IEU11-A IEQ11-A

IEU / IEQ STATIC DIAG
CZIEAD0

AH-T066D-MC
1 OF 9 JUN 1992

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IDENTIFICATION

PRODUCT CODE: AC T064D-MC

PRODUCT NAME: CZIEADO IEU11/IEQ11 STATIC DIAG

PRODUCT DATE: OCTOBER 1991

MAINTAINER: CSS ISG/U

AUTHOR: PETER SEEBACH

REVISED: 24 OCT-1991 By Stepehen Tamagna

```
REMARKS TO VERSION B
*********************
INITCODE MODIFYED SO THAT SEVERAL UNITS CAN BE RUN .

THE CHANGES ARE MARKED WITH *B*

UPDATED TO VERSION B BY PETER SEEBACH, 6-SEP 82


REMARKS TO VERSION C
*********************
DEFAULT ADDRESS CHANGED FROM 760140 TO 764100.
DEFAULT VECTOR  CHANGED FROM    420 TO    270.
DEFAULT ITERRATION COUNTER CHANGED FROM 20 TO 4.
SOME CHANGES ARE MADE IN THE DESCRIPTION OF TEST 25 AND 27.
LOGDEV IN THE PRINT STATMENT IN THE DROP UNIT SECTION IS CHANGED
TO RO SO THAT THE CORRECT UNIT NUMBER WILL BE PRINTED AFTER DROP COMMAND.

THE CHANGES ARE MARKED WITH *C*

UPDATED TO VERSION C BY PETER SEEBACH, 24-MAY-83


REMARKS TO VERSION D
*********************
        Kevin J. Liston  October 4, 1988                    (KJL001)

          Added initialization code to set BIT 12 of Location 52
          to set the CHARACTERISTICS WORD under the small (XXDP-SM)
          and extended (XXDP-XM) monitors.  The diagnostic
          trapped to location 117110 when running with the
          extended monitor of XXDP release 2.5.

          Corrected typographical errors in several of the
          output messages.

          Added IEU11-A/IEQ11-A User's Guide to the list of
          related documents in Section 1.3

          Changed module revision to "D" for release as ZIEADO.

Stepehen Tamagna 10/24/91

          Changed test 2 Initialization test.
        due to a hardware change MCR bit 14 which always
        read as a 0 now can be a 1 or a 0.


*********************
```

PROGRAM HEADER AND TABLES

Table of contents

TABLE OF CONTENTS

```
1.0   GENERAL INFORMATION
----------- ----------- --

1.1   PROGRAM ABSTRACT
----- ----------------

THE IEU-11/IEQ-11 DIAGNOSTIC PROGRAM PROVIDES A SERIFS
OF TESTS  DESIGNED TO VERIFY THE INTEGRITY AND
FUNCTIONALITY OF THE IEU-11 OR IEQ-11 INTERFACE.
TEST 3,27 AND 28 ARE DEPENDENT ON THE INTERFACE AND ON
THE SOFTWARE P-TABLE ANSWERS (SEE 6.27 AND 6.28).


THIS DIAGNOSTIC HAS BEEN WRITTEN FOR USE WITH THE DIAGNOSTIC
RUNTIME SERVICES SOFTWARE (SUPERVISOR).  THESE SERVICES PROVIDE
THE INTERFACE TO THE OPERATOR AND TO THE SOFTWARE ENVIRONMENT.
THIS PROGRAM CAN BE USED WITH XXDP+, ACT, APT, SLIDE .
FOR A COMPLETE DESCRIPTION OF THE RUNTIME SERVICES, REFER
TO THE XXDP+ USER'S MANUAL.  THERE IS A BRIEF DESCRIPTION OF
THE RUNTIME SERVICES IN SECTION 2 OF THIS DOCUMENT.

1.2   SYSTEM REQUIREMENTS
--------- ---------------

PDP 11/LSI 11 PROCESSOR WITH 32K MEMORY OR MORE
IEQ-11 INTERFACE (M-8634) FOR THE LSI
IEU-11 INTERFACE (M-8648) FOR THE PDP
CONSOLE TERMINAL (VT100,LA36, ECT.)
XXDP+ LOAD DEVICE (RX,RK,RL ECT.)



1.3   RELATED DOCUMENTS AND STANDARDS
  ---  ----  ------------------------

XXDP+ USER MANUAL          (CHQUSA )

IEU11-A OPTION DESCRIPTION (YG-C03KC-00) OR
IEQ11-A OPTION DESCRIPTION (YG-C03LC-00)

IEU11-A/IEQ11-A User's Guide (EK-IEUQ1-UG)

IEU/IEQ DIAGNOSTIC LISTING (AC T064D MC)


1.4   DIAGNOSTIC HIERARCY PREREQUISITES
-----------  -------------- -----------

ALL PDP 11 OR LSI-11 PROCESSOR DIAGNOSTIC SHOULD RUN SUCCESSFULLY
```

```
1.5   ASSUMPTIONS
----------- -- --

NONE

1.6   EXECUTION TIME
  ------------------

EXECUTION TIME IS DEPENDENT ON THE PROCESSOR SPEED AND THE TYPE OF
TEST EXECUTION (QUICK VERIFY PASS OR NOT):
THE FOLLOWING ARE TYPICAL EXECUTION TIMES OBSERVED ON A PDP-11/60:

QUICK VERIFY PASS ?YES ,EXECUTION TIME FOR THE WHOLE PASS IS 28 SEC.

QUIC< VERIFY PASS ? NO ,EXECUTION TIME FOR THE WHOLE PASS IS 3.3 MIN.

EXECUTION TIME IN NON QUICK VERIFY MODE ON A 11/23 IS ABOUT 6.45 MIN.
```

2.0 OPERATING INSTRUCTIONS

THIS SECTION CONTAINS A BRIEF DESCRIPTION OF THE RUNTIME SERVICES. FOR DETAILED INFORMATION, REFER TO THE XXDP+ USER'S MANUAL (CHQUS).

2.1 COMMANDS

THERE ARE ELEVEN LEGAL COMMANDS FOR THE DIAGNOSTIC RUNTIME SERVICES (SUPERVISOR). THIS SECTION LISTS THE COMMANDS AND GIVES A VERY BRIEF DESCRIPTION OF THEM. THE XXDP+ USER'S MANUAL HAS MORE DETAILS.

COMMAND	EFFECT
START	START THE DIAGNOSTIC FROM AN INITIAL STATE
RESTART	START THE DIAGNOSTIC WITHOUT INITIALIZING
CONTINUE	CONTINUE AT TEST THAT WAS INTERRUPTED (AFTER ↑C)
PROCEED	CONTINUE FROM AN ERROR HALT
EXIT	RETURN TO XXDP+ MONITOR (XXDP+ OPERATION ONLY!)
ADD	ACTIVATE A UNIT FOR TESTING (ALL UNITS ARE CONSIDERED TO BE ACTIVE AT START TIME
DROP	DEACTIVATE A UNIT
PRINT	PRINT STATISTICAL INFORMATION (IF IMPLEMENTED BY THE DIAGNOSTIC - SECTION 4.0)
DISPLAY	TYPE A LIST OF ALL DEVICE INFORMATION
FLAGS	TYPE THE STATE OF ALL FLAGS (SEE SECTION 2.3)
ZFLAGS	CLEAR ALL FLAGS (SEE SECTION 2.3)

A COMMAND CAN BE RECOGNIZED BY THE FIRST THREE CHARACTERS. SO YOU MAY, FOR EXAMPLE, TYPE "STA" INSTEAD OF "START".

2.2 SWITCHES

THERE ARE SEVERAL SWITCHES WHICH ARE USED TO MODIFY SUPERVISOR OPERATION. THESE SWITCHES ARE APPENDED TO THE LEGAL COMMANDS. ALL OF THE LEGAL SWITCHES ARE TABULATED BELOW WITH A BRIEF DESCRIPTION OF EACH. IN THE DESCRIPTIONS BELOW, A DECIMAL NUMBER IS DESIGNATED BY "DDDDD".

SWITCH	EFFECT
/TESTS:LIST	EXECUTE ONLY THOSE TESTS SPECIFIED IN THE LIST. LIST IS A STRING OF TEST NUMBERS, FOR EXAMPLE - /TESTS:1:5:7-10. THIS LIST WILL CAUSE TESTS 1,5,7,8,9,10 TO BE RUN. ALL OTHER TESTS WILL NOT BE RUN.
/PASS:DDDDD	EXECUTE DDDDD PASSES (DDDDD = 1 TO 64000)
/FLAGS:FLGS	SET SPECIFIED FLAGS. FLAGS ARE DESCRIBED IN SECTION 2.3.
/EOP:DDDDD	REPORT END OF PASS MESSAGE AFTER EVERY DDDDD PASSES ONLY. (DDDDD = 1 TO 64000)
/UNITS:LIST	TEST/ADD/DROP ONLY THOSE UNITS SPECIFIED IN THE LIST. LIST EXAMPLE - /UNITS:0:5:10-12 USE UNITS 0,5,10,11,12 (UNIT NUMBERS = 0-63)

EXAMPLE OF SWITCH USAGE:

```
START/TESTS:1-5/PASS:1000/EOP:100
```

THE EFFECT OF THIS COMMAND WILL BE: 1) TESTS 1 THROUGH 5 WILL BE EXECUTED, 2) ALL UNITS WILL TESTED 1000 TIMES AND 3) THE END OF PASS MESSAGES WILL BE PRINTED AFTER EACH 100 PASSES ONLY. A SWITCH CAN BE RECOGNIZED BY THE FIRST THREE CHARACTERS. YOU MAY, FOR EXAMPLE, TYPE "/TES:1-5" INSTEAD OF "/TESTS:1-5".

BELOW IS A TABLE THAT SPECIFIES WHICH SWITCHES CAN BE USED BY EACH COMMAND.

	TESTS	PASS	FLAGS	EOP	UNITS
START	X	X	X	X	X
RESTART	X	X	X	X	X
CONTINUE		X	X	X	
PROCEED			X		
DROP					X
ADD					X
PRINT					
DISPLAY					X
FLAGS					
ZFLAGS					
EXIT					

2.3 FLAGS

FLAGS ARE USED TO SET UP CERTAIN OPERATIONAL PARAMETERS SUCH AS LOOPING ON ERROR. ALL FLAGS ARE CLEARED AT STARTUP AND REMAIN CLEARED UNTIL EXPLICITLY SET USING THE FLAGS SWITCH. FLAGS ARE ALSO CLEARED AFTER A START COMMAND UNLESS SET USING THE FLAG SWITCH. THE ZFLAGS COMMAND MAY ALSO BE USED TO CLEAR ALL FLAGS. WITH THE EXCEPTION OF THE START AND ZFLAGS COMMANDS, NO COMMANDS AFFECT THE STATE OF THE FLAGS; THEY REMAIN SET OR CLEARED AS SPECIFIED BY THE LAST FLAG SWITCH.

FLAG	EFFECT
HOE	HALT ON ERROR - CONTROL IS RETURNED TO RUNTIME SERVICES COMMAND MODE
LOE	LOOP ON ERROR
IER*	INHIBIT ALL ERROR REPORTS
IBE*	INHIBIT ALL ERROR REPORTS EXCEPT FIRST LEVEL (FIRST LEVEL CONTAINS ERROR TYPE, NUMBER, PC, TEST AND UNIT)
IXE*	INHIBIT EXTENDED ERROR REPORTS (THOSE CALLED BY PRINTX MACRO'S)
PRI	DIRECT MESSAGES TO LINE PRINTER
PNT	PRINT TEST NUMBER AS TEST EXECUTES
BOE	"BELL" ON ERROR
UAM	UNATTENDED MODE (NO MANUAL INTERVENTION)
ISR	INHIBIT STATISTICAL REPORTS (DOES NOT APPLY TO DIAGNOSTICS WHICH DO NOT SUPPORT STATISTICAL REPORTING)
IDR	INHIBIT PROGRAM DROPPING OF UNITS
ADR	EXECUTE AUTODROP CODE
LOT	LOOP ON TEST
EVL	EXECUTE EVALUATION (ON DIAGNOSTICS WHICH HAVE EVALUATION SUPPORT)

*ERROR MESSAGES ARE DESCRIBED IN SECTION 3.1

2.3.1 FLAG COMMANDS

```
--   --
FLA(GS)         THIS COMMAND PRINTED THE CURRENT SETTING
--   -          OF ALL FLAGS

 ---
ZFL(AGS)        THIS COMMAND CLEARED ALL FLAGS
--- ----
```

SEE THE XXDP+ USER'S MANUAL FOR MORE DETAILS ON FLAGS. YOU MAY SPECIFY MORE THAN ONE FLAG WITH THE FLAG SWITCH. FOR EXAMPLE, TO CAUSE THE PROGRAM TO LOOP ON ERROR, INHIBIT ERROR REPORTS AND TYPE A "BELL" ON ERROR, YOU MAY USE THE FOLLOWING STRING:

```
/FLAGS:LOE:IER:BOE
```

```
2.4  HARDWARE QUESTIONS
-- --------------------

WHEN A DIAGNOSTIC IS STARTED, THE RUNTIME SERVICES WILL PROMPT
THE USER FOR HARDWARE INFORMATION BY TYPING "CHANGE HW (L) ?"
YOU MUST ANSWER "Y" AFTER A START COMMAND UNLESS THE HARDWARE
INFORMATION HAS BEEN "PRELOADED" USING THE SETUP UTILITY (SEE
CHAPTER 6 OF THE XXDP+ USER'S MANUAL).  WHEN YOU ANSWER THIS
QUESTION WITH A "Y", THE RUNTIME SERVICES WILL ASK FOR THE NUMBER
OF UNITS (IN DECIMAL).  YOU WILL THEN BE ASKED THE FOLLOWING
QUESTIONS FOR EACH UNIT.


EXAMPLE OF THE DIALOGUE:

CHANGE HW  (L) ?  Y

#UNITS (D)  ?  1
UNIT 0
DEVICE ADDRESS             (O)  764100 ?
INTERRUPT VECTOR           (O)     270 ?
PRIORITY LEVEL             (O)       6 ?
DEVICE PRIMARY ADDRESS CH 0     (O) 0 ?
DEVICE PRIMARY ADDRESS CH 1     (O) 1 ?
IS TESTCABLE IN            (L)N/Y      ?



2.5  SOFTWARE QUESTIONS
 --- ------------------

AFTER YOU HAVE ANSWERED THE HARDWARE QUESTIONS OR AFTER A RESTART
OR CONTINUE COMMAND,THE RUNTIME SERVICES WILL ASK FOR SOFTWARE
PARAMETERS. THESE PARAMETERS WILL GOVERN SOME DIAGNOSTIC SPECIFIC
OPERATION MODES. YOU WILL BE PROMPTED BY "CHANGE SW (L) ?".
IF YOU WISH TO CHANGE ANY PARAMETERS, ANSWER BY TYPING "Y".
THE SOFTWARE QUESTIONS AND THE DEFAULT VALUE ARE :

QUICK VERIFY PASS (L) Y ?

IF 'Y',THEN EACH TEST WILL ITERATE ONLY ONCE BEFORE
CONTINUING TO THE NEXT TEST IN SEQUENCE.

IF 'N',THEN EACH TEST WILL ITERRATE 4 TIMES BEFORE
CONTINUING ON THE NEXT TEST IN SEQUENCE.
ALSO SOME TESTS WILL DO WITH MORE TESTPATTERNS .

NUMBER OF MATCH CHARACTER COUNTS (O) 63.?

AFTER THIS QUESTION YOU CAN CHANGE THE NUMBER OF DMA CYCLES

NUMBER OF BYTE COUNTS (O) 2047. ?
```

AFTER THIS QUESTION YOU CAN SELECT THE ADDITIONAL STANDBY TEST WICH CHECK EXTENDED ADDRESS BITS FOR THE Q-22 BUS WITHOUT MEMORY.

DO YOU WANT THE ADDITIONAL STANDBY TEST (L) ? N

2.6 EXTENDED P-TABLE DIALOGUE

WHEN YOU ANSWER THE HARDWARE QUESTIONS, YOU ARE BUILDING ENTRIES IN A TABLE THAT DESCRIBES THE DEVICES UNDER TEST. THE SIMPLEST WAY TO BUILD THIS TABLE IS TO ANSWER ALL QUESTIONS FOR EACH UNIT TO BE TESTED. IF YOU HAVE A MULTIPLEXED DEVICE SUCH AS A MASS STORAGE CONTROLLER WITH SEVERAL DRIVES OR A COMMUNICATION DEVICE WITH SEVERAL LINES, THIS BECOMES TEDIOUS SINCE MOST OF THE ANSWERS ARE REPETITIOUS.

TO ILLUSTRATE A MORE EFFICIENT METHOD, SUPPOSE YOU ARE TESTING A FICTIONAL DEVICE, THE XY11. SUPPOSE THIS DEVICE CONSISTS OF A CONTROL MODULE WITH EIGHT UNITS (SUB-DEVICES) ATTACHED TO IT. THESE UNITS ARE DESCRIBED BY THE OCTAL NUMBERS 0 THROUGH 7. THERE IS ONE HARDWARE PARAMETER THAT CAN VARY AMONG UNITS CALLED THE Q-FACTOR. THIS Q-FACTOR MAY BE 0 OR 1. BELOW IS A SIMPLE WAY TO BUILD A TABLE FOR ONE XY11 WITH EIGHT UNITS.

```
# UNITS (D) ?  8<CR>

UNIT 1
CSR ADDRESS (O) ?  160000<CR>
SUB-DEVICE # (O) ?  0<CR>
Q-FACTOR (O) 0 ?  1<CR>

UNIT 2
CSR ADDRESS (O) ?  160000<CR>
SUB-DEVICE # (O) ?  1<CR>
Q-FACTOR (O) 1 ?  0<CR>

UNIT 3
CSR ADDRESS (O) ?  160000<CR>
SUB-DEVICE # (O) ?  2<CR>
Q-FACTOR (O) 0 ?  <CR>

UNIT 4
CSR ADDRESS (O) ?  160000<CR>
SUB DEVICE # (O) ?  3<CR>
Q-FACTOR (O) 0 ?  <CR>

UNIT 5
CSR ADDRESS (O) ?  160000<CR
SUB DEVICE # (O) ?  4<CR>
Q FACTOR (O) 0 ?  <CR>

UNIT 6
CSR ADDRESS (O) ?  160000<CR>
SUB-DEVICE # (O) ?  5<CR>
```

```
        Q-FACTOR (O) 0 ?  &lt;CR&gt;

        UNIT 7
        CSR ADDRESS (O) ?  160000&lt;CR&gt;
        SUB DEVICE # (O) ?  6&lt;CR&gt;
        Q-FACTOR (O) 0 ?  1&lt;CR&gt;

        UNIT 8
        CSR ADDRESS (O)  160000&lt;CR&gt;
        SUB-DEVICE # (O) ?  7&lt;CR&gt;
        Q-FACTOR (O) 1 ?  &lt;CR&gt;
```

NOTICE THAT THE DEFAULT VALUE FOR THE Q-FACTOR CHANGES WHEN A NON DEFAULT RESPONSE IS GIVEN. BE CAREFUL WHEN SPECIFYING MULTIPLE UNITS!

AS YOU CAN SEE FROM THE ABOVE EXAMPLE, THE HARDWARE PARAMETERS DO NOT VARY SIGNIFICANTLY FROM UNIT TO UNIT. THE PROCEDURE SHOWN IS NOT VERY EFFICIENT.

THE RUNTIME SERVICES CAN TAKE MULTIPLE UNIT SPECIFICATIONS HOWEVER. LET'S BUILD THE SAME TABLE USING THE MULTIPLE SPECIFICATION FEATURE.

```
        # UNITS (D) ?  8<CR>

        UNIT 1
        CSR ADDRESS (O) ?  160000<CR>
        SUB-DEVICE # (O) ?  0,1<CR>
        Q-FACTOR (O) 0 ?  1,0<CR>

        UNIT 3
        CSR ADDRESS (O) ?  160000<CR>
        SUB-DEVICE # (O) ?  2-5<CR>
        Q-FACTOR (O) 0 ?  0<CR>

        UNIT 7
        CSR ADDRESS (O) ?  160000<CR>
        SUB DEVICE # (O) ?  6,7<CR>
        Q-FACTOR (O) 0 ?  1<CR>
```

AS YOU CAN SEE IN THE ABOVE DIALOGUE, THE RUNTIME SERVICES WILL BUILD AS MANY ENTRIES AS IT CAN WITH THE INFORMATION GIVEN IN ANY ONE PASS THROUGH THE QUESTIONS. IN THE FIRST PASS, TWO ENTRIES ARE BUILT SINCE TWO SUB-DEVICES AND Q-FACTORS WERE SPECIFIED. THE SERVICES ASSUME THAT THE CSR ADDRESS IS 160000 FOR BOTH SINCE IT WAS SPECIFIED ONLY ONCE. IN THE SECOND PASS, FOUR ENTRIES WERE BUILT. THIS IS BECAUSE FOUR SUB-DEVICES WERE SPECIFIED. THE "-" CONSTRUCT TELLS THE RUNTIME SERVICES TO INCREMENT THE DATA FROM THE FIRST NUMBER TO THE SECOND. IN THIS CASE, SUB-DEVICES 2, 3, 4 AND 5 WERE SPECIFIED. (IF THE SUB-DEVICE WERE SPECIFIED BY ADDRESSES, THE INCREMENT WOULD BE BY 2 SINCE ADDRESSES MUST BE ON AN EVEN BOUNDARY.) THE CSR ADDRESSES AND Q-FACTORS FOR THE FOUR ENTRIES ARE ASSUMED TO BE 160000 AND 0 RESPECTIVELY SINCE THEY WERE ONLY SPECIFIED ONCE. THE LAST TWO UNITS ARE SPECIFIED IN THE THIRD PASS.

```
THE WHOLE PROCESS COULD HAVE BEEN ACCOMPLISHED IN ONE PASS AS
SHOWN BELOW.

        # UNITS (D) ?  8<CR>

        UNIT 1
        CSR ADDRESS (O) ?  160000<CR>
        SUB-DEVICE # (O) ?  0-7<CR>
        Q-FACTOR (O) 0 ?  0,1,0,,,,1,1<CR>

AS YOU CAN SEE FROM THIS EXAMPLE, NULL REPLIES (COMMAS ENCLOSING
A NULL FIELD) TELL THE RUNTIME SERVICES TO REPEAT THE LAST REPLY.
```

2.7 QUICK START-UP PROCEDURE (XXDP+)

TO START-UP THIS PROGRAM:

1. BOOT XXDP+
2. ANSWER ALL XXDP + QUESTIONS
3. TYPE "R NAME", WHERE NAME IS THE NAME OF THE BIN OR BIC
   FILE FOR THIS PROGRAM
4. TYPE "START"
5. ANSWER THE "CHANGE HW" QUESTION WITH "Y"
6. ANSWER ALL THE HARDWARE QUESTIONS
7. ANSWER THE "CHANGE SW" QUESTION WITH "N"

WHEN YOU FOLLOW THIS PROCEDURE YOU WILL BE USING ONLY THE
DEFAULTS FOR FLAGS AND SOFTWARE PARAMETERS. THESE DEFAULTS
ARE DESCRIBED IN SECTIONS 2.3 AND 2.5.

2.7.1 CONTROL CHARACTERS

A CONTROL C ENTERD DURING THE EXECUTION OF A DIAGNOSTIC
CAUSES A RETURN TO COMMAND MODE.

A CONTROL Z ENTERED DURING ONE OF THE OPERATOR DIALOGUES
, CAUSES THE DEFAULTS TO BE TAKEN FOR
THE REMAINDER OF THAT DIALOGUE.

3.0 ERROR INFORMATION

3.1 TYPES OF ERROR MESSAGES

THERE ARE THREE LEVELS OF ERROR MESSAGES THAT MAY BE ISSUED BY A DIAGNOSTIC: GENERAL, BASIC AND EXTENDED. GENERAL ERROR MESSAGES ARE ALWAYS PRINTED UNLESS THE "IER" FLAG IS SET (SECTION 2.3). THE GENERAL ERROR MESSAGE IS OF THE FORM:

```
        NAME .TYPE,NUMBER,UNIT NUMBER,TST NUMBER,PC:XXXXXX


,WHERE: NAME = DIAGNOSTIC NAME
        TYPE = ERROR TYPE (SYS FATAL, DEV FATAL, HARD OR SOFT)
        NUMBER = ERROR NUMBER
        UNIT NUMBER = 0 - N (N IS LAST UNIT IN PTABLE)
        TST NUMBER = TEST AND SUBTEST WHERE ERROR OCCURRED
        PC:XXXXXX = ADDRESS OF ERROR MESSAGE CALL
```

BASIC ERROR MESSAGES ARE MESSAGES THAT CONTAIN SOME ADDITIONAL INFORMATION ABOUT THE ERROR. THESE ARE ALWAYS PRINTED UNLESS THE "IER" OR "IBE" FLAGS ARE SET (SECTION 2.3). THESE MESSAGES ARE PRINTED AFTER THE ASSOCIATED GENERAL MESSAGE.

EXTENDED ERROR MESSAGES CONTAIN SUPPLEMENTARY ERROR INFORMATION SUCH AS REGISTER CONTENTS OR GOOD/BAD DATA. THESE ARE ALWAYS PRINTED UNLESS THE "IER", "IBR" OR "IXE" FLAGS ARE SET (SECTION 2.3). THESE MESSAGES ARE PRINTED AFTER THE ASSOCIATED GENERAL ERROR MESSAGE AND ANY ASSOCIATED BASIC ERROR MESSAGES.

EXAMPLES:

```
CZIEA SOFT ERR 00301 ON UNIT 00 TST 003 SUB 000 PC: 001234
READ WRITE BITS NOT CORRECT
REGISTER : IIR , CHANNEL : 1 , GOOD DATA :00000 ,BAD DATA :00001
```

NOTE THAT THE ERROR NUMBER IS IN THE FORMAT 'TNN' WHERE:

```
T       IS THE TEST NUMBER AND
NN      IS THE ERROR NUMBER WITHIN THE TEST

IE.     00302 = ERROR 2 IN TEST 03.
        00504 = ERROR 4 IN TEST 05.
```

3.2 SPECIFIC ERROR MESSAGES AND REPORTS

ERROR MESSAGES:

CALL	MESSAGE
E101	REGISTER ADDRESSING ERROR - TRAP 4
E200	REGISTER INCORRECT AFTER BUS RESET
E301	READ - WRITE BITS INCORRECT
E302	BITS NOT CLEARED AFTER BUS RESET
E303	MUX BIT IN CSR NOT SETABLE
E401	CSR CONTENTS INCORRECT
E402	NO INTERRUPT WHEN EXPECTED
E403	INCORRECT PRIORITY LEVEL
E501	BITS IN IIR REGISTER INCORRECT
E502	BITS IN ISR REGISTER INCORRECT
E801	DATA TRANSFER FROM CHANNEL 1 TO 2 INCORRECT
E802	DATA TRANSFER FROM CHANNEL 2 TO 1 INCORRECT
E901	ICR CONTENTS INCORRECT
E222	DIR CONTENTS INCORRECT
E250	RX BUFFER CONTENTS INCORRECT AFTER DMA (2 TO 1)
E231	RX BUFFER CONTENTS INCORRECT AFTER DMA (1 TO 2)
E232	NO INTERRUPT AFTER DMA
E233	NO INTERRUPT AFTER READ FROM A NXM ADDRESS
E234	BAR CONTENTS INCORRECT
E235	BCR CONTENTS INCORRECT

ERROR REPORTS:

```
CALL            MESSAGE
---             ---- --
ERR101          REGISTER AT (AAAAAA) DOES NOT RESPOND
ERR201          REGISTER: CSR,CHA.:(CC) ,GOOD DATA:NNNN,BAD DATA:NNNN
                (FOR IEU11A IGNORE BIT 9-12)
ERR202          REGISTER: (RRR),CHA.:(CC) ,GOOD DATA:NNNN,BAD DATA:NNN
ERR401          CHAN.:(CC),CORRECT PRIORITY:(PPP) ,WRONG PRIORITY:(PPP)
ERR402          CHANNEL :(CC) IS SELECTED
ERR501          CHAN.: (CC),GOOD DATA:NNNN ,BAD DATA:NNNN,ITERATION:NN
ERR231          GOOD DATA   TXADDR   BAD DATA   RXADDR   BYTE CNT#
                DDDDDD      AAAAAA   DDDDDD     AAAAAA   CCCCCC
```

4.0 PERFORMANCE AND PROGRESS REPORTS

AT THE END OF EACH PASS, THE PASS COUNT IS GIVEN ALONG WITH THE TOTAL NUMBER OF ERRORS REPORTED SINCE THE DIAGNOSTIC WAS STARTED. THE "EOP" SWITCH CAN BE USED TO CONTROL HOW OFTEN THE END OF PASS MESSAGE IS PRINTED. SECTION 2.2 DESCRIBES SWITCHES.

5.0 DEVICE INFORMATION TABLES

```
        6.0 TEST SUMMARIES
        ------------------

6.1     TEST 1 -IEX11 : REGISTER ADDRESSING TEST
---
VERIFY THAT ADDRESSING THE 8 BUS DEVICE REGISTERS DOES NOT CAUSE
A NON-EXISTENT MEMORY TRAP.
AN ERROR IN THIS TEST COULD MEAN THAT THE DEVICE IS INCORRECTLY
CONFIGURED OR THAT THE ADDRESS IS WRONG OR THE DEVICE DOSE NOT RESPOND.
COMMUNICATION BETWEEN THE MAIN CPU AND THE IEX11 IS ACCOMPLISHED
THROUGH A SET OF SIXTEEN REGISTERS.THE SIXTEEN REGISTERS ARE
ASSIGNED ADDRESSES IN THE I/O PAGE.


6.2     IEX - TEST 2 : INITIALIZATION TEST
---
RESETS THE IEX AND ENSURES THAT REGISTERS CSR,IIR,ISR,ICR,IDR,MCR
IN BOTH CHANNELS ARE IN THEIR PROPER INITIALIZATION STATE .
REGISTERS BAR AND BCR ARE NOT IN A DEFINITIVE STATE AFTER RESET
SO THEY ARE NOT TESTED HERE.
THE MUX BIT IN CSR IS ALSO TESTED.


6.3     IEX - TEST 3 : R/W BIT TEST
-
THIS TEST CHECKS ALL R/W BITS OF CSR,BAR,BCR AND MCR REGISTERS
IN BOTH CHANNELS. IT ALSO TESTS THE MASTER CLEAR FUNCTION IN
CSR1 + CSR2.
THE TMS 9914 REGISTERS IIR,ISR,ICR,IDR ARE NOT CHECKED
IN THIS TEST.


6.4     IEX   TEST 4 : SYSTEM CONTROLLER COMMANDS TEST

PART 1 CHANNEL 1 WHICH IS SELECTED AS SYSTEM CONTROLLER, SENDS THE IFC AND
        REN MESSAGE BY MEANS OF THE AUXILIARY COMMANDS SIC AND SRE.
        ALSO, BOTH IIR AS WELL AS ISR REGISTERS ARE CHECKED.
PART 2 CHANNEL 2 WHICH IS SELECTED AS SYSTEM CONTROLLER, SENDS THE IFC AND
        REN MESSAGE BY MEANS OF THE AUXILIARY COMMANDS SIC AND SRE.
        ALSO BOTH IIR AS WELL AS ISR REGISTERS ARE CHECKED.


6.5     IEX - TEST 5 : INTERRUPT TEST

PART 1 CHECKS THE DEVICE PRIORITY LEVEL AND
        THE FUNCTION OF INTERRUPT SEQUENCE IN CHANNEL 1.
        INITIATING THIS SEQUENCE WILL BE DONE BY SETTING THE INT ENB,DMA ENB
        BITS IN CSR1 AND BO BIT IN IIR 1 REGISTER.
PART 2 CHECKS THE DEVICE PRIORITY LEVEL AND
        THE FUNCTION OF INTERRUPT SEQUENCE IN CHANNEL 2.
        INITIATING THIS SEQUENCE WILL BE DONE BY SETTING THE INT ENB,DMA ENB
```

```
        BITS IN CSR2 AND B0 BIT IN IIR 2 REGISTER.


6.6     IEX - TEST 6 : ADDRESS REGISTER TEST (ICR) OF CHANNEL 1
---
PART 1 CHECKS THE CORRECT FUNCTION OF ADDRESS REGISTER 1 (ADR)
        BY LOADING ITS DEVICE PRIMARY ADDRESS INTO BIT A1-A5 AND RECEIVING THE
        ASSIGNED LISTEN OR TALKER ADDRESS VIA THE IEC/IEEE BUS.
NOTE:  THE ULPA BIT IN THE ISR1 REGISTER IS DEPENDENT
        FROM THE STATUS OF DPA1 (DPA1=ULPA IS SET)
PART 2 CHECKS THE FUNCTION OF THE "DAT", "DAL" AND "EDPA" BIT OF ADR1 REGISTER
IF THE QUICK VERIFY PASS IS NOT SELECTED, THE TEST ITERATION WILL DO
IT WITH DIFFERENT DPA'S.


6.7     IEX   TEST 7 : ADDRESS REGISTER TEST (ICR) OF CHANNEL 2
---
THIS TEST IS THE SAME TEST AS TEST 6 EXCEPT THE CHANNEL IS CHANGED
PART 1 CHECKS THE CORRECT FUNCTION OF ADDRESS REGISTER 2 (ADR)
        BY LOADING ITS DEVICE PRIMARY ADDRESS INTO BIT A1-A5 AND RECEIVING THE
        ASSIGNED LISTEN OR TALKER ADDRESS VIA THE IEC/IEEE BUS.
NOTE: THE ULPA BIT IN THE ISR2 REGISTER IS DEPENDENT
        FROM THE STATUS OF DPA2 (DPA2=ULPA IS SET)
PART 2 CHECKS THE FUNCTION OF THE "DAT", "DAL" AND "EDPA" BIT OF ADR2 REGISTER
IF THE QUICK VERIFY PASS IS NOT SELECTED, THE TEST ITERATION WILL DO
IT WITH DIFFERENT DPA'S.


6.8     IEX - TEST 8 : DATA TRANSFER TEST
---
THIS TEST IS DIVIDED INTO TWO PARTS.
IT CHECKS THE  DATA OUT (DOR) AND DATA IN (DIR) REGISTERS .
PART 1 CHECKS DOR AND DIR REGISTERS BY LOADING THE DOR1 WITH A DATA BYTE
        AND READING IT FROM THE DIR2 (PROGRAMMED DATA TRANSFER FROM
        CHAN.1 TO CHAN.2).
PART 2 CHECKS DOR AND DIR REGISTERS BY LOADING THE DOR2 WITH A DATA BYTE
        AND READING IT FROM THE DIR1 (PROGRAMMED DATA TRANSFER FROM
        CHAN.2 TO CHAN.1).
IF THE QUICK VERIFY PASS IS NOT SELECTED, THE TEST ITERATION IS
CARRIED OUT WITH A DIFFERENT DATA PATTERN


6.9     IEX - TEST 9 : SECONDARY ADDRESSING TEST OF CHANNEL 1 (LISTENER)
---
THIS TEST CHECKS THE EXTENDED LISTENER INTERFACE FUNCTION .
PURPOSE OF THIS TEST IS TO CHECK THE SECONDARY ADDRESSING
FEATURE OF CHANNEL 1 BY MEANS OF RECEIVING A VALID AS WELL AN INVALID
'MY SECONDARY ADDRESS' (MSA1)


6.10    IEX - TEST 10 : SECONDARY ADDRESSING TEST OF CHANNEL 1 (TALKER)
---
```

```
THIS TEST CHECKS THE EXTENDED TALKER INTERFACE FUNCTION.
PURPOSE OF THIS TEST IS TO CHECK THE SECONDARY ADDRESSING
FEATURE OF CHANNEL 1 BY MEANS OF RECEIVING A VALID AS WELL AN INVALID
'MY SECONDARY ADDRESS' (MSA1)


6.11    IEX - TEST 11 : SECONDARY ADDRESSING TEST OF CHANNEL 2 (LISTENER)
---
THIS TEST CHECKS THE EXTENDED LISTENER INTERFACE FUNCTION .
PURPOSE OF THIS TEST IS TO CHECK THE SECONDARY ADDRESSING
FEATURE OF CHANNEL 2 BY MEANS OF RECEIVING A VALID AS WELL AN INVALID
'MY SECONDARY ADDRESS' (MSA2)


6.12    IEX - TEST 12 : SECONDARY ADDRESSING TEST OF CHANNEL 2 (TALKER)
---
THIS TEST CHECKS THE EXTENDED TALKER INTERFACE FUNCTION .
PURPOSE OF THIS TEST IS TO CHECK THE SECONDARY ADDRESSING
FEATURE OF CHANNEL 2 BY MEANS OF RECEIVING A VALID AS WELL AN INVALID
'MY SECONDARY ADDRESS' (MSA2)


6.13    IEX - TEST 13 : DEVICE CLEAR INTERFACE FUNCTION TEST
 --
PART 1 CHECKS THE DEVICE CLEAR INTERFACE FUNCTION OF CHANNEL 2 BY MEANS OF
        RECEIVING A UNIVERSAL COMMAND (DCL) AS WELL AS AN ADDRESS COMMAND
        (SDC)
PART 2 CHECKS THE DEVICE CLEAR INTERFACE FUNCTION OF CHANNEL 1 BY MEANS OF
        RECEIVING A UNIVERSAL COMMAND (DCL) AS WELL AS AN ADDRESS COMMAND
        (SDC)


6.14    IEX - TEST 14 : DEVICE TRIGGER INTERFACE FUNCTION TEST
--
PART 1 CHECKS THE TRIGGER INTERFACE FUNCTION OF CHANNEL 2 BY MEANS OF
        RECEIVING THE ADDRESS COMMAND GET AS WELL AS THE AUXILIARY
        COMMAND NOT FGET.
PART 2 CHECKS THE TRIGGER INTERFACE FUNCTION OF CHANNEL 1 BY MEANS OF
        RECEIVING THE ADDRESS COMMAND GET AS WELL AS THE AUXILIARY
        COMMAND NOT FGET.


6.15    IEX - TEST 15 : INCOMPLETE SOURCE HANDSHAKE TEST
---
PART 1 CHECKS THE INCOMPLETE SOURCE HANDSHAKE OF CHANNEL 1.
        SOURCE HANDSHAKE DOES NOT OCCUR DURING THE DATA TRANSFER,
        BECAUSE CHANNEL 2 IS NOT SELECTED AS LISTENER.
PART 2 CHECKS THE INCOMPLETE SOURCE HANDSHAKE OF CHANNEL 2.
        SOURCE HANDSHAKE DOES NOT OCCUR DURING THE DATA TRANSFER,
        BECAUSE CHANNEL 1 IS NOT SELECTED AS LISTENER.
```

```
6.16    IEX - TEST 16 : CHANGING OF THE CONTROLLER CONFIGURATION
-- -
PART 1 CHECKS THE CHANGING OF THE CONTROLLER CONFIGURATION FROM 1 TO 2
        BY MEANS OF THE AUXILIARY COMMANDS RQC AND RLC.
PART 2 CHECKS THE CHANGING OF THE CONTROLLER CONFIGURATION FROM 2 TO 1
        BY MEANS OF THE AUXILIARY COMMANDS RQC AND RLC.


6.17    IEX - TEST 17 : REMOTE/LOCAL INTERFACE FUNCTION TEST
---
PART 1 CHECKS THE REMOTE/LOCAL FUNCTION OF CHANNEL 2 USING THE FOLLOWING
        COMMANDS GTL,LLO,NOT RTL.
PART 2 CHECKS THE REMOTE/LOCAL FUNCTION OF CHANNEL 1 USING THE FOLLOWING
        COMMANDS GTL,LLO,NOT RTL.


6.18    IEX - TEST 18 : SERVICE REQUEST INTERFACE FUNCTION TEST OF CHANNEL 1
----
THIS TEST CHECKS THE SERIAL POLL REGISTER OF CHANNEL 1
PART 1 SETS AND CLEARS THE RSV BIT IN SPR REGISTER OF CHANNEL 1
        AND CHECKS THE SRQ BIT IN ISR2.
PART 2 CHECKS THE SERIAL POLL SEQUENCE OF CHANNEL 1.
IF QUICK VERIFY PASS IS NOT SELECTED, THE SERIAL POLL SEQUENCE IS CARRIED
OUT WITH DIFFERENT DATA.


6.19    IEX - TEST 19 : SERVICE REQUEST INTERFACE FUNCTION TEST  OF CHANNEL 2
----
THIS TEST CHECKS THE SERIAL POLL REGISTER OF CHANNEL 2.
PART 1 SETS AND CLEARS THE RSV BIT IN SPR REGISTER OF CHANNEL 2 AND
        CHECKS THE SRQ BIT IN ISR1.
PART 2 CHECKS THE SERIAL POLL SEQUENCE OF CHANNEL 2.
IF QUICK VERIFY PASS IS NOT SELECTED, THE SERIAL POLL SEQUENCE IS CARRIED
OUT WITH DIFFERENT DATA.


6.20    IEX -TEST 20 : PARALLEL POLL INTERFACE FUNCTION TEST OF CHANNEL 1
----
PART 1 CHECKS PARALLEL POLL SEQUENCE (LOCAL CONFIGURED).
PART 2 CHECKS PARALLEL POLL SEQUENCE (REMOTE CONFIGURED).


6.21    IEX - TEST 21 : PARALLEL POLL INTERFACE FUNCTION TEST OF CHANNEL 2
----
PART 1 CHECKS PARALLEL POLL SEQUENCE (LOCAL CONFIGURED).
PART 2 CHECKS PARALLEL POLL SEQUENCE (REMOTE CONFIGURED).
```

```
6.22    IEX - TEST 22 : END OF A MESSAGE BLOCK TEST
----
PART 1 CHECKS THE END OF A MESSAGE BLOCK FROM CHANNEL 1.  CHANNEL 2 SENDS THE
        EOI MESSAGE VIA THE IEC/IEEE BUS.
PART 2 CHECKS THE END OF A MESSAGE BLOCK FROM CHANNEL 2.  CHANNEL 1 SENDS THE
        EOI MESSAGE VIA THE IEC/IEEE BUS.


6.23    IEX - TEST 23 : DMA DATA TRANSFER TEST FROM CHANNEL 1 TO 2
---
PART 1 SENDS DATA VIA THE IEC/IEEE BUS  FROM CHAN. 1 TO 2 BY MEANS OF A DMA
        I.E. CHAN. 1 WHICH IS SELECTED AS TALKER PERFORMS A DATI CYCLE,
        WHEREAS CHAN.2 WHICH IS SELECTED AS A LISTENER PERFORMS A DATOB CYCLE.
        THE MAX. SELECTABLE BYTE COUNT FOR THIS DATA TRANSFER IS 2K BYTES
        AND THE HIGHEST BUS ADDRESS IS BELOW 32 K.
PART 2 CHECKS THE NON EXISTENT MEMORY BIT OF CHANNEL 1.
        THIS IS DONE BY A DMA FROM A NON EXISTING I/O PAGE ADDRESS
        SELECTED IN THE BUS ADDRESS REGISTER OF CHAN 1 (DATI CYCLE).
PART 3 SAME PROCEDURE AS IN PART 1 EXCEPT THE DATA TRANSFER IS EXECUTED
        OVER 32K (IF MEMORY MANAGEMENT IS AVAILABLE).
PART 4 SAME PROCEDURE AS IN PART 1 EXCEPT THE DATA TRANSFER IS EXECUTED
        OVER 64K (IF MEMORY MANAGEMENT IS AVAILABLE).


6.24    IEX   TEST 24 : DMA DATA TRANSFER TEST FROM CHANNEL 2 TO 1
----
PART 1 SENDS DATA VIA THE IEC/IEEE BUS  FROM CHAN. 2 TO 1 BY MEANS OF A DMA
        I.E. CHAN. 2 WHICH IS SELECTED AS TALKER PERFORMS A DATI CYCLE,
        WHEREAS CHAN.1 WHICH IS SELECTED AS A LISTENER PERFORMS A DATOB CYCLE.
        THE MAX. SELECTABLE BYTE COUNT FOR THIS DATA TRANSFER IS 2K BYTES
        AND THE HIGHEST BUS ADDRESS IS BELOW 32 K.
PART 2 CHECKS THE NON EXISTENT MEMORY BIT OF CHANNEL 1
        THIS IS DONE BY A DMA FROM A NON EXISTING I/O PAGE ADDRESS
        SELECTED IN THE BUS ADDRESS REGISTER OF CHAN 2 (DATOB CYCLE).
PART 3 SAME PROCEDURE AS IN PART 1 EXCEPT THE DATA TRANSFER IS EXECUTED
        OVER 32K (IF MEMORY MANAGEMENT IS AVAILABLE).
PART 4 SAME PROCEDURE AS IN PART 1 EXCEPT THE DATA TRANSFER IS EXECUTED
        OVER 64K (IF MEMORY MANAGEMENT IS AVAILABLE).


6.25    IEX - TEST 25 : MCR FUNCTION TEST OF CHANNEL 1
----
PART 1  CHANNEL 2 TRANSMITS 9 DATA BYTES (50) THAN
        A PREDEFINED QUANTITY (MC INPUT) OF SUCCESSIVE EOS CHARACTERS (177)
        VIA THE IEC/IEEE BUS TO CHANNEL 1.  AFTER RECEIVING THESE CHARACTERS
        THE DMA DATA TRANSFER IS TERMINATED BY CHANNEL 1 (COMP END).
PART 2  SAME AS PART 1 EXCEPT THAT A WRONG QUANTITY OF SUCCESSIVE EOS
        CHARACTERS  ARE TRANSMITTED  BEFORE THE CORRECT QUANTITY OF SUCCESSIVE
        EOS CHARACTER ARE TRANSMITTED.
        I.E. 2 EOS CHAR.(25),1 DATA BYTE (50)THAN THE PREDEFINED EOS CHAR.(25).
```

```
6.26     IEX - TEST 26  MCR FUNCTION TEST OF CHANNEL 2
----
PART 1   CHANNEL 1 TRANSMITS 9 DATA BYTES (50) THAN
         A PREDEFINED QUANTITY (MC INPUT)OF SUCCESSIVE EOS CHARACTERS (177)
         VIA THE IEC/IEEE BUS TO CHANNEL 2.  AFTER RECEIVING THESE CHARACTERS
         THE DMA DATA TRANSFER IS TERMINATED BY CHANNEL 2 (COMP END).
PART 2   SAME AS PART 1 EXCEPT THAT A WRONG QUANTITY OF SUCCESSIVE EOS
         CHARACTERS  ARE TRANSMITTED  BEFORE THE CORRECT QUANTITY OF SUCCESSIVE
         EOS CHARACTER ARE TRANSMITTED.
         I.E. 2 EOS CHAR.(25),1 DATA BYTE (50)THAN THE PREDEFINED EOS CHAR.(25).


6.27     IEX - TEST 27 EXTENDED ADDRESS BIT (Q22-BUS) TEST
----
THIS TEST IS ONLY BE CARRIED OUT IF A Q-BUS IS USED AND IF THE AVAILABLE
MEMORY IS GREATER THAN 128K (Q22-BUS).

PART 1   FINDS OUT IF THE AVAILABLE MEMORY IS GREATER THAN 128K.
         IF YES ,THEN A DMA IS CARRIED OUT BY SENDING DATA VIA THE
         IEC/IEEE BUS FROM CHANNEL 1 TO 2.THE DMA WILL CROSS THE 128K
         BOUNDERY.
         THE SEQUENCE DESCRIBED ABOVE IS ALSO EXECUTED WITH MEMORY
         GREATER THAN 256K (BA 19 SET),GREATER THAN 512K (BA 20 SET)
         AND GREASTER THAN 1024K (BA 21 SET).
PART 2   SAME AS PART 1 EXCEPT THE CHANNELS .THE DMA DATA TRANSFER IS
         CARRIED OUT FROM CHANNEL 2 TO 1.


6.28     IEX - TEST 28 ADDITIONAL STANDBY TEST
----
THIS TEST CAN BE USED IF YOU WANT TO CHECK THE EXTENDED ADDRESS BITS
WITHOUT MEMORY.
IT MOVES A SLIDING ONE'S BIT PATTERN ACROSS THE ADDRESS LINE 16,17,
18,19,20,21 IGNORING NXM ERRORS BUT CHECKING THE ADDRESS REGISTER LINES TO
THE BUS.

THE PATTERN SHOULD BE CHECKED ON A LOGIC ANALYSER .
THE LOGIC ANALYSER HAS TO BE CONNECT TO THE ADDRESS LINES 16 21
THE TRIGGER HAS TO BE CONNECT TO THE SIGNAL ADREN L(E9, PIN 4).

THIS TEST IS ONLY CARRIED OUT IF A Q-BUS IS USED AND IF YOU ANSWER
THE SOFTWARE QUESTION.


         7.0 PROGRAM LISTING

                                        &

.NLIST
1030                       .LIST SEQ,BIN
1031                       .LIST
```

```
                                 .IIF NDF ONEFILE,.END
                                 .NLIST
                                 .NLIST  CND
         000000                  HELP=0          ; CONTROL LISTING OF HELP INFORMATION
                                                 ; HELP=0   NO LIST
                                                 ; HELP-1   LIST

                                 ;
                                 ;ONEFILE=0      ; CONTROL USE OF SOURCE FILES
                                                 ; ONEFILE IS NOT DEFINED   ASSEMBLE EACH SOURCE FILE SEPARATELY
                                                 ; ONEFILE=ANYTHING   ASSEMBLE ALL SOURCE FILES TOGETHER
                                 .LIST
                                 .TITLE PROGRAM HEADER AND TABLES
                                 .SBTTL  PROGRAM HEADER
                                 .IF EQ HELP
                                 .NLIST
                                 .ENDC

                                         .MCALL  SVC
 000000                                  SVC                             ; INITIALIZE SUPERVISOR MACROS
         000003                  C$REVISION=3
         000003                  C$EDIT=3
         177777                  SVCINS=-1
         177777                  SVCTST=-1
         177777                  SVCSUB=-1
         177777                  SVCGBL=-1
         177777                  SVCTAG=-1
         000012                  .RADIX          10
         000000                  C$RESERV=0
         000001                  C$ETST=1
         000002                  C$BSUB=2
         000003                  C$ESUB=3
         000004                  C$BSEG=4
         000005                  C$ESEG=5
         000006                  C$CLP1=6
         000007                  C$RDBU=7
         000010                  C$ESCAPE=8
         000011                  C$INIT=9
         000012                  C$CLEAN=10
         000013                  C$TPRI=11
         000014                  C$PNTB=12
         000015                  C$PNTX=13
         000016                  C$PNTS=14
         000017                  C$PNTF=15
         000020                  C$INLP=16
         000021                  C$RFLA=17
         000022                  C$BRK=18
         000023                  C$MSG=19
         000024                  C$DRPT=20
         000025                  C$RPT=21
         000026                  C$GETB=22
         000027                  C$GETW=23
         000030                  C$GPLO=24
         000031                  C$MEM=25
         000032                  C$EXIT=26
         000033                  C$RESET=27
         000034                  C$OPEN=28
```

```
000035    C$CLOS=29
000036    C$CVEC=30
000037    C$SVEC=31
000040    C$GPRI=32
000041    C$SPRI=33
000042    C$GPHRD=34
000043    C$GMAN=35
000044    C$DCLN=36
000045    C$CEFG=37
000046    C$SEFG=38
000047    C$REFG=39
000050    C$MANI=40
000051    C$DODU=41
000052    C$AU=42
000053    C$DU=43
000054    C$ERSF=44
000055    C$ERDF=45
000056    C$ERHRD=46
000057    C$ERSOFT=47
000060    C$ERROR=48
000061    C$AUTO=49
000062    C$CLCK=50
000377    C$QIO=255
000010    .RADIX        8
000035    E$LOAD=35
002100    E$END=2100
000000    T$TESTNUM=0
000000    T$SUBNUM=0
000000    T$ERRNUM=0
010000    T$TAGNUM=10000
010000    T$LSYM=10000
177777    T$TAGLEV=-1
177777    T$NESTLEV=-1
177777    T$SAVLEV=-1
177777    T$SEGLEV=-1
177777    T$TSTMAC=-1
000000    T$TSTSEQ=0
000000    T$PTNUM=0
000000    T$LAST=0
000000    T$GMANID=0
000000    F$MOD=0
000001    F$TEST=1
000002    F$SUB=2
000003    F$SEG=3
000004    F$HARD=4
000005    F$SOFT=5
000006    F$INIT=6
000007    F$CLEAN=7
000010    F$SRV=10
000011    F$MSG=11
000012    F$RPT=12
000013    F$HW=13
000014    F$SW=14
000015    F$AU=15
000016    F$DU=16
000017    F$PWR=17
000020    F$AUTO=20
```

```
        000021                  F$PROT=21
        000040                  F$BGN=40
        000041                  F$END=41
        000050                  F$JMP=50
        000041                  I$MOD=F$END
        000041                  I$TST=F$END
        000041                  I$SUB=F$END
        000041                  I$SEG=F$END
        000041                  I$INIT=F$END
        000041                  I$CLN=F$END
        000041                  I$SRV=F$END
        000041                  I$MSG=F$END
        000041                  I$RPT=F$END
        000041                  I$AU=F$END
        000041                  I$DU=F$END
        000041                  I$PWR=F$END
        000041                  I$SETUP=F$END
        000041                  I$PTAB=F$END
        000041                  I$AUTO=F$END
        000041                  I$PROT=F$END
        000000                  G$PRML=0
        000001                  G$PRMA=1
        000002                  G$PRMD=2
        000003                  G$DISP=3
        000004                  G$XFER=4
        000000                  G$NO=0*↑D8
        000010                  G$YES=1*↑D8
        000000                  G$RADB=0*↑D16
        000020                  G$RADO=1*↑D16
        000040                  G$RADD=2*↑D16
        000120                  G$RADL=5*↑D16
        000140                  G$RADA=6*↑D16
        000376                  G$OFSIZE=↑D254
        000372                  G$DELM=↑D250
        000400                  G$OFFSET=1*↑D256
        000400                  X$OFFSET=1*↑D256
        000200                  G$CNTOP=1*↑D128
        000400                  G$EXCP=1*↑D256
        000001                  G$LOLIM=1
        000002                  G$HILIM=2
        000000                  X$ALWAYS=0*↑D16
        000020                  X$TRUE=1*↑D16
        000040                  X$FALSE=2*↑D16
        000000                  O$BGNSFT=0
        000000                  O$BGNRPT=0
        000000                  O$GNSW=0
        000000                  O$APTS=0
        000000                  O$AU=0
        000000                  O$DU=0
        000000                  O$ERRTBL=0
        000000                  O$SETUP=0
        000000                  O$POINTER=0
        010000                  S$LSYM=T$LSYM
        000167                  J$JMP=167
                                .IIF NDF ASSEMBLY,      ASSEMBLY=10
                                .IIF NDF DIAGMCALLS,    DIAGMCALLS=0
                                .IF EQ DIAGMCALLS
```

```
                                .MCALL  M$MCHIGH
     000000                     M$MCHIGH
                                .ENDC
                                .IF EQ ASSEMBLY-10
                                .MCALL  M$MCLOW
     000000                     M$MCLOW
                                .ENDC

                                ;*****************************************************************
                                ;       IF STRUCTURED MACROS ARE TO BE USED, ADD ".MCALL STRUCT" AND 'STRUCT'
                                ;       TO INITIALIZE THE STRUCTURED MACROS.

             000000             SVCINS= 0       ; LIST INSTRUCTIONS, SHIFTED RIGHT
             000001             SVCTST= 1       ; LIST TEST TAGS, SHIFTED RIGHT
             000001             SVCSUB= 1       ; LIST SUBTEST TAGS, SHIFTED RIGHT
             000000             SVCGBL= 0       ; LIST GLOBAL TAGS, SHIFTED RIGHT
             000001             SVCTAG= 1       ; LIST OTHER TAGS, SHIFTED RIGHT

                                ;       CHANGE THE VALUES OF THE SVC... SYMBOLS TO BE ZERO IF YOU WISH
                                ;       TO ALIGN THE MACRO CALLS AND THEIR EXPANSIONS.  CHANGE THE
                                ;       SYMBOLS TO BE MINUS-ONE TO NOT LIST THE EXPANSIONS.  YOU MAY
                                ;       CHANGE THE SYMBOLS AT ANY POINT IN YOUR PROGRAM.
                                ;*****************************************************************
                                .IF EQ HELP
                                .LIST
                                .ENDC

                                .IF DF ONEFILE
     000000                             .ENABL  AMA,ABS
             002000                     .       =       2000
                                .ENDC

                                ; KJL001 Start
                                ;       *************************************************************
                                ;                       ACT11 HOOKS
                                ;       *************************************************************

             002000                     $SVPC=.

             000052                     .=52
     000052  010000                     .WORD   10000           ;BIT 12 OF XXDP'S PROGRAM
                                                                ;CHARACTERISTICS WORD = 1

             002000                     .=$SVPC                 ;RESTORE PC

                                ;       *************************************************************
                                ; KJL001 End


     002000                             BGNMOD
                                .MCALL  M$GNGBL,M$PUSH
                                .IF NE  F$END-I$MOD
                                .ERROR  ;"BGNMOD" IN MOD
                                .MEXIT
                                .IFF
             000040             I$MOD=F$BGN
                                .ENDC
```

```
                                .IF NB
                                M$GNGBL
                                .ENDC
     002000                     M$PUSH  T$NS,T$NESTLEV,F$MOD
                                .MCALL  M$INCR,M$SETS
     002000                     M$INCR  T$NESTLEV
             000000             T$NESTLEV=T$NESTLEV+1
     002000                     M$SETS  T$NS,\T$NESTLEV,F$MOD
             000000             T$NS0=F$MOD

                                ;++
                                ; THE PROGRAM HEADER IS THE INTERFACE BETWEEN
                                ; THE DIAGNOSTIC PROGRAM AND THE SUPERVISOR.
                                ;--

     002000                             POINTER BGNDU,BGNAU,BGNSETUP,BGNSW,BGNSFT,ERRTBL
                                .IRP PX,<BGNDU,BGNAU,BGNSETUP,BGNSW,BGNSFT,ERRTBL,,,>
                                .IF IDN <ALL>,<PX>
                                O$BGNSFT=1
                                O$BGNRPT=1
                                O$GNSW=1
                                O$APTS=1
                                O$AU=1
                                O$DU=1
                                O$ERRTBL=1
                                O$SETUP=1
                                O$POINTER=1
                                .MEXIT
                                .ENDC
                                .IF IDN <NONE>,<PX>
                                O$BGNSFT=0
                                O$BGNRPT=0
                                O$GNSW-0
                                O$APTS=0
                                O$AU=0
                                O$DU=0
                                O$ERRTBL=0
                                O$SETUP=0
                                O$POINTER=1
                                .MEXIT
                                .ENDC
                                .IF IDN <BGNSFT>,<PX>
                                O$BGNSFT=1
                                O$POINTER=1
                                .ENDC
                                .IF IDN <BGNRPT>,<PX>
                                O$BGNRPT=1
                                O$POINTER=1
                                .ENDC
                                .IF IDN <BGNSW>,<PX>
                                O$GNSW=1
                                O$POINTER=1
                                .ENDC
                                .IF IDN <APTSTAT>,<PX>
                                O$APTS=1
                                O$POINTER=1
                                .ENDC
```

```
.IF IDN <BGNAU>,<PX>
O$AU=1
O$POINTER=1
.ENDC
.IF IDN <BGNDU>,<PX>
O$DU=1
O$POINTER=1
.ENDC
.IF IDN <ERRTBL>,<PX>
O$ERRTBL=1
O$POINTER=1
.ENDC
.IF IDN <BGNSETUP>,<PX>
O$SETUP=1
O$POINTER=1
.ENDC
.ENDM
.IF IDN <ALL>,<BGNDU>
O$BGNSFT=1
O$BGNRPT=1
O$GNSW=1
O$APTS=1
O$AU=1
O$DU=1
O$ERRTBL=1
O$SETUP=1
O$POINTER-1
.MEXIT
.ENDC
.IF IDN <NONE>,<BGNDU>
O$BGNSFT=0
O$BGNRPT=0
O$GNSW=0
O$APTS=0
O$AU=0
O$DU=0
O$ERRTBL-0
O$SETUP=0
O$POINTER-1
.MEXIT
.ENDC
.IF IDN <BGNSFT>,<BGNDU>
O$BGNSFT=1
O$POINTER=1
.ENDC
.IF IDN <BGNRPT>,<BGNDU>
O$BGNRPT-1
O$POINTER-1
.ENDC
.IF IDN <BGNSW>,<BGNDU>
O$GNSW=1
O$POINTER=1
.ENDC
.IF IDN <APTSTAT>,<BGNDU>
O$APTS=1
O$POINTER=1
.ENDC
```

```
                        .IF IDN <BGNAU>,<BGNDU>
                        O$AU=1
                        O$POINTER=1
                        .ENDC
                        .IF IDN <BGNDU>,<BGNDU>
        000001          O$DU=1
        000001          O$POINTER=1
                        .ENDC
                        .IF IDN <ERRTBL>,<BGNDU>
                        O$ERRTBL=1
                        O$POINTER=1
                        .ENDC
                        .IF IDN <BGNSETUP>,<BGNDU>
                        O$SETUP=1
                        O$POINTER=1
                        .ENDC
                        .IF IDN <ALL>,<BGNAU>
                        O$BGNSFT=1
                        O$BGNRPT=1
                        O$GNSW=1
                        O$APTS=1
                        O$AU=1
                        O$DU=1
                        O$ERRTBL=1
                        O$SETUP=1
                        O$POINTER=1
                        .MEXIT
                        .ENDC
                        .IF IDN <NONE>,<BGNAU>
                        O$BGNSFT=0
                        O$BGNRPT=0
                        O$GNSW=0
                        O$APTS=0
                        O$AU=0
                        O$DU=0
                        O$ERRTBL=0
                        O$SETUP=0
                        O$POINTER=1
                        .MEXIT
                        .ENDC
                        .IF IDN <BGNSFT>,<BGNAU>
                        O$BGNSFT=1
                        O$POINTER=1
                        .ENDC
                        .IF IDN <BGNRPT>,<BGNAU>
                        O$BGNRPT=1
                        O$POINTER-1
                        .ENDC
                        .IF IDN <BGNSW>,<BGNAU>
                        O$GNSW=1
                        O$POINTER=1
                        .ENDC
                        .IF IDN <APTSTAT>,<BGNAU>
                        O$APTS=1
                        O$POINTER=1
                        .ENDC
                        .IF IDN <BGNAU>,<BGNAU>
```

E3


```
               000001                 O$AU=1
               000001                 O$POINTER=1
                                      .ENDC
                                      .IF IDN <BGNDU>,<BGNAU>
                                      O$DU=1
                                      O$POINTER=1
                                      .ENDC
                                      .IF IDN <ERRTBL>,<BGNAU>
                                      O$ERRTBL=1
                                      O$POINTER=1
                                      .ENDC
                                      .IF IDN <BGNSETUP>,<BGNAU>
                                      O$SETUP=1
                                      O$POINTER=1
                                      .ENDC
                                      .IF IDN <ALL>,<BGNSETUP>
                                      O$BGNSFT=1
                                      O$BGNRPT=1
                                      O$GNSW=1
                                      O$APTS=1
                                      O$AU=1
                                      O$DU=1
                                      O$ERRTBL=1
                                      O$SETUP=1
                                      O$POINTER=1
                                      .MEXIT
                                      .ENDC
                                      .IF IDN <NONE>,<BGNSETUP>
                                      O$BGNSFT=0
                                      O$BGNRPT=0
                                      O$GNSW=0
                                      O$APTS=0
                                      O$AU=0
                                      O$DU=0
                                      O$ERRTBL=0
                                      O$SETUP=0
                                      O$POINTER=1
                                      .MEXIT
                                      .ENDC
                                      .IF IDN <BGNSFT>,<BGNSETUP>
                                      O$BGNSFT=1
                                      O$POINTER=1
                                      .ENDC
                                      .IF IDN <BGNRPT>,<BGNSETUP>
                                      O$BGNRPT 1
                                      O$POINTER=1
                                      .ENDC
                                      .IF IDN <BGNSW>,<BGNSETUP>
                                      O$GNSW-1
                                      O$POINTER-1
                                      .ENDC
                                      .IF IDN <APTSTAT>,<BGNSETUP>
                                      O$APTS=1
                                      O$POINTER=1
                                      .ENDC
                                      .IF IDN <BGNAU>,<BGNSETUP>
                                      O$AU-1
```

F3


```
                        O$POINTER=1
                        .ENDC
                        .IF IDN <BGNDU>,<BGNSETUP>
                        O$DU=1
                        O$POINTER=1
                        .ENDC
                        .IF IDN <ERRTBL>,<BGNSETUP>
                        O$ERRTBL=1
                        O$POINTER=1
                        .ENDC
                        .IF IDN <BGNSETUP>,<BGNSETUP>
        000001          O$SETUP=1
        000001          O$POINTER=1
                        .ENDC
                        .IF IDN <ALL>,<BGNSW>
                        O$BGNSFT=1
                        O$BGNRPT=1
                        O$GNSW=1
                        O$APTS=1
                        O$AU=1
                        O$DU=1
                        O$ERRTBL=1
                        O$SETUP=1
                        O$POINTER=1
                        .MEXIT
                        .ENDC
                        .IF IDN <NONE>,<BGNSW>
                        O$BGNSFT=0
                        O$BGNRPT=0
                        O$GNSW=0
                        O$APTS=0
                        O$AU=0
                        O$DU=0
                        O$ERRTBL=0
                        O$SETUP=0
                        O$POINTER=1
                        .MEXIT
                        .ENDC
                        .IF IDN <BGNSFT>,<BGNSW>
                        O$BGNSFT=1
                        O$POINTER=1
                        .ENDC
                        .IF IDN <BGNRPT>,<BGNSW>
                        O$BGNRPT=1
                        O$POINTER=1
                        .ENDC
                        .IF IDN <BGNSW>,<BGNSW>
        000001          O$GNSW=1
        000001          O$POINTER=1
                        .ENDC
                        .IF IDN <APTSTAT>,<BGNSW>
                        O$APTS=1
                        O$POINTER=1
                        .ENDC
                        .IF IDN <BGNAU>,<BGNSW>
                        O$AU=1
                        O$POINTER=1
```

```
                        .ENDC
                        .IF IDN <BGNDU>,<BGNSW>
                        O$DU=1
                        O$POINTER=1
                        .ENDC
                        .IF IDN <ERRTBL>,<BGNSW>
                        O$ERRTBL=1
                        O$POINTER=1
                        .ENDC
                        .IF IDN <BGNSETUP>,<BGNSW>
                        O$SETUP=1
                        O$POINTER=1
                        .ENDC
                        .IF IDN <ALL>,<BGNSFT>
                        O$BGNSFT=1
                        O$BGNRPT=1
                        O$GNSW=1
                        O$APTS=1
                        O$AU=1
                        O$DU=1
                        O$ERRTBL=1
                        O$SETUP=1
                        O$POINTER=1
                        .MEXIT
                        .ENDC
                        .IF IDN <NONE>,<BGNSFT>
                        O$BGNSFT=0
                        O$BGNRPT=0
                        O$GNSW=0
                        O$APTS=0
                        O$AU=0
                        O$DU=0
                        O$ERRTBL=0
                        O$SETUP=0
                        O$POINTER=1
                        .MEXIT
                        .ENDC
                        .IF IDN <BGNSFT>,<BGNSFT>
        000001          O$BGNSFT=1
        000001          O$POINTER-1
                        .ENDC
                        .IF IDN <BGNRPT>,<BGNSFT>
                        O$BGNRPT=1
                        O$POINTER=1
                        .ENDC
                        .IF IDN <BGNSW>,<BGNSFT>
                        O$GNSW=1
                        O$POINTER=1
                        .ENDC
                        .IF IDN <APTSTAT>,<BGNSFT>
                        O$APTS=1
                        O$POINTER=1
                        .ENDC
                        .IF IDN <BGNAU>,<BGNSFT>
                        O$AU=1
                        O$POINTER=1
                        .ENDC
```

```
.IF IDN <BGNDU>,<BGNSFT>
O$DU=1
O$POINTER=1
.ENDC
.IF IDN <ERRTBL>,<BGNSFT>
O$ERRTBL=1
O$POINTER=1
.ENDC
.IF IDN <BGNSETUP>,<BGNSFT>
O$SETUP-1
O$POINTER=1
.ENDC
.IF IDN <ALL>,<ERRTBL>
O$BGNSFT=1
O$BGNRPT=1
O$GNSW=1
O$APTS=1
O$AU=1
O$DU=1
O$ERRTBL=1
O$SETUP=1
O$POINTER=1
.MEXIT
.ENDC
.IF IDN <NONE>,<ERRTBL>
O$BGNSFT=0
O$BGNRPT=0
O$GNSW=0
O$APTS=0
O$AU=0
O$DU=0
O$ERRTBL=0
O$SETUP=0
O$POINTER=1
.MEXIT
.ENDC
.IF IDN <BGNSFT>,<ERRTBL>
O$BGNSFT=1
O$POINTER=1
.ENDC
.IF IDN <BGNRPT>,<ERRTBL>
O$BGNRPT=1
O$POINTER=1
.ENDC
.IF IDN <BGNSW>,<ERRTBL>
O$GNSW=1
O$POINTER=1
.ENDC
.IF IDN <APTSTAT>,<ERRTBL>
O$APTS=1
O$POINTER-1
.ENDC
.IF IDN <BGNAU>,<ERRTBL>
O$AU=1
O$POINTER=1
.ENDC
.IF IDN <BGNDU>,<ERRTBL>
```

```
                                O$DU=1
                                O$POINTER=1
                                .ENDC
                                .IF IDN <ERRTBL>,<ERRTBL>
          000001                O$ERRTBL=1
          000001                O$POINTER=1
                                .ENDC
                                .IF IDN <BGNSETUP>,<ERRTBL>
                                O$SETUP=1
                                O$POINTER=1
                                .ENDC
                                .IF IDN <ALL>,<>
                                O$BGNSFT=1
                                O$BGNRPT=1
                                O$GNSW=1
                                O$APTS=1
                                O$AU=1
                                O$DU=1
                                O$ERRTBL=1
                                O$SETUP=1
                                O$POINTER=1
                                .MEXIT
                                .ENDC
                                .IF IDN <NONE>,<>
                                O$BGNSFT=0
                                O$BGNRPT=0
                                O$GNSW=0
                                O$APTS=0
                                O$AU=0
                                O$DU=0
                                O$ERRTBL=0
                                O$SETUP=0
                                O$POINTER=1
                                .MEXIT
                                .ENDC
                                .IF IDN <BGNSFT>,<>
                                O$BGNSFT=1
                                O$POINTER=1
                                .ENDC
                                .IF IDN <BGNRPT>,<>
                                O$BGNRPT=1
                                O$POINTER=1
                                .ENDC
                                .IF IDN <BGNSW>,<>
                                O$GNSW=1
                                O$POINTER=1
                                .ENDC
                                .IF IDN <APTSTAT>,<>
                                O$APTS=1
                                O$POINTER=1
                                .ENDC
                                .IF IDN <BGNAU>,<>
                                O$AU=1
                                O$POINTER=1
                                .ENDC
                                .IF IDN <BGNDU>,<>
                                O$DU=1
```

J3


```
O$POINTER=1
.ENDC
.IF IDN <ERRTBL>,<>
O$ERRTBL=1
O$POINTER=1
.ENDC
.IF IDN <BGNSETUP>,<>
O$SETUP=1
O$POINTER=1
.ENDC
.IF IDN <ALL>,<>
O$BGNSFT=1
O$BGNRPT=1
O$GNSW=1
O$APTS=1
O$AU=1
O$DU=1
O$ERRTBL=1
O$SETUP=1
O$POINTER=1
.MEXIT
.ENDC
.IF IDN <NONE>,<>
O$BGNSFT=0
O$BGNRPT=0
O$GNSW=0
O$APTS=0
O$AU=0
O$DU=0
O$ERRTBL=0
O$SETUP=0
O$POINTER=1
.MEXIT
.ENDC
.IF IDN <BGNSFT>,<>
O$BGNSFT=1
O$POINTER=1
.ENDC
.IF IDN <BGNRPT>,<>
O$BGNRPT=1
O$POINTER=1
.ENDC
.IF IDN <BGNSW>,<>
O$GNSW=1
O$POINTER=1
.ENDC
.IF IDN <APTSTAT>,<>
O$APTS=1
O$POINTER=1
.ENDC
.IF IDN <BGNAU>,<>
O$AU=1
O$POINTER=1
.ENDC
.IF IDN <BGNDU>,<>
O$DU=1
O$POINTER=1
```

```
.ENDC
.IF IDN <ERRTBL>,<>
O$ERRTBL=1
O$POINTER=1
.ENDC
.IF IDN <BGNSETUP>,<>
O$SETUP=1
O$POINTER=1
.ENDC
.IF IDN <ALL>,<>
O$BGNSFT=1
O$BGNRPT=1
O$GNSW=1
O$APTS=1
O$AU=1
O$DU=1
O$ERRTBL=1
O$SETUP=1
O$POINTER=1
.MEXIT
.ENDC
.IF IDN <NONE>,<>
O$BGNSFT=0
O$BGNRPT=0
O$GNSW=0
O$APTS=0
O$AU=0
O$DU=0
O$ERRTBL=0
O$SETUP=0
O$POINTER=1
.MEXIT
.ENDC
.IF IDN <BGNSFT>,<>
O$BGNSFT=1
O$POINTER=1
.ENDC
.IF IDN <BGNRPT>,<>
O$BGNRPT=1
O$POINTER=1
.ENDC
.IF IDN <BGNSW>,<>
O$GNSW=1
O$POINTER=1
.ENDC
.IF IDN <APTSTAT>,<>
O$APTS=1
O$POINTER=1
.ENDC
.IF IDN <BGNAU>,<>
O$AU=1
O$POINTER=1
.ENDC
.IF IDN <BGNDU>,<>
O$DU=1
O$POINTER=1
.ENDC
```

```
                        .IF IDN <ERRTBL>,<>
                        O$ERRTBL=1
                        O$POINTER=1
                        .ENDC
                        .IF IDN <BGNSETUP>,<>
                        O$SETUP=1
                        O$POINTER=1
                        .ENDC
                        .IF EQ O$POINTER
                        .ERROR  ;ILL. ARGS. ON "POINTER"
                        .ENDC


                        .IF NE HELP
                        ;*****************************************************************************
                        ;      IF ANY OPTIONAL POINTERS ARE NOT TO BE USED IN THE "HEADER", CHANGE
                        ;      "POINTER" TO CONTAIN THE CORRECT ARGUMENTS.  IF NO OPTIONAL
                        ;      POINTERS ARE TO BE USED, CHANGE "POINTER" TO BE "POINTER NONE".
                        ;        ARGUMENT         OPTION
                        ;        --------         ------
                        ;        BGNRPT           REPORT CODE
                        ;        BGNSW            SOFTWARE TABLE
                        ;        BGNSFT           SOFTWARE TABLE QUESTIONS
                        ;        BGNAU            ADD CODE
                        ;        BGNDU            DROP CODE
                        ;        ERRTBL           ERROR TABLE
                        ;        BGNSETUP         ASSEMBLED P-TABLES
                        ;*****************************************************************************
                        .ENDC

002000                          HEADER  CZIEA,D,0,0,0
                        .MCALL  M$HAPT,M$HNAP
002000                  M$HAPT  CZIEA,D,0,0,0,
                        .MCALL  M$GNGBL,M$GNINS,M$BYTE,M$DATA
                        .IF B   CZIEA
                        .ERROR  ; MISSING DIAG. NAME
                        .MEXIT
                        .ENDC
002000                  M$GNGBL L$NAME,<<;DIAGNOSTIC NAME>>
                        .MCALL  M$GEN
                        .IF NB,L$NAME
                        .IF NB,<;DIAGNOSTIC NAME>
002000                  M$GEN   L$NAME,:,SVCGBL,<;DIAGNOSTIC NAME>
                        .IF LE  SVCGBL
                        .IIF EQ SVCGBL,.LIST
002000                  L$NAME::                ;DIAGNOSTIC NAME
                        .IIF EQ SVCGBL,.NLIST
                        .MEXIT
                        .ENDC
                        .LIST
                                                                          L$NAME::
                                .NLIST
                        .ENDC
                        .IF B,<;DIAGNOSTIC NAME>
                        M$GEN   L$NAME,:,SVCGBL,< >
                        .ENDC
                        .ENDC
```

M3


```
              000007                  T$ARGCNT=↑D7
                                      .IRPC   CHAR,<CZIEA>
                                      M$GNINS <.ASCII /CHAR/>
                                      T$ARGCNT=T$ARGCNT-1
                                      .IF LT T$ARGCNT
                                      .ERROR  ;PROG NAME TOO BIG
                                      .MEXIT
                                      .ENDC
                                      .ENDM
      002000                          M$GNINS <.ASCII /C/>
                                      .IF LT SVCINS
                                      .ASCII /C/
                                      .MEXIT
                                      .ENDC
                                      .IF EQ SVCINS
                                      .LIST
      002000      103                         .ASCII /C/
                                                      .NLIST
                                      .MEXIT
                                      .ENDC
                                      .IF GT SVCINS
                                      .LIST
                                                                                          .ASCII /C/
                                                      .NLIST
                                      .ENDC
              000006                  T$ARGCNT=T$ARGCNT-1
                                      .IF LT T$ARGCNT
                                      .ERROR  ;PROG NAME TOO BIG
                                      .MEXIT
                                      .ENDC
      002001                          M$GNINS <.ASCII /Z/>
                                      .IF LT SVCINS
                                      .ASCII /Z/
                                      .MEXIT
                                      .ENDC
                                      .IF EQ SVCINS
                                      .LIST
      002001      132                         .ASCII /Z/
                                                      .NLIST
                                      .MEXIT
                                      .ENDC
                                      .IF GT SVCINS
                                      .LIST
                                                                                          .ASCII /Z/
                                                      .NLIST
                                      .ENDC
              000005                  T$ARGCNT=T$ARGCNT-1
                                      .IF LT T$ARGCNT
                                      .ERROR  ;PROG NAME TOO BIG
                                      .MEXIT
                                      .ENDC
      002002                          M$GNINS <.ASCII /I/>
                                      .IF LT SVCINS
                                      .ASCII /I/
                                      .MEXIT
                                      .ENDC
                                      .IF EQ SVCINS
```

N3


```
                                        .LIST
      002002    111                              .ASCII /I/
                                                         .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
                                                                                            .ASCII /I/
                                                         .NLIST
                                        .ENDC
            000004                      T$ARGCNT=T$ARGCNT-1
                                        .IF LT T$ARGCNT
                                        .ERROR  ;PROG NAME TOO BIG
                                        .MEXIT
                                        .ENDC
      002003                            M$GNINS <.ASCII /E/>
                                        .IF LT SVCINS
                                        .ASCII /E/
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
      002003    105                              .ASCII /E/
                                                         .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
                                                                                            .ASCII /E/
                                                         .NLIST
                                        .ENDC
            000003                      T$ARGCNT=T$ARGCNT-1
                                        .IF LT T$ARGCNT
                                        .ERROR  ;PROG NAME TOO BIG
                                        .MEXIT
                                        .ENDC
      002004                            M$GNINS <.ASCII /A/>
                                        .IF LT SVCINS
                                        .ASCII /A/
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
      002004    101                              .ASCII /A/
                                                         .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
                                                                                            .ASCII /A/
                                                         .NLIST
                                        .ENDC
            000002                      T$ARGCNT=T$ARGCNT-1
                                        .IF LT T$ARGCNT
                                        .ERROR  ;PROG NAME TOO BIG
                                        .MEXIT
                                        .ENDC
```

```
              000002                   .REPT   T$ARGCNT
                                       M$BYTE  0
                                       .ENDR
        002005                         M$BYTE  0
                                       .MCALL  M$GNINS
                                       .IRP    N,<0>
                                       M$GNINS <.BYTE  N>
                                       .ENDM
        002005                         M$GNINS <.BYTE  0>
                                       .IF LT SVCINS
                                       .BYTE   0
                                       .MEXIT
                                       .ENDC
                                       .IF EQ SVCINS
                                       .LIST
        002005   000                           .BYTE   0
                                                       .NLIST
                                       .MEXIT
                                       .ENDC
                                       .IF GT SVCINS
                                       .LIST
                                                                                   .BYTE   0
                                                       .NLIST
                                       .ENDC
        002006                         M$BYTE  0
                                       .MCALL  M$GNINS
                                       .IRP    N,<0>
                                       M$GNINS <.BYTE  N>
                                       .ENDM
        002006                         M$GNINS <.BYTE  0>
                                       .IF LT SVCINS
                                       .BYTE   0
                                       .MEXIT
                                       .ENDC
                                       .IF EQ SVCINS
                                       .LIST
        002006   000                           .BYTE   0
                                                       .NLIST
                                       .MEXIT
                                       .ENDC
                                       .IF GT SVCINS
                                       .LIST
                                                                                   .BYTE   0
                                                       .NLIST
                                       .ENDC
        002007                         M$BYTE  0
                                       .MCALL  M$GNINS
                                       .IRP    N,<0>
                                       M$GNINS <.BYTE  N>
                                       .ENDM
        002007                         M$GNINS <.BYTE  0>
                                       .IF LT SVCINS
                                       .BYTE   0
                                       .MEXIT
                                       .ENDC
                                       .IF EQ SVCINS
                                       .LIST
```

```
        002007    000                    .BYTE   0
                                                  .NLIST
                         .MEXIT
                         .ENDC
                         .IF GT SVCINS
                         .LIST
                                                                                 .BYTE   0
                                                  .NLIST
                         .ENDC
                         .IF NB D
        002010           M$DATA  L$REV,.ASCII,</D/>,<<;REVISION LEVEL>>
                         .MCALL  M$GNGBL,M$GNINS
                         .IF NB <;REVISION LEVEL>
        002010           M$GNGBL L$REV,<<;REVISION LEVEL>>
                         .MCALL  M$GEN
                         .IF NB,L$REV
                         .IF NB,<;REVISION LEVEL>
        002010           M$GEN   L$REV,:,SVCGBL,<;REVISION LEVEL>
                         .IF LE  SVCGBL
                         .IIF EQ SVCGBL,.LIST
        002010           L$REV::                 ;REVISION LEVEL
                         .IIF EQ SVCGBL,.NLIST
                         .MEXIT
                         .ENDC
                         .LIST
                                                                           L$REV::
                                 .NLIST
                         .ENDC
                         .IF B,<;REVISION LEVEL>
                         M$GEN   L$REV,:,SVCGBL,< >
                         .ENDC
                         .ENDC
                         .ENDC
                         .IF B <;REVISION LEVEL>
                         M$GNGBL L$REV
                         .ENDC
        002010           M$GNINS <.ASCII /D/>
                         .IF LT SVCINS
                         .ASCII  /D/
                         .MEXIT
                         .ENDC
                         .IF EQ SVCINS
                         .LIST
        002010    104            .ASCII  /D/
                                          .NLIST
                         .MEXIT
                         .ENDC
                         .IF GT SVCINS
                         .LIST
                                                                                 .ASCII  /D/
                                          .NLIST
                         .ENDC
                         .IFF
                         .ERROR  ; MISSING REV. LEVEL
                         M$DATA  L$REV,.ASCII,</?/>,<<;REVISION LEVEL>>
                         .ENDC
                         .IF NB 0
```

```
        002011                        M$DATA  L$DEPO,.ASCII,</0/>,<<;0>>
                                      .MCALL  M$GNGBL,M$GNINS
                                      .IF NB <;0>
        002011                        M$GNGBL L$DEPO,<<;0>>
                                      .MCALL  M$GEN
                                      .IF NB,L$DEPO
                                      .IF NB,<;0>
        002011                        M$GEN   L$DEPO,:,SVCGBL,<;0>
                                      .IF LE  SVCGBL
                                      .IIF EQ SVCGBL,.LIST
        002011                        L$DEPO::                ;0
                                      .IIF EQ SVCGBL,.NLIST
                                      .MEXIT
                                      .ENDC
                                      .LIST
                                                                                          L$DEPO::
                                              .NLIST
                                      .ENDC
                                      .IF B,<;0>
                                      M$GEN   L$DEPO,:,SVCGBL,< >
                                      .ENDC
                                      .ENDC
                                      .ENDC
                                      .IF B <;0>
                                      M$GNGBL L$DEPO
                                      .ENDC
        002011                        M$GNINS <.ASCII /0/>
                                      .IF LT SVCINS
                                      .ASCII  /0/
                                      .MEXIT
                                      .ENDC
                                      .IF EQ SVCINS
                                      .LIST
        002011     060                        .ASCII  /0/
                                                      .NLIST
                                      .MEXIT
                                      .ENDC
                                      .IF GT SVCINS
                                      .LIST
                                                                                                .ASCII  /0/
                                                      .NLIST
                                      .ENDC
                                      .IFF
                                      .ERROR  ; MISSING DEPO.
                                      M$DATA  L$DEPO,.ASCII,</?/>,<<;0>>
                                      .ENDC
                                      .IF EQ O$SETUP
                                      M$DATA  L$UNIT,.WORD,0,<<;NUMBER OF UNITS>>
                                      .IFF
        002012                        M$DATA  L$UNIT,.WORD,T$PTHV,<<;NUMBER OF UNITS>>
                                      .MCALL  M$GNGBL,M$GNINS
                                      .IF NB  <;NUMBER OF UNITS>
        002012                        M$GNGBL L$UNIT,<<;NUMBER OF UNITS>>
                                      .MCALL  M$GEN
                                      .IF NB,L$UNIT
                                      .IF NB,<;NUMBER OF UNITS>
        002012                        M$GEN   L$UNIT,:,SVCGBL,<;NUMBER OF UNITS>
```

E4


```
                                .IF LE  SVCGBL
                                .IIF EQ SVCGBL,.LIST
     002012                     L$UNIT::              ;NUMBER OF UNITS
                                .IIF EQ SVCGBL,.NLIST
                                .MEXIT
                                .ENDC
                                .LIST
                                                                  L$UNIT::
                                     .NLIST
                                .ENDC
                                .IF B,<;NUMBER OF UNITS>
                                M$GEN   L$UNIT,:,SVCGBL,< >
                                .ENDC
                                .ENDC
                                .ENDC
                                .IF B <;NUMBER OF UNITS>
                                M$GNGBL L$UNIT
                                .ENDC
     002012                     M$GNINS <.WORD  T$PTHV>
                                .IF LT SVCINS
                                .WORD   T$PTHV
                                .MEXIT
                                .ENDC
                                .I' EQ SVCINS
                                .L.ST
     002012  000001                  .WORD   T$PTHV
                                             .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
                                                                       .WORD   T$PTHV
                                             .NLIST
                                .ENDC
                                .ENDC
                                .IF B   0
                                .ERROR  ; LONGEST TEST TIME MISSING
                                M$DATA  L$TIML,.WORD,0,<<;LONGEST TEST TIME>>
                                .IFF
     002014                     M$DATA  L$TIML,.WORD,0,<<;LONGEST TEST TIME>>
                                .MCALL  M$GNGBL,M$GNINS
                                .IF NB <;LONGEST TEST TIME>
     002014                     M$GNGBL L$TIML,<<;LONGEST TEST TIME>>
                                .MCALL  M$GEN
                                .IF NB,L$TIML
                                .IF NB,<;LONGEST TEST TIME>
     002014                     M$GEN   L$TIML,:,SVCGBL,<;LONGEST TEST TIME>
                                .IF LE  SVCGBL
                                .IIF EQ SVCGBL,.LIST
     002014                     L$TIML::              ;LONGEST TEST TIME
                                .IIF EQ SVCGBL,.NLIST
                                .MEXIT
                                .ENDC
                                .LIST
                                                                  L$TIML::
                                     .NLIST
                                  NDC
```

F4


```
                                        .IF B,<;LONGEST TEST TIME>
                                        M$GEN   L$TIML,:,SVCGBL,< >
                                        .ENDC
                                        .ENDC
                                        .ENDC
                                        .IF B <;LONGEST TEST TIME>
                                        M$GNGBL L$TIML
                                        .ENDC
      002014                            M$GNINS <.WORD  0>
                                        .IF LT SVCINS
                                        .WORD   0
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
      002014  000000                            .WORD   0
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
                                                                                                .WORD   0
                                                        .NLIST
                                        .ENDC
                                        .ENDC
      002016                            M$DATA  L$HPCP,.WORD,L$HARD,<<;POINTER TO H.W. QUES.>>
                                        .MCALL  M$GNGBL,M$GNINS
                                        .IF NB <;POINTER TO H.W. QUES.>
      002016                            M$GNGBL L$HPCP,<<;POINTER TO H.W. QUES.>>
                                        .MCALL  M$GEN
                                        .IF NB,L$HPCP
                                        .IF NB,<;POINTER TO H.W. QUES.>
      002016                            M$GEN   L$HPCP,:,SVCGBL,<;POINTER TO H.W. QUES.>
                                        .IF LE  SVCGBL
                                        .IIF EQ SVCGBL,.LIST
      002016                            L$HPCP::                ;POINTER TO H.W. QUES.
                                        .IIF EQ SVCGBL,.NLIST
                                        .MEXIT
                                        .ENDC
                                        .LIST
                                                                                        L$HPCP::
                                                .NLIST
                                        .ENDC
                                        .IF B,<;POINTER TO H.W. QUES.>
                                        M$GEN   L$HPCP,:,SVCGBL,< >
                                        .ENDC
                                        .ENDC
                                        .ENDC
                                        .IF B <;POINTER TO H.W. QUES.>
                                        M$GNGBL L$HPCP
                                        .ENDC
      002016                            M$GNINS <.WORD  L$HARD>
                                        .IF LT SVCINS
                                        .WORD   L$HARD
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
```

```
                                .LIST
        002016  076726                  .WORD   L$HARD
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
                                                                                        .WORD   L$HARD
                                                .NLIST
                                .ENDC
                                .IF EQ O$BGNSFT
                                M$DATA  L$SPCP,.WORD,0,<<;POINTER TO S.W. QUES.>>
                                .IFF
        002020                  M$DATA  L$SPCP,.WORD,L$SOFT,<<;POINTER TO S.W. QUES.>>
                                .MCALL  M$GNGBL,M$GNINS
                                .IF NB <;POINTER TO S.W. QUES.>
        002020                  M$GNGBL L$SPCP,<<;POINTER TO S.W. QUES.>>
                                .MCALL  M$GEN
                                .IF NB,L$SPCP
                                .IF NB,<;POINTER TO S.W. QUES.>
        002020                  M$GEN   L$SPCP,:,SVCGBL,<;POINTER TO S.W. QUES.>
                                .IF LE  SVCGBL
                                .IIF EQ SVCGBL,.LIST
        002020                  L$SPCP::                ;POINTER TO S.W. QUES.
                                .IIF EQ SVCGBL,.NLIST
                                .MEXIT
                                .ENDC
                                .LIST
                                                                                  L$SPCP::
                                        .NLIST
                                .ENDC
                                .IF B,<;POINTER TO S.W. QUES.>
                                M$GEN   L$SPCP,:,SVCGBL,< >
                                .ENDC
                                .ENDC
                                .ENDC
                                .IF B <;POINTER TO S.W. QUES.>
                                M$GNGBL L$SPCP
                                .ENDC
        002020                  M$GNINS <.WORD  L$SOFT>
                                .IF LT SVCINS
                                .WORD   L$SOFT
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
        002020  077340                  .WORD   L$SOFT
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
                                                                                        .WORD   L$SOFT
                                                .NLIST
                                .ENDC
                                .ENDC
        002022                  M$DATA  L$HPTP,.WORD,L$HW,<<;PTR. TO DEF. H.W. PTABLE>>
```

H4


```
                                        .MCALL  M$GNGBL,M$GNINS
                                        .IF NB <;PTR. TO DEF. H.W. PTABLE>
      002022                            M$GNGBL L$HPTP,<<;PTR. TO DEF. H.W. PTABLE>>
                                        .MCALL  M$GEN
                                        .IF NB,L$HPTP
                                        .IF NB,<;PTR. TO DEF. H.W. PTABLE>
      002022                            M$GEN   L$HPTP,:,SVCGBL,<;PTR. TO DEF. H.W. PTABLE>
                                        .IF LE  SVCGBL
                                        .IIF EQ SVCGBL,.LIST
      002022                            L$HPTP::                ;PTR. TO DEF. H.W. PTABLE
                                        .IIF EQ SVCGBL,.NLIST
                                        .MEXIT
                                        .ENDC
                                        .LIST
                                                                                    L$HPTP::
                                               .NLIST
                                        .ENDC
                                        .IF B,<;PTR. TO DEF. H.W. PTABLE>
                                        M$GEN   L$HPTP,:,SVCGBL,< >
                                        .ENDC
                                        .ENDC
                                        .ENDC
                                        .IF B <;PTR. TO DEF. H.W. PTABLE>
                                        M$GNGBL L$HPTP
                                        .ENDC
      002022                            M$GNINS <.WORD  L$HW>
                                        .IF LT SVCINS
                                        .WORD   L$HW
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
      002022  002216                           .WORD   L$HW
                                                       .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
                                                                                          .WORD   L$HW
                                                       .NLIST
                                        .ENDC
                                        .IF EQ O$GNSW
                                        M$DATA  L$SPTP,.WORD,0,<<;PTR. TO S.W. PTABLE>>
                                        .IFF
      002024                            M$DATA  L$SPTP,.WORD,L$SW,<<;PTR. TO S.W. PTABLE>>
                                        .MCALL  M$GNGBL,M$GNINS
                                        .IF NB <;PTR. TO S.W. PTABLE>
      002024                            M$GNGBL L$SPTP,<<;PTR. TO S.W. PTABLE>>
                                        .MCALL  M$GEN
                                        .IF NB,L$SPTP
                                        .IF NB,<;PTR. TO S.W. PTABLE>
      002024                            M$GEN   L$SPTP,:,SVCGBL,<;PTR. TO S.W. PTABLE>
                                        .IF LE  SVCGBL
                                        .IIF EQ SVCGBL,.LIST
      002024                            L$SPTP::                ;PTR. TO S.W. PTABLE
                                        .IIF EQ SVCGBL,.NLIST
                                        .MEXIT
```

```
                                    .ENDC
                                    .LIST
                                                                              L$SPTP::
                                          .NLIST
                                    .ENDC
                                    .IF B,<;PTR. TO S.W. PTABLE>
                                    M$GEN   L$SPTP,:,SVCGBL,< >
                                    .ENDC
                                    .ENDC
                                    .ENDC
                                    .IF B <;PTR. TO S.W. PTABLE>
                                    M$GNGBL L$SPTP
                                    .ENDC
      002024                        M$GNINS <.WORD  L$SW>
                                    .IF LT SVCINS
                                    .WORD   L$SW
                                    .MEXIT
                                    .ENDC
                                    .IF EQ SVCINS
                                    .LIST
      002024  002234                      .WORD   L$SW
                                                .NLIST
                                    .MEXIT
                                    .ENDC
                                    .IF GT SVCINS
                                    .LIST
                                                                                    .WORD   L$SW
                                                .NLIST
                                    .ENDC
                                    .ENDC
      002026                        M$DATA  L$LADP,.WORD,L$LAST,<<;DIAG. END ADDRESS>>
                                    .MCALL  M$GNGBL,M$GNINS
                                    .IF NB <;DIAG. END ADDRESS>
      002026                        M$GNGBL L$LADP,<<;DIAG. END ADDRESS>>
                                    .MCALL  M$GEN
                                    .IF NB,L$LADP
                                    .IF NB,<;DIAG. END ADDRESS>
      002026                        M$GEN   L$LADP,:,SVCGBL,<;DIAG. END ADDRESS>
                                    .IF LE  SVCGBL
                                    .IIF EQ SVCGBL,.LIST
      002026                        L$LADP::             ;DIAG. END ADDRESS
                                    .IIF EQ SVCGBL,.NLIST
                                    .MEXIT
                                    .ENDC
                                    .LIST
                                                                              L$LADP::
                                          .NLIST
                                    .ENDC
                                    .IF B,<;DIAG. END ADDRESS>
                                    M$GEN   L$LADP,:,SVCGBL,< >
                                    .ENDC
                                    .ENDC
                                    .ENDC
                                    .IF B <;DIAG. END ADDRESS>
                                    M$GNGBL L$LADP
                                    .ENDC
      002026                        M$GNINS <.WORD  L$LAST>
```

```
                            .IF LT SVCINS
                            .WORD   L$LAST
                            .MEXIT
                            .ENDC
                            .IF EQ SVCINS
                            .LIST
     002026  100004                 .WORD   L$LAST
                                            .NLIST
                            .MEXIT
                            .ENDC
                            .IF GT SVCINS
                            .LIST
                                                                          .WORD   L$LAST
                                            .NLIST
                            .ENDC
                            .IF EQ O$APTS
     002030                 M$DATA  L$STA,.WORD,0,<<;RESERVED FOR APT STATS>>
                            .MCALL  M$GNGBL,M$GNINS
                            .IF NB <;RESERVED FOR APT STATS>
     002030                 M$GNGBL L$STA,<<;RESERVED FOR APT STATS>>
                            .MCALL  M$GEN
                            .IF NB,L$STA
                            .IF NB,<;RESERVED FOR APT STATS>
     002030                 M$GEN   L$STA,:,SVCGBL,<;RESERVED FOR APT STATS>
                            .IF LE  SVCGBL
                            .IIF EQ SVCGBL,.LIST
     002030                 L$STA::                 ;RESERVED FOR APT STATS
                            .IIF EQ SVCGBL,.NLIST
                            .MEXIT
                            .ENDC
                            .LIST
                                                                  L$STA::
                                    .NLIST
                            .ENDC
                            .IF B,<;RESERVED FOR APT STATS>
                            M$GEN   L$STA,:,SVCGBL,< >
                            .ENDC
                            .ENDC
                            .ENDC
                            .IF B <;RESERVED FOR APT STATS>
                            M$GNGBL L$STA
                            .ENDC
     002030                 M$GNINS <.WORD  0>
                            .IF LT SVCINS
                            .WORD   0
                            .MEXIT
                            .ENDC
                            .IF EQ SVCINS
                            .LIST
     002030  000000                 .WORD   0
                                            .NLIST
                            .MEXIT
                            .ENDC
                            .IF GT SVCINS
                            .LIST
                                                                          .WORD   0
                                            .NLIST
```

```
                                .ENDC
                                .IFF
                                M$DATA  L$STA,.WORD,0,<<;RESERVED FOR APT STATS>>
                                .ENDC
     002032                     M$DATA  L$CO,.WORD,0
                                .MCALL  M$GNGBL,M$GNINS
                                .IF NB
                                M$GNGBL L$CO,<>
                                .ENDC
                                .IF B
     002032                     M$GNGBL L$CO
                                .MCALL  M$GEN
                                .IF NB,L$CO
                                .IF NB,
                                M$GEN   L$CO,:,SVCGBL,
                                .ENDC
                                .IF B,
     002032                     M$GEN   L$CO,:,SVCGBL,< >
                                .IF LE  SVCGBL
                                .IIF EQ SVCGBL,.LIST
     002032                     L$CO::
                                .IIF EQ SVCGBL,.NLIST
                                .MEXIT
                                .ENDC
                                .LIST
                                                                    L$CO::
                                     .NLIST
                                .ENDC
                                .ENDC
                                .ENDC
     002032                     M$GNINS <.WORD  0>
                                .IF LT SVCINS
                                .WORD   0
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
     002032  000000                  .WORD   0
                                          .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
                                                                         .WORD   0
                                          .NLIST
                                .ENDC
                                .IF B   0
                                .ERROR  ; MISSING DIAG. TYPE
                                M$DATA  L$DTYP,.WORD,0,<<;DIAGNOSTIC TYPE>>
                                .IFF
                                .IF IDN 0,0
     002034                     M$DATA  L$DTYP,.WORD,0,<<;DIAGNOSTIC TYPE>>
                                .MCALL  M$GNGBL,M$GNINS
                                .IF NB <;DIAGNOSTIC TYPE>
     002034                     M$GNGBL L$DTYP,<<;DIAGNOSTIC TYPE>>
                                .MCALL  M$GEN
                                .IF NB,L$DTYP
```

L4


```
                                        .IF NB,<;DIAGNOSTIC TYPE>
        002034                          M$GEN   L$DTYP,:,SVCGBL,<;DIAGNOSTIC TYPE>
                                        .IF LE  SVCGBL
                                        .IIF EQ SVCGBL,.LIST
        002034                          L$DTYP::                ;DIAGNOSTIC TYPE
                                        .IIF EQ SVCGBL,.NLIST
                                        .MEXIT
                                        .ENDC
                                        .LIST
                                                                                    L$DTYP::
                                                .NLIST
                                        .ENDC
                                        .IF B,<;DIAGNOSTIC TYPE>
                                        M$GEN   L$DTYP,:,SVCGBL,< >
                                        .ENDC
                                        .ENDC
                                        .ENDC
                                        .IF B <;DIAGNOSTIC TYPE>
                                        M$GNGBL L$DTYP
                                        .ENDC
        002034                          M$GNINS <.WORD  0>
                                        .IF LT SVCINS
                                        .WORD   0
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
        002034  000000                          .WORD   0
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
                                                                                         .WORD   0
                                                        .NLIST
                                        .ENDC
                                        .IFF
                                        .IF IDN 1,0
                                        M$DATA  L$DTYP,.WORD,0,<<;DIAGNOSTIC TYPE>>
                                        .IFF
                                        M$DATA  L$DTYP,.WORD,0,<<;DIAGNOSTIC TYPE>>
                                        .ERROR  ; INVALID DIAG. TYPE (0=DIAG, 1=EXERCISER)
                                        .ENDC
                                        .ENDC
                                        .ENDC
        002036                          M$DATA  L$APT,.WORD,0,<<;APT EXPANSION>>
                                        .MCALL  M$GNGBL,M$GNINS
                                        .IF NB <;APT EXPANSION>
        002036                          M$GNGBL L$APT,<<;APT EXPANSION>>
                                        .MCALL  M$GEN
                                        .IF NB,L$APT
                                        .IF NB,<;APT EXPANSION>
        002036                          M$GEN   L$APT,:,SVCGBL,<;APT EXPANSION>
                                        .IF LE  SVCGBL
                                        .IIF EQ SVCGBL,.LIST
        002036                          L$APT::                 ;APT EXPANSION
                                        .IIF EQ SVCGBL,.NLIST
```

M4


```
                                .MEXIT
                                .ENDC
                                .LIST
                                                                        L$APT::
                                     .NLIST
                                .ENDC
                                .IF B,<;APT EXPANSION>
                                M$GEN   L$APT,:,SVCGBL,< >
                                .ENDC
                                .ENDC
                                .ENDC
                                .IF B <;APT EXPANSION>
                                M$GNGBL L$APT
                                .ENDC
     002036                     M$GNINS <.WORD  0>
                                .IF LT SVCINS
                                .WORD   0
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
     002036  000000                  .WORD   0
                                          .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
                                                                             .WORD   0
                                          .NLIST
                                .ENDC
     002040                     M$DATA  L$DTP,.WORD,L$DISPATCH,<<;PTR. TO DISPATCH TABLE>>
                                .MCALL  M$GNGBL,M$GNINS
                                .IF NB <;PTR. TO DISPATCH TABLE>
     002040                     M$GNGBL L$DTP,<<;PTR. TO DISPATCH TABLE>>
                                .MCALL  M$GEN
                                .IF NB,L$DTP
                                .IF NB,<;PTR. TO DISPATCH TABLE>
     002040                     M$GEN   L$DTP,:,SVCGBL,<;PTR. TO DISPATCH TABLE>
                                .IF LE  SVCGBL
                                .IIF EQ SVCGBL,.LIST
     002040                     L$DTP::               ;PTR. TO DISPATCH TABLE
                                .IIF EQ SVCGBL,.NLIST
                                .MEXIT
                                .ENDC
                                .LIST
                                                                        L$DTP::
                                     .NLIST
                                .ENDC
                                .IF B,<;PTR. TO DISPATCH TABLE>
                                M$GEN   L$DTP,:,SVCGBL,< >
                                .ENDC
                                .ENDC
                                .ENDC
                                .IF B <;PTR. TO DISPATCH TABLE>
                                M$GNGBL L$DTP
                                .ENDC
     002040                     M$GNINS <.WORD  L$DISPATCH>
```

```
                              .IF LT SVCINS
                              .WORD   L$DISPATCH
                              .MEXIT
                              .ENDC
                              .IF EQ SVCINS
                              .LIST
     002040  002124                   .WORD   L$DISPATCH
                                              .NLIST
                              .MEXIT
                              .ENDC
                              .IF GT SVCINS
                              .LIST
                                                                                  .WORD   L$DISPATCH
                                              .NLIST
                              .ENDC
                              .IF B
     002042                   M$DATA  L$PRIO,.WORD,0,<<;DIAGNOSTIC RUN PRIORITY>>
                              .MCALL  M$GNGBL,M$GNINS
                              .IF NB <;DIAGNOSTIC RUN PRIORITY>
     002042                   M$GNGBL L$PRIO,<<;DIAGNOSTIC RUN PRIORITY>>
                              .MCALL  M$GEN
                              .IF NB,L$PRIO
                              .IF NB,<;DIAGNOSTIC RUN PRIORITY>
     002042                   M$GEN   L$PRIO,:,SVCGBL,<;DIAGNOSTIC RUN PRIORITY>
                              .IF LE  SVCGBL
                              .IIF EQ SVCGBL,.LIST
     002042                   L$PRIO::               ;DIAGNOSTIC RUN PRIORITY
                              .IIF EQ SVCGBL,.NLIST
                              .MEXIT
                              .ENDC
                              .LIST
                                                                             L$PRIO::
                                      .NLIST
                              .ENDC
                              .IF B,<;DIAGNOSTIC RUN PRIORITY>
                              M$GEN   L$PRIO,:,SVCGBL,< >
                              .ENDC
                              .ENDC
                              .ENDC
                              .IF B <;DIAGNOSTIC RUN PRIORITY>
                              M$GNGBL L$PRIO
                              .ENDC
     002042                   M$GNINS <.WORD  0>
                              .IF LT SVCINS
                              .WORD   0
                              .MEXIT
                              .ENDC
                              .IF EQ SVCINS
                              .LIST
     002042  000000                   .WORD   0
                                              .NLIST
                              .MEXIT
                              .ENDC
                              .IF GT SVCINS
                              .LIST
                                                                                  .WORD   0
                                              .NLIST
```

```
                                        .ENDC
                                        .IFF
                                        M$DATA  L$PRIO,.WORD,,<<;DIAGNOSTIC RUN PRIORITY>>
                                        .ENDC
      002044                            M$HNAP
                                        .MCALL  M$DATA,M$WORD,M$GNINS
      002044                            M$DATA  L$ENVI,.WORD,0,<<;FLAGS DESCRIBE HOW IT WAS SETUP>>
                                        .MCALL  M$GNGBL,M$GNINS
                                        .IF NB <;FLAGS DESCRIBE HOW IT WAS SETUP>
      002044                            M$GNGBL L$ENVI,<<;FLAGS DESCRIBF HOW IT WAS SETUP>>
                                        .MCALL  M$GEN
                                        .IF NB,L$ENVI
                                        .IF NB,<;FLAGS DESCRIBE HOW IT WAS SETUP>
      002044                            M$GEN   L$ENVI,:,SVCGBL,<;FLAGS DESCRIBE HOW IT WAS SETUP>
                                        .IF LE  SVCGBL
                                        .IIF EQ SVCGBL,.LIST
      002044                            L$ENVI::                ;FLAGS DESCRIBE HOW IT WAS SETUP
                                        .IIF EQ SVCGBL,.NLIST
                                        .MEXIT
                                        .ENDC
                                        .LIST
                                                                                        L$ENVI::
                                                .NLIST
                                        .ENDC
                                        .IF B,<;FLAGS DESCRIBE HOW IT WAS SETUP>
                                        M$GEN   L$ENVI,:,SVCGBL,< >
                                        .ENDC
                                        .ENDC
                                        .ENDC
                                        .IF B <;FLAGS DESCRIBE HOW IT WAS SETUP>
                                        M$GNGBL L$ENVI
                                        .ENDC
      002044                            M$GNINS <.WORD  0>
                                        .IF LT SVCINS
                                        .WORD   0
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
      002044  000000                            .WORD   0
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
                                                                                               .WORD   0
                                                        .NLIST
                                        .ENDC
      002046                            M$DATA  L$EXP1,.WORD,0,<<;EXPANSION WORD>>
                                        .MCALL  M$GNGBL,M$GNINS
                                        .IF NB <;EXPANSION WORD>
      002046                            M$GNGBL L$EXP1,<<;EXPANSION WORD>>
                                        .MCALL  M$GEN
                                        .IF NB,L$EXP1
                                        .IF NB,<;EXPANSION WORD>
      002046                            M$GEN   L$EXP1,:,SVCGBL,<;EXPANSION WORD>
                                        .IF LE  SVCGBL
```

C5

```
                                .IIF EQ SVCGBL,.LIST
     002046                     L$EXP1::                        ;EXPANSION WORD
                                .IIF EQ SVCGBL,.NLIST
                                .MEXIT
                                .ENDC
                                .LIST
                                                                                        L$EXP1::
                                         .NLIST
                                .ENDC
                                .IF B,<;EXPANSION WORD>
                                M$GEN   L$EXP1,:,SVCGBL,< >
                                .ENDC
                                .ENDC
                                .ENDC
                                .IF B <;EXPANSION WORD>
                                M$GNGBL L$EXP1
                                .ENDC
     002046                     M$GNINS <.WORD  0>
                                .IF LT SVCINS
                                .WORD   0
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
     002046  000000                      .WORD   0
                                                 .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
                                                                                              .WORD   0
                                                 .NLIST
                                .ENDC
     002050                     M$DATA  L$MREV,.BYTE,C$REVISION,<<;SVC REV AND EDIT #>>
                                .MCALL  M$GNGBL,M$GNINS
                                .IF NB <;SVC REV AND EDIT #>
     002050                     M$GNGBL L$MREV,<<;SVC REV AND EDIT #>>
                                .MCALL  M$GEN
                                .IF NB,L$MREV
                                .IF NB,<;SVC REV AND EDIT #>
     002050                     M$GEN   L$MREV,:,SVCGBL,<;SVC REV AND EDIT #>
                                .IF LE  SVCGBL
                                .IIF EQ SVCGBL,.LIST
     002050                     L$MREV::                        ;SVC REV AND EDIT #
                                .IIF EQ SVCGBL,.NLIST
                                .MEXIT
                                .ENDC
                                .LIST
                                                                                        L$MREV::
                                         .NLIST
                                .ENDC
                                .IF B,<;SVC REV AND EDIT #>
                                M$GEN   L$MREV,:,SVCGBL,< >
                                .ENDC
                                .ENDC
                                .ENDC
                                .IF B <;SVC REV AND EDIT #>
```

7B 80 8 3675 6

```
                                M$GNGBL L$MREV
                                .ENDC
     002050                     M$GNINS <.BYTE  C$REVISION>
                                .IF LT SVCINS
                                .BYTE   C$REVISION
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
     002050   003                       .BYTE   C$REVISION
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
                                                                        .BYTE   C$REVISION
                                                .NLIST
                                .ENDC
     002051                     M$GNINS <.BYTE  C$EDIT>
                                .IF LT SVCINS
                                .BYTE   C$EDIT
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
     002051   003                       .BYTE   C$EDIT
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
                                                                        .BYTE   C$EDIT
                                                .NLIST
                                .ENDC
     002052                     M$DATA  L$EF,.WORD,0    ,<<;DIAG. EVENT FLAGS>>
                                .MCALL  M$GNGBL,M$GNINS
                                .IF NB <;DIAG. EVENT FLAGS>
     002052                     M$GNGBL L$EF,<<;DIAG. EVENT FLAGS>>
                                .MCALL  M$GEN
                                .IF NB,L$EF
                                .IF NB,<;DIAG. EVENT FLAGS>
     002052                     M$GEN   L$EF,:,SVCGBL,<;DIAG. EVENT FLAGS>
                                .IF LE  SVCGBL
                                .IIF EQ SVCGBL,.LIST
     002052                     L$EF::                  ;DIAG. EVENT FLAGS
                                .IIF EQ SVCGBL,.NLIST
                                .MEXIT
                                .ENDC
                                .LIST
                                                                L$EF::
                                        .NLIST
                                .ENDC
                                .IF B,<;DIAG. EVENT FLAGS>
                                M$GEN   L$EF,:,SVCGBL,< >
                                .ENDC
                                .ENDC
                                .ENDC
```

E5


```
                                  .IF B <;DIAG. EVENT FLAGS>
                                  M$GNGBL L$EF
                                  .ENDC
     002052                       M$GNINS <.WORD  0>
                                  .IF LT SVCINS
                                  .WORD   0
                                  .MEXIT
                                  .ENDC
                                  .IF EQ SVCINS
                                  .LIST
     002052  000000                       .WORD   0
                                                  .NLIST
                                  .MEXIT
                                  .ENDC
                                  .IF GT SVCINS
                                  .LIST
                                                                          .WORD   0
                                                  .NLIST
                                  .ENDC
     002054                       M$WORD  0
                                  .MCALL  M$GNINS
                                  .IRP    N,<0>
                                  M$GNINS <.WORD  N>
                                  .ENDM
     002054                       M$GNINS <.WORD  0>
                                  .IF LT SVCINS
                                  .WORD   0
                                  .MEXIT
                                  .ENDC
                                  .IF EQ SVCINS
                                  .LIST
     002054  000000                       .WORD   0
                                                  .NLIST
                                  .MEXIT
                                  .ENDC
                                  .IF GT SVCINS
                                  .LIST
                                                                          .WORD   0
                                                  .NLIST
                                  .ENDC
     002056                       M$DATA  L$SPC,.WORD,0
                                  .MCALL  M$GNGBL,M$GNINS
                                  .IF NB
                                  M$GNGBL L$SPC,<>
                                  .ENDC
                                  .IF B
     002056                       M$GNGBL L$SPC
                                  .MCALL  M$GEN
                                  .IF NB,L$SPC
                                  .IF NB,
                                  M$GEN   L$SPC,:,SVCGBL,
                                  .ENDC
                                  .IF B,
     002056                       M$GEN   L$SPC,:,SVCGBL,< >
                                  .IF LE  SVCGBL
                                  .IIF EQ SVCGBL,.LIST
     002056                       L$SPC::
```

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F5

```
                          .IIF EQ SVCGBL,.NLIST
                          .MEXIT
                          .ENDC
                          .LIST
                                                                          L$SPC::
                                  .NLIST
                          .ENDC
                          .ENDC
                          .ENDC
    002056                M$GNINS <.WORD  0>
                          .IF LT SVCINS
                          .WORD   0
                          .MEXIT
                          .ENDC
                          .IF EQ SVCINS
                          .LIST
    002056  000000                .WORD   0
                                          .NLIST
                          .MEXIT
                          .ENDC
                          .IF GT SVCINS
                          .LIST
                                                                              .WORD   0
                                          .NLIST
                          .ENDC
    002060                M$DATA  L$DEVP,.WORD,L$DVTYP           ,<<; POINTER TO DEVICE TYPE LIST>>
                          .MCALL  M$GNGBL,M$GNINS
                          .IF NB <; POINTER TO DEVICE TYPE LIST>
    002060                M$GNGBL L$DEVP,<<; POINTER TO DEVICE TYPE LIST>>
                          .MCALL  M$GEN
                          .IF NB,L$DEVP
                          .IF NB,<; POINTER TO DEVICE TYPE LIST>
    002060                M$GEN   L$DEVP,:,SVCGBL,<; POINTER TO DEVICE TYPE LIST>
                          .IF LE  SVCGBL
                          .IIF EQ SVCGBL,.LIST
    002060                L$DEVP::            ; POINTER TO DEVICE TYPE LIST
                          .IIF EQ SVCGBL,.NLIST
                          .MEXIT
                          .ENDC
                          .LIST
                                                                          L$DEVP::
                                  .NLIST
                          .ENDC
                          .IF B,<; POINTER TO DEVICE TYPE LIST>
                          M$GEN   L$DEVP,:,SVCGBL,< >
                          .ENDC
                          .ENDC
                          .ENDC
                          .IF B <; POINTER TO DEVICE TYPE LIST>
                          M$GNGBL L$DEVP
                          .ENDC
    002060                M$GNINS <.WORD  L$DVTYP>
                          .IF LT SVCINS
                          .WORD   L$DVTYP
                          .MEXIT
                          .ENDC
                          .IF EQ SVCINS
```

G5


```
                                 .LIST
      002060  003352                  .WORD   L$DVTYP
                                              .NLIST
                                 .MEXIT
                                 .ENDC
                                 .IF GT SVCINS
                                 .LIST
                                                                                .WORD   L$DVTYP
                                              .NLIST
                                 .ENDC
                                 .IF EQ O$BGNRPT
      002062                     M$DATA  L$REPP,.WORD,0,<<;PTR. TO REPORT CODE>>
                                 .MCALL  M$GNGBL,M$GNINS
                                 .IF NB <;PTR. TO REPORT CODE>
      002062                     M$GNGBL L$REPP,<<;PTR. TO REPORT CODE>>
                                 .MCALL  M$GEN
                                 .IF NB,L$REPP
                                 .IF NB,<;PTR. TO REPORT CODE>
      002062                     M$GEN   L$REPP,:,SVCGBL,<;PTR. TO REPORT CODE>
                                 .IF LE  SVCGBL
                                 .IIF EQ SVCGBL,.LIST
      002062                     L$REPP::              ;PTR. TO REPORT CODE
                                 .IIF EQ SVCGBL,.NLIST
                                 .MEXIT
                                 .ENDC
                                 .LIST
                                                                          L$REPP::
                                      .NLIST
                                 .ENDC
                                 .IF B,<;PTR. TO REPORT CODE>
                                 M$GEN   L$REPP,:,SVCGBL,< >
                                 .ENDC
                                 .ENDC
                                 .ENDC
                                 .IF B <;PTR. TO REPORT CODE>
                                 M$GNGBL L$REPP
                                 .ENDC
      002062                     M$GNINS <.WORD  0>
                                 .IF LT SVCINS
                                 .WORD   0
                                 .MEXIT
                                 .ENDC
                                 .IF EQ SVCINS
                                 .LIST
      002062  000000                  .WORD   0
                                              .NLIST
                                 .MEXIT
                                 .ENDC
                                 .IF GT SVCINS
                                 .LIST
                                                                                .WORD   0
                                              .NLIST
                                 .ENDC
                                 .IFF
                                 M$DATA  L$REPP,.WORD,L$RPT,<<;PTR. TO REPORT CODE>>
                                 .ENDC
      002064                     M$DATA  L$EXP4,.WORD,0
```

H5

```
                                  .MCALL  M$GNGBL,M$GNINS
                                  .IF NB
                                  M$GNGBL L$EXP4,<>
                                  .ENDC
                                  .IF B
     002064                       M$GNGBL L$EXP4
                                  .MCALL  M$GEN
                                  .IF NB,L$EXP4
                                  .IF NB,
                                  M$GEN   L$EXP4,:,SVCGBL,
                                  .ENDC
                                  .IF B,
     002064                       M$GEN   L$EXP4,:,SVCGBL,< >
                                  .IF LE  SVCGBL
                                  .IIF EQ SVCGBL,.LIST
     002064                       L$EXP4::
                                  .IIF EQ SVCGBL,.NLIST
                                  .MEXIT
                                  .ENDC
                                  .LIST
                                                                     L$EXP4::
                                          .NLIST
                                  .ENDC
                                  .ENDC
                                  .ENDC
     002064                       M$GNINS <.WORD  0>
                                  .IF LT SVCINS
                                  .WORD   0
                                  .MEXIT
                                  .ENDC
                                  .IF EQ SVCINS
                                  .LIST
     002064  000000                       .WORD   0
                                                  .NLIST
                                  .MEXIT
                                  .ENDC
                                  .IF GT SVCINS
                                  .LIST
                                                                          .WORD   0
                                                  .NLIST
                                  .ENDC
     002066                       M$DATA  L$EXP5,.WORD,0
                                  .MCALL  M$GNGBL,M$GNINS
                                  .IF NB
                                  M$GNGBL L$EXP5,<>
                                  .ENDC
                                  .IF B
     002066                       M$GNGBL L$EXP5
                                  .MCALL  M$GEN
                                  .IF NB,L$EXP5
                                  .IF NB,
                                  M$GEN   L$EXP5,:,SVCGBL,
                                  .ENDC
                                  .IF B,
     002066                       M$GEN   L$EXP5,:,SVCGBL,< >
                                  .IF LE  SVCGBL
                                  .IIF EQ SVCGBL,.LIST
```

I5

I5


```
        002066                          L$EXP5::
                                        .IIF EQ SVCGBL,.NLIST
                                        .MEXIT
                                        .ENDC
                                        .LIST
                                                                                L$EXP5::
                                                .NLIST
                                        .ENDC
                                        .ENDC
                                        .ENDC
        002066                          M$GNINS <.WORD  0>
                                        .IF LT SVCINS
                                        .WORD   0
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
        002066  000000                          .WORD   0
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
                                                                                        .WORD   0
                                                        .NLIST
                                        .ENDC
                                        .IF EQ O$AU
                                        M$DATA L$AUT,.WORD,0,<<;PTR. TO ADD UNIT CODE>>
                                        .IFF
        002070                          M$DATA L$AUT,.WORD,L$AU,<<;PTR. TO ADD UNIT CODE>>
                                        .MCALL  M$GNGBL,M$GNINS
                                        .IF NB <;PTR. TO ADD UNIT CODE>
        002070                          M$GNGBL L$AUT,<<;PTR. TO ADD UNIT CODE>>
                                        .MCALL  M$GEN
                                        .IF NB,L$AUT
                                        .IF NB,<;PTR. TO ADD UNIT CODE>
        002070                          M$GEN   L$AUT,:,SVCGBL,<;PTR. TO ADD UNIT CODE>
                                        .IF LE  SVCGBL
                                        .IIF EQ SVCGBL,.LIST
        002070                          L$AUT::                 ;PTR. TO ADD UNIT CODE
                                        .IIF EQ SVCGBL,.NLIST
                                        .MEXIT
                                        .ENDC
                                        .LIST
                                                                                L$AUT::
                                                .NLIST
                                        .ENDC
                                        .IF B,<;PTR. TO ADD UNIT CODE>
                                        M$GEN   L$AUT,:,SVCGBL,< >
                                        .ENDC
                                        .ENDC
                                        .ENDC
                                        .IF B <;PTR. TO ADD UNIT CODE>
                                        M$GNGBL L$AUT
                                        .ENDC
        002070                          M$GNINS <.WORD  L$AU>
                                        .IF LT SVCINS
```

J5

J5


```
                                        .WORD   L$AU
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
     002070  012410                             .WORD   L$AU
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
                                                                                  .WORD   L$AU
                                                        .NLIST
                                        .ENDC
                                        .ENDC
                                        .IF EQ O$DU
                                        M$DATA L$DUT,.WORD,0,<<;PTR. TO DROP UNIT CODE>>
                                        .IFF
     002072                             M$DATA L$DUT,.WORD,L$DU,<<;PTR. TO DROP UNIT CODE>>
                                        .MCALL  M$GNGBL,M$GNINS
                                        .IF NB <;PTR. TO DROP UNIT CODE>
     002072                             M$GNGBL L$DUT,<<;PTR. TO DROP UNIT CODE>>
                                        .MCALL  M$GEN
                                        .IF NB,L$DUT
                                        .IF NB,<;PTR. TO DROP UNIT CODE>
     002072                             M$GEN   L$DUT,:,SVCGBL,<;PTR. TO DROP UNIT CODE>
                                        .IF LE  SVCGBL
                                        .IIF EQ SVCGBL,.LIST
     002072                             L$DUT::                 ;PTR. TO DROP UNIT CODE
                                        .IIF EQ SVCGBL,.NLIST
                                        .MEXIT
                                        .ENDC
                                        .LIST
                                                                            L$DUT::
                                                .NLIST
                                        .ENDC
                                        .IF B,<;PTR. TO DROP UNIT CODE>
                                        M$GEN   L$DUT,:,SVCGBL,< >
                                        .ENDC
                                        .ENDC
                                        .ENDC
                                        .IF B <;PTR. TO DROP UNIT CODE>
                                        M$GNGBL L$DUT
                                        .ENDC
     002072                             M$GNINS <.WORD  L$DU>
                                        .IF LT SVCINS
                                        .WORD   L$DU
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
     002072  012330                             .WORD   L$DU
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
```

K5

```
                                                                                          .WORD   L$DU
                                                  .NLIST
                                      .ENDC
                                      .ENDC
      002074                          M$DATA  L$LUN,.WORD,0                  ,<<;LUN FOR EXERCISERS TO FILL>>
                                      .MCALL  M$GNGBL,M$GNINS
                                      .IF NB <;LUN FOR EXERCISERS TO FILL>
      002074                          M$GNGBL L$LUN,<<;LUN FOR EXERCISERS TO FILL>>
                                      .MCALL  M$GEN
                                      .IF NB,L$LUN
                                      .IF NB,<;LUN FOR EXERCISERS TO FILL>
      002074                          M$GEN   L$LUN,:,SVCGBL,<;LUN FOR EXERCISERS TO FILL>
                                      .IF LE  SVCGBL
                                      .IIF EQ SVCGBL,.LIST
      002074                          L$LUN::                 ;LUN FOR EXERCISERS TO FILL
                                      .IIF EQ SVCGBL,.NLIST
                                      .MEXIT
                                      .ENDC
                                      .LIST
                                                                                    L$LUN::
                                            .NLIST
                                      .ENDC
                                      .IF B,<;LUN FOR EXERCISERS TO FILL>
                                      M$GEN   L$LUN,:,SVCGBL,< >
                                      .ENDC
                                      .ENDC
                                      .ENDC
                                      .IF B <;LUN FOR EXERCISERS TO FILL>
                                      M$GNGBL L$LUN
                                      .ENDC
      002074                          M$GNINS <.WORD  0>
                                      .IF LT SVCINS
                                      .WORD   0
                                      .MEXIT
                                      .ENDC
                                      .IF EQ SVCINS
                                      .LIST
      002074  000000                        .WORD   0
                                                  .NLIST
                                      .MEXIT
                                      .ENDC
                                      .IF GT SVCINS
                                      .LIST
                                                                                          .WORD   0
                                                  .NLIST
                                      .ENDC
      002076                          M$DATA  L$DESP,.WORD,L$DESC            ,<<;POINTER TO DIAG. DESCRIPTION>>
                                      .MCALL  M$GNGBL,M$GNINS
                                      .IF NB <;POINTER TO DIAG. DESCRIPTION>
      002076                          M$GNGBL L$DESP,<<;POINTER TO DIAG. DESCRIPTION>>
                                      .MCALL  M$GEN
                                      .IF NB,L$DESP
                                      .IF NB,<;POINTER TO DIAG. DESCRIPTION>
      002076                          M$GEN   L$DESP,:,SVCGBL,<;POINTER TO DIAG. DESCRIPTION>
                                      .IF LE  SVCGBL
                                      .IIF EQ SVCGBL,.LIST
      002076                          L$DESP::                ;POINTER TO DIAG. DESCRIPTION
```

L5

```
                              .IIF EQ SVCGBL,.NLIST
                              .MEXIT
                              .ENDC
                              .LIST
                                                                     L$DESP::
                                      .NLIST
                              .ENDC
                              .IF B,<;POINTER TO DIAG. DESCRIPTION>
                              M$GEN   L$DESP,:,SVCGBL,< >
                              .ENDC
                              .ENDC
                              .ENDC
                              .IF B <;POINTER TO DIAG. DESCRIPTION>
                              M$GNGBL L$DESP
                              .ENDC
     002076                   M$GNINS <.WORD  L$DESC>
                              .IF LT SVCINS
                              .WORD   L$DESC
                              .MEXIT
                              .ENDC
                              .IF EQ SVCINS
                              .LIST
     002076  003414                   .WORD   L$DESC
                                              .NLIST
                              .MEXIT
                              .ENDC
                              .IF GT SVCINS
                              .LIST
                                                                          .WORD   L$DESC
                                              .NLIST
                              .ENDC
     002100                   M$DATA  L$LOAD,EMT,E$LOAD              ,<<;GENERATE SPECIAL AUTOLOAD EMT>>
                              .MCALL  M$GNGBL,M$GNINS
                              .IF NB <;GENERATE SPECIAL AUTOLOAD EMT>
     002100                   M$GNGBL L$LOAD,<<;GENERATE SPECIAL AUTOLOAD EMT>>
                              .MCALL  M$GEN
                              .IF NB,L$LOAD
                              .IF NB,<;GENERATE SPECIAL AUTOLOAD EMT>
     002100                   M$GEN   L$LOAD,:,SVCGBL,<;GENERATE SPECIAL AUTOLOAD EMT>
                              .IF LE  SVCGBL
                              .IIF EQ SVCGBL,.LIST
     002100                   L$LOAD::                 ;GENERATE SPECIAL AUTOLOAD EMT
                              .IIF EQ SVCGBL,.NLIST
                              .MEXIT
                              .ENDC
                              .LIST
                                                                     L$LOAD::
                                      .NLIST
                              .ENDC
                              .IF B,<;GENERATE SPECIAL AUTOLOAD EMT>
                              M$GEN   L$LOAD,:,SVCGBL,< >
                              .ENDC
                              .ENDC
                              .ENDC
                              .IF B <;GENERATE SPECIAL AUTOLOAD EMT>
                              M$GNGBL L$LOAD
                              .ENDC
```

M5


```
        002100                  M$GNINS <EMT    E$LOAD>
                                .IF LT SVCINS
                                EMT     E$LOAD
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
        002100  104035                  EMT     E$LOAD
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
                                                                                        EMT     E$LOAD
                                                .NLIST
                                .ENDC
                                .IF EQ O$ERRTBL
                                M$DATA  L$ETP,.WORD,0,<<;POINTER TO ERRTBL>>
                                .IFF
        002102                  M$DATA  L$ETP,.WORD,L$ERRTBL,<<;POINTER TO ERRTBL>>
                                .MCALL  M$GNGBL,M$GNINS
                                .IF NB <;POINTER TO ERRTBL>
        002102                  M$GNGBL L$ETP,<<;POINTER TO ERRTBL>>
                                .MCALL  M$GEN
                                .IF NB,L$ETP
                                .IF NB,<;POINTER TO ERRTBL>
        002102                  M$GEN   L$ETP,:,SVCGBL,<;POINTER TO ERRTBL>
                                .IF LE  SVCGBL
                                .IIF EQ SVCGBL,.LIST
        002102                  L$ETP::                 ;POINTER TO ERRTBL
                                .IIF EQ SVCGBL,.NLIST
                                .MEXIT
                                .ENDC
                                .LIST
                                                                                  L$ETP::
                                        .NLIST
                                .ENDC
                                .IF B,<;POINTER TO ERRTBL>
                                M$GEN   L$ETP,:,SVCGBL,< >
                                .ENDC
                                .ENDC
                                .ENDC
                                .IF B <;POINTER TO ERRTBL>
                                M$GNGBL L$ETP
                                .ENDC
        002102                  M$GNINS <.WORD  L$ERRTBL>
                                .IF LT SVCINS
                                .WORD   L$ERRTBL
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
        002102  002504                  .WORD   L$ERRTBL
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
```

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N5

N5


```
                        .LIST
                                                                                   .WORD   L$ERRTBL
                                        .NLIST
                        .ENDC
                        .ENDC
    002104              M$DATA  L$ICP,.WORD,L$INIT,<<;PTR. TO INIT CODE>>
                        .MCALL  M$GNGBL,M$GNINS
                        .IF NB <;PTR. TO INIT CODE>
    002104              M$GNGBL L$ICP,<<;PTR. TO INIT CODE>>
                        .MCALL  M$GEN
                        .IF NB,L$ICP
                        .IF NB,<;PTR. TO INIT CODE>
    002104              M$GEN   L$ICP,:,SVCGBL,<;PTR. TO INIT CODE>
                        .IF LE  SVCGBL
                        .IIF EQ SVCGBL,.LIST
    002104              L$ICP::                 ;PTR. TO INIT CODE
                        .IIF EQ SVCGBL,.NLIST
                        .MEXIT
                        .ENDC
                        .LIST
                                                                            L$ICP::
                                .NLIST
                        .ENDC
                        .IF B,<;PTR. TO INIT CODE>
                        M$GEN   L$ICP,:,SVCGBL,< >
                        .ENDC
                        .ENDC
                        .ENDC
                        .IF B <;PTR. TO INIT CODE>
                        M$GNGBL L$ICP
                        .ENDC
    002104              M$GNINS <.WORD  L$INIT>
                        .IF LT SVCINS
                        .WORD   L$INIT
                        .MEXIT
                        .ENDC
                        .IF EQ SVCINS
                        .LIST
    002104  011110              .WORD   L$INIT
                                        .NLIST
                        .MEXIT
                        .ENDC
                        .IF GT SVCINS
                        .LIST
                                                                                   .WORD   L$INIT
                                        .NLIST
                        .ENDC
    002106              M$DATA  L$CCP,.WORD,L$CLEAN,<<;PTR. TO CLEAN-UP CODE>>
                        .MCALL  M$GNGBL,M$GNINS
                        .IF NB <;PTR. TO CLEAN-UP CODE>
    002106              M$GNGBL L$CCP,<<;PTR. TO CLEAN-UP CODE>>
                        .MCALL  M$GEN
                        .IF NB,L$CCP
                        .IF NB,<;PTR. TO CLEAN UP CODE>
    002106              M$GEN   L$CCP,:,SVCGBL,<;PTR. TO CLEAN UP CODE>
                        .IF LE  SVCGBL
                        .IIF EQ SVCGBL,.LIST
```

B6


```
002106                          L$CCP::                        ;PTR. TO CLEAN-UP CODE
                                 .IIF EQ SVCGBL,.NLIST
                                 .MEXIT
                                 .ENDC
                                 .LIST
                                                                                       L$CCP::
                                          .NLIST
                                 .ENDC
                                 .IF B,<;PTR. TO CLEAN-UP CODE>
                                 M$GEN   L$CCP,:,SVCGBL,< >
                                 .ENDC
                                 .ENDC
                                 .ENDC
                                 .IF B <;PTR. TO CLEAN-UP CODE>
                                 M$GNGBL L$CCP
                                 .ENDC
002106                           M$GNINS <.WORD  L$CLEAN>
                                 .IF LT SVCINS
                                 .WORD   L$CLEAN
                                 .MEXIT
                                 .ENDC
                                 .IF EQ SVCINS
                                 .LIST
002106  012304                            .WORD   L$CLEAN
                                                  .NLIST
                                 .MEXIT
                                 .ENDC
                                 .IF GT SVCINS
                                 .LIST
                                                                                             .WORD   L$CLEAN
                                                  .NLIST
                                 .ENDC
002110                           M$DATA  L$ACP,.WORD,L$AUTO,<<;PTR. TO AUTO CODE>>
                                 .MCALL  M$GNGBL,M$GNINS
                                 .IF NB <;PTR. TO AUTO CODE>
002110                           M$GNGBL L$ACP,<<;PTR. TO AUTO CODE>>
                                 .MCALL  M$GEN
                                 .IF NB,L$ACP
                                 .IF NB,<;PTR. TO AUTO CODE>
002110                           M$GEN   L$ACP,:,SVCGBL,<;PTR. TO AUTO CODE>
                                 .IF LE  SVCGBL
                                 .IIF EQ SVCGBL,.LIST
002110                           L$ACP::                       ;PTR. TO AUTO CODE
                                 .IIF EQ SVCGBL,.NLIST
                                 .MEXIT
                                 .ENDC
                                 .LIST
                                                                                       L$ACP::
                                          .NLIST
                                 .ENDC
                                 .IF B,<;PTR. TO AUTO CODE>
                                 M$GEN   L$ACP,:,SVCGBL,< >
                                 .ENDC
                                 .ENDC
                                 .ENDC
                                 .IF B <;PTR. TO AUTO CODE>
                                 M$GNGBL L$ACP
```

C6

C6


```
                         .ENDC
002110                   M$GNINS <.WORD  L$AUTO>
                         .IF LT SVCINS
                         .WORD   L$AUTO
                         .MEXIT
                         .ENDC
                         .IF EQ SVCINS
                         .LIST
002110  012220                   .WORD   L$AUTO
                                         .NLIST
                         .MEXIT
                         .ENDC
                         .IF GT SVCINS
                         .LIST
                                                                                .WORD   L$AUTO
                                         .NLIST
                         .ENDC
002112                   M$DATA  L$PRT,.WORD,L$PROT,<<;PTR. TO PROTECT TABLE>>
                         .MCALL  M$GNGBL,M$GNINS
                         .IF NB <;PTR. TO PROTECT TABLE>
002112                   M$GNGBL L$PRT,<<;PTR. TO PROTECT TABLE>>
                         .MCALL  M$GEN
                         .IF NB,L$PRT
                         .IF NB,<;PTR. TO PROTECT TABLE>
002112                   M$GEN   L$PRT,:,SVCGBL,<;PTR. TO PROTECT TABLE>
                         .IF LE  SVCGBL
                         .IIF EQ SVCGBL,.LIST
002112                   L$PRT::                 ;PTR. TO PROTECT TABLE
                         .IIF EQ SVCGBL,.NLIST
                         .MEXIT
                         .ENDC
                         .LIST
                                                                           L$PRT::
                                 .NLIST
                         .ENDC
                         .IF B,<;PTR. TO PROTECT TABLE>
                         M$GEN   L$PRT,:,SVCGBL,< >
                         .ENDC
                         .ENDC
                         .ENDC
                         .IF B <;PTR. TO PROTECT TABLE>
                         M$GNGBL L$PRT
                         .ENDC
002112                   M$GNINS <.WORD  L$PROT>
                         .IF LT SVCINS
                         .WORD   L$PROT
                         .MEXIT
                         .ENDC
                         .IF EQ SVCINS
                         .LIST
002112  011102                   .WORD   L$PROT
                                         .NLIST
                         .MEXIT
                         .ENDC
                         .IF GT SVCINS
                         .LIST
                                                                                .WORD   L$PROT
```

78 0018 3675 6

D6

D6


```
                                                    .NLIST
                                      .ENDC
002114                                M$DATA  L$TEST,.WORD,0,<<;TEST NUMBER>>
                                      .MCALL  M$GNGBL,M$GNINS
                                      .IF NB <;TEST NUMBER>
002114                                M$GNGBL L$TEST,<<;TEST NUMBER>>
                                      .MCALL  M$GEN
                                      .IF NB,L$TEST
                                      .IF NB,<;TEST NUMBER>
002114                                M$GEN   L$TEST,:,SVCGBL,<;TEST NUMBER>
                                      .IF LE  SVCGBL
                                      .IIF EQ SVCGBL,.LIST
002114                                L$TEST::                  ;TEST NUMBER
                                      .IIF EQ SVCGBL,.NLIST
                                      .MEXIT
                                      .ENDC
                                      .LIST
                                                                                      L$TEST::
                                            .NLIST
                                      .ENDC
                                      .IF B,<;TEST NUMBER>
                                      M$GEN   L$TEST,:,SVCGBL,< >
                                      .ENDC
                                      .ENDC
                                      .ENDC
                                      .IF B <;TEST NUMBER>
                                      M$GNGBL L$TEST
                                      .ENDC
002114                                M$GNINS <.WORD  0>
                                      .IF LT SVCINS
                                      .WORD   0
                                      .MEXIT
                                      .ENDC
                                      .IF EQ SVCINS
                                      .LIST
002114  000000                              .WORD   0
                                                  .NLIST
                                      .MEXIT
                                      .ENDC
                                      .IF GT SVCINS
                                      .LIST
                                                                                            .WORD   0
                                                  .NLIST
                                      .ENDC
002116                                M$DATA  L$DLY,.WORD,0,<<;DELAY COUNT>>
                                      .MCALL  M$GNGBL,M$GNINS
                                      .IF NB <;DELAY COUNT>
002116                                M$GNGBL L$DLY,<<;DELAY COUNT>>
                                      .MCALL  M$GEN
                                      .IF NB,L$DLY
                                      .IF NB,<;DELAY COUNT>
002116                                M$GEN   L$DLY,:,SVCGBL,<;DELAY COUNT>
                                      .IF LE  SVCGBL
                                      .IIF EQ SVCGBL,.LIST
002116                                L$DLY::                   ;DELAY COUNT
                                      .IIF EQ SVCGBL,.NLIST
                                      .MEXIT
```

E6


```
                                .ENDC
                                .LIST
                                                                    L$DLY::
                                        .NLIST
                                .ENDC
                                .IF B,<;DELAY COUNT>
                                M$GEN   L$DLY,:,SVCGBL,< >
                                .ENDC
                                .ENDC
                                .ENDC
                                .IF B <;DELAY COUNT>
                                M$GNGBL L$DLY
                                .ENDC
      00211€                    M$GNINS <.WORD  0>
                                .IF LT SVCINS
                                .WORD   0
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
      002116  000000                    .WORD   0
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
                                                                         .WORD   0
                                                .NLIST
                                .ENDC
      002120                    M$DATA  L$HIME,.WORD,0,<<;PTR. TO HIGH MEM>>
                                .MCALL  M$GNGBL,M$GNINS
                                .IF NB <;PTR. TO HIGH MEM>
      002120                    M$GNGBL L$HIME,<<;PTR. TO HIGH MEM>>
                                .MCALL  M$GEN
                                .IF NB,L$HIME
                                .IF NB,<;PTR. TO HIGH MEM>
      002120                    M$GEN   L$HIME,:,SVCGBL,<;PTR. TO HIGH MEM>
                                .IF LE  SVCGBL
                                .IIF EQ SVCGBL,.LIST
      002120                    L$HIME::                ;PTR. TO HIGH MEM
                                .IIF EQ SVCGBL,.NLIST
                                .MEXIT
                                .ENDC
                                .LIST
                                                                    L$HIME::
                                        .NLIST
                                .ENDC
                                .IF B,<;PTR. TO HIGH MEM>
                                M$GEN   L$HIME,:,SVCGBL,< >
                                .ENDC
                                .ENDC
                                .ENDC
                                .IF B <;PTR. TO HIGH MEM>
                                M$GNGBL L$HIME
                                .ENDC
      002120                    M$GNINS <.WORD  0>
                                .IF LT SVCINS
```

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F6

```
                                        .WORD   0
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
      002120  000000                          .WORD   0
                                                      .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
                                                                                  .WORD   0
                                                      .NLIST
                                        .ENDC
                                        .IF EQ O$POINTER
                                        .ERROR  ;"POINTER" MUST PRECEDE "HEADER"
                                        .ENDC

                                        .IF NE HELP
                                        ;*************************************************************
                                        ;      CHANGE THE "HEADER" TO CONTAIN THE PROPER ARGUMENTS.
                                        ;        ARGUMENTS ARE: NAME,REV,PATCH,LONGEST TEST TIME,TYPE
                                        ;        WHERE "TYPE" = 0 FOR SEQUENTIAL DIAGNOSTIC AND =1
                                        ;        FOR EXERCISER.  THERE IS ALSO AN OPTIONAL SIXTH ARGUMENT
                                        ;        WHICH SPECIFIES THE PROCESSOR PRIORITY TO BE SET WHEN
                                        ;        STARTING THE DIAGNOSTIC (DEFAULT IS 0).
                                        ;*************************************************************
                                        .ENDC
```

```
                                .SBTTL  DISPATCH TABLE

                                ;++
                                ; THE DISPATCH TABLE CONTAINS THE STARTING ADDRESS OF EACH TEST.
                                ; IT IS USED BY THE SUPERVISOR TO DISPATCH TO EACH TEST.
                                ;--

002122                                  DISPATCH 28
                                .MCALL  M$WORD,M$GNGBL
                000012          .RADIX  10
002122                          M$WORD \28
                                .MCALL  M$GNINS
                                .IRP    N,<28>
                                M$GNINS <.WORD  N>
                                .ENDM
002122                          M$GNINS <.WORD  28>
                                .IF LT SVCINS
                                .WORD   28
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
002122  000034                          .WORD   28
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
                                                                                .WORD   28
                                                .NLIST
                                .ENDC
002124                          M$GNGBL L$DISPATCH
                                .MCALL  M$GEN
                                .IF NB,L$DISPATCH
                                .IF NB,
                                M$GEN   L$DISPATCH,:,SVCGBL,
                                .ENDC
                                .IF B,
002124                          M$GEN   L$DISPATCH,:,SVCGBL,< >
                                .IF LE  SVCGBL
                                .IIF EQ SVCGBL,.LIST
002124                          L$DISPATCH::
                                .IIF EQ SVCGBL,.NLIST
                                .MEXIT
                                .ENDC
                                .LIST
                                                                        L$DISPATCH::
                                        .NLIST
                                .ENDC
                                .ENDC
                000001          T$TEMP=1
                000034          .REPT   28
                                .IRP    N,<\T$TEMP>
                                M$WORD  T'N
                                .ENDM
                                T$TEMP=T$TEMP + 1
                                .ENDR
```

H6

```
                            .IRP     N,<\T$TEMP>
                            M$WORD   T'N
                            .ENDM
        002124              M$WORD   T1
                            .MCALL   M$GNINS
                            .IRP     N,<T1>
                            M$GNINS <.WORD   N>
                            .ENDM
        002124              M$GNINS <.WORD   T1>
                            .IF LT SVCINS
                            .WORD    T1
                            .MEXIT
                            .ENDC
                            .IF EQ SVCINS
                            .LIST
        002124  012416              .WORD    T1
                                             .NLIST
                            .MEXIT
                            .ENDC
                            .IF GT SVCINS
                            .LIST
                                                                             .WORD    T1
                                             .NLIST
                            .ENDC
                000002      T$TEMP=T$TEMP + 1
                            .IRP     N,<\T$TEMP>
                            M$WORD   T'N
                            .ENDM
        002126              M$WORD   T2
                            .MCALL   M$GNINS
                            .IRP     N,<T2>
                            M$GNINS <.WORD   N>
                            .ENDM
        002126              M$GNINS <.WORD   T2>
                            .IF LT SVCINS
                            .WORD    T2
                            .MEXIT
                            .ENDC
                            .IF EQ SVCINS
                            .LIST
        002126  012672              .WORD    T2
                                             .NLIST
                            .MEXIT
                            .ENDC
                            .IF GT SVCINS
                            .LIST
                                                                             .WORD    T2
                                             .NLIST
                            .ENDC
                000003      T$TEMP=T$TEMP + 1
                            .IRP     N,<\T$TEMP>
                            M$WORD   T'N
                            .ENDM
        002130              M$WORD   T3
                            .MCALL   M$GNINS
                            .IRP     N,<T3>
                            M$GNINS <.WORD   N>
```

I6


```
                                .ENDM
        002130                  M$GNINS <.WORD  T3>
                                .IF LT SVCINS
                                .WORD   T3
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
        002130  013420                  .WORD   T3
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
                                                                                        .WORD   T3
                                                .NLIST
                                .ENDC
                000004          T$TEMP=T$TEMP + 1
                                .IRP    N,<\T$TEMP>
                                M$WORD  T'N
                                .ENDM
        002132                  M$WORD  T4
                                .MCALL  M$GNINS
                                .IRP    N,<T4>
                                M$GNINS <.WORD  N>
                                .ENDM
        002132                  M$GNINS <.WORD  T4>
                                .IF LT SVCINS
                                .WORD   T4
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
        002132  014100                  .WORD   T4
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
                                                                                        .WORD   T4
                                                .NLIST
                                .ENDC
                000005          T$TEMP=T$TEMP + 1
                                .IRP    N,<\T$TEMP>
                                M$WORD  T'N
                                .ENDM
        002134                  M$WORD  T5
                                .MCALL  M$GNINS
                                .IRP    N,<T5>
                                M$GNINS <.WORD  N>
                                .ENDM
        002134                  M$GNINS <.WORD  T5>
                                .IF LT SVCINS
                                .WORD   T5
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
```

J6

J6


```
                                .LIST
     002134  015576                     .WORD   T5
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
                                                                        .WORD   T5
                                                .NLIST
                                .ENDC
             000006             T$TEMP=T$TEMP + 1
                                .IRP    N,<\T$TEMP>
                                M$WORD  T'N
                                .ENDM
     002136                     M$WORD  T6
                                .MCALL  M$GNINS
                                .IRP    N,<T6>
                                M$GNINS <.WORD  N>
                                .ENDM
     002136                     M$GNINS <.WORD  T6>
                                .IF LT SVCINS
                                .WORD   T6
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
     002136  016764                     .WORD   T6
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
                                                                        .WORD   T6
                                                .NLIST
                                .ENDC
             000007             T$TEMP=T$TEMP + 1
                                .IRP    N,<\T$TEMP>
                                M$WORD  T'N
                                .ENDM
     002140                     M$WORD  T7
                                .MCALL  M$GNINS
                                .IRP    N,<T7>
                                M$GNINS <.WORD  N>
                                .ENDM
     002140                     M$GNINS <.WORD  T7>
                                .IF LT SVCINS
                                .WORD   T7
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
     002140  023064                     .WORD   T7
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
```


K6

K6


```
                                                                        .WORD   T7
                                                .NLIST
                                 .ENDC
              000010             T$TEMP=T$TEMP + 1
                                 .IRP    N,<\T$TEMP>
                                 M$WORD  T'N
                                 .ENDM
        002142                   M$WORD  T8
                                 .MCALL  M$GNINS
                                 .IRP    N,<T8>
                                 M$GNINS <.WORD  N>
                                 .ENDM
        002142                   M$GNINS <.WORD  T8>
                                 .IF LT SVCINS
                                 .WORD   T8
                                 .MEXIT
                                 .ENDC
                                 .IF EQ SVCINS
                                 .LIST
        002142  027420                   .WORD   T8
                                                .NLIST
                                 .MEXIT
                                 .ENDC
                                 .IF GT SVCINS
                                 .LIST
                                                                        .WORD   T8
                                                .NLIST
                                 .ENDC
              000011             T$TEMP=T$TEMP + 1
                                 .IRP    N,<\T$TEMP>
                                 M$WORD  T'N
                                 .ENDM
        002144                   M$WORD  T9
                                 .MCALL  M$GNINS
                                 .IRP    N,<T9>
                                 M$GNINS <.WORD  N>
                                 .ENDM
        002144                   M$GNINS <.WORD  T9>
                                 .IF L  SVCINS
                                 .WORD   T9
                                 .MEXIT
                                 .ENDC
                                 .IF EQ SVCINS
                                 .LIST
        002144  031766                   .WORD   T9
                                                .NLIST
                                 .MEXIT
                                 .ENDC
                                 .IF GT SVCINS
                                 .LIST
                                                                        .WORD   T9
                                                .NLIST
                                 .ENDC
              000012             T$TEMP=T$TEMP + 1
                                 .IRP    N,<\T$TEMP>
                                 M$WORD  T'N
                                 .ENDM
```

7880 8 3675 6

L6

```
        002146                        M$WORD  T10
                                      .MCALL  M$GNINS
                                      .IRP    N,<T10>
                                      M$GNINS <.WORD  N>
                                      .ENDM
        002146                        M$GNINS <.WORD  T10>
                                      .IF LT SVCINS
                                      .WORD   T10
                                      .MEXIT
                                      .ENDC
                                      .IF EQ SVCINS
                                      .LIST
        002146  033552                        .WORD   T10
                                                      .NLIST
                                      .MEXIT
                                      .ENDC
                                      .IF GT SVCINS
                                      .LIST
                                                                                  .WORD   T10
                                                      .NLIST
                                      .ENDC
                000013                T$TEMP=T$TEMP + 1
                                      .IRP    N,<\T$TEMP>
                                      M$WORD  T'N
                                      .ENDM
        002150                        M$WORD  T11
                                      .MCALL  M$GNINS
                                      .IRP    N,<T11>
                                      M$GNINS <.WORD  N>
                                      .ENDM
        002150                        M$GNINS <.WORD  T11>
                                      .IF LT SVCINS
                                      .WORD   T11
                                      .MEXIT
                                      .ENDC
                                      .IF EQ SVCINS
                                      .LIST
        002150  035320                        .WORD   T11
                                                      .NLIST
                                      .MEXIT
                                      .ENDC
                                      .IF GT SVCINS
                                      .LIST
                                                                                  .WORD   T11
                                                      .NLIST
                                      .ENDC
                000014                T$TEMP=T$TEMP + 1
                                      .IRP    N,<\T$TEMP>
                                      M$WORD  T'N
                                      .ENDM
        002152                        M$WORD  T12
                                      .MCALL  M$GNINS
                                      .IRP    N,<T12>
                                      M$GNINS <.WORD  N>
                                      .ENDM
        002152                        M$GNINS <.WORD  T12>
                                      .IF LT SVCINS
```

M6


```
                                .WORD   T12
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
     002152  037070                     .WORD   T12
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
                                                                        .WORD   T12
                                                .NLIST
                                .ENDC
             000015             T$TEMP=T$TEMP + 1
                                .IRP    N,<\T$TEMP>
                                M$WORD  T'N
                                .ENDM
     002154                     M$WORD  T13
                                .MCALL  M$GNINS
                                .IRP    N,<T13>
                                M$GNINS <.WORD  N>
                                .ENDM
     002154                     M$GNINS <.WORD  T13>
                                .IF LT SVCINS
                                .WORD   T13
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
     002154  040746                     .WORD   T13
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
                                                                        .WORD   T13
                                                .NLIST
                                .ENDC
             000016             T$TEMP=T$TEMP + 1
                                .IRP    N,<\T$TEMP>
                                M$WORD  T'N
                                .ENDM
     002156                     M$WORD  T14
                                .MCALL  M$GNINS
                                .IRP    N,<T14>
                                M$GNINS <.WORD  N>
                                .ENDM
     002156                     M$GNINS <.WORD  T14>
                                .IF LT SVCINS
                                .WORD   T14
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
     002156  043120                     .WORD   T14
                                                .NLIST
```

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N6

```
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
                                                                                .WORD   T14
                                          .NLIST
                                .ENDC
          000017                T$TEMP=T$TEMP + 1
                                .IRP    N,<\T$TEMP>
                                M$WORD  T'N
                                .ENDM
002160                          M$WORD  T15
                                .MCALL  M$GNINS
                                .IRP    N,<T15>
                                M$GNINS <.WORD  N>
                                .ENDM
002160                          M$GNINS <.WORD  T15>
                                .IF LT SVCINS
                                .WORD   T15
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
002160    044024                     .WORD   T15
                                          .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
                                                                                .WORD   T15
                                          .NLIST
                                .ENDC
          000020                T$TEMP=T$TEMP + 1
                                .IRP    N,<\T$TEMP>
                                M$WORD  T'N
                                .ENDM
002162                          M$WORD  T16
                                .MCALL  M$GNINS
                                .IRP    N,<T16>
                                M$GNINS <.WORD  N>
                                .ENDM
002162                          M$GNINS <.WORD  T16>
                                .IF LT SVCINS
                                .WORD   T16
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
002162    045000                     .WORD   T16
                                          .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
                                                                                .WORD   T16
                                          .NLIST
                                .ENDC
```

B


```
                000021          T$TEMP=T$TEMP + 1
                                .IRP    N,<\T$TEMP>
                                M$WORD  T'N
                                .ENDM
        002164                  M$WORD  T17
                                .MCALL  M$GNINS
                                .IRP    N,<T17>
                                M$GNINS <.WORD  N>
                                .ENDM
        002164                  M$GNINS <.WORD  T17>
                                .IF LT SVCINS
                                .WORD   T17
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
        002164  046346                  .WORD   T17
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
                                                                        .WORD   T17
                                                .NLIST
                                .ENDC
                000022          T$TEMP=T$TEMP + 1
                                .IRP    N,<\T$TEMP>
                                M$WORD  T'N
                                .ENDM
        002166                  M$WORD  T18
                                .MCALL  M$GNINS
                                .IRP    N,<T18>
                                M$GNINS <.WORD  N>
                                .ENDM
        002166                  M$GNINS <.WORD  T18>
                                .IF LT SVCINS
                                .WORD   T18
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
        002166  050724                  .WORD   T18
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
                                                                        .WORD   T18
                                                .NLIST
                                .ENDC
                000023          T$TEMP=T$TEMP + 1
                                .IRP    N,<\T$TEMP>
                                M$WORD  T'N
                                .ENDM
        002170                  M$WORD  T19
                                .MCALL  M$GNINS
                                .IRP    N,<T19>
```

C7

```
                                M$GNINS <.WORD  N>
                                .ENDM
002170                          M$GNINS <.WORD  T19>
                                .IF LT SVCINS
                                .WORD   T19
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
002170  052034                          .WORD   T19
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
                                                                                    .WORD   T19
                                                .NLIST
                                .ENDC
        000024                  T$TEMP=T$TEMP + 1
                                .IRP    N,<\T$TEMP>
                                M$WORD  T'N
                                .ENDM
002172                          M$WORD  T20
                                .MCALL  M$GNINS
                                .IRP    N,<T20>
                                M$GNINS <.WORD  N>
                                .ENDM
002172                          M$GNINS <.WORD  T20>
                                .IF LT SVCINS
                                .WORD   T20
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
002172  053144                          .WORD   T20
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
                                                                                    .WORD   T20
                                                .NLIST
                                .ENDC
        000025                  T$TEMP=T$TEMP + 1
                                .IRP    N,<\T$TEMP>
                                M$WORD  T'N
                                .ENDM
002174                          M$WORD  T21
                                .MCALL  M$GNINS
                                .IRP    N,<T21>
                                M$GNINS <.WORD  N>
                                .ENDM
002174                          M$GNINS <.WORD  T21>
                                .IF LT SVCINS
                                .WORD   T21
                                .MEXIT
                                .ENDC
```

D7

```
                                .IF EQ SVCINS
                                .LIST
     002174  054214                     .WORD   T21
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
                                                                        .WORD   T21
                                                .NLIST
                                .ENDC
             000026             T$TEMP=T$TEMP + 1
                                .IRP    N,<\T$TEMP>
                                M$WORD  T'N
                                .ENDM
     002176                     M$WORD  T22
                                .MCALL  M$GNINS
                                .IRP    N,<T22>
                                M$GNINS <.WORD  N>
                                .ENDM
     002176                     M$GNINS <.WORD  T22>
                                .IF LT SVCINS
                                .WORD   T22
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
     002176  055264                     .WORD   T22
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
                                                                        .WORD   T22
                                                .NLIST
                                .ENDC
             000027             T$TEMP=T$TEMP + 1
                                .IRP    N,<\T$TEMP>
                                M$WORD  T'N
                                .ENDM
     002200                     M$WORD  T23
                                .MCALL  M$GNINS
                                .IRP    N,<T23>
                                M$GNINS <.WORD  N>
                                .ENDM
     002200                     M$GNINS <.WORD  T23>
                                .IF LT SVCINS
                                .WORD   T23
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
     002200  057252                     .WORD   T23
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
```

```
                                        .LIST
                                                                                          .WORD   T23
                                                    .NLIST
                                        .ENDC
                 000030                 T$TEMP=T$TEMP + 1
                                        .IRP    N,<\T$TEMP>
                                        M$WORD  T'N
                                        .ENDM
         002202                         M$WORD  T24
                                        .MCALL  M$GNINS
                                        .IRP    N,<T24>
                                        M$GNINS <.WORD  N>
                                        .ENDM
         002202                         M$GNINS <.WORD  T24>
                                        .IF LT SVCINS
                                        .WORD   T24
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
         002202  063272                         .WORD   T24
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
                                                                                          .WORD   T24
                                                        .NLIST
                                        .ENDC
                 000031                 T$TEMP=T$TEMP + 1
                                        .IRP    N,<\T$TEMP>
                                        M$WORD  T'N
                                        .ENDM
         002204                         M$WORD  T25
                                        .MCALL  M$GNINS
                                        .IRP    N,<T25>
                                        M$GNINS <.WORD  N>
                                        .ENDM
         002204                         M$GNINS <.WORD  T25>
                                        .IF LT SVCINS
                                        .WORD   T25
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
         002204  067272                         .WORD   T25
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
                                                                                          .WORD   T25
                                                        .NLIST
                                        .ENDC
                 000032                 T$TEMP=T$TEMP + 1
                                        .IRP    N,<\T$TEMP>
                                        M$WORD  T'N
```

F7

```
                                        .ENDM
        002206                          M$WORD  T26
                                        .MCALL  M$GNINS
                                        .IRP    N,<T26>
                                        M$GNINS <.WORD  N>
                                        .ENDM
        002206                          M$GNINS <.WORD  T26>
                                        .IF LT SVCINS
                                        .WORD   T26
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
        002206  071014                          .WORD   T26
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
                                                                                                        .WORD   T26
                                                        .NLIST
                                        .ENDC
                000033                  T$TEMP=T$TEMP + 1
                                        .IRP    N,<\T$TEMP>
                                        M$WORD  T'N
                                        .ENDM
        002210                          M$WORD  T27
                                        .MCALL  M$GNINS
                                        .IRP    N,<T27>
                                        M$GNINS <.WORD  N>
                                        .ENDM
        002210                          M$GNINS <.WORD  T27>
                                        .IF LT SVCINS
                                        .WORD   T27
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
        002210  072546                          .WORD   T27
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
                                                                                                        .WORD   T27
                                                        .NLIST
                                        .ENDC
                000034                  T$TEMP=T$TEMP + 1
                                        .IRP    N,<\T$TEMP>
                                        M$WORD  T'N
                                        .ENDM
        002212                          M$WORD  T28
                                        .MCALL  M$GNINS
                                        .IRP    N,<T28>
                                        M$GNINS <.WORD  N>
                                        .ENDM
        002212                          M$GNINS <.WORD  T28>
```

```
                                .IF LT SVCINS
                                .WORD   T28
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
002212  075460                          .WORD   T28
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
                                                                                .WORD   T28
                                                .NLIST
                                .ENDC
        000035                  T$TEMP-T$TEMP + 1
        000010                  .RADIX  8

                                .IF NE HELP
                                ;%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%
                                ;       CHANGE THE ARGUMENT OF "DISPATCH" TO BE THE
                                ;       NUMBER OF HARDWARE TESTS IN YOUR PROGRAM.
                                ;%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%
                                .ENDC
```

```
                                   .SBTTL  DEFAULT HARDWARE P-TABLE

                                   ;++
                                   ; THE DEFAULT HARDWARE P-TABLE CONTAINS DEFAULT VALUES OF
                                   ; THE TEST-DEVICE PARAMETERS.  THE STRUCTURE OF THIS TABLE
                                   ; IS IDENTICAL TO THE STRUCTURE OF THE HARDWARE P-TABLES,
                                   ; AND IS USED AS A "TEMPLATE" FOR BUILDING THE P-TABLES.
                                   ;--

      002214                               BGNHW   DFPTBL
                                   .MCALL  M$PUSH,M$INCR,M$GNINS,M$GNGBL
      002214                       M$PUSH  T$NS,T$NESTLEV,F$HW
                                   .MCALL  M$INCR,M$SETS
      002214                       M$INCR  T$NESTLEV
              000001               T$NESTLEV=T$NESTLEV+1
      002214                       M$SETS  T$NS,\T$NESTLEV,F$HW
              000013               T$NS1=F$HW
              010000               T$$HW=T$TAGNUM
      002214                       M$INCR  T$TAGNUM
              010001               T$TAGNUM=T$TAGNUM+1
                                   .IRP    N,<\T$$HW>
                                   M$GNINS <.WORD  L'N-L$HW/2>
                                   .ENDM
      002214                       M$GNINS <.WORD  L10000-L$HW/2>
                                   .IF LT SVCINS
                                   .WORD   L10000-L$HW/2
                                   .MEXIT
                                   .ENDC
                                   .IF EQ SVCINS
                                   .LIST
      002214  000006                       .WORD   L10000-L$HW/2
                                                   .NLIST
                                   .MEXIT
                                   .ENDC
                                   .IF GT SVCINS
                                   .LIST
                                                                                          .WORD   L10000-L$HW/2
                                                   .NLIST
                                   .ENDC
      002216                       M$GNGBL L$HW
                                   .MCALL  M$GEN
                                   .IF NB,L$HW
                                   .IF NB,
                                   M$GEN   L$HW,:,SVCGBL,
                                   .ENDC
                                   .IF B,
      002216                       M$GEN   L$HW,:,SVCGBL,< >
                                   .IF LE  SVCGBL
                                   .IIF EQ SVCGBL,.LIST
      002216                       L$HW::
                                   .IIF EQ SVCGBL,.NLIST
                                   .MEXIT
                                   .ENDC
                                   .LIST
                                                                                  L$HW::
                                           .NLIST
                                   .ENDC
```

I7

```
                                 .ENDC
     002216                      M$GNGBL DFPTBL
                                 .MCALL  M$GEN
                                 .IF NB,DFPTBL
                                 .IF NB,
                                 M$GEN    DFPTBL,:,SVCGBL,
                                 .ENDC
                                 .IF B,
     002216                      M$GEN    DFPTBL,:,SVCGBL,< >
                                 .IF LE  SVCGBL
                                 .IIF EQ SVCGBL,.LIST
     002216                      DFPTBL::
                                 .IIF EQ SVCGBL,.NLIST
                                 .MEXIT
                                 .ENDC
                                 .LIST
                                                                   DFPTBL::
                                         .NLIST
                                 .ENDC
                                 .ENDC

                                 .IF NE HELP
                                 ;*****************************************************************
                                 ;       PLACE YOUR DEFAULT HARDWARE P-TABLE HERE.  THE VALUES AND
                                 ;       SIZE WILL BE USED AS A "TEMPLATE" FOR CREATING ACTUAL P TABLE
                                 ;       ENTRIES AND THE DEFAULT VALUES IN THE OPERATOR DIALOGUE.
                                 ;       THE ACTUAL P-TABLE BUILT AT RUNTIME IS STORED IN SUPERVISOR
                                 ;       SPACE.
                                 ;*****************************************************************
                                 .ENDC
     002216  164100                      .WORD   164100  ;1ST (OF 8) REGISTER ADDRESS          *C*
     002220  000270                      .WORD      270  ;1ST (OF 2) VECTOR ADDRESS            *C*
     002222  000300                      .WORD   PRI06   ;DEVICE PRIORITY LEVEL
     002224  000000                      .WORD      0    ;DEVICE PRIMARY ADDRESS FOR CH.1
     002226  000001                      .WORD      1    ;DEVICE PRIMARY ADDRESS FOR CH.2
     002230  000000                      .WORD      0    ;DEFAULT VALUE FOR TESTCABLE


     002232                              ENDHW
                                 .MCALL  M$POP,M$GNTAG,M$ENDERR
     002232                      M$POP   T$NS,T$NESTLEV,T$TEMP
                                 .MCALL  M$GETS,M$DECR
                                 .IF LT  T$NESTLEV
                                 .ERROR  T$NESTLEV       ; MACRO T$NS UNDERFLOW
                                 .MEXIT
                                 .ENDC
     002232                      M$GETS  T$NS,\T$NESTLEV,T$TEMP
             000013              T$TEMP=T$NS1
     002232                      M$DECR  T$NESTLEV
             000000              T$NESTLEV=T$NESTLEV-1
                                 .IF EQ  F$HW-T$TEMP
     002232                      M$GNTAG L,T$$HW
                                 .MCALL  M$GEN
     002232                      M$GEN   L,\T$$HW,SVCTAG
                                 .IF LE  SVCTAG
                                 .IIF EQ SVCTAG,.LIST
                                 ..10000:
```


J7

```
                                        .IIF EQ SVCTAG,.NLIST
                                        .MEXIT
                                        .ENDC
                                        .LIST
      002232                                                                              L10000:
                                              .NLIST
              010000                    S$LSYM=T$LSYM
                                        .IFF
                                        M$ENDERR        ENDHW,T$TEMP
                                        .ENDC
```

K7


```
                                .SBTTL  SOFTWARE P-TABLE

                                ;++
                                ; THE SOFTWARE TABLE CONTAINS VARIOUS DATA USED BY THE
                                ; PROGRAM AS OPERATIONAL PARAMETERS.  THESE PARAMETERS ARE
                                ; SET UP AT ASSEMBLY TIME AND MAY BE VARIED BY THE OPERATOR
                                ; AT RUN TIME.
                                ;--
002232                                  BGNSW   SFPTBL
                                .MCALL  M$PUSH,M$INCR,M$GNINS,M$GNGBL
002232                          M$PUSH  T$NS,T$NESTLEV,F$SW
                                .MCALL  M$INCR,M$SETS
002232                          M$INCR  T$NESTLEV
        000001                  T$NESTLEV=T$NESTLEV+1
002232                          M$SETS  T$NS,\T$NESTLEV,F$SW
        000014                  T$NS1=F$SW
        010001                  T$$SW=T$TAGNUM
002232                          M$INCR  T$TAGNUM
        010002                  T$TAGNUM=T$TAGNUM+1
                                .IRP    N,<\T$$SW>
                                M$GNINS <.WORD  L'N-L$SW/2>
                                .ENDM
002232                          M$GNINS <.WORD  L10001-L$SW/2>
                                .IF LT SVCINS
                                .WORD   L10001-L$SW/2
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
002232  000004                          .WORD   L10001-L$SW/2
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
                                                                                .WORD   L10001-L$SW/2
                                                .NLIST
                                .ENDC
002234                          M$GNGBL L$SW
                                .MCALL  M$GEN
                                .IF NB,L$SW
                                .IF NB,
                                M$GEN   L$SW,:,SVCGBL,
                                .ENDC
                                .IF B,
002234                          M$GEN   L$SW,:,SVCGBL,< >
                                .IF LE  SVCGBL
                                .IIF EQ SVCGBL,.LIST
002234                          L$SW::
                                .IIF EQ SVCGBL,.NLIST
                                .MEXIT
                                .ENDC
                                .LIST
                                                                        L$SW::
                                        .NLIST
                                .ENDC
                                .ENDC
```

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I 7

```
     002234                      M$GNGBL SFPTBL
                                 .MCALL  M$GEN
                                 .IF NB,SFPTBL
                                 .IF NB,
                                 M$GEN   SFPTBL,:,SVCGBL,
                                 .ENDC
                                 .IF B,
     002234                      M$GEN   SFPTBL,:,SVCGBL,< >
                                 .IF LE  SVCGBL
                                 .IIF EQ SVCGBL,.LIST
     002234                      SFPTBL::
                                 .IIF EQ SVCGBL,.NLIST
                                 .MEXIT
                                 .ENDC
                                 .LIST
                                                                          SFPTBL::
                                         .NLIST
                                 .ENDC
                                 .ENDC

                                 .IF NE HELP
                                 ;*******************************************************************
                                 ;       PLACE YOUR SOFTWARE P-TABLE HERE.  THIS TABLE
                                 ;       IS OPTIONAL.  THIS TABLE, UNLIKE THE HARDWARE TABLE, WILL CONTAIN
                                 ;       THE ACTUAL VALUES ENTERED BY THE OPERATOR.
                                 ;*******************************************************************
                                 .ENDC

     002234  000001              QVP::   .WORD   1       ;QUICK VERIFY SWITCH
     002236  000077              MCINP:: .WORD   63.     ;NUMBER OF DEFAULT MATCH CHARACTER COUNTS
     002240  003777              BCINP:: .WORD   2047.   ;NUMBER OF DEFAULT BYTE COUNTS IS 2047 DECIMA:
     002242  000000              MAINB:: .WORD   0       ;STANDBY TEST 28,DEFAULT IS NO
     002244                              ENDSW
                                 .MCALL  M$POP,M$GNTAG,M$ENDERR
     002244                      M$POP   T$NS,T$NESTLEV,T$TEMP
                                 .MCALL  M$GETS,M$DECR
                                 .IF LT  T$NESTLEV
                                 .ERROR  T$NESTLEV       ; MACRO T$NS UNDERFLOW
                                 .MEXIT
                                 .ENDC
     002244                      M$GETS  T$NS,\T$NESTLEV,T$TEMP
             000014              T$TEMP=T$NS1
     002244                      M$DECR  T$NESTLEV
             000000              T$NESTLEV=T$NESTLEV-1
                                 .IF EQ  F$SW-T$TEMP
     002244                      M$GNTAG L,T$$SW
                                 .MCALL  M$GEN
     002244                      M$GEN   L,\T$$SW,SVCTAG
                                 .IF LE  SVCTAG
                                 .IIF EQ SVCTAG,.LIST
                                 L10001:
                                 .IIF EQ SVCTAG,.NLIST
                                 .MEXIT
                                 .ENDC
                                 .LIST
     002244                                                               L10001:
                                         .NLIST
```

```
                    010000              S$LSYM=T$LSYM
                                        .IFF
                                        M$ENDERR        ENDSW,T$TEMP
                                        .ENDC

          002244                                ENDMOD
                                        .MCALL  M$POP,M$ENDERR
                                        .IF EQ  F$BGN-I$MOD
                    000041              I$MOD=F$END
                                        .IFF
                                        .ERROR  ; MISSING "BGNMOD"
                                        .MEXIT
                                        .ENDC
          002244                        M$POP   T$NS,T$NESTLEV,T$TEMP
                                        .MCALL  M$GETS,M$DECR
                                        .IF LT  T$NESTLEV
                                        .ERROR  T$NESTLEV       ; MACRO T$NS UNDERFLOW
                                        .MEXIT
                                        .ENDC
          002244                        M$GETS  T$NS,\T$NESTLEV,T$TEMP
                    000000              T$TEMP=T$NS0
          002244                        M$DECR  T$NESTLEV
                    177777              T$NESTLEV=T$NESTLEV-1
                                        .IF NE F$MOD-T$TEMP
                                        M$ENDERR        ENDMOD,T$TEMP
                                        .ENDC
```

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N7

```
                                .IIF NDF ONEFILE,.END

                                .NLIST
                                .NLIST  CND
          000000                HELP=0          ; CONTROL LISTING OF HELP INFORMATION
                                                ; HELP=0   NO LIST
                                                ; HELP=1   LIST

          000001                ONEFILE=1       ; CONTROL USE OF SOURCE FILES
                                                ; ONEFILE IS NOT DEFINED   ASSEMBLE EACH SOURCE FILE SEPARATELY
                                                ; ONEFILE=ANYTHING   ASSEMBLE ALL SOURCE FILES TOGETHER
                                .LIST
                                .TITLE GLOBAL AREAS
                                .SBTTL  GLOBAL EQUATES SECTION
                                .IF NDF ONEFILE
                                .IF EQ HELP
                                .NLIST
                                .ENDC

                                        .MCALL  SVC
                                        SVC                                     ; INITIALIZE SUPERVISOR MACROS

                                ;******************************************************************************
                                ;       IF STRUCTURED MACROS ARE TO BE USED, ADD ".MCALL STRUCT" AND "STRUCT"
                                ;       TO INITIALIZE THE STRUCTURED MACROS.

                                SVCINS= 1       ; LIST INSTRUCTIONS, SHIFTED RIGHT
                                SVCTST= 1       ; LIST TEST TAGS, SHIFTED RIGHT
                                SVCSUB= 1       ; LIST SUBTEST TAGS, SHIFTED RIGHT
                                SVCGBL= 1       ; LIST GLOBAL TAGS, SHIFTED RIGHT
                                SVCTAG= 1       ; LIST OTHER TAGS, SHIFTED RIGHT

                                ;       CHANGE THE VALUES OF THE SVC... SYMBOLS TO BE ZERO IF YOU WISH
                                ;       TO ALIGN THE MACRO CALLS AND THEIR EXPANSIONS.  CHANGE THE
                                ;       SYMBOLS TO BE MINUS ONE TO NOT LIST THE EXPANSIONS.  YOU
                                ;       CHANGE THE SYMBOLS AT ANY POINT IN YOUR PROGRAM.
                                ;******************************************************************************
                                .IF EQ HELP
                                .LIST
                                .ENDC
                                .ENDC

                                .IF NE HELP
                                ;******************************************************************************
                                ;       NOTE:   THE ASSEMBLER DIRECTIVE '.GLOBL' SHOULD NOT BE USED ANYWHERE IN
                                ;               YOUR DIAGNOSTIC PROGRAM.  INSTEAD, USE THE DOUBLE EQUATE (==) OR
                                ;               DOUBLE-COLON (::) TO DEFINE GLOBAL VALUES.  HELP-MESSAGES GIVEN
                                ;               BELOW EXPLAIN WHERE TO USE THE DOUBLE-EQUATE AND DOUBLE-COLON
                                ;               DIRECTIVES.
                                ;******************************************************************************
                                .ENDC

     002244                             BGNMOD
                                .MCALL  M$GNGBL,M$PUSH
                                .IF NE  F$END I$MOD
                                .ERROR  ;"BGNMOD" IN MOD
                                .MEXIT
```

```
                                .IFF
               000040           I$MOD=F$BGN
                                .ENDC
                                .IF NB
                                M$GNGBL
                                .ENDC
       002244                   M$PUSH  T$NS,T$NESTLEV,F$MOD
                                .MCALL  M$INCR,M$SETS
       002244                   M$INCR  T$NESTLEV
               000000           T$NESTLEV=T$NESTLEV+1
       002244                   M$SETS  T$NS,\T$NESTLEV,F$MOD
               000000           T$NS0=F$MOD

                                ;++
                                ; THE GLOBAL EQUATES SECTION CONTAINS PROGRAM EQUATES THAT
                                ; ARE USED IN MORE THAN ONE TEST.
                                ;--

                                        .IF NE HELP
                                ;*****************************************************************
                                ;       THE "EQUALS" MACRO DEFINES SOME COMMON SYMBOLS: BIT DEFINITIONS,
                                ;       SUPERVISOR EVENT FLAGS, SUPERVISOR FLAGS AND PROCESSOR PRIORITIES.
                                ;
                                ;       ADD TO THIS SECTION YOUR EQUATED VALUES THAT ARE USED IN MORE
                                ;       THAN ONE TEST.  EQUATES THAT ARE USED IN ONLY ONE TEST SHOULD BE
                                ;       PLACED AT THE FRONT OF THE TEST.
                                ;
                                ;       EQUATES THAT ARE ADDED TO THIS SECTION MUST BE DEFINED WITH A
                                ;       DOUBLE-EQUATE (==); THIS WILL MAKE THEM GLOBAL EQUATES.
                                ;       FOR EXAMPLE, AN ERROR STATUS BIT COULD BE DEFINED AS ERR==BIT15.
                                ;*****************************************************************
                                .ENDC

       002244                           EQUALS
                                .LIST
                                ;
                                ; BIT DIFINITIONS
                                ;
               100000           BIT15== 100000
               040000           BIT14== 40000
               020000           BIT13== 20000
               010000           BIT12== 10000
               004000           BIT11== 4000
               002000           BIT10== 2000
               001000           BIT09== 1000
               000400           BIT08== 400
               000200           BIT07== 200
               000100           BIT06== 100
               000040           BIT05== 40
               000020           BIT04== 20
               000010           BIT03== 10
               000004           BIT02== 4
               000002           BIT01== 2
               000001           BIT00== 1
                                ;
               001000           BIT9==  BIT09
               000400           BIT8==  BIT08
```

```
        000200                  BIT7==  BIT07
        000100                  BIT6==  BIT06
        000040                  BIT5==  BIT05
        000020                  BIT4==  BIT04
        000010                  BIT3==  BIT03
        000004                  BIT2==  BIT02
        000002                  BIT1==  BIT01
        000001                  BIT0==  BIT00
                                ;
                                ; EVENT FLAG DEFINITIONS
                                ;   EF32:EF17 RESERVED FOR SUPERVISOR TO PROGRAM COMMUNICATION
                                ;
        000040                  EF.START==      32.                     ; START COMMAND WAS ISSUED
        000037                  EF.RESTART==    31.                     ; RESTART COMMAND WAS ISSUED
        000036                  EF.CONTINUE==   30.                     ; CONTINUE COMMAND WAS ISSUED
        000035                  EF.NEW==        29.                     ; A NEW PASS HAS BEEN STARTED
        000034                  EF.PWR==        28.                     ; A POWER-FAIL/POWER-UP OCCURRED
                                ;
                                ;
                                ; PRIORITY LEVEL DEFINITIONS
                                ;
        000340                  PRI07== 340
        000300                  PRI06== 300
        000240                  PRI05== 240
        000200                  PRI04== 200
        000140                  PRI03== 140
        000100                  PRI02== 100
        000040                  PRI01== 40
        000000                  PRI00== 0
                                ;
                                ;OPERATOR FLAG BITS
                                ;
        000004                  EVL==         4
        000010                  LOT==        10
        000020                  ADR==        20
        000040                  IDU==        40
        000100                  ISR==       100
        000200                  UAM==       200
        000400                  BOE==       400
        001000                  PNT==      1000
        002000                  PRI==      2000
        004000                  IXE==      4000
        010000                  IBE==     10000
        020000                  IER==     20000
        040000                  LOE==     40000
        100000                  HOE==    100000
                                .NLIST
```

```
                                .SBTTL  GLOBAL DATA SECTION

                                ;++
                                ; THE GLOBAL DATA SECTION CONTAINS DATA THAT ARE USED
                                ; IN MORE THAN ONE TEST.
                                ;

                                .IF NE HELP
                                ;**************************************************************
                                ;       THE ERRTBL MACRO IS REQUIRED IF YOU INTEND TO REPORT ERRORS USING
                                ;       THE "ERROR" MACRO.  THE ERRTBL MACRO EXPANDS INTO FOUR WORDS THAT
                                ;       ARE USED BY THE RUNTIME SERVICES DURING AN ERROR CALL: ERROR TYPE,
                                ;       ERROR NUMBER, ADDRESS OF ERROR MESSAGE AND ADDRESS OF MESSAGE
                                ;       BLOCK.  THERE MUST BE ONLY ONE ERRTBL IN ANY PROGRAM.  THIS SECTION
                                ;       IS OPTIONAL.  REMOVE IF IT IF YOU ARE NOT GOING TO USE THE ERROR
                                ;       MACRO.  CHANGE THE POINTER MACRO TO REFLECT THIS SECTION'S DEL-
                                ;       ETION IF YOU REMOVE IT.
                                ;**************************************************************
                                .ENDC


                                ;************************************************
                                ;IEX11 VECTOR AND REGISTER INDIRECT POINTERS
                                ;************************************************
002244  000000                  VECC1::         .WORD   0               ;INTERRUPT VECTOR FOR CHANNEL 1
002246  000000                  VECC2::         .WORD   0               ;INTERRUPT VECTOR FOR CHANNEL 2
002250  000000                  IIRX::          .WORD   0               ;POINTER TO IEEE INTERRUPT REGISTER
002252  000000                  IIRLX::         .WORD   0               ;POINTER TO LOW BYTE OF IIR REGISTER
002254  000000                  IIRHX::         .WORD   0               ;POINTER TO HIGH BYTE OF INTERRUPT REGISTER
002256  000000                  ISRX::          .WORD   0               ;POINTER TO IEEE STATUS REGISTER
002260  000000                  ISRLX::         .WORD   0               ;POINTER TO LOW BYTE OF ISR REGISTER
002262  000000                  ISRHX::         .WORD   0               ;POINTER TO HIGH BYTE OF STATUS REGISTER
002264  000000                  ICRX::          .WORD   0               ;POINTER TO IEEE COMMAND REGISTER
002266  000000                  ICRLX::         .WORD   0               ;POINTER TO LOW BYTE OF ICR REGISTER
002270  000000                  ICRHX::         .WORD   0               ;POINTER TO HIGH BYTE OF COMMAND REGISTER
002272  000000                  IDRX::          .WORD   0               ;POINTER TO IEEE DATA REGISTER
002274  000000                  IDRLX::         .WORD   0               ;POINTER TO LOW BYTE OF IDR REGISTER
002276  000000                  IDRHX::         .WORD   0               ;POINTER TO HIGH BYTE OF DATA REGISTER
002300  000000                  CSRX::          .WORD   0               ;POINTER TO CONTROL & STATUS REGISTER
002302  000000                  BARX::          .WORD   0               ;POINTER TO BUS ADDRESS REGISTER
002304  000000                  BCRX::          .WORD   0               ;POINTER TO BYTE COUNT REGISTER
002306  000000                  MCRX::          .WORD   0               ;POINTER TO MATCH CHARACTER REGISTER
002310  000000                  MCRHX::         .WORD   0               ;POINTER TO HIGH BYTE OF MCR REGISTER
002312  000000                  DPA1::          .WORD   0               ;POINTER TO DEVICE PRIMARY ADDRESS FOR CH.1
002314  000000                  DPA2::          .WORD   0               ;POINTER TO DEVICE PRIMARY ADDRESS FOR CH.2
002316  000000                  PLEV::          .WORD   0               ;POINTER TO THE PRIORITY LEVEL
                                ;
                                ;************************************************
                                ;PROGRAM CONTROL PARAMETERS
                                ;************************************************
002320  000004                  ITRDEF::        .WORD   4               ;ITERATION DEFAULT      *C*
002322  000000                  ITRCNT::        .WORD   0               ;ITERATION COUNTER
                                ;
                                ;************************************************
                                ;PROGRAM VARIABLES
                                ;************************************************
002324  000000                  PNTF::          .WORD   0               ;FLAG FOR TEST HEADER PRINTOUT
```

```
002326 000000    NXMFLG::    .WORD  0    ;FLAG USED WHEN ADDRESS IS NXM.
002330 000000    MM22::      .WORD  0    ;FLAG INDICATING 22 BIT MMU
002332 000000    MMFLG::     .WORD  0    ;FLAG TO SEE IF MEMORY MANAGEMENT THERE
002334 000000    PHHIGH::    .WORD  0    ;LOCATION FOR MEMORY SIZE
002336 000000    PHLOW::     .WORD  0    ;LOCATION FOR MEMORY SIZE
002340 000000    VIADD::     .WORD  0    ;LOCATION FOR VIRTUAL MEMORY SIZE
002342 000000    PHHSIZ::    .WORD  0    ;LOCATION FOR MEMORY SIZE
002344 000000    PHLSIZ::    .WORD  0    ;LOCATION FOR MEMORY SIZE
002346 000000    SIZEPA::    .WORD  0    ;LOCATION FOR MEMORY SIZE IN PAGE FORM
002350 000000    MASK::      .WORD  0    ; BIT MASK OF READ/WRITE BITS
002352 000000    MASCOM::    .WORD  0    ; COMPLEMENT OF MASK
002354 000000    REGADD::    .WORD  0    ; ADDRESS OF REGISTER TO BE TESTED
002356 000000    BUFAB::     .WORD  0    ;LOCATION FOR START ADDR. OF BUFFER A
002360 000000    BUFBB::     .WORD  0    ;LOCATION FOR START ADDR. OF BUFFER B
002362 000000    CSRMSK::    .WORD  0    ;WORK LOCATION USED IN TEST 27
002364 000000    CSRMS1::    .WORD  0    ;WORK LOCATION USED IN TEST 27
002366 000000    CSRMS2::    .WORD  0    ;WORK LOCATION USED IN TEST 27
002370 000000    ANS::       .WORD  0    ;STORE FOR OPERATOR ANSWER USED IN T28
002372 000000    LOGDEV::    .WORD  0    ;LOGICAL DEVICE NUMBER
002374 000000    CHAN::      .WORD  0    ;FLAG FOR CHANNEL
002376 000000    INTFC1::    .WORD  0    ;INTERRUPT FLAG FOR CHA.1.
002400 000000    INTFC2::    .WORD  0    ;INTERRUPT FLAG FOR CHA.2
002402 000000    RSAVE::     .WORD  0    ;TEMPORARY LOCATION TO SAVE DATA
002404 000000    CNT1::      .WORD  0    ;COUNTER USED IN TEST 23-26
002406 000000    SDPA::      .WORD  0    ;TEMPORARY STORE TO SAVE DEVICE PRIM. ADDR.
002410 000000    MLA1::      .WORD  0    ;STORE TO SAVE MY LISTENER ADDRESS
002412 000000    MLA2::      .WORD  0    ;STORE TO SAVE MY LISTENER ADDRESS
002414 000000    MTA1::      .WORD  0    ;STORE TO SAVE MY TALKER ADDRESS CH.1
002416 000000    MTA2::      .WORD  0    ;STORE TO SAVE MY TALKER ADDRESS CH.2
002420 000000    MSA1::      .WORD  0    ;STORE TO SAVE MSA
002422 000000    RXADRH::    .WORD  0    ;LOCATION FOR RX HIGH ADDRESS
002424 000000    RXADRL::    .WORD  0    ;LOCATION FOR RX LOW ADDRESS
002426 000000    TXADRH::    .WORD  0    ;LOCATION FOR DMA TX HIGH ADDRESS
002430 000000    TXADRL::    .WORD  0    ;LOCATION FOR DMA TX LOW ADDRESS
002432 000000    ERNU::      .WORD  0    ;LINE COUNTER FOR ERROR PRINTOUT
002434 000000    CDAT1::     .WORD  0    ;VARIABLE COMPARE DATA FOR ISR REGISTER
002436 000000    CDAT2::     .WORD  0    ;VARIABLE COMPARE DATA FOR ISR REGISTER
002440 000000    CDAT3::     .WORD  0    ;VARIABLE COMPARE DATA FOR ISR REGISTER
002442 000000    CDAT4::     .WORD  0    ;VARIABLE COMPARE DATA FOR ISR REGISTER
002444 000000    CDAT5::     .WORD  0    ;VARIABLE COMPARE DATA FOR ISR REGISTER
002446 000000    CDAT6::     .WORD  0    ;VARIABLE COMPARE DATA FOR ISR REGISTER
002450 000000    CDAT7::     .WORD  0    ;VARIABLE COMPARE DATA FOR ISR REGISTER
002452 000000    CDAT8::     .WORD  0    ;VARIABLE COMPARE DATA FOR ISR REGISTER
002454 000000    CDAT9::     .WORD  0    ;VARIABLE COMPARE DATA FOR ISR REGISTER
002456 000000    CDAT10::    .WORD  0    ;VARIABLE COMPARE DATA FOR ISR REGISTER
002460 000000    CDAT11::    .WORD  0    ;VARIABLE COMPARE DATA FOR ISR REGISTER
002462 000000    CDAT12::    .WORD  0    ;VARIABLE COMPARE DATA FOR ISR REGISTER
002464 000000    CDAT13::    .WORD  0    ;VARIABLE COMPARE DATA FOR ISR REGISTER
002466 000000    CDAT14::    .WORD  0    ;VARIABLE COMPARE DATA FOR ISR REGISTER
002470 000000    CDAT15::    .WORD  0    ;VARIABLE COMPARE DATA FOR ISR REGISTER
002472 000000    CDAT16::    .WORD  0    ;VARIABLE COMPARE DATA FOR ISR REGISTER
002474 000000    CDAT17::    .WORD  0    ;VARIABLE COMPARE DATA FOR ISR REGISTER
002476 000000    CDAT18::    .WORD  0    ;VARIABLE COMPARE DATA FOR ISR REGISTER
                 ;
                 ;*************************************************
                 ;ERROR VARIABLES
                 ;*************************************************
```

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```
002500  000000                    GOOD::          .WORD   0               ;WORD USED FOR ERROR PRINTOUT
002502  000000                    BAD::           .WORD   0               ;WORD USED FOR ERRCR PRINTOUT
002504                                    ERRTBL
                                  .MCALL  M$GNGBL
002504                            M$GNGBL L$ERRTBL
                                  .MCALL  M$GEN
                                  .IF NB,L$ERRTBL
                                  .IF NB,
                                  M$GEN   L$ERRTBL,:,SVCGBL,
                                  .ENDC
                                  .IF B,
002504                            M$GEN   L$ERRTBL,:,SVCGBL,< >
                                  .IF LE  SVCGBL
                                  .IIF EQ SVCGBL,.LIST
002504                            L$ERRTBL::
                                  .IIF EQ SVCGBL,.NLIST
                                  .MEXIT
                                  .ENDC
                                  .LIST
                                                                                  L$ERRTBL::
                                          .NLIST
                                  .ENDC
                                  .ENDC
                                  .LIST
002504  000000                    ERRTYP::        .WORD   0
002506  000000                    ERRNBR::        .WORD   0
002510  000000                    ERRMSG::        .WORD   0
002512  000000                    ERRBLK::        .WORD   0
                                          .NLIST
                                  ;
                                  ;**********************************************************************
                                  ;TABLE AREA FOR MCR FUNTIONS (TEST 25,26)
                                  ;**********************************************************************
                                          .NLIST BEX
002514    050   050   050         TABD::          .BYTE   50,50,50,50,50,50,50,50,50              ;9DATA,63 EOS
002525    125   125   125                         .BYTE   125,125,125,125,125,125,125,125,125,125
002537    125   125   125                         .BYTE   125,125,125,125,125,125,125,125,125,125
002551    125   125   125                         .BYTE   125,125,125,125,125,125,125,125,125,125
002563    125   125   125                         .BYTE   125,125,125,125,125,125,125,125,125,125
002575    125   125   125                         .BYTE   125,125,125,125,125,125,125,125,125,125
002607    125   125   125                         .BYTE   125,125,125,125,125,125,125,125,125,125
002621    125   125   125                         .BYTE   125,125,125
                                                  .EVEN

002624  000007                    TABE::          .REPT   7                                       ;72 DATA BYTES
                                                  .BYTE   0,0,0,0,0,0,0,0,0,0
                                                  .ENDR
002624    000   000   000                         .BYTE   0,0,0,0,0,0,0,0,0,0
002636    000   000   000                         .BYTE   0,0,0,0,0,0,0,0,0,0
002650    000   000   000                         .BYTE   0,0,0,0,0,0,0,0,0,0
002662    000   000   000                         .BYTE   0,0,0,0,0,0,0,0,0,0
002674    000   000   000                         .BYTE   0,0,0,0,0,0,0,0,0,0
002706    000   000   000                         .BYTE   0,0,0,0,0,0,0,0,0,0
002720    000   000   000                         .BYTE   0,0,0,0,0,0,0,0,0,0
002732    000   000                               .BYTE   0,0
                                                  .EVEN
```

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```
002734     050    050    050  TABF::          .BYTE   50,50,50,50,50,50,50,50,50            ;9 DA^A,63 EOS
        000006                                .REPT   6
                                              .BYTE   177,177,177,177,177,177,177,177,177,177
                                              .ENDR
002745     177    177    177                  .BYTE   177,177,177,177,177,177,177,177,177,177
002757     177    177    177                  .BYTE   177,177,177,177,177,177,177,177,177,177
002771     177    177    177                  .BYTE   177,177,177,177,177,177,177,177,177,177
003003     177    177    177                  .BYTE   177,177,177,177,177,177,177,177,177,177
003015     177    177    177                  .BYTE   177,177,177,177,177,177,177,177,177,177
003027     177    177    177                  .BYTE   177,177,177,177,177,177,177,177,177,177
003041     177    177    177                  .BYTE   177,177,177
                                              .EVEN

003044     012    012    050  TABG::          .BYTE   12,12,50,12,12,12                    ;2EOS,1DATA,63EOS
        000006                                .REPT   6
                                              .BYTE   12,12,12,12,12,12,12,12,12,12
                                              .ENDR
003052     012    012    012                  .BYTE   12,12,12,12,12,12,12,12,12,12
003064     012    012    012                  .BYTE   12,12,12,12,12,12,12,12,12,12
003076     012    012    012                  .BYTE   12,12,12,12,12,12,12,12,12,12
003110     012    012    012                  .BYTE   12,12,12,12,12,12,12,12,12,12
003122     012    012    012                  .BYTE   12,12,12,12,12,12,12,12,12,12
003134     012    012    012                  .BYTE   12,12,12,12,12,12,12,12,12,12
                                              .EVEN

003146     000    000    000  TABH::          .BYTE   0,0,0,0,0,0                          ;66 DATA BYTES
        000006                                .REPT   6
                                              .BYTE   0,0,0,0,0,0,0,0,0,0
                                              .ENDR
003154     000    000    000                  .BYTE   0,0,0,0,0,0,0,0,0,0
003166     000    000    000                  .BYTE   0,0,0,0,0,0,0,0,0,0
003200     000    000    000                  .BYTE   0,0,0,0,0,0,0,0,0,0
003212     000    000    000                  .BYTE   0,0,0,0,0,0,0,0,0,0
003224     000    000    000                  .BYTE   0,0,0,0,0,0,0,0,0,0
003236     000    000    000                  .BYTE   0,0,0,0,0,0,0,0,0,0
                                              .EVEN

003250     025    025    050  TABK::          .BYTE   25,25,50,25,25,25                    ;2 EOS,1 DATABYTE,63 EOS
        000006                                .REPT   6
                                              .BYTE   25,25,25,25,25,25,25,25,25,25
                                              .ENDR
003256     025    025    025                  .BYTE   25,25,25,25,25,25,25,25,25,25
003270     025    025    025                  .BYTE   25,25,25,25,25,25,25,25,25,25
003302     025    025    025                  .BYTE   25,25,25,25,25,25,25,25,25,25
003314     025    025    025                  .BYTE   25,25,25,25,25,25,25,25,25,25
003326     025    025    025                  .BYTE   25,25,25,25,25,25,25,25,25,25
003340     025    025    025                  .BYTE   25,25,25,25,25,25,25,25,25,25
                                              .EVEN
                                        .LIST BEX
```

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```
                                        .SBTTL  GLOBAL TEXT SECTION

                                        ;++
                                        ; THE GLOBAL TEXT SECTION CONTAINS FORMAT STATEMENTS,
                                        ; MESSAGES, AND ASCII INFORMATION THAT ARE USED IN
                                        ; MORE THAN ONE TEST.
                                        ;--

                                        ;*************************************************
                                        ; NAMES OF DEVICES SUPPORTED BY PROGRAM
                                        ;*************************************************

     003352                                     DEVTYP  <IEU11 FOR UNIBUS \IEQ11 FOR Q-BUS>
                                        .MCALL M$DATA,M$GNINS
     003352                             M$DATA L$DVTYP,.ASCIZ,</IEU11 FOR UNIBUS \IEQ11 FOR Q-BUS/>
                                        .MCALL  M$GNGBL,M$GNINS
                                        .IF NB
                                        M$GNGBL L$DVTYP,<>
                                        .ENDC
                                        .IF B
     003352                             M$GNGBL L$DVTYP
                                        .MCALL  M$GEN
                                        .IF NB,L$DVTYP
                                        .IF NB,
                                        M$GEN   L$DVTYP,:,SVCGBL,
                                        .ENDC
                                        .IF B,
     003352                             M$GEN   L$DVTYP,:,SVCGBL,< >
                                        .IF LE  SVCGBL
                                        .IIF EQ SVCGBL,.LIST
     003352                             L$DVTYP::
                                        .IIF EQ SVCGBL,.NLIST
                                        .MEXIT
                                        .ENDC
                                        .LIST
                                                                                    L$DVTYP::
                                                .NLIST
                                        .ENDC
                                        .ENDC
                                        .ENDC
     003352                             M$GNINS <.ASCIZ /IEU11 FOR UNIBUS \IEQ11 FOR Q BUS/>
                                        .IF LT SVCINS
                                        .ASCIZ  /IEU11 FOR UNIBUS \IEQ11 FOR Q BUS/
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
     003352    111     105     125              .ASCIZ  /IEU11 FOR UNIBUS \IEQ11 FOR Q-BUS/
     003355    061     061     040
     003360    106     117     122
     003363    040     125     116
     003366    111     102     125
     003371    123     040     134
     003374    111     105     121
     003377    061     061     040
     003402    106     117     122
     003405    040     121     055
```

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```
        003410    102     125     123
        003413    000
                                                .NLIST
                                      .MEXIT
                                      .ENDC
                                      .IF GT SVCINS
                                      .LIST
                                                                                     .ASCIZ  /IEU11 FOR UNIBUS \I
EQ11 FOR Q-BUS/
                                                .NLIST
                                      .ENDC
        003414                        M$GNINS .EVEN
                                      .IF LT SVCINS
                                      .EVEN
                                      .MEXIT
                                      .ENDC
                                      .IF EQ SVCINS
                                      .LIST
                                           .EVEN
                                                .NLIST
                                      .MEXIT
                                      .ENDC
                                      .IF GT SVCINS
                                      .LIST
                                                                                     .EVEN
                                                .NLIST
                                      .ENDC
                                      .IF NE HELP
                                      ;*****************************************************************
                                      ;      INSERT INTO THE <> THE NAMES OF THE DEVICES TO BE TESTED.
                                      ;*****************************************************************
                                      .ENDC
                                      ;**************************************************
                                      ; TITEL OF PROGRAM
                                      ;**************************************************

        003414                             DESCRIPT         <IEU11\IEQ11 DIAGNOSTIC>
                                      .MCALL  M$DATA,M$GNINS
        003414                        M$DATA  L$DESC,.ASCIZ,</IEU11\IEQ11 DIAGNOSTIC/>
                                      .MCALL  M$GNGBL,M$GNINS
                                      .IF NB
                                      M$GNGBL L$DESC,<>
                                      .ENDC
                                      .IF B
        003414                        M$GNGBL L$DESC
                                      .MCALL  M$GEN
                                      .IF NB,L$DESC
                                      .IF NB,
                                      M$GEN   L$DESC,:,SVCGBL,
                                      .ENDC
                                      .IF B,
        003414                        M$GEN   L$DESC,:,SVCGBL,< >
                                      .IF LE  SVCGBL
                                      .IIF EQ SVCGBL,.LIST
        003414                        L$DESC::
                                      .IIF EQ SVCGBL,.NLIST
                                      .MEXIT
```

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```
                                                .ENDC
                                                .LIST
                                                                                                    L$DESC::
                                                        .NLIST
                                                .ENDC
                                                .ENDC
                                                .ENDC
        003414                                  M$GNINS <.ASCIZ /IEU11\IEQ11 DIAGNOSTIC/>
                                                .IF LT SVCINS
                                                .ASCIZ  /IEU11\IEQ11 DIAGNOSTIC/
                                                .MEXIT
                                                .ENDC
                                                .IF EQ SVCINS
                                                .LIST
        003414     111     105     125                  .ASCIZ  /IEU11\IEQ11 DIAGNOSTIC/
        003417     061     061     134
        003422     111     105     121
        003425     061     061     040
        003430     104     111     101
        003433     107     116     117
        003436     123     124     111
        003441     103     000
                                                                .NLIST
                                                .MEXIT
                                                .ENDC
                                                .IF GT SVCINS
                                                .LIST
                                                                                                            .ASCIZ  /IEU11\IEQ11 DIAGNOS
TIC/
                                                                .NLIST
                                                .ENDC
        003443                                  M$GNINS .EVEN
                                                .IF LT SVCINS
                                                .EVEN
                                                .MEXIT
                                                .ENDC
                                                .IF EQ SVCINS
                                                .LIST
                                                        .EVEN
                                                                .NLIST
                                                .MEXIT
                                                .ENDC
                                                .IF GT SVCINS
                                                .LIST
                                                                                                            .EVEN
                                                                .NLIST
                                                .ENDC

                                                        .EVEN

                                                .IF NE HELP
                                                ;*************************************************************************
                                                ;       INSERT AN ASCII STRING INTO <> THAT IDENTIFIES THE DIAGNOSTIC.
                                                ;       FOR EXAMPLE: DESCRIPT <DIAGNOSTIC SUPERVISOR SKELETON PROGRAM>
                                                ;*************************************************************************
                                                .ENDC

                                                ;
```

```
                                ; FORMAT STATEMENTS USED IN PRINT CALLS
                                ;
                                .IF NE HELP
                                ;***********************************************************************
                                ;       INSERT THE FORMAT STATEMENTS USED IN THE VARIOUS PRINT CALLS.
                                ;       FORMAT STATEMENTS ARE ASCIZ STRINGS USED BY THE RUNTIME
                                ;       SERVICES TO BUILD MESSAGES.  FORMAT STATEMENTS ARE DESCRIBED
                                ;       IN THE SUPERVISOR PROGRAMMER'S MANUAL.
                                ;
                                ;       THE PRINT CALLS (PRINTB AND PRINTX) ARE IN THE NEXT SECTION.
                                ;***********************************************************************
                                .ENDC

                                .IF NE HELP
                                ;***********************************************************************
                                ;     LABELS ATTACHED TO ASCII MESSAGES PLACED IN THIS SECTION MUST BE DEFINED
                                ;     WITH A DOUBLE-COLON (::); THIS WILL MAKE THEM GLOBAL LABELS.  FOR EXAMPLE,
                                ;     A MESSAGE COULD BE DEFINED AS DTAERR:: .ASCIZ 'DATA ERROR OCCURRED'.
                                ;***********************************************************************
                                .ENDC
          000001                        SVCGBL= 1
          000001                        SVCINS= 1
```

```
                                .SBTTL  GLOBAL ERROR REPORT SECTION

                                ;++
                                ; THE GLOBAL ERROR REPORT SECTION CONTAINS MESSAGE PRINTING AREAS
                                ; USED BY MORE THAN ONE TEST TO OUTPUT ADDITIONAL ERROR INFORMATION.  PRINTB
                                ; (BASIC) AND PRINTX (EXTENDED) CALLS ARE USED TO CALL PRINT SERVICES.
                                ;--


 003444                                 BGNMSG  ERR101
                                .MCALL  M$PUSH,M$INCR,M$GNGBL
          000040                I$MSG=F$BGN
 003444                         M$PUSH  T$NS,T$NESTLEV,F$MSG
                                .MCALL  M$INCR,M$SETS
 003444                         M$INCR  T$NESTLEV
          000001                T$NESTLEV=T$NESTLEV+1
 003444                         M$SETS  T$NS,\T$NESTLEV,F$MSG
          000011                T$NS1=F$MSG
          010002                T$$MSG=T$TAGNUM
 003444                         M$INCR T$TAGNUM
          010003                T$TAGNUM=T$TAGNUM+1
 003444                         M$GNGBL ERR101
                                .MCALL  M$GEN
                                .IF NB,ERR101
                                .IF NB,
                                M$GEN   ERR101,:,SVCGBL,
                                .ENDC
                                .IF B,
 003444                         M$GEN   ERR101,:,SVCGBL,< >
                                .IF LE  SVCGBL
                                .IIF EQ SVCGBL,.LIST
                                ERR101::
                                .IIF EQ SVCGBL,.NLIST
                                .MEXIT
                                .ENDC
                                .LIST
 003444                                                                         ERR101::
                                         .NLIST
                                .ENDC
                                .ENDC
 003444                                 PRINTB  #EMG101,R1
                                .MCALL  M$PRINT
                                .IF B   #EMG101
                                .ERROR  ;MISSING FORMAT
                                .MEXIT
                                .ENDC
                                .IF B   <R1>
                                M$PRINT C$PNTB,#EMG101
                                .MEXIT
                                .ENDC
                                .IF B   <>
 003444                         M$PRINT C$PNTB,#EMG101,<R1>
                                .MCALL  M$COUNT,M$PUT,M$GNINS,M$SVC
          000001                T$ARGCNT=1
 003444                         M$COUNT T$ARGCNT,<R1>,<>,<>,<>,<>,<>,<>,<>
                                .IF NB <>
                                M$COUNT T$ARGCNT,<>,<>,<>,<>,<>,<>,<>,<>
```

```
                                .ENDC
                                .IF NB <R1>
                000002          T$ARGCNT=T$ARGCNT+1
                                .ENDC
                                .IRP    N,<\T$ARGCNT>
                                M$PUT   #N,#EMG101,<R1>,<>,<>,<>,<>,<>,<>,<>
                                .ENDM
        003444                  M$PUT   #2,#EMG101,<R1>,<>,<>,<>,<>,<>,<>,<>
                                .MCALL  M$PUT1
                                .IF NB  <#EMG101>
        003444                  M$PUT   <#EMG101>,<R1>,<>,<>,<>,<>,<>,<>,<>
                                .MCALL  M$PUT1
                                .IF NB  <R1>
        003444                  M$PUT   <R1>,<>,<>,<>,<>,<>,<>,<>,<>
                                .MCALL  M$PUT1
                                .IF NB  <>
                                M$PUT   <>,<>,<>,<>,<>,<>,<>,<>,<>
                                .ENDC
                                .IF NB  <R1>
        003444                  M$PUT1  R1
                                .MCALL  M$GNINS
                                .IF B
        003444                  M$GNINS <MOV    R1,-(SP)>
                                .IF LT SVCINS
                                MOV     R1,-(SP)
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        MOV     R1,-(SP)
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
        003444  010146                                                      MOV     R1,-(SP)
                                                .NLIST
                                .ENDC
                                .IFF
                                .IF DIF B,<R1>
                                .ERROR  ;ILL. ARG. "R1" ONLY "B" IS ALLOWED.
                                .MEXIT
                                .ENDC
                                M$GNINS <CLR    -(SP)>
                                M$GNINS <BISB   ,(SP)>
                                .ENDC
                                .ENDC
                                .ENDC
                                .IF NB  <#EMG101>
        003446                  M$PUT1  #EMG101
                                .MCALL  M$GNINS
                                .IF B
        003446                  M$GNINS <MOV    #EMG101, (SP)>
                                .IF LT SVCINS
                                MOV     #EMG101,-(SP)
                                .MEXIT
                                .ENDC
```


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```
                                .IF EQ SVCINS
                                .LIST
                                        MOV     #EMG101,-(SP)
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
003446  012746  004106                                                  MOV     #EMG101,-(SP)
                                                .NLIST
                                .ENDC
                                .IFF
                                .IF DIF B,<#EMG101>
                                .ERROR  ;ILL. ARG. "#EMG101" ONLY "B" IS ALLOWED.
                                .MEXIT
                                .ENDC
                                M$GNINS <CLR    -(SP)>
                                M$GNINS <BISB   ,(SP)>
                                .ENDC
                                .ENDC
                                .ENDC
                                .IF NB  <#2>
003452                          M$PUT1  #2
                                .MCALL  M$GNINS
                                .IF B
003452                          M$GNINS <MOV    #2,-(SP)>
                                .IF LT SVCINS
                                MOV     #2,-(SP)
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        MOV     #2,-(SP)
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
003452  012746  000002                                                  MOV     #2,-(SP)
                                                .NLIST
                                .ENDC
                                .IFF
                                .IF DIF B,<#2>
                                .ERROR  ;ILL. ARG. "#2" ONLY "B" IS ALLOWED.
                                .MEXIT
                                .ENDC
                                M$GNINS <CLR    -(SP)>
                                M$GNINS <BISB   ,(SP)>
                                .ENDC
                                .ENDC
003456                          M$GNINS <MOV    SP,R0>
                                .IF LT SVCINS
                                MOV     SP,R0
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
```

P9


```
                                                MOV     SP,R0
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
    003456  010600                                                                  MOV     SP,R0
                                                        .NLIST
                                        .ENDC
    003460                              M$SVC   C$PNTB
                                        .MCALL  M$GNINS,M$TSTLAB
    003460                              M$TSTLAB
                                        .MCALL  M$TLABEL,M$INCR
                                        .IIF LT T$TSTMAC, .MEXIT
                                        .RADIX  10
                                        M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                        .RADIX  8
                                        M$INCR  T$TSTSEQ
    003460                              M$GNINS <TRAP   C$PNTB>
                                        .IF LT SVCINS
                                        TRAP    C$PNTB
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                TRAP    C$PNTB
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
    003460  104414                                                                  TRAP    C$PNTB
                                                        .NLIST
                                        .ENDC
                                        .IRP    N,<\T$ARGCNT*2+2>
                                        M$GNINS <ADD    #N,SP>
                                        .ENDM
    003462                              M$GNINS <ADD    #6,SP>
                                        .IF LT SVCINS
                                        ADD     #6,SP
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                ADD     #6,SP
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
    003462  062706  000006                                                          ADD     #6,SP
                                                        .NLIST
                                        .ENDC
                                        .MEXIT
                                        .ENDC
                                        .IF B   <>
                                        M$PRINT C$PNTB,#EMG101,<R1>,<>
```

C9

```
                        .MEXIT
                        .ENDC
                        .IF B   <>
                        M$PRINT C$PNTB,#EMG101,<R1>,<>,<>
                        .MEXIT
                        .ENDC
                        .IF B   <>
                        M$PRINT C$PNTB,#EMG101,<R1>,<>,<>,<>
                        .MEXIT
                        .ENDC
                        .IF B   <>
                        M$PRINT C$PNTB,#EMG101,<R1>,<>,<>,<>,<>
                        .MEXIT
                        .ENDC
                        .IF B   <>
                        M$PRINT C$PNTB,#EMG101,<R1>,<>,<>,<>,<>,<>
                        .MEXIT
                        .ENDC
                        .IF B   <>
                        M$PRINT C$PNTB,#EMG101,<R1>,<>,<>,<>,<>,<>,<>
                        .MEXIT
                        .ENDC
                        M$PRINT C$PNTB,#EMG101,<R1>,<>,<>,<>,<>,<>,<>,<>
1519 003466                     ENDMSG
                        .MCALL  M$POP,M$GNTAG,M$SVC,M$ENDERR
     003466             M$POP   T$NS,T$NESTLEV,T$TEMP
                        .MCALL  M$GETS,M$DECR
                        .IF LT  T$NESTLEV
                        .ERROR  T$NESTLEV       ; MACRO T$NS UNDERFLOW
                        .MEXIT
                        .ENDC
     003466             M$GETS  T$NS,\T$NESTLEV,T$TEMP
            000011      T$TEMP=T$NS1
     003466             M$DECR  T$NESTLEV
            000000      T$NESTLEV=T$NESTLEV-1
                        .IF EQ F$MSG-T$TEMP
     003466             M$GNTAG L,T$$MSG
                        .MCALL  M$GEN
     003466             M$GEN   L,\T$$MSG,SVCTAG
                        .IF LE  SVCTAG
                        .IIF EQ SVCTAG,.LIST
                        L10002:
                        .IIF EQ SVCTAG,.NLIST
                        .MEXIT
                        .ENDC
                        .LIST
     003466                                                         L10002:
                                .NLIST
            010000      S$LSYM=T$LSYM
     003466             M$SVC   C$MSG
                        .MCALL  M$GNINS,M$TSTLAB
     003466             M$TSTLAB
                        .MCALL  M$TLABEL,M$INCR
                        .IIF LT T$TSTMAC, .MEXIT
                        .RADIX  10
                        M$TLABEL        \T$TESTNUM,\T$TSTSEQ
                        .RADIX  8
```

D9

```
                                M$INCR  T$TSTSEQ
     003466                     M$GNINS <TRAP   C$MSG>
                                .IF LT SVCINS
                                TRAP    C$MSG
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        TRAP    C$MSG
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
     003466  104423                                                                 TRAP    C$MSG
                                                .NLIST
                                .ENDC
             000041             I$MSG=F$END
                                .IFF
                                M$ENDERR        ENDMSG,T$TEMP
                                .ENDC



                                .IF NE HELP
                                ;***********************************************************************
                                ;       THESE MESSAGE AREAS ARE USED TO OUTPUT SUPPLEMENTARY INFORMATION
                                ;       AFTER AN ERROR CALL.  THEY ARE INVOKED BY APPENDING THE NAME
                                ;       OF THE AREA TO AN ERROR CALL:  ERRXXX 1,ERRORMESSAGE,AREANAME.
                                ;       THE CORRESPONDING MESSAGE AREA IS SET UP IN THIS SECTION:
                                ;               BGNMSG  AREANAME
                                ;               [CODE]
                                ;               ENDMSG
                                ;
                                ;       THE AREAS IN THIS SECTION ARE FOR MESSAGES USED IN MORE THAN ONE
                                ;       TEST.  USE THE PRINTB (PRINT BASIC) AND PRINTX (PRINT EXTENDED)
                                ;       MACROS.
                                ;***********************************************************************
                                .ENDC
     003470                             BGNMSG  ERR201
                                .MCALL  M$PUSH,M$INCR,M$GNGBL
             000040             I$MSG=F$BGN
     003470                     M$PUSH  T$NS,T$NESTLEV,F$MSG
                                .MCALL  M$INCR,M$SETS
     003470                     M$INCR  T$NESTLEV
             000001             T$NESTLEV=T$NESTLEV+1
     003470                     M$SETS  T$NS,\T$NESTLEV,F$MSG
             000011             T$NS1=F$MSG
             010003             T$$MSG=T$TAGNUM
     003470                     M$INCR T$TAGNUM
             010004             T$TAGNUM=T$TAGNUM+1
     003470                     M$GNGBL ERR201
                                .MCALL  M$GEN
                                .IF NB,ERR201
                                .IF NB,
                                M$GEN   ERR201,:,SVCGBL,
                                .ENDC
```

E9

```
                                        .IF B,
       003470                           M$GEN   ERR201,:,SVCGBL,< >
                                        .IF LE  SVCGBL
                                        .IIF EQ SVCGBL,.LIST
                                        ERR201::
                                        .IIF EQ SVCGBL,.NLIST
                                        .MEXIT
                                        .ENDC
                                        .LIST
       003470                                                                      ERR201::
                                                .NLIST
                                        .ENDC
                                        .ENDC
  1539 003470                                   PRINTB  #EMG201,CHAN,GOOD,BAD
                                        .MCALL  M$PRINT
                                        .IF B   #EMG201
                                        .ERROR  ;MISSING FORMAT
                                        .MEXIT
                                        .ENDC
                                        .IF B   <CHAN>
                                        M$PRINT C$PNTB,#EMG201
                                        .MEXIT
                                        .ENDC
                                        .IF B   <GOOD>
                                        M$PRINT C$PNTB,#EMG201,<CHAN>
                                        .MEXIT
                                        .ENDC
                                        .IF B   <BAD>
                                        M$PRINT C$PNTB,#EMG201,<CHAN>,<GOOD>
                                        .MEXIT
                                        .ENDC
                                        .IF B   <>
       003470                           M$PRINT C$PNTB,#EMG201,<CHAN>,<GOOD>,<BAD>
                                        .MCALL  M$COUNT,M$PUT,M$GNINS,M$SVC
              000001                    T$ARGCNT=1
       003470                           M$COUNT T$ARGCNT,<CHAN>,<GOOD>,<BAD>,<>,<>,<>,<>,<>
                                        .IF NB <GOOD>
       003470                           M$COUNT T$ARGCNT,<GOOD>,<BAD>,<>,<>,<>,<>,<>,<>
                                        .IF NB <BAD>
       003470                           M$COUNT T$ARGCNT,<BAD>,<>,<>,<>,<>,<>,<>,<>
                                        .IF NB <>
                                        M$COUNT T$ARGCNT,<>,<>,<>,<>,<>,<>,<>,<>
                                        .ENDC
                                        .IF NB <BAD>
              000002                    T$ARGCNT=T$ARGCNT+1
                                        .ENDC
                                        .ENDC
                                        .IF NB <GOOD>
              000003                    T$ARGCNT=T$ARGCNT+1
                                        .ENDC
                                        .ENDC
                                        .IF NB <CHAN>
              000004                    T$ARGCNT=T$ARGCNT+1
                                        .ENDC
                                        .IRP    N,<\T$ARGCNT>
                                        M$PUT   #N,#EMG201,<CHAN>,<GOOD>,<BAD>,<>,<>,<>,<>,<>
                                        .ENDM
```

F9


```
        003470                          M$PUT   #4,#EMG201,<CHAN>,<GOOD>,<BAD>,<>,<>,<>,<>,<>
                                        .MCALL  M$PUT1
                                        .IF NB  <#EMG201>
        003470                          M$PUT   <#EMG201>,<CHAN>,<GOOD>,<BAD>,<>,<>,<>,<>,<>
                                        .MCALL  M$PUT1
                                        .IF NB  <CHAN>
        003470                          M$PUT   <CHAN>,<GOOD>,<BAD>,<>,<>,<>,<>,<>,<>
                                        .MCALL  M$PUT1
                                        .IF NB  <GOOD>
        003470                          M$PUT   <GOOD>,<BAD>,<>,<>,<>,<>,<>,<>,<>
                                        .MCALL  M$PUT1
                                        .IF NB  <BAD>
        003470                          M$PUT   <BAD>,<>,<>,<>,<>,<>,<>,<>,<>
                                        .MCALL  M$PUT1
                                        .IF NB  <>
                                        M$PUT   <>,<>,<>,<>,<>,<>,<>,<>,<>
                                        .ENDC
                                        .IF NB  <BAD>
        003470                          M$PUT1  BAD
                                        .MCALL  M$GNINS
                                        .IF B
        003470                          M$GNINS <MOV    BAD,-(SP)>
                                        .IF LT SVCINS
                                        MOV     BAD,-(SP)
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                MOV     BAD,(SP)
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
        003470  013746  002502                                                          MOV     BAD,-(SP)
                                                        .NLIST
                                        .ENDC
                                        .IFF
                                        .IF DIF B,<BAD>
                                        .ERROR  ;ILL. ARG. "BAD" ONLY "B" IS ALLOWED.
                                        .MEXIT
                                        .ENDC
                                        M$GNINS <CLR    -(SP)>
                                        M$GNINS <BISB   ,(SP)>
                                        .ENDC
                                        .ENDC
                                        .ENDC
                                        .IF NB  <GOOD>
        003474                          M$PUT1  GOOD
                                        .MCALL  M$GNINS
                                        .IF B
        003474                          M$GNINS <MOV    GOOD,-(SP)>
                                        .IF LT SVCINS
                                        MOV     GOOD,-(SP)
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
```

G9

G9


```
                                        .LIST
                                                MOV     GOOD,-(SP)
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
      003474  013746  002500                                                            MOV     GOOD,-(SP)
                                                        .NLIST
                                        .ENDC
                                        .IFF
                                        .IF DIF B,<GOOD>
                                        .ERROR  ;ILL. ARG. "GOOD" ONLY "B" IS ALLOWED.
                                        .MEXIT
                                        .ENDC
                                        M$GNINS <CLR    -(SP)>
                                        M$GNINS <BISB   ,(SP)>
                                        .ENDC
                                        .ENDC
                                        .ENDC
                                        .IF NB  <CHAN>
      003500                            M$PUT1  CHAN
                                        .MCALL  M$GNINS
                                        .IF B
      003500                            M$GNINS <MOV    CHAN,-(SP)>
                                        .IF LT SVCINS
                                        MOV     CHAN,-(SP)
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                MOV     CHAN,-(SP)
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
      003500  013746  002374                                                            MOV     CHAN,-(SP)
                                                        .NLIST
                                        .ENDC
                                        .IFF
                                        .IF DIF B,<CHAN>
                                        .ERROR  ;ILL. ARG. "CHAN" ONLY "B" IS ALLOWED.
                                        .MEXIT
                                        .ENDC
                                        M$GNINS <CLR    -(SP)>
                                        M$GNINS <BISB   ,(SP)>
                                        .ENDC
                                        .ENDC
                                        .ENDC
                                        .IF NB  <#EMG201>
      003504                            M$PUT1  #EMG201
                                        .MCALL  M$GNINS
                                        .IF B
      003504                            M$GNINS <MOV    #EMG201,-(SP)>
                                        .IF LT SVCINS
                                        MOV     #EMG201, (SP)
```

78 8018 3675-6

H9

```
                                   .MEXIT
                                   .ENDC
                                   .IF EQ SVCINS
                                   .LIST
                                           MOV     #EMG201,-(SP)
                                                   .NLIST
                                   .MEXIT
                                   .ENDC
                                   .IF GT SVCINS
                                   .LIST
     003504  012746  004160                                                        MOV     #EMG201,-(SP)
                                                   .NLIST
                                   .ENDC
                                   .IFF
                                   .IF DIF B,<#EMG201>
                                   .ERROR  ;ILL. ARG. "#EMG201" ONLY "B" IS ALLOWED.
                                   .MEXIT
                                   .ENDC
                                   M$GNINS <CLR    -(SP)>
                                   M$GNINS <BISB   ,(SP)>
                                   .ENDC
                                   .ENDC
                                   .ENDC
                                   .IF NB  <#4>
     003510                        M$PUT1  #4
                                   .MCALL  M$GNINS
                                   .IF B
     003510                        M$GNINS <MOV    #4,-(SP)>
                                   .IF LT SVCINS
                                   MOV     #4,-(SP)
                                   .MEXIT
                                   .ENDC
                                   .IF EQ SVCINS
                                   .LIST
                                           MOV     #4,-(SP)
                                                   .NLIST
                                   .MEXIT
                                   .ENDC
                                   .IF GT SVCINS
                                   .LIST
     003510  012746  000004                                                        MOV     #4, (SP)
                                                   .NLIST
                                   .ENDC
                                   .IFF
                                   .IF DIF B,<#4>
                                   .ERROR  ;ILL. ARG. "#4" ONLY "B" IS ALLOWED.
                                   .MEXIT
                                   .ENDC
                                   M$GNINS <CLR    -(SP)>
                                   M$GNINS <BISB   ,(SP)>
                                   .ENDC
                                   .ENDC
     003514                        M$GNINS <MOV    SP,R0>
                                   .IF LT SVCINS
                                   MOV     SP,R0
                                   .MEXIT
                                   .ENDC
```


T9

```
                                        .IF EQ SVCINS
                                        .LIST
                                                MOV     SP,R0
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
      003514  010600                                                                                  MOV     SP,R0
                                                        .NLIST
                                        .ENDC
      003516                            M$SVC   C$PNTB
                                        .MCALL  M$GNINS,M$TSTLAB
      003516                            M$TSTLAB
                                        .MCALL  M$TLABEL,M$INCR
                                        .IIF LT T$TSTMAC, .MEXIT
                                        .RADIX  10
                                        M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                        .RADIX  8
                                        M$INCR  T$TSTSEQ
      003516                            M$GNINS <TRAP   C$PNTB>
                                        .IF LT SVCINS
                                        TRAP    C$PNTB
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                TRAP    C$PNTB
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
      003516  104414                                                                                  TRAP    C$PNTB
                                                        .NLIST
                                        .ENDC
                                        .IRP    N,<\T$ARGCNT*2+2>
                                        M$GNINS <ADD    #N,SP>
                                        .ENDM
      003520                            M$GNINS <ADD    #12,SP>
                                        .IF LT SVCINS
                                        ADD     #12,SP
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                ADD     #12,SP
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
      003520  062706  000012                                                                          ADD     #12,SP
                                                        .NLIST
                                        .ENDC
                                        .MEXIT
                                        .ENDC
```

J9

```
                                        .IF B   <>
                                        M$PRINT C$PNTB,#EMG201,<CHAN>,<GOOD>,<BAD>,<>
                                        .MEXIT
                                        .ENDC
                                        .IF B   <>
                                        M$PRINT C$PNTB,#EMG201,<CHAN>,<GOOD>,<BAD>,<>,<>
                                        .MEXIT
                                        .ENDC
                                        .IF B   <>
                                        M$PRINT C$PNTB,#EMG201,<CHAN>,<GOOD>,<BAD>,<>,<>,<>
                                        .MEXIT
                                        .ENDC
                                        .IF B   <>
                                        M$PRINT C$PNTB,#EMG201,<CHAN>,<GOOD>,<BAD>,<>,<>,<>,<>
                                        .MEXIT
                                        .ENDC
                                        M$PRINT C$PNTB,#EMG201,<CHAN>,<GOOD>,<BAD>,<>,<>,<>,<>,<>
  1540 003524                                   PRINTB  #EMG203
                                        .MCALL  M$PRINT
                                        .IF B   #EMG203
                                        .ERROR  ;MISSING FORMAT
                                        .MEXIT
                                        .ENDC
                                        .IF B   <>
       003524                           M$PRINT C$PNTB,#EMG203
                                        .MCALL  M$COUNT,M$PUT,M$GNINS,M$SVC
              000001                    T$ARGCNT=1
       003524                           M$COUNT T$ARGCNT,<>,<>,<>,<>,<>,<>,<>,<>
                                        .IF NB <>
                                        M$COUNT T$ARGCNT,<>,<>,<>,<>,<>,<>,<>,<>
                                        .ENDC
                                        .IF NB <>
                                        T$ARGCNT=T$ARGCNT+1
                                        .ENDC
                                        .IRP    N,<\T$ARGCNT>
                                        M$PUT   #N,#EMG203,<>,<>,<>,<>,<>,<>,<>,<>
                                        .ENDM
       003524                           M$PUT   #1,#EMG203,<>,<>,<>,<>,<>,<>,<>,<>
                                        .MCALL  M$PUT1
                                        .IF NB  <#EMG203>
       003524                           M$PUT   <#EMG203>,<>,<>,<>,<>,<>,<>,<>,<>
                                        .MCALL  M$PUT1
                                        .IF NB  <>
                                        M$PUT   <>,<>,<>,<>,<>,<>,<>,<>,<>
                                        .ENDC
                                        .IF NB  <#EMG203>
       003524                           M$PUT1  #EMG203
                                        .MCALL  M$GNINS
                                        .IF B
       003524                           M$GNINS <MOV    #EMG203,-(SP)>
                                        .IF LT SVCINS
                                        MOV     #EMG203,-(SP)
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                MOV     #EMG203,-(SP)
```


K9

```
                                                .NLIST
                                    .MEXIT
                                    .ENDC
                                    .IF GT SVCINS
                                    .LIST
      003524  012746  004255                                                          MOV     #EMG203,-(SP)
                                                .NLIST
                                    .ENDC
                                    .IFF
                                    .IF DIF B,<#EMG203>
                                    .ERROR  ;ILL. ARG. "#EMG203" ONLY "B" IS ALLOWED.
                                    .MEXIT
                                    .ENDC
                                    M$GNINS <CLR    -(SP)>
                                    M$GNINS <BISB   ,(SP)>
                                    .ENDC
                                    .ENDC
                                    .ENDC
                                    .IF NB  <#1>
      003530                        M$PUT1  #1
                                    .MCALL  M$GNINS
                                    .IF B
      003530                        M$GNINS <MOV    #1,-(SP)>
                                    .IF LT SVCINS
                                    MOV     #1,-(SP)
                                    .MEXIT
                                    .ENDC
                                    .IF EQ SVCINS
                                    .LIST
                                            MOV     #1,-(SP)
                                                .NLIST
                                    .MEXIT
                                    .ENDC
                                    .IF GT SVCINS
                                    .LIST
      003530  012746  000001                                                          MOV     #1, (SP)
                                                .NLIST
                                    .ENDC
                                    .IFF
                                    .IF DIF B,<#1>
                                    .ERROR  ;ILL. ARG. "#1" ONLY "B" IS ALLOWED.
                                    .MEXIT
                                    .ENDC
                                    M$GNINS <CLR    -(SP)>
                                    M$GNINS <BISB   ,(SP)>
                                    .ENDC
                                    .ENDC
      003534                        M$GNINS <MOV    SP,R0>
                                    .IF LT SVCINS
                                    MOV     SP,R0
                                    .MEXIT
                                    .ENDC
                                    .IF EQ SVCINS
                                    .LIST
                                            MOV     SP,R0
                                                .NLIST
                                    .MEXIT
```

```
                                .ENDC
                                .IF GT SVCINS
                                .LIST
     003534  010600                                                          MOV     SP,R0
                                          .NLIST
                                .ENDC
     003536                     M$SVC   C$PNTB
                                .MCALL  M$GNINS,M$TSTLAB
     003536                     M$TSTLAB
                                .MCALL  M$TLABEL,M$INCR
                                .IIF LT T$TSTMAC, .MEXIT
                                .RADIX  10
                                M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                .RADIX  8
                                M$INCR  T$TSTSEQ
     003536                     M$GNINS <TRAP   C$PNTB>
                                .IF LT SVCINS
                                TRAP    C$PNTB
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        TRAP    C$PNTB
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
     003536  104414                                                          TRAP    C$PNTB
                                          .NLIST
                                .ENDC
                                .IRP    N,<\T$ARGCNT*2+2>
                                M$GNINS <ADD    #N,SP>
                                .ENDM
     003540                     M$GNINS <ADD    #4,SP>
                                .IF LT SVCINS
                                ADD     #4,SP
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        ADD     #4,SP
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
     003540  062706  000004                                                  ADD     #4,SP
                                          .NLIST
                                .ENDC
                                .MEXIT
                                .ENDC
                                .IF B   <>
                                M$PRINT C$PNTB,#EMG203,<>
                                .MEXIT
                                .ENDC
                                .IF B   <>
```


M9

```
                                M$PRINT C$PNTB,#EMG203,<>,<>
                                .MEXIT
                                .ENDC
                                .IF B   <>
                                M$PRINT C$PNTB,#EMG203,<>,<>,<>
                                .MEXIT
                                .ENDC
                                .IF B   <>
                                M$PRINT C$PNTB,#EMG203,<>,<>,<>,<>
                                .MEXIT
                                .ENDC
                                .IF B   <>
                                M$PRINT C$PNTB,#EMG203,<>,<>,<>,<>,<>
                                .MEXIT
                                .ENDC
                                .IF B   <>
                                M$PRINT C$PNTB,#EMG203,<>,<>,<>,<>,<>,<>
                                .MEXIT
                                .ENDC
                                .IF B   <>
                                M$PRINT C$PNTB,#EMG203,<>,<>,<>,<>,<>,<>,<>
                                .MEXIT
                                .ENDC
                                M$PRINT C$PNTB,#EMG203,<>,<>,<>,<>,<>,<>,<>,<>
1541 003544                             ENDMSG
                                .MCALL  M$POP,M$GNTAG,M$SVC,M$ENDERR
     003544                     M$POP   T$NS,T$NESTLEV,T$TEMP
                                .MCALL  M$GETS,M$DECR
                                .IF LT  T$NESTLEV
                                .ERROR  T$NESTLEV       ; MACRO T$NS UNDERFLOW
                                .MEXIT
                                .ENDC
     003544                     M$GETS  T$NS,\T$NESTLEV,T$TEMP
            000011              T$TEMP=T$NS1
     003544                     M$DECR  T$NESTLEV
            000000              T$NESTLEV=T$NESTLEV-1
                                .IF EQ F$MSG-T$TEMP
     003544                     M$GNTAG L,T$$MSG
                                .MCALL  M$GEN
     003544                     M$GEN   L,\T$$MSG,SVCTAG
                                .IF LE  SVCTAG
                                .IIF EQ SVCTAG,.LIST
                                L10003:
                                .IIF EQ SVCTAG,.NLIST
                                .MEXIT
                                .ENDC
                                .LIST
     003544                                                             L10003:
                                        .NLIST
            010000              S$LSYM=T$LSYM
     003544                     M$SVC   C$MSG
                                .MCALL  M$GNINS,M$TSTLAB
     003544                     M$TSTLAB
                                .MCALL  M$TLABEL,M$INCR
                                .IIF LT T$TSTMAC, .MEXIT
                                .RADIX  10
                                M$TLABEL        \T$TESTNUN,\T$TSTSEQ
```

```
                                .RADIX  8
                                M$INCR  T$TSTSEQ
     003544                     M$GNINS <TRAP   C$MSG>
                                .IF LT SVCINS
                                TRAP    C$MSG
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        TRAP    C$MSG
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
     003544  104423                                                             TRAP    C$MSG
                                                .NLIST
                                .ENDC
             000041             I$MSG=F$END
                                .IFF
                                M$ENDERR        ENDMSG,T$TEMP
                                .ENDC
1542
1543 003546                             BGNMSG  ERR202
                                .MCALL  M$PUSH,M$INCR,M$GNGBL
             000040             I$MSG=F$BGN
     003546                     M$PUSH  T$NS,T$NESTLEV,F$MSG
                                .MCALL  M$INCR,M$SETS
     003546                     M$INCR  T$NESTLEV
             000001             T$NESTLEV=T$NESTLEV+1
     003546                     M$SETS  T$NS,\T$NESTLEV,F$MSG
             000011             T$NS1=F$MSG
             010004             T$$MSG=T$TAGNUM
     003546                     M$INCR T$TAGNUM
             010005             T$TAGNUM=T$TAGNUM+1
     003546                     M$GNGBL ERR202
                                .MCALL  M$GEN
                                .IF NB,ERR202
                                .IF NB,
                                M$GEN   ERR202,:,SVCGBL,
                                .ENDC
                                .IF B,
     003546                     M$GEN   ERR202,:,SVCGBL,< >
                                .IF LE  SVCGBL
                                .IIF EQ SVCGBL,.LIST
                                ERR202::
                                .IIF EQ SVCGBL,.NLIST
                                .MEXIT
                                .ENDC
                                .LIST
     003546                                                             ERR202::
                                        .NLIST
                                .ENDC
                                .ENDC
1544 003546                             PRINTB  #EMG202,R2,CHAN,GOOD,BAD
                                .MCALL  M$PRINT
                                .IF B   #EMG202
```

```
                                    .ERROR  ;MISSING FORMAT
                                    .MEXIT
                                    .ENDC
                                    .IF B   <R2>
                                    M$PRINT C$PNTB,#EMG202
                                    .MEXIT
                                    .ENDC
                                    .IF B   <CHAN>
                                    M$PRINT C$PNTB,#EMG202,<R2>
                                    .MEXIT
                                    .ENDC
                                    .IF B   <GOOD>
                                    M$PRINT C$PNTB,#EMG202,<R2>,<CHAN>
                                    .MEXIT
                                    .ENDC
                                    .IF B   <BAD>
                                    M$PRINT C$PNTB,#EMG202,<R2>,<CHAN>,<GOOD>
                                    .MEXIT
                                    .ENDC
                                    .IF B   <>
      003546                        M$PRINT C$PNTB,#EMG202,<R2>,<CHAN>,<GOOD>,<BAD>
                                    .MCALL  M$COUNT,M$PUT,M$GNINS,M$SVC
            000001                  T$ARGCNT=1
      003546                        M$COUNT T$ARGCNT,<R2>,<CHAN>,<GOOD>,<BAD>,<>,<>,<>,<>
                                    .IF NB <CHAN>
      003546                        M$COUNT T$ARGCNT,<CHAN>,<GOOD>,<BAD>,<>,<>,<>,<>,<>
                                    .IF NB <GOOD>
      003546                        M$COUNT T$ARGCNT,<GOOD>,<BAD>,<>,<>,<>,<>,<>,<>
                                    .IF NB <BAD>
      003546                        M$COUNT T$ARGCNT,<BAD>,<>,<>,<>,<>,<>,<>,<>
                                    .IF NB <>
                                    M$COUNT T$ARGCNT,<>,<>,<>,<>,<>,<>,<>,<>
                                    .ENDC
                                    .IF NB <BAD>
            000002                  T$ARGCNT=T$ARGCNT+1
                                    .ENDC
                                    .ENDC
                                    .IF NB <GOOD>
            000003                  T$ARGCNT=T$ARGCNT+1
                                    .ENDC
                                    .ENDC
                                    .IF NB <CHAN>
            000004                  T$ARGCNT=T$ARGCNT+1
                                    .ENDC
                                    .ENDC
                                    .IF NB <R2>
            000005                  T$ARGCNT-T$ARGCNT+1
                                    .ENDC
                                    .IRP    N,<\T$ARGCNT>
                                    M$PUT   #N,#EMG202,<R2>,<CHAN>,<GOOD>,<BAD>,<>,<>,<>,<>
                                    .ENDM
      003546                        M$PUT   #5,#EMG202,<R2>,<CHAN>,<GOOD>,<BAD>,<>,<>,<>,<>
                                    .MCALL  M$PUT1
                                    .IF NB  <#EMG202>
      003546                        M$PUT   <#EMG202>,<R2>,<CHAN>,<GOOD>,<BAD>,<>,<>,<>,<>
                                    .MCALL  M$PUT1
                                    .IF NB  <R2>
```

C10


```
        003546                        M$PUT   <R2>,<CHAN>,<GOOD>,<BAD>,<>,<>,<>,<>,<>
                                      .MCALL  M$PUT1
                                      .IF NB  <CHAN>
        003546                        M$PUT   <CHAN>,<GOOD>,<BAD>,<>,<>,<>,<>,<>,<>
                                      .MCALL  M$PUT1
                                      .IF NB  <GOOD>
        003546                        M$PUT   <GOOD>,<BAD>,<>,<>,<>,<>,<>,<>,<>
                                      .MCALL  M$PUT1
                                      .IF NB  <BAD>
        003546                        M$PUT   <BAD>,<>,<>,<>,<>,<>,<>,<>,<>
                                      .MCALL  M$PUT1
                                      .IF NB  <>
                                      M$PUT   <>,<>,<>,<>,<>,<>,<>,<>,<>
                                      .ENDC
                                      .IF NB  <BAD>
        003546                        M$PUT1  BAD
                                      .MCALL  M$GNINS
                                      .IF B
        003546                        M$GNINS <MOV    BAD,-(SP)>
                                      .IF LT SVCINS
                                      MOV     BAD,-(SP)
                                      .MEXIT
                                      .ENDC
                                      .IF EQ SVCINS
                                      .LIST
                                              MOV     BAD, (SP)
                                                      .NLIST
                                      .MEXIT
                                      .ENDC
                                      .IF GT SVCINS
                                      .LIST
        003546  013746  002502                                                        MOV     BAD,-(SP)
                                                      .NLIST
                                      .ENDC
                                      .IFF
                                      .IF DIF B,<BAD>
                                      .ERROR  ;ILL. ARG. "BAD" ONLY "B" IS ALLOWED.
                                      .MEXIT
                                      .ENDC
                                      M$GNINS <CLR     (SP)>
                                      M$GNINS <BISB   ,(SP)>
                                      .ENDC
                                      .ENDC
                                      .ENDC
                                      .IF NB  <GOOD>
        003552                        M$PUT1  GOOD
                                      .MCALL  M$GNINS
                                      .IF B
        003552                        M$GNINS <MOV    GOOD,-(SP)>
                                      .IF LT SVCINS
                                      MOV     GOOD, (SP)
                                      .MEXIT
                                      .ENDC
                                      .IF EQ SVCINS
                                      .LIST
                                              MOV     GOOD, (SP)
                                                      .NLIST
```

D10

```
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
    003552  013746  002500                                              MOV     GOOD,-(SP)
                                          .NLIST
                                .ENDC
                                .IFF
                                .IF DIF B,<GOOD>
                                .ERROR  ;ILL. ARG. "GOOD  ONLY "B" IS ALLOWED.
                                .MEXIT
                                .ENDC
                                M$GNINS <CLR    -(SP)>
                                M$GNINS <BISB   ,(SP)>
                                .ENDC
                                .ENDC
                                .ENDC
                                .IF NB  <CHAN>
    003556                      M$PUT1  CHAN
                                .MCALL  M$GNINS
                                .IF B
    003556                      M$GNINS <MOV    CHAN, (SP)>
                                .IF LT SVCINS
                                MOV     CHAN,-(SP)
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        MOV     CHAN,-(SP)
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
    003556  013746  002374                                              MOV     CHAN,-(SP)
                                                .NLIST
                                .ENDC
                                .IFF
                                .IF DIF B,<CHAN>
                                .ERROR  ;ILL. ARG. "CHAN" ONLY "B" IS ALLOWED.
                                .MEXIT
                                .ENDC
                                M$GNINS <CLR    -(SP)>
                                M$GNINS <BISB   ,(SP)>
                                .ENDC
                                .ENDC
                                .ENDC
                                .IF NB  <R2>
    003562                      M$PUT1  R2
                                .MCALL  M$GNINS
                                .IF B
    003562                      M$GNINS <MOV    R2, (SP)>
                                .IF LT SVCINS
                                MOV     R2, (SP)
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
```

```
                                        .LIST
                                                MOV     R2, (SP)
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
      003562  010246                                                                      MOV     R2,-(SP)
                                                        .NLIST
                                        .ENDC
                                        .IFF
                                        .IF DIF B,<R2>
                                        .ERROR  ;ILL. ARG. "R2" ONLY "B" IS ALLOWED.
                                        .MEXIT
                                        .ENDC
                                        M$GNINS <CLR    -(SP)>
                                        M$GNINS <BISB   ,(SP)>
                                        .ENDC
                                        .ENDC
                                        .ENDC
                                        .IF NB  <#EMG202>
      003564                            M$PUT1  #EMG202
                                        .MCALL  M$GNINS
                                        .IF B
      003564                            M$GNINS <MOV    #EMG202,-(SP)>
                                        .IF LT SVCINS
                                        MOV     #EMG202,-(SP)
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                MOV     #EMG202,-(SP)
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
      003564  012746  004320                                                              MOV     #EMG202, (SP)
                                                        .NLIST
                                        .ENDC
                                        .IFF
                                        .IF DIF B,<#EMG202>
                                        .ERROR  ;ILL. ARG. "#EMG202" ONLY "B" IS ALLOWED.
                                        .MEXIT
                                        .ENDC
                                        M$GNINS <CLR     (SP)>
                                        M$GNINS <BISB   ,(SP)>
                                        .ENDC
                                        .ENDC
                                        .ENDC
                                        .IF NB  <#5>
      003570                            M$PUT1  #5
                                        .MCALL  M$GNINS
                                        .IF B
      003570                            M$GNINS <MOV    #5, (SP)>
                                        .IF LT SVCINS
                                        MOV     #5, (SP)
```

F10


```
                                 .MEXIT
                                 .ENDC
                                 .IF EQ SVCINS
                                 .LIST
                                      MOV     #5,-(SP)
                                              .NLIST
                                 .MEXIT
                                 .ENDC
                                 .IF GT SVCINS
                                 .LIST
     003570  012746  000005                                                 MOV     #5, (SP)
                                              .NLIST
                                 .ENDC
                                 .IFF
                                 .IF DIF B,<#5>
                                 .ERROR  ;ILL. ARG. "#5" ONLY "B" IS ALLOWED.
                                 .MEXIT
                                 .ENDC
                                 M$GNINS <CLR    -(SP)>
                                 M$GNINS <BISB   ,(SP)>
                                 .ENDC
                                 .ENDC
     003574                      M$GNINS <MOV    SP,R0>
                                 .IF LT SVCINS
                                 MOV     SP,R0
                                 .MEXIT
                                 .ENDC
                                 .IF EQ SVCINS
                                 .LIST
                                      MOV     SP,R0
                                              .NLIST
                                 .MEXIT
                                 .ENDC
                                 .IF GT SVCINS
                                 .LIST
     003574  010600                                                         MOV     SP,R0
                                              .NLIST
                                 .ENDC
     003576                      M$SVC   C$PNTB
                                 .MCALL  M$GNINS,M$TSTLAB
     003576                      M$TSTLAB
                                 .MCALL  M$TLABEL,M$INCR
                                 .IIF LT T$TSTMAC, .MEXIT
                                 .RADIX  10
                                 M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                 .RADIX  8
                                 M$INCR  T$TSTSEQ
     003576                      M$GNINS <TRAP   C$PNTB>
                                 .IF LT SVCINS
                                 TRAP    C$PNTB
                                 .MEXIT
                                 .ENDC
                                 .IF EQ SVCINS
                                 .LIST
                                      TRAP    C$PNTB
                                              .NLIST
                                 .MEXIT
```

G10

```
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
      003576  104414                                                                              TRAP      C$PNTB
                                                    .NLIST
                                        .ENDC
                                        .IRP     N,<\T$ARGCNT*2+2>
                                        M$GNINS <ADD     #N,SP>
                                        .ENDM
      003600                            M$GNINS <ADD     #14,SP>
                                        .IF LT SVCINS
                                        ADD      #14,SP
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                              ADD      #14,SP
                                                    .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
      003600  062706  000014                                                                      ADD       #14,SP
                                                    .NLIST
                                        .ENDC
                                        .MEXIT
                                        .ENDC
                                        .IF B    <>
                                        M$PRINT C$PNTB,#EMG202,<R2>,<CHAN>,<GOOD>,<BAD>,<>
                                        .MEXIT
                                        .ENDC
                                        .IF B    <>
                                        M$PRINT C$PNTB,#EMG202,<R2>,<CHAN>,<GOOD>,<BAD>,<>,<>
                                        .MEXIT
                                        .ENDC
                                        .IF B    <>
                                        M$PRINT C$PNTB,#EMG202,<R2>,<CHAN>,<GOOD>,<BAD>,<>,<>,<>
                                        .MEXIT
                                        .ENDC
                                        M$PRINT C$PNTB,#EMG202,<R2>,<CHAN>,<GOOD>,<BAD>,<>,<>,<>,<>
 1545 003604                                    ENDMSG
                                        .MCALL  M$POP,M$GNTAG,M$SVC,M$ENDERR
      003604                            M$POP   T$NS,T$NESTLEV,T$TEMP
                                        .MCALL  M$GETS,M$DECR
                                        .IF LT  T$NESTLEV
                                        .ERROR  T$NESTLEV        ; MACRO T$NS UNDERFLOW
                                        .MEXIT
                                        .ENDC
      003604                            M$GETS  T$NS,\T$NESTLEV,T$TEMP
              000011                    T$TEMP=T$NS1
      003604                            M$DECR  T$NESTLEV
              000000                    T$NESTLEV=T$NESTLEV-1
                                        .IF EQ F$MSG-T$TEMP
      003604                            M$GNTAG L,T$$MSG
                                        .MCALL  M$GEN
      003604                            M$GEN   L,\T$$MSG,SVCTAG
                                        .Ir LE  SVCTAG
```


H10

```
                           .IIF EQ SVCTAG,.LIST
                           L10004:
                           .IIF EQ SVCTAG,.NLIST
                           .MEXIT
                           .ENDC
                           .LIST
     003604                                                          L10004:
                                   .NLIST
             010000        S$LSYM=T$LSYM
     003604                M$SVC   C$MSG
                           .MCALL  M$GNINS,M$TSTLAB
     003604                M$TSTLAB
                           .MCALL  M$TLABEL,M$INCR
                           .IIF LT T$TSTMAC, .MEXIT
                           .RADIX  10
                           M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                           .RADIX  8
                           M$INCR  T$TSTSEQ
     003604                M$GNINS <TRAP    C$MSG>
                           .IF LT SVCINS
                           TRAP    C$MSG
                           .MEXIT
                           .ENDC
                           .IF EQ SVCINS
                           .LIST
                                   TRAP    C$MSG
                                           .NLIST
                           .MEXIT
                           .ENDC
                           .IF GT SVCINS
                           .LIST
     003604  104423                                                      TRAP    C$MSG
                                           .NLIST
                           .ENDC
             000041        I$MSG=F$END
                           .IFF
                           M$ENDERR        ENDMSG,T$TEMP
                           .ENDC

     003606                        BGNMSG  ERR401
                           .MCALL  M$PUSH,M$INCR,M$GNGBL
             000040        I$MSG=F$BGN
     003606                M$PUSH  T$NS,T$NESTLEV,F$MSG
                           .MCALL  M$INCR,M$SETS
     003606                M$INCR  T$NESTLEV
             000001        T$NESTLEV=T$NESTLEV+1
     003606                M$SETS  T$NS,\T$NESTLEV,F$MSG
             000011        T$NS1=F$MSG
             010005        T$$MSG=T$TAGNUM
     003606                M$INCR T$TAGNUM
             010006        T$TAGNUM=T$TAGNUM+1
     003606                M$GNGBL ERR401
                           .MCALL  M$GEN
                           .IF NB,ERR401
                           .IF NB,
                           M$GEN   ERR401,:,SVCGBL,
                           .ENDC
```

78 8018 3873-6

```
                                        .IF B,
      003606                            M$GEN   ERR401,:,SVCGBL,< >
                                        .IF LE  SVCGBL
                                        .IIF EQ SVCGBL,.LIST
                                        ERR401::
                                        .IIF EQ SVCGBL,.NLIST
                                        .MEXIT
                                        .ENDC
                                        .LIST
      003606                                                                        ERR401::
                                                .NLIST
                                        .ENDC
                                        .ENDC
 1548 003606                                    PRINTB  #EMG401,CHAN,GOOD,BAD
                                        .MCALL  M$PRINT
                                        .IF B   #EMG401
                                        .ERROR  ;MISSING FORMAT
                                        .MEXIT
                                        .ENDC
                                        .IF B   <CHAN>
                                        M$PRINT C$PNTB,#EMG401
                                        .MEXIT
                                        .ENDC
                                        .IF B   <GOOD>
                                        M$PRINT C$PNTB,#EMG401,<CHAN>
                                        .MEXIT
                                        .ENDC
                                        .IF B   <BAD>
                                        M$PRINT C$PNTB,#EMG401,<CHAN>,<GOOD>
                                        .MEXIT
                                        .ENDC
                                        .IF B   <>
      003606                            M$PRINT C$PNTB,#EMG401,<CHAN>,<GOOD>,<BAD>
                                        .MCALL  M$COUNT,M$PUT,M$GNINS,M$SVC
             000001                     T$ARGCNT=1
      003606                            M$COUNT T$ARGCNT,<CHAN>,<GOOD>,<BAD>,<>,<>,<>,<>,<>
                                        .IF NB <GOOD>
      003606                            M$COUNT T$ARGCNT,<GOOD>,<BAD>,<>,<>,<>,<>,<>,<>
                                        .IF NB <BAD>
      003606                            M$COUNT T$ARGCNT,<BAD>,<>,<>,<>,<>,<>,<>,<>
                                        .IF NB <>
                                        M$COUNT T$ARGCNT,<>,<>,<>,<>,<>,<>,<>,<>
                                        .ENDC
                                        .IF NB <BAD>
             000002                     T$ARGCNT=T$ARGCNT+1
                                        .ENDC
                                        .ENDC
                                        .IF NB <GOOD>
             000003                     T$ARGCNT-T$ARGCNT+1
                                        .ENDC
                                        .ENDC
                                        .IF NB <CHAN>
             000004                     T$ARGCNT=T$ARGCNT+1
                                        .ENDC
                                        .IRP    N,<\T$ARGCNT>
                                        M$PUT   #N,#EMG401,<CHAN>,<GOOD>,<BAD>,<>,<>,<>,<>,<>
                                        .ENDM
```

```
        003606                          M$PUT   #4,#EMG401,<CHAN>,<GOOD>,<BAD>,<>,<>,<>,<>,<>
                                        .MCALL  M$PUT1
                                        .IF NB  <#EMG401>
        003606                          M$PUT   <#EMG401>,<CHAN>,<GOOD>,<BAD>,<>,<>,<>,<>,<>
                                        .MCALL  M$PUT1
                                        .IF NB  <CHAN>
        003606                          M$PUT   <CHAN>,<GOOD>,<BAD>,<>,<>,<>,<>,<>,<>
                                        .MCALL  M$PUT1
                                        .IF NB  <GOOD>
        003606                          M$PUT   <GOOD>,<BAD>,<>,<>,<>,<>,<>,<>,<>
                                        .MCALL  M$PUT1
                                        .IF NB  <BAD>
        003606                          M$PUT   <BAD>,<>,<>,<>,<>,<>,<>,<>,<>
                                        .MCALL  M$PUT1
                                        .IF NB  <>
                                        M$PUT   <>,<>,<>,<>,<>,<>,<>,<>,<>
                                        .ENDC
                                        .IF NB  <BAD>
        003606                          M$PUT1  BAD
                                        .MCALL  M$GNINS
                                        .IF B
        003606                          M$GNINS <MOV    BAD, (SP)>
                                        .IF LT SVCINS
                                        MOV     BAD,-(SP)
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                MOV     BAD,-(SP)
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
        003606  013746  002502                                                          MOV     BAD,-(SP)
                                                        .NLIST
                                        .ENDC
                                        .IFF
                                        .IF DIF B,<BAD>
                                        .ERROR  ;ILL. ARG. "BAD" ONLY "B" IS ALLOWED.
                                        .MEXIT
                                        .ENDC
                                        M$GNINS <CLR    -(SP)>
                                        M$GNINS <BISB   ,(SP)>
                                        .ENDC
                                        .ENDC
                                        .ENDC
                                        .IF NB  <GOOD>
        003612                          M$PUT1  GOOD
                                        .MCALL  M$GNINS
                                        .IF B
        003612                          M$GNINS <MOV    GOOD,-(SP)>
                                        .IF LT SVCINS
                                        MOV     GOOD, (SP)
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
```

```
                                        .LIST
                                                MOV     GOOD,-(SP)
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
        003612  013746  002500                                                          MOV     GOOD, (SP)
                                                        .NLIST
                                        .ENDC
                                        .IFF
                                        .IF DIF B,<GOOD>
                                        .ERROR  ;ILL. ARG. "GOOD" ONLY "B" IS ALLOWED.
                                        .MEXIT
                                        .ENDC
                                        M$GNINS <CLR    -(SP)>
                                        M$GNINS <BISB   ,(SP)>
                                        .ENDC
                                        .ENDC
                                        .ENDC
                                        .IF NB  <CHAN>
        003616                          M$PUT1  CHAN
                                        .MCALL  M$GNINS
                                        .IF B
        003616                          M$GNINS <MOV    CHAN,-(SP)>
                                        .IF LT SVCINS
                                        MOV     CHAN, (SP)
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                MOV     CHAN,-(SP)
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
        003616  013746  002374                                                          MOV     CHAN, (SP)
                                                        .NLIST
                                        .ENDC
                                        .IFF
                                        .IF DIF B,<CHAN>
                                        .ERROR  ;ILL. ARG. "CHAN" ONLY "B" IS ALLOWED.
                                        .MEXIT
                                        .ENDC
                                        M$GNINS <CLR    -(SP)>
                                        M$GNINS <BISB   ,(SP)>
                                        .ENDC
                                        .ENDC
                                        .ENDC
                                        .IF NB  <#EMG401>
        003622                          M$PUT1  #EMG401
                                        .MCALL  M$GNINS
                                        .IF B
        003622                          M$GNINS <MOV    #EMG401,-(SP)>
                                        .IF LT SVCINS
                                        MOV     #EMG401,-(SP)
```

L10


```
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                MOV     #EMG401,-(SP)
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
        003622  012746  004415                                                                  MOV     #EMG401,-(SP)
                                                        .NLIST
                                        .ENDC
                                        .IFF
                                        .IF DIF B,<#EMG401>
                                        .ERROR  ;ILL. ARG. "#EMG401" ONLY "B" IS ALLOWED.
                                        .MEXIT
                                        .ENDC
                                        M$GNINS <CLR    -(SP)>
                                        M$GNINS <BISB   ,(SP)>
                                        .ENDC
                                        .ENDC
                                        .ENDC
                                        .IF NB  <#4>
        003626                          M$PUT1  #4
                                        .MCALL  M$GNINS
                                        .IF B
        003626                          M$GNINS <MOV    #4,-(SP)>
                                        .IF LT SVCINS
                                        MOV     #4,-(SP)
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                MOV     #4,-(SP)
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
        003626  012746  000004                                                                  MOV     #4,-(SP)
                                                        .NLIST
                                        .ENDC
                                        .IFF
                                        .IF DIF B,<#4>
                                        .ERROR  ;ILL. ARG. "#4" ONLY "B" IS ALLOWED.
                                        .MEXIT
                                        .ENDC
                                        M$GNINS <CLR    -(SP)>
                                        M$GNINS <BISB   ,(SP)>
                                        .ENDC
                                        .ENDC
        003632                          M$GNINS <MOV    SP,R0>
                                        .IF LT SVCINS
                                        MOV     SP,R0
                                        .MEXIT
                                        .ENDC
```

M10

```
                                .IF EQ SVCINS
                                .LIST
                                        MOV     SP,R0
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
      003632  010600                                                         MOV     SP,R0
                                                .NLIST
                                .ENDC
      003634                    M$SVC   C$PNTB
                                .MCALL  M$GNINS,M$TSTLAB
      003634                    M$TSTLAB
                                .MCALL  M$TLABEL,M$INCR
                                .IIF LT T$TSTMAC, .MEXIT
                                .RADIX  10
                                M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                .RADIX  8
                                M$INCR  T$TSTSEQ
      003634                    M$GNINS <TRAP   C$PNTB>
                                .IF LT SVCINS
                                TRAP    C$PNTB
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        TRAP    C$PNTB
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
      003634  104414                                                         TRAP    C$PNTB
                                                .NLIST
                                .ENDC
                                .IRP    N,<\T$ARGCNT*2+2>
                                M$GNINS <ADD    #N,SP>
                                .ENDM
      003636                    M$GNINS <ADD    #12,SP>
                                .IF LT SVCINS
                                ADD     #12,SP
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        ADD     #12,SP
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
      003636  062706  000012                                                 ADD     #12,SP
                                                .NLIST
                                .ENDC
                                .MEXIT
                                .ENDC
```

N10


```
                         .IF B    <>
                         M$PRINT C$PNTB,#EMG401,<CHAN>,<GOOD>,<BAD>,<>
                         .MEXIT
                         .ENDC
                         .IF B    <>
                         M$PRINT C$PNTB,#EMG401,<CHAN>,<GOOD>,<BAD>,<>,<>
                         .MEXIT
                         .ENDC
                         .IF B    <>
                         M$PRINT C$PNTB,#EMG401,<CHAN>,<GOOD>,<BAD>,<>,<>,<>
                         .MEXIT
                         .ENDC
                         .IF B    <>
                         M$PRINT C$PNTB,#EMG401,<CHAN>,<GOOD>,<BAD>,<>,<>,<>,<>
                         .MEXIT
                         .ENDC
                         M$PRINT C$PNTB,#EMG401,<CHAN>,<GOOD>,<BAD>,<>,<>,<>,<>,<>
1549 003642                      ENDMSG
                         .MCALL  M$POP,M$GNTAG,M$SVC,M$ENDERR
     003642              M$POP   T$NS,T$NESTLEV,T$TEMP
                         .MCALL  M$GETS,M$DECR
                         .IF LT  T$NESTLEV
                         .ERROR  T$NESTLEV        ; MACRO T$NS UNDERFLOW
                         .MEXIT
                         .ENDC
     003642              M$GETS  T$NS,\T$NESTLEV,T$TEMP
            000011       T$TEMP=T$NS1
     003642              M$DECR  T$NESTLEV
            000000       T$NESTLEV=T$NESTLEV-1
                         .IF EQ F$MSG-T$TEMP
     003642              M$GNTAG L,T$$MSG
                         .MCALL  M$GEN
     003642              M$GEN   L,\T$$MSG,SVCTAG
                         .IF LE  SVCTAG
                         .IIF EQ SVCTAG,.LIST
                         L10005:
                         .IIF EQ SVCTAG,.NLIST
                         .MEXIT
                         .ENDC
                         .LIST
     003642                                                          L10005:
                                 .NLIST
            010000       S$LSYM=T$LSYM
     003642              M$SVC   C$MSG
                         .MCALL  M$GNINS,M$TSTLAB
     003642              M$TSTLAB
                         .MCALL  M$TLABEL,M$INCR
                         .IIF LT T$TSTMAC, .MEXIT
                         .RADIX  10
                         M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                         .RADIX  8
                         M$INCR  T$TSTSEQ
     003642              M$GNINS <TRAP   C$MSG>
                         .IF LT SVCINS
                         TRAP    C$MSG
                         .MEXIT
                         .ENDC
```

```
                                  .IF EQ SVCINS
                                  .LIST
                                          TRAP    C$MSG
                                                  .NLIST
                                  .MEXIT
                                  .ENDC
                                  .IF GT SVCINS
                                  .LIST
      003642  104423                                                                  TRAP    C$MSG
                                                  .NLIST
                                  .ENDC
              000041              I$MSG=F$END
                                  .IFF
                                  M$ENDERR        ENDMSG,T$TEMP
                                  .ENDC
 1550
 1551 003644                              BGNMSG  ERR402
                                  .MCALL  M$PUSH,M$INCR,M$GNGBL
              000040              I$MSG=F$BGN
      003644                      M$PUSH  T$NS,T$NESTLEV,F$MSG
                                  .MCALL  M$INCR,M$SETS
      003644                      M$INCR  T$NESTLEV
              000001              T$NESTLEV=T$NESTLEV+1
      003644                      M$SETS  T$NS,\T$NESTLEV,F$MSG
              000011              T$NS1=F$MSG
              010006              T$$MSG=T$TAGNUM
      003644                      M$INCR T$TAGNUM
              010007              T$TAGNUM=T$TAGNUM+1
      003644                      M$GNGBL ERR402
                                  .MCALL  M$GEN
                                  .IF NB,ERR402
                                  .IF NB,
                                  M$GEN   ERR402,:,SVCGBL,
                                  .ENDC
                                  .IF B,
      003644                      M$GEN   ERR402,:,SVCGBL,< >
                                  .IF LE  SVCGBL
                                  .IIF EQ SVCGBL,.LIST
                                  ERR402::
                                  .IIF EQ SVCGBL,.NLIST
                                  .MEXIT
                                  .ENDC
                                  .LIST
      003644                                                                    ERR402::
                                          .NLIST
                                  .ENDC
                                  .ENDC
 1552 003644                              PRINTB  #EMG402,CHAN
                                  .MCALL  M$PRINT
                                  .IF B   #EMG402
                                  .ERROR  ;MISSING FORMAT
                                  .MEXIT
                                  .ENDC
                                  .IF B   <CHAN>
                                  M$PRINT C$PNTB,#EMG402
                                  .MEXIT
                                  .ENDC
```


C11

C11


```
                                .IF B    <>
     003644                     M$PRINT C$PNTB,#EMG402,<CHAN>
                                .MCALL  M$COUNT,M$PUT,M$GNINS,M$SVC
             000001             T$ARGCNT=1
     003644                     M$COUNT T$ARGCNT,<CHAN>,<>,<>,<>,<>,<>,<>,<>
                                .IF NB <>
                                M$COUNT T$ARGCNT,<>,<>,<>,<>,<>,<>,<>,<>
                                .ENDC
                                .IF NB <CHAN>
             000002             T$ARGCNT=T$ARGCNT+1
                                .ENDC
                                .IRP    N,<\T$ARGCNT>
                                M$PUT   #N,#EMG402,<CHAN>,<>,<>,<>,<>,<>,<>,<>
                                .ENDM
     003644                     M$PUT   #2,#EMG402,<CHAN>,<>,<>,<>,<>,<>,<>,<>
                                .MCALL  M$PUT1
                                .IF NB  <#EMG402>
     003644                     M$PUT   <#EMG402>,<CHAN>,<>,<>,<>,<>,<>,<>,<>
                                .MCALL  M$PUT1
                                .IF NB  <CHAN>
     003644                     M$PUT   <CHAN>,<>,<>,<>,<>,<>,<>,<>,<>
                                .MCALL  M$PUT1
                                .IF NB  <>
                                M$PUT   <>,<>,<>,<>,<>,<>,<>,<>,<>
                                .ENDC
                                .IF NB  <CHAN>
     003644                     M$PUT1  CHAN
                                .MCALL  M$GNINS
                                .IF B
     003644                     M$GNINS <MOV    CHAN,-(SP)>
                                .IF LT SVCINS
                                MOV     CHAN,-(SP)
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        MOV     CHAN,-(SP)
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
     003644  013746  002374                                          MOV     CHAN,-(SP)
                                                .NLIST
                                .ENDC
                                .IFF
                                .IF DIF B,<CHAN>
                                .ERROR  ;ILL. ARG. "CHAN" ONLY "B" IS ALLOWED.
                                .MEXIT
                                .ENDC
                                M$GNINS <CLR    -(SP)>
                                M$GNINS <BISB   ,(SP)>
                                .ENDC
                                .ENDC
                                .ENDC
                                .IF NB  <#EMG402>
     003650                     M$PUT1  #EMG402
```

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D11

```
                                .MCALL  M$GNINS
                                .IF B
      003650                    M$GNINS <MOV    #EMG402,-(SP)>
                                .IF LT SVCINS
                                MOV     #EMG402,-(SP)
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        MOV     #EMG402,-(SP)
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
      003650  012746  004511                                              MOV     #EMG402,-(SP)
                                                .NLIST
                                .ENDC
                                .IFF
                                .IF DIF B,<#EMG402>
                                .ERROR  ;ILL. ARG. "#EMG402" ONLY "B" IS ALLOWED.
                                .MEXIT
                                .ENDC
                                M$GNINS <CLR    -(SP)>
                                M$GNINS <BISB   ,(SP)>
                                .ENDC
                                .ENDC
                                .ENDC
                                .IF NB  <#2>
      003654                    M$PUT1  #2
                                .MCALL  M$GNINS
                                .IF B
      003654                    M$GNINS <MOV    #2,-(SP)>
                                .IF LT SVCINS
                                MOV     #2, (SP)
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        MOV     #2,-(SP)
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
      003654  012746  000002                                              MOV     #2, (SP)
                                                .NLIST
                                .ENDC
                                .IFF
                                .IF DIF B,<#2>
                                .ERROR  ;ILL. ARG. "#2" ONLY "B" IS ALLOWED.
                                .MEXIT
                                .ENDC
                                M$GNINS <CLR    -(SP)>
                                M$GNINS <BISB   ,(SP)>
                                .ENDC
                                .ENDC
```

```
003660                    M$GNINS <MOV    SP,R0>
                          .IF LT SVCINS
                          MOV     SP,R0
                          .MEXIT
                          .ENDC
                          .IF EQ SVCINS
                          .LIST
                                  MOV     SP,R0
                                          .NLIST
                          .MEXIT
                          .ENDC
                          .IF GT SVCINS
                          .LIST
003660  010600                                                  MOV     SP,R0
                                          .NLIST
                          .ENDC
003662                    M$SVC   C$PNTB
                          .MCALL  M$GNINS,M$TSTLAB
003662                    M$TSTLAB
                          .MCALL  M$TLABEL,M$INCR
                          .IIF LT T$TSTMAC, .MEXIT
                          .RADIX  10
                          M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                          .RADIX  8
                          M$INCR  T$TSTSEQ
003662                    M$GNINS <TRAP   C$PNTB>
                          .IF LT SVCINS
                          TRAP    C$PNTB
                          .MEXIT
                          .ENDC
                          .IF EQ SVCINS
                          .LIST
                                  TRAP    C$PNTB
                                          .NLIST
                          .MEXIT
                          .ENDC
                          .IF GT SVCINS
                          .LIST
003662  104414                                                  TRAP    C$PNTB
                                          .NLIST
                          .ENDC
                          .IRP    N,<\T$ARGCNT*2+2>
                          M$GNINS <ADD    #N,SP>
                          .ENDM
003664                    M$GNINS <ADD    #6,SP>
                          .IF LT SVCINS
                          ADD     #6,SP
                          .MEXIT
                          .ENDC
                          .IF EQ SVCINS
                          .LIST
                                  ADD     #6,SP
                                          .NLIST
                          .MEXIT
                          .ENDC
                          .IF GT SVCINS
                          .LIST
```


E11

```
      003664  062706  000006                                                      ADD     #6,SP
                                                .NLIST
                                    .ENDC
                                    .MEXIT
                                    .ENDC
                                    .IF B    <>
                                    M$PRINT C$PNTB,#EMG402,<CHAN>,<>
                                    .MEXIT
                                    .ENDC
                                    .IF B    <>
                                    M$PRINT C$PNTB,#EMG402,<CHAN>,<>,<>
                                    .MEXIT
                                    .ENDC
                                    .IF B    <>
                                    M$PRINT C$PNTB,#EMG402,<CHAN>,<>,<>,<>
                                    .MEXIT
                                    .ENDC
                                    .IF B    <>
                                    M$PRINT C$PNTB,#EMG402,<CHAN>,<>,<>,<>,<>
                                    .MEXIT
                                    .ENDC
                                    .IF B    <>
                                    M$PRINT C$PNTB,#EMG402,<CHAN>,<>,<>,<>,<>,<>
                                    .MEXIT
                                    .ENDC
                                    .IF B    <>
                                    M$PRINT C$PNTB,#EMG402,<CHAN>,<>,<>,<>,<>,<>,<>
                                    .MEXIT
                                    .ENDC
                                    M$PRINT C$PNTB,#EMG402,<CHAN>,<>,<>,<>,<>,<>,<>,<>
   1553 003670                              ENDMSG
                                    .MCALL  M$POP,M$GNTAG,M$SVC,M$ENDERR
        003670                      M$POP   T$NS,T$NESTLEV,T$TEMP
                                    .MCALL  M$GETS,M$DECR
                                    .IF LT  T$NESTLEV
                                    .ERROR  T$NESTLEV       ; MACRO T$NS UNDERFLOW
                                    .MEXIT
                                    .ENDC
        003670                      M$GETS  T$NS,\T$NESTLEV,T$TEMP
                000011              T$TEMP=T$NS1
        003670                      M$DECR  T$NESTLEV
                000000              T$NESTLEV=T$NESTLEV 1
                                    .IF EQ F$MSG-T$TEMP
        003670                      M$GNTAG L,T$$MSG
                                    .MCALL  M$GEN
        003670                      M$GEN   L,\T$$MSG,SVCTAG
                                    .IF LE  SVCTAG
                                    .IIF EQ SVCTAG,.LIST
                                    L10006:
                                    .IIF EQ SVCTAG,.NLIST
                                    .MEXIT
                                    .ENDC
                                    .LIST
        003670                                                              L10006:
                                            .NLIST
                010000              S$LSYM=T$LSYM
        003670                      M$SVC   C$MSG
```

```
                                  .MCALL  M$GNINS,M$TSTLAB
      003670                      M$TSTLAB
                                  .MCALL  M$TLABEL,M$INCR
                                  .IIF LT T$TSTMAC, .MEXIT
                                  .RADIX  10
                                  M$TLABEL       \T$TESTNUN,\T$TSTSEQ
                                  .RADIX  8
                                  M$INCR  T$TSTSEQ
      003670                      M$GNINS <TRAP   C$MSG>
                                  .IF LT SVCINS
                                  TRAP    C$MSG
                                  .MEXIT
                                  .ENDC
                                  .IF EQ SVCINS
                                  .LIST
                                          TRAP    C$MSG
                                                  .NLIST
                                  .MEXIT
                                  .ENDC
                                  .IF GT SVCINS
                                  .LIST
      003670  104423                                                  TRAP    C$MSG
                                                  .NLIST
                                  .ENDC
              000041              I$MSG=F$END
                                  .IFF
                                  M$ENDERR       ENDMSG,T$TEMP
                                  .ENDC
 1554
 1555 003672                              BGNMSG  ERR501
                                  .MCALL  M$PUSH,M$INCR,M$GNGBL
              000040              I$MSG=F$BGN
      003672                      M$PUSH  T$NS,T$NESTLEV,F$MSG
                                  .MCALL  M$INCR,M$SETS
      003672                      M$INCR  T$NESTLEV
              000001              T$NESTLEV=T$NESTLEV+1
      003672                      M$SETS  T$NS,\T$NESTLEV,F$MSG
              000011              T$NS1=F$MSG
              010007              T$$MSG=T$TAGNUM
      003672                      M$INCR T$TAGNUM
              010010              T$TAGNUM=T$TAGNUM+1
      003672                      M$GNGBL ERR501
                                  .MCALL  M$GEN
                                  .IF NB,ERR501
                                  .IF NB,
                                  M$GEN   ERR501,:,SVCGBL,
                                  .ENDC
                                  .IF B,
      003672                      M$GEN   ERR501,:,SVCGBL,< >
                                  .IF LE  SVCGBL
                                  .IIF EQ SVCGBL,.LIST
                                  ERR501::
                                  .IIF EQ SVCGBL,.NLIST
                                  .MEXIT
                                  .ENDC
                                  .LIST
      003672                                                      ERR501::
```

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H11

```
                                                .NLIST
                                        .ENDC
                                        .ENDC
     003672                                     PRINTB  #EMG501,CHAN,GOOD,BAD,ITRCNT
                                        .MCALL  M$PRINT
                                        .IF B   #EMG501
                                        .ERROR  ;MISSING FORMAT
                                        .MEXIT
                                        .ENDC
                                        .IF B   <CHAN>
                                        M$PRINT C$PNTB,#EMG501
                                        .MEXIT
                                        .ENDC
                                        .IF B   <GOOD>
                                        M$PRINT C$PNTB,#EMG501,<CHAN>
                                        .MEXIT
                                        .ENDC
                                        .IF B   <BAD>
                                        M$PRINT C$PNTB,#EMG501,<CHAN>,<GOOD>
                                        .MEXIT
                                        .ENDC
                                        .IF B   <ITRCNT>
                                        M$PRINT C$PNTB,#EMG501,<CHAN>,<GOOD>,<BAD>
                                        .MEXIT
                                        .ENDC
                                        .IF B   <>
     003672                             M$PRINT C$PNTB,#EMG501,<CHAN>,<GOOD>,<BAD>,<ITRCNT>
                                        .MCALL  M$COUNT,M$PUT,M$GNINS,M$SVC
               000001                   T$ARGCNT=1
     003672                             M$COUNT T$ARGCNT,<CHAN>,<GOOD>,<BAD>,<ITRCNT>,<>,<>,<>,<>
                                        .IF NB <GOOD>
     003672                             M$COUNT T$ARGCNT,<GOOD>,<BAD>,<ITRCNT>,<>,<>,<>,<>,<>
                                        .IF NB <BAD>
     003672                             M$COUNT T$ARGCNT,<BAD>,<ITRCNT>,<>,<>,<>,<>,<>,<>
                                        .IF NB <ITRCNT>
     003672                             M$COUNT T$ARGCNT,<ITRCNT>,<>,<>,<>,<>,<>,<>,<>
                                        .IF NB <>
                                        M$COUNT T$ARGCNT,<>,<>,<>,<>,<>,<>,<>,<>
                                        .ENDC
                                        .IF NB <ITRCNT>
               000002                   T$ARGCNT=T$ARGCNT+1
                                        .ENDC
                                        .ENDC
                                        .IF NB <BAD>
               000003                   T$ARGCNT=T$ARGCNT+1
                                        .ENDC
                                        .ENDC
                                        .IF NB <GOOD>
               000004                   T$ARGCNT=T$ARGCNT+1
                                        .ENDC
                                        .ENDC
                                        .IF NB <CHAN>
               000005                   T$ARGCNT=T$ARGCNT+1
                                        .ENDC
                                        .IRP    N,<\T$ARGCNT>
                                        M$PUT   #N,#EMG501,<CHAN>,<GOOD>,<BAD>,<ITRCNT>,<>,<>,<>,<>
                                        .ENDM
```

```
003672                          M$PUT   #5,#EMG501,<CHAN>,<GOOD>,<BAD>,<ITRCNT>,<>,<>,<>,<>
                                .MCALL  M$PUT1
                                .IF NB  <#EMG501>
003672                          M$PUT   <#EMG501>,<CHAN>,<GOOD>,<BAD>,<ITRCNT>,<>,<>,<>,<>
                                .MCALL  M$PUT1
                                .IF NB  <CHAN>
003672                          M$PUT   <CHAN>,<GOOD>,<BAD>,<ITRCNT>,<>,<>,<>,<>,<>
                                .MCALL  M$PUT1
                                .IF NB  <GOOD>
003672                          M$PUT   <GOOD>,<BAD>,<ITRCNT>,<>,<>,<>,<>,<>,<>
                                .MCALL  M$PUT1
                                .IF NB  <BAD>
003672                          M$PUT   <BAD>,<ITRCNT>,<>,<>,<>,<>,<>,<>,<>
                                .MCALL  M$PUT1
                                .IF NB  <ITRCNT>
003672                          M$PUT   <ITRCNT>,<>,<>,<>,<>,<>,<>,<>,<>
                                .MCALL  M$PUT1
                                .IF NB  <>
                                M$PUT   <>,<>,<>,<>,<>,<>,<>,<>,<>
                                .ENDC
                                .IF NB  <ITRCNT>
003672                          M$PUT1  ITRCNT
                                .MCALL  M$GNINS
                                .IF B
003672                          M$GNINS <MOV    ITRCNT,-(SP)>
                                .IF LT SVCINS
                                MOV     ITRCNT, (SP)
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        MOV     ITRCNT,-(SP)
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
003672  013746  002322                                                          MOV     ITRCNT,-(SP)
                                                .NLIST
                                .ENDC
                                .IFF
                                .IF DIF B,<ITRCNT>
                                .ERROR  ;ILL. ARG. "ITRCNT" ONLY "B" IS ALLOWED.
                                .MEXIT
                                .ENDC
                                M$GNINS <CLR    -(SP)>
                                M$GNINS <BISB   ,(SP)>
                                .ENDC
                                .ENDC
                                .ENDC
                                .IF NB  <BAD>
003676                          M$PUT1  BAD
                                .MCALL  M$GNINS
                                .IF B
003676                          M$GNINS <MOV    BAD,-(SP)>
                                .IF LT SVCINS
                                MOV     BAD,-(SP)
```

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111

J11


```
                                   .MEXIT
                                   .ENDC
                                   .IF EQ SVCINS
                                   .LIST
                                           MOV     BAD,-(SP)
                                                   .NLIST
                                   .MEXIT
                                   .ENDC
                                   .IF GT SVCINS
                                   .LIST
      003676  013746  002502                                                       MOV     BAD,-(SP)
                                                   .NLIST
                                   .ENDC
                                   .IFF
                                   .IF DIF B,<BAD>
                                   .ERROR  ;ILL. ARG. "BAD" ONLY "B" IS ALLOWED.
                                   .MEXIT
                                   .ENDC
                                   M$GNINS <CLR    -(SP)>
                                   M$GNINS <BISB   ,(SP)>
                                   .ENDC
                                   .ENDC
                                   .ENDC
                                   .IF NB  <GOOD>
      003702                       M$PUT1  GOOD
                                   .MCALL  M$GNINS
                                   .IF B
      003702                       M$GNINS <MOV    GOOD, (SP)>
                                   .IF LT SVCINS
                                   MOV     GOOD,-(SP)
                                   .MEXIT
                                   .ENDC
                                   .IF EQ SVCINS
                                   .LIST
                                           MOV     GOOD,-(SP)
                                                   .NLIST
                                   .MEXIT
                                   .ENDC
                                   .IF GT SVCINS
                                   .LIST
      003702  013746  002500                                                       MOV     GOOD,-(SP)
                                                   .NLIST
                                   .ENDC
                                   .IFF
                                   .IF DIF B,<GOOD>
                                   .ERROR  ;ILL. ARG. "GOOD" ONLY "B" IS ALLOWED.
                                   .MEXIT
                                   .ENDC
                                   M$GNINS <CLR    -(SP)>
                                   M$GNINS <BISB   ,(SP)>
                                   .ENDC
                                   .ENDC
                                   .ENDC
                                   .IF NB  <CHAN>
      003706                       M$PUT1  CHAN
                                   .MCALL  M$GNINS
                                   .IF B
```

K11


```
        003706                          M$GNINS <MOV    CHAN,-(SP)>
                                        .IF LT SVCINS
                                        MOV     CHAN,-(SP)
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                MOV     CHAN,-(SP)
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
        003706  013746  002374                                                          MOV     CHAN,-(SP)
                                                        .NLIST
                                        .ENDC
                                        .IFF
                                        .IF DIF B,<CHAN>
                                        .ERROR  ;ILL. ARG. "CHAN" ONLY "B" IS ALLOWED.
                                        .MEXIT
                                        .ENDC
                                        M$GNINS <CLR    -(SP)>
                                        M$GNINS <BISB   ,(SP)>
                                        .ENDC
                                        .ENDC
                                        .ENDC
                                        .IF NB  <#EMG501>
        003712                          M$PUT1  #EMG501
                                        .MCALL  M$GNINS
                                        .IF B
        003712                          M$GNINS <MOV    #EMG501,-(SP)>
                                        .IF LT SVCINS
                                        MOV     #EMG501,-(SP)
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                MOV     #EMG501,-(SP)
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
        003712  012746  004550                                                          MOV     #EMG501, (SP)
                                                        .NLIST
                                        .ENDC
                                        .IFF
                                        .IF DIF B,<#EMG501>
                                        .ERROR  ;ILL. ARG. "#EMG501" ONLY "B" IS ALLOWED.
                                        .MEXIT
                                        .ENDC
                                        M$GNINS <CLR    -(SP)>
                                        M$GNINS <BISB   ,(SP)>
                                        .ENDC
                                        .ENDC
                                        .ENDC
                                        .IF NB  <#5>
```

```
        003716                                   M$PUT1  #5
                                                 .MCALL  M$GNINS
                                                 .IF B
        003716                                   M$GNINS <MOV    #5,-(SP)>
                                                 .IF LT SVCINS
                                                 MOV     #5,-(SP)
                                                 .MEXIT
                                                 .ENDC
                                                 .IF EQ SVCINS
                                                 .LIST
                                                         MOV     #5,-(SP)
                                                                 .NLIST
                                                 .MEXIT
                                                 .ENDC
                                                 .IF GT SVCINS
                                                 .LIST
        003716  012746  000005                                                                   MOV     #5, (SP)
                                                                 .NLIST
                                                 .ENDC
                                                 .IFF
                                                 .IF DIF B,<#5>
                                                 .ERROR  ;ILL. ARG. "#5" ONLY "B" IS ALLOWED.
                                                 .MEXIT
                                                 .ENDC
                                                 M$GNINS <CLR    -(SP)>
                                                 M$GNINS <BISB   ,(SP)>
                                                 .ENDC
                                                 .ENDC
        003722                                   M$GNINS <MOV    SP,R0>
                                                 .IF LT SVCINS
                                                 MOV     SP,R0
                                                 .ME' .T
                                                 .E  )C
                                                 .IF EQ SVCINS
                                                 .LIST
                                                         MOV     SP,R0
                                                                 .NLIST
                                                 .MEXIT
                                                 .ENDC
                                                 .IF GT SVCINS
                                                 .LIST
        003722  010600                                                                           MOV     SP,R0
                                                                 .NLIST
                                                 .ENDC
        003724                                   M$SVC   C$PNTB
                                                 .MCALL  M$GNINS,M$TSTLAB
        003724                                   M$TSTLAB
                                                 .MCALL  M$TLABEL,M$INCR
                                                 .IIF LT T$TSTMAC, .MEXIT
                                                 .RADIX  10
                                                 M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                                 .RADIX  8
                                                 M$INCR  T$TSTSEQ
        003724                                   M$GNINS <TRAP   C$PNTB>
                                                 .IF LT SVCINS
                                                 TRAP    C$PNTB
                                                 .MEXIT
```

```
                                  .ENDC
                                  .IF EQ SVCINS
                                  .LIST
                                          TRAP     C$PNTB
                                                   .NLIST
                                  .MEXIT
                                  .ENDC
                                  .IF GT SVCINS
                                  .LIST
      003724  104414                                                                  TRAP     C$PNTB
                                                   .NLIST
                                  .ENDC
                                  .IRP     N,<\T$ARGCNT*2+2>
                                  M$GNINS <ADD     #N,SP>
                                  .ENDM
      003726                      M$GNINS <ADD     #14,SP>
                                  .IF LT SVCINS
                                  ADD      #14,SP
                                  .MEXIT
                                  .ENDC
                                  .IF EQ SVCINS
                                  .LIST
                                          ADD      #14,SP
                                                   .NLIST
                                  .MEXIT
                                  .ENDC
                                  .IF GT SVCINS
                                  .LIST
      003726  062706  000014                                                          ADD      #14,SP
                                                   .NLIST
                                  .ENDC
                                  .MEXIT
                                  .ENDC
                                  .IF B    <>
                                  M$PRINT C$PNTB,#EMG501,<CHAN>,<GOOD>,<BAD>,<ITRCNT>,<>
                                  .MEXIT
                                  .ENDC
                                  .IF B    <>
                                  M$PRINT C$PNTB,#EMG501,<CHAN>,<GOOD>,<BAD>,<ITRCNT>,<>,<>
                                  .MEXIT
                                  .ENDC
                                  .IF B    <>
                                  M$PRINT C$PNTB,#EMG501,<CHAN>,<GOOD>,<BAD>,<ITRCNT>,<>,<>,<>
                                  .MEXIT
                                  .ENDC
                                  M$PRINT C$PNTB,#EMG501,<CHAN>,<GOOD>,<BAD>,<ITRCNT>,<>,<>,<>,<>
 1557 003732                              ENDMSG
                                  .MCALL   M$POP,M$GNTAG,M$SVC,M$ENDERR
      003732                      M$POP    T$NS,T$NESTLEV,T$TEMP
                                  .MCALL   M$GETS,M$DECR
                                  .IF LT   T$NESTLEV
                                  .ERROR   T$NESTLEV        ; MACRO T$NS UNDERFLOW
                                  .MEXIT
                                  .ENDC
      003732                      M$GETS   T$NS,\T$NESTLEV,T$TEMP
              000011              T$TEMP=T$NS1
      003732                      M$DECR   T$NESTLEV
```

78 8018 3673-6

```
                000000              T$NESTLEV=T$NESTLEV-1
                                    .IF EQ F$MSG-T$TEMP
        003732                      M$GNTAG L,T$$MSG
                                    .MCALL  M$GEN
        003732                      M$GEN   L,\T$$MSG,SVCTAG
                                    .IF LE  SVCTAG
                                    .IIF EQ SVCTAG,.LIST
                                    L10007:
                                    .IIF EQ SVCTAG,.NLIST
                                    .MEXIT
                                    .ENDC
                                    .LIST
        003732                                                              L100C7:
                                            .NLIST
                010000              S$LSYM=T$LSYM
        003732                      M$SVC   C$MSG
                                    .MCALL  M$GNINS,M$TSTLAB
        003732                      M$TSTLAB
                                    .MCALL  M$TLABEL,M$INCR
                                    .IIF LT T$TSTMAC, .MEXIT
                                    .RADIX  10
                                    M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                    .RADIX  8
                                    M$INCR  T$TSTSEQ
        003732                      M$GNINS <TRAP   C$MSG>
                                    .IF LT SVCINS
                                    TRAP    C$MSG
                                    .MEXIT
                                    .ENDC
                                    .IF EQ SVCINS
                                    .LIST
                                            TRAP    C$MSG
                                                    .NLIST
                                    .MEXIT
                                    .ENDC
                                    .IF GT SVCINS
                                    .LIST
        003732  104423                                                          TRAP    C$MSG
                                                    .NLIST
                                    .ENDC
                000041              I$MSG=F$END
                                    .IFF
                                    M$ENDERR        ENDMSG,T$TEMP
                                    .ENDC
   1558
   1559 003734                              BGNMSG  ERR231
                                    .MCALL  M$PUSH,M$INCR,M$GNGBL
                000040              I$MSG=F$BGN
        003734                      M$PUSH  T$NS,T$NESTLEV,F$MSG
                                    .MCALL  M$INCR,M$SETS
        003734                      M$INCR  T$NESTLEV
                000001              T$NESTLEV=T$NESTLEV+1
        003734                      M$SETS  T$NS,\T$NESTLEV,F$MSG
                000011              T$NS1=F$MSG
                010010              T$$MSG-T$TAGNUM
        003734                      M$INCR T$TAGNUM
                010011              T$TAGNUM=T$TAGNUM+1
```

```
      003734                          M$GNGBL ERR231
                                      .MCALL  M$GEN
                                      .IF NB,ERR231
                                      .IF NB,
                                      M$GEN   ERR231,:,SVCGBL,
                                      .ENDC
                                      .IF B,
      003734                          M$GEN   ERR231,:,SVCGBL,< >
                                      .IF LE  SVCGBL
                                      .IIF EQ SVCGBL,.LIST
                                      ERR231::
                                      .IIF EQ SVCGBL,.NLIST
                                      .MEXIT
                                      .ENDC
                                      .LIST
      003734                                                                  ERR231::
                                              .NLIST
                                      .ENDC
                                      .ENDC
 1560 003734                                  PRINTB  #DMAHAD
                                      .MCALL  M$PRINT
                                      .IF B   #DMAHAD
                                      .ERROR  ;MISSING FORMAT
                                      .MEXIT
                                      .ENDC
                                      .IF B   <>
      003734                          M$PRINT C$PNTB,#DMAHAD
                                      .MCALL  M$COUNT,M$PUT,M$GNINS,M$SVC
             000001                   T$ARGCNT=1
      003734                          M$COUNT T$ARGCNT,<>,<>,<>,<>,<>,<>,<>,<>
                                      .IF NB <>
                                      M$COUNT T$ARGCNT,<>,<>,<>,<>,<>,<>,<>,<>
                                      .ENDC
                                      .IF NB <>
                                      T$ARGCNT=T$ARGCNT+1
                                      .ENDC
                                      .IRP    N,<\T$ARGCNT>
                                      M$PUT   #N,#DMAHAD,<>,<>,<>,<>,<>,<>,<>,<>
                                      .ENDM
      003734                          M$PUT   #1,#DMAHAD,<>,<>,<>,<>,<>,<>,<>,<>
                                      .MCALL  M$PUT1
                                      .IF NB  <#DMAHAD>
      003734                          M$PUT   <#DMAHAD>,<>,<>,<>,<>,<>,<>,<>,<>
                                      .MCALL  M$PUT1
                                      .IF NB  <>
                                      M$PUT   <>,<>,<>,<>,<>,<>,<>,<>,<>
                                      .ENDC
                                      .IF NB  <#DMAHAD>
      003734                          M$PUT1  #DMAHAD
                                      .MCALL  M$GNINS
                                      .IF B
      003734                          M$GNINS <MOV     #DMAHAD,-(SP)>
                                      .IF LT SVCINS
                                      MOV     #DMAHAD, (SP)
                                      .MEXIT
                                      .ENDC
                                      .IF EQ SVCINS
```

C12

C12


```
                                .LIST
                                        MOV     ØDMAHAD,-(SP)
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
     003734  012746  004705                                                     MOV     ØDMAHAD,-(SP)
                                                .NLIST
                                .ENDC
                                .IFF
                                .IF DIF B,<ØDMAHAD>
                                .ERROR  ;ILL. ARG. "ØDMAHAD" ONLY "B" IS ALLOWED.
                                .MEXIT
                                .ENDC
                                M$GNINS <CLR    -(SP)>
                                M$GNINS <BISB   ,(SP)>
                                .ENDC
                                .ENDC
                                .ENDC
                                .IF NB  <Ø1>
     003740                     M$PUT1  Ø1
                                .MCALL  M$GNINS
                                .IF B
     003740                     M$GNINS <MOV    Ø1,-(SP)>
                                .IF LT SVCINS
                                MOV     Ø1,-(SP)
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        MOV     Ø1,-(SP)
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
     003740  012746  000001                                                     MOV     Ø1,-(SP)
                                                .NLIST
                                .ENDC
                                .IFF
                                .IF DIF B,<Ø1>
                                .ERROR  ;ILL. ARG. "Ø1" ONLY "B" IS ALLOWED.
                                .MEXIT
                                .ENDC
                                M$GNINS <CLR    -(SP)>
                                M$GNINS <BISB   ,(SP)>
                                .ENDC
                                .ENDC
     003744                     M$GNINS <MOV    SP,R0>
                                .IF LT SVCINS
                                MOV     SP,R0
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        MOV     SP,R0
```

D12

```
                                                  .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
     003744  010600                                                      MOV     SP,R0
                                                  .NLIST
                                .ENDC
     003746                     M$SVC   C$PNTB
                                .MCALL  M$GNINS,M$TSTLAB
     003746                     M$TSTLAB
                                .MCALL  M$TLABEL,M$INCR
                                .IIF LT T$TSTMAC, .MEXIT
                                .RADIX  10
                                M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                .RADIX  8
                                M$INCR  T$TSTSEQ
     003746                     M$GNINS <TRAP   C$PNTB>
                                .IF LT SVCINS
                                TRAP    C$PNTB
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        TRAP    C$PNTB
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
     003746  104414                                                      TRAP    C$PNTB
                                                  .NLIST
                                .ENDC
                                .IRP    N,<\T$ARGCNT*2+2>
                                M$GNINS <ADD    #N,SP>
                                .ENDM
     003750                     M$GNINS <ADD    #4,SP>
                                .IF LT SVCINS
                                ADD     #4,SP
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        ADD     #4,SP
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
     003750  062706  000004                                              ADD     #4,SP
                                                  .NLIST
                                .ENDC
                                .MEXIT
                                .ENDC
                                .IF B   <>
                                M$PRINT C$PNTB,#DMAHAD,<>
                                .MEXIT
```

```
                                             .ENDC
                                             .IF B    <>
                                             M$PRINT C$PNTB,#DMAHAD,<>,<>
                                             .MEXIT
                                             .ENDC
                                             .IF B    <>
                                             M$PRINT C$PNTB,#DMAHAD,<>,<>,<>
                                             .MEXIT
                                             .ENDC
                                             .IF B    <>
                                             M$PRINT C$PNTB,#DMAHAD,<>,<>,<>,<>
                                             .MEXIT
                                             .ENDC
                                             .IF B    <>
                                             M$PRINT C$PNTB,#DMAHAD,<>,<>,<>,<>,<>
                                             .MEXIT
                                             .ENDC
                                             .IF B    <>
                                             M$PRINT C$PNTB,#DMAHAD,<>,<>,<>,<>,<>,<>
                                             .MEXIT
                                             .ENDC
                                             .IF B    <>
                                             M$PRINT C$PNTB,#DMAHAD,<>,<>,<>,<>,<>,<>,<>
                                             .MEXIT
                                             .ENDC
                                             M$PRINT C$PNTB,#DMAHAD,<>,<>,<>,<>,<>,<>,<>,<>
003754  006337  002426                               ASL     TXADRH
003760  006337  002422                               ASL     RXADRH
003764  005737  002430                               TST     TXADRL
003770  002005                                       BGE     1$
003772  042737  100000  002430                       BIC     #100000,TXADRL
004000  005237  002426                               INC     TXADRH
004004  005737  002424                       1$:     TST     RXADRL
004010  002005                                       BGE     2$
004012  042737  100000  002424                       BIC     #100000,RXADRL
004020  005237  002422                               INC     RXADRH
004024                                       2$:     PRINTB  #EMG231,GOOD,TXADRH,TXADRL,BAD,RXADRH,RXADRL,CNT1
                                             .MCALL  M$PRINT
                                             .IF B   #EMG231
                                             .ERROR  ;MISSING FORMAT
                                             .MEXIT
                                             .ENDC
                                             .IF B   <GOOD>
                                             M$PRINT C$PNTB,#EMG231
                                             .MEXIT
                                             .ENDC
                                             .IF B   <TXADRH>
                                             M$PRINT C$PNTB,#EMG231,<GOOD>
                                             .MEXIT
                                             .ENDC
                                             .IF B   <TXADRL>
                                             M$PRINT C$PNTB,#EMG231,<GOOD>,<TXADRH>
                                             .MEXIT
                                             .ENDC
                                             .IF B   <BAD>
                                             M$PRINT C$PNTB,#EMG231,<GOOD>,<TXADRH>,<TXADRL>
                                             .MEXIT
```

```
                                .ENDC
                                .IF B   <RXADRH>
                                M$PRINT C$PNTB,#EMG231,<GOOD>,<TXADRH>,<TXADRL>,<BAD>
                                .MEXIT
                                .ENDC
                                .IF B   <RXADRL>
                                M$PRINT C$PNTB,#EMG231,<GOOD>,<TXADRH>,<TXADRL>,<BAD>,<RXADRH>
                                .MEXIT
                                .ENDC
                                .IF B   <CNT1>
                                M$PRINT C$PNTB,#EMG231,<GOOD>,<TXADRH>,<TXADRL>,<BAD>,<RXADRH>,<RXADRL>
                                .MEXIT
                                .ENDC
                                .IF B   <>
      004024                    M$PRINT C$PNTB,#EMG231,<GOOD>,<TXADRH>,<TXADRL>,<BAD>,<RXADRH>,<RXADRL>,<CNT1>
                                .MCALL  M$COUNT,M$PUT,M$GNINS,M$SVC
              000001            T$ARGCNT=1
      004024                    M$COUNT T$ARGCNT,<GOOD>,<TXADRH>,<TXADRL>,<BAD>,<RXADRH>,<RXADRL>,<CNT1>,<>
                                .IF NB <TXADRH>
      004024                    M$COUNT T$ARGCNT,<TXADRH>,<TXADRL>,<BAD>,<RXADRH>,<RXADRL>,<CNT1>,<>,<>
                                .IF NB <TXADRL>
      004024                    M$COUNT T$ARGCNT,<TXADRL>,<BAD>,<RXADRH>,<RXADRL>,<CNT1>,<>,<>,<>
                                .IF NB <BAD>
      004024                    M$COUNT T$ARGCNT,<BAD>,<RXADRH>,<RXADRL>,<CNT1>,<>,<>,<>,<>
                                .IF NB <RXADRH>
      004024                    M$COUNT T$ARGCNT,<RXADRH>,<RXADRL>,<CNT1>,<>,<>,<>,<>,<>
                                .IF NB <RXADRL>
      004024                    M$COUNT T$ARGCNT,<RXADRL>,<CNT1>,<>,<>,<>,<>,<>,<>
                                .IF NB <CNT1>
      004024                    M$COUNT T$ARGCNT,<CNT1>,<>,<>,<>,<>,<>,<>,<>
                                .IF NB <>
                                M$COUNT T$ARGCNT,<>,<>,<>,<>,<>,<>,<>,<>
                                .ENDC
                                .IF NB <CNT1>
              000002            T$ARGCNT=T$ARGCNT+1
                                .ENDC
                                .ENDC
                                .IF NB <RXADRL>
              000003            T$ARGCNT=T$ARGCNT+1
                                .ENDC
                                .ENDC
                                .IF NB <RXADRH>
              000004            T$ARGCNT=T$ARGCNT+1
                                .ENDC
                                .ENDC
                                .IF NB <BAD>
              000005            T$ARGCNT=T$ARGCNT+1
                                .ENDC
                                .ENDC
                                .IF NB <TXADRL>
              000006            T$ARGCNT=T$ARGCNT+1
                                .ENDC
                                .ENDC
                                .IF NB <TXADRH>
              000007            T$ARGCNT-T$ARGCNT+1
                                .ENDC
                                .ENDC
```

```
                                        .IF NB <GOOD>
              000010                    T$ARGCNT=T$ARGCNT+1
                                        .ENDC
                                        .IRP    N,<\T$ARGCNT>
                                        M$PUT   #N,#EMG231,<GOOD>,<TXADRH>,<TXADRL>,<BAD>,<RXADRH>,<RXADRL>,<CNT1>,<>
                                        .ENDM
        004024                          M$PUT   #10,#EMG231,<GOOD>,<TXADRH>,<TXADRL>,<BAD>,<RXADRH>,<RXADRL>,<CNT1>,<>
                                        .MCALL  M$PUT1
                                        .IF NB  <#EMG231>
        004024                          M$PUT   <#EMG231>,<GOOD>,<TXADRH>,<TXADRL>,<BAD>,<RXADRH>,<RXADRL>,<CNT1>,<>
                                        .MCALL  M$PUT1
                                        .IF NB  <GOOD>
        004024                          M$PUT   <GOOD>,<TXADRH>,<TXADRL>,<BAD>,<RXADRH>,<RXADRL>,<CNT1>,<>,<>
                                        .MCALL  M$PUT1
                                        .IF NB  <TXADRH>
        004024                          M$PUT   <TXADRH>,<TXADRL>,<BAD>,<RXADRH>,<RXADRL>,<CNT1>,<>,<>,<>
                                        .MCALL  M$PUT1
                                        .IF NB  <TXADRL>
        004024                          M$PUT   <TXADRL>,<BAD>,<RXADRH>,<RXADRL>,<CNT1>,<>,<>,<>,<>
                                        .MCALL  M$PUT1
                                        .IF NB  <BAD>
        004024                          M$PUT   <BAD>,<RXADRH>,<RXADRL>,<CNT1>,<>,<>,<>,<>,<>
                                        .MCALL  M$PUT1
                                        .IF NB  <RXADRH>
        004024                          M$PUT   <RXADRH>,<RXADRL>,<CNT1>,<>,<>,<>,<>,<>,<>
                                        .MCALL  M$PUT1
                                        .IF NB  <RXADRL>
        004024                          M$PUT   <RXADRL>,<CNT1>,<>,<>,<>,<>,<>,<>,<>
                                        .MCALL  M$PUT1
                                        .IF NB  <CNT1>
        004024                          M$PUT   <CNT1>,<>,<>,<>,<>,<>,<>,<>,<>
                                        .MCALL  M$PUT1
                                        .IF NB  <>
                                        M$PUT   <>,<>,<>,<>,<>,<>,<>,<>,<>
                                        .ENDC
                                        .IF NB  <CNT1>
        004024                          M$PUT1  CNT1
                                        .MCALL  M$GNINS
                                        .IF B
        004024                          M$GNINS <MOV    CNT1,-(SP)>
                                        .IF LT SVCINS
                                        MOV     CNT1,-(SP)
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                MOV     CNT1,-(SP)
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
        004024  013746  002404                                                  MOV     CNT1,-(SP)
                                                        .NLIST
                                        .ENDC
                                        .IFF
                                        .IF DIF B,<CNT1>
```

H12


```
                                        .ERROR  ;ILL. ARG. "CNT1" ONLY "B" IS ALLOWED.
                                        .MEXIT
                                        .ENDC
                                        M$GNINS <CLR    -(SP)>
                                        M$GNINS <BISB   ,(SP)>
                                        .ENDC
                                        .ENDC
                                        .ENDC
                                        .IF NB  <RXADRL>
      004030                            M$PUT1  RXADRL
                                        .MCALL  M$GNINS
                                        .IF B
      004030                            M$GNINS <MOV    RXADRL,-(SP)>
                                        .IF LT SVCINS
                                        MOV     RXADRL,-(SP)
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                MOV     RXADRL,-(SP)
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
      004030  013746  002424                                                            MOV     RXADRL,-(SP)
                                                        .NLIST
                                        .ENDC
                                        .IFF
                                        .IF DIF B,<RXADRL>
                                        .ERROR  ;ILL. ARG. "RXADRL" ONLY "B" IS ALLOWED.
                                        .MEXIT
                                        .ENDC
                                        M$GNINS <CLR    -(SP)>
                                        M$GNINS <BISB   ,(SP)>
                                        .ENDC
                                        .ENDC
                                        .ENDC
                                        .IF NB  <RXADRH>
      004034                            M$PUT1  RXADRH
                                        .MCALL  M$GNINS
                                        .IF B
      004034                            M$GNINS <MOV    RXADRH, (SP)>
                                        .IF LT SVCINS
                                        MOV     RXADRH,-(SP)
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                MOV     RXADRH, (SP)
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
      004034  013746  002422                                                            MOV     RXADRH,-(SP)
                                                        .NLIST
```

78 8018 3875-6

```
                                .ENDC
                                .IFF
                                .IF DIF B,<RXADRH>
                                .ERROR  ;ILL. ARG. "RXADRH" ONLY "B" IS ALLOWED.
                                .MEXIT
                                .ENDC
                                M$GNINS <CLR    -(SP)>
                                M$GNINS <BISB   ,(SP)>
                                .ENDC
                                .ENDC
                                .ENDC
                                .IF NB  <BAD>
     004040                     M$PUT1  BAD
                                .MCALL  M$GNINS
                                .IF B
     004040                     M$GNINS <MOV    BAD,-(SP)>
                                .IF LT SVCINS
                                MOV     BAD,-(SP)
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        MOV     BAD,-(SP)
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
     004040  013746  002502                                             MOV     BAD,-(SP)
                                                .NLIST
                                .ENDC
                                .IFF
                                .IF DIF B,<BAD>
                                .ERROR  ;ILL. ARG. "BAD" ONLY "B" IS ALLOWED.
                                .MEXIT
                                .ENDC
                                M$GNINS <CLR    -(SP)>
                                M$GNINS <BISB   ,(SP)>
                                .ENDC
                                .ENDC
                                .ENDC
                                .IF NB  <TXADRL>
     004044                     M$PUT1  TXADRL
                                .MCALL  M$GNINS
                                .IF B
     004044                     M$GNINS <MOV    TXADRL,-(SP)>
                                .IF LT SVCINS
                                MOV     TXADRL,-(SP)
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        MOV     TXADRL,-(SP)
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
```

J12


```
                                        .LIST
        004044  013746  002430                                                                  MOV     TXADRL, (SP)
                                                        .NLIST
                                        .ENDC
                                        .IFF
                                        .IF DIF B,<TXADRL>
                                        .ERROR  ;ILL. ARG. "TXADRL" ONLY "B" IS ALLOWED.
                                        .MEXIT
                                        .ENDC
                                        M$GNINS <CLR    -(SP)>
                                        M$GNINS <BISB   ,(SP)>
                                        .ENDC
                                        .ENDC
                                        .ENDC
                                        .IF NB  <TXADRH>
        004050                          M$PUT1  TXADRH
                                        .MCALL  M$GNINS
                                        .IF B
        004050                          M$GNINS <MOV    TXADRH,-(SP)>
                                        .IF LT SVCINS
                                        MOV     TXADRH,-(SP)
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                MOV     TXADRH,-(SP)
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
        004050  013746  002426                                                                  MOV     TXADRH,-(SP)
                                                        .NLIST
                                        .ENDC
                                        .IFF
                                        .IF DIF B,<TXADRH>
                                        .ERROR  ;ILL. ARG. "TXADRH" ONLY "B" IS ALLOWED.
                                        .MEXIT
                                        .ENDC
                                        M$GNINS <CLR    -(SP)>
                                        M$GNINS <BISB   ,(SP)>
                                        .ENDC
                                        .ENDC
                                        .ENDC
                                        .IF NB  <GOOD>
        004054                          M$PUT1  GOOD
                                        .MCALL  M$GNINS
                                        .IF B
        004054                          M$GNINS <MOV    GOOD,-(SP)>
                                        .IF LT SVCINS
                                        MOV     GOOD, (SP)
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                MOV     GOOD,-(SP)
                                                        .NLIST
```

K12


```
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
     004054  013746  002500                                                 MOV     GOOD,-(SP)
                                          .NLIST
                                .ENDC
                                .IFF
                                .IF DIF B,<GOOD>
                                .ERROR  ;ILL. ARG. "GOOD" ONLY "B" IS ALLOWED.
                                .MEXIT
                                .ENDC
                                M$GNINS <CLR    -(SP)>
                                M$GNINS <BISB   ,(SP)>
                                .ENDC
                                .ENDC
                                .ENDC
                                .IF NB  <#EMG231>
     004060                     M$PUT1  #EMG231
                                .MCALL  M$GNINS
                                .IF B
     004060                     M$GNINS <MOV    #EMG231,-(SP)>
                                .IF LT SVCINS
                                MOV     #EMG231,-(SP)
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        MOV     #EMG231,-(SP)
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
     004060  012746  004641                                                 MOV     #EMG231,-(SP)
                                          .NLIST
                                .ENDC
                                .IFF
                                .IF DIF B,<#EMG231>
                                .ERROR  ;ILL. ARG. "#EMG231" ONLY "B" IS ALLOWED.
                                .MEXIT
                                .ENDC
                                M$GNINS <CLR    -(SP)>
                                M$GNINS <BISB   ,(SP)>
                                .ENDC
                                .ENDC
                                .ENDC
                                .IF NB  <#10>
     004064                     M$PUT1  #10
                                .MCALL  M$GNINS
                                .IF B
     004064                     M$GNINS <MOV    #10,-(SP)>
                                .IF LT SVCINS
                                MOV     #10,-(SP)
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
```

```
                                        .LIST
                                                MOV     #10,-(SP)
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
      004064  012746  000010                                                            MOV     #10,-(SP)
                                                        .NLIST
                                        .ENDC
                                        .IFF
                                        .IF DIF B,<#10>
                                        .ERROR  ;ILL. ARG. "#10" ONLY "B" IS ALLOWED.
                                        .MEXIT
                                        .ENDC
                                        M$GNINS <CLR    -(SP)>
                                        M$GNINS <BISB   ,(SP)>
                                        .ENDC
                                        .ENDC
      004070                            M$GNINS <MOV    SP,R0>
                                        .IF LT SVCINS
                                        MOV     SP,R0
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                MOV     SP,R0
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
      004070  010600                                                                    MOV     SP,R0
                                                        .NLIST
                                        .ENDC
      004072                            M$SVC   C$PNTB
                                        .MCALL  M$GNINS,M$TSTLAB
      004072                            M$TSTLAB
                                        .MCALL  M$TLABEL,M$INCR
                                        .IIF LT T$TSTMAC, .MEXIT
                                        .RADIX  10
                                        M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                        .RADIX  8
                                        M$INCR  T$TSTSEQ
      004072                            M$GNINS <TRAP   C$PNTB>
                                        .IF LT SVCINS
                                        TRAP    C$PNTB
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                TRAP    C$PNTB
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
```

```
       004072  104414                                                        TRAP    C$PNTB
                                                     .NLIST
                                     .ENDC
                                     .IRP     N,<\T$ARGCNT*2+2>
                                     M$GNINS <ADD      #N,SP>
                                     .ENDM
       004074                        M$GNINS <ADD      #22,SP>
                                     .IF LT SVCINS
                                     ADD      #22,SP
                                     .MEXIT
                                     .ENDC
                                     .IF EQ SVCINS
                                     .LIST
                                              ADD      #22,SP
                                                       .NLIST
                                     .MEXIT
                                     .ENDC
                                     .IF GT SVCINS
                                     .LIST
       004074  062706  000022                                                ADD     #22,SP
                                                       .NLIST
                                     .ENDC
                                     .MEXIT
                                     .ENDC
                                     M$PRINT C$PNTB,#EMG231,<GOOD>,<TXADRH>,<TXADPL>,<BAD>,<RXADRH>,<RXADRL>,<CNT1>,<>
  1572 004100                                 ENDMSG
                                     .MCALL   M$POP,M$GNTAG,M$SVC,M$ENDERR
       004100                        M$POP    T$NS,T$NESTLEV,T$TEMP
                                     .MCALL   M$GETS,M$DECR
                                     .IF LT   T$NESTLEV
                                     .ERROR   T$NESTLEV       ; MACRO T$NS UNDERFLOW
                                     .MEXIT
                                     .ENDC
       004100                        M$GETS   T$NS,\T$NESTLEV,T$TEMP
               000011                T$TEMP=T$NS1
       004100                        M$DECR   T$NESTLEV
               000000                T$NESTLEV=T$NESTLEV-1
                                     .IF EQ F$MSG-T$TEMP
       004100                        M$GNTAG L,T$$MSG
                                     .MCALL   M$GEN
       004100                        M$GEN    L,\T$$MSG,SVCTAG
                                     .IF LE   SVCTAG
                                     .IIF EQ SVCTAG,.LIST
                                     L10010:
                                     .IIF EQ SVCTAG,.NLIST
                                     .MEXIT
                                     .ENDC
                                     .LIST
       004100                                                          L10010:
                                              .NLIST
               010000                S$LSYM=T$LSYM
       004100                        M$SVC    C$MSG
                                     .MCALL   M$GNINS,M$TSTLAB
       004100                        M$TSTLAB
                                     .MCALL   M$TLABEL,M$INCR
                                     .IIF LT T$TSTMAC, .MEXIT
                                     .RADIX   10
```

```
                                M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                .RADIX  8
                                M$INCR  T$TSTSEQ
      004100                    M$GNINS <TRAP   C$MSG>
                                .IF LT SVCINS
                                TRAP    C$MSG
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        TRAP    C$MSG
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
      004100  104423                                                    TRAP    C$MSG
                                                .NLIST
                                .ENDC
              000041            I$MSG=F$END
                                .IFF
                                M$ENDERR        ENDMSG,T$TEMP
                                .ENDC
 1573
 1574 004102                            EXIT    MSG
                                .MCALL  M$SVC,M$EXIT,M$EXSEG,M$EXTJ,M$GETTOP,M$CHECK,M$WORD,XFER
              000041            T$FLAG=F$END
      004102                    M$CHECK MSG,T$TEMP,T$FLAG
                                .IF IDN <TST>,<MSG>
                                T$TEMP=T$$TEST
                                T$FLAG=I$TST
                                .MEXIT
                                .ENDC
                                .IF IDN <SUB>,<MSG>
                                T$TEMP=T$$SUB
                                T$FLAG=I$SUB
                                .MEXIT
                                .ENDC
                                .IF IDN <SEG>,<MSG>
                                T$TEMP=T$$SEG
                                T$FLAG=I$SEG
                                .MEXIT
                                .ENDC
                                .IF IDN <INIT>,<MSG>
                                T$TEMP=T$$INIT
                                T$FLAG=I$INIT
                                .MEXIT
                                .ENDC
                                .IF IDN <CLN>,<MSG>
                                T$TEMP=T$$CLEAN
                                T$FLAG=I$CLN
                                .MEXIT
                                .ENDC
                                .IF IDN <SRV>,<MSG>
                                T$TEMP-T$$SRV
                                T$FLAG=I$SRV
                                .MEXIT
```

B13


```
                                        .ENDC
                                        .IF IDN <MSG>,<MSG>
                  010010                T$TEMP=T$$MSG
                  000050                T$FLAG=F$JMP
                                        .MEXIT
                                        .ENDC
                                        .IF IDN <RPT>,<MSG>
                                        T$TEMP=T$$RPT
                                        T$FLAG=F$JMP
                                        .MEXIT
                                        .ENDC
                                        .IF IDN <DU>,<MSG>
                                        T$TEMP=T$$DU
                                        T$FLAG=F$JMP
                                        .MEXIT
                                        .ENDC
                                        .IF IDN <AU>,<MSG>
                                        T$TEMP=T$$AU
                                        T$FLAG=F$JMP
                                        .MEXIT
                                        .ENDC
                                        .IF EQ T$FLAG-F$JMP
        004102                          M$WORD  J$JMP
                                        .MCALL  M$GNINS
                                        .IRP    N,<J$JMP>
                                        M$GNINS <.WORD  N>
                                        .ENDM
        004102                          M$GNINS <.WORD  J$JMP>
                                        .IF LT SVCINS
                                        .WORD   J$JMP
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                .WORD   J$JMP
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
        004102    000167                                                                .WORD   J$JMP
                                                        .NLIST
                                        .ENDC
        004104                          M$EXTJ  \T$TEMP
                                        .MCALL  M$GNINS
        004104                          M$GNINS <.WORD  L10010-2 .>
                                        .I  LT SVCINS
                                        .WORD   L10010-2-.
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                .WORD   L10010-2-.
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
```

C13

```
                                        .LIST
     004104  177772                                                                          .WORD   L10010-2-.
                                                     .NLIST
                                        .ENDC
                                        .MEXIT
                                        .ENDC
                                        .IF EQ  T$FLAG-F$BGN
                                        M$SVC   C$EXIT
                                        .IF IDN <SEG>,<MSG>
                                        M$GETTOP T$SEK,T$SEGLEV,T$TEMP
                                        M$EXSEG \T$TEMP
                                        .IFF
                                        M$EXIT  \T$TEMP
                                        .ENDC
                                        .MEXIT
                                        .ENDC
                                        .IF IDN <HRD>,<MSG>
                                        M$GETTOP        T$NS,T$NESTLEV,T$TEMP
                                        .IF EQ  F$HARD-T$TEMP
                                        .IRP    N,<\T$$HARD>
                                        XFER    L'N
                                        .ENDM
                                        .MEXIT
                                        .ENDC
                                        .ENDC
                                        .IF IDN <SFT>,<MSG>
                                        M$GETTOP        T$NS,T$NESTLEV,T$TEMP
                                        .IF EQ  F$SOFT-T$TEMP
                                        .IRP    N,<\T$$SOFT>
                                        XFER    L'N
                                        .ENDM
                                        .MEXIT
                                        .ENDC
                                        .ENDC
                                        .ERROR  ;ILL. "EXIT MSG" STMT.

                                        ;
                                        ;EXTENDED ERROR MESSAGES
                                        ;
                                              .NLIST BEX
     004106   045    123    063   EMG101: .ASCIZ  /%S3%AREGISTER AT %06%A DOES NOT RESPOND%N/
     004160   045    101    122   EMG201: .ASCIZ  /%AREGISTER: CSR ,CHA.:%01%A ,GOOD DATA:%06%A, BAD DATA:%06%N/
     004255   045    101    050   EMG203: .ASCIZ  /%A(FOR IEU11-A IGNORE BIT 9-12).%N/
     004320   045    101    122   EMG202: .ASCIZ  /%AREGISTER:%T%A ,CHA.:%01%A ,GOOD DATA:%06%A ,BAD DATA:%06%N/
     004415   045    101    103   EMG401: .ASCIZ  /%ACHAN.:%01%A ,CORRECT PRIORITY:%03%A ,WRONG PRIORITY:%03%N/
     004511   045    101    103   EMG402: .ASCIZ  /%ACHANNEL :%01%A IS SELECTED%N/
     004550   045    101    103   EMG501: .ASCIZ  /%ACHAN.:%01%A ,GOOD :%06%A ,BAD :%06%A ,ITERATION :%03%N/
     004641   045    117    066   EMG231: .ASCIZ  /%06%S6%03%05%S6%06%S6%03%05%S6%06%N/
     004705   045    101    107   DMAHAD: .ASCIZ  /%AGOOD DATA   TXADDR      BAD DATA    RXADDR     BYTE CNT%%N/

                                        ;
                                        ;ERROR MESSAGES
                                        ;
     005002   040    122    105   E101::  .ASCIZ  / REGISTER ADDRESSING ERROR - TRAP 4 /
     005047   040    122    105   E200::  .ASCIZ  / REGISTER INCORRECT AFTER BUS RESET /
     005114   040    122    105   E301::  .ASCIZ  / READ - WRITE BITS INCORRECT /
     005152   040    102    111   E302::  .ASCIZ  / BITS NOT CLEARED AFTER MASTER RESET /
```

```
005220   040   115   125  E303::  .ASCIZ  / MUX BIT IN CSR NOT SETABLE /
005255   040   103   123  E401::  .ASCIZ  / CSR CONTENTS INCORRECT /
005306   040   116   117  E402::  .ASCIZ  / NO INTERRUPT WHEN EXPECTED /
005343   040   111   116  E403::  .ASCIZ  / INCORRECT PRIORITY LEVEL /
005376   040   102   111  E501::  .ASCIZ  / BITS IN IIR REGISTER INCORRECT /
005437   040   102   111  E502::  .ASCIZ  / BITS IN ISR REGISTER INCORRECT /
005500   040   104   101  E801::  .ASCIZ  / DATA TRANSFER FROM CHANNEL 1 TO 2 INCORRECT /
005556   040   104   101  E802::  .ASCIZ  / DATA TRANSFER FROM CHANNEL 2 TO 1 INCORRECT /
005634   040   111   103  E901::  .ASCIZ  / ICR CONTENTS INCORRECT /
005665   040   104   111  E222::  .ASCIZ  / DIR CONTENTS INCORRECT /
005716   040   122   130  E250::  .ASCIZ  / RX BUFFER CONTENTS INCORRECT AFTER DMA (2 TO 1) /
006000   040   122   130  E231::  .ASCIZ  / RX BUFFER CONTENTS INCORRECT AFTER DMA (1 TO 2) /
006062   040   116   117  E232::  .ASCIZ  / NO INTERRUPT AFTER DMA /
006113   040   116   117  E233::  .ASCIZ  / NO INTERRUPT AFTER READ FROM A NXM ADDRESS /
006170   040   102   101  E234::  .ASCIZ  / BAR CONTENTS INCORRECT /
006221   040   102   103  E235::  .ASCIZ  / BCR CONTENTS INCORRECT /

                                .EVEN
                                .LIST BEX
```

```
                .SBTTL  LOCAL MACRO DEFINITIONS

        ;++
        ;THIS SECTION CONTAINS ONLY MACROS WHICH ARE USED
        ;SEPARATE FROM THE MACRO LIBRARY (SVC34R)(LIBA.MLB)
        ;---

        ;*******************************************************
        ;PRIT MACRO - THIS MACRO CHECKS IF INTERRUPT OCCURES
        ;               AND WHAT IS THE PRIORITY.
        ;*******************************************************
                .MACRO  PRIT    ARG,ENUM,ERRM,?A
                TST     ARG             ;INTERRUPT OCCURED?
                BNE     A               ;BRANCH IF YES
                DEC     R1              ;CHECKSUM = 7
                SETPRI  #PRI06          ;CHANGE PROCESSOR PRIORITY TO 6
                TST     ARG             ;INTERRUPT OCCURED?
                BNE     A               ;BRANCH IF YES
                DEC     R1              ;CHECKSUM = 6
                SETPRI  #PRI05          ;CHANGE PROCESSOR PRIORITY TO 5
                TST     ARG             ;INTERRUPT OCCURED?
                BNE     A               ;BRANCH IF YES
                DEC     R1              ;CHECKSUM = 5
                SETPRI  #PRI04          ;CHANGE PROCESSOR PRIORITY TO 4
                TST     ARG             ;INTERRUPT OCCURED?
                BNE     A               ;BRANCH IF YES
                DEC     R1              ;CHECKSUM = 4
                SETPRI #PRI03           ;CHANGE PROCESSOR PRIORITY TO 3
                TST     ARG             ;INTERRUPT OCCURED?
                BNE     A               ;BRANCH IF YES
                ERRSOFT ENUM,E402,ERRM  ;NO INTERRUPT ERROR
        A:      NOP
                .ENDM   PRIT
        .SBTTL  GLOBAL SUBROUTINES SECTION
```

```
;++
; THE GLOBAL SUBROUTINES SECTION CONTAINS THE SUBROUTINES
; THAT ARE USED IN MORE THAN ONE TEST.
;++
;*************************************************************************
; SUBROUTINE REGTST - GENERAL PURPOSE REGISTER TEST.
;*************************************************************************
;
; FUNCTIONAL DESCRIPTION:
;
;       CHECKS THAT ALL READ/WRITE BITS OF THE SELECTED REGISTER CAN BE
;       SET, CLEARED, AND INDIVIDUALLY SET (SLIDING ONES PATTERN).
;
; INPUTS:
;
;       IF ENTERED AT LOCATION REGTST, THE LOCATIONS FOLLOWING THE
;       SUBROUTINE CALL MUST CONTAIN THE READ/WRITE BIT MASK, THE
;       ADDRESS OF THE REGISTER TO BE TESTED, AND THE FIRST ERROR NUMBER
;       TO BE USED (SEE CALLING SEQUENCE).
;
;       IF ENTERED AT LOCATION REGTS1, THE READ/WRITE BIT MASK, REGISTER
;       ADDRESS TO BE TESTED, AND THE FIRST ERROR NUMBER MUST BE LOADED
;       INTO LOCATIONS MASK, REGADD, AND ERRNBR RESPECTIVELY. THIS
;       ALLOWS THE ARGUMENTS TO BE VARIED AT RUN TIME.
;
; IMPLICIT INPUTS:      NONE.
;
;
; OUTPUTS:              ERROR MESSAGES IF ERRORS OCCUR.
;
;
; IMPLICIT OUTPUTS:
;
;       IF ENTERED AT LOCATION REGTST,
;
;       MASK   - CONTAINS THE READ/WRITE BIT MASK
;       REGADD - CONTAINS THE ADDRESS OF THE REGISTER BEING TESTED
;
;       ALWAYS,
;
;       MASCOM - CONTAINS THE COMPLEMENT OF THE MASK
;       GOOD   - CONTAINS LAST EXPECTED DATA
;       BAD    - CONTAINS LAST ACTUAL DATA
;       ERRNBR - CONTAINS THE INPUT ERROR NUMBER + 2
;       ERRTYP - CONTAINS 3 (SOFT ERROR)
;       ERRBLK - CONTAINS ADDRESS OF REGERR (REGISTER ERROR MESSAGE)
;       ERRMSG - CONTAINS 3RD REGISTER ERROR MESSAGE
;
; SUBORDINATE ROUTINES USED:    DRS ERROR MACRO
;
;
; FUNCTIONAL SIDE EFFECTS:      NONE.
;
;
; CALLING SEQUENCE:
;
```

```
                                        ;       EITHER FIXED PARAMETERS FOLLOW THE SUBROUTINE CALL :
                                        ;
                                        ;       EG.     CALL    REGTST
                                        ;               177                     ; BIT MASK OF R/W BITS
                                        ;               CSR                     ; REGISTER ADDRESS
                                        ;               200.                    ; FIRST ERROR NUMBER
                                        ;
                                        ;       OR PARAMETERS ARE SET DYNAMICALLY :
                                        ;
                                        ;       EG.     MOV     #177,MASK       ; BIT MASK OF R/W BITS
                                        ;               MOV     CSR,REGADD      ; REGISTER ADDRESS
                                        ;               MOV     #200.,ERRNBR    ; FIRST ERROR NUMBER
                                        ;               CALL    REGTS1
                                        ;
                                        ;************************************************************************
 006252                                 REGTST::
 006252  017637  000000  002350                 MOV     @(SP),MASK              ; GET R/W BIT MASK
 006260  062716  000002                         ADD     #2,(SP)                 ; JUMP OVER ARGUMENT
 006264  017637  000000  002354                 MOV     @(SP),REGADD            ; GET REGISTER ADDRESS
 006272  062716  000002                         ADD     #2,(SP)                 ; JUMP OVER ARGUMENT
 006276  017637  000000  002506                 MOV     @(SP),ERRNBR            ; GET FIRST ERROR NUMBER
 006304  062716  000002                         ADD     #2,(SP)                 ; JUMP OVER ARGUMENT
 006310                                 REGTS1::
 006310  013737  002350  002352                 MOV     MASK,MASCOM             ; SET UP COMPLEMENT
 006316  005137  002352                         COM     MASCOM                  ; OF R/W BIT MASK
 006322  012737  000003  002504                 MOV     #3,ERRTYP               ; SET UP FOR SOFT ERROR
 006330  012737  006602  002512                 MOV     #REGERR,ERRBLK          ; SET UP ERROR MESSAGE ROUTINE
 006336  012737  006650  002510                 MOV     #RERR1,ERRMSG           ; FIRST ERROR MESSAGE
                                        ;
                                        ; CHECK THAT ALL R/W BITS CAN BE SET
                                        ;
 006344  013737  002350  002500                 MOV     MASK,GOOD               ; SET UP EXPECTED DATA
 006352                                         BGNSEG
                                        .MCALL  M$PUSH,M$INCR,M$SVC
         000040                         I$SEG=F$BGN
 006352                                 M$PUSH  T$NS,T$NESTLEV,F$SEG
                                        .MCALL  M$INCR,M$SETS
 006352                                 M$INCR  T$NESTLEV
         000001                         T$NESTLEV=T$NESTLEV+1
 006352                                 M$SETS  T$NS,\T$NESTLEV,F$SEG
         000003                         T$NS1=F$SEG
         010000                         T$$SEG=S$LSYM
 006352                                 M$PUSH  T$SEK,T$SEGLEV,T$$SEG
                                        .MCALL  M$INCR,M$SETS
 006352                                 M$INCR  T$SEGLEV
         000000                         T$SEGLEV=T$SEGLEV+1
 006352                                 M$SETS  T$SEK,\T$SEGLEV,T$$SEG
         010000                         T$SEK0=T$$SEG
 006352                                 M$INCR  S$LSYM
         010001                         S$LSYM=S$LSYM+1
 006352                                 M$SVC   C$BSEG
                                        .MCALL  M$GNINS,M$TSTLAB
 006352                                 M$TSTLAB
                                        .MCALL  M$TLABEL,M$INCR
                                        .IIF LT T$TSTMAC, .MEXIT
                                        .RADIX  10
```

```
                                        M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                        .RADIX  8
                                        M$INCR  T$TSTSEQ
      006352                            M$GNINS <TRAP   C$BSEG>
                                        .IF LT SVCINS
                                        TRAP    C$BSEG
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                TRAP    C$BSEG
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
      006352  104404                                                                    TRAP    C$BSEG
                                                        .NLIST
                                        .ENDC
 1746 006354  053777  002500  173772            BIS     GOOD,@REGADD            ; SET ALL R/W BITS
 1747 006362  017737  173766  002502            MOV     @REGADD,BAD             ; READ THE RESULT
 1748 006370  043737  002352  002502            BIC     MASCOM,BAD              ; KEEP ONLY R/W BITS
 1749 006376  023737  002502  002500            CMP     BAD,GOOD                ; ALL R/W BITS SET?
 1750 006404  001401                                    BEQ     1$                      ; IF YES, BRANCH
 1751 006406                                    ERROR                           ; ELSE REPORT ERROR
                                        .MCALL  M$SVC
      006406                            M$SVC   C$ERROR
                                        .MCALL  M$GNINS,M$TSTLAB
      006406                            M$TSTLAB
                                        .MCALL  M$TLABEL,M$INCR
                                        .IIF LT T$TSTMAC, .MEXIT
                                        .RADIX  10
                                        M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                        .RADIX  8
                                        M$INCR  T$TSTSEQ
      006406                            M$GNINS <TRAP   C$ERROR>
                                        .IF LT SVCINS
                                        TRAP    C$ERROR
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                TRAP    C$ERROR
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
      006406  104460                                                                    TRAP    C$ERROR
                                                        .NLIST
                                        .ENDC
 1752 006410                            1$:     ENDSEG
                                        .MCALL  M$POP,M$GNLS,M$SVC,M$ENDERR
      006410                            M$POP   T$NS,T$NESTLEV,T$TEMP
                                        .MCALL  M$GETS,M$DECR
                                        .IF LT  T$NESTLEV
                                        .ERROR  T$NESTLEV       ; MACRO T$NS UNDERFLOW
```

```
                                .MEXIT
                                .ENDC
      006410                    M$GETS  T$NS,\T$NESTLEV,T$TEMP
              000003            T$TEMP=T$NS1
      006410                    M$DECR  T$NESTLEV
              000000            T$NESTLEV=T$NESTLEV-1
                                .IF EQ F$SEG-T$TEMP
      006410                    M$POP   T$SEK,T$SEGLEV,T$$SEG
                                .MCALL  M$GETS,M$DECR
                                .IF LT  T$SEGLEV
                                .ERROR  T$SEGLEV        ; MACRO T$SEK UNDERFLOW
                                .MEXIT
                                .ENDC
      006410                    M$GETS  T$SEK,\T$SEGLEV,T$$SEG
              010000            T$$SEG=T$SEK0
      006410                    M$DECR  T$SEGLEV
              177777            T$SEGLEV=T$SEGLEV-1
      006410                    M$GNLS  T$$SEG
                                .MCALL  M$GEN
                                .IF NB T$$SEG
      006410                    M$GEN   \T$$SEG,$,SVCTAG
                                .IF LE  SVCTAG
                                .IIF EQ SVCTAG,.LIST
                                10000$:
                                .IIF EQ SVCTAG,.NLIST
                                .MEXIT
                                .ENDC
                                .LIST
      006410                                                            10000$:
                                        .NLIST
                                .IFF
                                M$GEN   \S$LSYM,$,SVCTAG
                                .ENDC
      006410                    M$SVC   C$ESEG
                                .MCALL  M$GNINS,M$TSTLAB
      006410                    M$TSTLAB
                                .MCALL  M$TLABEL,M$INCR
                                .IIF LT T$TSTMAC, .MEXIT
                                .RADIX  10
                                M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                .RADIX  8
                                M$INCR  T$TSTSEQ
      006410                    M$GNINS <TRAP   C$ESEG>
                                .IF LT SVCINS
                                TRAP    C$ESEG
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        TRAP    C$ESEG
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
      006410  104405                                                         TRAP    C$ESEG
                                                .NLIST
```

```
                                        .ENDC
                                        .IF EQ T$SEGLEV+1
               000041                   I$SEG=F$END
                                        .ENDC
                                        .IFF
                                        M$ENDERR        ENDSEG,T$TEMP
                                        .ENDC
   1753                                 ;
   1754                                 ; CHECK THAT ALL R/W BITS CAN BE CLEARED
   1755                                 ;
   1756 006412 005037  002500                   CLR     GOOD                    ; SET UP EXPECTED DATA
   1757 006416 005237  002506                   INC     ERRNBR                  ; NEXT ERROR NUMBER
   1758 006422 012737  006722  002510           MOV     #RERR2,ERRMSG           ; NEXT ERROR MESSAGE
   1759
   1760 006430                                  BGNSEG
                                        .MCALL  M$PUSH,M$INCR,M$SVC
               000040                   I$SEG=F$BGN
        006430                          M$PUSH  T$NS,T$NESTLEV,F$SEG
                                        .MCALL  M$INCR,M$SETS
        006430                          M$INCR  T$NESTLEV
               000001                   T$NESTLEV=T$NESTLEV+1
        006430                          M$SETS  T$NS,\T$NESTLEV,F$SEG
               000003                   T$NS1=F$SEG
               010001                   T$$SEG=S$LSYM
        006430                          M$PUSH  T$SEK,T$SEGLEV,T$$SEG
                                        .MCALL  M$INCR,M$SETS
        006430                          M$INCR  T$SEGLEV
               000000                   T$SEGLEV=T$SEGLEV+1
        006430                          M$SETS  T$SEK,\T$SEGLEV,T$$SEG
               010001                   T$SEK0=T$$SEG
        006430                          M$INCR  S$LSYM
               010002                   S$LSYM=S$LSYM+1
        006430                          M$SVC   C$BSEG
                                        .MCALL  M$GNINS,M$TSTLAB
        006430                          M$TSTLAB
                                        .MCALL  M$TLABEL,M$INCR
                                        .IIF LT T$TSTMAC, .MEXIT
                                        .RADIX  10
                                        M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                        .RADIX  8
                                        M$INCR  T$TSTSEQ
        006430                          M$GNINS <TRAP   C$BSEG>
                                        .IF LT SVCINS
                                        TRAP    C$BSEG
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                TRAP    C$BSEG
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
                                                                                        TRAP    C$BSEG
        006430 104404
                                                        .NLIST
                                        .ENDC
```

GLOBAL SUBROUTINES SECTION

```
   1761 006432  043777  002350  173714          BIC     MASK,@REGADD            ; CLEAR ALL R/W BITS
   1762 006440  017737  173710  002502          MOV     @REGADD,BAD             ; READ THE RESULT
   1763 006446  043737  002352  002502          BIC     MASCOM,BAD              ; KEEP ONLY R/W BITS
   1764 006454  023737  002502  002500          CMP     BAD,GOOD                ; ALL R/W BITS CLEAR?
   1765 006462  001401                          BEQ     2$                      ; IF YES, BRANCH
   1766 006464                                  ERROR                           ; ELSE REPORT ERROR
                                        .MCALL  M$SVC
        006464                          M$SVC   C$ERROR
                                        .MCALL  M$GNINS,M$TSTLAB
        006464                          M$TSTLAB
                                        .MCALL  M$TLABEL,M$INCR
                                        .IIF LT T$TSTMAC, .MEXIT
                                        .RADIX  10
                                        M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                        .RADIX  8
                                        M$INCR  T$TSTSEQ
        006464                          M$GNINS <TRAP   C$ERROR>
                                        .IF LT SVCINS
                                        TRAP    C$ERROR
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                TRAP    C$ERROR
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
        006464  104460                                                                          TRAP    C$ERROR
                                                        .NLIST
                                        .ENDC
   1767 006466                          2$:     ENDSEG
                                        .MCALL  M$POP,M$GNLS,M$SVC,M$ENDERR
        006466                          M$POP   T$NS,T$NESTLEV,T$TEMP
                                        .MCALL  M$GETS,M$DECR
                                        .IF LT  T$NESTLEV
                                        .ERROR  T$NESTLEV       ; MACRO T$NS UNDERFLOW
                                        .MEXIT
                                        .ENDC
        006466                          M$GETS  T$NS,\T$NESTLEV,T$TEMP
                000003                  T$TEMP=T$NS1
        006466                          M$DECR  T$NESTLEV
                000000                  T$NESTLEV=T$NESTLEV 1
                                        .IF EQ F$SEG T$TEMP
        006466                          M$POP   T$SEK,T$SEGLEV,T$$SEG
                                        .MCALL  M$GETS,M$DECR
                                        .IF LT  T$SEGLEV
                                        .ERROR  T$SEGLEV        ; MACRO T$SE< UNDERFLOW
                                        .MEXIT
                                        .ENDC
        006466                          M$GETS  T$SEK,\T$SEGLEV,T$$SEG
                010001                  T$$SEG=T$SEKO
        006466                          M$DECR  T$SEGLEV
                177777                  T$SEGLEV=T$SEGLEV 1
        006466                          M$GNLS  T$$SEG
                                        .MCALL  M$GEN
```

```
                                        .IF NB T$$SEG
     006466                             M$GEN   \T$$SEG,$,SVCTAG
                                        .IF LE  SVCTAG
                                        .IIF EQ SVCTAG,.LIST
                                        10001$:
                                        .IIF EQ SVCTAG,.NLIST
                                        .MEXIT
                                        .ENDC
                                        .LIST
     006466                                                                             10001$:
                                                .NLIST
                                        .IFF
                                        M$GEN   \S$LSYM,$,SVCTAG
                                        .ENDC
     006466                             M$SVC   C$ESEG
                                        .MCALL  M$GNINS,M$TSTLAB
     006466                             M$TSTLAB
                                        .MCALL  M$TLABEL,M$INCR
                                        .IIF LT T$TSTMAC, .MEXIT
                                        .RADIX  10
                                        M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                        .RADIX  8
                                        M$INCR  T$TSTSEQ
     006466                             M$GNINS <TRAP   C$ESEG>
                                        .IF LT SVCINS
                                        TRAP    C$ESEG
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                TRAP    C$ESEG
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
     006466  104405                                                                           TRAP    C$ESEG
                                                        .NLIST
                                        .ENDC
                                        .IF EQ T$SEGLEV+1
             000041                     I$SEG=F$END
                                        .ENDC
                                        .IFF
                                        M$ENDERR        ENDSEG,T$TEMP
                                        .ENDC
                                        ;
                                        ; CHECK THAT EACH R/W BIT CAN BE SET
                                        ;
     006470  005237  002506                     INC     ERRNBR                  ; NEXT ERROR NUMBER
     006474  012737  007000  002510             MOV     #ERR3,ERRMSG            ; NEXT ERROR MESSAGE
     006502  012737  000001  002500             MOV     #1,GOOD                 ; FIRST BIT TO TEST
     006510  033737  002500  002350     3$:     BIT     GOOD,MASK               ; R/W BIT?
     006516  001004                             BNE     5$                      ; IF YES, TEST IT
     006520  006337  002500             4$:     ASL     GOOD                    ; ELSE FIND NEXT R/W BIT
     006524  103425                             BCS     7$                      ; IF ALL DONE, RETURN
     006526  000770                             BR      3$                      ; ELSE CHECK IF NEXT IS R/W
```

```
1780 006530                          5$:     BGNSEG
                                     .MCALL  M$PUSH,M$INCR,M$SVC
             000040                  I$SEG=F$BGN
     006530                          M$PUSH  T$NS,T$NESTLEV,F$SEG
                                     .MCALL  M$INCR,M$SETS
     006530                          M$INCR  T$NESTLEV
             000001                  T$NESTLEV=T$NESTLEV+1
     006530                          M$SETS  T$NS,\T$NESTLEV,F$SEG
             000003                  T$NS1=F$SEG
             010002                  T$$SEG=S$LSYM
     006530                          M$PUSH  T$SFK,T$SEGLEV,T$$SEG
                                     .MCALL  M$INCR,M$SETS
     006530                          M$INCR  T$SEGLEV
             000000                  T$SEGLEV=T$SEGLEV+1
     006530                          M$SETS  T$SEK,\T$SEGLEV,T$$SEG
             010002                  T$SEK0=T$$SEG
     006530                          M$INCR  S$LSYM
             010003                  S$LSYM=S$LSYM+1
     006530                          M$SVC   C$BSEG
                                     .MCALL  M$GNINS,M$TSTLAB
     006530                          M$TSTLAB
                                     .MCALL  M$TLABEL,M$INCR
                                     .IIF LT T$TSTMAC, .MEXIT
                                     .RADIX  10
                                     M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                     .RADIX  8
                                     M$INCR  T$TSTSEQ
     006530                          M$GNINS <TRAP   C$BSEG>
                                     .IF LT SVCINS
                                     TRAP    C$BSEG
                                     .MEXIT
                                     .ENDC
                                     .IF EQ SVCINS
                                     .LIST
                                             TRAP    C$BSEG
                                                     .NLIST
                                     .MEXIT
                                     .ENDC
                                     .IF GT SVCINS
                                     .LIST
     006530  104404                                                                  TRAP    C$BSEG
                                                     .NLIST
                                     .ENDC
1781 006532  042777  177767  173614          BIC     #177767,@REGADD         ;CLEAR ALL BITS EXEPT THE MUX BIT
1782 006540  053777  002500  173606          BIS     GOOD,@REGADD            ; SET THE BIT
1783 006546  017737  173602  002502          MOV     @REGADD,BAD             ; READ IT BACK
1784 006554  043737  002352  002502          BIC     MASCOM,BAD              ; KEEP ONLY R/W BITS
1785 006562  023737  002502  002500          CMP     BAD,GOOD                ; ALL OTHER BITS CLEAR?
1786 006570  001401                          BEQ     6$                      ; IF YES, BRANCH
1787 006572                                  ERROR                           ; ELSE REPORT ERROR
                                     .MCALL  M$SVC
     006572                          M$SVC   C$ERROR
                                     .MCALL  M$GNINS,M$TSTLAB
     006572                          M$TSTLAB
                                     .MCALL  M$TLABEL,M$INCR
                                     .IIF LT T$TSTMAC, .MEXIT
                                     .RADIX  10
```

N13


```
                                  M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                  .RADIX  8
                                  M$INCR  T$TSTSEQ
      006572                      M$GNINS <TRAP   C$ERROR>
                                  .IF LT SVCINS
                                  TRAP    C$ERROR
                                  .MEXIT
                                  .ENDC
                                  .IF EQ SVCINS
                                  .LIST
                                          TRAP    C$ERROR
                                                  .NLIST
                                  .MEXIT
                                  .ENDC
                                  .IF GT SVCINS
                                  .LIST
      006572  104460                                                                  TRAP    C$ERROR
                                                  .NLIST
                                  .ENDC
 1788 006574                      6$:     ENDSEG
                                  .MCALL  M$POP,M$GNLS,M$SVC,M$ENDERR
      006574                      M$POP   T$NS,T$NESTLEV,T$TEMP
                                  .MCALL  M$GETS,M$DECR
                                  .IF LT  T$NESTLEV
                                  .ERROR  T$NESTLEV       ; MACRO T$NS UNDERFLOW
                                  .MEXIT
                                  .ENDC
      006574                      M$GETS  T$NS,\T$NESTLEV,T$TEMP
              000003              T$TEMP T$NS1
      006574                      M$DECR  T$NESTLEV
              000000              T$NESTLEV=T$NESTLEV-1
                                  .IF EQ F$SEG-T$TEMP
      006574                      M$POP   T$SEK,T$SEGLEV,T$$SEG
                                  .MCALL  M$GETS,M$DECR
                                  .IF LT  T$SEGLEV
                                  .ERROR  T$SEGLEV        ; MACRO T$SEK UNDERFLOW
                                  .MEXIT
                                  .ENDC
      006574                      M$GETS  T$SEK,\T$SEGLEV,T$$SEG
              010002              T$$SEG=T$SEK0
      006574                      M$DECR  T$SEGLEV
              177777              T$SEGLEV=T$SEGLEV-1
      006574                      M$GNLS  T$$SEG
                                  .MCALL  M$GEN
                                  .IF NB T$$SEG
      006574                      M$GEN   \T$$SEG,$,SVCTAG
                                  .IF LE  SVCTAG
                                  .IIF EQ SVCTAG,.LIST
                                  10002$:
                                  .IIF EQ SVCTAG,.NLIST
                                  .MEXIT
                                  .ENDC
                                  .LIST
      006574                                                                    10002$:
                                          .NLIST
                                  .IFF
                                  M$GEN   \S$LSYM,$,SVCTAG
```

```
                                   .ENDC
     006574                        M$SVC   C$ESEG
                                   .MCALL  M$GNINS,M$TSTLAB
     006574                        M$TSTLAB
                                   .MCALL  M$TLABEL,M$INCR
                                   .IIF LT T$TSTMAC, .MEXIT
                                   .RADIX  10
                                   M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                   .RADIX  8
                                   M$INCR  T$TSTSEQ
     006574                        M$GNINS <TRAP   C$ESEG>
                                   .IF LT SVCINS
                                   TRAP    C$ESEG
                                   .MEXIT
                                   .ENDC
                                   .IF EQ SVCINS
                                   .LIST
                                           TRAP    C$ESEG
                                                   .NLIST
                                   .MEXIT
                                   .ENDC
                                   .IF GT SVCINS
                                   .LIST
     006574  104405                                                          TRAP    C$ESEG
                                                   .NLIST
                                   .ENDC
                                   .IF EQ T$SEGLEV+1
             000041                I$SEG=F$END
                                   .ENDC
                                   .IFF
                                   M$ENDERR        ENDSEG,T$TEMP
                                   .ENDC
1789 006576  000750                        BR      4$                ; TEST NEXT BIT
1790
1791 006600  000207                7$:     RETURN
1792
1793
1794
1795 006602                                BGNMSG  REGERR
                                   .MCALL  M$PUSH,M$INCR,M$GNGBL
             000040                I$MSG=F$BGN
     006602                        M$PUSH  T$NS,T$NESTLEV,F$MSG
                                   .MCALL  M$INCR,M$SETS
     006602                        M$INCR  T$NESTLEV
             000001                T$NESTLEV=T$NESTLEV+1
     006602                        M$SETS  T$NS,\T$NESTLEV,F$MSG
             000011                T$NS1=F$MSG
             010011                T$$MSG=T$TAGNUM
     006602                        M$INCR T$TAGNUM
             010012                T$TAGNUM=T$TAGNUM+1
     006602                        M$GNGBL REGERR
                                   .MCALL  M$GEN
                                   .IF NB,REGERR
                                   .IF NB,
                                   M$GEN   REGERR,:,SVCGBL,
                                   .ENDC
                                   .IF B,
```

C14


```
     006602                    M$GEN   REGERR,:,SVCGBL,< >
                               .IF LE  SVCGBL
                               .IIF EQ SVCGBL,.LIST
                               REGERR::
                               .IIF EQ SVCGBL,.NLIST
                               .MEXIT
                               .ENDC
                               .LIST
     006602                                                            REGERR::
                                       .NLIST
                               .ENDC
                               .ENDC
     006602                            PRINTB  #REGMSG,REGADD,CHAN,GOOD,BAD,MASK
                               .MCALL  M$PRINT
                               .IF B   #REGMSG
                               .ERROR  ;MISSING FORMAT
                               .MEXIT
                               .ENDC
                               .IF B   <REGADD>
                               M$PRINT C$PNTB,#REGMSG
                               .MEXIT
                               .ENDC
                               .IF B   <CHAN>
                               M$PRINT C$PNTB,#REGMSG,<REGADD>
                               .MEXIT
                               .ENDC
                               .IF B   <GOOD>
                               M$PRINT C$PNTB,#REGMSG,<REGADD>,<CHAN>
                               .MEXIT
                               .ENDC
                               .IF B   <BAD>
                               M$PRINT C$PNTB,#REGMSG,<REGADD>,<CHAN>,<GOOD>
                               .MEXIT
                               .ENDC
                               .IF B   <MASK>
                               M$PRINT C$PNTB,#REGMSG,<REGADD>,<CHAN>,<GOOD>,<BAD>
                               .MEXIT
                               .ENDC
                               .IF B   <>
     006602                    M$PRINT C$PNTB,#REGMSG,<REGADD>,<CHAN>,<GOOD>,<BAD>,<MASK>
                               .MCALL  M$COUNT,M$PUT,M$GNINS,M$SVC
             000001            T$ARGCNT=1
     006602                    M$COUNT T$ARGCNT,<REGADD>,<CHAN>,<GOOD>,<BAD>,<MASK>,<>,<>,<>
                               .IF NB <CHAN>
     006602                    M$COUNT T$ARGCNT,<CHAN>,<GOOD>,<BAD>,<MASK>,<>,<>,<>,<>
                               .IF NB <GOOD>
     006602                    M$COUNT T$ARGCNT,<GOOD>,<BAD>,<MASK>,<>,<>,<>,<>,<>
                               .IF NB <BAD>
     006602                    M$COUNT T$ARGCNT,<BAD>,<MASK>,<>,<>,<>,<>,<>,<>
                               .IF NB <MASK>
     006602                    M$COUNT T$ARGCNT,<MASK>,<>,<>,<>,<>,<>,<>,<>
                               .IF NB <>
                               M$COUNT T$ARGCNT,<>,<>,<>,<>,<>,<>,<>,<>
                               .ENDC
                               .IF NB <MASK>
             000002            T$ARGCNT=T$ARGCNT+1
                               .ENDC
```

```
                                .ENDC
                                .IF NB <BAD>
          000003                T$ARGCNT=T$ARGCNT+1
                                .ENDC
                                .ENDC
                                .IF NB <GOOD>
          000004                T$ARGCNT=T$ARGCNT+1
                                .ENDC
                                .ENDC
                                .IF NB <CHAN>
          000005                T$ARGCNT=T$ARGCNT+1
                                .ENDC
                                .ENDC
                                .IF NB <REGADD>
          000006                T$ARGCNT=T$ARGCNT+1
                                .ENDC
                                .IRP     N,<\T$ARGCNT>
                                M$PUT    #N,#REGMSG,<REGADD>,<CHAN>,<GOOD>,<BAD>,<MASK>,<>,<>,<>
                                .ENDM
     006602                     M$PUT    #6,#REGMSG,<REGADD>,<CHAN>,<GOOD>,<BAD>,<MASK>,<>,<>,<>
                                .MCALL   M$PUT1
                                .IF NB   <#REGMSG>
     006602                     M$PUT    <#REGMSG>,<REGADD>,<CHAN>,<GOOD>,<BAD>,<MASK>,<>,<>,<>
                                .MCALL   M$PUT1
                                .IF NB   <REGADD>
     006602                     M$PUT    <REGADD>,<CHAN>,<GOOD>,<BAD>,<MASK>,<>,<>,<>,<>
                                .MCALL   M$PUT1
                                .IF NB   <CHAN>
     006602                     M$PUT    <CHAN>,<GOOD>,<BAD>,<MASK>,<>,<>,<>,<>,<>
                                .MCALL   M$PUT1
                                .IF NB   <GOOD>
     006602                     M$PUT    <GOOD>,<BAD>,<MASK>,<>,<>,<>,<>,<>,<>
                                .MCALL   M$PUT1
                                .IF NB   <BAD>
     006602                     M$PUT    <BAD>,<MASK>,<>,<>,<>,<>,<>,<>,<>
                                .MCALL   M$PUT1
                                .IF NB   <MASK>
     006602                     M$PUT    <MASK>,<>,<>,<>,<>,<>,<>,<>,<>
                                .MCALL   M$PUT1
                                .IF NB   <>
                                M$PUT    <>,<>,<>,<>,<>,<>,<>,<>,<>
                                .ENDC
                                .IF NB   <MASK>
     006602                     M$PUT1   MASK
                                .MCALL   M$GNINS
                                .IF B
     006602                     M$GNINS <MOV     MASK, (SP)>
                                .IF LT SVCINS
                                MOV      MASK, (SP)
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                         MOV      MASK,-(SP)
                                                  .NLIST
                                .MEXIT
                                .ENDC
```

```
                                        .IF GT SVCINS
                                        .LIST
        006602  013746  002350                                                          MOV     MASK,-(SP)
                                                        .NLIST
                                        .ENDC
                                        .IFF
                                        .IF DIF B,<MASK>
                                        .ERROR  ;ILL. ARG. "MASK" ONLY "B" IS ALLOWED.
                                        .MEXIT
                                        .ENDC
                                        M$GNINS <CLR    -(SP)>
                                        M$GNINS <BISB   ,(SP)>
                                        .ENDC
                                        .ENDC
                                        .ENDC
                                        .IF NB  <BAD>
        006606                          M$PUT1  BAD
                                        .MCALL  M$GNINS
                                        .IF B
        006606                          M$GNINS <MOV    BAD,-(SP)>
                                        .IF LT SVCINS
                                        MOV     BAD, (SP)
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                MOV     BAD, (SP)
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
        006606  013746  002502                                                          MOV     BAD,-(SP)
                                                        .NLIST
                                        .ENDC
                                        .IFF
                                        .IF DIF B,<BAD>
                                        .ERROR  ;ILL. ARG. "BAD" ONLY "B" IS ALLOWED.
                                        .MEXIT
                                        .ENDC
                                        M$GNINS <CLR    -(SP)>
                                        M$GNINS <BISB   ,(SP)>
                                        .ENDC
                                        .ENDC
                                        .ENDC
                                        .IF NB  <GOOD>
        006612                          M$PUT1  GOOD
                                        .MCALL  M$GNINS
                                        .IF B
        006612                          M$GNINS <MOV    GOOD,-(SP)>
                                        .IF LT SVCINS
                                        MOV     GOOD,-(SP)
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                MOV     GOOD,-(SP)
```

```
                                                  .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
      006612  013746  002500                                                        MOV     GOOD,-(SP)
                                                  .NLIST
                                        .ENDC
                                        .IFF
                                        .IF DIF B,<GOOD>
                                        .ERROR  ;ILL. ARG. "GOOD" ONLY "B" IS ALLOWED.
                                        .MEXIT
                                        .ENDC
                                        M$GNINS <CLR    -(SP)>
                                        M$GNINS <BISB   ,(SP)>
                                        .ENDC
                                        .ENDC
                                        .ENDC
                                        .IF NB  <CHAN>
      006616                            M$PUT1  CHAN
                                        .MCALL  M$GNINS
                                        .IF B
      006616                            M$GNINS <MOV    CHAN,-(SP)>
                                        .IF LT SVCINS
                                        MOV     CHAN,-(SP)
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                MOV     CHAN,-(SP)
                                                  .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
      006616  013746  002374                                                        MOV     CHAN,-(SP)
                                                  .NLIST
                                        .ENDC
                                        .IFF
                                        .IF DIF B,<CHAN>
                                        .ERROR  ;ILL. ARG. "CHAN" ONLY "B" IS ALLOWED.
                                        .MEXIT
                                        .ENDC
                                        M$GNINS <CLR    -(SP)>
                                        M$GNINS <BISB   ,(SP)>
                                        .ENDC
                                        .ENDC
                                        .ENDC
                                        .IF NB  <REGADD>
      006622                            M$PUT1  REGADD
                                        .MCALL  M$GNINS
                                        .IF B
      006622                            M$GNINS <MOV    REGADD,-(SP)>
                                        .IF LT SVCINS
                                        MOV     REGADD,-(SP)
                                        .MEXIT
                                        .ENDC
```

G14


```
                                .IF EQ SVCINS
                                .LIST
                                        MOV     REGADD,-(SP)
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
006622  013746  002354                                                          MOV     REGADD,-(SP)
                                                .NLIST
                                .ENDC
                                .IFF
                                .IF DIF B,<REGADD>
                                .ERROR  ;ILL. ARG. "REGADD" ONLY "B" IS ALLOWED.
                                .MEXIT
                                .ENDC
                                M$GNINS <CLR    -(SP)>
                                M$GNINS <BISB   ,(SP)>
                                .ENDC
                                .ENDC
                                .ENDC
                                .IF NB  <#REGMSG>
006626                          M$PUT1  #REGMSG
                                .MCALL  M$GNINS
                                .IF B
006626                          M$GNINS <MOV    #REGMSG,-(SP)>
                                .IF LT SVCINS
                                MOV     #REGMSG,-(SP)
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        MOV     #REGMSG,-(SP)
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
006626  012746  007067                                                          MOV     #REGMSG,-(SP)
                                                .NLIST
                                .ENDC
                                .IFF
                                .IF DIF B,<#REGMSG>
                                .ERROR  ;ILL. ARG. "#REGMSG" ONLY "B" IS ALLOWED.
                                .MEXIT
                                .ENDC
                                M$GNINS <CLR    -(SP)>
                                M$GNINS <BISB   ,(SP)>
                                .ENDC
                                .ENDC
                                .ENDC
                                .IF NB  <#6>
006632                          M$PUT1  #6
                                .MCALL  M$GNINS
                                .IF B
006632                          M$GNINS <MOV    #6, (SP)>
                                .IF LT SVCINS
```

```
                                        MOV     #6,-(SP)
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                MOV     #6,-(SP)
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
      006632  012746  000006                                                    MOV     #6,-(SP)
                                                        .NLIST
                                        .ENDC
                                        .IFF
                                        .IF DIF B,<#6>
                                        .ERROR  ;ILL. ARG. "#6" ONLY "B" IS ALLOWED.
                                        .MEXIT
                                        .ENDC
                                        M$GNINS <CLR    -(SP)>
                                        M$GNINS <BISB   ,(SP)>
                                        .ENDC
                                        .ENDC
      006636                            M$GNINS <MOV    SP,R0>
                                        .IF LT SVCINS
                                        MOV     SP,R0
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                MOV     SP,R0
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
      006636  010600                                                            MOV     SP,R0
                                                        .NLIST
                                        .ENDC
      006640                            M$SVC   C$PNTB
                                        .MCALL  M$GNINS,M$TSTLAB
      006640                            M$TSTLAB
                                        .MCALL  M$TLABEL,M$INCR
                                        .IIF LT T$TSTMAC, .MEXIT
                                        .RADIX  10
                                        M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                        .RADIX  8
                                        M$INCR  T$TSTSEQ
      006640                            M$GNINS <TRAP   C$PNTB>
                                        .IF LT SVCINS
                                        TRAP    C$PNTB
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                TRAP    C$PNTB
                                                        .NLIST
```

I14


```
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
      006640  104414                                                                          TRAP     C$PNTB
                                                        .NLIST
                                        .ENDC
                                        .IRP    N,<\T$ARGCNT*2+2>
                                        M$GNINS <ADD    #N,SP>
                                        .ENDM
      006642                            M$GNINS <ADD    #16,SP>
                                        .IF LT SVCINS
                                        ADD     #16,SP
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                ADD     #16,SP
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
      006642  062706  000016                                                                  ADD      #16,SP
                                                        .NLIST
                                        .ENDC
                                        .MEXIT
                                        .ENDC
                                        .IF B   <>
                                        M$PRINT C$PNTB,#REGMSG,<REGADD>,<CHAN>,<GOOD>,<BAD>,<MASK>,<>
                                        .MEXIT
                                        .ENDC
                                        .IF B   <>
                                        M$PRINT C$PNTB,#REGMSG,<REGADD>,<CHAN>,<GOOD>,<BAD>,<MASK>,<>,<>
                                        .MEXIT
                                        .ENDC
                                        M$PRINT C$PNTB,#REGMSG,<REGADD>,<CHAN>,<GOOD>,<BAD>,<MASK>,<>,<>,<>
 1797 006646                                    ENDMSG
                                        .MCALL  M$POP,M$GNTAG,M$SVC,M$ENDERR
      006646                            M$POP   T$NS,T$NESTLEV,T$TEMP
                                        .MCALL  M$GETS,M$DECR
                                        .IF LT  T$NESTLEV
                                        .ERROR  T$NESTLEV       ; MACRO T$NS UNDERFLOW
                                        .MEXIT
                                        .ENDC
      006646                            M$GETS  T$NS,\T$NESTLEV,T$TEMP
              000011                    T$TEMP=T$NS1
      006646                            M$DECR  T$NESTLEV
              000000                    T$NESTLEV=T$NESTLEV-1
                                        .IF EQ F$MSG-T$TEMP
      006646                            M$GNTAG L,T$$MSG
                                        .MCALL  M$GEN
      006646                            M$GEN   L,\T$$MSG,SVCTAG
                                        .IF LE  SVCTAG
                                        .IIF EQ SVCTAG,.LIST
                                        L10011:
                                        .IIF EQ SVCTAG,.NLIST
```

```
                                          .MEXIT
                                          .ENDC
                                          .LIST
      006646                                                                            L10011:
                                                .NLIST
             010000                       S$LSYM=T$LSYM
      006646                              M$SVC    C$MSG
                                          .MCALL   M$GNINS,M$TSTLAB
      006646                              M$TSTLAB
                                          .MCALL   M$TLABEL,M$INCR
                                          .IIF LT T$TSTMAC, .MEXIT
                                          .RADIX  10
                                          M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                          .RADIX  8
                                          M$INCR  T$TSTSEQ
      006646                              M$GNINS <TRAP    C$MSG>
                                          .IF LT SVCINS
                                          TRAP    C$MSG
                                          .MEXIT
                                          .ENDC
                                          .IF EQ SVCINS
                                          .LIST
                                                TRAP    C$MSG
                                                        .NLIST
                                          .MEXIT
                                          .ENDC
                                          .IF GT SVCINS
                                          .LIST
      006646 104423                                                                           TRAP    C$MSG
                                                        .NLIST
                                          .ENDC
             000041                       I$MSG=F$END
                                          .IFF
                                          M$ENDERR        ENDMSG,T$TEMP
                                          .ENDC

                                                .NLIST BEX

      006650    122     105     107  RERR1:   .ASCIZ   *REGISTER READ/WRITE BITS COULD NOT BE SET*
      006722    122     105     107  RERR2:   .ASCIZ   *REGISTER READ/WRITE BITS COULD NOT BE CLEARED*
      007000    122     105     107  RERR3:   .ASCIZ   *REGISTER READ/WRITE BITS COULD NOT BE INDIVIDUALLY SET*

      007067    045     101     101  REGMSG:  .ASCIZ   .*AADD: *06*A,CHAN *01*A,GOOD *06*A, BAD *06*A, R/W BITS *06*N.

                                                .LIST BEX
                                                .EVEN
```

```
;*************************************************************************
; SUBROUTINE MEMINI - MEMORY SIZING AND MEMORY MANAGEMENT INIT ROUTINE.
;*************************************************************************
;++
; FUNCTIONAL DESCRIPTION:
;
;       DETERMINES THE SIZE OF CONTIGUOUS USABLE MEMORY AND OUTPUTS IT
;       TO THE CONSOLE. IF MEMORY MANAGEMENT IS AVAILABLE, THE KERNEL
;       PAGE ADDRESS AND DESCRIPTOR REGISTERS ARE INITIALISED.
;
; INPUTS:
;
;       NONE.
;
; IMPLICIT INPUTS:
;
;       NONE.
;
; OUTPUTS:
;
;       PHHSIZ - HIGH WORD OF MEMORY SIZE
;       PHLOW  - LOW WORD OF MEMORY SIZE
;       MMFLG  - FLAG SET TO 1 IF MEMORY MANAGEMENT AVAILABLE
;       MM22   - FLAG SET TO 1 IF 22 BIT MEMORY MANAGEMENT AVAILABLE
;
;       MEMORY SIZE IN K WORDS IS PRINTED
;
; IMPLICIT OUTPUTS:
;
;       IF MEMORY MANAGEMENT IS AVAILABLE, THE KERNEL PAGE DESCRIPTOR
;       AND PAGE ADDRESS REGISTERS ARE SET AS FOLLOWS :
;
;       KPDR0 TO KPDR7 ARE SET TO 77406
;
;       KPAR0 IS SET TO 0
;       KPAR1 IS SET TO 200
;       KPAR2 IS SET TO 400
;       KPAR3 IS SET TO 600
;       KPAR4 IS SET TO 1000
;       KPAR6 IS SET TO 1400
;
;       KPAR5 POINTS TO THE HIGHEST ADDRESSABLE MEMORY BANK
;
;       KPAR7 POINTS TO THE I/O PAGE
;
;       IF 22 BIT MAPPING IS AVAILABLE, IT IS ENABLED VIA SR3. MEMORY
;       MANAGEMENT IS LEFT DISABLED VIA SR0.
;
; SUBORDINATE ROUTINES USED:
;
;       NXM    - NON EXISTANT MEMORY TRAP SERVICE ROUTINE
;       VPCON  - VIRTUAL TO PHYSICAL ADDRESS CONVERSION ROUTINE
;
; FUNCTIONAL SIDE EFFECTS:
;
;       NONE
;
```

GLOBAL SUBROUTINES SECTION

```
                                ; CALLING SEQUENCE:
                                ;
                                ;       CALL    MEMINI
                                ;
                                ;--

                                ; KT11 STATUS REGISTER ADDRESSES

                177572          SR0=    177572
                177574          SR1=    177574
                177576          SR2=    177576
                172516          SR3=    172516

                                ; KERNEL PAGE DESCRIPTOR REGISTERS

                172300          KPDR0=  172300
                172302          KPDR1=  172302
                172304          KPDR2=  172304
                172306          KPDR3=  172306
                172310          KPDR4=  172310
                172312          KPDR5=  172312
                172314          KPDR6=  172314
                172316          KPDR7=  172316

                                ; KERNEL PAGE ADDRESS REGISTERS

                172340          KPAR0=  172340
                172342          KPAR1=  172342
                172344          KPAR2=  172344
                172346          KPAR3=  172346
                172350          KPAR4=  172350
                172352          KPAR5=  172352
                172354          KPAR6=  172354
                172356          KPAR7=  172356

        007166                  MEMINI::
        007166  010046                  MOV     R0,-(SP)                ; SAVE REGISTERS USED IN
        007170  010146                  MOV     R1,-(SP)                ; THIS ROUTINE
        007172  010246                  MOV     R2,-(SP)                ;
        007174                          SETVEC  #4,#NXM,#340            ; SET UP NON EXISTENT MEMORY TRAP VEC.
                                .MCALL  M$PUT,M$SVC,M$GNINS
        007174                  M$PUT   #3,#4,#NXM,#340
                                .MCALL  M$PUT1
                                .IF NB  <#4>
        007174                  M$PUT   <#4>,<#NXM>,<#340>,<>,<>,<>,<>,<>,<>
                                .MCALL  M$PUT1
                                .IF NB  <#NXM>
        007174                  M$PUT   <#NXM>,<#340>,<>,<>,<>,<>,<>,<>,<>
                                .MCALL  M$PUT1
                                .IF NB  <#340>
        007174                  M$PUT   <#340>,<>,<>,<>,<>,<>,<>,<>,<>
                                .MCALL  M$PUT1
                                .IF NB  <>
                                M$PUT   <>,<>,<>,<>,<>,<>,<>,<>,<>
                                .ENDC
                                .IF NB  <#340>
        007174                  M$PUT1  #340
```

```
                                .MCALL  M$GNINS
                                .IF B
      007174                    M$GNINS <MOV    #340,-(SP)>
                                .IF LT SVCINS
                                MOV     #340,-(SP)
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        MOV     #340,-(SP)
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
      007174  012746  000340                                                    MOV     #340, (SP)
                                                .NLIST
                                .ENDC
                                .IFF
                                .IF DIF B,<#340>
                                .ERROR  ;ILL. ARG. "#340" ONLY "B" IS ALLOWED.
                                .MEXIT
                                .ENDC
                                M$GNINS <CLR    -(SP)>
                                M$GNINS <BISB   ,(SP)>
                                .ENDC
                                .ENDC
                                .ENDC
                                .IF NB  <#NXM>
      007200                    M$PUT1  #NXM
                                .MCALL  M$GNINS
                                .IF B
      007200                    M$GNINS <MOV    #NXM,-(SP)>
                                .IF LT SVCINS
                                MOV     #NXM,-(SP)
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        MOV     #NXM,-(SP)
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
      007200  012746  010122                                                    MOV     #NXM, (SP)
                                                .NLIST
                                .ENDC
                                .IFF
                                .IF DIF B,<#NXM>
                                .ERROR  ;ILL. ARG. "#NXM" ONLY "B" IS ALLOWED.
                                .MEXIT
                                .ENDC
                                M$GNINS <CLR     (SP)>
                                M$GNINS <BISB   ,(SP)>
                                .ENDC
                                .ENDC
```

```
                                        .ENDC
                                        .IF NB  <#4>
      007204                            M$PUT1  #4
                                        .MCALL  M$GNINS
                                        .IF B
      007204                            M$GNINS <MOV    #4,-(SP)>
                                        .IF LT SVCINS
                                        MOV     #4,-(SP)
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                MOV     #4, (SP)
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
      007204  012746  000004                                                            MOV     #4,-(SP)
                                                        .NLIST
                                        .ENDC
                                        .IFF
                                        .IF DIF B,<#4>
                                        .ERRCR  ;ILL. ARG. "#4" ONLY "B" IS ALLOWED.
                                        .MEXIT
                                        .ENDC
                                        M$GNINS <CLR    -(SP)>
                                        M$GNINS <BISB   ,(SP)>
                                        .ENDC
                                        .ENDC
                                        .ENDC
                                        .IF NB  <#3>
      007210                            M$PUT1  #3
                                        .MCALL  M$GNINS
                                        .IF B
      007210                            M$GNINS <MOV    #3,-(SP)>
                                        .IF LT SVCINS
                                        MOV     #3,-(SP)
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                MOV     #3, (SP)
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
      007210  012746  000003                                                            MOV     #3, (SP)
                                                        .NLIST
                                        .ENDC
                                        .IFF
                                        .IF DIF B,<#3>
                                        .ERROR  ;ILL. ARG. "#3" ONLY "B" IS ALLOWED.
                                        .MEXIT
                                        .ENDC
                                        M$GNINS <CLR     (SP)>
```

```
                                M$GNINS <BISB   ,(SP)>
                                .ENDC
                                .ENDC
007214                          M$SVC   C$SVEC
                                .MCALL  M$GNINS,M$TSTLAB
007214                          M$TSTLAB
                                .MCALL  M$TLABEL,M$INCR
                                .IIF LT T$TSTMAC, .MEXIT
                                .RADIX  10
                                M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                .RADIX  8
                                M$INCR  T$TSTSEQ
007214                          M$GNINS <TRAP   C$SVEC>
                                .IF LT SVCINS
                                TRAP    C$SVEC
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        TRAP    C$SVEC
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
007214  104437                                                                  TRAP    C$SVEC
                                                .NLIST
                                .ENDC
007216                          M$GNINS <ADD    #10,SP>
                                .IF LT SVCINS
                                ADD     #10,SP
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        ADD     #10,SP
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
007216  062706  000010                                                          ADD     #10,SP
                                                .NLIST
                                .ENDC
007222  005037  002326                  CLR     NXMFLG                  ; CLEAR NXM FLAG
007226  005037  002344                  CLR     PHLSIZ                  ; START WITH 1ST 2K BANK OF MEMORY
007232  005037  002342                  CLR     PHHSIZ                  ;
                                ;
                                ; SIZE MEMORY UP TO 32K
                                ;
007236  005777  173102          10$:    TST     @PHLSIZ                 ; CHECK THIS BANK EXISTS
007242  005737  002326                  TST     NXMFLG                  ; WAS THERE AN NXM TRAP?
007246  001147                          BNE     140$                    ; IF YES, PRINT THE MEMORY SIZE
007250  062737  010000  002344          ADD     #10000,PHLSIZ           ; ELSE GET NEXT 2K BANK
007256  023727  002344  160000          CMP     PHLSIZ,#160000          ; HAVE WE REACHED THE I/O PAGE?
007264  001364                          BNE     10$                     ; IF NOT, TRY NEXT 2K BANK
                                ;
```

```
                                              ; 28K OR MORE - CHECK IF MEMORY MANAGEMENT UNIT PRESENT.
                                              ;
007266  005037  002332                                CLR     MMFLG                   ; ASSUME NO MEMORY MANAGEMENT
007272  005737  177572                                TST     SR0                     ; ADDRESS MMU STATUS REGISTER 0
007276  005737  002326                                TST     NXMFLG                  ; WAS THERE AN NXM TRAP?
007302  001131                                        BNE     140$                    ; IF YES, PRINT THE MEMORY SIZE
                                              ;
                                              ; MEMORY MANAGEMENT AVAILABLE - SET UP MMU REGISTERS
                                              ;
007304  012737  000001  002332                        MOV     #1,MMFLG                ; FLAG MEMORY MANAGEMENT AVAILABLE
007312  012700  172340                                MOV     #KPAR0,R0               ; LOAD FIRST KPAR ADDRESS
007316  005001                                        CLR     R1                      ; SET UP CONTENTS OF FIRST KPAR
007320  012702  000006                                MOV     #6,R2                   ; SET UP FIRST 6 KPAR'S
007324  010120                                50$:    MOV     R1,(R0)+                ; LOAD KPAR VALUE
007326  062701  000200                                ADD     #200,R1                 ; NEXT KPAR VALUE
007332  005302                                        DEC     R2                      ; ALL KPAR'S LOADED?
007334  001373                                        BNE     50$                     ; IF NOT, LOAD NEXT
007336  012737  177600  172356                        MOV     #177600,KPAP7           ; ELSE LOAD KPAR7 WITH I/O PAGE ADDRESS

007344  012700  172300                                MOV     #KPDR0,R0               ; LOAD FIRST PDR ADDRESS
007350  012701  000010                                MOV     #10,R1                  ; SET UP 8 PDR'S
007354  012720  077406                        60$:    MOV     #77406,(R0)+            ; LOAD ALL PDR'S WITH 77406
007360  005301                                        DEC     R1                      ; ALL LOADED?
007362  001374                                        BNE     60$                     ; IF NOT, LOAD NEXT
                                              ;
                                              ; USE THE MEMORY MANAGEMENT UNIT TO SIZE THE MEMORY UP TO 128K
                                              ;
007364  005037  172352                                CLR     KPAR5                   ; POINT KPAR5 TO FIRST PAGE
007370  012737  000001  177572                        MOV     #1,SR0                  ; ENABLE MEMORY MANAGEMENT
007376  005737  120000                        70$:    TST     120000                  ; ADDRESS PAGE POINTED TO BY KPAR5
007402  005737  002326                                TST     NXMFLG                  ; WAS THERE AN NXM TRAP?
007406  001053                                        BNE     130$                    ; IF YES, PRINT THE MEMORY SIZE
007410  062737  000200  172352                        ADD     #200,KPAR5              ; ELSE POINT KPAR5 TO NEXT PAGE
007416  023727  172352  007600                        CMP     KPAR5,#7600             ; ARE WE IN THE I/O PAGE?
007424  001364                                        BNE     70$                     ; IF NOT, TEST NEXT PAGE
                                              ;
                                              ; 128 K OR MORE - CHECK IF 22 BIT MMU PRESENT
                                              ;
007426  005037  002330                        90$:    CLR     MM22                    ; ASSUME NO 22 BIT MAPPING
007432  005000                                        CLR     R0                      ; COMPARE DATA AT ADDRESS 0
007434  012737  010000  172352                        MOV     #10000,KPAR5            ; WITH DATA AT 128 K
007442  012701  120000                                MOV     #120000,R1              ; USING KPAR5
007446  012702  000010                                MOV     #10,R2                  ; WILL CHECK 8 WORDS
007452  012737  000020  172516                        MOV     #20,SR3                 ; ENABLE 22 BIT MAPPING

007460  022021                                100$:   CMP     (R0)+,(R1)+             ; DATA IDENTICAL?
007462  001006                                        BNE     110$                    ; IF NOT, WE HAVE 22 BIT MMU
007464  005302                                        DEC     R2                      ; ELSE CHECKED 8 WORDS?
007466  001374                                        BNE     100$                    ; IF NOT, CHECK NEXT
007470  012737  007600  172352                        MOV     #7600,KPAR5             ; ELSE CAN ONLY USE 124 K
007476  000417                                        BR      130$                    ; PRINT OUT MEMORY SIZE
                                              ;
                                              ; 22 BIT MEMORY MANAGEMENT AVAILABLE - USE TO SIZE MEMORY UP TO 4 MBYTES
                                              ;
007500  012737  000001  002330                110$:   MOV     #1,MM22                 ; FLAG 22 BIT MMU AVAILABLE
007506  005737  120000                        120$:   TST     120000                  ; ADDRESS PAGE POINTED TO BY KPAR5
007512  005737  002326                                TST     NXMFLG                  ; WAS THERE AN NXM TRAP?
```

GLOBAL SUBROUTINES SECTION

```
007516  001007                            BNE     130$                   ; IF YES, SAVE THE MEMORY SIZE
007520  062737  000200  172352            ADD     #200,KPAR5             ; ELSE POINT TO NEXT PAGE
007526  023727  172352  177600            CMP     KPAR5,#177600          ; REACHED THE I/O PAGE?
007534  001364                            BNE     120$                   ; IF NOT, TEST THE NEXT PAGE
                                  ;
                                  ; CONVERT VIRTUAL SIZE TO PHYSICAL SIZE
                                  ;
007536  005037  177572            130$:   CLR     SR0                    ; DISABLE MEMORY MANAGEMENT
007542  005037  002340                    CLR     VIADD                  ; CONVERT KPAR5 TO PHYSICAL
007546  004737  010014                    JSR     PC,VPCON               ; MEMORY SIZE
007552  013737  002334  002342            MOV     PHHIGH,PHHSIZ          ; SAVE MEMORY SIZE
007560  013737  002336  002344            MOV     PHLOW,PHLSIZ           ;
                                  ;
                                  ; PRINT OUT MEMORY SIZE AND RETURN FROM THE SUBROUTINE
                                  ;
007566  013701  002342            140$:   MOV     PHHSIZ,R1              ; GET SIZE HIGH WORD
007572  013700  002344                    MOV     PHLSIZ,R0              ; AND LOW WORD
        000005                            .REPT   5                      ; SHIFT HIGH AND LOW
                                          ASL     R0                     ; WORDS TO GET THE
                                          ROL     R1                     ; NUMBER OF K WORDS
                                          .ENDR                          ;
007576  006300                            ASL     R0                     ; WORDS TO GET THE
007600  006101                            ROL     R1                     ; NUMBER OF K WORDS
007602  006300                            ASL     R0                     ; WORDS TO GET THE
007604  006101                            ROL     R1                     ; NUMBER OF K WORDS
007606  006300                            ASL     R0                     ; WORDS TO GET THE
007610  006101                            ROL     R1                     ; NUMBER OF K WORDS
007612  006300                            ASL     R0                     ; WORDS TO GET THE
007614  006101                            ROL     R1                     ; NUMBER OF K WORDS
007616  006300                            ASL     R0                     ; WORDS TO GET THE
007620  006101                            ROL     R1                     ; NUMBER OF K WORDS
007622                                    PRINTF  #MSIZE,R1              ; PRINT THE SIZE
                                  .MCALL  M$PRINT
                                  .IF B   #MSIZE
                                  .ERROR  ;MISSING FORMAT
                                  .MEXIT
                                  .ENDC
                                  .IF B   <R1>
                                  M$PRINT C$PNTF,#MSIZE
                                  .MEXIT
                                  .ENDC
                                  .IF B   <>
007622                            M$PRINT C$PNTF,#MSIZE,<R1>
                                  .MCALL  M$COUNT,M$PUT,M$GNINS,M$SVC
        000001                    T$ARGCNT=1
007622                            M$COUNT T$ARGCNT,<R1>,<>,<>,<>,<>,<>,<>,<>
                                  .IF NB <>
                                  M$COUNT T$ARGCNT,<>,<>,<>,<>,<>,<>,<>,<>
                                  .ENDC
                                  .IF NB <R1>
        000002                    T$ARGCNT=T$ARGCNT+1
                                  .ENDC
                                  .IRP    N,<\T$ARGCNT>
                                  M$PUT   #N,#MSIZE,<R1>,<>,<>,<>,<>,<>,<>,<>
                                  .ENDM
007622                            M$PUT   #2,#MSIZE,<R1>,<>,<>,<>,<>,<>,<>,<>
                                  .MCALL  M$PUT1
```

E15


```
                              .IF NB   <#MSIZE>
     007622                   M$PUT    <#MSIZE>,<R1>,<>,<>,<>,<>,<>,<>,<>
                              .MCALL   M$PUT1
                              .IF NB   <R1>
     007622                   M$PUT    <R1>,<>,<>,<>,<>,<>,<>,<>,<>
                              .MCALL   M$PUT1
                              .IF NB   <>
                              M$PUT    <>,<>,<>,<>,<>,<>,<>,<>,<>
                              .ENDC
                              .IF NB   <R1>
     007622                   M$PUT1   R1
                              .MCALL   M$GNINS
                              .IF B
     007622                   M$GNINS <MOV     R1,-(SP)>
                              .IF LT SVCINS
                              MOV      R1,-(SP)
                              .MEXIT
                              .ENDC
                              .IF EQ SVCINS
                              .LIST
                                       MOV     R1,-(SP)
                                               .NLIST
                              .MEXIT
                              .ENDC
                              .IF GT SVCINS
                              .LIST
     007622  010146                                                        MOV     R1,-(SP)
                                               .NLIST
                              .ENDC
                              .IFF
                              .IF DIF B,<R1>
                              .ERROR   ;ILL. ARG. "R1" ONLY "B" IS ALLOWED.
                              .MEXIT
                              .ENDC
                              M$GNINS <CLR     -(SP)>
                              M$GNINS <BISB    ,(SP)>
                              .ENDC
                              .ENDC
                              .ENDC
                              .IF NB   <#MSIZE>
     007624                   M$PUT1   #MSIZE
                              .MCALL   M$GNINS
                              .IF B
     007624                   M$GNINS <MOV     #MSIZE,-(SP)>
                              .IF LT SVCINS
                              MOV      #MSIZE,-(SP)
                              .MEXIT
                              .ENDC
                              .IF EQ SVCINS
                              .LIST
                                       MOV     #MSIZE,-(SP)
                                               .NLIST
                              .MEXIT
                              .ENDC
                              .IF GT SVCINS
                              .LIST
     007624  012746  007662                                                MOV     #MSIZE,-(SP)
```

F15


```
                                                .NLIST
                                .ENDC
                                .IFF
                                .IF DIF B,<#MSIZE>
                                .ERROR  ;ILL. ARG. "#MSIZE" ONLY "B" IS ALLOWED.
                                .MEXIT
                                .ENDC
                                M$GNINS <CLR     (SP)>
                                M$GNINS <BISB   ,(SP)>
                                .ENDC
                                .ENDC
                                .ENDC
                                .IF NB  <#2>
  007630                        M$PUT1  #2
                                .MCALL  M$GNINS
                                .IF B
  007630                        M$GNINS <MOV    #2,-(SP)>
                                .IF LT SVCINS
                                MOV     #2,-(SP)
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        MOV     #2,-(SP)
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
  007630  012746  000002                                                        MOV     #2,-(SP)
                                                .NLIST
                                .ENDC
                                .IFF
                                .IF DIF B,<#2>
                                .ERROR  ;ILL. ARG. "#2" ONLY "B" IS ALLOWED.
                                .MEXIT
                                .ENDC
                                M$GNINS <CLR    -(SP)>
                                M$GNINS <BISB   ,(SP)>
                                .ENDC
                                .ENDC
  007634                        M$GNINS <MOV    SP,R0>
                                .IF LT SVCINS
                                MOV     SP,R0
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        MOV     SP,R0
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
  007634  010600                                                                MOV     SP,R0
                                                .NLIST
                                .ENDC
```

```
        007636                              M$SVC    C$PNTF
                                            .MCALL   M$GNINS,M$TSTLAB
        007636                              M$TSTLAB
                                            .MCALL   M$TLABEL,M$INCR
                                            .IIF LT T$TSTMAC, .MEXIT
                                            .RADIX   10
                                            M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                            .RADIX   8
                                            M$INCR   T$TSTSEQ
        007636                              M$GNINS <TRAP    C$PNTF>
                                            .IF LT SVCINS
                                            TRAP     C$PNTF
                                            .MEXIT
                                            .ENDC
                                            .IF EQ SVCINS
                                            .LIST
                                                     TRAP     C$PNTF
                                                              .NLIST
                                            .MEXIT
                                            .ENDC
                                            .IF GT SVCINS
                                            .LIST
        007636  104417                                                                          TRAP     C$PNTF
                                                              .NLIST
                                            .ENDC
                                            .IRP     N,<\T$ARGCNT*2+2>
                                            M$GNINS <ADD     #N,SP>
                                            .ENDM
        007640                              M$GNINS <ADD     #6,SP>
                                            .IF LT SVCINS
                                            ADD      #6,SP
                                            .MEXIT
                                            .ENDC
                                            .IF EQ SVCINS
                                            .LIST
                                                     ADD      #6,SP
                                                              .NLIST
                                            .MEXIT
                                            .ENDC
                                            .IF GT SVCINS
                                            .LIST
        007640  062706  000006                                                                  ADD      #6,SP
                                                              .NLIST
                                            .ENDC
                                            .MEXIT
                                            .ENDC
                                            .IF B    <>
                                            M$PRINT C$PNTF,#MSIZE,<R1>,<>
                                            .MEXIT
                                            .ENDC
                                            .IF B    <>
                                            M$PRINT C$PNTF,#MSIZE,<R1>,<>,<>
                                            .MEXIT
                                            .ENDC
                                            .IF B    <>
                                            M$PRINT C$PNTF,#MSIZE,<R1>,<>,<>,<>
                                            .MEXIT
```

```
                                .ENDC
                                .IF B   <>
                                M$PRINT C$PNTF,#MSIZE,<R1>,<>,<>,<>,<>
                                .MEXIT
                                .ENDC
                                .IF B   <>
                                M$PRINT C$PNTF,#MSIZE,<R1>,<>,<>,<>,<>,<>
                                .MEXIT
                                .ENDC
                                .IF B   <>
                                M$PRINT C$PNTF,#MSIZE,<R1>,<>,<>,<>,<>,<>,<>
                                .MEXIT
                                .ENDC
                                M$PRINT C$PNTF,#MSIZE,<R1>,<>,<>,<>,<>,<>,<>,<>
1999 007644                             CLRVEC  #4                      ; RESET THE NXM VECTOR
                                .MCALL  M$LDRO,M$SVC
     007644                     M$LDRO  #4,CLRVEC
                                .MCALL  M$GNINS
                                .IF NB #4
                                .IIF DIF RO,#4
     007644                     M$GNINS <MOV    #4,RO>
                                .IF LT SVCINS
                                MOV     #4,RO
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        MOV     #4,RO
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
     007644  012700  000004                                                     MOV     #4,RO
                                                .NLIST
                                .ENDC
                                .ENDC
                                .IFF
                                .ERROR  ;MISSING ARG. ON "CLRVEC"
                                .ENDC
     007650                     M$SVC   C$CVEC
                                .MCALL  M$GNINS,M$TSTLAB
     007650                     M$TSTLAB
                                .MCALL  M$TLABEL,M$INCR
                                .IIF LT T$TSTMAC, .MEXIT
                                .RADIX  10
                                M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                .RADIX  8
                                M$INCR  T$TSTSEQ
     007650                     M$GNINS <TRAP   C$CVEC>
                                .IF LT SVCINS
                                TRAP    C$CVEC
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        TRAP    C$CVEC
```

I15


```
                                                  .NLIST
                                      .MEXIT
                                      .ENDC
                                      .IF GT SVCINS
                                      .LIST
     007650  104436                                                                  TRAP    C$CVEC
                                                  .NLIST
                                      .ENDC
2000 007652  012602                         MOV    (SP)+,R2             ; RESTORE THE REGISTERS
2001 007654  012601                         MOV    (SP)+,R1             ; USED BY THE ROUTINE
2002 007656  012600                         MOV    (SP)+,R0
2003 007660  000207                         RETURN
2004
2005
2006                                        .NLIST  BEX
2007 007662     045     101     115 MSIZE:  .ASCIZ  /%AMEMORY SIZE = %D4%A K%N/
2008                                        .LIST   BEX
2009                                        .EVEN
```

```
                                        ;*******************************************************************
                                        ; SUBROUTINE PVCON - PHYSICAL TO VIRTUAL ADDRESS CONVERSION ROUTINE
                                        ;*******************************************************************
                                        ;++
                                        ; FUNCTIONAL DESCRIPTION:
                                        ;
                                        ;       CONVERTS A PHYSICAL ADDRESS OF UP TO 22 BITS INTO A VIRTUAL
                                        ;       ADDRESS USING KPAR 5.
                                        ;
                                        ; INPUTS:
                                        ;
                                        ;       PHHIGH - HIGH WORD OF PHYSICAL ADDRESS
                                        ;       PHLOW  - LOW WORD OF PHYSICAL ADDRESS
                                        ;
                                        ; IMPLICIT INPUTS:
                                        ;
                                        ;       NONE.
                                        ;
                                        ; OUTPUTS:
                                        ;
                                        ;       VIADD  - VIRTUAL ADDRESS USING KPAR5
                                        ;       KPAR5  - POINTS TO PHYSICAL PAGE
                                        ;
                                        ; IMPLICIT OUTPUTS:
                                        ;
                                        ;       NONE.
                                        ;
                                        ; SUBORDINATE ROUTINES USED:
                                        ;
                                        ;       NONE.
                                        ;
                                        ; FUNCTIONAL SIDE EFFECTS:
                                        ;
                                        ;       NONE.
                                        ;
                                        ; CALLING SEQUENCE:
                                        ;
                                        ;       CALL    PVCON
                                        ;
                                        ;--

 007714                                 PVCON::
 007714  010046                                 MOV     R0,-(SP)                ; SAVE REGISTERS USED IN
 007716  010146                                 MOV     R1,-(SP)                ; THIS ROUTINE
                                        ;
                                        ; PUT ADDRESS BITS 0 TO 6 INTO THE VIRTUAL ADDRESS
                                        ;
 007720  013737  002336  002340                 MOV     PHLOW,VIADD             ; LOAD LOWEST 15 BITS OF PHYSICAL ADDR.
 007726  042737  177700  002340                 BIC     #177700,VIADD           ; CLEAR PAGE AND BLOCK INFORMATION
 007734  052737  120000  002340                 BIS     #120000,VIADD           ; SET THE PAGE REGISTER TO KPAR5
                                        ;
                                        ; PUT ADDRESS BITS 6 TO 21 INTO KPAR5
                                        ;
 007742  013700  002336                         MOV     PHLOW,R0                ; INITIALISE OUR SHIFT REGISTER
 007746  013701  002334                         MOV     PHHIGH,R1               ; HIGH WORD WILL BE SHIFTED IN
         000006                                 .REPT   6
                                                ASR     R1                      ; SHIFT HIGH WORD
```

K15


```
2068                                    ROR     R0              ; INTO LOW WORD
2069                                    .ENDR
     007752  006201                     ASR     R1              ; SHIFT HIGH WORD
     007754  006000                     ROR     R0              ; INTO LOW WORD
     007756  006201                     ASR     R1              ; SHIFT HIGH WORD
     007760  006000                     ROR     R0              ; INTO LOW WORD
     007762  006201                     ASR     R1              ; SHIFT HIGH WORD
     007764  006000                     ROR     R0              ; INTO LOW WORD
     007766  006201                     ASR     R1              ; SHIFT HIGH WORD
     007770  006000                     ROR     R0              ; INTO LOW WORD
     007772  006201                     ASR     R1              ; SHIFT HIGH WORD
     007774  006000                     ROR     R0              ; INTO LOW WORD
     007776  006201                     ASR     R1              ; SHIFT HIGH WORD
     010000  006000                     ROR     R0              ; INTO LOW WORD
2070 010002  010037  172352             MOV     R0,KPAR5        ; SAVE AS KPAR5
2071 010006  012601                     MOV     (SP)+,R1        ; RESTORE THE REGISTERS
2072 010010  012600                     MOV     (SP)+,R0        ; USED BY THIS ROUTINE
2073 010012  000207                     RETURN                  ;
```

```
                                         ;*********************************************************************
                                         ; SUBROUTINE VPCON - VIRTUAL TO PHYSICAL ADDRESS CONVERSION ROUTINE
                                         ;*********************************************************************
                                         ;++
                                         ; FUNCTIONAL DESCRIPTION:
                                         ;
                                         ;       CONVERTS A VIRTUAL ADDRESS TOGETHER WITH KPAR 5 INTO A PHYSICAL
                                         ;       ADDRESS OF UP TO 22 BITS.
                                         ;
                                         ; INPUTS:
                                         ;
                                         ;       VIADD  - VIRTUAL ADDRESS (BITS 13 TO 15 ARE IGNORED)
                                         ;       KPAR5  - PAGE ADDRESS REGISTER 5
                                         ;
                                         ; IMPLICIT INPUTS:
                                         ;
                                         ;       NONE.
                                         ;
                                         ; OUTPUTS:
                                         ;
                                         ;       PHHIGH - PHYSICAL ADDRESS HIGH WORD
                                         ;       PHLOW  - PHYSICAL ADDRESS LOW WORD
                                         ;
                                         ; IMPLICIT OUTPUTS:
                                         ;
                                         ;       NONE.
                                         ;
                                         ; SUBORDINATE ROUTINES USED:
                                         ;
                                         ;       NONE.
                                         ;
                                         ; FUNCTIONAL SIDE EFFECTS:
                                         ;
                                         ;       NONE.
                                         ;
                                         ; CALLING SEQUENCE:
                                         ;
                                         ;       CALL VPCON
                                         ;
                                         ;--

010014                                   VPCON::
010014 010046                                    MOV     R0,-(SP)                ; SAVE R0
010016 013737 002340 002336                      MOV     VIADD,PHLOW             ; SET UP LOW WORD
010024 042737 160000 002336                      BIC     #160000,PHLOW           ; DISCARD PAGE INFORMATION
010032 013700 172352                             MOV     KPAR5,R0                ; PAGE WILL GO IN HIGH WORD
010036 005037 002334                             CLR     PHHIGH                  ; INITIALISE HIGH WORD
       000006                                    .REPT   6
                                                 ASL     R0                      ; SHIFT PAGE NUMBER
                                                 ROL     PHHIGH                  ; INTO HIGH WORD
                                                 .ENDR
010042 006300                                    ASL     R0                      ; SHIFT PAGE NUMBER
010044 006137 002334                             ROL     PHHIGH                  ; INTO HIGH WORD
010050 006300                                    ASL     R0                      ; SHIFT PAGE NUMBER
010052 006137 002334                             ROL     PHHIGH                  ; INTO HIGH WORD
010056 006300                                    ASL     R0                      ; SHIFT PAGE NUMBER
```

```
     010060  006137  002334          ROL     PHHIGH          ; INTO HIGH WORD
     010064  006300                  ASL     R0              ; SHIFT PAGE NUMBER
     010066  006137  002334          ROL     PHHIGH          ; INTO HIGH WORD
     010072  006300                  ASL     R0              ; SHIFT PAGE NUMBER
     010074  006137  002334          ROL     PHHIGH          ; INTO HIGH WORD
     010100  006300                  ASL     R0              ; SHIFT PAGE NUMBER
     010102  006137  002334          ROL     PHHIGH          ; INTO HIGH WORD
     010106  060037  002336          ADD     R0,PHLOW        ; ADD BLOCK NO. TO LOW WORD
     010112  005537  002334          ADC     PHHIGH          ; CARRY ACROSS TO HIGH WORD
     010116  012600                  MOV     (SP)+,R0        ; RESTORE R0
     010120  000207                  RETURN
```

```
                                                ;******************************;
                                                ; INTERRUPT SERVICE ROUTINES ;
                                                ;******************************;
                                .SBTTL  GLOBAL INTERRUPT HANDLING ROUTINES

                                ;++
                                ;THE INTERRUPT HANDLING SECTION CONTAINS CODING REQUIRED TO USE
                                ;THE 'SETVEC' MACRO. NOTE EVERY INTERRUPT ROUTINE SHOULD SAVE
                                ;AND RESTOR R0.
                                ;---

                                ;*****************************************************************
                                ;       NXM   INTERRUPT SERVICE ROUTINE
                                ;
                                ;FUNTION:        THIS ROUTINE IS ASSIGNED TO VECTOR 4
                                ;                WHEN ADDRESSING THE IEX FOR THE FIRST TIME.
                                ;                IF THIS INTERRRUPT IS GENERATED THE IEX
                                ;                IS INCORRECTLY ADDRESSED.
                                ;                THIS ROUTINE IS ALSO USED IN MEMORY MANAGEMENT
                                ;                SUBROUTINE
                                ;
                                ;ENTRY CONDTION:
                                ;
                                ;EXIT CONDTION:  WHEN THIS INTERRUPT IS SERVICED THE
                                ;                NXMFLG IS SET.
                                ;
                                ;USED IN TESTS: AUTO DROP,23,24,
                                ;*****************************************************************

 010122                                 BGNSRV  NXM
                                .MCALL  M$PUSH,M$INCR,M$GNGBL
                000040          I$SRV=F$BGN
 010122                         M$PUSH  T$NS,T$NESTLEV,F$SRV
                                .MCALL  M$INCR,M$SETS
 010122                         M$INCR  T$NESTLEV
                000001          T$NESTLEV=T$NESTLEV+1
 010122                         M$SETS  T$NS,\T$NESTLEV,F$SRV
                000010          T$NS1=F$SRV
                010012          T$$SRV=T$TAGNUM
 010122                         M$INCR T$TAGNUM
                010013          T$TAGNUM=T$TAGNUM+1
 010122                         M$GNGBL NXM
                                .MCALL  M$GEN
                                .IF NB,NXM
                                .IF NB,
                                M$GEN   NXM,:,SVCGBL,
                                .ENDC
                                .IF B,
 010122                         M$GEN   NXM,:,SVCGBL,< >
                                .IF LE  SVCGBL
                                .IIF EQ SVCGBL,.LIST
                                NXM::
                                .IIF EQ SVCGBL,.NLIST
                                .MEXIT
                                .ENDC
                                .LIST
 010122                                                         NXM::
```

```
                                                        .NLIST
                                        .ENDC
                                        .ENDC
2163 010122  012737  000001  002326              MOV     #1,NXMFLG        ;SET FLAG IF MEMORY IS NON-EXISTENT.
2164 010130                                      ENDSRV
                                        .MCALL  M$POP,M$GNTAG,M$GNINS,M$ENDERR
     010130                             M$POP   T$NS,T$NESTLEV,T$TEMP
                                        .MCALL  M$GETS,M$DECR
                                        .IF LT  T$NESTLEV
                                        .ERROR  T$NESTLEV        ; MACRO T$NS UNDERFLOW
                                        .MEXIT
                                        .ENDC
     010130                             M$GETS  T$NS,\T$NESTLEV,T$TEMP
            000010                      T$TEMP=T$NS1
     010130                             M$DECR  T$NESTLEV
            000000                      T$NESTLEV=T$NESTLEV-1
                                        .IF EQ F$SRV-T$TEMP
     010130                             M$GNTAG L,T$$SRV
                                        .MCALL  M$GEN
     010130                             M$GEN   L,\T$$SRV,SVCTAG
                                        .IF LE  SVCTAG
                                        .IIF EQ SVCTAG,.LIST
                                        L10012:
                                        .IIF EQ SVCTAG,.NLIST
                                        .MEXIT
                                        .ENDC
                                        .LIST
     010130                                                                                          L10012:
                                                .NLIST
            010000                      S$LSYM=T$LSYM
                                        .IF NB
                                        M$GNINS <BICB   #340,2(SP)>
                                        M$GNINS <BISB   ,2(SP)>
                                        .ENDC
     010130                             M$GNINS RTI
                                        .IF LT SVCINS
                                        RTI
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                RTI
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
     010130  000002                                                                                      RTI
                                                        .NLIST
                                        .ENDC
            000041                      I$SRV=F$END
                                        .IFF
                                        M$ENDERR        ENDSRV,T$TEMP
                                        .ENDC
2165
```

```

                                         ;*****************************************************************
                                         ;       INTSC1   INTERRUPT SERVICE ROUTINE
                                         ;
                                         ;FUNTION:        GENERAL PURPOSE INTERRUPT ROUTINE FOR CHANNEL 1.
                                         ;                SET A FLAG WHEN INTERRUPT WAS GENERATED
                                         ;ENTRY CONDTION:
                                         ;
                                         ;EXIT CONDTION: INTFC1 = FLAG, SET WHEN THIS INTERRUPT IS SERVIED
                                         ;
                                         ;CALLED BY TEST:5,23,24,25,26
                                         ;
                                         ;*****************************************************************

     010132                                      BGNSRV  INTSC1
                                         .MCALL  M$PUSH,M$INCR,M$GNGBL
             000040                      I$SRV=F$BGN
     010132                              M$PUSH  T$NS,T$NESTLEV,F$SRV
                                         .MCALL  M$INCR,M$SETS
     010132                              M$INCR  T$NESTLEV
             000001                      T$NESTLEV=T$NESTLEV+1
     010132                              M$SETS  T$NS,\T$NESTLEV,F$SRV
             000010                      T$NS1=F$SRV
             010013                      T$$SRV=T$TAGNUM
     010132                              M$INCR T$TAGNUM
             010014                      T$TAGNUM=T$TAGNUM+1
     010132                              M$GNGBL INTSC1
                                         .MCALL  M$GEN
                                         .IF NB,INTSC1
                                         .IF NB,
                                         M$GEN   INTSC1,:,SVCGBL,
                                         .ENDC
                                         .IF B,
     010132                              M$GEN   INTSC1,:,SVCGBL,< >
                                         .IF LE  SVCGBL
                                         .IIF EQ SVCGBL,.LIST
                                         INTSC1::
                                         .IIF EQ SVCGBL,.NLIST
                                         .MEXIT
                                         .ENDC
                                         .LIST
     010132                                                                                         INTSC1::
                                                 .NLIST
                                         .ENDC
                                         .ENDC
     010132  012737  000001  002376              MOV     #1,INTFC1       ;SET INTERRUPT FLAG
     010140                                      ENDSRV
                                         .MCALL  M$POP,M$GNTAG,M$GNINS,"$ENDERR
     010140                              M$POP   T$NS,T$NESTLEV,T$TEMP
                                         .MCALL  M$GETS,M$DECR
                                         .IF LT  T$NESTLEV
                                         .ERROR  T$NESTLEV       ; MACRO T$NS UNDERFLOW
                                         .MEXIT
                                         .ENDC
     010140                              M$GETS  T$NS,\T$NESTLEV,T$TEMP
             000010                      T$TEMP=T$NS1
     010140                              M$DECR  T$NESTLEV
```

D16


```
                000000          T$NESTLEV=T$NESTLEV-1
                                .IF EQ F$SRV-T$TEMP
        010140                  M$GNTAG L,T$$SRV
                                .MCALL  M$GEN
        010140                  M$GEN   L,\T$$SRV,SVCTAG
                                .IF LE  SVCTAG
                                .IIF EQ SVCTAG,.LIST
                                L10013:
                                .IIF EQ SVCTAG,.NLIST
                                .MEXIT
                                .ENDC
                                .LIST
        010140                                                              L10013:
                                        .NLIST
                010000          S$LSYM=T$LSYM
                                .IF NB
                                M$GNINS <BICB   #340,2(SP)>
                                M$GNINS <BISB   ,2(SP)>
                                .ENDC
        010140                  M$GNINS RTI
                                .IF LT SVCINS
                                RTI
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        RTI
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
        010140  000002                                                          RTI
                                                .NLIST
                                .ENDC
                000041          I$SRV=F$END
                                .IFF
                                M$ENDERR        ENDSRV,T$TEMP
                                .ENDC

                                ;*****************************************************************
                                ;       INTSC2  INTERRUPT SERVICE ROUTINE
                                ;
                                ;FUNTION:       GENERAL PURPOSE INTERRUPT ROUTINE FOR CHANNEL 2.
                                ;               SET A FLAG WHEN INTERRUPT IN CHANNEL 2 WAS
                                ;               GENERATED
                                ;ENTRY CONDITION:
                                ;
                                ;EXIT CONDTION: INTFC2 = FLAG,SET WHEN THIS INTERRUPT IS SERVIED
                                ;
                                ;USED IN TEST:5,23,24,25,26
                                ;*****************************************************************

        010142                          BGNSRV  INTSC2
                                .MCALL  M$PUSH,M$INCR,M$GNGBL
                000040          I$SRV=F$BGN
        010142                  M$PUSH  T$NS,T$NESTLEV,F$SRV
```

E16


```
                                        .MCALL  M$INCR,M$SETS
       010142                           M$INCR  T$NESTLEV
              000001                    T$NESTLEV=T$NESTLEV+1
       010142                           M$SETS  T$NS,\T$NESTLEV,F$SRV
              000010                    T$NS1=F$SRV
              010014                    T$$SRV=T$TAGNUM
       010142                           M$INCR T$TAGNUM
              010015                    T$TAGNUM=T$TAGNUM+1
       010142                           M$GNGBL INTSC2
                                        .MCALL  M$GEN
                                        .IF NB,INTSC2
                                        .IF NB,
                                        M$GEN   INTSC2,:,SVCGBL,
                                        .ENDC
                                        .IF B,
       010142                           M$GEN   INTSC2,:,SVCGBL,< >
                                        .IF LE  SVCGBL
                                        .T   EQ SVCGBL, _IST
                                        INTSC2::
                                        .IIF EQ SVCGBL,.NLIST
                                        .MEXIT
                                        .ENDC
                                        .LIST
       010142                                                                     INTSC2::
                                                .NLIST
                                        .ENDC
                                        .ENDC
  2199 010142 012737  000001  002400            MOV     #1,INTFC2       ;SET INTERRUPT FLAG
  2200 010150                                   ENDSRV
                                        .MCALL  M$POP,M$GNTAG,M$GNINS,M$ENDERR
       010150                           M$POP   T$NS,T$NESTLEV,T$TEMP
                                        .MCALL  M$GETS,M$DECR
                                        .IF LT  T$NESTLEV
                                        .ERROR  T$NESTLEV       ; MACRO T$NS UNDERFLOW
                                        .MEXIT
                                        .ENDC
       010150                           M$GETS  T$NS,\T$NESTLEV,T$TEMP
              000010                    T$TEMP=T$NS1
       010150                           M$DECR  T$NESTLEV
              000000                    T$NESTLEV=T$NESTLEV-1
                                        .IF EQ F$SRV-T$TEMP
       010150                           M$GNTAG L,T$$SRV
                                        .MCALL  M$GEN
       010150                           M$GEN   L,\T$$SRV,SVCTAG
                                        .IF LE  SVCTAG
                                        .IIF EQ SVCTAG,.LIST
                                        L10014:
                                        .IIF EQ SVCTAG,.NLIST
                                        .MEXIT
                                        .ENDC
                                        .LIST
       010150                                                                     L10014:
                                                .NLIST
              010000                    S$LSYM=T$LSYM
                                        .IF NB
                                        M$GNINS <BICB   #340,2(SP)>
                                        M$GNINS <BISB   ,2(SP)>
```

F16


```
                                .ENDC
      010150                    M$GNINS RTI
                                .IF LT SVCINS
                                RTI
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        RTI
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
      010150  000002                                                            RTI
                                                .NLIST
                                .ENDC
              000041            I$SRV=F$END
                                .IFF
                                M$ENDERR        ENDSRV,T$TEMP
                                .ENDC
```

```
                        ;*****************************************************************
                        ;       INTERR - INTERRUPT ERROR SERVICE ROUTINE
                        ;
                        ;FUNTION:        WHEN AN INVALID INTERRUPT IS FOUND A
                        ;                ERROR MESSAGE IS GENERATED.
                        ;ENTRY CONDITION:
                        ;
                        ;EXIT CONDITION:ERROR MESSAGE INVALID INTERRUPT
                        ;
                        ;USED IN TEST:5
                        ;*****************************************************************

010152                          BGNSRV  INTERR
                        .MCALL  M$PUSH,M$INCR,M$GNGBL
        000040          I$SRV=F$BGN
010152                  M$PUSH  T$NS,T$NESTLEV,F$SRV
                        .MCALL  M$INCR,M$SETS
010152                  M$INCR  T$NESTLEV
        000001          T$NESTLEV=T$NESTLEV+1
010152                  M$SETS  T$NS,\T$NESTLEV,F$SRV
        000010          T$NS1=F$SRV
        010015          T$$SRV=T$TAGNUM
010152                  M$INCR T$TAGNUM
        010016          T$TAGNUM=T$TAGNUM+1
010152                  M$GNGBL INTERR
                        .MCALL  M$GEN
                        .IF NB,INTERR
                        .IF NB,
                        M$GEN   INTERR,:,SVCGBL,
                        .ENDC
                        .IF B,
010152                  M$GEN   INTERR,:,SVCGBL,< >
                        .IF LE  SVCGBL
                        .IIF EQ SVCGBL,.LIST
                        INTERR::
                        .IIF EQ SVCGBL,.NLIST
                        .MEXIT
                        .ENDC
                        .LIST
010152                                                          INTERR::
                                .NLIST
                        .ENDC
                        .ENDC
010152                          ERRSOFT 500,E400
                        .MCALL  M$ERRINS
010152                  M$ERRINS        500,E400,,C$ERSOFT
                        .MCALL  M$GNINS,M$WORD,M$TSTLAB
010152                  M$SVC   C$ERSOFT
                        .MCALL  M$GNINS,M$TSTLAB
010152                  M$TSTLAB
                        .MCALL  M$TLABEL,M$INCR
                        .IIF LT T$TSTMAC, .MEXIT
                        .RADIX  10
                        M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                        .RADIX  8
                        M$INCR  T$TSTSEQ
```

H16


```
010152                  M$GNINS <TRAP   C$ERSOFT>
                        .IF LT SVCINS
                        TRAP    C$ERSOFT
                        .MEXIT
                        .ENDC
                        .IF EQ SVCINS
                        .LIST
                                TRAP    C$ERSOFT
                                        .NLIST
                        .MEXIT
                        .ENDC
                        .IF GT SVCINS
                        .LIST
010152  104457                                                  TRAP    C$ERSOFT
                                        .NLIST
                        .ENDC
        000012          .RADIX  10
                        .IF NB  500
        000764          T$ERRNUM=500
                        .IFF
                        .ERROR  ;MISSING ERROR NR
                        .ENDC
010154                  M$WORD  \T$ERRNUM
                        .MCALL  M$GNINS
                        .IRP    N,<500>
                        M$GNINS <.WORD  N>
                        .ENDM
010154                  M$GNINS <.WORD  500>
                        .IF LT SVCINS
                        .WORD   500
                        .MEXIT
                        .ENDC
                        .IF EQ SVCINS
                        .LIST
                                .WORD   500
                                        .NLIST
                        .MEXIT
                        .ENDC
                        .IF GT SVCINS
                        .LIST
010154  000764                                                  .WORD   500
                                        .NLIST
                        .ENDC
        000010          .RADIX  8
                        .IF NB E400
010156                  M$WORD  E400
                        .MCALL  M$GNINS
                        .IRP    N,<E400>
                        M$GNINS <.WORD  N>
                        .ENDM
010156                  M$GNINS <.WORD  E400>
                        .IF LT SVCINS
                        .WORD   E400
                        .MEXIT
                        .ENDC
                        .IF EQ SVCINS
                        .LIST
```

```
                                                  .WORD   E400
                                                          .NLIST
                                         .MEXIT
                                         .ENDC
                                         .IF GT SVCINS
                                         .LIST
      010156  010162                                                          .WORD   E400
                                                          .NLIST
                                         .ENDC
                                         .IFF
                                         M$WORD  0
                                         .ENDC
                                         .IF NB
                                         M$WORD
                                         .IFF
      010160                             M$WORD  0
                                         .MCALL  M$GNINS
                                         .IRP    N,<0>
                                         M$GNINS <.WORD  N>
                                         .ENDM
      010160                             M$GNINS <.WORD  0>
                                         .IF LT SVCINS
                                         .WORD   0
                                         .MEXIT
                                         .ENDC
                                         .IF EQ SVCINS
                                         .LIST
                                                  .WORD   0
                                                          .NLIST
                                         .MEXIT
                                         .ENDC
                                         .IF GT SVCINS
                                         .LIST
      010160  000000                                                          .WORD   0
                                                          .NLIST
                                         .ENDC
                                         .ENDC
 2217 010162     040      111      116   E400:    .ASCIZ  / INVALID INTERRUPT/
      010165     126      101      114
      010170     111      104      040
      010173     111      116      124
      010176     105      122      122
      010201     125      120      124
      010204     000
 2218                                             .EVEN
 2219 010206                                      ENDSRV
                                         .MCALL  M$POP,M$GNTAG,M$GNINS,M$ENDERR
      010206                             M$POP   T$NS,T$NESTLEV,T$TEMP
                                         .MCALL  M$GETS,M$DECR
                                         .IF LT  T$NESTLEV
                                         .ERROR  T$NESTLEV       ; MACRO T$NS UNDERFLOW
                                         .MEXIT
                                         .ENDC
      010206                             M$GETS  T$NS,\T$NESTLEV,T$TEMP
              000010                     T$TEMP=T$NS1
      010206                             M$DECR  T$NESTLEV
              000000                     T$NESTLEV=T$NESTLEV-1
```

J16


```
                                        .IF EQ F$SRV-T$TEMP
      010206                            M$GNTAG L,T$$SRV
                                        .MCALL  M$GEN
      010206                            M$GEN   L,\T$$SRV,SVCTAG
                                        .IF LE  SVCTAG
                                        .IIF EQ SVCTAG,.LIST
                                        L10015:
                                        .IIF EQ SVCTAG,.NLIST
                                        .MEXIT
                                        .ENDC
                                        .LIST
      010206                                                                            L10015:
                                                .NLIST
              010000                    S$LSYM=T$LSYM
                                        .IF NB
                                        M$GNINS <BICB   #340,2(SP)>
                                        M$GNINS <BISB   ,2(SP)>
                                        .ENDC
      010206                            M$GNINS RTI
                                        .IF LT SVCINS
                                        RTI
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                RTI
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
      010206  000002                                                                          RTI
                                                        .NLIST
                                        .ENDC
              000041                    I$SRV=F$END
                                        .IFF
                                        M$ENDERR        ENDSRV,T$TEMP
                                        .ENDC
  2220
```

```
                                ;*********************************************************************************
                                ;               SUBROUTINE CULPA
                                ;               ========== =====
                                ;FUNCTION:      THIS SUBROUTINE CLEARS THE ULPA BIT IN ISR REGISTER
                                ;               AND THE MASK BITS IN IIR REGISTER FOR BOTH CHANNELS .
                                ;
                                ;CALLING FORMAT:        JSR     PC,CULPA
                                ;
                                ;CALLED BY TEST: ALL TESTS EXCEPT TEST 1,2,3,14,23,24,25,26,27
                                ;*********************************************************************************
010210                          CULPA:: BGNSEG
                                .MCALL  M$PUSH,M$INCR,M$SVC
        000040                  I$SEG=F$BGN
010210                          M$PUSH  T$NS,T$NESTLEV,F$SEG
                                .MCALL  M$INCR,M$SETS
010210                          M$INCR  T$NESTLEV
        000001                  T$NESTLEV T$NESTLEV+1
010210                          M$SETS  T$NS,\T$NESTLEV,F$SEG
        000003                  T$NS1=F$SEG
        010000                  T$$SEG=S$LSYM
010210                          M$PUSH  T$SEK,T$SEGLEV,T$$SEG
                                .MCALL  M$INCR,M$SETS
010210                          M$INCR  T$SEGLEV
        000000                  T$SEGLEV=T$SEGLEV+1
010210                          M$SETS  T$SEK,\T$SEGLEV,T$$SEG
        010000                  T$SEK0=T$$SEG
010210                          M$INCR  S$LSYM
        010001                  S$LSYM=S$LSYM+1
010210                          M$SVC   C$BSEG
                                .MCALL  M$GNINS,M$TSTLAB
010210                          M$TSTLAB
                                .MCALL  M$TLABEL,M$INCR
                                .IIF LT T$TSTMAC, .MEXIT
                                .RADIX  10
                                M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                .RADIX  8
                                M$INCR  T$TSTSEQ
010210                          M$GNINS <TRAP   C$BSEG
                                .IF LT SVCINS
                                TRAP    C$BSEG
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        TRAP    C$BSEG
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
010210  104404                                                                  TRAP    C$BSEG
                                                .NLIST
                                .ENDC
010212                                  BRESET                          ;RESET HARDWARE
                                .MCALL  M$SVC
010212                          M$SVC   C$RESET
```

GLOBAL INTERRUPT HANDLING ROUTINES

```
                                        .MCALL  M$GNINS,M$TSTLAB
 010212                                 M$TSTLAB
                                        .MCALL  M$TLABEL,M$INCR
                                        .IIF LT T$TSTMAC, .MEXIT
                                        .RADIX  10
                                        M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                        .RADIX  8
                                        M$INCR  T$TSTSEQ
 010212                                 M$GNINS <TRAP   C$RESET>
                                        .IF LT SVCINS
                                        TRAP    C$RESET
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                TRAP    C$RESET
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
 010212 104433                                                                  TRAP    C$RESET
                                                        .NLIST
                                        .ENDC
 010214 112777 000000 172046                    MOVB    #0,@ICRHX               ;LOAD NOT SWRST INTO ACR 1
 010222 012777 000010 172050                    MOV     #10,@CSRX               ;SELECT CHANNEL 2
 010230 112777 000000 172032                    MOVB    #0,@ICRHX               ;LOAD NOT SWRST INTO ACR 2
 010236 112777 000000 172010                    MOVB    #0,@IIRHX               ;LOAD EVEN DPA INTO ADR 2
 010244 005077 172030                           CLR     @CSRX                   ;SELECT CHANNEL 1
 010250 052777 000002 172022                    BIS     #2,@CSRX                ;SELECT CHA. 1 AS SYSTEM CONTROLLER
 010256 112777 000217 172004                    MOVB    #217,@ICRHX             ;LOAD SIC INTO ACR1
 010264 012701 000100                           MOV     #100,R1                 ;WAIT 100 US
 010270 005301                          2$:     DEC     R1                      ;...
 010272 001376                                  BNE     2$                      ;...
 010274 112777 000017 171766                    MOVB    #17,@ICRHX              ;LOAD NOT SIC INTO ACR1
 010302 112777 000040 171766                    MOVB    #40,@IDRHX              ;LOAD EVEN MLA 2 INTO DOR 1
 010310 004737 011050                           JSR     PC,LOOP                 ;WAIT A LITTLE
 010314 112777 000077 171754                    MOVB    #77,@IDRHX              ;LOAD UNL INTO DOR 1
 010322 004737 011050                           JSR     PC,LOOP                 ;WAIT A LITTLE
 010326 112777 000200 171734                    MOVB    #200,@ICRHX             ;SET SYSTEM CONTROLLER 1 IN IDLE STATE
 010334 112777 000000 171726                    MOVB    #0,@ICRHX               ;...
 010342 112777 000002 171704                    MOVB    #2,@IIRHX               ;LOAD EVEN DPA INTO ADR 1
 010350 012777 000010 171722                    MOV     #10,@CSRX               ;SELECT CHANNEL 2
 010356 052777 000002 171714                    BIS     #2,@CSRX                ;SELECT CHANNEL 2 AS SYS. CONTROLLER
 010364 112777 000217 171676                    MOVB    #217,@ICRHX             ;LOAD SIC INTO ACR2
 010372 012701 000100                           MOV     #100,R1                 ;WAIT 100 US
 010376 005301                          3$:     DEC     R1                      ;...
 010400 001376                                  BNE     3$                      ;...
 010402 112777 000017 171660                    MOVB    #17,@ICRHX              ;LOAD NOT SIC INTO ACR2
 010410 112777 000042 171660                    MOVB    #42,@IDRHX              ;LOAD EVEN MLA INTO DOR 2
 010416 004737 011050                           JSR     PC,LOOP                 ;WAIT A LITTEL
 010422 112777 000077 171646                    MOVB    #77,@IDRHX              ;LOAD UNL INTO DOR 2
 010430 004737 011050                           JSR     PC,LOOP                 ;WAIT A LITTLE
 010434 112777 000200 171626                    MOVB    #200,@ICRHX             ;SET SYSTEM CONTROLLER 2 IN IDLE STATE
 010442 112777 000000 171620                    MOVB    #0,@ICRHX               ;...
 010450 112777 000000 171602                    MOVB    #0,@ISRLX               ;CLEAR LOW BYTE OF ISR2
 010456 112777 000000 171576                    MOVB    #0,@ISRHX               ;CLEAR HIGH BYTE OF ISR2
```

```
     010464  005077  171610                 CLR     @CSRX                   ;SELECT CHANNEL 1
     010470  112777  000000  171562         MOVB    #0,@ISRLX               ;CLEAR LOW BYTE OF ISR1
     010476  112777  000000  171556         MOVB    #0,@ISRHX               ;CLEAR HIGH BYTE OF ISR1
     010504  112777  000200  171556         MOVB    #200,@ICRHX             ;SET SYSTEM CONTROLLER 1 IN IDEL STATE
     010512  112777  000000  171550         MOVB    #0,@ICRHX               ;...
     010520                                 ENDSEG
                                    .MCALL  M$POP,M$GNLS,M$SVC,M$ENDERR
     010520                         M$POP   T$NS,T$NESTLEV,T$TEMP
                                    .MCALL  M$GETS,M$DECR
                                    .IF LT  T$NESTLEV
                                    .ERROR  T$NESTLEV       ; MACRO T$NS UNDERFLOW
                                    .MEXIT
                                    .ENDC
     010520                         M$GETS  T$NS,\T$NESTLEV,T$TEMP
             000003                 T$TEMP=T$NS1
     010520                         M$DECR  T$NESTLEV
             000000                 T$NESTLEV=T$NESTLEV-1
                                    .IF EQ F$SEG-T$TEMP
     010520                         M$POP   T$SEK,T$SEGLEV,T$$SEG
                                    .MCALL  M$GETS,M$DECR
                                    .IF LT  T$SEGLEV
                                    .ERROR  T$SEGLEV        ; MACRO T$SEK UNDERFLOW
                                    .MEXIT
                                    .ENDC
     010520                         M$GETS  T$SEK,\T$SEGLEV,T$$SEG
             010000                 T$$SEG=T$SEK0
     010520                         M$DECR  T$SEGLEV
             177777                 T$SEGLEV=T$SEGLEV-1
     010520                         M$GNLS  T$$SEG
                                    .MCALL  M$GEN
                                    .IF NB T$$SEG
     010520                         M$GEN   \T$$SEG,$,SVCTAG
                                    .IF LE  SVCTAG
                                    .IIF EQ SVCTAG,.LIST
                                    10000$:
                                    .IIF EQ SVCTAG,.NLIST
                                    .MEXIT
                                    .ENDC
                                    .LIST
     010520                                                                     10000$:
                                            .NLIST
                                    .IFF
                                    M$GEN   \S$LSYM,$,SVCTAG
                                    .ENDC
     010520                         M$SVC   C$ESEG
                                    .MCALL  M$GNINS,M$TSTLAB
     010520                         M$TSTLAB
                                    .MCALL  M$TLABEL,M$INCR
                                    .IIF LT T$TSTMAC, .MEXIT
                                    .RADIX  10
                                    M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                    .RADIX  8
                                    M$INCR  T$TSTSEQ
     010520                         M$GNINS <TRAP   C$ESEG>
                                    .IF LT SVCINS
                                    TRAP    C$ESEG
                                    .MEXIT
```

```
                                   .ENDC
                                   .IF EQ SVCINS
                                   .LIST
                                           TRAP    C$ESEG
                                                   .NLIST
                                   .MEXIT
                                   .ENDC
                                   .IF GT SVCINS
                                   .LIST
      010520  104405                                                                   TRAP    C$ESEG
                                                   .NLIST
                                   .ENDC
                                   .IF EQ T$SEGLEV+1
              000041               I$SEG=F$END
                                   .ENDC
                                   .IFF
                                   M$ENDERR        ENDSEG,T$TEMP
                                   .ENDC
 2275 010522  000207                       RETURN
 2276
```

```

                             ;***********************************************************************
                             ;                 SUBROUTINE BGIN1
                             ;                 ================
                             ;FUNTION:         THIS SUBROUTINE LOADS THE DPA ADDRESS AND THE
                             ;                 SOFTWARE RESET INTO BOTH CHANNELS.
                             ;                 IT A' SO SELECTS CHANNEL 1 AS SYSTEM CONTROLLER
                             ;                 AND CLEARS MASK0+MASK1 REGISTER .
                             ;
                             ;CALLING FORMAT:           JSR     PC,BGIN1
                             ;
                             ;CALLED BY TEST: 5,7,8,11,12,13,14,15,16,17,19,21,22,23,26
                             ;***********************************************************************
 010524                      BGIN1:: BGNSEG
                             .MCALL  M$PUSH,M$INCR,M$SVC
         000040              I$SEG-F$BGN
 010524                      M$PUSH  T$NS,T$NESTLEV,F$SEG
                             .MCALL  M$INCR,M$SETS
 010524                      M$INCR  T$NESTLEV
         000001              T$NESTLEV=T$NESTLEV+1
 010524                      M$SETS  T$NS,\T$NESTLEV,F$SEG
         000003              T$NS1=F$SEG
         010001              T$$SEG=S$LSYM
 010524                      M$PUSH  T$SEK,T$SEGLEV,T$$SEG
                             .MCALL  M$INCR,M$SETS
 010524                      M$INCR  T$SEGLEV
         000000              T$SEGLEV=T$SEGLEV+1
 010524                      M$SETS  T$SEK,\T$SEGLEV,T$$SEG
         010001              T$SEK0=T$$SEG
 010524                      M$INCR  S$LSYM
         010002              S$LSYM=S$LSYM+1
 010524                      M$SVC   C$BSEG
                             .MCALL  M$GNINS,M$TSTLAB
 010524                      M$TSTLAB
                             .MCALL  M$TLABEL,M$INCR
                             .IIF LT T$TSTMAC, .MEXIT
                             .RADIX  10
                             M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                             .RADIX  8
                             M$INCR  T$TSTSEQ
 010524                      M$GNINS <TRAP   C$BSEG>
                             .IF LT SVCINS
                             TRAP    C$BSEG
                             .MEXIT
                             .ENDC
                             .IF EQ SVCINS
                             .LIST
                                     TRAP    C$BSEG
                                             .NLIST
                             .MEXIT
                             .ENDC
                             .IF GT SVCINS
                             .LIST
 010524  104404                                                                TRAP    C$BSEG
                                             .NLIST
                             .ENDC
 010526                              BRESET
```

```
                                .MCALL  M$SVC
     010526                     M$SVC   C$RESET
                                .MCALL  M$GNINS,M$TSTLAB
     010526                     M$TSTLAB
                                .MCALL  M$TLABEL,M$INCR
                                .IIF LT T$TSTMAC, .MEXIT
                                .RADIX  10
                                M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                .RADIX  8
                                M$INCR  T$TSTSEQ
     010526                     M$GNINS <TRAP   C$RESET>
                                .IF LT SVCINS
                                TRAP    C$RESET
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        TRAP    C$RESET
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
     010526  104433                                                                    TRAP    C$RESET
                                                .NLIST
                                .ENDC
     010530  113777  002312  171516         MOVB    DPA1,@IIRHX             ;LOAD DEVICE PRIM. ADDR.1
     010536  012777  000010  171534         MOV     #10,@CSRX               ;SELECT CHANNEL 2
     010544  113777  002314  171502         MOVB    DPA2,@IIRHX             ;LOAD DEVICE PRIM. ADDR. 2
     010552  005077  171522                 CLR     @CSRX                   ;SELECT CHANNEL 1
     010556  112777  000000  171504         MOVB    #0,@ICRHX               ;LOAD NOT SWRST IN ACR 1
     010564  112777  000000  171466         MOVB    #0,@ISRLX               ;CLEAR LOW BYTE OF ISR1
     010572  112777  000000  171462         MOVB    #0,@ISRHX               ;CLEAR HIGH BYTE OF ISR1
     010600  112777  000010  171472         MOVB    #10,@CSRX               ;SELECT CHANNEL 2
     010606  112777  000000  171454         MOVB    #0,@ICRHX               ;LOAD NOT SWRST IN ACR 2
     010614  112777  000000  171436         MOVB    #0,@ISRLX               ;CLEAR LOW BYTE OF ISR2
     010622  112777  000000  171432         MOVB    #0,@ISRHX               ;CLEAR HIGH BYTE OF ISR2
     010630  005077  171444                 CLR     @CSRX                   ;SELECT CHANNEL 1
     010634  012737  000001  002374         MOV     #1,CHAN                 ;LOAD CHANNEL NUMBER
     010642  052777  000002  171430         BIS     #2,@CSRX                ;SELECT CHANNEL 1 AS SYSTEM CONTROLLER
     010650  112777  000217  171412         MOVB    #217,@ICRHX             ;LOAD SIC IN ACR 1
     010656  012701  000100                 MOV     #100,R1                 ;WAIT 100 US
     010662  005301                 1$:     DEC     R1                      ;...
     010664  001376                         BNE     1$                      ;...
     010666  112777  000017  171374         MOVB    #17,@ICRHX              ;LOAD NOT SIC IN ACR1
     010674                                 ENDSEG
                                .MCALL  M$POP,M$GNLS,M$SVC,M$ENDERR
     010674                     M$POP   T$NS,T$NESTLEV,T$TEMP
                                .MCALL  M$GETS,M$DECR
                                .IF LT  T$NESTLEV
                                .ERROR  T$NESTLEV       ; MACRO T$NS UNDERFLOW
                                .MEXIT
                                .ENDC
     010674                     M$GETS  T$NS,\T$NESTLEV,T$TEMP
             000003             T$TEMP-T$NS1
     010674                     M$DECR  T$NESTLEV
             000000             T$NESTLEV-T$NESTLEV-1
```

```
                                .IF EQ F$SEG-T$TEMP
     010674                     M$POP    T$SEK,T$SEGLEV,T$$SEG
                                .MCALL  M$GETS,M$DECR
                                .IF LT   T$SEGLEV
                                .ERROR   T$SEGLEV        ; MACRO T$SEK UNDERFLOW
                                .MEXIT
                                .ENDC
     010674                     M$GETS   T$SEK,\T$SEGLEV,T$$SEG
             010001             T$$SEG=T$SEKO
     010674                     M$DECR   T$SEGLEV
             177777             T$SEGLEV=T$SEGLEV-1
     010674                     M$GNLS   T$$SEG
                                .MCALL  M$GEN
                                .IF NB T$$SEG
     010674                     M$GEN    \T$$SEG,$,SVCTAG
                                .IF LE   SVCTAG
                                .IIF EQ SVCTAG,.LIST
                                10001$:
                                .IIF EQ SVCTAG,.NLIST
                                .MEXIT
                                .ENDC
                                .LIST
     010674                                                                      10001$:
                                        .NLIST
                                .IFF
                                M$GEN    \S$LSYM,$,SVCTAG
                                .ENDC
     010674                     M$SVC    C$ESEG
                                .MCALL  M$GNINS,M$TSTLAB
     010674                     M$TSTLAB
                                .MCALL  M$TLABEL,M$INCR
                                .IIF LT T$TSTMAC, .MEXIT
                                .RADIX  10
                                M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                .RADIX  8
                                M$INCR   T$TSTSEQ
     010674                     M$GNINS <TRAP    C$ESEG>
                                .IF LT SVCINS
                                TRAP     C$ESEG
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        TRAP     C$ESEG
                                                 .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
     010674  104405                                                                    TRAP     C$ESEG
                                                 .NLIST
                                .ENDC
                                .IF EQ T$SEGLEV+1
             000041             I$SEG=F$END
                                .ENDC
                                .IFF
                                M$ENDERR        ENDSEG,T$TEMP
```

```
                                        .ENDC
  2313 010676  000207                          RETURN
```

```
                                ;*************************************************************************
                                ;                   SUBROUTINE BGIN2
                                ;                   ================
                                ;
                                ;FUNCTION:          THIS SUBROUTINE LOADS THE DPA ADDRESSES AND THE
                                ;                   SOFTWARE RESET INTO BOTH CHANNELS .
                                ;                   IT ALSO SELECTS CHANNEL 2 AS SYSTEM CONTROLLER
                                ;                   AND CLEARS MASKO+MASK1 REGISTER.
                                ;
                                ;CALLING FORMAT:            JSR     PC,BGIN2
                                ;
                                ;CALLED BY TEST: 5,6,8,9,10,13,14,15,16,17,18,20,22,24,25
                                ;*************************************************************************
010700                          BGIN2:: BGNSEG
                                .MCALL  M$PUSH,M$INCR,M$SVC
        000040                  I$SEG=F$BGN
010700                          M$PUSH  T$NS,T$NESTLEV,F$SEG
                                .MCALL  M$INCR,M$SETS
010700                          M$INCR  T$NESTLEV
        000001                  T$NESTLEV=T$NESTLEV+1
010700                          M$SETS  T$NS,\T$NESTLEV,F$SEG
        000003                  T$NS1=F$SEG
        010002                  T$$SEG=S$LSYM
010700                          M$PUSH  T$SEK,T$SEGLEV,T$$SEG
                                .MCALL  M$INCR,M$SETS
010700                          M$INCR  T$SEGLEV
        000000                  T$SEGLEV=T$SEGLEV+1
010700                          M$SETS  T$SEK,\T$SEGLEV,T$$SEG
        010002                  T$SEKO=T$$SEG
010700                          M$INCR  S$LSYM
        010003                  S$LSYM=S$LSYM+1
010700                          M$SVC   C$BSEG
                                .MCALL  M$GNINS,M$TSTLAB
010700                          M$TSTLAB
                                .MCALL  M$TLABEL,M$INCR
                                .IIF LT T$TSTMAC, .MEXIT
                                .RADIX  10
                                M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                .RADIX  8
                                M$INCR  T$TSTSEQ
010700                          M$GNINS <TRAP   C$BSEG>
                                .IF LT SVCINS
                                TRAP    C$BSEG
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        TRAP    C$BSEG
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
010700  104404                                                          TRAP    C$BSEG
                                                .NLIST
                                .ENDC
010702                                  BRESET                  ;RESET HARDWARE
```

H1

```
                                    .MCALL  M$SVC
     010702                         M$SVC   C$RESET
                                    .MCALL  M$GNINS,M$TSTLAB
     010702                         M$TSTLAB
                                    .MCALL  M$TLABEL,M$INCR
                                    .IIF LT T$TSTMAC, .MEXIT
                                    .RADIX  10
                                    M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                    .RADIX  8
                                    M$INCR  T$TSTSEQ
     010702                         M$GNINS <TRAP   C$RESET>
                                    .IF LT SVCINS
                                    TRAP    C$RESET
                                    .MEXIT
                                    .ENDC
                                    .IF EQ SVCINS
                                    .LIST
                                            TRAP    C$RESET
                                                    .NLIST
                                    .MEXIT
                                    .ENDC
                                    .IF GT SVCINS
                                    .LIST
     010702  104433                                                         TRAP    C$RESET
                                                    .NLIST
                                    .ENDC
     010704  113777  002312  171342         MOVB    DPA1,@IIRHX             ;LOAD DEVICE PRIM. ADDR.1
     010712  012777  000010  171360         MOV     #10,@CSRX               ;SELECT CHANNEL 2
     010720  113777  002314  171326         MOVB    DPA2,@IIRHX             ;LOAD DEVICE PRIM. ADDR. 2
     010726  005077  171346                 CLR     @CSRX                   ;SELECT CHANNEL 1
     010732  112777  000000  171330         MOVB    #0,@ICRHX               ;LOAD NOT SWRST IN ACR 1
     010740  112777  000000  171312         MOVB    #0,@ISRLX               ;CLEAR LOW BYTE OF ISR1
     010746  112777  000000  171306         MOVB    #0,@ISRHX               ;CLEAR HIGH BYTE OF ISR1
     010754  012777  000010  171316         MOV     #10,@CSRX               ;SELECT CHANNEL 2
     010762  012737  000002  002374         MOV     #2,CHAN                 ;LOAD CHANNEL FLAG
     010770  112777  000000  171272         MOVB    #0,@ICRHX               ;LOAD NOT SWRST IN ACR 2
     010776  112777  000000  171254         MOVB    #0,@ISRLX               ;CLEAR LOW BYTE OF ISR2
     011004  112777  000000  171250         MOVB    #0,@ISRHX               ;CLEAR HIGH BYTE OF ISR2
     011012  052777  000002  171260         BIS     #2,@CSRX                ;SELECT CHANNEL 2 AS SYSTEM CONTROLLER
     011020  112777  000217  171242         MOVB    #217,@ICRHX             ;LOAD SIC IN ACR 2
     011026  012701  000100                 MOV     #100,R1                 ;WAIT 100 US
     011032  005301                 1$:     DEC     R1                      ;...
     011034  001376                         BNE     1$                      ;...
     011036  112777  000017  171224         MOVB    #17,@ICRHX              ;LOAD NOT SIC IN ACR2
     011044                                 ENDSEG
                                    .MCALL  M$POP,M$GNLS,M$SVC,M$ENDERR
     011044                         M$POP   T$NS,T$NESTLEV,T$TEMP
                                    .MCALL  M$GETS,M$DECR
                                    .IF LT  T$NESTLEV
                                    .ERROR  T$NESTLEV       ; MACRO T$NS UNDERFLOW
                                    .MEXIT
                                    .ENDC
     011044                         M$GETS  T$NS,\T$NESTLEV,T$TEMP
             000003                 T$TEMP=T$NS1
     011044                         M$DECR  T$NESTLEV
             000000                 T$NESTLEV-T$NESTLEV 1
                                    .IF EQ F$SEG T$TEMP
```

```
011044                          M$POP   T$SEK,T$SEGLEV,T$$SEG
                                .MCALL  M$GETS,M$DECR
                                .IF LT  T$SEGLEV
                                .ERROR  T$SEGLEV        ; MACRO T$SEK UNDERFLOW
                                .MEXIT
                                .ENDC
011044                          M$GETS  T$SEK,\T$SEGLEV,T$$SEG
         010002                 T$$SEG=T$SEKO
011044                          M$DECR  T$SEGLEV
         177777                 T$SEGLEV=T$SEGLEV-1
011044                          M$GNLS  T$$SEG
                                .MCALL  M$GEN
                                .IF NB T$$SEG
011044                          M$GEN   \T$$SEG,$,SVCTAG
                                .IF LE  SVCTAG
                                .IIF EQ SVCTAG,.LIST
                                10002$:
                                .IIF EQ SVCTAG,.NLIST
                                .MEXIT
                                .ENDC
                                .LIST
011044                                                                      10002$:
                                        .NLIST
                                .IFF
                                M$GEN   \S$LSYM,$,SVCTAG
                                .ENDC
011044                          M$SVC   C$ESEG
                                .MCALL  M$GNINS,M$TSTLAB
011044                          M$TSTLAB
                                .MCALL  M$TLABEL,M$INCR
                                .IIF LT T$TSTMAC, .MEXIT
                                .RADIX  10
                                M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                .RADIX  8
                                M$INCR  T$TSTSEQ
011044                          M$GNINS <TRAP   C$ESEG>
                                .IF LT SVCINS
                                TRAP    C$ESEG
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        TRAP    C$ESEG
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
011044  104405                                                                   TRAP    C$ESEG
                                                .NLIST
                                .ENDC
                                .IF EQ T$SEGLEV+1
         000041                 I$SEG=F$END
                                .ENDC
                                .IFF
                                M$ENDERR        ENDSEG,T$TEMP
                                .ENDC
```

```
   2349 011046  000207                  RETURN
```

```
                                        ;*************************************************************************
                                        ;                  SUBROUTINE LOOP
                                        ;                  ===============
                                        ;FUNTION :         ROUTINE FOR WAIT (AT LEAST) 1 US.
                                        ;
                                        ;CALLING FORMAT:          JSR     PC,LOOP
                                        ;
                                        ;CALLED BY TEST:          ALL TESTS EXCEPT 1,2,3,4,5
                                        ;*************************************************************************
011050  012701  000001                  LOOP:   MOV     #1,R1                   ;LOAD LOOP COUNTER
011054  005301                          1$:     DEC     R1                      ;DECREMENT LOOP COUNTER
011056  001376                                  BNE     1$                      ;LOOP UNTIL DONE
011060  000207                                  RETURN




                                        ;*************************************************************************
                                        ;                  SUBROUTINE WAIT
                                        ;                  ===============
                                        ;FUNCTION:         ROUTINE FOR WAIT (AT LEAST) 100 US.
                                        ;
                                        ;CALLING FORMAT:          JSR     PC,WAIT
                                        ;
                                        ;CALLED BY TEST:          4,6,8,13,17
                                        ;*************************************************************************
011062  012701  000100                  WAIT::  MOV     #100,R1
011066  005301                          1$:     DEC     R1                      ;DECREMENT COUNTER
011070  001376                                  BNE     1$                      ;WAIT UNTIL DONE
011072  000207                                  RETURN

011074                                          ENDMOD
                                        .MCALL  M$POP,M$ENDERR
                                        .IF EQ  F$BGN-I$MOD
        000041                          I$MOD=F$END
                                        .IFF
                                        .ERROR  ; MISSING "BGNMOD"
                                        .MEXIT
                                        .ENDC
011074                                  M$POP   T$NS,T$NESTLEV,T$TEMP
                                        .MCALL  M$GETS,M$DECR
                                        .IF LT  T$NESTLEV
                                        .ERROR  T$NESTLEV        ; MACRO T$NS UNDERFLOW
                                        .MEXIT
                                        .ENDC
011074                                  M$GETS  T$NS,\T$NESTLEV,T$TEMP
        000000                          T$TEMP=T$NS0
011074                                  M$DECR  T$NESTLEV
        177777                          T$NESTLEV=T$NESTLEV 1
                                        .IF NE F$MOD T$TEMP
                                        M$ENDERR        ENDMOD,T$TEMP
                                        .ENDC
```

```
                                   .IIF NDF ONEFILE,.END
                                   .NLIST
                                   .NLIST  CND
          000000                   HELP=0          ; CONTROL LISTING OF HELP INFORMATION
                                                   ; HELP=0   NO LIST
                                                   ; HELP=1   LIST

          000001                   ONEFILE=1       ; CONTROL USE OF SOURCE FILES
                                                   ; ONEFILE IS NOT DEFINED   ASSEMBLE EACH SOURCE FILE SEPARATELY
                                                   ; ONEFILE=ANYTHING   ASSEMBLE ALL SOURCE FILES TOGETHER
                                   .LIST
                                   .TITLE MISCELLANEOUS SECTIONS
                                   .SBTTL  REPORT CODING SECTION
                                   .IF NDF ONEFILE
                                   .IF EQ HELP
                                   .NLIST
                                   .ENDC

                                           .MCALL  SVC
                                           SVC                                 ; INITIALIZE SUPERVISOR MACROS

                                   ;*****************************************************************
                                   ;     IF STRUCTURED MACROS ARE TO BE USED, ADD ".MCALL STRUCT" AND "STRUCT"
                                   ;     TO INITIALIZE THE STRUCTURED MACROS.

                                   SVCINS= 1       ; LIST INSTRUCTIONS, SHIFTED RIGHT
                                   SVCTST= 1       ; LIST TEST TAGS, SHIFTED RIGHT
                                   SVCSUB= 1       ; LIST SUBTEST TAGS, SHIFTED RIGHT
                                   SVCGBL= 1       ; LIST GLOBAL TAGS, SHIFTED RIGHT
                                   SVCTAG= 1       ; LIST OTHER TAGS, SHIFTED RIGHT

                                   ;     CHANGE THE VALUES OF THE SVC... SYMBOLS TO BE ZERO IF YOU WISH
                                   ;     TO ALIGN THE MACRO CALLS AND THEIR EXPANSIONS.  CHANGE THE
                                   ;     SYMBOLS TO BE MINUS-ONE TO NOT LIST THE EXPANSIONS.  YOU MAY
                                   ;     CHANGE THE SYMBOLS AT ANY POINT IN YOUR PROGRAM.
                                   ;*****************************************************************
                                   .IF EQ HELP
                                   .LIST
                                   .ENDC
                                   .ENDC

 011074                                    BGNMOD
                                   .MCALL  M$GNGBL,M$PUSH
                                   .IF NE  F$END-I$MOD
                                   .ERROR  ;"BGNMOD" IN MOD
                                   .MEXIT
                                   .IFF
          000040                   I$MOD=F$BGN
                                   .ENDC
                                   .IF NB
                                   M$GNGBL
                                   .ENDC
 011074                            M$PUSH  T$NS,T$NESTLEV,F$MOD
                                   .MCALL  M$INCR,M$SETS
 011074                            M$INCR  T$NESTLEV
          000000                   T$NESTLEV=T$NESTLEV+1
 011074                            M$SETS  T$NS,\T$NESTLEV,F$MOD
```

M1

```
           000000          T$NSO=F$MOD

                           ;++
                           ; THE REPORT CODING SECTION CONTAINS THE
                           ; "PRINTS" CALLS THAT GENERATE STATISTICAL REPORTS.
                           ;-

   011074                          BGNRPT
                           .MCALL  M$PUSH,M$INCR,M$GNGBL
           000040          I$RPT=F$BGN
   011074                  M$PUSH  T$NS,T$NESTLEV,F$RPT
                           .MCALL  M$INCR,M$SETS
   011074                  M$INCR  T$NESTLEV
           000001          T$NESTLEV=T$NESTLEV+1
   011074                  M$SETS  T$NS,\T$NESTLEV,F$RPT
           000012          T$NS1=F$RPT
           010016          T$$RPT=T$TAGNUM
   011074                  M$INCR T$TAGNUM
           010017          T$TAGNUM=T$TAGNUM+1
   011074                  M$GNGBL L$RPT
                           .MCALL  M$GEN
                           .IF NB,L$RPT
                           .IF NB,
                           M$GEN   L$RPT,:,SVCGBL,
                           .ENDC
                           .IF B,
   011074                  M$GEN   L$RPT,:,SVCGBL,< >
                           .IF LE  SVCGBL
                           .IIF EQ SVCGBL,.LIST
                           L$RPT::
                           .IIF EQ SVCGBL,.NLIST
                           .MEXIT
                           .ENDC
                           .LIST
   011074                                                                    L$RPT::
                                   .NLIST
                           .ENDC
                           .ENDC

                           .IF NE HELP
                           ;*****************************************************************
                           ;       THIS SECTION, WHICH IS OPTIONAL, CONTAINS THE CODE FOR PRINTING
                           ;       STATISTICAL INFORMATION GATHERED BY THE DIAGNOSTIC.  IT IS
                           ;       EXECUTED BY THE OPERATOR COMMAND "PRINT" OR BY THE MACRO CALL
                           ;       "DORPT".  USE THE PRINTS MACRO TO PRINT THE INFORMATION.
                           ;       USE FORMAT STATEMENTS AS IN THE PRINTB/PRINTX MACROS.  IT IS
                           ;       THE PROGRAMMER'S RESPONSIBILTY TO DEVISE AND IMPLEMENT THE
                           ;       FORM AND CONTENT OF THE STATISTICS.
                           ;*****************************************************************
                           .ENDC

   011074                          EXIT    RPT
                           .MCALL  M$SVC,M$EXIT,M$EXSEG,M$EXTJ,M$GETTOP,M$CHECK,M$WORD,XFER
           000041          T$FLAG=F$END
   011074                  M$CHECK RPT,T$TEMP,T$FLAG
                           .IF IDN <TST>,<RPT>
                           T$TEMP-T$$TEST
```

```
                        T$FLAG=I$TST
                        .MEXIT
                        .ENDC
                        .IF IDN <SUB>,<RPT>
                        T$TEMP=T$$SUB
                        T$FLAG=I$SUB
                        .MEXIT
                        .ENDC
                        .IF IDN <SEG>,<RPT>
                        T$TEMP=T$$SEG
                        T$FLAG=I$SEG
                        .MEXIT
                        .ENDC
                        .IF IDN <INIT>,<RPT>
                        T$TEMP=T$$INIT
                        T$FLAG=I$INIT
                        .MEXIT
                        .ENDC
                        .IF IDN <CLN>,<RPT>
                        T$TEMP=T$$CLEAN
                        T$FLAG=I$CLN
                        .MEXIT
                        .ENDC
                        .IF IDN <SRV>,<RPT>
                        T$TEMP=T$$SRV
                        T$FLAG=I$SRV
                        .MEXIT
                        .ENDC
                        .IF IDN <MSG>,<RPT>
                        T$TEMP=T$$MSG
                        T$FLAG=F$JMP
                        .MEXIT
                        .ENDC
                        .IF IDN <RPT>,<RPT>
        010016          T$TEMP=T$$RPT
        000050          T$FLAG=F$JMP
                        .MEXIT
                        .ENDC
                        .IF IDN <DU>,<RPT>
                        T$TEMP-T$$DU
                        T$FLAG=F$JMP
                        .MEXIT
                        .ENDC
                        .IF IDN <AU>,<RPT>
                        T$TEMP-T$$AU
                        T$FLAG=F$JMP
                        .MEXIT
                        .ENDC
                        .IF EQ T$FLAG F$JMP
    011074              M$WORD  J$JMP
                        .MCALL  M$GNINS
                        .IRP    N,<J$JMP>
                        M$GNINS <.WORD  N>
                        .ENDM
    011074              M$GNINS <.WORD  J$JMP>
                        .IF LT SVCINS
                        .WORD   J$JMP
```

```
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        .WORD   J$JMP
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
     011074  000167                                                              .WORD   J$JMP
                                                .NLIST
                                .ENDC
     011076                     M$EXTJ  \T$TEMP
                                .MCALL  M$GNINS
     011076                     M$GNINS <.WORD  L10016-2-.>
                                .IF LT SVCINS
                                .WORD   L10016-2-.
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        .WORD   L10016 2-.
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
     011076  000000                                                              .WORD   L10016-2-.
                                                .NLIST
                                .ENDC
                                .MEXIT
                                .ENDC
                                .IF EQ  T$FLAG-F$BGN
                                M$SVC   C$EXIT
                                .IF IDN <SEG>,<RPT>
                                M$GETTOP T$SEK,T$SEGLEV,T$TEMP
                                M$EXSEG \T$TEMP
                                .IFF
                                M$EXIT  \T$TEMP
                                .ENDC
                                .MEXIT
                                .ENDC
                                .IF IDN <HRD>,<RPT>
                                M$GETTOP        T$NS,T$NESTLEV,T$TEMP
                                .IF EQ  F$HARD-T$TEMP
                                .IRP    N,<\T$$HARD>
                                XFER    L'N
                                .ENDM
                                .MEXIT
                                .ENDC
                                .ENDC
                                .IF IDN <SFT>,<RPT>
                                M$GETTOP        T$NS,T$NESTLEV,T$TEMP
                                .IF EQ  F$SOFT T$TEMP
                                .IRP    N,<\T$$SOFT>
                                XFER    L'N
```

C2


```
                        .ENDM
                        .MEXIT
                        .ENDC
                        .ENDC
                        .ERROR  ;ILL. "EXIT RPT" STMT.

                        .IF NE HELP
                        ;*****************************************************
                        ;       INSERT LOCAL STORAGE THAT IS USED ONLY
                        ;       DURING THE REPORT SECTION
                        ;*****************************************************

                        ;*****************************************************
                        ;       INSERT MESSAGES THAT ARE USED ONLY
                        ;       DURING THE REPORT SECTION.
                        ;*****************************************************
                        .ENDC

                                .EVEN

011100                          ENDRPT
                        .MCALL  M$POP,M$GNTAG,M$SVC,M$ENDERR
011100                  M$POP   T$NS,T$NESTLEV,T$TEMP
                        .MCALL  M$GETS,M$DECR
                        .IF LT  T$NESTLEV
                        .ERROR  T$NESTLEV       ; MACRO T$NS UNDERFLOW
                        .MEXIT
                        .ENDC
011100                  M$GETS  T$NS,\T$NESTLEV,T$TEMP
        000012          T$TEMP=T$NS1
011100                  M$DECR  T$NESTLEV
        000000          T$NESTLEV=T$NESTLEV-1
                        .IF EQ F$RPT-T$TEMP
011100                  M$GNTAG L,T$$RPT
                        .MCALL  M$GEN
011100                  M$GEN   L,\T$$RPT,SVCTAG
                        .IF LE  SVCTAG
                        .IIF EQ SVCTAG,.LIST
                        L10016:
                        .IIF EQ SVCTAG,.NLIST
                        .MEXIT
                        .ENDC
                        .LIST
011100                                                          L10016:
                                .NLIST
        010000          S$LSYM=T$LSYM
011100                  M$SVC   C$RPT
                        .MCALL  M$GNINS,M$TSTLAB
011100                  M$TSTLAB
                        .MCALL  M$TLABEL,M$INCR
                        .IIF LT T$TSTMAC, .MEXIT
                        .RADIX  10
                        M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                        .RADIX  8
                        M$INCR  T$TSTSEQ
011100                  M$GNINS <TRAP   C$RPT>
                        .IF LT SVCINS
```

```
                                TRAP    C$RPT
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        TRAP    C$RPT
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
     011100  104425                                                                  TRAP    C$RPT
                                                .NLIST
                                .ENDC
             000041             I$RPT=F$END
                                .IFF
                                M$ENDERR        ENDRPT,T$TEMP
                                .ENDC
```

```
                                  .SBTTL  PROTECTION TABLE

                                  ;++
                                  ; THIS TABLE IS USED BY THE RUNTIME SERVICES
                                  ; TO PROTECT THE LOAD MEDIA.
                                  ; -

     011102                               BGNPROT
                                  .MCALL M$PUSH,M$INCR,M$GNGBL
              000040              I$PROT=F$BGN
     011102                       M$PUSH T$NS,T$NESTLEV,F$PROT
                                  .MCALL  M$INCR,M$SETS
     011102                       M$INCR  T$NESTLEV
              000001              T$NESTLEV=T$NESTLEV+1
     011102                       M$SETS  T$NS,\T$NESTLEV,F$PROT
              000021              T$NS1=F$PROT
              010017              T$$PROT=T$TAGNUM
     011102                       M$INCR T$TAGNUM
              010020              T$TAGNUM=T$TAGNUM+1
     011102                       M$GNGBL L$PROT
                                  .MCALL  M$GEN
                                  .IF NB,L$PROT
                                  .IF NB,
                                  M$GEN   L$PROT,:,SVCGBL,
                                  .ENDC
                                  .IF B,
     011102                       M$GEN   L$PROT,:,SVCGBL,< >
                                  .IF LE  SVCGBL
                                  .IIF EQ SVCGBL,.LIST
                                  L$PROT::
                                  .IIF EQ SVCGBL,.NLIST
                                  .MEXIT
                                  .ENDC
                                  .LIST
     011102                                                                   L$PROT::
                                          .NLIST
                                  .ENDC
                                  .ENDC

     011102   000000                      .WORD   0               ;CHECK CSR ADDRESS
     011104   177777                      .WORD   -1              ;DON'T CHECK MASSBUS UNIT NUMBER
     011106   177777                      .WORD   -1              ;DON'T CHECK DRIVE NUMBER

     011110                               ENDPROT
                                  .MCALL M$POP
     011110                       M$POP T$NS,T$NESTLEV,T$TEMP
                                  .MCALL  M$GETS,M$DECR
                                  .IF LT  T$NESTLEV
                                  .ERROR  T$NESTLEV       ; MACRO T$NS UNDERFLOW
                                  .MEXIT
                                  .ENDC
     011110                       M$GETS  T$NS,\T$NESTLEV,T$TEMP
              000021              T$TEMP=T$NS1
     011110                       M$DECR  T$NESTLEV
              000000              T$NESTLEV=T$NESTLEV-1
                                  .IF NE F$PROT T$TEMP
                                  .ERROR  ;MISSING BGNPROT
```

```
                .MEXIT
                .ENDC

                .IF NE HELP
;*******************************************************************************
;       INSERT BYTE OFFSET FOR DATA NOTED IN COMMENTS ABOVE.  (OFFSET
;       REFERS TO THE NUMBER OF BYTES FROM THE BEGINNING OF A PTABLE
;       ENTRY TO THE ITEM IN QUESTION.)  IF THE PARTICULAR
;       ITEM DOES NOT APPLY, LEAVE ENTRY AS -1.  WHEN THE RUNTIME
;       SERVICES EXECUTES A GPHARD, IT USES THESE OFFSETS (IF NOT
;       SET TO -1) TO GET THE ITEMS AND COMPARE WITH THOSE SAVED
;       IN THE XXDP+ MONITOR.  IF THE UNIT BEING REQUESTED MATCHES THE
;       LOAD DEVICE, THE RUNTIME SERVICES RETURN AN INCOMPLETE FLAG ON
;       THE GPHARD.
;*******************************************************************************
                .ENDC
```

```
                                .SBTTL  INITIALIZE SECTION

                                ;++
                                ; THE INITIALIZE SECTION CONTAINS THE CODING THAT IS PERFORMED
                                ; AT THE BEGINNING OF EACH PASS.
                                ;--

011110                                  BGNINIT
                                .MCALL  M$PUSH,M$INCR,M$GNGBL
                000040          I$INIT=F$BGN
011110                          M$PUSH  T$NS,T$NESTLEV,F$INIT
                                .MCALL  M$INCR,M$SETS
011110                          M$INCR  T$NESTLEV
                000001          T$NESTLEV=T$NESTLEV+1
011110                          M$SETS  T$NS,\T$NESTLEV,F$INIT
                000006          T$NS1=F$INIT
                010020          T$$INIT=T$TAGNUM
011110                          M$INCR T$TAGNUM
                010021          T$TAGNUM=T$TAGNUM+1
011110                          M$GNGBL L$INIT
                                .MCALL  M$GEN
                                .IF NB,L$INIT
                                .IF NB,
                                M$GEN   L$INIT,:,SVCGBL,
                                .ENDC
                                .IF B,
011110                          M$GEN   L$INIT,:,SVCGBL,< >
                                .IF LE  SVCGBL
                                .IIF EQ SVCGBL,.LIST
                                L$INIT::
                                .IIF EQ SVCGBL,.NLIST
                                .MEXIT
                                .ENDC
                                .LIST
011110                                                                L$INIT::
                                        .NLIST
                                .ENDC
                                .ENDC

                                .IF NE HELP
                                ;*****************************************************************
                                ;       THE INITIALIZE CODE IS EXECUTED UNDER FIVE CONDITIONS.  THERE
                                ;       ARE SUPERVISOR EVENT FLAGS THAT ARE USED TO LET THE
                                ;       DIAGNOSTIC KNOW UNDER WHICH CONDITION THE EXECUTION IS TAKING
                                ;       PLACE.  THE EVENT FLAGS ARE READ USING THE "READEF" MACRO.
                                ;       THE CONDITIONS UNDER WHICH THE INIT CODE IS EXECUTED AND THE
                                ;       CORRRESPONDING EVENT FLAGS ARE:
                                ;               START COMMAND           EF.START
                                ;               RESTART COMMAND         EF.RESTART
                                ;               CONTINUE COMMAND        EF.CONTINUE
                                ;               POWERDOWN/POWERUP       EF.PWR
                                ;               NEW PASS                EF.NEW
                                ;       EXAMPLE OF EVENT FLAG USE:
                                ;               READEF  #EF.START
                                ;               BCOMPLETE       STARTCODE
                                ;       DURING THE INIT CODE, USE THE "GPHARD" MACRO TO OBTAIN P TABLE
                                ;       INFORMATION FOR DEVICE TESTING.  GET ONE UNIT'S INFORMATION IF
```

```
2523                                     ;       THIS IS A SEQUENTIAL DIAGNOSTIC.  GET INFORMATION ON ALL
2524                                     ;       UNITS AVAILABLE FOR TESTING IF THIS IS AN EXERCISER.  THE NUMBER
2525                                     ;       OF UNITS AVAILABLE IS IN A HEADER LOCATION: "L$UNIT".
2526                                     ;**************************************************************
2527                                     .ENDC
2528
2529 011110                                      RFLAGS  R0              ;GET THE OPERATOR FLAGS
                                         .MCALL  M$SVC,M$RNRO
     011110                              M$SVC   C$RFLA
                                         .MCALL  M$GNINS,M$TSTLAB
     011110                              M$TSTLAB
                                         .MCALL  M$TLABEL,M$INCR
                                         .IIF LT T$TSTMAC, .MEXIT
                                         .RADIX  10
                                         M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                         .RADIX  8
                                         M$INCR  T$TSTSEQ
     011110                              M$GNINS <TRAP   C$RFLA>
                                         .IF LT SVCINS
                                         TRAP    C$RFLA
                                         .MEXIT
                                         .ENDC
                                         .IF EQ SVCINS
                                         .LIST
                                                 TRAP    C$RFLA
                                                         .NLIST
                                         .MEXIT
                                         .ENDC
                                         .IF GT SVCINS
                                         .LIST
     011110  104421                                                                      TRAP    C$RFLA
                                                         .NLIST
                                         .ENDC
     011112                              M$RNRO  R0,RFLAGS
                                         .MCALL  M$GNINS
                                         .IF NB  R0
                                         .IF DIF R0,R0
                                         M$GNINS <MOV    R0,R0>
                                         .ENDC
                                         .IFF
                                         .ERROR  ;MISSING ARG. ON "RFLAGS"
                                         .ENDC
2530 011112  032700  001000                      BIT     #1000,R0        ;IS PNT FLAG SET?
2531 011116  001404                              BEQ     2$              ;BRANCH IF NO
2532 011120  012737  000001  002324              MOV     #1,PNTF         ;SET FLAG FOR TEST HEADER PRINTOUT
2533 011126  000402                              BR      3$              ;
2534 011130  005037  002324              2$:     CLR     PNTF            ;CLEAR FLAG FOR DISABLE TEST HEADER PRINTOUT
2535 011134                              3$:     READEF  #EF.START       ;IS THIS JUST STARTED ?
                                         .MCALL  M$LDRO,M$SVC
     011134                              M$LDRO  #EF.START,READEF
                                         .MCALL  M$GNINS
                                         .IF NB #EF.START
                                         .IF DIF R0,#EF.START
     011134                              M$GNINS <MOV    #EF.START,R0>
                                         .IF LT SVCINS
                                         MOV     #EF.START,R0
                                         .MEXIT
```

```
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                MOV     #EF.START,R0
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
        011134  012700  000040                                                          MOV     #EF.START,R0
                                                        .NLIST
                                        .ENDC
                                        .ENDC
                                        .IFF
                                        .ERROR  ;MISSING ARG. ON "READEF"
                                        .ENDC
        011140                          M$SVC   C$REFG
                                        .MCALL  M$GNINS,M$TSTLAB
        011140                          M$TSTLAB
                                        .MCALL  M$TLABEL,M$INCR
                                        .IIF LT T$TSTMAC, .MEXIT
                                        .RADIX  10
                                        M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                        .RADIX  8
                                        M$INCR  T$TSTSEQ
        011140                          M$GNINS <TRAP   C$REFG>
                                        .IF LT SVCINS
                                        TRAP    C$REFG
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                TRAP    C$REFG
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
        011140  104447                                                                  TRAP    C$REFG
                                                        .NLIST
                                        .ENDC
   2536 011142                                  BCOMPLETE STARST        ;IF YES - BRANCH.
                                        .MCALL  M$GNINS
        011142                          M$GNINS <BCS    STARST>
                                        .IF LT SVCINS
                                        BCS  -  STARST
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                BCS     STARST
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
        011142  103424                                                                  BCS     STARST
```

```
                                                   .NLIST
                                       .ENDC
  2537 011144                                  READEF  #EF.RESTART      ;IS THIS A RESTART ?
                                       .MCALL  M$LDRO,M$SVC
       011144                          M$LDRO  #EF.RESTART,READEF
                                       .MCALL  M$GNINS
                                       .IF NB #EF.RESTART
                                       .IF DIF RO,#EF.RESTART
       011144                          M$GNINS <MOV     #EF.RESTART,RO>
                                       .IF LT SVCINS
                                       MOV     #EF.RESTART,RO
                                       .MEXIT
                                       .ENDC
                                       .IF EQ SVCINS
                                       .LIST
                                               MOV     #EF.RESTART,RO
                                                       .NLIST
                                       .MEXIT
                                       .ENDC
                                       .IF GT SVCINS
                                       .LIST
       011144  012700  000037                                                                  MOV     #EF.RESTART,RO
                                                       .NLIST
                                       .ENDC
                                       .ENDC
                                       .IFF
                                       .ERROR  ;MISSING ARG. ON "READEF"
                                       .ENDC
       011150                          M$SVC   C$REFG
                                       .MCALL  M$GNINS,M$TSTLAB
       011150                          M$TSTLAB
                                       .MCALL  M$TLABEL,M$INCR
                                       .IIF LT T$TSTMAC, .MEXIT
                                       .RADIX  10
                                       M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                       .RADIX  8
                                       M$INCR  T$TSTSEQ
       011150                          M$GNINS <TRAP    C$REFG>
                                       .IF LT SVCINS
                                       TRAP    C$REFG
                                       .MEXIT
                                       .ENDC
                                       .IF EQ SVCINS
                                       .LIST
                                               TRAP    C$REFG
                                                       .NLIST
                                       .MEXIT
                                       .ENDC
                                       .IF GT SVCINS
                                       .LIST
       011150  104447                                                                          TRAP    C$REFG
                                                       .NLIST
                                       .ENDC
  2538 011152                                  BCOMPLETE NEWST          ;IF YES - BRANCH                *B*
                                       .MCALL  M$GNINS
       011152                          M$GNINS <BCS     NEWST>
                                       .IF LT SVCINS
```

```
                                        BCS     NEWST
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                BCS     NEWST
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
      011152  103425                                                                    BCS     NEWST
                                                        .NLIST
                                        .ENDC
 2539 011154                                    READEF  #EF.NEW         ;IS THIS A NEW PASS ?
                                        .MCALL  M$LDRO,M$SVC
      011154                            M$LDRO  #EF.NEW,READEF
                                        .MCALL  M$GNINS
                                        .IF NB #EF.NEW
                                        .IF DIF RO,#EF.NEW
      011154                            M$GNINS <MOV    #EF.NEW,RO>
                                        .IF LT SVCINS
                                        MOV     #EF.NEW,RO
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                MOV     #EF.NEW,RO
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
      011154  012700  000035                                                            MOV     #EF.NEW,RO
                                                        .NLIST
                                        .ENDC
                                        .ENDC
                                        .IFF
                                        .ERROR  ;MISSING ARG. ON "READEF"
                                        .ENDC
      011160                            M$SVC   C$REFG
                                        .MCALL  M$GNINS,M$TSTLAB
      011160                            M$TSTLAB
                                        .MCALL  M$TLABEL,M$INCR
                                        .IIF LT T$TSTMAC, .MEXIT
                                        .RADIX  10
                                        M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                        .RADIX  8
                                        M$INCR  T$TSTSEQ
      011160                            M$GNINS <TRAP   C$REFG>
                                        .IF LT SVCINS
                                        TRAP    C$REFG
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                TRAP    C$REFG
```

```
                                        .NLIST
                        .MEXIT
                        .ENDC
                        .IF GT SVCINS
                        .LIST
     011160  104447                                                          TRAP    C$REFG
                                        .NLIST
                        .ENDC
2540 011162                     BCOMPLETE NEWST          ;IF YES - FIRST UNIT AGAIN
                        .MCALL  M$GNINS
     011162             M$GNINS <BCS    NEWST>
                        .IF LT SVCINS
                        BCS     NEWST
                        .MEXIT
                        .ENDC
                        .IF EQ SVCINS
                        .LIST
                                BCS     NEWST
                                        .NLIST
                        .MEXIT
                        .ENDC
                        .IF GT SVCINS
                        .LIST
     011162  103421                                                          BCS     NEWST
                                        .NLIST
                        .ENDC
2541 011164                     READEF  #EF.CONTINUE     ;IS THIS A CONTINUE ?
                        .MCALL  M$LDR0,M$SVC
     011164             M$LDR0  #EF.CONTINUE,READEF
                        .MCALL  M$GNINS
                        .IF NB #EF.CONTINUE
                        .IF DIF R0,#EF.CONTINUE
     011164             M$GNINS <MOV    #EF.CONTINUE,R0>
                        .IF LT SVCINS
                        MOV     #EF.CONTINUE,R0
                        .MEXIT
                        .ENDC
                        .IF EQ SVCINS
                        .LIST
                                MOV     #EF.CONTINUE,R0
                                        .NLIST
                        .MEXIT
                        .ENDC
                        .IF GT SVCINS
                        .LIST
     011164  012700  000036                                                  MOV     #EF.CONTINUE,R0
                                        .NLIST
                        .ENDC
                        .ENDC
                        .IFF
                        .ERROR  ;MISSING ARG. ON "READEF"
                        .ENDC
     011170             M$SVC   C$REFG
                        .MCALL  M$GNINS,M$TSTLAB
     011170             M$TSTLAB
                        .MCALL  M$TLABEL,M$INCR
                        .IIF LT T$TSTMAC, .MEXIT
```

```
                                .RADIX  10
                                M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                .RADIX  8
                                M$INCR  T$TSTSEQ
     011170                     M$GNINS <TRAP    C$REFG>
                                .IF LT SVCINS
                                TRAP    C$REFG
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        TRAP    C$REFG
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
     011170  104447                                                                     TRAP    C$REFG
                                                .NLIST
                                .ENDC
2542 011172                             BCOMPLETE EXINI         ;IF YES - DON'T INITIALIZE
                                .MCALL  M$GNINS
     011172                     M$GNINS <BCS    EXINI>
                                .IF LT SVCINS
                                BCS     EXINI
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        BCS     EXINI
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
     011172  103406                                                                     BCS     EXINI
                                                .NLIST
                                .ENDC
2543 011174                             READEF  #EF.PWR         ;IS THIS A POWER FAIL           *B*
                                .MCALL  M$LDRO,M$SVC
     011174                     M$LDRO  #EF.PWR,READEF
                                .MCALL  M$GNINS
                                .IF NB #EF.PWR
                                .IF DIF RO,#EF.PWR
     011174                     M$GNINS <MOV    #EF.PWR,RO>
                                .IF LT SVCINS
                                MOV     #EF.PWR,RO
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        MOV     #EF.PWR,RO
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
```

```
      011174  012700  000034                                               MOV     #EF.PWR,R0
                                          .NLIST
                               .ENDC
                               .ENDC
                               .IFF
                               .ERROR  ;MISSING ARG. ON "READEF"
                               .ENDC
      011200                   M$SVC   C$REFG
                               .MCALL  M$GNINS,M$TSTLAB
      011200                   M$TSTLAB
                               .MCALL  M$TLABEL,M$INCR
                               .IIF LT T$TSTMAC, .MEXIT
                               .RADIX  10
                               M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                               .RADIX  8
                               M$INCR  T$TSTSEQ
      011200                   M$GNINS <TRAP   C$REFG>
                               .IF LT SVCINS
                               TRAP    C$REFG
                               .MEXIT
                               .ENDC
                               .IF EQ SVCINS
                               .LIST
                                       TRAP    C$REFG
                                               .NLIST
                               .MEXIT
                               .ENDC
                               .IF GT SVCINS
                               .LIST
      011200  104447                                                       TRAP    C$REFG
                                               .NLIST
                               .ENDC
 2544 011202                           BNCOMPLETE GETPRM       ;IF NOT-MUST BE A NEW UNIT          *B*
                               .MCALL  M$GNINS
      011202                   M$GNINS <BCC    GETPRM>
                               .IF LT SVCINS
                               BCC     GETPRM
                               .MEXIT
                               .ENDC
                               .IF EQ SVCINS
                               .LIST
                                       BCC     GETPRM
                                               .NLIST
                               .MEXIT
                               .ENDC
                               .IF GT SVCINS
                               .LIST
      011202  103014                                                       BCC     GETPRM
                                               .NLIST
                               .ENDC
 2545 011204  004737  007166           JSR     PC,MEMINI       ;IF YES MUST BE A POWER FAIL,RELOAD MMU
 2546 011210                   EXINI:  EXIT    INIT            ;
                               .MCALL  M$SVC,M$EXIT,M$EXSEG,M$EXTJ,M$GETTOP,M$CHECK,M$WORD,XFER
              000041           T$FLAG=F$END
      011210                   M$CHECK INIT,T$TEMP,T$FLAG
                               .IF IDN <TST>,<INIT>
                               T$TEMP=T$$TEST
```

```
                        T$FLAG=I$TST
                        .MEXIT
                        .ENDC
                        .IF IDN <SUB>,<INIT>
                        T$TEMP=T$$SUB
                        T$FLAG=I$SUB
                        .MEXIT
                        .ENDC
                        .IF IDN <SEG>,<INIT>
                        T$TEMP=T$$SEG
                        T$FLAG=I$SEG
                        .MEXIT
                        .ENDC
                        .IF IDN <INIT>,<INIT>
          010020        T$TEMP=T$$INIT
          000040        T$FLAG=I$INIT
                        .MEXIT
                        .ENDC
                        .IF IDN <CLN>,<INIT>
                        T$TEMP=T$$CLEAN
                        T$FLAG=I$CLN
                        .MEXIT
                        .ENDC
                        .IF IDN <SRV>,<INIT>
                        T$TEMP=T$$SRV
                        T$FLAG=I$SRV
                        .MEXIT
                        .ENDC
                        .IF IDN <MSG>,<INIT>
                        T$TEMP=T$$MSG
                        T$FLAG=F$JMP
                        .MEXIT
                        .ENDC
                        .IF IDN <RPT>,<INIT>
                        T$TEMP=T$$RPT
                        T$FLAG=F$JMP
                        .MEXIT
                        .ENDC
                        .IF IDN <DU>,<INIT>
                        T$TEMP=T$$DU
                        T$FLAG=F$JMP
                        .MEXIT
                        .ENDC
                        .IF IDN <AU>,<INIT>
                        T$TEMP=T$$AU
                        T$FLAG=F$JMP
                        .MEXIT
                        .ENDC
                        .IF EQ T$FLAG-F$JMP
                        M$WORD  J$JMP
                        M$EXTJ  \T$TEMP
                        .MEXIT
                        .ENDC
                        .IF EQ  T$FLAG-F$BGN
     011210             M$SVC   C$EXIT
                        .MCALL  M$GNINS,M$TSTLAB
     011210             M$TSTLAB
```

```
                                .MCALL  M$TLABEL,M$INCR
                                .IIF LT T$TSTMAC, .MEXIT
                                .RADIX  10
                                M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                .RADIX  8
                                M$INCR  T$TSTSEQ
     011210                     M$GNINS <TRAP   C$EXIT>
                                .IF LT SVCINS
                                TRAP    C$EXIT
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        TRAP    C$EXIT
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
     011210  104432                                                         TRAP    C$EXIT
                                                .NLIST
                                .ENDC
                                .IF IDN <SEG>,<INIT>
                                M$GETTOP T$SEK,T$SEGLEV,T$TEMP
                                M$EXSEG \T$TEMP
                                .IFF
     011212                     M$EXIT  \T$TEMP
                                .MCALL  M$GNINS
     011212                     M$GNINS <.WORD  L10020-.>
                                .IF LT SVCINS
                                .WORD   L10020-.
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        .WORD   L10020-.
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
     011212  001004                                                         .WORD   L10020-.
                                                .NLIST
                                .ENDC
                                .ENDC
                                .MEXIT
                                .ENDC
                                .IF IDN <HRD>,<INIT>
                                M$GETTOP        T$NS,T$NESTLEV,T$TEMP
                                .IF EQ  F$HARD T$TEMP
                                .IRP    N,<\T$$HARD>
                                XFER    L'N
                                .ENDM
                                .MEXIT
                                .ENDC
                                .ENDC
                                .IF IDN <SFT>,<INIT>
```

```
                                     M$GETTOP        T$NS,T$NESTLEV,T$TEMP
                                     .IF EQ  F$SOFT-T$TEMP
                                     .IRP    N,<\T$$SOFT>
                                     XFER    L'N
                                     .ENDM
                                     .MEXIT
                                     .ENDC
                                     .ENDC
                                     .ERROR  ;ILL. "EXIT INIT" STMT.
 2547 011214                         STARST: SETPRI  #PRI07          ;SET DIAGNOSTIC TO PRIORTY 7
                                     .MCALL  M$LDR0,M$SVC
      011214                         M$LDR0  #PRI07,SETPRI
                                     .MCALL  M$GNINS
                                     .IF NB #PRI07
                                     .IF DIF R0,#PRI07
      011214                         M$GNINS <MOV    #PRI07,R0>
                                     .IF LT SVCINS
                                     MOV     #PRI07,R0
                                     .MEXIT
                                     .ENDC
                                     .IF EQ SVCINS
                                     .LIST
                                             MOV     #PRI07,R0
                                                     .NLIST
                                     .MEXIT
                                     .ENDC
                                     .IF GT SVCINS
                                     .LIST
      011214  012700  000340                                                 MOV     #PRI07,R0
                                                     .NLIST
                                     .ENDC
                                     .ENDC
                                     .IFF
                                     .ERROR  ;MISSING ARG. ON "SETPRI"
                                     .ENDC
      011220                         M$SVC   C$SPRI
                                     .MCALL  M$GNINS,M$TSTLAB
      011220                         M$TSTLAB
                                     .MCALL  M$TLABEL,M$INCR
                                     .IIF LT T$TSTMAC, .MEXIT
                                     .RADIX  10
                                     M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                     .RADIX  8
                                     M$INCR  T$TSTSEQ
      011220                         M$GNINS <TRAP   C$SPRI>
                                     .IF LT SVCINS
                                     TRAP    C$SPRI
                                     .MEXIT
                                     .ENDC
                                     .IF EQ SVCINS
                                     .LIST
                                             TRAP    C$SPRI
                                                     .NLIST
                                     .MEXIT
                                     .ENDC
                                     .IF GT SVCINS
                                     .LIST
```

```
     011220  104441                                                            TRAP     C$SPRI
                                              .NLIST
                                  .ENDC
     011222  004737  007166                   JSR      PC,MEMINI          ;INITIATE MEMORY MANAGEMENT
     011226  012737  177777  002372  NEWST:   MOV      #-1,LOGDEV         ;INITIALIZE LOGICAL UNIT NUMBER.
     011234  005237  002372          GETPRM:  INC      LOGDEV             ;NEXT LOGICAL UNIT TO BE TESTED ?
     011240  023737  002372  002012           CMP      LOGDEV,L$UNIT      ;IS THE MAXIMUM UNIT # EXEEDED ?
     011246  002367                           BGE      NEWST              ;IF YES - A NEW START
                                     ;        SETVEC   #14,#34716,#340    ;***JUST FOR DEBUG PROGRAM;;;;;;;;;;;;;
     011250  000240                           NOP                         ;SPACE FOR DEBUG PROGRAM
     011252  000240                           NOP                         ;...
     011254  000240                           NOP                         ;...
     011256  000240                           NOP                         ;...
     011260  000240                           NOP                         ;...
     011262  000240                           NOP                         ;...
     011264                                   GPHARD   LOGDEV,R1          ;GET THE P-TABLE POINTER INTO R1
                                  .MCALL  M$LDRO,M$SVC,M$RNRO
     011264                       M$LDRO  LOGDEV,GPHARD
                                  .MCALL  M$GNINS
                                  .IF NB LOGDEV
                                  .IF DIF RO,LOGDEV
     011264                       M$GNINS <MOV     LOGDEV,RO>
                                  .IF LT SVCINS
                                  MOV     LOGDEV,RO
                                  .MEXIT
                                  .ENDC
                                  .IF EQ SVCINS
                                  .LIST
                                          MOV      LOGDEV,RO
                                                   .NLIST
                                  .MEXIT
                                  .ENDC
                                  .IF GT SVCINS
                                  .LIST
     011264  013700  002372                                                    MOV      LOGDEV,RO
                                                   .NLIST
                                  .ENDC
                                  .ENDC
                                  .IFF
                                  .ERROR  ;MISSING ARG. ON "GPHARD'
                                  .ENDC
     011270                       M$SVC   C$GPHRD
                                  .MCALL  M$GNINS,M$TSTLAB
     011270                       M$TSTLAB
                                  .MCALL  M$TLABEL,M$INCR
                                  .IIF LT T$TSTMAC, .MEXIT
                                  .RADIX  10
                                  M$TLABEL         \T$TESTNUN,\T$TSTSEQ
                                  .RADIX  8
                                  M$INCR  T$TSTSEQ
     011270                       M$GNINS <TRAP    C$GPHRD>
                                  .IF LT SVCINS
                                  TRAP    C$GPHRD
                                  .MEXIT
                                  .ENDC
                                  .IF EQ SVCINS
                                  .LIST
```

F3


```
                                        TRAP    C$GPHRD
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
      011270  104442                                                                    TRAP    C$GPHRD
                                                .NLIST
                                .ENDC
      011272                    M$RNRO  R1,GPHARD
                                .MCALL  M$GNINS
                                .IF NB  R1
                                .IF DIF R0,R1
      011272                    M$GNINS <MOV    R0,R1>
                                .IF LT SVCINS
                                MOV     R0,R1
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        MOV     R0,R1
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
      011272  010001                                                                    MOV     R0,R1
                                                .NLIST
                                .ENDC
                                .ENDC
                                .IFF
                                .ERROR  ;MISSING ARG. ON "GPHARD"
                                .ENDC
2561  011274                            BNCOMPLETE GETPRM       ;IF NOT AVAILABLE ,GET THE NEXT ONE
                                .MCALL  M$GNINS
      011274                    M$GNINS <BCC    GETPRM>
                                .IF LT SVCINS
                                BCC     GETPRM
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        BCC     GETPRM
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
      011274  103357                                                                    BCC     GETPRM
                                                .NLIST
                                .ENDC
2562  011276  011100                    MOV     (R1),R0         ;SAVE THE ADDRESS
2563  011300  032700  000007            BIT     #7,R0           ;DOES THIS DEVICE ADDRESS END IN NON-ZERO?
2564  011304  001414                    BEQ     10$             ;IF NOT - OK (76XXX0)
2565  011306  042711  000007            BIC     #7,(R1)         ;MAKE IT 76XXX0
2566  011312                            PRINTB  #FINIT1,(R1),R0 ;INFORM THE USER
                                .MCALL  M$PRINT
```

G3


```
                                        .IF B    #FINIT1
                                        .ERROR   ;MISSING FORMAT
                                        .MEXIT
                                        .ENDC
                                        .IF B    <(R1)>
                                        M$PRINT C$PNTB,#FINIT1
                                        .MEXIT
                                        .ENDC
                                        .IF B    <R0>
                                        M$PRINT C$PNTB,#FINIT1,<(R1)>
                                        .MEXIT
                                        .ENDC
                                        .IF B    <>
      011312                            M$PRINT C$PNTB,#FINIT1,<(R1)>,<R0>
                                        .MCALL   M$COUNT,M$PUT,M$GNINS,M$SVC
              000001                    T$ARGCNT=1
      011312                            M$COUNT T$ARGCNT,<(R1)>,<R0>,<>,<>,<>,<>,<>,<>
                                        .IF NB <R0>
      011312                            M$COUNT T$ARGCNT,<R0>,<>,<>,<>,<>,<>,<>,<>
                                        .IF NB <>
                                        M$COUNT T$ARGCNT,<>,<>,<>,<>,<>,<>,<>,<>
                                        .ENDC
                                        .IF NB <R0>
              000002                    T$ARGCNT=T$ARGCNT+1
                                        .ENDC
                                        .ENDC
                                        .IF NB <(R1)>
              000003                    T$ARGCNT=T$ARGCNT+1
                                        .ENDC
                                        .IRP     N,<\T$ARGCNT>
                                        M$PUT    #N,#FINIT1,<(R1)>,<R0>,<>,<>,<>,<>,<>,<>
                                        .ENDM
      011312                            M$PUT    #3,#FINIT1,<(R1)>,<R0>,<>,<>,<>,<>,<>,<>
                                        .MCALL   M$PUT1
                                        .IF NB   <#FINIT1>
      011312                            M$PUT    <#FINIT1>,<(R1)>,<R0>,<>,<>,<>,<>,<>,<>
                                        .MCALL   M$PUT1
                                        .IF NB   <(R1)>
      011312                            M$PUT    <(R1)>,<R0>,<>,<>,<>,<>,<>,<>,<>
                                        .MCALL   M$PUT1
                                        .IF NB   <R0>
      011312                            M$PUT    <R0>,<>,<>,<>,<>,<>,<>,<>,<>
                                        .MCALL   M$PUT1
                                        .IF NB   <>
                                        M$PUT    <>,<>,<>,<>,<>,<>,<>,<>,<>
                                        .ENDC
                                        .IF NB   <R0>
      011312                            M$PUT1   R0
                                        .MCALL   M$GNINS
                                        .IF B
      011312                            M$GNINS <MOV    R0,-(SP)>
                                        .IF LT SVCINS
                                        MOV      R0,-(SP)
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
```

H3


```
                                        MOV     R0,-(SP)
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
    011312  010046                                                              MOV     R0,-(SP)
                                                .NLIST
                                .ENDC
                                .IFF
                                .IF DIF B,<R0>
                                .ERROR  ;ILL. ARG. "R0" ONLY "B" IS ALLOWED.
                                .MEXIT
                                .ENDC
                                M$GNINS <CLR    -(SP)>
                                M$GNINS <BISB   ,(SP)>
                                .ENDC
                                .ENDC
                                .ENDC
                                .IF NB  <(R1)>
    011314                      M$PUT1  (R1)
                                .MCALL  M$GNINS
                                .IF B
    011314                      M$GNINS <MOV    (R1),-(SP)>
                                .IF LT SVCINS
                                MOV     (R1),-(SP)
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        MOV     (R1),-(SP)
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
    011314  011146                                                              MOV     (R1),-(SP)
                                                .NLIST
                                .ENDC
                                .IFF
                                .IF DIF B,<(R1)>
                                .ERROR  ;ILL. ARG. "(R1)" ONLY "B" IS ALLOWED.
                                .MEXIT
                                .ENDC
                                M$GNINS <CLR    -(SP)>
                                M$GNINS <BISB   ,(SP)>
                                .ENDC
                                .ENDC
                                .ENDC
                                .IF NB  <#FINIT1>
    011316                      M$PUT1  #FINIT1
                                .MCALL  M$GNINS
                                .IF B
    011316                      M$GNINS <MOV    #FINIT1,-(SP)>
                                .IF LT SVCINS
                                MOV     #FINIT1,-(SP)
                                .MEXIT
```

```
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                MOV     #FINIT1,-(SP)
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
      011316  012746  012036                                                              MOV     #FINIT1,-(SP)
                                                        .NLIST
                                        .ENDC
                                        .IFF
                                        .IF DIF B,<#FINIT1>
                                        .ERROR  ;ILL. ARG. "#FINIT1" ONLY "B" IS ALLOWED.
                                        .MEXIT
                                        .ENDC
                                        M$GNINS <CLR    -(SP)>
                                        M$GNINS <BISB   ,(SP)>
                                        .ENDC
                                        .ENDC
                                        .ENDC
                                        .IF NB  <#3>
      011322                            M$PUT1  #3
                                        .MCALL  M$GNINS
                                        .IF B
      011322                            M$GNINS <MOV    #3,-(SP)>
                                        .IF LT SVCINS
                                        MOV     #3,-(SP)
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                MOV     #3,-(SP)
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
      011322  012746  000003                                                              MOV     #3, (SP)
                                                        .NLIST
                                        .ENDC
                                        .IFF
                                        .IF DIF B,<#3>
                                        .ERROR  ;ILL. ARG. "#3" ONLY "B" IS ALLOWED.
                                        .MEXIT
                                        .ENDC
                                        M$GNINS <CLR    -(SP)>
                                        M$GNINS <BISB   ,(SP)>
                                        .ENDC
                                        .ENDC
      011326                            M$GNINS <MOV    SP,R0>
                                        .IF LT SVCINS
                                        MOV     SP,R0
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
```

J3


```
                                   .LIST
                                           MOV     SP,R0
                                                   .NLIST
                                   .MEXIT
                                   .ENDC
                                   .IF GT SVCINS
                                   .LIST
        011326  010600                                                                  MOV     SP,R0
                                                   .NLIST
                                   .ENDC
        011330                     M$SVC   C$PNTB
                                   .MCALL  M$GNINS,M$TSTLAB
        011330                     M$TSTLAB
                                   .MCALL  M$TLABEL,M$INCR
                                   .IIF LT T$TSTMAC, .MEXIT
                                   .RADIX  10
                                   M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                   .RADIX  8
                                   M$INCR  T$TSTSEQ
        011330                     M$GNINS <TRAP   C$PNTB>
                                   .IF LT SVCINS
                                   TRAP    C$PNTB
                                   .MEXIT
                                   .ENDC
                                   .IF EQ SVCINS
                                   .LIST
                                           TRAP    C$PNTB
                                                   .NLIST
                                   .MEXIT
                                   .ENDC
                                   .IF GT SVCINS
                                   .LIST
        011330  104414                                                                  TRAP    C$PNTB
                                                   .NLIST
                                   .ENDC
                                   .IRP    N,<\T$ARGCNT*2+2>
                                   M$GNINS <ADD    #N,SP>
                                   .ENDM
        011332                     M$GNINS <ADD    #10,SP>
                                   .IF LT SVCINS
                                   ADD     #10,SP
                                   .MEXIT
                                   .ENDC
                                   .IF EQ SVCINS
                                   .LIST
                                           ADD     #10,SP
                                                   .NLIST
                                   .MEXIT
                                   .ENDC
                                   .IF GT SVCINS
                                   .LIST
        011332  062706  000010                                                          ADD     #10,SP
                                                   .NLIST
                                   .ENDC
                                   .MEXIT
                                   .ENDC
                                   .IF B   <>
```

```
                                        M$PRINT C$PNTB,#FINIT1,<(R1)>,<R0>,<>
                                        .MEXIT
                                        .ENDC
                                        .IF B   <>
                                        M$PRINT C$PNTB,#FINIT1,<(R1)>,<R0>,<>,<>
                                        .MEXIT
                                        .ENDC
                                        .IF B   <>
                                        M$PRINT C$PNTB,#FINIT1,<(R1)>,<R0>,<>,<>,<>
                                        .MEXIT
                                        .ENDC
                                        .IF B   <>
                                        M$PRINT C$PNTB,#FINIT1,<(R1)>,<R0>,<>,<>,<>,<>
                                        .MEXIT
                                        .ENDC
                                        .IF B   <>
                                        M$PRINT C$PNTB,#FINIT1,<(R1)>,<R0>,<>,<>,<>,<>,<>
                                        .MEXIT
                                        .ENDC
                                        M$PRINT C$PNTB,#FINIT1,<(R1)>,<R0>,<>,<>,<>,<>,<>,<>
011336  011137  002256          10$:    MOV     (R1),ISRX       ;LOAD ADDRESS 0
011342  013737  002256  002260          MOV     ISRX,ISRLX      ;LOAD LOW BYTE LABLE OF ADDRSS 0
011350  011137  002262                  MOV     (R1),ISRHX      ;LOAD HIGH BYTE, ADDRESS 1
011354  062737  000001  002262          ADD     #1,ISRHX        ;...
011362  011137  002250                  MOV     (R1),IIRX       ;LOAD ADDRESS 2
011366  062737  000002  002250          ADD     #2,IIRX         ;...
011374  013737  002250  002252          MOV     IIRX,IIRLX      ;LOAD LOW BYTE LABLE OF ADDRESS 2
011402  011137  002254                  MOV     (R1),IIRHX      ;LOAD HIGH BYTE, ADDRESS 3
011406  062737  000003  002254          ADD     #3,IIRHX        ;...
011414  011137  002264                  MOV     (R1),ICRX       ;LOAD ADDRESS 4
011420  062737  000004  002264          ADD     #4,ICRX         ;...
011426  013737  002264  002266          MOV     ICRX,ICRLX      ;LOAD LOW BYTE LABLE OF ADDRESS 4
011434  011137  002270                  MOV     (R1),ICRHX      ;LOAD HIGH BYTE,ADDRESS 5
011440  062737  000005  002270          ADD     #5,ICRHX        ;...
011446  011137  002272                  MOV     (R1),IDRX       ;LOAD ADDRESS 6
011452  062737  000006  002272          ADD     #6,IDRX         ;...
011460  013737  002272  002274          MOV     IDRX,IDRLX      ;LOAD LOW BYTE LABLE OF ADDRESS 6 (PPR)
011466  011137  002276                  MOV     (R1),IDRHX      ;LOAD HIGH BYTE,ADDRESS 7 (DOR)
011472  062737  000007  002276          ADD     #7,IDRHX        ;...
011500  011137  002300                  MOV     (R1),CSRX       ;LOAD ADDRESS OF CONTROL&STATUS REGISTER
011504  062737  000010  002300          ADD     #10,CSRX        ;...
011512  011137  002302                  MOV     (R1),BARX       ;LOAD ADDRESS OF BUS ADDRESS REGISTER
011516  062737  000012  002302          ADD     #12,BARX        ;...
011524  011137  002304                  MOV     (R1),BCRX       ;LOAD ADDRESS OF BYTE COUNT REGISTER
011530  062737  000014  002304          ADD     #14,BCRX        ;...
011536  011137  002306                  MOV     (R1),MCRX       ;LOAD ADDRESS OF MATCH CHARACTER REGISTER
011542  062737  000016  002306          ADD     #16,MCRX        ;...
011550  012137  002310                  MOV     (R1)+,MCRHX     ;LOAD HIGH BYTE OF MCR REGISTER
011554  062737  000017  002310          ADD     #17,MCRHX       ;...
011562  011100                          MOV     (R1),R0         ;GET VECTOR
011564  032700  000007                  BIT     #7,R0           ;DOES THIS VECTOR END IN NON - ZERO ?
011570  001414                          BEQ     11$             ;IF NOT - OK (XX0)
011572  042711  000007                  BIC     #7,(R1)         ;MAKE   IT XX0
011576                                  PRINTB  #FINIT2,(R1),R0 ;INFORM THE USER
                                        .MCALL  M$PRINT
                                        .IF B   #FINIT2
                                        .ERROR  ;MISSING FORMAT
```

```
                                .MEXIT
                                .ENDC
                                .IF B   <(R1)>
                                M$PRINT C$PNTB,#FINIT2
                                .MEXIT
                                .ENDC
                                .IF B   <R0>
                                M$PRINT C$PNTB,#FINIT2,<(R1)>
                                .MEXIT
                                .ENDC
                                .IF B   <>
     011576                     M$PRINT C$PNTB,#FINIT2,<(R1)>,<R0>
                                .MCALL  M$COUNT,M$PUT,M$GNINS,M$SVC
             000001             T$ARGCNT=1
     011576                     M$COUNT T$ARGCNT,<(R1)>,<R0>,<>,<>,<>,<>,<>,<>
                                .IF NB <R0>
     011576                     M$COUNT T$ARGCNT,<R0>,<>,<>,<>,<>,<>,<>,<>
                                .IF NB <>
                                M$COUNT T$ARGCNT,<>,<>,<>,<>,<>,<>,<>,<>
                                .ENDC
                                .IF NB <R0>
             000002             T$ARGCNT=T$ARGCNT+1
                                .ENDC
                                .ENDC
                                .IF NB <(R1)>
             000003             T$ARGCNT=T$ARGCNT+1
                                .ENDC
                                .IRP    N,<\T$ARGCNT>
                                M$PUT   #N,#FINIT2,<(R1)>,<R0>,<>,<>,<>,<>,<>,<>
                                .ENDM
     011576                     M$PUT   #3,#FINIT2,<(R1)>,<R0>,<>,<>,<>,<>,<>,<>
                                .MCALL  M$PUT1
                                .IF NB  <#FINIT2>
     011576                     M$PUT   <#FINIT2>,<(R1)>,<R0>,<>,<>,<>,<>,<>,<>
                                .MCALL  M$PUT1
                                .IF NB  <(R1)>
     011576                     M$PUT   <(R1)>,<R0>,<>,<>,<>,<>,<>,<>,<>
                                .MCALL  M$PUT1
                                .IF NB  <R0>
     011576                     M$PUT   <R0>,<>,<>,<>,<>,<>,<>,<>,<>
                                .MCALL  M$PUT1
                                .IF NB  <>
                                M$PUT   <>,<>,<>,<>,<>,<>,<>,<>,<>
                                .ENDC
                                .IF NB  <R0>
     011576                     M$PUT1  R0
                                .MCALL  M$GNINS
                                .IF B
     011576                     M$GNINS <MOV    R0,-(SP)>
                                .IF LT SVCINS
                                MOV     R0,-(SP)
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        MOV     R0,-(SP)
                                                .NLIST
```

M3


```
                        .MEXIT
                        .ENDC
                        .IF GT SVCINS
                        .LIST
011576  010046                                          MOV     R0,-(SP)
                                        .NLIST
                        .ENDC
                        .IFF
                        .IF DIF B,<R0>
                        .ERROR  ;ILL. ARG. "R0" ONLY "B" IS ALLOWED.
                        .MEXIT
                        .ENDC
                        M$GNINS <CLR    -(SP)>
                        M$GNINS <BISB   ,(SP)>
                        .ENDC
                        .ENDC
                        .ENDC
                        .IF NB  <(R1)>
011600                  M$PUT1  (R1)
                        .MCALL  M$GNINS
                        .IF B
011600                  M$GNINS <MOV    (R1),-(SP)>
                        .IF LT SVCINS
                        MOV     (R1),-(SP)
                        .MEXIT
                        .ENDC
                        .IF EQ SVCINS
                        .LIST
                                MOV     (R1),-(SP)
                                        .NLIST
                        .MEXIT
                        .ENDC
                        .IF GT SVCINS
                        .LIST
011600  011146                                          MOV     (R1),-(SP)
                                        .NLIST
                        .ENDC
                        .IFF
                        .IF DIF B,<(R1)>
                        .ERROR  ;ILL. ARG. "(R1)" ONLY "B" IS ALLOWED.
                        .MEXIT
                        .ENDC
                        M$GNINS <CLR    -(SP)>
                        M$GNINS <BISB   ,(SP)>
                        .ENDC
                        .ENDC
                        .ENDC
                        .IF NB  <#FINIT2>
011602                  M$PUT1  #FINIT2
                        .MCALL  M$GNINS
                        .IF B
011602                  M$GNINS <MOV    #FINIT2,-(SP)>
                        .IF LT SVCINS
                        MOV     #FINIT2,-(SP)
                        .MEXIT
                        .ENDC
                        .IF EQ SVCINS
```

```
                                        .LIST
                                                MOV     #FINIT2,-(SP)
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
        011602  012746  012126                                                                  MOV     #FINIT2,-(SP)
                                                        .NLIST
                                        .ENDC
                                        .IFF
                                        .IF DIF B,<#FINIT2>
                                        .ERROR  ;ILL. ARG. "#FINIT2" ONLY "B" IS ALLOWED.
                                        .MEXIT
                                        .ENDC
                                        M$GNINS <CLR    -(SP)>
                                        M$GNINS <BISB   ,(SP)>
                                        .ENDC
                                        .ENDC
                                        .ENDC
                                        .IF NB  <#3>
        011606                          M$PUT1  #3
                                        .MCALL  M$GNINS
                                        .IF B
        011606                          M$GNINS <MOV    #3,-(SP)>
                                        .IF LT SVCINS
                                        MOV     #3,-(SP)
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                MOV     #3,-(SP)
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
        011606  012746  000003                                                                  MOV     #3,-(SP)
                                                        .NLIST
                                        .ENDC
                                        .IFF
                                        .IF DIF B,<#3>
                                        .ERROR  ;ILL. ARG. "#3" ONLY "B" IS ALLOWED.
                                        .MEXIT
                                        .ENDC
                                        M$GNINS <CLR    -(SP)>
                                        M$GNINS <BISB   ,(SP)>
                                        .ENDC
                                        .ENDC
        011612                          M$GNINS <MOV    SP,R0>
                                        .IF LT SVCINS
                                        MOV     SP,R0
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                MOV     SP,R0
```

B4


```
                                    .NLIST
                          .MEXIT
                          .ENDC
                          .IF GT SVCINS
                          .LIST
011612  010600                                                  MOV     SP,R0
                                    .NLIST
                          .ENDC
011614                    M$SVC   C$PNTB
                          .MCALL  M$GNINS,M$TSTLAB
011614                    M$TSTLAB
                          .MCALL  M$TLABEL,M$INCR
                          .IIF LT T$TSTMAC, .MEXIT
                          .RADIX  10
                          M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                          .RADIX  8
                          M$INCR  T$TSTSEQ
011614                    M$GNINS <TRAP   C$PNTB>
                          .IF LT SVCINS
                          TRAP    C$PNTB
                          .MEXIT
                          .ENDC
                          .IF EQ SVCINS
                          .LIST
                                  TRAP    C$PNTB
                                          .NLIST
                          .MEXIT
                          .ENDC
                          .IF GT SVCINS
                          .LIST
011614  104414                                                  TRAP    C$PNTB
                                    .NLIST
                          .ENDC
                          .IRP    N,<\T$ARGCNT*2+2>
                          M$GNINS <ADD    #N,SP>
                          .ENDM
011616                    M$GNINS <ADD    #10,SP>
                          .IF LT SVCINS
                          ADD     #10,SP
                          .MEXIT
                          .ENDC
                          .IF EQ SVCINS
                          .LIST
                                  ADD     #10,SP
                                          .NLIST
                          .MEXIT
                          .ENDC
                          .IF GT SVCINS
                          .LIST
011616  062706  000010                                          ADD     #10,SP
                                    .NLIST
                          .ENDC
                          .MEXIT
                          .ENDC
                          .IF B   <>
                          M$PRINT C$PNTB,#FINIT2,<(R1)>,<R0>,<>
                          .MEXIT
```

```
                                        .ENDC
                                        .IF B    <>
                                        M$PRINT C$PNTB,#FINIT2,<(R1)>,<R0>,<>,<>
                                        .MEXIT
                                        .ENDC
                                        .IF B    <>
                                        M$PRINT C$PNTB,#FINIT2,<(R1)>,<R0>,<>,<>,<>
                                        .MEXIT
                                        .ENDC
                                        .IF B    <>
                                        M$PRINT C$PNTB,#FINIT2,<(R1)>,<R0>,<>,<>,<>,<>
                                        .MEXIT
                                        .ENDC
                                        .IF B    <>
                                        M$PRINT C$PNTB,#FINIT2,<(R1)>,<R0>,<>,<>,<>,<>,<>
                                        .MEXIT
                                        .ENDC
                                        M$PRINT C$PNTB,#FINIT2,<(R1)>,<R0>,<>,<>,<>,<>,<>,<>
011622  011137  002244                  11$:    MOV     (R1),VECC1      ;LOAD VECTOR FOR CHANNEL 1
011626  012137  002246                          MOV     (R1)+,VECC2     ;LOAD VECTOR FOR CHANNEL 2
011632  062737  000004  002246                  ADD     #4,VECC2        ;...
011640  012102                                  MOV     (R1)+,R2        ;GET PRIORITY
011642  010237  002316                          MOV     R2,PLEV         ;SAVE THE LEVEL
011646  012137  002312                          MOV     (R1)+,DPA1      ;SAVE THE DEVICE PRIMARY ADDRESS 1
011652  011137  002314                          MOV     (R1),DPA2       ;SAVE THE DEVICE PRIMARY ADDRESS 2
011656  012737  120040  002434                  MOV     #120040,CDAT1   ;LOAD COMPARE DATA FOR ISR CHECK
011664  012737  120050  002436                  MOV     #120050,CDAT2   ;LOAD COMPARE DATA FOR ISR CHECK
011672  012737  120052  002440                  MOV     #120052,CDAT3   ;LOAD COMPARE DATA FOR ISR CHECK
011700  012737  120060  002442                  MOV     #120060,CDAT4   ;LOAD COMPARE DATA FOR ISR CHECK
011706  012737  120064  002444                  MOV     #120064,CDAT5   ;LOAD COMPARE DATA FOR ISR CHECK
011714  012737  170060  002446                  MOV     #170060,CDAT6   ;LOAD COMPARE DATA FOR ISR CHECK
011722  012737  020024  002450                  MOV     #20024,CDAT7    ;LOAD COMPARE DATA FOR ISR CHECK
011730  012737  170050  002452                  MOV     #170050,CDAT8   ;LOAD COMPARE DATA FOR ISR CHECK
011736  012737  170044  002454                  MOV     #170044,CDAT9   ;LOAD COMPARE DATA FOR ISR CHECK
011744  012737  170042  002456                  MOV     #170042,CDAT10  ;LOAD COMPARE DATA FOR ISR CHECK
011752  012737  120664  002460                  MOV     #120664,CDAT11  ;LOAD COMPARE DATA FOR ISR CHECK
011760  012737  120464  002462                  MOV     #120464,CDAT12  ;LOAD COMPARE DATA FOR ISR CHECK
011766  012737  120744  002464                  MOV     #120744,CDAT13  ;LOAD COMPARE DATA FOR ISR CHECK
011774  012737  120540  002466                  MOV     #120540,CDAT14  ;LOAD COMPARE DATA FOR ISR CHECK
012002  012737  030012  002470                  MOV     #30012,CDAT15   ;LOAD COMPARE DATA FOR ISR CHECK
012010  012737  104040  002472                  MOV     #104040,CDAT16  ;LOAD COMPARE DATA FOR ISR CHECK
012016  012737  030004  002474                  MOV     #30004,CDAT17   ;LOAD COMPARE DATA FOR ISR CHECK
012024  012737  034004  002476                  MOV     #34004,CDAT18   ;LOAD COMPARE DATA FOR ISR CHECK

012032                                          EXIT    INIT
                                        .MCALL  M$SVC,M$EXIT,M$EXSEG,M$EXTJ,M$GETTOP,M$CHECK,M$WORD,XFER
        000041                          T$FLAG=F$END
012032                                  M$CHECK INIT,T$TEMP,T$FLAG
                                        .IF IDN <TST>,<INIT>
                                        T$TEMP=T$$TEST
                                        T$FLAG=I$TST
                                        .MEXIT
                                        .ENDC
                                        .IF IDN <SUB>,<INIT>
                                        T$TEMP=T$$SUB
                                        T$FLAG=I$SUB
                                        .MEXIT
```

```
                              .ENDC
                              .IF IDN <SEG>,<INIT>
                              T$TEMP=T$$SEG
                              T$FLAG=I$SEG
                              .MEXIT
                              .ENDC
                              .IF IDN <INIT>,<INIT>
         010020               T$TEMP=T$$INIT
         000040               T$FLAG=I$INIT
                              .MEXIT
                              .ENDC
                              .IF IDN <CLN>,<INIT>
                              T$TEMP=T$$CLEAN
                              T$FLAG-I$CLN
                              .MEXIT
                              .ENDC
                              .IF IDN <SRV>,<INIT>
                              T$TEMP=T$$SRV
                              T$FLAG=I$SRV
                              .MEXIT
                              .ENDC
                              .IF IDN <MSG>,<INIT>
                              T$TEMP=T$$MSG
                              T$FLAG=F$JMP
                              .MEXIT
                              .ENDC
                              .IF IDN <RPT>,<INIT>
                              T$TEMP=T$$RPT
                              T$FLAG=F$JMP
                              .MEXIT
                              .ENDC
                              .IF IDN <DU>,<INIT>
                              T$TEMP=T$$DU
                              T$FLAG=F$JMP
                              .MEXIT
                              .ENDC
                              .IF IDN <AU>,<INIT>
                              T$TEMP=T$$AU
                              T$FLAG=F$JMP
                              .MEXIT
                              .ENDC
                              .IF EQ T$FLAG F$JMP
                              M$WORD  J$JMP
                              M$EXTJ  \T$TEMP
                              .MEXIT
                              .ENDC
                              .IF EQ  T$FLAG F$BGN
    012032                    M$SVC   C$EXIT
                              .MCALL  M$GNINS,M$TSTLAB
    012032                    M$TSTLAB
                              .MCALL  M$TLABEL,M$INCR
                              .IIF LT T$TSTMAC, .MEXIT
                              .RADIX  10
                              M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                              .RADIX  8
                              M$INCR  T$TSTSEQ
    012032                    M$GNINS <TRAP   C$EXIT>
```

```
                                        .IF LT SVCINS
                                        TRAP    C$EXIT
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                TRAP    C$EXIT
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
      012032  104432                                                                                    TRAP    C$EXIT
                                                        .NLIST
                                        .ENDC
                                        .IF IDN <SEG>,<INIT>
                                        M$GETTOP T$SEK,T$SEGLEV,T$TEMP
                                        M$EXSEG \T$TEMP
                                        .IFF
      012034                            M$EXIT  \T$TEMP
                                        .MCALL  M$GNINS
      012034                            M$GNINS <.WORD  L10020-.>
                                        .IF LT SVCINS
                                        .WORD   L10020-.
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                .WORD   L10020-.
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
      012034  000162                                                                                    .WORD   L10020-.
                                                        .NLIST
                                        .ENDC
                                        .ENDC
                                        .MEXIT
                                        .ENDC
                                        .IF IDN <HRD>,<INIT>
                                        M$GETTOP        T$NS,T$NESTLEV,T$TEMP
                                        .IF EQ  F$HARD T$TEMP
                                        .IRP    N,<\T$$HARD>
                                        XFER    L'N
                                        .ENDM
                                        .MEXIT
                                        .ENDC
                                        .ENDC
                                        .IF IDN <SFT>,<INIT>
                                        M$GETTOP        T$NS,T$NESTLEV,T$TEMP
                                        .IF EQ  F$SOFT T$TEMP
                                        .IRP    N,<\T$$SOFT>
                                        XFER    L'N
                                        .ENDM
                                        .MEXIT
                                        .ENDC
```

```
                                              .ENDC
                                              .ERROR  ;ILL. "EXIT INIT" STMT.
 2628
 2629                                         .IF NE HELP
 2630                                         ;****************************************************************
 2631                                         ;      INSERT LOCAL STORAGE THAT IS USED ONLY
 2632                                         ;      DURING THE INITIALIZE SECTION.
 2633                                         ;****************************************************************
 2634
 2635                                         ;****************************************************************
 2636                                         ;      INSERT MESSAGES THAT A_E USED ONLY
 2637                                         ;      DURING THE INITIALIZE SECTION.
 2638                                         ;****************************************************************
 2639                                         .ENDC
 2640                                         .NLIST BEX
 2641 012036     045      101      052       FINIT1: .ASCIZ  /%A**WARNING-WILL ASSUME IEX ADDRESS %06%A (NOT %06%A)%N/
 2642 012126     045      101      052       FINIT2: .ASCIZ  /%A**WARNING-WILL ASSUME IEX VECTOR %03%A (NOT %03%A)%N/
 2643
 2644                                                 .EVEN
 2645                                         .LIST BEX
 2646
 2647 012216                                          ENDINIT
                                              .MCALL  M$POP,M$GNTAG,M$SVC,M$ENDERR
      012216                                  M$POP   T$NS,T$NESTLEV,T$TEMP
                                              .MCALL  M$GETS,M$DECR
                                              .IF LT  T$NESTLEV
                                              .ERROR  T$NESTLEV        ; MACRO T$NS UNDERFLOW
                                              .MEXIT
                                              .ENDC
      012216                                  M$GETS  T$NS,\T$NESTLEV,T$TEMP
              000006                          T$TEMP=T$NS1
      012216                                  M$DECR  T$NESTLEV
              000000                          T$NESTLEV=T$NESTLEV-1
                                              .IF EQ F$INIT-T$TEMP
      012216                                  M$GNTAG L,T$$INIT
                                              .MCALL  M$GEN
      012216                                  M$GEN   L,\T$$INIT,SVCTAG
                                              .IF LE  SVCTAG
                                              .IIF EQ SVCTAG,.LIST
                                              L10020:
                                              .IIF EQ SVCTAG,.NLIST
                                              .MEXIT
                                              .ENDC
                                              .LIST
      012216                                                                                    L10020:
                                                      .NLIST
              010000                          S$LSYM=T$LSYM
      012216                                  M$SVC   C$INIT
                                              .MCALL  M$GNINS,M$TSTLAB
      012216                                  M$TSTLAB
                                              .MCALL  M$TLABEL,M$INCR
                                              .IIF LT T$TSTMAC, .MEXIT
                                              .RADIX  10
                                              M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                              .RADIX  8
                                              M$INCR  T$TSTSEQ
      012216                                  M$GNINS <TRAP   C$INIT>
```

```
                                .IF LT SVCINS
                                TRAP    C$INIT
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        TRAP    C$INIT
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
     012216  104411                                                          TRAP    C$INIT
                                                .NLIST
                                .ENDC
             000041             I$INIT=F$END
                                .IFF
                                M$ENDERR        ENDINIT,T$TEMP
                                .ENDC
```

```
                                .SBTTL  AUTODROP SECTION

                                ;++
                                ; THIS CODE IS EXECUTED IMMEDIATELY AFTER THE INITIALIZE CODE IF
                                ; THE "ADR" FLAG WAS SET.  THE UNIT(S) UNDER TEST ARE CHECKED TO
                                ; SEE IF THEY WILL RESPOND.  THOSE THAT DON'T ARE IMMEDIATELY
                                ; DROPPED FROM TESTING.
                                ;--

012220                                  BGNAUTO
                                .MCALL  M$PUSH,M$INCR,M$GNGBL
                000040          I$AUTO=F$BGN
012220                          M$PUSH T$NS,T$NESTLEV,F$AUTO
                                .MCALL  M$INCR,M$SETS
012220                          M$INCR  T$NESTLEV
                000001          T$NESTLEV=T$NESTLEV+1
012220                          M$SETS  T$NS,\T$NESTLEV,F$AUTO
                000020          T$NS1=F$AUTO
                010021          T$$AUTO=T$TAGNUM
012220                          M$INCR T$TAGNUM
                010022          T$TAGNUM=T$TAGNUM+1
012220                          M$GNGBL L$AUTO
                                .MCALL  M$GEN
                                .IF NB,L$AUTO
                                .IF NB,
                                M$GEN   L$AUTO,:,SVCGBL,
                                .ENDC
                                .IF B,
012220                          M$GEN   L$AUTO,:,SVCGBL,< >
                                .IF LE  SVCGBL
                                .IIF EQ SVCGBL,.LIST
                                L$AUTO::
                                .IIF EQ SVCGBL,.NLIST
                                .MEXIT
                                .ENDC
                                .LIST
012220                                                                                  L$AUTO::
                                        .NLIST
                                .ENDC
                                .ENDC

                                .IF NE HELP
                                ;###################################################################
                                ;       INSERT CODE HERE TO CHECK DEVICE(S) TO SEE IF THEY RESPOND.
                                ;       ISSUE A "DODU" FOR THOSE THAT DON'T.
                                ;###################################################################
                                .ENDC
012220                                  SETVEC  #4,#NXM,#PRI07  ;SET UP NON -EXISTENT MEMORY TRAP VECTOR.
                                .MCALL  M$PUT,M$SVC,M$GNINS
012220                          M$PUT   #3,#4,#NXM,#PRI07
                                .MCALL  M$PUT1
                                .IF NB  <#4>
012220                          M$PUT   <#4>,<#NXM>,<#PRI07>,<>,<>,<>,<>,<>,<>
                                .MCALL  M$PUT1
                                .IF NB  <#NXM>
012220                          M$PUT   <#NXM>,<#PRI07>,<>,<>,<>,<>,<>,<>,<>
                                .MCALL  M$PUT1
```

```
                                        .IF NB  <#PRI07>
012220                                  M$PUT   <#PRI07>,<>,<>,<>,<>,<>,<>,<>,<>
                                        .MCALL  M$PUT1
                                        .IF NB  <>
                                        M$PUT   <>,<>,<>,<>,<>,<>,<>,<>,<>
                                        .ENDC
                                        .IF NB  <#PRI07>
012220                                  M$PUT1  #PRI07
                                        .MCALL  M$GNINS
                                        .IF B
012220                                  M$GNINS <MOV    #PRI07,-(SP)>
                                        .IF LT SVCINS
                                        MOV     #PRI07,-(SP)
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                MOV     #PRI07,-(SP)
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
012220  012746  000340                                                                  MOV     #PRI07,-(SP)
                                                        .NLIST
                                        .ENDC
                                        .IFF
                                        .IF DIF B,<#PRI07>
                                        .ERROR  ;ILL. ARG. "#PRI07" ONLY "B" IS ALLOWED.
                                        .MEXIT
                                        .ENDC
                                        M$GNINS <CLR    -(SP)>
                                        M$GNINS <BISB   ,(SP)>
                                        .ENDC
                                        .ENDC
                                        .ENDC
                                        .IF NB  <#NXM>
012224                                  M$PUT1  #NXM
                                        .MCALL  M$GNINS
                                        .IF B
012224                                  M$GNINS <MOV    #NXM, (SP)>
                                        .IF LT SVCINS
                                        MOV     #NXM,-(SP)
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                MOV     #NXM, (SP)
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
012224  012746  010122                                                                  MOV     #NXM, (SP)
                                                        .NLIST
                                        .ENDC
                                        .IFF
```

```
                                  .IF DIF B,<#NXM>
                                  .ERROR  ;ILL. ARG. "#NXM" ONLY "B" IS ALLOWED.
                                  .MEXIT
                                  .ENDC
                                  M$GNINS <CLR    -(SP)>
                                  M$GNINS <BISB   ,(SP)>
                                  .ENDC
                                  .ENDC
                                  .ENDC
                                  .IF NB  <#4>
        012230                    M$PUT1  #4
                                  .MCALL  M$GNINS
                                  .IF B
        012230                    M$GNINS <MOV    #4,-(SP)>
                                  .IF LT SVCINS
                                  MOV     #4,-(SP)
                                  .MEXIT
                                  .ENDC
                                  .IF EQ SVCINS
                                  .LIST
                                          MOV     #4,-(SP)
                                                  .NLIST
                                  .MEXIT
                                  .ENDC
                                  .IF GT SVCINS
                                  .LIST
        012230  012746  000004                                                                MOV     #4, (SP)
                                                  .NLIST
                                  .ENDC
                                  .IFF
                                  .IF DIF B,<#4>
                                  .ERROR  ;ILL. ARG. "#4" ONLY "B" IS ALLOWED.
                                  .MEXIT
                                  .ENDC
                                  M$GNINS <CLR    -(SP)>
                                  M$GNINS <BISB   ,(SP)>
                                  .ENDC
                                  .ENDC
                                  .ENDC
                                  .IF NB  <#3>
        012234                    M$PUT1  #3
                                  .MCALL  M$GNINS
                                  .IF B
        012234                    M$GNINS <MOV    #3,-(SP)>
                                  .IF LT SVCINS
                                  MOV     #3,-(SP)
                                  .MEXIT
                                  .ENDC
                                  .IF EQ SVCINS
                                  .LIST
                                          MOV     #3,-(SP)
                                                  .NLIST
                                  .MEXIT
                                  .ENDC
                                  .IF GT SVCINS
                                  .LIST
        012234  012746  000003                                                                MOV     #3,-(SP)
```

```
                                                          .NLIST
                                        .ENDC
                                        .IFF
                                        .IF DIF B,<#3>
                                        .ERROR  ;ILL. ARG. "#3" ONLY "B" IS ALLOWED.
                                        .MEXIT
                                        .ENDC
                                        M$GNINS <CLR    -(SP)>
                                        M$GNINS <BISB   ,(SP)>
                                        .ENDC
                                        .ENDC
      012240                            M$SVC   C$SVEC
                                        .MCALL  M$GNINS,M$TSTLAB
      012240                            M$TSTLAB
                                        .MCALL  M$TLABEL,M$INCR
                                        .IIF LT T$TSTMAC, .MEXIT
                                        .RADIX  10
                                        M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                        .RADIX  8
                                        M$INCR  T$TSTSEQ
      012240                            M$GNINS <TRAP   C$SVEC>
                                        .IF LT SVCINS
                                        TRAP    C$SVEC
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                TRAP    C$SVEC
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
      012240  104437                                                                    TRAP    C$SVEC
                                                        .NLIST
                                        .ENDC
      012242                            M$GNINS <ADD    #10,SP>
                                        .IF LT SVCINS
                                        ADD     #10,SP
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                ADD     #10,SP
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
      012242  062706  000010                                                            ADD     #10,SP
                                                        .NLIST
                                        .ENDC
      012246  005037  002326                    CLR     NXMFLG          ;CLEAR NON -EXISTENT MEMORY FLAG
      012252  005777  167772                    TST     @IIRX           ;REFERENCE MEMORY ADDRESS FOR THE DEVICE
                                                                        ;TO SEE IF IT EXISTS.
                                        ;***********************************************************************
                                        ;IF THE DEVICE DOESN'T EXIST THE RESULTANT TRAP TO VECTOR 04 WILL
```

```
                                   ;CAUSE THE DEVICE TO BE DROPPED (SEE INTERRUPT ROUTINE)
                                   ;OTHERWISE THE MEMORY REFERENCE IS UNEVENTFUL AND THE DEVICE IS READY.
                                   ;*****************************************************************************
012256  005737  002326                     TST     NXMFLG             ;WAS THERE A TRAP ?
012262  001407                             BEQ     10$                ;BR IF NOT
012264                                     DODU    LOGDEV             ;DROP THE DEVICE
                                   .MCALL  M$LDRO,M$SVC
012264                             M$LDRO  LOGDEV,DODU
                                   .MCALL  M$GNINS
                                   .IF NB LOGDEV
                                   .IF DIF R0,LOGDEV
012264                             M$GNINS <MOV     LOGDEV,R0>
                                   .IF LT SVCINS
                                   MOV     LOGDEV,R0
                                   .MEXIT
                                   .ENDC
                                   .IF EQ SVCINS
                                   .LIST
                                           MOV     LOGDEV,R0
                                                   .NLIST
                                   .MEXIT
                                   .ENDC
                                   .IF GT SVCINS
                                   .LIST
012264  013700  002372                                                                     MOV     LOGDEV,R0
                                                   .NLIST
                                   .ENDC
                                   .ENDC
                                   .IFF
                                   .ERROR  ;MISSING ARG. ON "DODU"
                                   .ENDC
012270                             M$SVC   C$DODU
                                   .MCALL  M$GNINS,M$TSTLAB
012270                             M$TSTLAB
                                   .MCALL  M$TLABEL,M$INCR
                                   .IIF LT T$TSTMAC, .MEXIT
                                   .RADIX  10
                                   M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                   .RADIX  8
                                   M$INCR  T$TSTSEQ
012270                             M$GNINS <TRAP    C$DODU>
                                   .IF LT SVCINS
                                   TRAP    C$DODU
                                   .MEXIT
                                   .ENDC
                                   .IF EQ SVCINS
                                   .LIST
                                           TRAP    C$DODU
                                                   .NLIST
                                   .MEXIT
                                   .ENDC
                                   .IF GT SVCINS
                                   .LIST
012270  104451                                                                             TRAP    C$DODU
                                                   .NLIST
                                   .ENDC
012272                                     DOCLN                      ;CLEAN UP CODE.
```

```
                                      .MCALL  M$SVC
      012272                          M$SVC   C$DCLN
                                      .MCALL  M$GNINS,M$TSTLAB
      012272                          M$TSTLAB
                                      .MCALL  M$TLABEL,M$INCR
                                      .IIF LT T$TSTMAC, .MEXIT
                                      .RADIX  10
                                      M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                      .RADIX  8
                                      M$INCR  T$TSTSEQ
      012272                          M$GNINS <TRAP   C$DCLN>
                                      .IF LT SVCINS
                                      TRAP    C$DCLN
                                      .MEXIT
                                      .ENDC
                                      .IF EQ SVCINS
                                      .LIST
                                              TRAP    C$DCLN
                                                      .NLIST
                                      .MEXIT
                                      .ENDC
                                      .IF GT SVCINS
                                      .LIST
      012272  104444                                                                          TRAP    C$DCLN
                                                      .NLIST
                                      .ENDC
 2679 012274                                  CLRVEC  #4              ;RETURN VECTOR 04 TO NORMAL STATE
                                      .MCALL  M$LDRO,M$SVC
      012274                          M$LDRO  #4,CLRVEC
                                      .MCALL  M$GNINS
                                      .IF NB #4
                                      .IF DIF RO,#4
      012274                          M$GNINS <MOV    #4,RO>
                                      .IF LT SVCINS
                                      MOV     #4,RO
                                      .MEXIT
                                      .ENDC
                                      .IF EQ SVCINS
                                      .LIST
                                              MOV     #4,RO
                                                      .NLIST
                                      .MEXIT
                                      .ENDC
                                      .IF GT SVCINS
                                      .LIST
      012274  012700  000004                                                                  MOV     #4,RO
                                                      .NLIST
                                      .ENDC
                                      .ENDC
                                      .IFF
                                      .ERROR  ;MISSING ARG. ON "CLRVEC"
                                      .ENDC
      012300                          M$SVC   C$CVEC
                                      .MCALL  M$GNINS,M$TSTLAB
      012300                          M$TSTLAB
                                      .MCALL  M$TLABEL,M$INCR
                                      .IIF LT T$TSTMAC, .MEXIT
```

```
                                .RADIX  10
                                M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                .RADIX  8
                                M$INCR  T$TSTSEQ
     012300                     M$GNINS <TRAP   C$CVEC>
                                .IF LT SVCINS
                                TRAP    C$CVEC
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        TRAP    C$CVEC
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
     012300  104436                                                      TRAP    C$CVEC
                                                .NLIST
                                .ENDC
2680 012302                     10$:
2681 012302                             ENDAUTO
                                .MCALL M$POP,M$GNTAG,M$SVC,M$ENDERR
     012302                     M$POP T$NS,T$NESTLEV,T$TEMP
                                .MCALL  M$GETS,M$DECR
                                .IF LT  T$NESTLEV
                                .ERROR  T$NESTLEV       ; MACRO T$NS UNDERFLOW
                                .MEXIT
                                .ENDC
     012302                     M$GETS  T$NS,\T$NESTLEV,T$TEMP
             000020             T$TEMP=T$NS1
     012302                     M$DFCR  T$NESTLEV
             000000             T$NESTLEV=T$NESTLEV-1
                                .IF EQ F$AUTO-T$TEMP
     012302                     M$GNTAG L,T$$AUTO
                                .MCALL  M$GEN
     012302                     M$GEN   L,\T$$AUTO,SVCTAG
                                .IF LE  SVCTAG
                                .IIF EQ SVCTAG,.LIST
                                L10021:
                                .IIF EQ S'CTAG,.NLIST
                                .MEXIT
                                .ENDC
                                .LIST
     012302                                                      L10021:
                                        .NLIST
             010000             S$LSYM=T$LSYM
     012302                     M$SVC C$AUTO
                                .MCALL  M$GNINS,M$TSTLAB
     012302                     M$TSTLAB
                                .MCALL  M$TLABEL,M$INCR
                                .IIF LT T$TSTMAC, .MEXIT
                                .RADIX  10
                                M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                .RADIX  8
                                M$INCR  T$TSTSEQ
     012302                     M$GNINS <TRAP   C$AUTO>
```

```
                              .IF LT SVCINS
                              TRAP    C$AUTO
                              .MEXIT
                              .ENDC
                              .IF EQ SVCINS
                              .LIST
                                      TRAP    C$AUTO
                                              .NLIST
                              .MEXIT
                              .ENDC
                              .IF GT SVCINS
                              .LIST
     012302  104461                                                               TRAP    C$AUTO
                                              .NLIST
                              .ENDC
             000041           I$AUTO=F$END
                              .IFF
                              M$ENDERR        ENDAUTO,T$TEMP
                              .ENDC
```

```
                                .SBTTL  CLEANUP CODING SECTION

                                ;++
                                ; THE CLEANUP CODING SECTION CONTAINS THE CODING THAT IS PERFORMED
                                ; AFTER THE HARDWARE TESTS HAVE BEEN PERFORMED.
                                ;--

012304                                  BGNCLN
                                .MCALL  M$PUSH,M$INCR,M$GNGBL
               000040           I$CLN=F$BGN
012304                          M$PUSH  T$NS,T$NESTLEV,F$CLEAN
                                .MCALL  M$INCR,M$SETS
012304                          M$INCR  T$NESTLEV
               000001           T$NESTLEV=T$NESTLEV+1
012304                          M$SETS  T$NS,\T$NESTLEV,F$CLEAN
               000007           T$NS1=F$CLEAN
               010022           T$$CLEAN=T$TAGNUM
012304                          M$INCR T$TAGNUM
               010023           T$TAGNUM=T$TAGNUM+1
012304                          M$GNGBL L$CLEAN
                                .MCALL  M$GEN
                                .IF NB,L$CLEAN
                                .IF NB,
                                M$GEN   L$CLEAN,:,SVCGBL,
                                .ENDC
                                .IF B,
012304                          M$GEN   L$CLEAN,:,SVCGBL,< >
                                .IF LE  SVCGBL
                                .IIF EQ SVCGBL,.LIST
                                L$CLEAN::
                                .IIF EQ SVCGBL,.NLIST
                                .MEXIT
                                .ENDC
                                .LIST
012304                                                                          L$CLEAN::
                                        .NLIST
                                .ENDC
                                .ENDC

                                .IF NE HELP
                                ;*****************************************************************
                                ;       INSERT YOUR CLEANUP CODING.  THIS CODING SHOULD
                                ;       RESTORE YOUR TEST-DEVICE TO A NEUTRAL STATE.
                                ;       THIS CODE WILL BE EXECUTED AFTER EACH PASS AND AFTER THE
                                ;       PROGRAM IS INTERRUPTED BY "↑C".
                                ;*****************************************************************
                                .ENDC
012304                                  SETPRI  #PRI07          ;DISABLE INTERRUPTS
                                .MCALL  M$LDR0,M$SVC
012304                          M$LDR0  #PRI07,SETPRI
                                .MCALL  M$GNINS
                                .IF NB #PRI07
                                .IF DIF R0,#PRI07
012304                          M$GNINS <MOV    #PRI07,R0>
                                .IF LT SVCINS
                                MOV     #PRI07,R0
                                .MEXIT
```

```
                        .ENDC
                        .IF EQ SVCINS
                        .LIST
                                MOV     #PRI07,R0
                                        .NLIST
                        .MEXIT
                        .ENDC
                        .IF GT SVCINS
                        .LIST
     012304 012700 000340                                       MOV     #PRI07,R0
                                        .NLIST
                        .ENDC
                        .ENDC
                        .IFF
                        .ERROR  ;MISSING ARG. ON "SETPRI"
                        .ENDC
     012310             M$SVC   C$SPRI
                        .MCALL  M$GNINS,M$TSTLAB
     012310             M$TSTLAB
                        .MCALL  M$TLABEL,M$INCR
                        .IIF LT T$TSTMAC, .MEXIT
                        .RADIX  10
                        M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                        .RADIX  8
                        M$INCR  T$TSTSEQ
     012310             M$GNINS <TRAP   C$SPRI>
                        .IF LT SVCINS
                        TRAP    C$SPRI
                        .MEXIT
                        .ENDC
                        .IF EQ SVCINS
                        .LIST
                                TRAP    C$SPRI
                                        .NLIST
                        .MEXIT
                        .ENDC
                        .IF GT SVCINS
                        .LIST
     012310 104441                                              TRAP    C$SPRI
                                        .NLIST
                        .ENDC
2701 012312                     BRESET                  ;RESET THE IEX11
                        .MCALL  M$SVC
     012312             M$SVC   C$RESET
                        .MCALL  M$GNINS,M$TSTLAB
     012312             M$TSTLAB
                        .MCALL  M$TLABEL,M$INCR
                        .IIF LT T$TSTMAC, .MEXIT
                        .RADIX  10
                        M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                        .RADIX  8
                        M$INCR  T$TSTSEQ
     012312             M$GNINS <TRAP   C$RESET>
                        .IF LT SVCINS
                        TRAP    C$RESET
                        .MEXIT
                        .ENDC
```

```
                                        .IF EQ SVCINS
                                        .LIST
                                                TRAP    C$RESET
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
        012312  104433                                                                          TRAP    C$RESET
                                                        .NLIST
                                        .ENDC
   2702 012314                                  CLRVEC  #4              ;RETURN VECTOR 04 TO NORMAL STATE
                                        .MCALL  M$LDRO,M$SVC
        012314                          M$LDRO  #4,CLRVEC
                                        .MCALL  M$GNINS
                                        .IF NB #4
                                        .IF DIF RO,#4
        012314                          M$GNINS <MOV    #4,RO>
                                        .IF LT SVCINS
                                        MOV     #4,RO
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                MOV     #4,RO
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
        012314  012700  000004                                                                  MOV     #4,RO
                                                        .NLIST
                                        .ENDC
                                        .ENDC
                                        .IFF
                                        .ERROR  ;MISSING ARG. ON "CLRVEC"
                                        .ENDC
        012320                          M$SVC   C$CVEC
                                        .MCALL  M$GNINS,M$TSTLAB
        012320                          M$TSTLAB
                                        .MCALL  M$TLABEL,M$INCR
                                        .IIF LT T$TSTMAC, .MEXIT
                                        .RADIX  10
                                        M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                        .RADIX  8
                                        M$INCR  T$TSTSEQ
        012320                          M$GNINS <TRAP   C$CVEC>
                                        .IF LT SVCINS
                                        TRAP    C$CVEC
                                        .MEXIT
                                        .ENDC
                                        .IF FQ SVCINS
                                        .LIST
                                                TRAP    C$CVEC
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
```


E5

F5


```
                                    .IF GT SVCINS
                                    .LIST
      012320  104436                                                                      TRAP     C$CVEC
                                                .NLIST
                                    .ENDC
  2703
  2704 012322                             EXIT     CLN
                                    .MCALL  M$SVC,M$EXIT,M$EXSEG,M$EXTJ,M$GETTOP,M$CHECK,M$WORD,XFER
              000041                T$FLAG=F$END
      012322                        M$CHECK CLN,T$TEMP,T$FLAG
                                    .IF IDN <TST>,<CLN>
                                    T$TEMP=T$$TEST
                                    T$FLAG=I$TST
                                    .MEXIT
                                    .ENDC
                                    .IF IDN <SUB>,<CLN>
                                    T$TEMP=T$$SUB
                                    T$FLAG=I$SUB
                                    .MEXIT
                                    .ENDC
                                    .IF IDN <SEG>,<CLN>
                                    T$TEMP=T$$SEG
                                    T$FLAG=I$SEG
                                    .MEXIT
                                    .ENDC
                                    .IF IDN <INIT>,<CLN>
                                    T$TEMP=T$$INIT
                                    T$FLAG=I$INIT
                                    .MEXIT
                                    .ENDC
                                    .IF IDN <CLN>,<CLN>
              010022                T$TEMP=T$$CLEAN
              000040                T$FLAG=I$CLN
                                    .MEXIT
                                    .ENDC
                                    .IF IDN <SRV>,<CLN>
                                    T$TEMP=T$$SRV
                                    T$FLAG=I$SRV
                                    .MEXIT
                                    .ENDC
                                    .IF IDN <MSG>,<CLN>
                                    T$TEMP=T$$MSG
                                    T$FLAG=F$JMP
                                    .MEXIT
                                    .ENDC
                                    .IF IDN <RPT>,<CLN>
                                    T$TEMP=T$$RPT
                                    T$FLAG=F$JMP
                                    .MEXIT
                                    .ENDC
                                    .IF IDN <DU>,<CLN>
                                    T$TEMP=T$$DU
                                    T$FLAG=F$JMP
                                    .MEXIT
                                    .ENDC
                                    .IF IDN <AU>,<CLN>
                                    T$TEMP=T$$AU
```

G5

G5


```
                                        T$FLAG=F$JMP
                                        .MEXIT
                                        .ENDC
                                        .IF EQ T$FLAG-F$JMP
                                        M$WORD  J$JMP
                                        M$EXTJ  \T$TEMP
                                        .MEXIT
                                        .ENDC
                                        .IF EQ  T$FLAG-F$BGN
      012322                            M$SVC   C$EXIT
                                        .MCALL  M$GNINS,M$TSTLAB
      012322                            M$TSTLAB
                                        .MCALL  M$TLABEL,M$INCR
                                        .IIF LT T$TSTMAC, .MEXIT
                                        .RADIX  10
                                        M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                        .RADIX  8
                                        M$INCR  T$TSTSEQ
      012322                            M$GNINS <TRAP   C$EXIT>
                                        .IF LT SVCINS
                                        TRAP    C$EXIT
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                TRAP    C$EXIT
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
      012322  104432                                                                    TRAP    C$EXIT
                                                        .NLIST
                                        .ENDC
                                        .IF IDN <SEG>,<CLN>
                                        M$GETTOP T$SEK,T$SEGLEV,T$TEMP
                                        M$EXSEG \T$TEMP
                                        .IFF
      012324                            M$EXIT  \T$TEMP
                                        .MCALL  M$GNINS
      012324                            M$GNINS <.WORD  L10022-.>
                                        .IF LT SVCINS
                                        .WORD   L10022 .
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                .WORD   L10022-.
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
      012324  000002                                                                    .WORD   L10022 .
                                                        .NLIST
                                        .ENDC
                                        .ENDC
```

H5

```
                                .MEXIT
                                .ENDC
                                .IF IDN <HRD>,<CLN>
                                M$GETTOP        T$NS,T$NESTLEV,T$TEMP
                                .IF EQ  F$HARD-T$TEMP
                                .IRP    N,<\T$$HARD>
                                XFER    L'N
                                .ENDM
                                .MEXIT
                                .ENDC
                                .ENDC
                                .IF IDN <SFT>,<CLN>
                                M$GETTOP        T$NS,T$NESTLEV,T$TEMP
                                .IF EQ  F$SOFT-T$TEMP
                                .IRP    N,<\T$$SOFT>
                                XFER    L'N
                                .ENDM
                                .MEXIT
                                .ENDC
                                .ENDC
                                .ERROR  ;ILL. "EXIT CLN" STMT.

                                .IF NE HELP
                                ;*************************************************************
                                ;       INSERT LOCAL STORAGE THAT IS USED ONLY
                                ;       DURING THE CLEANUP SECTION.
                                ;*************************************************************

                                ;*************************************************************
                                ;       INSERT MESSAGES THAT ARE USED ONLY
                                ;       DURING THE CLEANUP SECTION.
                                ;*************************************************************
                                .ENDC

                                        .EVEN

                                        ENDCLN
012326                          .MCALL  M$POP,M$GNTAG,M$SVC,M$ENDERR
012326                          M$POP   T$NS,T$NESTLEV,T$TEMP
                                .MCALL  M$GETS,M$DECR
                                .IF LT  T$NESTLEV
                                .ERROR  T$NESTLEV       ; MACRO T$NS UNDERFLOW
                                .MEXIT
                                .ENDC
012326                          M$GETS  T$NS,\T$NESTLEV,T$TEMP
        000007                  T$TEMP=T$NS1
012326                          M$DECR  T$NESTLEV
        000000                  T$NESTLEV=T$NESTLEV-1
                                .IF EQ F$CLEAN-T$TEMP
012326                          M$GNTAG L,T$$CLEAN
                                .MCALL  M$GEN
012326                          M$GEN   L,\T$$CLEAN,SVCTAG
                                .IF LE  SVCTAG
                                .IIF EQ SVCTAG,.LIST
                                L10022:
                                .IIF EQ SVCTAG,.NLIST
                                .MEXIT
```


T5

```
                                .ENDC
                                .LIST
      012326                                                                  L10022:
                                     .NLIST
             010000             S$LSYM=T$LSYM
      012326                    M$SVC   C$CLEAN
                                .MCALL  M$GNINS,M$TSTLAB
      012326                    M$TSTLAB
                                .MCALL  M$TLABEL,M$INCR
                                .IIF LT T$TSTMAC, .MEXIT
                                .RADIX  10
                                M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                .RADIX  8
                                M$INCR  T$TSTSEQ
      012326                    M$GNINS <TRAP   C$CLEAN>
                                .IF LT SVCINS
                                TRAP    C$CLEAN
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        TRAP    C$CLEAN
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
      012326 104412                                                                TRAP    C$CLEAN
                                                .NLIST
                                .ENDC
             000041             I$CLN=F$END
                                .IFF
                                M$ENDERR        ENDCLN,T$TEMP
                                .ENDC
```

```
                                        .SBTTL  DROP UNIT SECTION

                                        ;++
                                        ; THE DROP-UNIT SECTION CONTAINS THE CODING THAT CAUSES A DEVICE
                                        ; TO NO LONGER BE TESTED.
                                        ;
                                        ;SUPVSR DOES THE "DROPPING".THIS IS JUST TO TELL THE MAN.
                                        ;"DROPPED" UNITS ARE RE-SELECTED ON OPERATOR "STA" OR "ADD"
                                        ;COMMAND, OTHERWISE REMAIN INACTIVE. THE DISPLAY COMMAND
                                        ;WILL PRINT ALL DROPPED UNITS, AND THE P-TABLES OF THOSE
                                        ;WHICH ARE STILL ACTIVE.
                                        ;--

     012330                                     BGNDU
                                        .MCALL  M$PUSH,M$INCR,M$GNGBL
               000040                   I$DU=F$BGN
     012330                             M$PUSH  T$NS,T$NESTLEV,F$DU
                                        .MCALL  M$INCR,M$SETS
     012330                             M$INCR  T$NESTLEV
               000001                   T$NESTLEV=T$NESTLEV+1
     012330                             M$SETS  T$NS,\T$NESTLEV,F$DU
               000016                   T$NS1=F$DU
               010023                   T$$DU=T$TAGNUM
     012330                             M$INCR  T$TAGNUM
               010024                   T$TAGNUM=T$TAGNUM+1
     012330                             M$GNGBL L$DU
                                        .MCALL  M$GEN
                                        .IF NB,L$DU
                                        .IF NB,
                                        M$GEN   L$DU,:,SVCGBL,
                                        .ENDC
                                        .IF B,
     012330                             M$GEN   L$DU,:,SVCGBL,< >
                                        .IF LE  SVCGBL
                                        .IIF EQ SVCGBL,.LIST
                                        L$DU::
                                        .IIF EQ SVCGBL,.NLIST
                                        .MEXIT
                                        .ENDC
                                        .LIST
     012330                                                                                   L$DU::
                                                .NLIST
                                        .ENDC
                                        .ENDC

                                        .IF NE HELP
                                        ;%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%
                                        ;       INSERT DROP CODE HERE.  THIS CODE WILL BE EXECUTED AFTER
                                        ;       A "DROP" COMMAND OR A "DODU" MACRO EXECUTION.  THE PURPOSE
                                        ;       OF THIS CODE IS TO DO ANY NECESSARY HOUSEKEEPING AFTER A
                                        ;       UNIT HAS BEEN DROPPED.  THIS SECTION IS OPTIONAL.
                                        ;%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%
                                        .ENDC
     012330                                     PRINTF  #FMDROP,R0      ;PRINT UNIT DROPPED             *C*
                                        .MCALL  M$PRINT
                                        .IF B   #FMDROP
                                        .ERROR  ;MISSING FORMAT
```

K5

```
                              .MEXIT
                              .ENDC
                              .IF B    <R0>
                              M$PRINT C$PNTF,#FMDROP
                              .MEXIT
                              .ENDC
                              .IF B    <>
     012330                   M$PRINT C$PNTF,#FMDROP,<R0>
                              .MCALL   M$COUNT,M$PUT,M$GNINS,M$SVC
             000001           T$ARGCNT=1
     012330                   M$COUNT T$ARGCNT,<R0>,<>,<>,<>,<>,<>,<>,<>
                              .IF NB <>
                              M$COUNT T$ARGCNT,<>,<>,<>,<>,<>,<>,<>,<>
                              .ENDC
                              .IF NB <R0>
             000002           T$ARGCNT=T$ARGCNT+1
                              .ENDC
                              .IRP     N,<\T$ARGCNT>
                              M$PUT    #N,#FMDROP,<R0>,<>,<>,<>,<>,<>,<>,<>
                              .ENDM
     012330                   M$PUT    #2,#FMDROP,<R0>,<>,<>,<>,<>,<>,<>,<>
                              .MCALL   M$PUT1
                              .IF NB   <#FMDROP>
     012330                   M$PUT    <#FMDROP>,<R0>,<>,<>,<>,<>,<>,<>,<>
                              .MCALL   M$PUT1
                              .IF NB   <R0>
     012330                   M$PUT    <R0>,<>,<>,<>,<>,<>,<>,<>,<>
                              .MCALL   M$PUT1
                              .IF NB   <>
                              M$PUT    <>,<>,<>,<>,<>,<>,<>,<>,<>
                              .ENDC
                              .IF NB   <R0>
     012330                   M$PUT1   R0
                              .MCALL   M$GNINS
                              .IF B
     012330                   M$GNINS <MOV     R0,-(SP)>
                              .IF LT SVCINS
                              MOV      R0,-(SP)
                              .MEXIT
                              .ENDC
                              .IF EQ SVCINS
                              .LIST
                                       MOV     R0,-(SP)
                                               .NLIST
                              .MEXIT
                              .ENDC
                              .IF GT SVCINS
                              .LIST
     012330  010046                                                            MOV     R0,-(SP)
                                               .NLIST
                              .ENDC
                              .IFF
                              .IF DIF B,<R0>
                              .ERROR   ;ILL. ARG. "R0" ONLY "B" IS ALLOWED.
                              .MEXIT
                              .ENDC
                              M$GNINS <CLR     -(SP)>
```

```
                                        M$GNINS <BISB   ,(SP)>
                                        .ENDC
                                        .ENDC
                                        .ENDC
                                        .IF NB  <#FMDROP>
      012332                            M$PUT1  #FMDROP
                                        .MCALL  M$GNINS
                                        .IF B
      012332                            M$GNINS <MOV    #FMDROP,-(SP)>
                                        .IF LT SVCINS
                                        MOV     #FMDROP,-(SP)
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                MOV     #FMDROP,-(SP)
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
      012332  012746  012356                                                        MOV     #FMDROP,-(SP)
                                                        .NLIST
                                        .ENDC
                                        .IFF
                                        .IF DIF B,<#FMDROP>
                                        .ERROR  ;ILL. ARG. "#FMDROP" ONLY "B" IS ALLOWED.
                                        .MEXIT
                                        .ENDC
                                        M$GNINS <CLR    -(SP)>
                                        M$GNINS <BISB   ,(SP)>
                                        .ENDC
                                        .ENDC
                                        .ENDC
                                        .IF NB  <#2>
      012336                            M$PUT1  #2
                                        .MCALL  M$GNINS
                                        .IF B
      012336                            M$GNINS <MOV    #2,-(SP)>
                                        .IF LT SVCINS
                                        MOV     #2,-(SP)
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                MOV     #2,-(SP)
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
      012336  012746  000002                                                        MOV     #2,-(SP)
                                                        .NLIST
                                        .ENDC
                                        .IFF
                                        .IF DIF B,<#2>
                                        .ERROR  ;ILL. ARG. "#2" ONLY "B" IS ALLOWED.
```

```
                                .MEXIT
                                .ENDC
                                M$GNINS <CLR    -(SP)>
                                M$GNINS <BISB   ,(SP)>
                                .ENDC
                                .ENDC
        012342                  M$GNINS <MOV    SP,R0>
                                .IF LT SVCINS
                                MOV     SP,R0
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        MOV     SP,R0
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
        012342  010600                                                          MOV     SP,R0
                                                .NLIST
                                .ENDC
        012344                  M$SVC   C$PNTF
                                .MCALL  M$GNINS,M$TSTLAB
        012344                  M$TSTLAB
                                .MCALL  M$TLABEL,M$INCR
                                .IIF LT T$TSTMAC, .MEXIT
                                .RADIX  10
                                M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                .RADIX  8
                                M$INCR  T$TSTSEQ
        012344                  M$GNINS <TRAP   C$PNTF>
                                .IF LT SVCINS
                                TRAP    C$PNTF
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        TRAP    C$PNTF
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
        012344  104417                                                          TRAP    C$PNTF
                                                .NLIST
                                .ENDC
                                .IRP    N,<\T$ARGCNT*2+2>
                                M$GNINS <ADD    #N,SP>
                                .ENDM
        012346                  M$GNINS <ADD    #6,SP>
                                .IF LT SVCINS
                                ADD     #6,SP
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
```

```
                                                ADD     #6,SP
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
      012346  062706  000006                                                                    ADD     #6,SP
                                                        .NLIST
                                        .ENDC
                                        .MEXIT
                                        .ENDC
                                        .IF B   <>
                                        M$PRINT C$PNTF,#FMDROP,<R0>,<>
                                        .MEXIT
                                        .ENDC
                                        .IF B   <>
                                        M$PRINT C$PNTF,#FMDROP,<R0>,<>,<>
                                        .MEXIT
                                        .ENDC
                                        .IF B   <>
                                        M$PRINT C$PNTF,#FMDROP,<R0>,<>,<>,<>
                                        .MEXIT
                                        .ENDC
                                        .IF B   <>
                                        M$PRINT C$PNTF,#FMDROP,<R0>,<>,<>,<>,<>
                                        .MEXIT
                                        .ENDC
                                        .IF B   <>
                                        M$PRINT C$PNTF,#FMDROP,<R0>,<>,<>,<>,<>,<>
                                        .MEXIT
                                        .ENDC
                                        .IF B   <>
                                        M$PRINT C$PNTF,#FMDROP,<R0>,<>,<>,<>,<>,<>,<>
                                        .MEXIT
                                        .ENDC
                                        M$PRINT C$PNTF,#FMDROP,<R0>,<>,<>,<>,<>,<>,<>,<>
   2746
   2747 012352                                  EXIT    DU
                                        .MCALL  M$SVC,M$EXIT,M$EXSEG,M$EXTJ,M$GETTOP,M$CHECK,M$WORD,XFER
                        000041          T$FLAG=F$END
        012352                          M$CHECK DU,T$TEMP,T$FLAG
                                        .IF IDN <TST>,<DU>
                                        T$TEMP=T$$TEST
                                        T$FLAG=I$TST
                                        .MEXIT
                                        .ENDC
                                        .IF IDN <SUB>,<DU>
                                        T$TEMP=T$$SUB
                                        T$FLAG=I$SUB
                                        .MEXIT
                                        .ENDC
                                        .IF IDN <SEG>,<DU>
                                        T$TEMP=T$$SEG
                                        T$FLAG=I$SEG
                                        .MEXIT
                                        .ENDC
                                        .IF IDN <INIT>,<DU>
```

```
                                        T$TEMP=T$$INIT
                                        T$FLAG=I$INIT
                                        .MEXIT
                                        .ENDC
                                        .IF IDN <CLN>,<DU>
                                        T$TEMP=T$$CLEAN
                                        T$FLAG=I$CLN
                                        .MEXIT
                                        .ENDC
                                        .IF IDN <SRV>,<DU>
                                        T$TEMP=T$$SRV
                                        T$FLAG=I$SRV
                                        .MEXIT
                                        .ENDC
                                        .IF IDN <MSG>,<DU>
                                        T$TEMP=T$$MSG
                                        T$FLAG=F$JMP
                                        .MEXIT
                                        .ENDC
                                        .IF IDN <RPT>,<DU>
                                        T$TEMP=T$$RPT
                                        T$FLAG=F$JMP
                                        .MEXIT
                                        .ENDC
                                        .IF IDN <DU>,<DU>
              010023                    T$TEMP=T$$DU
              000050                    T$FLAG=F$JMP
                                        .MEXIT
                                        .ENDC
                                        .IF IDN <AU>,<DU>
                                        T$TEMP=T$$AU
                                        T$FLAG=F$JMP
                                        .MEXIT
                                        .ENDC
                                        .IF EQ T$FLAG-F$JMP
       012352                           M$WORD  J$JMP
                                        .MCALL  M$GNINS
                                        .IRP    N,<J$JMP>
                                        M$GNINS <.WORD  N>
                                        .ENDM
       012352                           M$GNINS <.WORD  J$JMP>
                                        .IF LT SVCINS
                                        .WORD   J$JMP
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                .WORD   J$JMP
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
       012352 000167                                                                              .WORD   J$JMP
                                                        .NLIST
                                        .ENDC
       012354                           M$EXTJ  \T$TEMP
```

```
                                        .MCALL  M$GNINS
      012354                            M$GNINS <.WORD  L10023-2-.>
                                        .IF LT SVCINS
                                        .WORD   L10023-2 .
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                .WORD   L10023-2-.
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
      012354  000030                                                                  .WORD   L10023-2-.
                                                        .NLIST
                                        .ENDC
                                        .MEXIT
                                        .ENDC
                                        .IF EQ  T$FLAG-F$BGN
                                        M$SVC   C$EXIT
                                        .IF IDN <SEG>,<DU>
                                        M$GETTOP T$SE<,T$SEGLEV,T$TEMP
                                        M$EXSEG \T$TEMP
                                        .IFF
                                        M$EXIT  \T$TEMP
                                        .ENDC
                                        .MEXIT
                                        .ENDC
                                        .IF IDN <HRD>,<DU>
                                        M$GETTOP        T$NS,T$NESTLEV,T$TEMP
                                        .IF EQ  F$HARD T$TEMP
                                        .IRP    N,<\T$$HARD>
                                        XFER    L'N
                                        .ENDM
                                        .MEXIT
                                        .ENDC
                                        .ENDC
                                        .IF IDN <SFT>,<DU>
                                        M$GETTOP        T$NS,T$NESTLEV,T$TEMP
                                        .IF EQ  F$SOFT T$TEMP
                                        .IRP    N,<\T$$SOFT>
                                        XFER    L'N
                                        .ENDM
                                        .MEXIT
                                        .ENDC
                                        .ENDC
                                        .ERROR  ;ILL. "EXIT DU" STMT.

                                        .IF NE HELP
                                        ;*************************************************************
                                        ;       INSERT LOCAL STORAGE THAT IS USED ONLY
                                        ;       DURING THE DROP UNIT SECTION.
                                        ;*************************************************************

                                        ;*************************************************************
                                        ;       INSERT MESSAGES THAT ARE USED ONLY
```

D6

```
 2757                                            ;      DURING THE DROP-UNIT SECTION.
 2758                                            ;********************************************************************************
 2759                                            .ENDC
 2760 012356     045     116     045             FMDROP: .ASCIZ  /%N%AUNIT %D2%A DROPPED/
      012361     101     125     116
      012364     111     124     040
      012367     045     104     062
      012372     045     101     040
      012375     104     122     117
      012400     120     120     105
      012403     104     000
 2761
 2762                                                    .EVEN
 2763
 2764 012406                                             ENDDU
                                                 .MCALL  M$POP,M$GNTAG,M$SVC,M$ENDERR
      012406                                    *M$POP   T$NS,T$NESTLEV,T$TEMP
                                                 .MCALL  M$GETS,M$DECR
                                                 .IF LT  T$NESTLEV
                                                 .ERROR  T$NESTLEV        ; MACRO T$NS UNDERFLOW
                                                 .MEXIT
                                                 .ENDC
      012406                                     M$GETS  T$NS,\T$NESTLEV,T$TEMP
             000016                              T$TEMP=T$NS1
      012406                                     M$DECR  T$NESTLEV
             000000                              T$NESTLEV-T$NESTLEV-1
                                                 .IF EQ F$DU-T$TEMP
      012406                                     M$GNTAG L,T$$DU
                                                 .MCALL  M$GEN
      012406                                     M$GEN   L,\T$$DU,SVCTAG
                                                 .IF LE  SVCTAG
                                                 .IIF EQ SVCTAG,.LIST
                                                 L10023:
                                                 .IIF EQ SVCTAG,.NLIST
                                                 .MEXIT
                                                 .ENDC
                                                 .LIST
      012406                                                                              L10023:
                                                         .NLIST
             010000                              S$LSYM=T$LSYM
      012406                                     M$SVC   C$DU
                                                 .MCALL  M$GNINS,M$TSTLAB
      012406                                     M$TSTLAB
                                                 .MCALL  M$TLABEL,M$INCR
                                                 .IIF LT T$TSTMAC, .MEXIT
                                                 .RADIX  10
                                                 M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                                 .RADIX  8
                                                 M$INCR  T$TSTSEQ
      012406                                     M$GNINS <TRAP   C$DU>
                                                 .IF LT SVCINS
                                                 TRAP    C$DU
                                                 .MEXIT
                                                 .ENDC
                                                 .IF EQ SVCINS
                                                 .LIST
                                                         TRAP    C$DU
```

E6


```
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
      012406  104453                                                                    TRAP    C$DU
                                                        .NLIST
                                        .ENDC
              000041                    I$DU=F$END
                                        .IFF
                                        M$ENDERR ENDDU,T$TEMP
                                        .ENDC
```


F6

```
                                .SBTTL  ADD UNIT SECTION

                                ;++
                                ; THE ADD-UNIT SECTION CONTAINS ANY CODE THE PROGRAMMER WISHES
                                ;  TO BE EXECUTED IN CONJUNCTION WITH THE ADDING OF A UNIT BACK
                                ;  TO THE TEST CYCLE.
                                ;--

      012410                            BGNAU
                                .MCALL  M$PUSH,M$INCR,M$GNGBL
               000040           I$AU=F$BGN
      012410                    M$PUSH  T$NS,T$NESTLEV,F$AU
                                .MCALL  M$INCR,M$SETS
      012410                    M$INCR  T$NESTLEV
               000001           T$NESTLEV=T$NESTLEV+1
      012410                    M$SETS  T$NS,\T$NESTLEV,F$AU
               000015           T$NS1=F$AU
               010024           T$$AU=T$TAGNUM
      012410                    M$INCR  T$TAGNUM
               010025           T$TAGNUM=T$TAGNUM+1
      012410                    M$GNGBL L$AU
                                .MCALL  M$GEN
                                .IF NB,L$AU
                                .IF NB,
                                M$GEN   L$AU,:,SVCGBL,
                                .ENDC
                                .IF B,
      012410                    M$GEN   L$AU,:,SVCGBL,< >
                                .IF LE  SVCGBL
                                .IIF EQ SVCGBL,.LIST
                                L$AU::
                                .IIF EQ SVCGBL,.NLIST
                                .MEXIT
                                .ENDC
                                .LIST
      012410                                                                  L$AU::
                                        .NLIST
                                .ENDC
                                .ENDC

                                .IF NE HELP
                                ;%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%
                                ;       INSERT ADD CODE HERE.  THIS CODE WILL BE EXECUTED AFTER
                                ;       AN "ADD" COMMAND.  THE PURPOSE OF THIS CODE IS TO DO ANY
                                ;       HOUSEKEEPING THAT MAY BE NECESSARY AFTER A UNIT HAS BEEN ADDED.
                                ;       THIS SECTION IS OPTIONAL.
                                ;%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%
                                .ENDC

      012410                            EXIT    AU
                                .MCALL  M$SVC,M$EXIT,M$EXSEG,M$EXTJ,M$GETTOP,M$CHECK,M$WORD,XFER
               000041           T$FLAG=F$END
      012410                    M$CHECK AU,T$TEMP,T$FLAG
                                .IF IDN <TST>,<AU>
                                T$TEMP=T$$TEST
                                T$FLAG=I$TST
                                .MEXIT
```

G6

G6


```
                                        .ENDC
                                        .IF IDN <SUB>,<AU>
                                        T$TEMP=T$$SUB
                                        T$FLAG=I$SUB
                                        .MEXIT
                                        .ENDC
                                        .IF IDN <SEG>,<AU>
                                        T$TEMP=T$$SEG
                                        T$FLAG=I$SEG
                                        .MEXIT
                                        .ENDC
                                        .IF IDN <INIT>,<AU>
                                        T$TEMP=T$$INIT
                                        T$FLAG=I$INIT
                                        .MEXIT
                                        .ENDC
                                        .IF IDN <CLN>,<AU>
                                        T$TEMP=T$$CLEAN
                                        T$FLAG=I$CLN
                                        .MEXIT
                                          NDC
                                        .IF IDN <SRV>,<AU>
                                        T$TEMP=T$$SRV
                                        T$FLAG=I$SRV
                                        .MEXIT
                                        .ENDC
                                        .IF IDN <MSG>,<AU>
                                        T$TEMP=T$$MSG
                                        T$FLAG=F$JMP
                                        .MEXIT
                                        .ENDC
                                        .IF IDN <RPT>,<AU>
                                        T$TEMP=T$$RPT
                                        T$FLAG=F$JMP
                                        .MEXIT
                                        .ENDC
                                        .IF IDN <DU>,<AU>
                                        T$TEMP=T$$DU
                                        T$FLAG=F$JMP
                                        .MEXIT
                                        .ENDC
                                        .IF IDN <AU>,<AU>
                010024                  T$TEMP=T$$AU
                000050                  T$FLAG-F$JMP
                                        .MEXIT
                                        .ENDC
                                        .IF EQ T$FLAG F$JMP
        012410                          M$WORD  J$JMP
                                        .MCALL  M$GNINS
                                        .IRP    N,<J$JMP>
                                        M$GNINS <.WORD  N>
                                        .ENDM
        012410                          M$GNINS <.WORD  J$JMP>
                                        .IF LT SVCINS
                                        .WORD   J$JMP
                                        .MEXIT
                                        .ENDC
```

H6

```
                                        .IF EQ SVCINS
                                        .LIST
                                                .WORD   J$JMP
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
        012410  000167                                                                  .WORD   J$JMP
                                                        .NLIST
                                        .ENDC
        012412                          M$EXTJ  \T$TEMP
                                        .MCALL  M$GNINS
        012412                          M$GNINS <.WORD  L10024-2-.>
                                        .IF LT SVCINS
                                        .WORD   L10024-2-.
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                .WORD   L10024-2-.
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
        012412  000000                                                                  .WORD   L10024-2-.
                                                        .NLIST
                                        .ENDC
                                        .MEXIT
                                        .ENDC
                                        .IF EQ  T$FLAG-F$BGN
                                        M$SVC   C$EXIT
                                        .IF IDN <SEG>,<AU>
                                        M$GETTOP T$SEK,T$SEGLEV,T$TEMP
                                        M$EXSEG \T$TEMP
                                        .IFF
                                        M$EXIT  \T$TEMP
                                        .ENDC
                                        .MEXIT
                                        .ENDC
                                        .IF IDN <HRD>,<AU>
                                        M$GETTOP        T$NS,T$NESTLEV,T$TEMP
                                        .IF EQ  F$HARD T$TEMP
                                        .IRP    N,<\T$$HARD>
                                        XFER    L'N
                                        .ENDM
                                        .MEXIT
                                        .ENDC
                                        .ENDC
                                        .IF IDN <SFT>,<AU>
                                        M$GETTOP        T$NS,T$NESTLEV,T$TEMP
                                        .IF EQ  F$SOFT-T$TEMP
                                        .IRP    N,<\T$$SOFT>
                                        XFER    L'N
                                        .ENDM
                                        .MEXIT
```

```
                                .ENDC
                                .ENDC
                                .ERROR  ;ILL. "EXIT AU" STMT.

                                .IF NE HELP
                                ;*******************************************************
                                ;       INSERT LOCAL STORAGE THAT IS USED ONLY
                                ;       DURING THE ADD-UNIT SECTION.
                                ;*******************************************************

                                ;*******************************************************
                                ;       INSERT MESSAGES THAT ARE USED ONLY
                                ;       DURING THE ADD-UNIT SECTION.
                                ;*******************************************************
                                .ENDC

                                        .EVEN

012414                                  ENDAU
                                .MCALL  M$POP,M$GNTAG,M$SVC,M$ENDERR
012414                          M$POP   T$NS,T$NESTLEV,T$TEMP
                                .MCALL  M$GETS,M$DECR
                                .IF LT  T$NESTLEV
                                .ERROR  T$NESTLEV       ; MACRO T$NS UNDERFLOW
                                .MEXIT
                                .ENDC
012414                          M$GETS  T$NS,\T$NESTLEV,T$TEMP
        000015                  T$TEMP=T$NS1
012414                          M$DECR  T$NESTLEV
        000000                  T$NESTLEV=T$NESTLEV-1
                                .IF EQ F$AU-T$TEMP
012414                          M$GNTAG L,T$$AU
                                .MCALL  M$GEN
012414                          M$GEN   L,\T$$AU,SVCTAG
                                .IF LE  SVCTAG
                                .IIF EQ SVCTAG,.LIST
                                L10024:
                                .IIF EQ SVCTAG,.NLIST
                                .MEXIT
                                .ENDC
                                .LIST
012414                                                                  L10024:
                                        .NLIST
        010000                  S$LSYM=T$LSYM
012414                          M$SVC   C$AU
                                .MCALL  M$GNINS,M$TSTLAB
012414                          M$TSTLAB
                                .MCALL  M$TLABEL,M$INCR
                                .IIF LT T$TSTMAC, .MEXIT
                                .RADIX  10
                                M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                .RADIX  8
                                M$INCR  T$TSTSEQ
012414                          M$GNINS <TRAP   C$AU>
                                .IF LT SVCINS
                                TRAP    C$AU
                                .MEXIT
```

```
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                TRAP    C$AU
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
     012414  104452                                                                      TRAP    C$AU
                                                        .NLIST
                                        .ENDC
             000041                     I$AU=F$END
                                        .IFF
                                        M$ENDERR ENDAU,T$TEMP
                                        .ENDC
2802 012416                                     ENDMOD
                                        .MCALL  M$POP,M$ENDERR
                                        .IF EQ  F$BGN-I$MOD
             000041                     I$MOD=F$END
                                        .IFF
                                        .ERROR  ; MISSING "BGNMOD"
                                        .MEXIT
                                        .ENDC
     012416                             M$POP   T$NS,T$NESTLEV,T$TEMP
                                        .MCALL  M$GETS,M$DECR
                                        .IF LT  T$NESTLEV
                                        .ERROR  T$NESTLEV       ; MACRO T$NS UNDERFLOW
                                        .MEXIT
                                        .ENDC
     012416                             M$GETS  T$NS,\T$NESTLEV,T$TEMP
             000000                     T$TEMP=T$NS0
     012416                             M$DECR  T$NESTLEV
             177777                     T$NESTLEV=T$NESTLEV 1
                                        .IF NE F$MOD T$TEMP
                                        M$ENDERR        ENDMOD,T$TEMP
                                        .ENDC
2803
```

```
                                .IIF NDF ONEFILE,.END
                                .TITLE HARDWARE TESTS
                                .NLIST
                                .NLIST  CND
        000000                  HELP=0          ; CONTROL LISTING OF HELP INFORMATION
                                                ; HELP=0   NO LIST
                                                ; HELP=1   LIST

        000001                  ONEFILE=1       ; CONTROL USE OF SOURCE FILES
                                                ; ONEFILE IS NOT DEFINED   ASSEMBLE EACH SOURCE FILE SEPARATELY
                                                ; ONEFILE=ANYTHING   ASSEMBLE ALL SOURCE FILES TOGETHER
                                .LIST
                                .SBTTL  TEST 1: REGISTER ADDRESSING TEST
                                .IF NDF ONEFILE

                                .IF NE HELP
                                ;*****************************************************************
                                ;       APPEND THE NAME OF THIS TEST TO THE .SBTTL, AS SHOWN IN THE
                                ;       FOLLOWING EXAMPLE.    .SBTTL  TEST 1:  NAME OF TEST
                                ;*****************************************************************
                                .ENDC

                                .IF EQ HELP
                                .NLIST
                                .ENDC

                                        .MCALL  SVC
                                        SVC                             ; INITIALIZE SUPERVISOR MACROS

                                ;*****************************************************************
                                ;       IF STRUCTURED MACROS ARE TO BE USED, ADD ".MCALL STRUCT" AND "STRUCT"
                                ;       TO INITIALIZE THE STRUCTURED MACROS.

                                SVCINS= 1       ; LIST INSTRUCTIONS, SHIFTED RIGHT
                                SVCTST= 1       ; LIST TEST TAGS, SHIFTED RIGHT
                                SVCSUB= 1       ; LIST SUBTEST TAGS, SHIFTED RIGHT
                                SVCGBL= 1       ; LIST GLOBAL TAGS, SHIFTED RIGHT
                                SVCTAG= 1       ; LIST OTHER TAGS, SHIFTED RIGHT

                                ;       CHANGE THE VALUES OF THE SVC... SYMBOLS TO BE ZERO IF YOU WISH
                                ;       TO ALIGN THE MACRO CALLS WITH THEIR EXPANSIONS.  CHANGE THE
                                ;       SYMBOLS TO BE MINUS-ONE TO NOT LIST THE EXPANSIONS.  YOU MAY
                                ;       CHANGE THE SYMBOLS AT ANY POINT IN YOUR PROGRAM.
                                ;*****************************************************************
                                .IF EQ HELP
                                .LIST
                                .ENDC
                                .ENDC

 012416                                 BGNMOD
                                .MCALL  M$GNGBL,M$PUSH
                                .IF NE  F$END I$MOD
                                .ERROR  ;"BGNMOD" IN MOD
                                .MEXIT
                                .IFF
        000040                  I$MOD=F$BGN
                                .ENDC
```

7880 8 3675 6

```
                                .IF NB
                                M$GNGBL
                                .ENDC
     012416                     M$PUSH  T$NS,T$NESTLEV,F$MOD
                                .MCALL  M$INCR,M$SETS
     012416                     M$INCR  T$NESTLEV
             000000             T$NESTLEV=T$NESTLEV+1
     012416                     M$SETS  T$NS,\T$NESTLEV,F$MOD
             000000             T$NSO=F$MOD

                                ;****************************************************************
                                ;                TEST 1 -IEX11
                                ;
                                ;VERIFY THAT ADDRESSING THE 8 BUS DEVICE REGISTERS DOES NOT CAUSE
                                ;A NON-EXISTENT MEMORY TRAP.
                                ;
                                ;AN ERROR IN THIS TEST COULD MEAN THAT THE DEVICE IS INCORRECTLY
                                ;CONFIGURED OR THAT THE ADDRESS IS WRONG.
                                ;
                                ;COMMUNICATION BETWEEN THE MAIN CPU AND THE IEX11 IS ACCOMPLISHED
                                ;THROUGH A SET OF SIXTEEN REGISTERS.THE SIXTEEN REGISTERS ARE
                                ;ASSIGNED ADDRESSES IN THE I/O PAGE.
                                ;****************************************************************


                                .IF NE HELP
                                ;%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%
                                ;     CHANGE THE PHRASE "TEST TO ..." TO BE A FUNCTIONAL
                                ;     DESCRIPTION OF THE HARDWARE TEST WHICH FOLLOWS.
                                ;%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%
                                .ENDC

                                .IF NE HELP
                                ;%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%
                                ;     INSERT PROGRAM EQUATES THAT ARE USED ONLY IN THIS TEST.
                                ;%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%
                                .ENDC

     012416                             BGNTST
                                .MCALL  M$INCR,M$GNTEST,M$PUSH,M$INCR
                                .IF NE  F$END-I$SUB
                                .ERROR  ;"BGNTST" IN SUB
                                .MEXIT
                                .ENDC
                                .IF NE  F$END I$SEG
                                .ERROR  ;"BGNTST" IN SEG
                                .MEXIT
                                .ENDC
                                .IF NE  F$END I$TST
                                .ERROR  ;"BGNTST" IN TST
                                .MEXIT
                                .IFF
             000040             I$TST=F$BGN
                                .ENDC
                                .IF B
     012416                     M$INCR  T$TESTNUM
             000001             T$TESTNUM T$TESTNUM+1
```

M6

```
                                        .IFF
                                        T$TESTNUM=
                                        .ENDC
            000000                      T$SUBNUM=0
            000012                      .RADIX  10
     012416                             M$GNTEST        \T$TESTNUM
                                        .MCALL  M$GEN
     012416                             M$GEN   T,1:,SVCTST
                                        .IF LE  SVCTST
                                        .IIF EQ SVCTST,.LIST
                                        T1::
                                        .IIF EQ SVCTST,.NLIST
                                        .MEXIT
                                        .ENDC
                                        .LIST
     012416                                                                         T1::
                                                .NLIST
            000010                      .RADIX  8
     012416                             M$PUSH  T$NS,T$NESTLEV,F$TEST
                                        .MCALL  M$INCR,M$SETS
     012416                             M$INCR  T$NESTLEV
            000001                      T$NESTLEV=T$NESTLEV+1
     012416                             M$SETS  T$NS,\T$NESTLEV,F$TEST
            000001                      T$NS1=F$TEST
            010025                      T$$TEST=T$TAGNUM
     012416                             M$INCR T$TAGNUM
            010026                      T$TAGNUM=T$TAGNUM+1
            000001                      T$TSTSEQ=1
     012416 005737  002324                      TST     PNTF            ;IS THE PNT FLAG SET
     012422 001410                              BEQ     7$              ;IF YES, PRINT THE TEST HEADER
     012424                                     PRINTF  #TSHD1
                                        .MCALL  M$PRINT
                                        .IF B   #TSHD1
                                        .ERROR  ;MISSING FORMAT
                                        .MEXIT
                                        .ENDC
                                        .IF B   <>
     012424                             M$PRINT C$PNTF,#TSHD1
                                        .MCALL  M$COUNT,M$PUT,M$GNINS,M$SVC
            000001                      T$ARGCNT=1
     012424                             M$COUNT T$ARGCNT,<>,<>,<>,<>,<>,<>,<>,<>
                                        .IF NB <>
                                        M$COUNT T$ARGCNT,<>,<>,<>,<>,<>,<>,<>,<>
                                        .ENDC
                                        .IF NB <>
                                        T$ARGCNT=T$ARGCNT+1
                                        .ENDC
                                        .IRP    N,<\T$ARGCNT>
                                        M$PUT   #N,#TSHD1,<>,<>,<>,<>,<>,<>,<>,<
                                        .ENDM
     012424                             M$PUT   #1,#TSHD1,<>,<>,<>,<>,<>,<>,<>,<>
                                        .MCALL  M$PUT1
                                        .IF NB  <#TSHD1>
     012424                             M$PUT   <#TSHD1>,<>,<>,<>,<>,<>,<>,<>,<>
                                        .MCALL  M$PUT1
                                        .IF NB  <>
                                        M$PUT   <>,<>,<>,<>,<>,<>,<>,<>,<>
```

N6

```
                                        .ENDC
                                        .IF NB  <#TSHD1>
012424                                  M$PUT1  #TSHD1
                                        .MCALL  M$GNINS
                                        .IF B
012424                                  M$GNINS <MOV    #TSHD1,-(SP)>
                                        .IF LT SVCINS
                                        MOV     #TSHD1,-(SP)
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                MOV     #TSHD1,-(SP)
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
012424  012746  012630                                                          MOV     #TSHD1, (SP)
                                                        .NLIST
                                        .ENDC
                                        .IFF
                                        .IF DIF B,<#TSHD1>
                                        .ERROR  ;ILL. ARG. "#TSHD1" ONLY "B" IS ALLOWED.
                                        .MEXIT
                                        .ENDC
                                        M$GNINS <CLR    -(SP)>
                                        M$GNINS <BISB   ,(SP)>
                                        .ENDC
                                        .ENDC
                                        .ENDC
                                        .IF NB  <#1>
012430                                  M$PUT1  #1
                                        .MCALL  M$GNINS
                                        .IF B
012430                                  M$GNINS <MOV    #1,-(SP)>
                                        .IF LT SVCINS
                                        MOV     #1,-(SP)
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                MOV     #1,-(SP)
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
012430  012746  000001                                                          MOV     #1, (SP)
                                                        .NLIST
                                        .ENDC
                                        .IFF
                                        .IF DIF B,<#1>
                                        .ERROR  ;ILL. ARG. "#1" ONLY "B" IS ALLOWED.
                                        .MEXIT
                                        .ENDC
                                        M$GNINS <CLR    -(SP)>
```

```
                                M$GNINS <BISB   ,(SP)>
                                .ENDC
                                .ENDC
012434                          M$GNINS <MOV    SP,R0>
                                .IF LT SVCINS
                                MOV     SP,R0
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        MOV     SP,R0
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
012434  010600                                                          MOV     SP,R0
                                                .NLIST
                                .ENDC
012436                          M$SVC   C$PNTF
                                .MCALL  M$GNINS,M$TSTLAB
012436                          M$TSTLAB
                                .MCALL  M$TLABEL,M$INCR
                                .IIF LT T$TSTMAC, .MEXIT
                                .RADIX  10
                                M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                .RADIX  8
                                M$INCR  T$TSTSEQ
012436                          M$GNINS <TRAP   C$PNTF>
                                .IF LT SVCINS
                                TRAP    C$PNTF
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        TRAP    C$PNTF
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
012436  104417                                                          TRAP    C$PNTF
                                                .NLIST
                                .ENDC
                                .IRP    N,<\T$ARGCNT*2+2>
                                M$GNINS <ADD    #N,SP>
                                .ENDM
012440                          M$GNINS <ADD    #4,SP>
                                .IF LT SVCINS
                                ADD     #4,SP
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        ADD     #4,SP
                                                .NLIST
                                .MEXIT
```

C7


```
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
     012440  062706  000004                                                          ADD     #4,SP
                                                     .NLIST
                                        .ENDC
                                        .MEXIT
                                        .ENDC
                                        .IF B   <>
                                        M$PRINT C$PNTF,#TSHD1,<>
                                        .MEXIT
                                        .ENDC
                                        .IF B   <>
                                        M$PRINT C$PNTF,#TSHD1,<>,<>
                                        .MEXIT
                                        .ENDC
                                        .IF B   <>
                                        M$PRINT C$PNTF,#TSHD1,<>,<>,<>
                                        .MEXIT
                                        .ENDC
                                        .IF B   <>
                                        M$PRINT C$PNTF,#TSHD1,<>,<>,<>,<>
                                        .MEXIT
                                        .ENDC
                                        .IF B   <>
                                        M$PRINT C$PNTF,#TSHD1,<>,<>,<>,<>,<>
                                        .MEXIT
                                        .ENDC
                                        .IF B   <>
                                        M$PRINT C$PNTF,#TSHD1,<>,<>,<>,<>,<>,<>
                                        .MEXIT
                                        .ENDC
                                        .IF B   <>
                                        M$PRINT C$PNTF,#TSHD1,<>,<>,<>,<>,<>,<>,<>
                                        .MEXIT
                                        .ENDC
                                        M$PRINT C$PNTF,#TSHD1,<>,<>,<>,<>,<>,<>,<>,<>

                                        .IF NE HELP
                                        ;*******************************************************************
                                        ;     INSERT THE CODING FOR THIS HARDWARE TEST.
                                        ;*******************************************************************
                                        ;
                                        .ENDC
     012444  005037  002322             7$:     CLR     ITRCNT                  ;CLEAR ITERATION COUNTER
     012450                                     SETVEC  #4,#LOCATE,#PRI07       ;
                                        .MCALL  M$PUT,M$SVC,M$GNINS
     012450                             M$PUT   #3,#4,#LOCATE,#PRI07
                                        .MCALL  M$PUT1
                                        .IF NB  <#4>
     012450                             M$PUT   <#4>,<#LOCATE>,<#PRI07>,<>,<>,<>,<>,<>,<>
                                        .MCALL  M$PUT1
                                        .IF NB  <#LOCATE>
     012450                             M$PUT   <#LOCATE>,<#PRI07>,<>,<>,<>,<>,<>,<>,<>
                                        .MCALL  M$PUT1
                                        .IF NB  <#PRI07>
     012450                             M$PUT   <#PRI07>,<>,<>,<>,<>,<>,<>,<>,<>
```

D7

```
                                        .MCALL  M$PUT1
                                        .IF NB  <>
                                        M$PUT   <>,<>,<>,<>,<>,<>,<>,<>,<>
                                        .ENDC
                                        .IF NB  <#PRIO7>
      012450                            M$PUT1  #PRIO7
                                        .MCALL  M$GNINS
                                        .IF B
      012450                            M$GNINS <MOV    #PRIO7,-(SP)>
                                        .IF LT SVCINS
                                        MOV     #PRIO7,-(SP)
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                MOV     #PRIO7,-(SP)
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
      012450  012746  000340                                                    MOV     #PRIO7,-(SP)
                                                        .NLIST
                                        .ENDC
                                        .IFF
                                        .IF DIF B,<#PRIO7>
                                        .ERROR  ;ILL. ARG. "#PRIO7" ONLY "B" IS ALLOWED.
                                        .MEXIT
                                        .ENDC
                                        M$GNINS <CLR    -(SP)>
                                        M$GNINS <BISB   ,(SP)>
                                        .ENDC
                                        .ENDC
                                        .ENDC
                                        .IF NB  <#LOCATE>
      012454                            M$PUT1  #LOCATE
                                        .MCALL  M$GNINS
                                        .IF B
      012454                            M$GNINS <MOV    #LOCATE,-(SP)>
                                        .IF LT SVCINS
                                        MOV     #LOCATE,-(SP)
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                MOV     #LOCATE,-(SP)
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
      012454  012746  012624                                                    MOV     #LOCATE,-(SP)
                                                        .NLIST
                                        .ENDC
                                        .IFF
                                        .IF DIF B,<#LOCATE>
                                        .ERROR  ;ILL. ARG. "#LOCATE" ONLY "B" IS ALLOWED.
```

78 8018 3675 6

E7


```
                                        .MEXIT
                                        .ENDC
                                        M$GNINS <CLR     (SP)>
                                        M$GNINS <BISB    ,(SP)>
                                        .ENDC
                                        .ENDC
                                        .ENDC
                                        .IF NB  <#4>
        012460                          M$PUT1  #4
                                        .MCALL  M$GNINS
                                        .IF B
        012460                          M$GNINS <MOV     #4,-(SP)>
                                        .IF LT SVCINS
                                        MOV     #4,-(SP)
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                MOV      #4,-(SP)
                                                         .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
        012460  012746  000004                                                  MOV     #4, (SP)
                                                         .NLIST
                                        .ENDC
                                        .IFF
                                        .IF DIF B,<#4>
                                        .ERROR  ;ILL. ARG. "#4" ONLY "B" IS ALLOWED.
                                        .MEXIT
                                        .ENDC
                                        M$GNINS <CLR     -(SP)>
                                        M$GNINS <BISB    ,(SP)>
                                        .ENDC
                                        .ENDC
                                        .ENDC
                                        .IF NB  <#3>
        012464                          M$PUT1  #3
                                        .MCALL  M$GNINS
                                        .IF B
        012464                          M$GNINS <MOV     #3,-(SP)>
                                        .IF LT SVCINS
                                        MOV     #3,-(SP)
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                MOV      #3,-(SP)
                                                         .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
        012464  012746  000003                                                  MOV     #3,-(SP)
                                                         .NLIST
                                        .ENDC
```

78 8018 3675-6

F7

```
                                        .IFF
                                        .IF DIF B,<Ø3>
                                        .ERROR  ;ILL. ARG. "Ø3" ONLY "B" IS ALLOWED.
                                        .MEXIT
                                        .ENDC
                                        M$GNINS <CLR     -(SP)>
                                        M$GNINS <BISB    ,(SP)>
                                        .ENDC
                                        .ENDC
     012470                             M$SVC   C$SVEC
                                        .MCALL  M$GNINS,M$TSTLAB
     012470                             M$TSTLAB
                                        .MCALL  M$TLABEL,M$INCR
                                        .IIF LT T$TSTMAC, .MEXIT
                                        .RADIX  10
                                        M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                        .RADIX  8
                                        M$INCR  T$TSTSEQ
     012470                             M$GNINS <TRAP    C$SVEC>
                                        .IF LT SVCINS
                                        TRAP    C$SVEC
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                TRAP    C$SVEC
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
     012470  104437                                                             TRAP    C$SVEC
                                                        .NLIST
                                        .ENDC
     012472                             M$GNINS <ADD     #10,SP>
                                        .IF LT SVCINS
                                        ADD     #10,SP
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                ADD     #10,SP
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
     012472  062706  000010                                                     ADD     #10,SP
                                                        .NLIST
                                        .ENDC
     012476  013701  002256             ITRAC1: MOV     ISRX,R1                 ;GET REGISTER ADDRESS
     012502  162701  000002                     SUB     #2,R1                   ;
     012506  012702  000010                     MOV     #8.,R2                  ;SET COUNTER FOR 8 REGISTER ADDRESSES
     012512  005003                             CLR     R3                      ;
     012514  062701  000002             10$:    ADD     #2,R1                   ;GET NEXT REGISTER ADDRESS
     012520                                     BGNSEG
                                        .MCALL  M$PUSH,M$INCR,M$SVC
```

G7

```
        000040                  I$SEG=F$BGN
 012520                         M$PUSH   T$NS,T$NESTLEV,F$SEG
                                .MCALL   M$INCR,M$SETS
 012520                         M$INCR   T$NESTLEV
        000002                  T$NESTLEV=T$NESTLEV+1
 012520                         M$SETS   T$NS,\T$NESTLEV,F$SEG
        000003                  T$NS2=F$SEG
        010000                  T$$SEG=S$LSYM
 012520                         M$PUSH   T$SEK,T$SEGLEV,T$$SEG
                                .MCALL   M$INCR,M$SETS
 012520                         M$INCR   T$SEGLEV
        000000                  T$SEGLEV=T$SEGLEV+1
 012520                         M$SETS   T$SEK,\T$SEGLEV,T$$SEG
        010000                  T$SEKC=T$$SEG
 012520                         M$I'ICR  S$LSYM
        010001                  S$LSYM=S$LSYM+1
 012520                         M$SVC    C$BSEG
                                .MCALL   M$GNINS,M$TSTLAB
 012520                         M$TSTLAB
                                .MCALL   M$TLABEL,M$INCR
                                .IIF LT T$TSTMAC, .MEXIT
                                .RADIX   10
                                M$TLABEL         \T$TESTNUN,\T$TSTSEQ
                                .RADIX   8
                                M$INCR   T$TSTSEQ
 012520                         M$GN'NS <TRAP    C$BSEG>
                                .IF LT SVCINS
                                TRAP     C$BSEG
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                         TRAP     C$BSEG
                                                  .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
 012520 104404                                                                        TRAP     C$BSEG
                                                  .NLIST
                                .ENDC
 012522 005004                           CLR R4                       ;
 012524 005711                           TST      (R1)                ;TEST REGISTER ADDRESS
 012526 005704                           TST      R4                  ;WAS THERE A TRAP
 012530 001405                           BEQ      20$                 ;BRANCH IF NO
 012532 005203                           INC      R3                  ;
 012534                                  ERRHRD   101,E101,ERR101     ;
                                .MCALL   M$ERRINS
 012534                         M$ERRINS          101,E101,ERR101,C$ERHRD
                                .MCALL   M$GNINS,M$WORD,M$TSTLAB
 012534                         M$SVC    C$ERHRD
                                .MCALL   M$GNINS,M$TSTLAB
 012534                         M$TSTLAB
                                .MCALL   M$TLABEL,M$INCR
                                .IIF LT T$TSTMAC, .MEXIT
                                .RADIX   10
                                M$TLABEL         \T$TESTNUN,\T$TSTSEQ
```

H7

```
                          .RADIX  8
                          M$INCR  T$TSTSEQ
012534                    M$GNINS <TRAP   C$ERHRD>
                          .IF LT SVCINS
                          TRAP    C$ERHRD
                          .MEXIT
                          .ENDC
                          .IF EQ SVCINS
                          .LIST
                                  TRAP    C$ERHRD
                                          .NLIST
                          .MEXIT
                          .ENDC
                          .IF GT SVCINS
                          .LIST
012534  104456                                                        TRAP    C$ERHRD
                                          .NLIST
                          .ENDC
        000012            .RADIX  10
                          .IF NB  101
        000145            T$ERRNUM=101
                          .IFF
                          .ERROR  ;MISSING ERROR-NR
                          .ENDC
012536                    M$WORD  \T$ERRNUM
                          .MCALL  M$GNINS
                          .IRP    N,<101>
                          M$GNINS <.WORD  N>
                          .ENDM
012536                    M$GNINS <.WORD  101>
                          .IF LT SVCINS
                          .WORD   101
                          .MEXIT
                          .ENDC
                          .IF EQ SVCINS
                          .LIST
                                  .WORD   101
                                          .NLIST
                          .MEXIT
                          .ENDC
                          .IF GT SVCINS
                          .LIST
012536  000145                                                        .WORD   101
                                          .NLIST
                          .ENDC
        000010            .RADIX  8
                          .IF NB E101
012540                    M$WORD  E101
                          .MCALL  M$GNINS
                          .IRP    N,<E101>
                          M$GNINS <.WORD  N>
                          .ENDM
012540                    M$GNINS <.WORD  E101>
                          .IF LT SVCINS
                          .WORD   E101
                          .MEXIT
                          .ENDC
```

```
                                .IF EQ SVCINS
                                .LIST
                                        .WORD   E101
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
     012540  005002                                                                     .WORD   E101
                                                .NLIST
                                .ENDC
                                .IFF
                                M$WORD  0
                                .ENDC
                                .IF NB ERR101
     012542                     M$WORD  ERR101
                                .MCALL  M$GNINS
                                .IRP    N,<ERR101>
                                M$GNINS <.WORD  N>
                                .ENDM
     012542                     M$GNINS <.WORD  ERR101>
                                .IF LT SVCINS
                                .WORD   ERR101
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        .WORD   ERR101
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
     012542  003444                                                                     .WORD   ERR101
                                                .NLIST
                                .ENDC
                                .IFF
                                M$WORD  0
                                .ENDC
2909 012544                     20$:    ENDSEG
                                .MCALL  M$POP,M$GNLS,M$SVC,M$ENDERR
     012544                     M$POP   T$NS,T$NESTLEV,T$TEMP
                                .MCALL  M$GETS,M$DECR
                                .IF LT  T$NESTLEV
                                .ERROR  T$NESTLEV       ; MACRO T$NS UNDERFLOW
                                .MEXIT
                                .ENDC
     012544                     M$GETS  T$NS,\T$NESTLEV,T$TEMP
             000003             T$TEMP=T$NS2
     012544                     M$DECR  T$NESTLEV
             000001             T$NESTLEV=T$NESTLEV 1
                                .IF EQ F$SEG-T$TEMP
     012544                     M$POP   T$SEK,T$SEGLEV,T$$SEG
                                .MCALL  M$GETS,M$DECR
                                .IF LT  T$SEGLEV
                                .ERROR  T$SEGLEV        ; MACRO T$SEK UNDERFLOW
                                .MEXIT
```

```
                                .ENDC
 012544                         M$GETS  T$SEK,\T$SEGLEV,T$$SEG
         010000                 T$$SEG=T$SEKO
 012544                         M$DECR  T$SEGLEV
         177777                 T$SEGLEV=T$SEGLEV-1
 012544                         M$GNLS  T$$SEG
                                .MCALL  M$GEN
                                .IF NB T$$SEG
 012544                         M$GEN   \T$$SEG,$,SVCTAG
                                .IF LE  SVCTAG
                                .IIF EQ SVCTAG,.LIST
                                10000$:
                                .IIF EQ SVCTAG,.NLIST
                                .MEXIT
                                .ENDC
                                .LIST
 012544                                                                  10000$:
                                        .NLIST
                                .IFF
                                M$GEN   \S$LSYM,$,SVCTAG
                                .ENDC
 012544                         M$SVC   C$ESEG
                                .MCALL  M$GNINS,M$TSTLAB
 012544                         M$TSTLAB
                                .MCALL  M$TLABEL,M$INCR
                                .IIF LT T$TSTMAC, .MEXIT
                                .RADIX  10
                                M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                .RADIX  8
                                M$INCR  T$TSTSEQ
 012544                         M$GNINS <TRAP   C$ESEG>
                                .IF LT SVCINS
                                TRAP    C$ESEG
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        TRAP    C$ESEG
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
 012544  104405                                                               TRAP    C$ESEG
                                                .NLIST
                                .ENDC
                                .IF EQ T$SEGLEV+1
         000041                 I$SEG=F$END
                                .ENDC
                                .IFF
                                M$ENDERR        ENDSEG,T$TEMP
                                .ENDC
 012546  005302                         DEC     R2                      ;ALL REGISTER ADDRESSES TESTED ?
 012550  001361                         BNE     10$                     ;BRANCH IF YES
 012552  005703                         TST     R3                      ;
 012554  001404                         BEQ     30$                     ;
 012556                                 DODU    LOGDEV                  ;
```

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```
                                .MCALL  M$LDRO,M$SVC
     012556                     M$LDRO  LOGDEV,DODU
                                .MCALL  M$GNINS
                                .IF NB LOGDEV
                                .IF DIF RO,LOGDEV
     012556                     M$GNINS <MOV    LOGDEV,RO>
                                .IF LT SVCINS
                                MOV     LOGDEV,RO
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        MOV     LOGDEV,RO
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
     012556  013700  002372                                                         MOV     LOGDEV,RO
                                                .NLIST
                                .ENDC
                                .ENDC
                                .IFF
                                .ERROR  ;MISSING ARG. ON "DODU"
                                .ENDC
     012562                     M$SVC   C$DODU
                                .MCALL  M$GNINS,M$TSTLAB
     012562                     M$TSTLAB
                                .MCALL  M$TLABEL,M$INCR
                                .IIF LT T$TSTMAC, .MEXIT
                                .RADIX  10
                                M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                .RADIX  8
                                M$INCR  T$TSTSEQ
     012562                     M$GNINS <TRAP   C$DODU>
                                .IF LT SVCINS
                                TRAP    C$DODU
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        TRAP    C$DODU
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
     012562  104451                                                                 TRAP    C$DODU
                                                .NLIST
                                .ENDC
2915 012564                             DOCLN                   ;
                                .MCALL  M$SVC
     012564                     M$SVC   C$DCLN
                                .MCALL  M$GNINS,M$TSTLAB
     012564                     M$TSTLAB
                                .MCALL  M$TLABEL,M$INCR
                                .IIF LT T$TSTMAC, .MEXIT
```

```
                                        .RADIX  10
                                        M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                        .RADIX  8
                                        M$INCR  T$TSTSEQ
     012564                             M$GNINS <TRAP   C$DCLN>
                                        .IF LT SVCINS
                                        TRAP    C$DCLN
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                TRAP    C$DCLN
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
     012564  104444                                                                             TRAP    C$DCLN
                                                        .NLIST
                                        .ENDC
     012566  005737  002234             30$:    TST     QVP                     ;IS QUICK VERIFY PASS SELECTED ?
     012572  001007                             BNE     EXQV1                   ;IF YES EXIT TEST
     012574  005237  002322                     INC     ITRCNT                  ;ITERATION COUNTER +1
     012600  023737  002320  002322             CMP     ITRDEF,ITRCNT           ;DEFAULT ITERATION EXECUTED
     012606  001401                             BEQ     EXQV1                   ;IF YES EXIT TEST
     012610  000732                             BR      ITRAC1                  ;IF NO TEST ITERATION
     012612                             EXQV1:  CLRVEC  #4                      ;
                                        .MCALL  M$LDRO,M$SVC
     012612                             M$LDRO  #4,CLRVEC
                                        .MCALL  M$GNINS
                                        .IF NB #4
                                        .IF DIF RO,#4
     012612                             M$GNINS <MOV    #4,RO>
                                        .IF LT SVCINS
                                        MOV     #4,RO
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                MOV     #4,RO
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
     012612  012700  000004                                                                     MOV     #4,RO
                                                        .NLIST
                                        .ENDC
                                        .ENDC
                                        .IFF
                                        .ERROR  ;MISSING ARG. ON "CLRVEC"
                                        .ENDC
     012616                             M$SVC   C$CVEC
                                        .MCALL  M$GNINS,M$TSTLAB
     012616                             M$TSTLAB
                                        .MCALL  M$TLABEL,M$INCR
                                        .IIF LT T$TSTMAC, .MEXIT
```

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```
                                  .RADIX  10
                                  M$TLABEL         \T$TESTNUN,\T$TSTSEQ
                                  .RADIX  8
                                  M$INCR  T$TSTSEQ
      012616                      M$GNINS <TRAP    C$CVEC>
                                  .IF LT SVCINS
                                  TRAP    C$CVEC
                                  .MEXIT
                                  .ENDC
                                  .IF EQ SVCINS
                                  .LIST
                                          TRAP     C$CVEC
                                                   .NLIST
                                  .MEXIT
                                  .ENDC
                                  .IF GT SVCINS
                                  .LIST
      012616  104436                                                          TRAP    C$CVEC
                                                   .NLIST
                                  .ENDC
 2923 012620                              EXIT TST
                                  .MCALL  M$SVC,M$EXIT,M$EXSEG,M$EXTJ,M$GETTOP,M$CHECK,M$WORD,XFER
              000041              T$FLAG=F$END
      012620                      M$CHECK TST,T$TEMP,T$FLAG
                                  .IF IDN <TST>,<TST>
              010025              T$TEMP=T$$TEST
              000040              T$FLAG=I$TST
                                  .MEXIT
                                  .ENDC
                                  .IF IDN <SUB>,<TST>
                                  T$TEMP=T$$SUB
                                  T$FLAG=I$SUB
                                  .MEXIT
                                  .ENDC
                                  .IF IDN <SEG>,<TST>
                                  T$TEMP=T$$SEG
                                  T$FLAG=I$SEG
                                  .MEXIT
                                  .ENDC
                                  .IF IDN <INIT>,<TST>
                                  T$TEMP=T$$INIT
                                  T$FLAG=I$INIT
                                  .MEXIT
                                  .ENDC
                                  .IF IDN <CLN>,<TST>
                                  T$TEMP=T$$CLEAN
                                  T$FLAG=I$CLN
                                  .MEXIT
                                  .ENDC
                                  .IF IDN <SRV>,<TST>
                                  T$TEMP=T$$SRV
                                  T$FLAG=I$SRV
                                  .MEXIT
                                  .ENDC
                                  .IF IDN <MSG>,<TST>
                                  T$TEMP=T$$MSG
                                  T$FLAG=F$JMP
```

```
                                .MEXIT
                                .ENDC
                                .IF IDN <RPT>,<TST>
                                T$TEMP=T$$RPT
                                T$FLAG=F$JMP
                                .MEXIT
                                .ENDC
                                .IF IDN <DU>,<TST>
                                T$TEMP=T$$DU
                                T$FLAG=F$JMP
                                .MEXIT
                                .ENDC
                                .IF IDN <AU>,<TST>
                                T$TEMP=T$$AU
                                T$FLAG=F$JMP
                                .MEXIT
                                .ENDC
                                .IF EQ T$FLAG-F$JMP
                                M$WORD  J$JMP
                                M$EXTJ  \T$TEMP
                                .MEXIT
                                .ENDC
                                .IF EQ  T$FLAG-F$BGN
     012620                     M$SVC   C$EXIT
                                .MCALL  M$GNINS,M$TSTLAB
     012620                     M$TSTLAB
                                .MCALL  M$TLABEL,M$INCR
                                .IIF LT T$TSTMAC, .MEXIT
                                .RADIX  10
                                M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                .RADIX  8
                                M$INCR  T$TSTSEQ
     012620                     M$GNINS <TRAP   C$EXIT>
                                .IF LT SVCINS
                                TRAP    C$EXIT
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        TRAP    C$EXIT
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
     012620  104432                                                       TRAP    C$EXIT
                                                .NLIST
                                .ENDC
                                .IF IDN <SEG>,<TST>
                                M$GETTOP T$SEK,T$SEGLEV,T$TEMP
                                M$EXSEG \T$TEMP
                                .IFF
     012622                     M$EXIT  \T$TEMP
                                .MCALL  M$GNINS
     012622                     M$GNINS <.WORD  L10025-.>
                                .IF LT SVCINS
                                .WORD   L10025-.
```

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```
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                .WORD   L10025-.
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
      012622  000046                                                                              .WORD   L10025-.
                                                        .NLIST
                                        .ENDC
                                        .ENDC
                                        .MEXIT
                                        .ENDC
                                        .IF IDN <HRD>,<TST>
                                        M$GETTOP        T$NS,T$NESTLEV,T$TEMP
                                        .IF EQ  F$HARD-T$TEMP
                                        .IRP    N,<\T$$HARD>
                                        XFER    L'N
                                        .ENDM
                                        .MEXIT
                                        .ENDC
                                        .ENDC
                                        .IF IDN <SFT>,<TST>
                                        M$GETTOP        T$NS,T$NESTLEV,T$TEMP
                                        .IF EQ  F$SOFT-T$TEMP
                                        .IRP    N,<\T$$SOFT>
                                        XFER    L'N
                                        .ENDM
                                        .MEXIT
                                        .ENDC
                                        .ENDC
                                        .ERROR  ;ILL. "EXIT TST" STMT.
 2924 012624                                    BGNSRV  LOCATE                  ;SERVICE ROUTINE LOCATE
                                        .MCALL  M$PUSH,M$INCR,M$GNGBL
              000040                    I$SRV=F$BGN
      012624                            M$PUSH  T$NS,T$NESTLEV,F$SRV
                                        .MCALL  M$INCR,M$SETS
      012624                            M$INCR  T$NESTLEV
              000002                    T$NESTLEV=T$NESTLEV+1
      012624                            M$SETS  T$NS,\T$NESTLEV,F$SRV
              000010                    T$NS2=F$SRV
              010026                    T$$SRV=T$TAGNUM
      012624                            M$INCR T$TAGNUM
              010027                    T$TAGNUM=T$TAGNUM+1
      012624                            M$GNGBL LOCATE
                                        .MCALL  M$GEN
                                        .IF NB,LOCATE
                                        .IF NB,
                                        M$GEN   LOCATE,:,SVCGBL,
                                        .ENDC
                                        .IF B,
      012624                            M$GEN   LOCATE,:,SVCGBL,< >
                                        .IF LE  SVCGBL
                                        .IIF EQ SVCGBL,.LIST
```

C8

```
                                LOCATE::
                                .IIF EQ SVCGBL,.NLIST
                                .MEXIT
                                .ENDC
                                .LIST
      012624                                                                  LOCATE::
                                        .NLIST
                                .ENDC
                                .ENDC
 2925 012624  005204                    INC     R4                    ;
 2926 012626                            ENDSRV
                                .MCALL  M$POP,M$GNTAG,M$GNINS,M$ENDERR
      012626                    M$POP   T$NS,T$NESTLEV,T$TEMP
                                .MCALL  M$GETS,M$DECR
                                .IF LT  T$NESTLEV
                                .ERROR  T$NESTLEV         ; MACRO T$NS UNDERFLOW
                                .MEXIT
                                .ENDC
      012626                    M$GETS  T$NS,\T$NESTLEV,T$TEMP
              000010            T$TEMP=T$NS2
      012626                    M$DECR  T$NESTLEV
              000001            T$NESTLEV=T$NESTLEV-1
                                .IF EQ F$SRV-T$TEMP
      012626                    M$GNTAG L,T$$SRV
                                .MCALL  M$GEN
      012626                    M$GEN   L,\T$$SRV,SVCTAG
                                .IF LE  SVCTAG
                                .IIF EQ SVCTAG,.LIST
                                L10026:
                                .IIF EQ SVCTAG,.NLIST
                                .MEXIT
                                .ENDC
                                .LIST
      012626                                                                  L10026:
                                        .NLIST
              010000            S$LSYM=T$LSYM
                                .IF NB
                                M$GNINS <BICB   #340,2(SP)>
                                M$GNINS <BISB   ,2(SP)>
                                .ENDC
      012626                    M$GNINS RTI
                                .IF LT SVCINS
                                RTI
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        RTI
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
      012626  000002                                                                RTI
                                                .NLIST
                                .ENDC
              000041            T$SRV=F$END
```

```
                                        .IFF
                                        M$ENDERR        ENDSRV,T$TEMP
                                        .ENDC

                                        .IF NE HELP
                                        ;*************************************************************
                                        ;       INSERT LOCAL STORAGE THAT IS USED ONLY
                                        ;       DURING THIS TEST.
                                        ;*************************************************************

                                        ;*************************************************************
                                        ;       INSERT MESSAGES THAT ARE USED ONLY
                                        ;       DURING THIS TEST.
                                        ;*************************************************************
                                        .ENDC
                                                .NLIST  BEX
012630     045     123     062          TSHD1:  .ASCIZ  /*S2*AREGISTER ADDRESSING TEST*N/
                                                .LIST   BEX
                                                .EVEN
012670                                          ENDTST
                                        .MCALL  M$POP,M$GNTAG,M$SVC,M$ENDERR
                                        .IF EQ  F$BGN-I$TST
        000041                          I$TST=F$END
                                        .IFF
                                        .ERROR  ;MISSING "BGNTST"
                                        .MEXIT
                                        .ENDC
012670                                  M$POP   T$NS,T$NESTLEV,T$TEMP
                                        .MCALL  M$GETS,M$DECR
                                        .IF LT  T$NESTLEV
                                        .ERROR  T$NESTLEV       ; MACRO T$NS UNDERFLOW
                                        .MEXIT
                                        .ENDC
012670                                  M$GETS  T$NS,\T$NESTLEV,T$TEMP
        000001                          T$TEMP=T$NS1
012670                                  M$DECR  T$NESTLEV
        000000                          T$NESTLEV=T$NESTLEV-1
                                        .IF EQ F$TEST-T$TEMP
012670                                  M$GNTAG L,T$$TEST
                                        .MCALL  M$GEN
012670                                  M$GEN   L,\T$$TEST,SVCTAG
                                        .IF LE  SVCTAG
                                        .IIF EQ SVCTAG,.LIST
                                        L10025:
                                        .IIF EQ SVCTAG,.NLIST
                                        .MEXIT
                                        .ENDC
                                        .LIST
012670                                                                                  L10025:
                                                .NLIST
        010000                          S$LSYM=T$LSYM
012670                                  M$SVC   C$ETST
                                        .MCALL  M$GNINS,M$TSTLAB
012670                                  M$TSTLAB
                                        .MCALL  M$TLABEL,M$INCR
                                        .IIF LT T$TSTMAC, .MEXIT
                                        .RADIX  10
```

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E8

```
                                M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                .RADIX  8
                                M$INCR  T$TSTSEQ
     012670                     M$GNINS <TRAP   C$ETST>
                                .IF LT SVCINS
                                TRAP    C$ETST
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        TRAP    C$ETST
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
     012670  104401                                                     TRAP    C$ETST
                                                .NL1ST
                                .ENDC
             000041             I$TST=F$END
                                .IFF
                                M$ENDERR        ENDTST,T$TEMP
                                .ENDC

                                .IF NE HELP
                                ;%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%
                                ;      BEGIN THE REMAINING TESTS ON NEW PAGES.
                                ;%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%
                                .ENDC
```

```
                              .SBTTL          TEST 2: INITIALIZATION TEST
                              ;*************************************************************;
                              ;                    IEX - TEST 2                             ;
                              ;RESET THE IEX AND ENSURE THAT REGISTERS CSR,IIR,ISR,ICR,IDR,MCR ;
                              ;IN BOTH CHANNELS ARE IN THEIR PROPER INITIALIZATION STATE .  ;
                              ;                                                             ;
                              ;REGISTERS BAR & BCR ARE NOT IN A DEFINATE STATE AFTER RESET  ;
                              ;SO THEY ARE NOT TESTED HERE                                  ;
                              ;                                                             ;
                              ;THE MUX BIT IN CSR IS ALSO TESTED                            ;
                              ;*************************************************************;
012672                                  BGNTST
                              .MCALL  M$INCR,M$GNTEST,M$PUSH,M$INCR
                              .IF NE  F$END-I$SUB
                              .ERROR  ;"BGNTST" IN SUB
                              .MEXIT
                              .ENDC
                              .IF NE  F$END-I$SEG
                              .ERROR  ;"BGNTST" IN SEG
                              .MEXIT
                              .ENDC
                              .IF NE  F$END-I$TST
                              .ERROR  ;"BGNTST" IN TST
                              .MEXIT
                              .IFF
         000040               I$TST=F$BGN
                              .ENDC
                              .IF B
012672                        M$INCR  T$TESTNUM
         000002               T$TESTNUM=T$TESTNUM+1
                              .IFF
                              T$TESTNUM=
                              .ENDC
         000000               T$SUBNUM=0
         000012               .RADIX  10
012672                        M$GNTEST        \T$TESTNUM
                              .MCALL  M$GEN
012672                        M$GEN   T,2:,SVCTST
                              .IF LE  SVCTST
                              .IIF EQ SVCTST,.LIST
                              T2::
                              .IIF EQ SVCTST,.NLIST
                              .MEXIT
                              .ENDC
                              .LIST
012672                                                                        T2::
                                        .NLIST
         000010               .RADIX  8
012672                        M$PUSH  T$NS,T$NESTLEV,F$TEST
                              .MCALL  M$INCR,M$SETS
012672                        M$INCR  T$NESTLEV
         000001               T$NESTLEV=T$NESTLEV+1
012672                        M$SETS  T$NS,\T$NESTLEV,F$TEST
         000001               T$NS1=F$TEST
         010027               T$$TEST=T$TAGNUM
012672                        M$INCR T$TAGNUM
         010030               T$TAGNUM-T$TAGNUM+1
```

```
          000001                  T$TSTSEQ=1
   012672 005737  002324                  TST     PNTF                    ;IS THE PNT FLAG SET
   012676 001410                          BEQ     7$                      ;IF YES, PRINT THE TEST HEADER
   012700                                 PRINTF  #TSHD2                  ;...
                                  .MCALL  M$PRINT
                                  .IF B   #TSHD2
                                  .ERROR  ;MISSING FORMAT
                                  .MEXIT
                                  .ENDC
                                  .IF B   <>
   012700                         M$PRINT C$PNTF,#TSHD2
                                  .MCALL  M$COUNT,M$PUT,M$GNINS,M$SVC
          000001                  T$ARGCNT=1
   012700                         M$COUNT T$ARGCNT,<>,<>,<>,<>,<>,<>,<>,<>
                                  .IF NB <>
                                  M$COUNT T$ARGCNT,<>,<>,<>,<>,<>,<>,<>,<>
                                  .ENDC
                                  .IF NB <>
                                  T$ARGCNT=T$ARGCNT+1
                                  .ENDC
                                  .IRP    N,<\T$ARGCNT>
                                  M$PUT   #N,#TSHD2,<>,<>,<>,<>,<>,<>,<>,<>
                                  .ENDM
   012700                         M$PUT   #1,#TSHD2,<>,<>,<>,<>,<>,<>,<>,<>
                                  .MCALL  M$PUT1
                                  .IF NB  <#TSHD2>
   012700                         M$PUT   <#TSHD2>,<>,<>,<>,<>,<>,<>,<>,<>
                                  .MCALL  M$PUT1
                                  .IF NB  <>
                                  M$PUT   <>,<>,<>,<>,<>,<>,<>,<>,<>
                                  .ENDC
                                  .IF NB  <#TSHD2>
   012700                         M$PUT1  #TSHD2
                                  .MCALL  M$GNINS
                                  .IF B
   012700                         M$GNINS <MOV    #TSHD2,-(SP)>
                                  .IF LT SVCINS
                                  MOV     #TSHD2,-(SP)
                                  .MEXIT
                                  .ENDC
                                  .IF EQ SVCINS
                                  .LIST
                                          MOV     #TSHD2, (SP)
                                                  .NLIST
                                  .MEXIT
                                  .ENDC
                                  .IF GT SVCINS
                                  .LIST
   012700 012746  013363                                                                          MOV     #TSHD2, (SP)
                                                  .NLIST
                                  .ENDC
                                  .IFF
                                  .IF DIF B,<#TSHD2>
                                  .ERROR  ;ILL. ARG. "#TSHD2" ONLY "B" IS ALLOWED.
                                  .MEXIT
                                  .ENDC
                                  M$GNINS <CLR     (SP)>
```

H8

```
                                M$GNINS <BISB   ,(SP)>
                                .ENDC
                                .ENDC
                                .ENDC
                                .IF NB  <#1>
      012704                    M$PUT1  #1
                                .MCALL  M$GNINS
                                .IF B
      012704                    M$GNINS <MOV    #1,-(SP)>
                                .IF LT SVCINS
                                MOV     #1,-(SP)
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        MOV     #1,-(SP)
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
      012704  012746  000001                                                    MOV     #1,-(SP)
                                                .NLIST
                                .ENDC
                                .IFF
                                .IF DIF B,<#1>
                                .ERROR  ;ILL. ARG. "#1" ONLY "B" IS ALLOWED.
                                .MEXIT
                                .ENDC
                                M$GNINS <CLR    -(SP)>
                                M$GNINS <BISB   ,(SP)>
                                .ENDC
                                .ENDC
      012710                    M$GNINS <MOV    SP,R0>
                                .IF LT SVCINS
                                MOV     SP,R0
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        MOV     SP,R0
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
      012710  010600                                                            MOV     SP,R0
                                                .NLIST
                                .ENDC
      012712                    M$SVC   C$PNTF
                                .MCALL  M$GNINS,M$TSTLAB
      012712                    M$TSTLAB
                                .MCALL  M$TLABEL,M$INCR
                                .IIF LT T$TSTMAC, .MEXIT
                                .RADIX  10
                                M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                .RADIX  8
```

```
                                        M$INCR  T$TSTSEQ
        012712                          M$GNINS <TRAP   C$PNTF>
                                        .IF LT SVCINS
                                        TRAP    C$PNTF
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                TRAP    C$PNTF
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
        012712  104417                                                                                  TRAP    C$PNTF
                                                        .NLIST
                                        .ENDC
                                        .IRP    N,<\T$ARGCNT*2+2>
                                        M$GNINS <ADD    #N,SP>
                                        .ENDM
        012714                          M$GNINS <ADD    #4,SP>
                                        .IF LT SVCINS
                                        ADD     #4,SP
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                ADD     #4,SP
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
        012714  062706  000004                                                                          ADD     #4,SP
                                                        .NLIST
                                        .ENDC
                                        .MEXIT
                                        .ENDC
                                        .IF B   <>
                                        M$PRINT C$PNTF,#TSHD2,<>
                                        .MEXIT
                                        .ENDC
                                        .IF B   <>
                                        M$PRINT C$PNTF,#TSHD2,<>,<>
                                        .MEXIT
                                        .ENDC
                                        .IF B   <>
                                        M$PRINT C$PNTF,#TSHD2,<>,<>,<>
                                        .MEXIT
                                        .ENDC
                                        .IF B   <>
                                        M$PRINT C$PNTF,#TSHD2,<>,<>,<>,<>
                                        .MEXIT
                                        .ENDC
                                        .IF B   <>
                                        M$PRINT C$PNTF,#TSHD2,<>,<>,<>,<>,<>
                                        .MEXIT
```

7880 8 3673 6

J8

```
                                        .ENDC
                                        .IF B    <>
                                        M$PRINT C$PNTF,#TSHD2,<>,<>,<>,<>,<>,<>
                                        .MEXIT
                                        .ENDC
                                        .IF B    <>
                                        M$PRINT C$PNTF,#TSHD2,<>,<>,<>,<>,<>,<>,<>
                                        .MEXIT
                                        .ENDC
                                        M$PRINT C$PNTF,#TSHD2,<>,<>,<>,<>,<>,<>,<>,<>
   2967 012720  005037  002322          7$:     CLR ITRCNT                      ;CLEAR ITERATION COUNTER
   2968 012724                          ITRAC2: BRESET                          ;CLEAR HARDWARE
                                        .MCALL  M$SVC
        012724                          M$SVC   C$RESET
                                        .MCALL  M$GNINS,M$TSTLAB
        012724                          M$TSTLAB
                                        .MCALL  M$TLABEL,M$INCR
                                        .IIF LT T$TSTMAC, .MEXIT
                                        .RADIX  10
                                        M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                        .RADIX  8
                                        M$INCR  T$TSTSEQ
        012724                          M$GNINS <TRAP   C$RESET>
                                        .IF LT SVCINS
                                        TRAP    C$RESET
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                TRAP    C$RESET
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
        012724  104433                                                                  TRAP    C$RESET
                                                        .NLIST
                                        .ENDC
   2969 012726  012737  000001  002374          MOV     #1,CHAN                 ;LOAD CANNEL NUM.
   2970 012734                                  BGNSEG
                                        .MCALL  M$PUSH,M$INCR,M$SVC
                000040                  I$SEG=F$BGN
        012734                          M$PUSH  T$NS,T$NESTLEV,F$SEG
                                        .MCALL  M$INCR,M$SETS
        012734                          M$INCR  T$NESTLEV
                000002                  T$NESTLEV=T$NESTLEV+1
        012734                          M$SETS  T$NS,\T$NESTLEV,F$SEG
                000003                  T$NS2=F$SEG
                010000                  T$$SEG=S$LSYM
        012734                          M$PUSH  T$SEK,T$SEGLEV,T$$SEG
                                        .MCALL  M$INCR,M$SETS
        012734                          M$INCR  T$SEGLEV
                000000                  T$SEGLEV=T$SEGLEV+1
        012734                          M$SETS  T$SEK,\T$SEGLEV,T$$SEG
                010000                  T$SEK0=T$$SEG
        012734                          M$INCR  S$LSYM
                010001                  S$LSYM=S$LSYM+1
```

```
        012734                                      M$SVC   C$BSEG
                                                    .MCALL  M$GNINS,M$TSTLAB
        012734                                      M$TSTLAB
                                                    .MCALL  M$TLABEL,M$INCR
                                                    .IIF LT T$TSTMAC, .MEXIT
                                                    .RADIX  10
                                                    M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                                    .RADIX  8
                                                    M$INCR  T$TSTSEQ
        012734                                      M$GNINS <TRAP   C$BSEG>
                                                    .IF LT SVCINS
                                                    TRAP    C$BSEG
                                                    .MEXIT
                                                    .ENDC
                                                    .IF EQ SVCINS
                                                    .LIST
                                                            TRAP    C$BSEG
                                                                    .NLIST
                                                    .MEXIT
                                                    .ENDC
                                                    .IF GT SVCINS
                                                    .LIST
        012734  104404                                                                                   TRAP    C$BSEG
                                                                    .NLIST
                                                    .ENDC
   2971 012736  017737  167336  002502                      MOV     @CSRX,BAD               ;TEST THE INITIALIATION STATE OF CSR REGISTER
   2972 012744  042737  017060  002502                      BIC     #17060,BAD              ;BIT 9-12 AND BIT 4.5 ARE NOT TESTED
   2973 012752  005737  002502                              TST     BAD                     ;CSR SHOULD BE ZERO
   2974 012756  001406                                      BEQ     10$                     ;BRANCH IF DATA CORRECT
   2975 012760  005037  002500                              CLR     GOOD                    ;SET UP DATA FOR ERROR MESSAGF
   2976 012764                                              ERRSOFT 201,E200,ERR201         ;ERROR HANDLER
                                                    .MCALL  M$ERRINS
        012764                                      M$ERRINS        201,E200,ERR201,C$ERSOFT
                                                    .MCALL  M$GNINS,M$WORD,M$TSTLAB
        012764                                      M$SVC   C$ERSOFT
                                                    .MCALL  M$GNINS,M$TSTLAB
        012764                                      M$TSTLAB
                                                    .MCALL  M$TLABEL,M$INCR
                                                    .IIF LT T$TSTMAC, .MEXIT
                                                    .RADIX  10
                                                    M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                                    .RADIX  8
                                                    M$INCR  T$TSTSEQ
        012764                                      M$GNINS <TRAP   C$ERSOFT>
                                                    .IF LT SVCINS
                                                    TRAP    C$ERSOFT
                                                    .MEXIT
                                                    .ENDC
                                                    .IF EQ SVCINS
                                                    .LIST
                                                            TRAP    C$ERSOFT
                                                                    .NLIST
                                                    .MEXIT
                                                    .ENDC
                                                    .IF GT SVCINS
                                                    .LIST
        012764  104457                                                                                   TRAP    C$ERSOFT
```

```
                                                     .NLIST
                                     .ENDC
              000012                 .RADIX  10
                                     .IF NB  201
              000311                 T$ERRNUM=201
                                     .IFF
                                     .ERROR  ;MISSING ERROR NR
                                     .ENDC
       012766                        M$WORD  \T$ERRNUM
                                     .MCALL  M$GNINS
                                     .IRP    N,<201>
                                     M$GNINS <.WORD  N>
                                     .ENDM
       012766                        M$GNINS <.WORD  201>
                                     .IF LT SVCINS
                                     .WORD   201
                                     .MEXIT
                                     .ENDC
                                     .IF EQ SVCINS
                                     .LIST
                                             .WORD   201
                                                     .NLIST
                                     .MEXIT
                                     .ENDC
                                     .IF GT SVCINS
                                     .LIST
       012766 000311                                                                      .WORD   201
                                                     .NLIST
                                     .ENDC
              000010                 .RADIX  8
                                     .IF NB E200
       012770                        M$WORD  E200
                                     .MCALL  M$GNINS
                                     .IRP    N,<E200>
                                     M$GNINS <.WORD  N>
                                     .ENDM
       012770                        M$GNINS <.WORD  E200>
                                     .IF LT SVCINS
                                     .WORD   E200
                                     .MEXIT
                                     .ENDC
                                     .IF EQ SVCINS
                                     .LIST
                                             .WORD   E200
                                                     .NLIST
                                     .MEXIT
                                     .ENDC
                                     .IF GT SVCINS
                                     .LIST
       012770 005047                                                                      .WORD   E200
                                                     .NLIST
                                     .ENDC
                                     .IFF
                                     M$WORD  0
                                     .ENDC
                                     .IF NB ERR201
       012772                        M$WORD  ERR201
```

```
                              .MCALL  M$GNINS
                              .IRP    N,<ERR201>
                              M$GNINS <.WORD  N>
                              .ENDM
     012772                   M$GNINS <.WORD  ERR201>
                              .IF LT SVCINS
                              .WORD   ERR201
                              .MEXIT
                              .ENDC
                              .IF EQ SVCINS
                              .LIST
                                      .WORD   ERR201
                                              .NLIST
                              .MEXIT
                              .ENDC
                              .IF GT SVCINS
                              .LIST
     012772  003470                                                            .WORD   ERR201
                                              .NLIST
                              .ENDC
                              .IFF
                              M$WORD  0
                              .ENDC
2977 012774                   10$:    ENDSEG
                              .MCALL  M$POP,M$GNLS,M$SVC,M$ENDERR
     012774                   M$POP   T$NS,T$NESTLEV,T$TEMP
                              .MCALL  M$GETS,M$DECR
                              .IF LT  T$NESTLEV
                              .ERROR  T$NESTLEV        ; MACRO T$NS UNDERFLOW
                              .MEXIT
                              .ENDC
     012774                   M$GETS  T$NS,\T$NESTLEV,T$TFMP
             000003           T$TEMP=T$NS2
     012774                   M$DECR  T$NESTLEV
             000001           T$NESTLEV=T$NESTLEV-1
                              .IF EQ F$SEG-T$TEMP
     012774                   M$POP   T$SEK,T$SEGLEV,T$$SEG
                              .MCALL  M$GETS,M$DECR
                              .IF LT  T$SEGLEV
                              .ERROR  T$SEGLEV         ; MACRO T$SEK UNDERFLOW
                              .MEXIT
                              .ENDC
     012774                   M$GETS  T$SEK,\T$SEGLEV,T$$SEG
             010000           T$$SEG=T$SEK0
     012774                   M$DECR  T$SEGLEV
             177777           T$SEGLEV=T$SEGLEV-1
     012774                   M$GNLS  T$$SEG
                              .MCALL  M$GEN
                              .IF NB T$$SEG
     012774                   M$GEN   \T$$SEG,$,SVCTAG
                              .IF LE  SVCTAG
                              .IIF EQ SVCTAG,.LIST
                              10000$:
                              .IIF EQ SVCTAG,.NLIST
                              .MEXIT
                              .ENDC
                              .LIST
```

```
     012774                                                       10000$:
                                    .NLIST
                          .IFF
                          M$GEN     \S$LSYM,$,SVCTAG
                          .ENDC
     012774               M$SVC     C$ESEG
                          .MCALL    M$GNINS,M$TSTLAB
     012774               M$TSTLAB
                          .MCALL    M$TLABEL,M$INCR
                          .IIF LT T$TSTMAC, .MEXIT
                          .RADIX   10
                          M$TLABEL          \T$TESTNUN,\T$TSTSEQ
                          .RADIX   8
                          M$INCR   T$TSTSEQ
     012774               M$GNINS <TRAP    C$ESEG>
                          .IF LT SVCINS
                          TRAP      C$ESEG
                          .MEXIT
                          .ENDC
                          .IF EQ SVCINS
                          .LIST
                                    TRAP      C$ESEG
                                              .NLIST
                          .MEXIT
                          .ENDC
                          .IF GT SVCINS
                          .LIST
     012774  104405                                                   TRAP     C$ESEG
                                              .NLIST
                          .ENDC
                          .IF EQ T$SEGLEV+1
             000041       I$SEG=F$END
                          .ENDC
                          .IFF
                          M$ENDERR          ENDSEG,T$TEMP
                          .ENDC
2978 012776               13$:      BGNSEG
                          .MCALL    M$PUSH,M$INCR,M$SVC
             000040       I$SEG=F$BGN
     012776               M$PUSH    T$NS,T$NESTLEV,F$SEG
                          .MCALL    M$INCR,M$SETS
     012776               M$INCR    T$NESTLEV
             000002       T$NESTLEV=T$NESTLEV+1
     012776               M$SETS    T$NS,\T$NESTLEV,F$SEG
             000003       T$NS2=F$SEG
             010001       T$$SEG=S$LSYM
     012776               M$PUSH    T$SEK,T$SEGLEV,T$$SEG
                          .MCALL    M$INCR,M$SETS
     012776               M$INCR    T$SEGLEV
             000000       T$SEGLEV=T$SEGLEV+1
     012776               M$SETS    T$SEK,\T$SEGLEV,T$$SEG
             010001       T$SEK0=T$$SEG
     012776               M$INCR    S$LSYM
             010002       S$LSYM=S$LSYM+1
     012776               M$SVC     C$BSEG
                          .MCALL    M$GNINS,M$TSTLAB
     012776               M$TSTLAB
```

```
                                        .MCALL  M$TLABEL,M$INCR
                                        .IIF LT T$TSTMAC, .MEXIT
                                        .RADIX  10
                                        M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                        .RADIX  8
                                        M$INCR  T$TSTSEQ
      012776                            M$GNINS <TRAP   C$BSEG>
                                        .IF LT SVCINS
                                        TRAP    C$BSEG
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                TRAP    C$BSEG
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
      012776  104404                                                                    TRAP    C$BSEG
                                                        .NLIST
                                        .ENDC
 2979 013000  017737  167244  002502            MOV     @IIRX,BAD               ;GET IIR CONTENTS
 2980 013006  005737  002502                    TST     BAD                     ;CONTENTS SHOULD BE ZERO
 2981 013012  001410                            BEQ     20$                     ;BRANCH IS YES
 2982 013014  005037  002500                    CLR     GOOD                    ;SET UP DATA FOR ERROR MESSAGE
 2983 013020  012702  013332                    MOV     #IIRNAM,R2              ;...
 2984 013024                                    ERRSOFT 202,E200,ERR202         ;ERROR HANDLER
                                        .MCALL  M$ERRINS
      013024                            M$ERRINS        202,E200,ERR202,C$ERSOFT
                                        .MCALL  M$GNINS,M$WORD,M$TSTLAB
      013024                            M$SVC   C$ERSOFT
                                        .MCALL  M$GNINS,M$TSTLAB
      013024                            M$TSTLAB
                                        .MCALL  M$TLABEL,M$INCR
                                        .IIF LT T$TSTMAC, .MEXIT
                                        .RADIX  10
                                        M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                        .RADIX  8
                                        M$INCR  T$TSTSEQ
      013024                            M$GNINS <TRAP   C$ERSOFT>
                                        .IF LT SVCINS
                                        TRAP    C$ERSOFT
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                TRAP    C$ERSOFT
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
      013024  104457                                                                    TRAP    C$ERSOFT
                                                        .NLIST
                                        .ENDC
              000012                    .RADIX  10
```

```
                                .IF NB  202
        000312                  T$ERRNUM=202
                                .IFF
                                .ERROR  ;MISSING ERROR-NR
                                .ENDC
013026                          M$WORD  \T$ERRNUM
                                .MCALL  M$GNINS
                                .IRP    N,<202>
                                M$GNINS <.WORD  N>
                                .ENDM
013026                          M$GNINS <.WORD  202>
                                .IF LT SVCINS
                                .WORD   202
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        .WORD   202
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
013026  000312                                                          .WORD   202
                                                .NLIST
                                .ENDC
        000010                  .RADIX  8
                                .IF NB E200
013030                          M$WORD  E200
                                .MCALL  M$GNINS
                                .IRP    N,<E200>
                                M$GNINS <.WORD  N>
                                .ENDM
013030                          M$GNINS <.WORD  E200>
                                .IF LT SVCINS
                                .WORD   E200
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        .WORD   E200
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
013030  005047                                                          .WORD   E200
                                                .NLIST
                                .ENDC
                                .IFF
                                M$WORD  0
                                .ENDC
                                .IF NB ERR202
013032                          M$WORD  ERR202
                                .MCALL  M$GNINS
                                .IRP    N,<ERR202>
                                M$GNINS <.WORD  N>
```

D9

D9


```
                                .ENDM
      013032                    M$GNINS <.WORD  ERR202>
                                .IF LT SVCINS
                                .WORD   ERR202
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        .WORD   ERR202
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
      013032  003546                                                                  .WORD   ERR202
                                                .NLIST
                                .ENDC
                                .IFF
                                M$WORD  0
                                .ENDC
 2985 013034                    20$:    ENDSEG
                                .MCALL  M$POP,M$GNLS,M$SVC,M$ENDERR
      013034                    M$POP   T$NS,T$NESTLEV,T$TEMP
                                .MCALL  M$GETS,M$DECR
                                .IF LT  T$NESTLEV
                                .ERROR  T$NESTLEV       ; MACRO T$NS UNDERFLOW
                                .MEXIT
                                .ENDC
      013034                    M$GETS  T$NS,\T$NESTLEV,T$TEMP
              000003            T$TEMP=T$NS2
      013034                    M$DECR  T$NESTLEV
              000001            T$NESTLEV=T$NESTLEV-1
                                .IF EQ F$SEG-T$TEMP
      013034                    M$POP   T$SEK,T$SEGLEV,T$$SEG
                                .MCALL  M$GETS,M$DECR
                                .IF LT  T$SEGLEV
                                .ERROR  T$SEGLEV        ; MACRO T$SEK UNDERFLOW
                                .MEXIT
                                .ENDC
      013034                    M$GETS  T$SEK,\T$SEGLEV,T$$SEG
              010001            T$$SEG=T$SEK0
      013034                    M$DECR  T$SEGLEV
              177777            T$SEGLEV=T$SEGLEV-1
      013034                    M$GNLS  T$$SEG
                                .MCALL  M$GEN
                                .IF NB T$$SEG
      013034                    M$GEN   \T$$SEG,$,SVCTAG
                                .IF LE  SVCTAG
                                .IIF EQ SVCTAG,.LIST
                                10001$:
                                .IIF EQ SVCTAG,.NLIST
                                .MEXIT
                                .ENDC
                                .LIST
      013034                                                                  10001$:
                                        .NLIST
                                .IFF
```

E9

```
                                        M$GEN   \S$LSYM,$,SVCTAG
                                        .ENDC
      013034                            M$SVC   C$ESEG
                                        .MCALL  M$GNINS,M$TSTLAB
      013034                            M$TSTLAB
                                        .MCALL  M$TLABEL,M$INCR
                                        .IIF LT T$TSTMAC, .MEXIT
                                        .RADIX  10
                                        M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                        .RADIX  8
                                        M$INCR  T$TSTSEQ
      013034                            M$GNINS <TRAP   C$ESEG>
                                        .IF LT SVCINS
                                        TRAP    C$ESEG
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                TRAP    C$ESEG
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
      013034  104405                                                                    TRAP    C$ESEG
                                                        .NLIST
                                        .ENDC
                                        .IF EQ T$SEGLEV+1
              000041                    I$SEG=F$END
                                        .ENDC
                                        .IFF
                                        M$ENDERR        ENDSEG,T$TEMP
                                        .ENDC
 2986 013036                                    BGNSEG
                                        .MCALL  M$PUSH,M$INCR,M$SVC
              000040                    I$SEG=F$BGN
      013036                            M$PUSH  T$NS,T$NESTLEV,F$SEG
                                        .MCALL  M$INCR,M$SETS
      013036                            M$INCR  T$NESTLEV
              000002                    T$NESTLEV=T$NESTLEV+1
      013036                            M$SETS  T$NS,\T$NESTLEV,F$SEG
              000003                    T$NS2=F$SEG
              010002                    T$$SEG=S$LSYM
      013036                            M$PUSH  T$SEK,T$SEGLEV,T$$SEG
                                        .MCALL  M$INCR,M$SETS
      013036                            M$INCR  T$SEGLEV
              000000                    T$SEGLEV=T$SEGLEV+1
      013036                            M$SETS  T$SEK,\T$SEGLEV,T$$SEG
              010002                    T$SEK0=T$$SEG
      013036                            M$INCR  S$LSYM
              010003                    S$LSYM=S$LSYM+1
      013036                            M$SVC   C$DSEG
                                        .MCALL  M$GNINS,M$TSTLAB
      013036                            M$TSTLAB
                                        .MCALL  M$TLABEL,M$INCR
                                        .IIF LT T$TSTMAC, .MEXIT
                                        .RADIX  10
```

```
                                        M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                        .RADIX  8
                                        M$INCR  T$TSTSEQ
        013036                          M$GNINS <TRAP   C$BSEG>
                                        .IF LT SVCINS
                                        TRAP    C$BSEG
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                TRAP    C$BSEG
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
        013036  104404                                                                          TRAP    C$BSEG
                                                        .NLIST
                                        .ENDC
   2987 013040  017737  167212  002502          MOV     @ISRX,BAD               ;GET ISR CONTENTS
   2988 013046  042737  000001  002502          BIC     #1,BAD                  ;CLEAR ULPA BIT
   2989 013054  005737  002502                  TST     BAD                     ;CONTENTS SHOULD BE ZERO
   2990 013060  001410                          BEQ     30$                     ;BRANCH IF YES
   2991 013062  005037  002500                  CLR     GOOD                    ;SET UP DATA FOR ERROR MESSAGE
   2992 013066  012702  013337                  MOV     #ISRNAM,R2              ;...
   2993 013072                                  ERRSOFT 203,E200,ERR202         ;ERROR HANDLER
                                        .MCALL  M$ERRINS
        013072                          M$ERRINS        203,E200,ERR202,C$ERSOFT
                                        .MCALL  M$GNINS,M$WORD,M$TSTLAB
        013072                          M$SVC   C$ERSOFT
                                        .MCALL  M$GNINS,M$TSTLAB
        013072                          M$TSTLAB
                                        .MCALL  M$TLABEL,M$INCR
                                        .IIF LT T$TSTMAC, .MEXIT
                                        .RADIX  10
                                        M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                        .RADIX  8
                                        M$INCR  T$TSTSEQ
        013072                          M$GNINS <TRAP   C$ERSOFT>
                                        .IF LT SVCINS
                                        TRAP    C$ERSOFT
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                TRAP    C$ERSOFT
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
        013072  104457                                                                          TRAP    C$ERSOFT
                                                        .NLIST
                                        .ENDC
                000012                  .RADIX  10
                                        .IF NB  203
                000313                  T$ERRNUM=203
```

G9


```
                                .IFF
                                .ERROR  ;MISSING ERROR-NR
                                .ENDC
     013074                     M$WORD  \T$ERRNUM
                                .MCALL  M$GNINS
                                .IRP    N,<203>
                                M$GNINS <.WORD  N>
                                .ENDM
     013074                     M$GNINS <.WORD  203>
                                .IF LT SVCINS
                                .WORD   203
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        .WORD   203
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
     013074  000313                                                                 .WORD   203
                                                .NLIST
                                .ENDC
             000010             .RADIX  8
                                .IF NB E200
     013076                     M$WORD  E200
                                .MCALL  M$GNINS
                                .IRP    N,<E200>
                                M$GNINS <.WORD  N>
                                .ENDM
     013076                     M$GNINS <.WORD  E200>
                                .IF LT SVCINS
                                .WORD   E200
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        .WORD   E200
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
     013076  005047                                                                 .WORD   E200
                                                .NLIST
                                .ENDC
                                .IFF
                                M$WORD  0
                                .ENDC
                                .IF NB ERR202
     013100                     M$WORD  ERR202
                                .MCALL  M$GNINS
                                .IRP    N,<ERR202>
                                M$GNINS <.WORD  N>
                                .ENDM
     013100                     M$GNINS <.WORD  ERR202>
```

H9

```
                                   .IF LT SVCINS
                                   .WORD   ERR202
                                   .MEXIT
                                   .ENDC
                                   .IF EQ SVCINS
                                   .LIST
                                           .WORD   ERR202
                                                   .NLIST
                                   .MEXIT
                                   .ENDC
                                   .IF GT SVCINS
                                   .LIST
        013100  003546                                                                     .WORD   ERR202
                                                   .NLIST
                                   .ENDC
                                   .IFF
                                   M$WORD  0
                                   .ENDC
   2994 013102                     30$:    ENDSEG
                                   .MCALL  M$POP,M$GNLS,M$SVC,M$ENDERR
        013102                     M$POP   T$NS,T$NESTLEV,T$TEMP
                                   .MCALL  M$GETS,M$DECR
                                   .IF LT  T$NESTLEV
                                   .ERROR  T$NESTLEV       ; MACRO T$NS UNDERFLOW
                                   .MEXIT
                                   .ENDC
        013102                     M$GETS  T$NS,\T$NESTLEV,T$TEMP
                000003             T$TEMP=T$NS2
        013102                     M$DECR  T$NESTLEV
                000001             T$NESTLEV=T$NESTLEV-1
                                   .IF EQ F$SEG-T$TEMP
        013102                     M$POP   T$SEK,T$SEGLEV,T$$SEG
                                   .MCALL  M$GETS,M$DECR
                                   .IF LT  T$SEGLEV
                                   .ERROR  T$SEGLEV        ; MACRO T$SEK UNDERFLOW
                                   .MEXIT
                                   .ENDC
        013102                     M$GETS  T$SEK,\T$SEGLEV,T$$SEG
                010002             T$$SEG=T$SEK0
        013102                     M$DECR  T$SEGLEV
                177777             T$SEGLEV=T$SEGLEV-1
        013102                     M$GNLS  T$$SEG
                                   .MCALL  M$GEN
                                   .IF NB T$$SEG
        013102                     M$GEN   \T$$SEG,$,SVCTAG
                                   .IF LE  SVCTAG
                                   .IIF EQ SVCTAG,.LIST
                                   10002$:
                                   .IIF EQ SVCTAG,.NLIST
                                   .MEXIT
                                   .ENDC
                                   .LIST
        013102                                                                     10002$:
                                           .NLIST
                                   .IFF
                                   M$GEN   \S$LSYM,$,SVCTAG
                                   .ENDC
```

```
        013102                  M$SVC   C$ESEG
                                .MCALL  M$GNINS,M$TSTLAB
        013102                  M$TSTLAB
                                .MCALL  M$TLABEL,M$INCR
                                .IIF LT T$TSTMAC, .MEXIT
                                .RADIX  10
                                M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                .RADIX  8
                                M$INCR  T$TSTSEQ
        013102                  M$GNINS <TRAP   C$ESEG>
                                .IF LT SVCINS
                                TRAP    C$ESEG
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        TRAP    C$ESEG
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
        013102  104405                                                  TRAP    C$ESEG
                                                .NLIST
                                .ENDC
                                .IF EQ T$SEGLEV+1
                000041          I$SEG=F$END
                                .ENDC
                                .IFF
                                M$ENDERR        ENDSEG,T$TEMP
                                .ENDC
   2995 013104                          BGNSEG
                                .MCALL  M$PUSH,M$INCR,M$SVC
                000040          I$SEG=F$BGN
        013104                  M$PUSH  T$NS,T$NESTLEV,F$SEG
                                .MCALL  M$INCR,M$SETS
        013104                  M$INCR  T$NESTLEV
                000002          T$NESTLEV=T$NESTLEV+1
        013104                  M$SETS  T$NS,\T$NESTLEV,F$SEG
                000003          T$NS2=F$SEG
                010003          T$$SEG=S$LSYM
        013104                  M$PUSH  T$SEK,T$SEGLEV,T$$SEG
                                .MCALL  M$INCR,M$SETS
        013104                  M$INCR  T$SEGLEV
                000000          T$SEGLEV=T$SEGLEV+1
        013104                  M$SETS  T$SEK,\T$SEGLEV,T$$SEG
                010003          T$SEK0=T$$SEG
        013104                  M$INCR  S$LSYM
                010004          S$LSYM=S$LSYM+1
        013104                  M$SVC   C$BSEG
                                .MCALL  M$GNINS,M$TSTLAB
        013104                  M$TSTLAB
                                .MCALL  M$TLABEL,M$INCR
                                .IIF LT T$TSTMAC, .MEXIT
                                .RADIX  10
                                M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                .RADIX  8
```

```
                                                M$INCR  T$TSTSEQ
      013104                                    M$GNINS <TRAP    C$BSEG>
                                                .IF LT SVCINS
                                                TRAP    C$BSEG
                                                .MEXIT
                                                .ENDC
                                                .IF EQ SVCINS
                                                .LIST
                                                        TRAP    C$BSEG
                                                                .NLIST
                                                .MEXIT
                                                .ENDC
                                                .IF GT SVCINS
                                                .LIST
      013104  104404                                                                            TRAP    C$BSEG
                                                                .NLIST
                                                .ENDC
 2996 013106  117737  167152  002502                    MOVB    @ICRX,BAD               ;GET ICR CONTENTS
 2997 013114  005737  002502                            TST     BAD                     ;CONTENTS SHOULD BE ZERO
 2998 013120  001410                                    BEQ     40$                     ;BRANCH IF YES
 2999 013122  005037  002500                            CLR     GOOD                    ;SET UP DATA FOR ERROR MESSAGE
 3000 013126  012702  013344                            MOV     #ICRNAM,R2              ;...
 3001 013132                                            ERRSOFT 204,E200,ERR202         ;ERROR HANDLER
                                                .MCALL  M$ERRINS
      013132                                    M$ERRINS        204,E200,ERR202,C$ERSOFT
                                                .MCALL  M$GNINS,M$WORD,M$TSTLAB
      013132                                    M$SVC   C$ERSOFT
                                                .MCALL  M$GNINS,M$TSTLAB
      013132                                    M$TSTLAB
                                                .MCALL  M$TLABEL,M$INCR
                                                .IIF LT T$TSTMAC, .MEXIT
                                                .RADIX  10
                                                M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                                .RADIX  8
                                                M$INCR  T$TSTSEQ
      013132                                    M$GNINS <TRAP    C$ERSOFT>
                                                .IF LT SVCINS
                                                TRAP    C$ERSOFT
                                                .MEXIT
                                                .ENDC
                                                .IF EQ SVCINS
                                                .LIST
                                                        TRAP    C$ERSOFT
                                                                .NLIST
                                                .MEXIT
                                                .ENDC
                                                .IF GT SVCINS
                                                .LIST
      013132  104457                                                                            TRAP    C$ERSOFT
                                                                .NLIST
                                                .ENDC
              000012                            .RADIX  10
                                                .IF NB  204
              000314                            T$ERRNUM=204
                                                .IFF
                                                .ERROR  ;MISSING ERROR NR
                                                .ENDC
```

K9

K9


```
        013134                          M$WORD  \T$ERRNUM
                                        .MCALL  M$GNINS
                                        .IRP    N,<204>
                                        M$GNINS <.WORD  N>
                                        .ENDM
        013134                          M$GNINS <.WORD  204>
                                        .IF LT SVCINS
                                        .WORD   204
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                .WORD   204
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
        013134  000314                                                                  .WORD   204
                                                        .NLIST
                                        .ENDC
                000010                  .RADIX  8
                                        .IF NB E200
        013136                          M$WORD  E200
                                        .MCALL  M$GNINS
                                        .IRP    N,<E200>
                                        M$GNINS <.WORD  N>
                                        .ENDM
        013136                          M$GNINS <.WORD  E200>
                                        .IF LT SVCINS
                                        .WORD   E200
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                .WORD   E200
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
        013136  005047                                                                  .WORD   E200
                                                        .NLIST
                                        .ENDC
                                        .IFF
                                        M$WORD  0
                                        .ENDC
                                        .IF NB ERR202
        013140                          M$WORD  ERR202
                                        .MCALL  M$GNINS
                                        .IRP    N,<ERR202>
                                        M$GNINS <.WORD  N>
                                        .ENDM
        013140                          M$GNINS <.WORD  ERR202>
                                        .IF LT SVCINS
                                        .WORD   ERR202
                                        .MEXIT
```

I9

```
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        .WORD   ERR202
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
      013140  003546                                                            .WORD   ERR202
                                                .NLIST
                                .ENDC
                                .IFF
                                M$WORD  0
                                .ENDC
 3002 013142                    40$:    ENDSEG
                                .MCALL  M$POP,M$GNLS,M$SVC,M$ENDERR
      013142                    M$POP   T$NS,T$NESTLEV,T$TEMP
                                .MCALL  M$GETS,M$DECR
                                .IF LT  T$NESTLEV
                                .ERROR  T$NESTLEV       ; MACRO T$NS UNDERFLOW
                                .MEXIT
                                .ENDC
      013142                    M$GETS  T$NS,\T$NESTLEV,T$TEMP
              000003            T$TEMP=T$NS2
      013142                    M$DECR  T$NESTLEV
              000001            T$NESTLEV=T$NESTLEV-1
                                .IF EQ F$SEG-T$TEMP
      013142                    M$POP   T$SEK,T$SEGLEV,T$$SEG
                                .MCALL  M$GETS,M$DECR
                                .IF LT  T$SEGLEV
                                .ERROR  T$SEGLEV        ; MACRO T$SEK UNDERFLOW
                                .MEXIT
                                .ENDC
      013142                    M$GETS  T$SEK,\T$SEGLEV,T$$SEG
              010003            T$$SEG=T$SEKO
      013142                    M$DECR  T$SEGLEV
              177777            T$SEGLEV=T$SEGLEV-1
      013142                    M$GNLS  T$$SEG
                                .MCALL  M$GEN
                                .IF NB T$$SEG
      013142                    M$GEN   \T$$SEG,$,SVCTAG
                                .IF LE  SVCTAG
                                .IIF EQ SVCTAG,.LIST
                                10003$:
                                .IIF EQ SVCTAG,.NLIST
                                .MEXIT
                                .ENDC
                                .LIST
      013142                                                            10003$:
                                        .NLIST
                                .IFF
                                M$GEN   \S$LSYM,$,SVCTAG
                                .ENDC
      013142                    M$SVC   C$ESEG
                                .MCALL  M$GNINS,M$TSTLAB
      013142                    M$TSTLAB
```

```
                                        .MCALL  M$TLABEL,M$INCR
                                        .IIF LT T$TSTMAC, .MEXIT
                                        .RADIX  10
                                        M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                        .RADIX  8
                                        M$INCR  T$TSTSEQ
        013142                          M$GNINS <TRAP   C$ESEG>
                                        .IF LT SVCINS
                                        TRAP    C$ESEG
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                TRAP    C$ESEG
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
        013142  104405                                                                  TRAP    C$ESEG
                                                        .NLIST
                                        .ENDC
                                        .IF EQ T$SEGLEV+1
                000041                  I$SEG=F$END
                                        .ENDC
                                        .IFF
                                        M$ENDERR        ENDSEG,T$TEMP
                                        .ENDC
   3003 013144                                  BGNSEG
                                        .MCALL  M$PUSH,M$INCR,M$SVC
                000040                  I$SEG=F$BGN
        013144                          M$PUSH  T$NS,T$NESTLEV,F$SEG
                                        .MCALL  M$INCR,M$SETS
        013144                          M$INCR  T$NESTLEV
                000002                  T$NESTLEV=T$NESTLEV+1
        013144                          M$SETS  T$NS,\T$NESTLEV,F$SEG
                000003                  T$NS2=F$SEG
                010004                  T$$SEG=S$LSYM
        013144                          M$PUSH  T$SEK,T$SEGLEV,T$$SEG
                                        .MCALL  M$INCR,M$SETS
        013144                          M$INCR  T$SEGLEV
                000000                  T$SEGLEV=T$SEGLEV+1
        013144                          M$SETS  T$SEK,\T$SEGLEV,T$$SEG
                010004                  T$SEK0=T$$SEG
        013144                          M$INCR  S$LSYM
                010005                  S$LSYM=S$LSYM+1
        013144                          M$SVC   C$BSEG
                                        .MCALL  M$GNINS,M$TSTLAB
        013144                          M$TSTLAB
                                        .MCALL  M$TLABEL,M$INCR
                                        .IIF LT T$TSTMAC, .MEXIT
                                        .RADIX  10
                                        M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                        .RADIX  8
                                        M$INCR  T$TSTSEQ
        013144                          M$GNINS <TRAP   C$BSEG>
                                        .IF LT SVCINS
```

```
                                                TRAP    C$BSEG
                                                .MEXIT
                                                .ENDC
                                                .IF EQ SVCINS
                                                .LIST
                                                        TRAP    C$BSEG
                                                                .NLIST
                                                .MEXIT
                                                .ENDC
                                                .IF GT SVCINS
                                                .LIST
      013144  104404                                                                                            TRAP    C$BSEG
                                                                .NLIST
                                                .ENDC
 3004 013146  017737  167134  002502                    MOV     @MCRX,BAD               ;GET MCR CONTENTS
 3005 013154  042737  040000  002502                    BIC     #40000,BAD              ;CLEAR BIT 14 sat
 3006 013162  005737  002502                            TST     BAD                     ;CONTENTS SHOULD BE ZERO sat
 3007 013166  001410                                    BEQ     50$                     ;BRANCH IF YES
 3008 013170  005037  002500                            CLR     GOOD                    ;SET UP DATA FOR ERROR MESSAGE
 3009 013174  012702  013356                            MOV     #MCRNAM,R2              ;...
 3010 013200                                            ERRSOFT 205,E200,ERR202         ;ERROR HANDLER
                                                .MCALL  M$ERRINS
      013200                                    M$ERRINS        205,E200,ERR202,C$ERSOFT
                                                .MCALL  M$GNINS,M$WORD,M$TSTLAB
      013200                                    M$SVC   C$ERSOFT
                                                .MCALL  M$GNINS,M$TSTLAB
      013200                                    M$TSTLAB
                                                .MCALL  M$TLABEL,M$INCR
                                                .IIF LT T$TSTMAC, .MEXIT
                                                .RADIX  10
                                                M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                                .RADIX  8
                                                M$INCR  T$TSTSEQ
      013200                                    M$GNINS <TRAP   C$ERSOFT>
                                                .IF LT SVCINS
                                                TRAP    C$ERSOFT
                                                .MEXIT
                                                .ENDC
                                                .IF EQ SVCINS
                                                .LIST
                                                        TRAP    C$ERSOFT
                                                                .NLIST
                                                .MEXIT
                                                .ENDC
                                                .IF GT SVCINS
                                                .LIST
      013200  104457                                                                                            TRAP    C$ERSOFT
                                                                .NLIST
                                                .ENDC
              000012                            .RADIX  10
                                                .IF NB  205
              000315                            T$ERRNUM=205
                                                .IFF
                                                .ERROR  ;MISSING ERROR NR
                                                .ENDC
      013202                                    M$WORD  \T$ERRNUM
                                                .MCALL  M$GNINS
```

B10


```
                          .IRP    N,<205>
                          M$GNINS <.WORD  N>
                          .ENDM
013202                    M$GNINS <.WORD  205>
                          .IF LT SVCINS
                          .WORD   205
                          .MEXIT
                          .ENDC
                          .IF EQ SVCINS
                          .LIST
                                  .WORD   205
                                          .NLIST
                          .MEXIT
                          .ENDC
                          .IF GT SVCINS
                          .LIST
013202  000315                                                          .WORD   205
                                          .NLIST
                          .ENDC
        000010            .RADIX  8
                          .IF NB E200
013204                    M$WORD  E200
                          .MCALL  M$GNINS
                          .IRP    N,<E200>
                          M$GNINS <.WORD  N>
                          .ENDM
013204                    M$GNINS <.WORD  E200>
                          .IF LT SVCINS
                          .WORD   E200
                          .MEXIT
                          .ENDC
                          .IF EQ SVCINS
                          .LIST
                                  .WORD   E200
                                          .NLIST
                          .MEXIT
                          .ENDC
                          .IF GT SVCINS
                          .LIST
013204  005047                                                          .WORD   E200
                                          .NLIST
                          .ENDC
                          .IFF
                          M$WORD  0
                          .ENDC
                          .IF NB ERR202
013206                    M$WORD  ERR202
                          .MCALL  M$GNINS
                          .IRP    N,<ERR202>
                          M$GNINS <.WORD  N>
                          .ENDM
013206                    M$GNINS <.WORD  ERR202>
                          .IF LT SVCINS
                          .WORD   ERR202
                          .MEXIT
                          .ENDC
                          .IF EQ SVCINS
```

C10

```
                                        .LIST
                                                .WORD   ERR202
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
       013206  003546                                                                         .WORD   ERR202
                                                        .NLIST
                                        .ENDC
                                        .IFF
                                        M$WORD  0
                                        .ENDC
  3011 013210                           50$:    ENDSEG
                                        .MCALL  M$POP,M$GNLS,M$SVC,M$ENDERR
       013210                           M$POP   T$NS,T$NESTLEV,T$TEMP
                                        .MCALL  M$GETS,M$DECR
                                        .IF LT  T$NESTLEV
                                        .ERROR  T$NESTLEV       ; MACRO T$NS UNDERFLOW
                                        .MEXIT
                                        .ENDC
       013210                           M$GETS  T$NS,\T$NESTLEV,T$TEMP
               000003                   T$TEMP=T$NS2
       013210                           M$DECR  T$NESTLEV
               000001                   T$NESTLEV=T$NESTLEV-1
                                        .IF EQ F$SEG-T$TEMP
       013210                           M$POP   T$SEK,T$SEGLEV,T$$SEG
                                        .MCALL  M$GETS,M$DECR
                                        .IF LT  T$SEGLEV
                                        .ERROR  T$SEGLEV        ; MACRO T$SEK UNDERFLOW
                                        .MEXIT
                                        .ENDC
       013210                           M$GETS  T$SEK,\T$SEGLEV,T$$SEG
               010004                   T$$SEG=T$SEK0
       013210                           M$DECR  T$SEGLEV
               177777                   T$SEGLEV=T$SEGLEV-1
       013210                           M$GNLS  T$$SEG
                                        .MCALL  M$GEN
                                        .IF NB T$$SEG
       013210                           M$GEN   \T$$SEG,$,SVCTAG
                                        .IF LE  SVCTAG
                                        .IIF EQ SVCTAG,.LIST
                                        10004$:
                                        .IIF EQ SVCTAG,.NLIST
                                        .MEXIT
                                        .ENDC
                                        .LIST
       013210                                                                         10004$:
                                                .NLIST
                                        .IFF
                                        M$GEN   \S$LSYM,$,SVCTAG
                                        .ENDC
       013210                           M$SVC   C$ESEG
                                        .MCALL  M$GNINS,M$TSTLAB
       013210                           M$TSTLAB
                                        .MCALL  M$TLABEL,M$INCR
                                        .IIF LT T$TSTMAC, .MEXIT
```

```
                                          .RADIX  10
                                          M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                          .RADIX  8
                                          M$INCR  T$TSTSEQ
     013210                               M$GNINS <TRAP   C$ESEG>
                                          .IF LT SVCINS
                                          TRAP    C$ESEG
                                          .MEXIT
                                          .ENDC
                                          .IF EQ SVCINS
                                          .LIST
                                                  TRAP    C$ESEG
                                                          .NLIST
                                          .MEXIT
                                          .ENDC
                                          .IF GT SVCINS
                                          .LIST
     013210  104405                                                                               TRAP    C$ESEG
                                                          .NLIST
                                          .ENDC
                                          .IF EQ T$SEGLEV+1
             000041                       I$SEG=F$END
                                          .ENDC
                                          .IFF
                                          M$ENDERR        ENDSEG,T$TEMP
                                          .ENDC
     013212  022737  000002  002374               CMP     #2,CHAN                 ;LOOK AT CHANNEL FLAG
     013220  001427                               BEQ     61$                     ;EXIT IF CHANNEL 2 WAS SELECTED
     013222  052777  000010  167050               BIS     #10,@CSRX               ;SET MUX BIT
     013230  012737  000002  002374               MOV     #2,CHAN                 ;LOAD CHANNEL FLAG
     013236  017737  167036  002502               MOV     @CSRX,BAD               ;GET CSR2 CONTENTS
     013244  042737  017060  002502               BIC     #17060,BAD              ;IGNORE BIT 9-12 AND BIT 4+5
     013252  022737  000010  002502               CMP     #10,BAD                 ;MUX BIT SHOULD BE SET
     013260  001646                               BEQ     13$                     ;BRANCH IF YES
     013262  012737  000010  002500               MOV     #10,GOOD                ;GET GOOD DATA
     013270                                       ERRSOFT 206,E200,ERR201         ;ERROR HANDLER
                                          .MCALL  M$ERRINS
     013270                               M$ERRINS        206,E200,ERR201,C$ERSOFT
                                          .MCALL  M$GNINS,M$WORD,M$TSTLAB
     013270                               M$SVC   C$ERSOFT
                                          .MCALL  M$GNINS,M$TSTLAB
     013270                               M$TSTLAB
                                          .MCALL  M$TLABEL,M$INCR
                                          .IIF LT T$TSTMAC, .MEXIT
                                          .RADIX  10
                                          M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                          .RADIX  8
                                          M$INCR  T$TSTSEQ
     013270                               M$GNINS <TRAP   C$ERSOFT>
                                          .IF LT SVCINS
                                          TRAP    C$ERSOFT
                                          .MEXIT
                                          .ENDC
                                          .IF EQ SVCINS
                                          .LIST
                                                  TRAP    C$ERSOFT
                                                          .NLIST
```

E10

```
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
     013270  104457                                                            TRAP    C$ERSOFT
                                          .NLIST
                                .ENDC
             000012             .RADIX  10
                                .IF NB  206
             000316             T$ERRNUM=206
                                .IFF
                                .ERROR  ;MISSING ERROR NR
                                .ENDC
     013272                     M$WORD  \T$ERRNUM
                                .MCALL  M$GNINS
                                .IRP    N,<206>
                                M$GNINS <.WORD  N>
                                .ENDM
     013272                     M$GNINS <.WORD  206>
                                .IF LT SVCINS
                                .WORD   206
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                     .WORD   206
                                          .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
     013272  000316                                                            .WORD   206
                                          .NLIST
                                .ENDC
             000010             .RADIX  8
                                .IF NB E200
     013274                     M$WORD  E200
                                .MCALL  M$GNINS
                                .IRP    N,<E200>
                                M$GNINS <.WORD  N>
                                .ENDM
     013274                     M$GNINS <.WORD  E200>
                                .IF LT SVCINS
                                .WORD   E200
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                     .WORD   E200
                                          .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
     013274  005047                                                            .WORD   E200
                                          .NLIST
                                .ENDC
```

```
                                          .IFF
                                          M$WORD  0
                                          .ENDC
                                          .IF NB ERR201
     013276                               M$WORD  ERR201
                                          .MCALL  M$GNINS
                                          .IRP    N,<ERR201>
                                          M$GNINS <.WORD  N>
                                          .ENDM
     013276                               M$GNINS <.WORD  ERR201>
                                          .IF LT SVCINS
                                          .WORD   ERR201
                                          .MEXIT
                                          .ENDC
                                          .IF EQ SVCINS
                                          .LIST
                                                  .WORD   ERR201
                                                          .NLIST
                                          .MEXIT
                                          .ENDC
                                          .IF GT SVCINS
                                          .LIST
     013276  003470                                                                  .WORD   ERR201
                                                          .NLIST
                                          .ENDC
                                          .IFF
                                          M$WORD  0
                                          .ENDC
3022 013300  005737  002234               61$:    TST     QVP                 ;IS QUICK VERIFY PASS SELECTED
3023 013304  001010                               BNE     EXQV2               ;IF YES EXIT TEST
3024 013306  005237  002322                       INC     ITRCNT              ;ITERATION COUNTER +1
3025 013312  023737  002320  002322               CMP     ITRDEF,ITRCNT       ;DEFAULT ITERATION EXECUTED
3026 013320  001402                               BEQ     EXQV2               ;IF YES EXIT TEST
3027 013322  000137  012724                       JMP     ITRAC2              ;IF NO TEST ITERATION
3028 013326                               EXQV2:  EXIT TST
                                          .MCALL  M$SVC,M$EXIT,M$EXSEG,M$EXTJ,M$GETTOP,M$CHECK,M$WORD,XFER
             000041                       T$FLAG=F$END
     013326                               M$CHECK TST,T$TEMP,T$FLAG
                                          .IF IDN <TST>,<TST>
             010027                       T$TEMP=T$$TEST
             000040                       T$FLAG=I$TST
                                          .MEXIT
                                          .ENDC
                                          .IF IDN <SUB>,<TST>
                                          T$TEMP=T$$SUB
                                          T$FLAG=I$SUB
                                          .MEXIT
                                          .ENDC
                                          .IF IDN <SEG>,<TST>
                                          T$TEMP=T$$SEG
                                          T$FLAG-I$SEG
                                          .MEXIT
                                          .ENDC
                                          .IF IDN <INIT>,<TST>
                                          T$TEMP-T$$INIT
                                          T$FLAG=I$INIT
                                          .MEXIT
```

G10

```
                        .ENDC
                        .IF IDN <CLN>,<TST>
                        T$TEMP=T$$CLEAN
                        T$FLAG=I$CLN
                        .MEXIT
                        .ENDC
                        .IF IDN <SRV>,<TST>
                        T$TEMP=T$$SRV
                        T$FLAG=I$SRV
                        .MEXIT
                        .ENDC
                        .IF IDN <MSG>,<TST>
                        T$TEMP=T$$MSG
                        T$FLAG=F$JMP
                        .MEXIT
                        .ENDC
                        .IF IDN <RPT>,<TST>
                        T$TEMP=T$$RPT
                        T$FLAG=F$JMP
                        .MEXIT
                        .ENDC
                        .IF IDN <DU>,<TST>
                        T$TEMP=T$$DU
                        T$FLAG=F$JMP
                        .MEXIT
                        .ENDC
                        .IF IDN <AU>,<TST>
                        T$TEMP=T$$AU
                        T$FLAG=F$JMP
                        .MEXIT
                        .ENDC
                        .IF EQ T$FLAG-F$JMP
                        M$WORD  J$JMP
                        M$EXTJ  \T$TEMP
                        .MEXIT
                        .ENDC
                        .IF EQ  T$FLAG-F$BGN
013326                  M$SVC   C$EXIT
                        .MCALL  M$GNINS,M$TSTLAB
013326                  M$TSTLAB
                        .MCALL  M$TLABEL,M$INCR
                        .IIF LT T$TSTMAC, .MEXIT
                        .RADIX  10
                        M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                        .RADIX  8
                        M$INCR  T$TSTSEQ
013326                  M$GNINS <TRAP   C$EXIT>
                        .IF LT SVCINS
                        TRAP    C$EXIT
                        .MEXIT
                        .ENDC
                        .IF EQ SVCINS
                        .LIST
                                TRAP    C$EXIT
                                        .NLIST
                        .MEXIT
                        .ENDC
```

```
                                        .IF GT SVCINS
                                        .LIST
      013326  104432                                                                  TRAP    C$EXIT
                                                      .NLIST
                                        .ENDC
                                        .IF IDN <SEG>,<TST>
                                        M$GETTOP T$SEK,T$SEGLEV,T$TEMP
                                        M$EXSEG \T$TEMP
                                        .IFF
      013330                            M$EXIT  \T$TEMP
                                        .MCALL  M$GNINS
      013330                            M$GNINS <.WORD  L10027-.>
                                        .IF LT SVCINS
                                        .WORD   L10027-.
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                .WORD   L10027-.
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
      013330  000066                                                                  .WORD   L10027-.
                                                        .NLIST
                                        .ENDC
                                        .ENDC
                                        .MEXIT
                                        .ENDC
                                        .IF IDN <HRD>,<TST>
                                        M$GETTOP        T$NS,T$NESTLEV,T$TEMP
                                        .IF EQ  F$HARD-T$TEMP
                                        .IRP    N,<\T$$HARD>
                                        XFER    L'N
                                        .ENDM
                                        .MEXIT
                                        .ENDC
                                        .ENDC
                                        .IF IDN <SFT>,<TST>
                                        M$GETTOP        T$NS,T$NESTLEV,T$TEMP
                                        .IF EQ  F$SOFT-T$TEMP
                                        .IRP    N,<\T$$SOFT>
                                        XFER    L'N
                                        .ENDM
                                        .MEXIT
                                        .ENDC
                                        .ENDC
                                        .ERROR  ;ILL. "EXIT TST" STMT.
                                                .NLIST  BEX
      013332     040      111      111  IIRNAM: .ASCIZ  / IIR/
      013337     040      111      123  ISRNAM: .ASCIZ  / ISR/
      013344     040      111      103  ICRNAM: .ASCIZ  / ICR/
      013351     040      111      104  IDRNAM: .ASCIZ  / IDR/
      013356     040      115      103  MCRNAM: .ASCIZ  / MCR/
      013363     045      123      062  TSHD2:  .ASCIZ  /%S2%AINITIALIZATION TEST%N/
                                                .EVEN
```

```
3037                               .LIST BEX
3038 013416                        ENDTST
                          .MCALL   M$POP,M$GNTAG,M$SVC,M$ENDERR
                          .IF EQ   F$BGN-I$TST
            000041        I$TST=F$END
                          .IFF
                          .ERROR   ;MISSING "BGNTST"
                          .MEXIT
                          .ENDC
     013416               M$POP    T$NS,T$NESTLEV,T$TEMP
                          .MCALL   M$GETS,M$DECR
                          .IF LT   T$NESTLEV
                          .ERROR   T$NESTLEV        ; MACRO T$NS UNDERFLOW
                          .MEXIT
                          .ENDC
     013416               M$GETS   T$NS,\T$NESTLEV,T$TEMP
            000001        T$TEMP=T$NS1
     013416               M$DECR   T$NESTLEV
            000000        T$NESTLEV=T$NESTLEV-1
                          .IF EQ F$TEST T$TEMP
     013416               M$GNTAG L,T$$TEST
                          .MCALL   M$GEN
     013416               M$GEN    L,\T$$TEST,SVCTAG
                          .IF LE   SVCTAG
                          .IIF EQ SVCTAG,.LIST
                          L10027:
                          .IIF EQ SVCTAG,.NLIST
                          .MEXIT
                          .ENDC
                          .LIST
     013416                                                            L10027:
                                   .NLIST
            010000        S$LSYM=T$LSYM
     013416               M$SVC    C$ETST
                          .MCALL   M$GNINS,M$TSTLAB
     013416               M$TSTLAB
                          .MCALL   M$TLABEL,M$INCR
                          .IIF LT T$TSTMAC, .MEXIT
                          .RADIX  10
                          M$TLABEL         \T$TESTNUN,\T$TSTSEQ
                          .RADIX  8
                          M$INCR   T$TSTSEQ
     013416               M$GNINS <TRAP    C$ETST>
                          .IF LT SVCINS
                          TRAP     C$ETST
                          .MEXIT
                          .ENDC
                          .IF EQ SVCINS
                          .LIST
                                   TRAP    C$ETST
                                           .NLIST
                          .MEXIT
                          .ENDC
                          .IF GT SVCINS
                          .LIST
     013416  104401                                                        TRAP     C$ETST
                                           .NLIST
```

J10

```
                                .ENDC
          000041                I$TST=F$END
                                .IFF
                                M$ENDERR        ENDTST,T$TEMP
                                .ENDC
```


K10

```
                          .SBTTL  TEST 3: R/W BIT TEST
                          ;*************************************************************;
                          ;               IEX - TEST 3                                   ;
                          ;THIS TEST CHECKS ALL R/W BITS OF CSR,BAR,BCR AND MCR REGISTER ;
                          ;IN BOTH CHANNELS.IT ALSO TESTS THE MASTER CLEAR FUNCTION IN   ;
                          ;CSR1 + CSR2.                                                  ;
                          ;                                                              ;
                          ;THE TMS 9914 REGISTERS IIR,ISR,ICR,IDR ARE NOT CHECKED        ;
                          ;IN THIS TEST.                                                 ;
                          ;*************************************************************;
013420                            BGNTST
                          .MCALL  M$INCR,M$GNTEST,M$PUSH,M$INCR
                          .IF NE  F$END-I$SUB
                          .ERROR  ;"BGNTST" IN SUB
                          .MEXIT
                          .ENDC
                          .IF NE  F$END-I$SEG
                          .ERROR  ;"BGNTST" IN SEG
                          .MEXIT
                          .ENDC
                          .IF NE  F$END-I$TST
                          .ERROR  ;"BGNTST" IN TST
                          .MEXIT
                          .IFF
          000040          I$TST=F$BGN
                          .ENDC
                          .IF B
013420                    M$INCR  T$TESTNUM
          000003          T$TESTNUM=T$TESTNUM+1
                          .IFF
                          T$TESTNUM=
                          .ENDC
          000000          T$SUBNUM=0
          000012          .RADIX  10
013420                    M$GNTEST        \T$TESTNUM
                          .MCALL  M$GEN
013420                    M$GEN   T,3:,SVCTST
                          .IF LE  SVCTST
                          .IIF EQ SVCTST,.LIST
                          T3::
                          .IIF EQ SVCTST,.NLIST
                          .MEXIT
                          .ENDC
                          .LIST
013420                                                            T3::
                                  .NLIST
          000010          .RADIX  8
013420                    M$PUSH  T$NS,T$NESTLEV,F$TEST
                          .MCALL  M$INCR,M$SETS
013420                    M$INCR  T$NESTLEV
          000001          T$NESTLEV=T$NESTLEV+1
013420                    M$SETS  T$NS,\T$NESTLEV,F$TEST
          000001          T$NS1=F$TEST
          010030          T$$TEST=T$TAGNUM
013420                    M$INCR T$TAGNUM
          010031          T$TAGNUM=T$TAGNUM+1
          000001          T$TSTSEQ=1
```

```
 013420  005737  002324                 TST     PNTF                              ;IS THE PNT FLAG SET
 013424  001410                         BEQ     7$                                ;IF YES, PRINT THE TEST HEADER
 013426                                 PRINTF  #TSHD3                            ;...
                                .MCALL  M$PRINT
                                .IF B   #TSHD3
                                .ERROR  ;MISSING FORMAT
                                .MEXIT
                                .ENDC
                                .IF B   <>
 013426                         M$PRINT C$PNTF,#TSHD3
                                .MCALL  M$COUNT,M$PUT,M$GNINS,M$SVC
         000001                 T$ARGCNT=1
 013426                         M$COUNT T$ARGCNT,<>,<>,<>,<>,<>,<>,<>,<>
                                .IF NB <>
                                M$COUNT T$ARGCNT,<>,<>,<>,<>,<>,<>,<>,<>
                                .ENDC
                                .IF NB <>
                                T$ARGCNT=T$ARGCNT+1
                                .ENDC
                                .IRP    N,<\T$ARGCNT>
                                M$PUT   #N,#TSHD3,<>,<>,<>,<>,<>,<>,<>,<>
                                .ENDM
 013426                         M$PUT   #1,#TSHD3,<>,<>,<>,<>,<>,<>,<>,<>
                                .MCALL  M$PUT1
                                .IF NB  <#TSHD3>
 013426                         M$PUT   <#TSHD3>,<>,<>,<>,<>,<>,<>,<>,<>
                                .MCALL  M$PUT1
                                .IF NB  <>
                                M$PUT   <>,<>,<>,<>,<>,<>,<>,<>,<>
                                .ENDC
                                .IF NB  <#TSHD3>
 013426                         M$PUT1  #TSHD3
                                .MCALL  M$GNINS
                                .IF B
 013426                         M$GNINS <MOV    #TSHD3,-(SP)>
                                .IF LT SVCINS
                                MOV     #TSHD3,-(SP)
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        MOV     #TSHD3,-(SP)
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
 013426  012746  014051                                                            MOV     #TSHD3, (SP)
                                                .NLIST
                                .ENDC
                                .IFF
                                .IF DIF B,<#TSHD3>
                                .ERROR  ;ILL. ARG. "#TSHD3" ONLY "B" IS ALLOWED.
                                .MEXIT
                                .ENDC
                                M$GNINS <CLR    -(SP)>
                                M$GNINS <BISB   ,(SP)>
```

```
                                        .ENDC
                                        .ENDC
                                        .ENDC
                                        .IF NB  <#1>
      013432                            M$PUT1  #1
                                        .MCALL  M$GNINS
                                        .IF B
      013432                            M$GNINS <MOV    #1,-(SP)>
                                        .IF LT SVCINS
                                        MOV     #1,-(SP)
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                MOV     #1,-(SP)
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
      013432  012746  000001                                                                  MOV     #1,-(SP)
                                                        .NLIST
                                        .ENDC
                                        .IFF
                                        .IF DIF B,<#1>
                                        .ERROR  ;ILL. ARG. "#1" ONLY "B" IS ALLOWED.
                                        .MEXIT
                                        .ENDC
                                        M$GNINS <CLR    -(SP)>
                                        M$GNINS <BISB   ,(SP)>
                                        .ENDC
                                        .ENDC
      013436                            M$GNINS <MOV    SP,R0>
                                        .IF LT SVCINS
                                        MOV     SP,R0
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                MOV     SP,R0
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
      013436  010600                                                                          MOV     SP,R0
                                                        .NLIST
                                        .ENDC
      013440                            M$SVC   C$PNTF
                                        .MCALL  M$GNINS,M$TSTLAB
      013440                            M$TSTLAB
                                        .MCALL  M$TLABEL,M$INCR
                                        .IIF LT T$TSTMAC, .MEXIT
                                        .RADIX  10
                                        M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                        .RADIX  8
                                        M$INCR  T$TSTSEQ
```

```
013440                          M$GNINS <TRAP   C$PNTF>
                                .IF LT SVCINS
                                TRAP    C$PNTF
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        TRAP    C$PNTF
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
013440  104417                                                                  TRAP    C$PNTF
                                                .NLIST
                                .ENDC
                                .IRP    N,<\T$ARGCNT*2+2>
                                M$GNINS <ADD    #N,SP>
                                .ENDM
013442                          M$GNINS <ADD    #4,SP>
                                .IF LT SVCINS
                                ADD     #4,SP
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        ADD     #4,SP
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
013442  062706  000004                                                          ADD     #4,SP
                                                .NLIST
                                .ENDC
                                .MEXIT
                                .ENDC
                                .IF B   <>
                                M$PRINT C$PNTF,#TSHD3,<>
                                .MEXIT
                                .ENDC
                                .IF B   <>
                                M$PRINT C$PNTF,#TSHD3,<>,<>
                                .MEXIT
                                .ENDC
                                .IF B   <>
                                M$PRINT C$PNTF,#TSHD3,<>,<>,<>
                                .MEXIT
                                .ENDC
                                .IF B   <>
                                M$PRINT C$PNTF,#TSHD3,<>,<>,<>,<>
                                .MEXIT
                                .ENDC
                                .IF B   <>
                                M$PRINT C$PNTF,#TSHD3,<>,<>,<>,<>,<>
                                .MEXIT
                                .ENDC
```

B11


```
                              .IF B    <>
                              M$PRINT C$PNTF,#TSHD3,<>,<>,<>,<>,<>,<>
                              .MEXIT
                              .ENDC
                              .IF B    <>
                              M$PRINT C$PNTF,#TSHD3,<>,<>,<>,<>,<>,<>,<>
                              .MEXIT
                              .ENDC
                              M$PRINT C$PNTF,#TSHD3,<>,<>,<>,<>,<>,<>,<>,<>
3054 013446  005037  002322   7$:     CLR     ITRCNT          ;CLEAR ITERATION COUNTER
3055 013452                           SETPRI  #PRI07          ;INTERRUPT NOT ALLOWED
                              .MCALL  M$LDRO,M$SVC
     013452                   M$LDRO  #PRI07,SETPRI
                              .MCALL  M$GNINS
                              .IF NB #PRI07
                              .IF DIF R0,#PRI07
     013452                   M$GNINS <MOV    #PRI07,R0>
                              .IF LT SVCINS
                              MOV     #PRI07,R0
                              .MEXIT
                              .ENDC
                              .IF EQ SVCINS
                              .LIST
                                      MOV     #PRI07,R0
                                              .NLIST
                              .MEXIT
                              .ENDC
                              .IF GT SVCINS
                              .LIST
     013452  012700  000340                                                  MOV     #PRI07,R0
                                              .NLIST
                              .ENDC
                              .ENDC
                              .IFF
                              .ERROR  ;MISSING ARG. ON "SETPRI"
                              .ENDC
     013456                   M$SVC   C$SPRI
                              .MCALL  M$GNINS,M$TSTLAB
     013456                   M$TSTLAB
                              .MCALL  M$TLABEL,M$INCR
                              .IIF LT T$TSTMAC, .MEXIT
                              .RADIX  10
                              M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                              .RADIX  8
                              M$INCR  T$TSTSEQ
     013456                   M$GNINS <TRAP   C$SPRI>
                              .IF LT SVCINS
                              TRAP    C$SPRI
                              .MEXIT
                              .ENDC
                              .IF EQ SVCINS
                              .LIST
                                      TRAP    C$SPRI
                                              .NLIST
                              .MEXIT
                              .ENDC
                              .IF GT SVCINS
```

C11

```
                                        .LIST
     013456  104441                                                                              TRAP    C$SPRI
                                                     .NLIST
                                        .ENDC
3056 013460                             ITRAC3: BRESET                     ;RESET ALL HARDWARE
                                        .MCALL  M$SVC
     013460                             M$SVC   C$RESET
                                        .MCALL  M$GNINS,M$TSTLAB
     013460                             M$TSTLAB
                                        .MCALL  M$TLABEL,M$INCR
                                        .IIF LT T$TSTMAC, .MEXIT
                                        .RADIX  10
                                        M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                        .RADIX  8
                                        M$INCR  T$TSTSEQ
     013460                             M$GNINS <TRAP   C$RESET>
                                        .IF LT SVCINS
                                        TRAP    C$RESET
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                TRAP    C$RESET
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
     013460  104433                                                                              TRAP    C$RESET
                                                        .NLIST
                                        .ENDC
3057 013462  005037  002502                     CLR     BAD                ;CLEAR ERROR LABEL BAD
3058 013466  012737  000001  002374             MOV     #1,CHAN            ;LOAD CHANNEL NO.
3059 013474                             T3SEC:  READBUS                    ;DETERMINE BUS TYPE
                                        .MCALL  M$SVC
     013474                             M$SVC   C$RDBU
                                        .MCALL  M$GNINS,M$TSTLAB
     013474                             M$TSTLAB
                                        .MCALL  M$TLABEL,M$INCR
                                        .IIF LT T$TSTMAC, .MEXIT
                                        .RADIX  10
                                        M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                        .RADIX  8
                                        M$INCR  T$TSTSEQ
     013474                             M$GNINS <TRAP   C$RDBU>
                                        .IF LT SVCINS
                                        TRAP    C$RDBU
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                TRAP    C$RDBU
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
```

D11

TEST 3: R/W BIT TEST

```
      013474  104407                                                     TRAP    C$RDBU
                                                    .NLIST
                                      .ENDC
3060  013476                                  BNCOMPLETE UNIMSK         ;BRANCH IF UNI-BUS
                                      .MCALL  M$GNINS
      013476                          M$GNINS <BCC     UNIMSK>
                                      .IF LT SVCINS
                                      BCC     UNIMSK
                                      .MEXIT
                                      .ENDC
                                      .IF EQ SVCINS
                                      .LIST
                                              BCC     UNIMSK
                                                      .NLIST
                                      .MEXIT
                                      .ENDC
                                      .IF GT SVCINS
                                      .LIST
      013476  103004                                                     BCC     UNIMSK
                                                      .NLIST
                                      .ENDC
3061  013500  012737  017167  002350          MOV     #17167,MASK      ;LOAD BIT MASK FOR Q-BUS DEVICE
3062  013506  000403                          BR      .+10             ;
3063  013510  012737  000167  002350  UNIMSK: MOV     #167,MASK        ;LOAD BIT MASK FOR UNI-BUS DEVICE
3064  013516  013737  002300  002354          MOV     CSRX,REGADD      ;LOAD REGISTER ADDRESS
3065  013524  012737  000455  002506          MOV     #301.,ERRNBR     ;FIRST ERROR NUMBER
3066  013532  004737  006310                  JSR     PC,REGTS1        ;CALL REGISTER TEST
3067  013536                                  BGNSEG
                                      .MCALL  M$PUSH,M$INCR,M$SVC
              000040                  I$SEG=F$BGN
      013536                          M$PUSH  T$NS,T$NESTLEV,F$SEG
                                      .MCALL  M$INCR,M$SETS
      013536                          M$INCR  T$NESTLEV
              000002                  T$NESTLEV=T$NESTLEV+1
      013536                          M$SETS  T$NS,\T$NESTLEV,F$SEG
              000003                  T$NS2=F$SEG
              010000                  T$$SEG=S$LSYM
      013536                          M$PUSH  T$SEK,T$SEGLEV,T$$SEG
                                      .MCALL  M$INCR,M$SETS
      013536                          M$INCR  T$SEGLEV
              000000                  T$SEGLEV=T$SEGLEV+1
      013536                          M$SETS  T$SEK,\T$SEGLEV,T$$SEG
              010000                  T$SEK0=T$$SEG
      013536                          M$INCR  S$LSYM
              010001                  S$LSYM=S$LSYM+1
      013536                          M$SVC   C$BSEG
                                      .MCALL  M$GNINS,M$TSTLAB
      013536                          M$TSTLAB
                                      .MCALL  M$TLABEL,M$INCR
                                      .IIF LT T$TSTMAC, .MEXIT
                                      .RADIX  10
                                      M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                      .RADIX  8
                                      M$INCR  T$TSTSEQ
      013536                          M$GNINS <TRAP    C$BSEG>
                                      .IF LT SVCINS
                                      TRAP    C$BSEG
```

E11

```
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                TRAP    C$BSEG
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
     013536  104404                                                                                TRAP    C$BSEG
                                                        .NLIST
                                        .ENDC
     013540  052777  000107  166532             BIS     #107,@CSRX      ;SET ALL R/W BITS THAT CAN BE CLEARED BY MC
                                                                        ;CHANGED FROM MOV TO BIS   sat
     013546  052777  000400  166524             BIS     #400,@CSRX      ;MASTER CLEAR
     013554  117737  166520  002502             MOVB    @CSRX,BAD       ;GET CSR CONTENTS
     013562  042737  000010  002502             BIC     #10,BAD         ;mask out MUX bit which is not
                                                                        ;cleared by MC....sat
     013570  105737  002502                     TSTB    BAD             ;ALL BITS CLEARED...sat
     013574  001410                             BEQ     10$             ;BRANCH IF YES
     013576  005037  002500                     CLR     GOOD            ;SET UP DATA FOR ERROR MESSAGE
     013602  012702  014044                     MOV     #CSRNAM,R2      ;...
     013606                                     ERRSOFT 304,E302,ERR202
                                        .MCALL  M$ERRINS
     013606                             M$ERRINS        304,E302,ERR202,C$ERSOFT
                                        .MCALL  M$GNINS,M$WORD,M$TSTLAB
     013606                             M$SVC   C$ERSOFT
                                        .MCALL  M$GNINS,M$TSTLAB
     013606                             M$TSTLAB
                                        .MCALL  M$TLABEL,M$INCR
                                        .IIF LT T$TSTMAC, .MEXIT
                                        .RADIX  10
                                        M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                        .RADIX  8
                                        M$INCR  T$TSTSEQ
     013606                             M$GNINS <TRAP   C$ERSOFT>
                                        .IF LT SVCINS
                                        TRAP    C$ERSOFT
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                TRAP    C$ERSOFT
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
     013606  104457                                                                                TRAP    C$ERSOFT
                                                        .NLIST
                                        .ENDC
             000012                     .RADIX  10
                                        .IF NB  304
             000460                     T$ERRNUM-304
                                        .IFF
                                        .ERROR  ;MISSING ERROR NR
```

```
                                 .ENDC
      013610                     M$WORD  \T$ERRNUM
                                 .MCALL  M$GNINS
                                 .IRP    N,<304>
                                 M$GNINS <.WORD  N>
                                 .ENDM
      013610                     M$GNINS <.WORD  304>
                                 .IF LT SVCINS
                                 .WORD   304
                                 .MEXIT
                                 .ENDC
                                 .IF EQ SVCINS
                                 .LIST
                                         .WORD   304
                                                 .NLIST
                                 .MEXIT
                                 .ENDC
                                 .IF GT SVCINS
                                 .LIST
      013610  000460                                                         .WORD   304
                                                 .NLIST
                                 .ENDC
              000010             .RADIX  8
                                 .IF NB E302
      013612                     M$WORD  E302
                                 .MCALL  M$GNINS
                                 .IRP    N,<E302>
                                 M$GNINS <.WORD  N>
                                 .ENDM
      013612                     M$GNINS <.WORD  E302>
                                 .IF LT SVCINS
                                 .WORD   E302
                                 .MEXIT
                                 .ENDC
                                 .IF EQ SVCINS
                                 .LIST
                                         .WORD   E302
                                                 .NLIST
                                 .MEXIT
                                 .ENDC
                                 .IF GT SVCINS
                                 .LIST
      013612  005152                                                         .WORD   E302
                                                 .NLIST
                                 .ENDC
                                 .IFF
                                 M$WORD  0
                                 .ENDC
                                 .IF NB ERR202
      013614                     M$WORD  ERR202
                                 .MCALL  M$GNINS
                                 .IRP    N,<ERR202>
                                 M$GNINS <.WORD  N>
                                 .ENDM
      013614                     M$GNINS <.WORD  ERR202>
                                 .IF LT SVCINS
                                 .WORD   ERR202
```

```
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                .WORD   ERR202
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
       013614  003546                                                                  .WORD   ERR202
                                                        .NLIST
                                        .ENDC
                                        .IFF
                                        M$WORD  0
                                        .ENDC
  3079 013616                           10$:    ENDSEG
                                        .MCALL  M$POP,M$GNLS,M$SVC,M$ENDERR
       013616                           M$POP   T$NS,T$NESTLEV,T$TEMP
                                        .MCALL  M$GETS,M$DECR
                                        .IF LT  T$NESTLEV
                                        .ERROR  T$NESTLEV       ; MACRO T$NS UNDERFLOW
                                        .MEXIT
                                        .ENDC
       013616                           M$GETS  T$NS,\T$NESTLEV,T$TEMP
               000003                   T$TEMP=T$NS2
       013616                           M$DECR  T$NESTLEV
               000001                   T$NESTLEV=T$NESTLEV 1
                                        .IF EQ F$SEG-T$TEMP
       013616                           M$POP   T$SEK,T$SEGLEV,T$$SEG
                                        .MCALL  M$GETS,M$DECR
                                        .IF LT  T$SEGLEV
                                        .ERROR  T$SEGLEV        ; MACRO T$SEK UNDERFLOW
                                        .MEXIT
                                        .ENDC
       013616                           M$GETS  T$SEK,\T$SEGLEV,T$$SEG
               010000                   T$$SEG=T$SEK0
       013616                           M$DECR  T$SEGLEV
               177777                   T$SEGLEV=T$SEGLEV-1
       013616                           M$GNLS  T$$SEG
                                        .MCALL  M$GEN
                                        .IF NB T$$SEG
       013616                           M$GEN   \T$$SEG,$,SVCTAG
                                        .IF LE  SVCTAG
                                        .IIF EQ SVCTAG,.LIST
                                        10000$:
                                        .IIF EQ SVCTAG,.NLIST
                                        .MEXIT
                                        .ENDC
                                        .LIST
       013616                                                                  10000$:
                                                .NLIST
                                        .IFF
                                        M$GEN   \S$LSYM,$,SVCTAG
                                        .ENDC
       013616                           M$SVC   C$ESEG
                                        .MCALL  M$GNINS,M$TSTLAB
```

```
     013616                                         M$TSTLAB
                                                    .MCALL  M$TLABEL,M$INCR
                                                    .IIF LT T$TSTMAC, .MEXIT
                                                    .RADIX  10
                                                    M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                                    .RADIX  8
                                                    M$INCR  T$TSTSEQ
     013616                                         M$GNINS <TRAP   C$ESEG>
                                                    .IF LT SVCINS
                                                    TRAP    C$ESEG
                                                    .MEXIT
                                                    .ENDC
                                                    .IF EQ SVCINS
                                                    .LIST
                                                            TRAP    C$ESEG
                                                                    .NLIST
                                                    .MEXIT
                                                    .ENDC
                                                    .IF GT SVCINS
                                                    .LIST
     013616  104405                                                                                 TRAP    C$ESEG
                                                                    .NLIST
                                                    .ENDC
                                                    .IF EQ T$SEGLEV+1
             000041                                 I$SEG=F$END
                                                    .ENDC
                                                    .IFF
                                                    M$ENDERR        ENDSEG,T$TEMP
                                                    .ENDC
     013620  012737  177767  002350                         MOV     #177767,MASK    ;BIT MASK OF R/W BITS
                                                                                    ;changed from 177767 177777 sat
     013626  013737  002302  002354                         MOV     BARX,REGADD     ;GET REGISTER ADDRESS OF BAR
     013634  012737  000461  002506                         MOV     #305.,ERRNBR    ;FIRST ERROR NUMBER
     013642  004737  006310                                 JSR     PC,REGTS1       ;CALL REGISTER TEST
     013646  013737  002304  002354                         MOV     BCRX,REGADD     ;GET REGISTER ADDRESS OF BCR
     013654  012737  000464  002506                         MOV     #308.,ERRNBR    ;FIRST ERROR NUMBER
     013662  004737  006310                                 JSR     PC,REGTS1       ;CALL REGISTER TEST
     013666  012737  137767  002350                         MOV     #137767,MASK    ;BIT MASK OF R/W BITS
                                                                                    ;changed from 137767 137777 sat
     013674  013737  002306  002354                         MOV     MCRX,REGADD     ;GET REGISTER ADDRESS OF MCR
     013702  012737  000467  002506                         MOV     #311.,ERRNBR    ;FIRST ERROR NUMBER
     013710  004737  006310                                 JSR     PC,REGTS1       ;CALL REGISTER TEST
     013714  032737  000001  002374                         BIT     #1,CHAN         ;WAS CHANNEL 2 SELECTED
     013722  001433                                         BEQ     QVT3            ;IF YES JUMP TO QUICK VERIFY PASS
     013724  012737  000002  002374                         MOV     #2,CHAN         ;SET CHANNEL FLAG
     013732  005037  002502                                 CLR     BAD             ;CLEAR ERROR LABLE BAD
     013736                                                 BGNSEG
                                                    .MCALL  M$PUSH,M$INCR,M$SVC
             000040                                 I$SEG=F$BGN
     013736                                         M$PUSH  T$NS,T$NESTLEV,F$SEG
                                                    .MCALL  M$INCR,M$SETS
     013736                                         M$INCR  T$NESTLEV
             000002                                 T$NESTLEV=T$NESTLEV+1
     013736                                         M$SETS  T$NS,\T$NESTLEV,F$SEG
             000003                                 T$NS2=F$SEG
             010001                                 T$$SEG=S$LSYM
     013736                                         M$PUSH  T$SEK,T$SEGLEV,T$$SEG
```

```
                                          .MCALL  M$INCR,M$SETS
     013736                               M$INCR  T$SEGLEV
            000000                        T$SEGLEV=T$SEGLEV+1
     013736                               M$SETS  T$SEK,\T$SEGLEV,T$$SEG
            010001                        T$SEK0=T$$SEG
     013736                               M$INCR  S$LSYM
            010002                        S$LSYM=S$LSYM+1
     013736                               M$SVC   C$BSEG
                                          .MCALL  M$GNINS,M$TSTLAB
     013736                               M$TSTLAB
                                          .MCALL  M$TLABEL,M$INCR
                                          .IIF LT T$TSTMAC, .MEXIT
                                          .RADIX  10
                                          M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                          .RADIX  8
                                          M$INCR  T$TSTSEQ
     013736                               M$GNINS <TRAP   C$BSEG>
                                          .IF LT SVCINS
                                          TRAP    C$BSEG
                                          .MEXIT
                                          .ENDC
                                          .IF EQ SVCINS
                                          .LIST
                                                  TRAP    C$BSEG
                                                          .NLIST
                                          .MEXIT
                                          .ENDC
                                          .IF GT SVCINS
                                          .LIST
     013736 104404                                                                                   TRAP    C$BSEG
                                                          .NLIST
                                          .ENDC
3098 013740 012777 000010 166332                  MOV     #10,@CSRX       ;SELECT CHANNEL 2 sat
3099 013746 117737 166326 002502                  MOVB    @CSRX,BAD       ;GET CSR CONTENTS
3100 013754 032737 000010 002502                  BIT     #10,BAD         ;IS MUX BIT SET
3101 013762 001011                                BNE     20$             ;BRANCH IF YES sat
3102 013764 012702 014044                         MOV     #CSRNAM,R2      ;SET UP DATA FOR ERROR MESSAGE
3103 013770 012737 000010 002500                  MOV     #10,GOOD        ;...
3104 013776                                       ERRSOFT 314,E303
                                          .MCALL  M$ERRINS
     013776                               M$ERRINS        314,E303,,C$ERSOFT
                                          .MCALL  M$GNINS,M$WORD,M$TSTLAB
     013776                               M$SVC   C$ERSOFT
                                          .MCALL  M$GNINS,M$TSTLAB
     013776                               M$TSTLAB
                                          .MCALL  M$TLABEL,M$INCR
                                          .IIF LT T$TSTMAC, .MEXIT
                                          .RADIX  10
                                          M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                          .RADIX  8
                                          M$INCR  T$TSTSEQ
     013776                               M$GNINS <TRAP   C,ERSOFT>
                                          .IF LT SVCINS
                                          TRAP    C$ERSOFT
                                          .MEXIT
                                          .ENDC
                                          .IF EQ SVCINS
```

```
                                .LIST
                                        TRAP    C$ERSOFT
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
        013776  104457                                                          TRAP    C$ERSOFT
                                                .NLIST
                                .ENDC
                000012          .RADIX  10
                                .IF NB  314
                000472          T$ERRNUM=314
                                .IFF
                                .ERROR  ;MISSING ERROR-NR
                                .ENDC
        014000                  M$WORD  \T$ERRNUM
                                .MCALL  M$GNINS
                                .IRP    N,<314>
                                M$GNINS <.WORD  N>
                                .ENDM
        014000                  M$GNINS <.WORD  314>
                                .IF LT SVCINS
                                .WORD   314
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        .WORD   314
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
        014000  000472                                                          .WORD   314
                                                .NLIST
                                .ENDC
                000010          .RADIX  8
                                .IF NB E303
        014002                  M$WORD  E303
                                .MCALL  M$GNINS
                                .IRP    N,<E303>
                                M$GNINS <.WORD  N>
                                .ENDM
        014002                  M$GNINS <.WORD  E303>
                                .IF LT SVCINS
                                .WORD   E303
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        .WORD   E303
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
```

```
       014002  005220                                                         .WORD   E303
                                         .NLIST
                          .ENDC
                          .IFF
                          M$WORD  0
                          .ENDC
                          .IF NB
                          M$WORD
                          .IFF
       014004             M$WORD  0
                          .MCALL  M$GNINS
                          .IRP    N,<0>
                          M$GNINS <.WORD  N>
                          .ENDM
       014004             M$GNINS <.WORD  0>
                          .IF LT SVCINS
                          .WORD   0
                          .MEXIT
                          .ENDC
                          .IF EQ SVCINS
                          .LIST
                                  .WORD   0
                                         .NLIST
                          .MEXIT
                          .ENDC
                          .IF GT SVCINS
                          .LIST
       014004  000000                                                         .WORD   0
                                         .NLIST
                          .ENDC
                          .ENDC
  3105 014006             20$:    ENDSEG
                          .MCALL  M$POP,M$GNLS,M$SVC,M$ENDERR
       014006             M$POP   T$NS,T$NESTLEV,T$TEMP
                          .MCALL  M$GETS,M$DECR
                          .IF LT  T$NESTLEV
                          .ERROR  T$NESTLEV       ; MACRO T$NS UNDERFLOW
                          .MEXIT
                          .ENDC
       014006             M$GETS  T$NS,\T$NESTLEV,T$TEMP
               000003     T$TEMP=T$NS2
       014006             M$DECR  T$NESTLEV
               000001     T$NESTLEV=T$NESTLEV-1
                          .IF EQ F$SEG T$TEMP
       014006             M$POP   T$SEK,T$SEGLEV,T$$SEG
                          .MCALL  M$GETS,M$DECR
                          .IF LT  T$SEGLEV
                          .ERROR  T$SEGLEV        ; MACRO T$SE< UNDERFLOW
                          .MEXIT
                          .ENDC
       014006             M$GETS  T$SEK,\T$SEGLEV,T$$SEG
               010001     T$$SEG=T$SEK0
       014006             M$DECR  T$SEGLEV
               177777     T$SEGLEV=T$SEGLEV 1
       014006             M$GNLS  T$$SEG
                          .MCALL  M$GEN
                          .IF NB T$$SEG
```


L11

L11


```
       014006                      M$GEN   \T$$SEG,$,SVCTAG
                                   .IF LE  SVCTAG
                                   .IIF EQ SVCTAG,.LIST
                                   10001$:
                                   .IIF EQ SVCTAG,.NLIST
                                   .MEXIT
                                   .ENDC
                                   .LIST
       014006                                                          10001$:
                                           .NLIST
                                   .IFF
                                   M$GEN   \S$LSYM,$,SVCTAG
                                   .ENDC
       014006                      M$SVC   C$ESEG
                                   .MCALL  M$GNINS,M$TSTLAB
       014006                      M$TSTLAB
                                   .MCALL  M$TLABEL,M$INCR
                                   .IIF LT T$TSTMAC, .MEXIT
                                   .RADIX  10
                                   M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                   .RADIX  8
                                   M$INCR  T$TSTSEQ
       014006                      M$GNINS <TRAP   C$ESEG>
                                   .IF LT SVCINS
                                   TRAP    C$ESEG
                                   .MEXIT
                                   .ENDC
                                   .IF EQ SVCINS
                                   .LIST
                                           TRAP    C$ESEG
                                                   .NLIST
                                   .MEXIT
                                   .ENDC
                                   .IF GT SVCINS
                                   .LIST
       014006  104405                                                       TRAP    C$ESEG
                                                   .NLIST
                                   .ENDC
                                   .IF EQ T$SEGLEV+1
               000041              I$SEG=F$END
                                   .ENDC
                                   .IFF
                                   M$ENDERR        ENDSEG,T$TEMP
                                   .ENDC
  3106 014010  000631                      BR      T3SEC           ;REPEAT TEST WITH CHANNEL 2
  3107 014012  005737  002234      QVT3:   TST     QVP             ;IS QUICK VERIFY PASS SELECTED
  3108 014016  001010                      BNE     EXQV3           ;IF YES EXIT TEST
  3109 014020  005237  002322              INC     ITRCNT          ;ITERATION COUNTER + 1
  3110 014024  023737  002322  002320      CMP     ITRCNT,ITRDEF   ;DEFAULT ITERATION EXECUTED
  3111 014032  001402                      BEQ     EXQV3           ;IF YES EXIT TEST
  3112 014034  000137  013460              JMP     ITRAC3          ;IF NO TEST ITERATION
  3113 014040                      EXQV3:  EXIT    TST
                                   .MCALL  M$SVC,M$EXIT,M$EXSEG,M$EXTJ,M$GETTOP,M$CHECK,M$WORD,XFER
               000041              T$FLAG=F$END
       014040                      M$CHECK TST,T$TEMP,T$FLAG
                                   .IF IDN <TST>,<TST>
               010030              T$TEMP-T$$TEST
```

M11

```
            000040                  T$FLAG=I$TST
                                    .MEXIT
                                    .ENDC
                                    .IF IDN <SUB>,<TST>
                                    T$TEMP=T$$SUB
                                    T$FLAG=I$SUB
                                    .MEXIT
                                    .ENDC
                                    .IF IDN <SEG>,<TST>
                                    T$TEMP=T$$SEG
                                    T$FLAG=I$SEG
                                    .MEXIT
                                    .ENDC
                                    .IF IDN <INIT>,<TST>
                                    T$TEMP=T$$INIT
                                    T$FLAG=I$INIT
                                    .MEXIT
                                    .ENDC
                                    .IF IDN <CLN>,<TST>
                                    T$TEMP=T$$CLEAN
                                    T$FLAG=I$CLN
                                    .MEXIT
                                    .ENDC
                                    .IF IDN <SRV>,<TST>
                                    T$TEMP=T$$SRV
                                    T$FLAG=I$SRV
                                    .MEXIT
                                    .ENDC
                                    .IF IDN <MSG>,<TST>
                                    T$TEMP=T$$MSG
                                    T$FLAG=F$JMP
                                    .MEXIT
                                    .ENDC
                                    .IF IDN <RPT>,<TST>
                                    T$TEMP=T$$RPT
                                    T$FLAG=F$JMP
                                    .MEXIT
                                    .ENDC
                                    .IF IDN <DU>,<TST>
                                    T$TEMP=T$$DU
                                    T$FLAG=F$JMP
                                    .MEXIT
                                    .ENDC
                                    .IF IDN <AU>,<TST>
                                    T$TEMP=T$$AU
                                    T$FLAG=F$JMP
                                    .MEXIT
                                    .ENDC
                                    .IF EQ T$FLAG-F$JMP
                                    M$WORD  J$JMP
                                    M$EXTJ  \T$TEMP
                                    .MEXIT
                                    .ENDC
                                    .IF EQ  T$FLAG-F$BGN
      014040                        M$SVC   C$EXIT
                                    .MCALL  M$GNINS,M$TSTLAB
      014040                        M$TSTLAB
```

N11


```
                                .MCALL  M$TLABEL,M$INCR
                                .IIF LT T$TSTMAC, .MEXIT
                                .RADIX  10
                                M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                .RADIX  8
                                M$INCR  T$TSTSEQ
      014040                    M$GNINS <TRAP   C$EXIT>
                                .IF LT SVCINS
                                TRAP    C$EXIT
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        TRAP    C$EXIT
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
      014040  104432                                                                    TRAP    C$EXIT
                                                .NLIST
                                .ENDC
                                .IF IDN <SEG>,<TST>
                                M$GETTOP T$SEK,T$SEGLEV,T$TEMP
                                M$EXSEG \T$TEMP
                                .IFF
      014042                    M$EXIT  \T$TEMP
                                .MCALL  M$GNINS
      014042                    M$GNINS <.WORD  L10030-.>
                                .IF LT SVCINS
                                .WORD   L10030-.
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        .WORD   L10030 .
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
      014042  000034                                                                    .WORD   L10030-.
                                                .NLIST
                                .ENDC
                                .ENDC
                                .MEXIT
                                .ENDC
                                .IF IDN <HRD>,<TST>
                                M$GETTOP        T$NS,^$NESTLEV,T$TEMP
                                .IF EQ  F$HARD T$TEMP
                                .IRP    N,<\T$$HARD>
                                XFER    L'N
                                .ENDM
                                .MEXIT
                                .ENDC
                                .ENDC
                                .IF IDN <SFT>,<TST>
```

B12


```
                                      M$GETTOP        T$NS,T$NESTLEV,T$TEMP
                                      .IF EQ  F$ST-T$TEMP
                                      .IRP    N,<\T$$SOFT>
                                      XFER    L'N
                                      .ENDM
                                      .MEXIT
                                      .ENDC
                                      .ENDC
                                      .ERROR  ;ILL. "EXIT TST" STMT.
3114                                          .NLIST BEX
3115 014044   040     103     123   CSRNAM: .ASCIZ  / CSR/
3116 014051   045     123     062   TSHD3:  .ASCIZ  /%S2%AR-W BIT TEST%N/
3117                                          .LIST BEX
3118                                          .EVEN
3119 014076                                   ENDTST
                                      .MCALL  M$POP,M$GNTAG,M$SVC,M$ENDERR
                                      .IF EQ  F$BGN-I$TST
          000041                      I$TST=F$END
                                      .IFF
                                      .ERROR  ;MISSING "BGNTST"
                                      .MEXIT
                                      .ENDC
     014076                           M$POP   T$NS,T$NESTLEV,T$TEMP
                                      .MCALL  M$GETS,M$DECR
                                      .IF LT  T$NESTLEV
                                      .ERROR  T$NESTLEV        ; MACRO T$NS UNDERFLOW
                                      .MEXIT
                                      .ENDC
     014076                           M$GETS  T$NS,\T$NESTLEV,T$TEMP
          000001                      T$TEMP=T$NS1
     014076                           M$DECR  T$NESTLEV
          000000                      T$NESTLEV=T$NESTLEV-1
                                      .IF EQ F$TEST-T$TEMP
     014076                           M$GNTAG L,T$$TEST
                                      .MCALL  M$GEN
     014076                           M$GEN   L,\T$$TEST,SVCTAG
                                      .IF LE  SVCTAG
                                      .IIF EQ SVCTAG,.LIST
                                      L10030:
                                      .IIF EQ SVCTAG,.NLIST
                                      .MEXIT
                                      .ENDC
                                      .LIST
     014076                                                                     L10030:
                                              .NLIST
          010000                      S$LSYM=T$LSYM
     014076                           M$SVC   C$ETST
                                      .MCALL  M$GNINS,M$TSTLAB
     014076                           M$TSTLAB
                                      .MCALL  M$TLABEL,M$INCR
                                      .IIF LT T$TSTMAC, .MEXIT
                                      .RADIX  10
                                      M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                      .RADIX  8
                                      M$INCR  T$TSTSEQ
     014076                           M$GNINS <TRAP   C$ETST>
                                      .IF LT SVCINS
```

78 8018 3675-4

C12

```
                                TRAP    C$ETST
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        TRAP    C$ETST
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
      014076  104401                                                                    TRAP    C$ETST
                                                .NLIST
                                .ENDC
              000041            I$TST=F$END
                                .IFF
                                M$ENDERR        ENDTST,T$TEMP
                                .ENDC
```

```
                                  .SBTTL  TEST 4 : SYSTEM CONTROLLER COMMANDS TEST
                                  ;*************************************************************************
                                  ;                 IEX - TEST 4
                                  ;PART 1 CHANEL 1 WHICH IS SELECTED AS SYSTEM CONTROLLER SENDS
                                  ;        THE IFC AND REN MESSAGE BY MEANS OF THE AUXILIARY COMMANDS SIC AND
                                  ;        SRE. ALSO BOTH IIR AS WELL AS ISR REGISTER ARE CHECKED.
                                  ;PART 2 CHANEL 2 WHICH IS SELECTED AS SYSTEM CONTROLLER SENDS
                                  ;        THE IFC AND REN MESSAGE BY MEANS OF THE AUXILIARY COMMANDS SIC AND
                                  ;        SRE. ALSO BOTH IIR AS WELL AS ISR REGISTER ARE CHECKED.
                                  ;*************************************************************************
 014100                                   BGNTST
                                  .MCALL  M$INCR,M$GNTEST,M$PUSH,M$INCR
                                  .IF NE  F$END-I$SUB
                                  .ERROR  ;"BGNTST" IN SUB
                                  .MEXIT
                                  .ENDC
                                  .IF NE  F$END-I$SEG
                                  .ERROR  ;"BGNTST" IN SEG
                                  .MEXIT
                                  .ENDC
                                  .IF NE  F$END-I$TST
                                  .ERROR  ;"BGNTST" IN TST
                                  .MEXIT
                                  .IFF
                 000040           I$TST=F$BGN
                                  .ENDC
                                  .IF B
        014100                    M$INCR  T$TESTNUM
                 000004           T$TESTNUM=T$TESTNUM+1
                                  .IFF
                                  T$TESTNUM=
                                  .ENDC
                 000000           T$SUBNUM=0
                 000012           .RADIX  10
        014100                    M$GNTEST        \T$TESTNUM
                                  .MCALL  M$GEN
        014100                    M$GEN   T,4:,SVCTST
                                  .IF LE  SVCTST
                                  .IIF EQ SVCTST,.LIST
                                  T4::
                                  .IIF EQ SVCTST,.NLIST
                                  .MEXIT
                                  .ENDC
                                  .LIST
        014100                                                                    T4::
                                          .NLIST
                 000010           .RADIX  8
        014100                    M$PUSH  T$NS,T$NESTLEV,F$TEST
                                  .MCALL  M$INCR,M$SETS
        014100                    M$INCR  T$NESTLEV
                 000001           T$NESTLEV=T$NESTLEV+1
        014100                    M$SETS  T$NS,\T$NESTLEV,F$TEST
                 000001           T$NS1=F$TEST
                 010031           T$$TEST=T$TAGNUM
        014100                    M$INCR T$TAGNUM
                 010032           T$TAGNUM-T$TAGNUM+1
                 000001           T$TSTSEQ-1
```

```
   3132 014100  005737  002324                 TST     PNTF                        ;IS THE PNT FLAG SET
   3133 014104  001410                         BEQ     7$                          ;IF YES, PRINT THE TEST HEADER
   3134 014106                                 PRINTF  #TSHD4                      ;...
                                       .MCALL  M$PRINT
                                       .IF B   #TSHD4
                                       .ERROR  ;MISSING FORMAT
                                       .MEXIT
                                       .ENDC
                                       .IF B   <>
        014106                         M$PRINT C$PNTF,#TSHD4
                                       .MCALL  M$COUNT,M$PUT,M$GNINS,M$SVC
                000001                 T$ARGCNT=1
        014106                         M$COUNT T$ARGCNT,<>,<>,<>,<>,<>,<>,<>,<>
                                       .IF NB <>
                                       M$COUNT T$ARGCNT,<>,<>,<>,<>,<>,<>,<>,<>
                                       .ENDC
                                       .IF NB <>
                                       T$ARGCNT=T$ARGCNT+1
                                       .ENDC
                                       .IRP    N,<\T$ARGCNT>
                                       M$PUT   #N,#TSHD4,<>,<>,<>,<>,<>,<>,<>,<>
                                       .ENDM
        014106                         M$PUT   #1,#TSHD4,<>,<>,<>,<>,<>,<>,<>,<>
                                       .MCALL  M$PUT1
                                       .IF NB  <#TSHD4>
        014106                         M$PUT   <#TSHD4>,<>,<>,<>,<>,<>,<>,<>,<>
                                       .MCALL  M$PUT1
                                       .IF NB  <>
                                       M$PUT   <>,<>,<>,<>,<>,<>,<>,<>,<>
                                       .ENDC
                                       .IF NB  <#TSHD4>
        014106                         M$PUT1  #TSHD4
                                       .MCALL  M$GNINS
                                       .IF B
        014106                         M$GNINS <MOV    #TSHD4,-(SP)>
                                       .IF LT SVCINS
                                       MOV     #TSHD4, (SP)
                                       .MEXIT
                                       .ENDC
                                       .IF EQ SVCINS
                                       .LIST
                                               MOV     #TSHD4,-(SP)
                                                       .NLIST
                                       .MEXIT
                                       .ENDC
                                       .IF GT SVCINS
                                       .LIST
        014106  012746  015524                                                                 MOV     #TSHD4,-(SP)
                                                       .NLIST
                                       .ENDC
                                       .IFF
                                       .IF DIF B,<#TSHD4>
                                       .ERROR  ;ILL. ARG. "#TSHD4" ONLY "B" IS ALLOWED.
                                       .MEXIT
                                       .ENDC
                                       M$GNINS <CLR    (SP)>
                                       M$GNINS <BISB   ,(SP)>
```

```
                                        .ENDC
                                        .ENDC
                                        .ENDC
                                        .IF NB  <#1>
       014112                           M$PUT1  #1
                                        .MCALL  M$GNINS
                                        .IF B
       014112                           M$GNINS <MOV    #1,-(SP)>
                                        .IF LT SVCINS
                                        MOV     #1,-(SP)
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                MOV     #1,-(SP)
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
       014112  012746  000001                                                                  MOV     #1,-(SP)
                                                        .NLIST
                                        .ENDC
                                        .IFF
                                        .IF DIF B,<#1>
                                        .ERROR  ;ILL. ARG. "#1" ONLY "B" IS ALLOWED.
                                        .MEXIT
                                        .ENDC
                                        M$GNINS <CLR    -(SP)>
                                        M$GNINS <BISB   ,(SP)>
                                        .ENDC
                                        .ENDC
       014116                           M$GNINS <MOV    SP,R0>
                                        .IF LT SVCINS
                                        MOV     SP,R0
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                MOV     SP,R0
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
       014116  010600                                                                          MOV     SP,R0
                                                        .NLIST
                                        .ENDC
       014120                           M$SVC   C$PNTF
                                        .MCALL  M$GNINS,M$TSTLAB
       014120                           M$TSTLAB
                                        .MCALL  M$TLABEL,M$INCR
                                        .IIF LT T$TSTMAC, .MEXIT
                                        .RADIX  10
                                        M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                        .RADIX  8
                                        M$INCR  T$TSTSEQ
```

```
        014120                          M$GNINS <TRAP   C$PNTF>
                                        .IF LT SVCINS
                                        TRAP,   C$PNTF
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                TRAP    C$PNTF
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
        014120  104417                                                                  TRAP    C$PNTF
                                                        .NLIST
                                        .ENDC
                                        .IRP    N,<\T$ARGCNT*2+2>
                                        M$GNINS <ADD    #N,SP>
                                        .ENDM
        014122                          M$GNINS <ADD    #4,SP>
                                        .IF LT SVCINS
                                        ADD     #4,SP
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                ADD     #4,SP
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
        014122  062706  000004                                                          ADD     #4,SP
                                                        .NLIST
                                        .ENDC
                                        .MEXIT
                                        .ENDC
                                        .IF B   <>
                                        M$PRINT C$PNTF,#TSHD4,<>
                                        .MEXIT
                                        .ENDC
                                        .IF B   <>
                                        M$PRINT C$PNTF,#TSHD4,<>,<>
                                        .MEXIT
                                        .ENDC
                                        .IF B   <>
                                        M$PRINT C$PNTF,#TSHD4,<>,<>,<>
                                        .MEXIT
                                        .ENDC
                                        .IF B   <>
                                        M$PRINT C$PNTF,#TSHD4,<>,<>,<>,<>
                                        .MEXIT
                                        .ENDC
                                        .IF B   <>
                                        M$PRINT C$PNTF,#TSHD4,<>,<>,<>,<>,<>
                                        .MEXIT
                                        .ENDC
```

```
                                        .IF B   <>
                                        M$PRINT C$PNTF,#TSHD4,<>,<>,<>,<>,<>,<>
                                        .MEXIT
                                        .ENDC
                                        .IF B   <>
                                        M$PRINT C$PNTF,#TSHD4,<>,<>,<>,<>,<>,<>,<>
                                        .MEXIT
                                        .ENDC
                                        M$PRINT C$PNTF,#TSHD4,<>,<>,<>,<>,<>,<>,<>,<>
014126  005037  002322                  7$:     CLR     ITRCNT                  ;CLEAR ITERATION COUNTER
014132  004737  010210                  ITRAC4: JSR     PC,CULPA                ;CLEAR ULPA BIT IN ISR 1 AND 2
014136  113777  002312  166110                  MOVB    DPA1,@IIRHX             ;LOAD DEVICE PRIM. ADDR. 1 IN ADDR 1
014144  112777  000010  166126                  MOVB    #10,@CSRX               ;SELECT CHANNEL 2
014152  113777  002314  166074                  MOVB    DPA2,@IIRHX             ;LOAD DEVICE PRIM. ADDR 2 IN ADDR REG.
014160                                          BGNSEG
                                        .MCALL  M$PUSH,M$INCR,M$SVC
        000040                          I$SEG=F$BGN
014160                                  M$PUSH  T$NS,T$NESTLEV,F$SEG
                                        .MCALL  M$INCR,M$SETS
014160                                  M$INCR  T$NESTLEV
        000002                          T$NESTLEV=T$NESTLEV+1
014160                                  M$SETS  T$NS,\T$NESTLEV,F$SEG
        000003                          T$NS2=F$SEG
        010000                          T$$SEG=S$LSYM
014160                                  M$PUSH  T$SEK,T$SEGLEV,T$$SEG
                                        .MCALL  M$INCR,M$SETS
014160                                  M$INCR  T$SEGLEV
        000000                          T$SEGLEV=T$SEGLEV+1
014160                                  M$SETS  T$SEK,\T$SEGLEV,T$$SEG
        010000                          T$SEK0=T$$SEG
014160                                  M$INCR  S$LSYM
        010001                          S$LSYM=S$LSYM+1
014160                                  M$SVC   C$BSEG
                                        .MCALL  M$GNINS,M$TSTLAB
014160                                  M$TSTLAB
                                        .MCALL  M$TLABEL,M$INCR
                                        .IIF LT T$TSTMAC, .MEXIT
                                        .RADIX  10
                                        M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                        .RADIX  8
                                        M$INCR  T$TSTSEQ
014160                                  M$GNINS <TRAP   C$BSEG>
                                        .IF LT SVCINS
                                        TRAP    C$BSEG
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                TRAP    C$BSEG
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
014160  104404                                                                          TRAP    C$BSEG
                                                        .NLIST
                                        .ENDC
```

```
3141 014162  105077  166112                 CLRB    @CSRX               ;SELECT CHANNEL 1
3142 014166  052777  000002  166104         BIS     #2,@CSRX            ;SELECT CHANNEL 1 AS SYSTEM CONTROLLER
3143 014174  112777  000217  166066         MOVB    #217,@ICRHX         ;--SEND INTERFACE CLEAR TO CHANNEL 1--
3144 014202  004737  011062                 JSR     PC,WAIT             ;WAIT 100 US.
3145 014206  052777  000010  166064         BIS     #10,@CSRX           ;SELECT CHANNEL 2
3146 014214  012737  000002  002374         MOV     #2,CHAN             ;LOAD CHANNEL NO.
3147 014222  017737  166022  002502         MOV     @IIRX,BAD           ;GET IIR2 CONTENTS
3148 014230  022737  000400  002502         CMP     #400,BAD            ;IFC BIT IN IIR 2 SHOULD BE SET
3149 014236  001410                         BEQ     10$                 ;BRANCH IF YES
3150 014240  012737  000400  002500         MOV     #400,GOOD           ;SET UP DATA FOR ERROR MESSAGE
3151 014246                                 ERRSOFT 401,E501,ERR501     ;ERROR HANDLER
                                    .MCALL  M$ERRINS
     014246                         M$ERRINS        401,E501,ERR501,C$ERSOFT
                                    .MCALL  M$GNINS,M$WORD,M$TSTLAB
     014246                         M$SVC   C$ERSOFT
                                    .MCALL  M$GNINS,M$TSTLAB
     014246                         M$TSTLAB
                                    .MCALL  M$TLABEL,M$INCR
                                    .IIF LT T$TSTMAC, .MEXIT
                                    .RADIX  10
                                    M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                    .RADIX  8
                                    M$INCR  T$TSTSEQ
     014246                         M$GNINS <TRAP   C$ERSOFT>
                                    .IF LT SVCINS
                                    TRAP    C$ERSOFT
                                    .MEXIT
                                    .ENDC
                                    .IF EQ SVCINS
                                    .LIST
                                            TRAP    C$ERSOFT
                                                    .NLIST
                                    .MEXIT
                                    .ENDC
                                    .IF GT SVCINS
                                    .LIST
     014246  104457                                                                         TRAP    C$ERSOFT
                                                    .NLIST
                                    .ENDC
             000012                 .RADIX  10
                                    .IF NB  401
             000621                 T$ERRNUM=401
                                    .IFF
                                    .ERROR  ;MISSING ERROR-NR
                                    .ENDC
     014250                         M$WORD  \T$ERRNUM
                                    .MCALL  M$GNINS
                                    .IRP    N,<401>
                                    M$GNINS <.WORD  N>
                                    .ENDM
     014250                         M$GNINS <.WORD  401>
                                    .IF LT SVCINS
                                    .WORD   401
                                    .MEXIT
                                    .ENDC
                                    .IF EQ SVCINS
                                    .LIST
```

```
                                        .WORD   401
                                                .NLIST
                              .MEXIT
                              .ENDC
                              .IF GT SVCINS
                              .LIST
   014250  000621                                                             .WORD   401
                                                .NLIST
                              .ENDC
           000010             .RADIX  8
                              .IF NB E501
   014252                     M$WORD  E501
                              .MCALL  M$GNINS
                              .IRP    N,<E501>
                              M$GNINS <.WORD  N>
                              .ENDM
   014252                     M$GNINS <.WORD  E501>
                              .IF LT SVCINS
                              .WORD   E501
                              .MEXIT
                              .ENDC
                              .IF EQ SVCINS
                              .LIST
                                        .WORD   E501
                                                .NLIST
                              .MEXIT
                              .ENDC
                              .IF GT SVCINS
                              .LIST
   014252  005376                                                             .WORD   E501
                                                .NLIST
                              .ENDC
                              .IFF
                              M$WORD  0
                              .ENDC
                              .IF NB ERR501
   014254                     M$WORD  ERR501
                              .MCALL  M$GNINS
                              .IRP    N,<ERR501>
                              M$GNINS <.WORD  N>
                              .ENDM
   014254                     M$GNINS <.WORD  ERR501>
                              .IF LT SVCINS
                              .WORD   ERR501
                              .MEXIT
                              .ENDC
                              .IF EQ SVCINS
                              .LIST
                                        .WORD   ERR501
                                                .NLIST
                              .MEXIT
                              .ENDC
                              .IF GT SVCINS
                              .LIST
   014254  003672                                                             .WORD   ERR501
                                                .NLIST
                              .ENDC
```

```
                                        .IFF
                                        M$WORD  0
                                        .ENDC
  3152 014256                                   CKLOOP                          ;BRANCH TO BGNSEG IF ERRLOOP IS SET
                                        .MCALL  M$SVC
       014256                           M$SVC   C$CLP1
                                        .MCALL  M$GNINS,M$TSTLAB
       014256                           M$TSTLAB
                                        .MCALL  M$TLABEL,M$INCR
                                        .IIF LT T$TSTMAC, .MEXIT
                                        .RADIX  10
                                        M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                        .RADIX  8
                                        M$INCR  T$TSTSEQ
       014256                           M$GNINS <TRAP   C$CLP1>
                                        .IF LT SVCINS
                                        TRAP    C$CLP1
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                TRAP    C$CLP1
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
       014256  104406                                                                              TRAP    C$CLP1
                                                        .NLIST
                                        .ENDC
  3153 014260  017737  165772  002502   10$:    MOV     @ISRX,BAD               ;GET ISR2 CONTENTS
  3154 014266  022737  121040  002502           CMP     #121040,BAD             ;ATN,NDAC,IFC,ATN SHOULD BE SET
  3155 014274  001410                           BEQ     20$                     ;BRANCH IF YES
  3156 014276  012737  121040  002500           MOV     #121040,GOOD            ;SET UP DATA FOR ERROR MESSAGE
  3157 014304                                   ERRSOFT 402,E502,ERR501         ;ERROR HANDLER
                                        .MCALL  M$ERRINS
       014304                           M$ERRINS        402,E502,ERR501,C$ERSOFT
                                        .MCALL  M$GNINS,M$WORD,M$TSTLAB
       014304                           M$SVC   C$ERSOFT
                                        .MCALL  M$GNINS,M$TSTLAB
       014304                           M$TSTLAB
                                        .MCALL  M$TLABEL,M$INCR
                                        .IIF LT T$TSTMAC, .MEXIT
                                        .RADIX  10
                                        M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                        .RADIX  8
                                        M$INCR  T$TSTSEQ
       014304                           M$GNINS <TRAP   C$ERSOFT>
                                        .IF LT SVCINS
                                        TRAP    C$ERSOFT
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                TRAP    C$ERSOFT
                                                        .NLIST
                                        .MEXIT
```

```
                        .ENDC
                        .IF GT SVCINS
                        .LIST
014304  104457                                          TRAP    C$ERSOFT
                                .NLIST
                        .ENDC
        000012          .RADIX  10
                        .IF NB  402
        000622          T$ERRNUM=402
                        .IFF
                        .ERROR  ;MISSING ERROR-NR
                        .ENDC
014306                  M$WORD  \T$ERRNUM
                        .MCALL  M$GNINS
                        .IRP    N,<402>
                        M$GNINS <.WORD  N>
                        .ENDM
014306                  M$GNINS <.WORD  402>
                        .IF LT SVCINS
                        .WORD   402
                        .MEXIT
                        .ENDC
                        .IF EQ SVCINS
                        .LIST
                                .WORD   402
                                        .NLIST
                        .MEXIT
                        .ENDC
                        .IF GT SVCINS
                        .LIST
014306  000622                                          .WORD   402
                                        .NLIST
                        .ENDC
        000010          .RADIX  8
                        .IF NB E502
014310                  M$WORD  E502
                        .MCALL  M$GNINS
                        .IRP    N,<E502>
                        M$GNINS <.WORD  N>
                        .ENDM
014310                  M$GNINS <.WORD  E502>
                        .IF LT SVCINS
                        .WORD   E502
                        .MEXIT
                        .ENDC
                        .IF EQ SVCINS
                        .LIST
                                .WORD   E502
                                        .NLIST
                        .MEXIT
                        .ENDC
                        .IF GT SVCINS
                        .LIST
014310  005437                                          .WORD   E502
                                        .NLIST
                        .ENDC
                        .IFF
```

```
                                     M$WORD  0
                                     .ENDC
                                     .IF NB ERR501
      014312                         M$WORD  ERR501
                                     .MCALL  M$GNINS
                                     .IRP    N,<ERR501>
                                     M$GNINS <.WORD  N>
                                     .ENDM
      014312                         M$GNINS <.WORD  ERR501>
                                     .IF LT SVCINS
                                     .WORD   ERR501
                                     .MEXIT
                                     .ENDC
                                     .IF EQ SVCINS
                                     .LIST
                                             .WORD   ERR501
                                                     .NLIST
                                     .MEXIT
                                     .ENDC
                                     .IF GT SVCINS
                                     .LIST
      014312  003672                                                                         .WORD   ERR501
                                                     .NLIST
                                     .ENDC
                                     .IFF
                                     M$WORD  0
                                     .ENDC
 3158 014314                                 CKLOOP                          ;BRANCH TO BGNSEG IF ERRLOOP IS SET
                                     .MCALL  M$SVC
      014314                         M$SVC   C$CLP1
                                     .MCALL  M$GNINS,M$TSTLAB
      014314                         M$TSTLAB
                                     .MCALL  M$TLABEL,M$INCR
                                     .IIF LT T$TSTMAC, .MEXIT
                                     .RADIX  10
                                     M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                     .RADIX  8
                                     M$INCR  T$TSTSEQ
      014314                         M$GNINS <TRAP   C$CLP1>
                                     .IF LT SVCINS
                                     TRAP    C$CLP1
                                     .MEXIT
                                     .ENDC
                                     .IF EQ SVCINS
                                     .LIST
                                             TRAP    C$CLP1
                                                     .NLIST
                                     .MEXIT
                                     .ENDC
                                     .IF GT SVCINS
                                     .LIST
      014314  104406                                                                         TRAP    C$CLP1
                                                     .NLIST
                                     .ENDC
 3159 014316  042777  000010  165754 20$:    BIC     #10,@CSRX               ;SELECT CHANNEL 1
 3160 014324  012737  000001  002374         MOV     #1,CHAN                 ;LOAD CHANNEL NUMBER
 3161 014332  017737  165712  002502         MOV     @IIRX,BAD               ;GET IIR1 CONTENTS
```

```
 3162 014340  022737  000020  002502          CMP     #20,BAD                 ;BO BIT IN IIR1 SHOULD BE SET
 3163 014346  001410                          BEQ     30$                     ;BRANCH IF YES
 3164 014350  012737  000020  002500          MOV     #20,GOOD                ;SET UP DATA FOR ERROR MESSAGES
 3165 014356                                  ERRSOFT 403,E501,ERR501         ;ERROR HANDLER
                                      .MCALL  M$ERRINS
      014356                          M$ERRINS        403,E501,ERR501,C$ERSOFT
                                      .MCALL  M$GNINS,M$WORD,M$TSTLAB
      014356                          M$SVC   C$ERSOFT
                                      .MCALL  M$GNINS,M$TSTLAB
      014356                          M$TSTLAB
                                      .MCALL  M$TLABEL,M$INCR
                                      .IIF LT T$TSTMAC, .MEXIT
                                      .RADIX  10
                                      M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                      .RADIX  8
                                      M$INCR  T$TSTSEQ
      014356                          M$GNINS <TRAP   C$ERSOFT>
                                      .IF LT SVCINS
                                      TRAP    C$ERSOFT
                                      .MEXIT
                                      .ENDC
                                      .IF EQ SVCINS
                                      .LIST
                                              TRAP    C$ERSOFT
                                                      .NLIST
                                      .MEXIT
                                      .ENDC
                                      .IF GT SVCINS
                                      .LIST
      014356  104457                                                                          TRAP    C$ERSOFT
                                                      .NLIST
                                      .ENDC
              000012                  .RADIX  10
                                      .IF NB  403
              000623                  T$ERRNUM=403
                                      .IFF
                                      .ERROR  ;MISSING ERROR NR
                                      .ENDC
      014360                          M$WORD  \T$ERRNUM
                                      .MCALL  M$GNINS
                                      .IRP    N,<403>
                                      M$GNINS <.WORD  N>
                                      .ENDM
      014360                          M$GNINS <.WORD  403>
                                      .IF LT SVCINS
                                      .WORD   403
                                      .MEXIT
                                      .ENDC
                                      .IF EQ SVCINS
                                      .LIST
                                              .WORD   403
                                                      .NLIST
                                      .MEXIT
                                      .ENDC
                                      .IF GT SVCINS
                                      .LIST
      014360  000623                                                                          .WORD   403
```

```
                                                          .NLIST
                                        .ENDC
                 000010                 .RADIX  8
                                        .IF NB E501
        014362                          M$WORD  E501
                                        .MCALL  M$GNINS
                                        .IRP    N,<E501>
                                        M$GNINS <.WORD  N>
                                        .ENDM
        014362                          M$GNINS <.WORD  E501>
                                        .IF LT SVCINS
                                        .WORD   E501
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                .WORD   E501
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
        014362  005376                                                                        .WORD   E501
                                                        .NLIST
                                        .ENDC
                                        .IFF
                                        M$WORD  0
                                        .ENDC
                                        .IF NB ERR501
        014364                          M$WORD  ERR501
                                        .MCALL  M$GNINS
                                        .IRP    N,<ERR501>
                                        M$GNINS <.WORD  N>
                                        .ENDM
        014364                          M$GNINS <.WORD  ERR501>
                                        .IF LT SVCINS
                                        .WORD   ERR501
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                .WORD   ERR501
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
        014364  003672                                                                        .WORD   ERR501
                                                        .NLIST
                                        .ENDC
                                        .IFF
                                        M$WORD  0
                                        .ENDC
   3166 014366                                  CKLOOP                      ;BRANCH TO BGNSEG IF ERRLOOP IS SET
                                        .MCALL  M$SVC
        014366                          M$SVC   C$CLP1
                                        .MCALL  M$GNINS,M$TSTLAB
```

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```
        014366                          M$TSTLAB
                                        .MCALL  M$TLABEL,M$INCR
                                        .IIF LT T$TSTMAC, .MEXIT
                                        .RADIX  10
                                        M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                        .RADIX  8
                                        M$INCR  T$TSTSEQ
        014366                          M$GNINS <TRAP   C$CLP1>
                                        .IF LT SVCINS
                                        TRAP    C$CLP1
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                TRAP    C$CLP1
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
        014366  104406                                                                  TRAP    C$CLP1
                                                        .NLIST
                                        .ENDC
   3167 014370  017737  165662  002502  30$:    MOV     @ISRX,BAD               ;GET ISR1 CONTENTS
   3168 014376  022737  120040  002502          CMP     #120040,BAD             ;ATN,NDAC,ATN IN ISR1 SHOULD BE SET
   3169 014404  001410                          BEQ     40$                     ;BRANCH IF YES
   3170 014406  012737  120040  002500          MOV     #120040,GOOD            ;SET UP DATA FOR ERROR MESSAGES
   3171 014414                                  ERRSOFT 404,E502,ERR501         ;ERROR HANDLER
                                        .MCALL  M$ERRINS
        014414                          M$ERRINS        404,E502,ERR501,C$ERSOFT
                                        .MCALL  M$GNINS,M$WORD,M$TSTLAB
        014414                          M$SVC   C$ERSOFT
                                        .MCALL  M$GNINS,M$TSTLAB
        014414                          M$TSTLAB
                                        .MCALL  M$TLABEL,M$INCR
                                        .IIF LT T$TSTMAC, .MEXIT
                                        .RADIX  10
                                        M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                        .RADIX  8
                                        M$INCR  T$TSTSEQ
        014414                          M$GNINS <TRAP   C$ERSOFT>
                                        .IF LT SVCINS
                                        TRAP    C$ERSOFT
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                TRAP    C$ERSOFT
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
        014414  104457                                                                  TRAP    C$ERSOFT
                                                        .NLIST
                                        .ENDC
                000012                  .RADIX  10
```

```
                                .IF NB  404
         000624                 T$ERRNUM=404
                                .IFF
                                .ERROR  ;MISSING ERROR NR
                                .ENDC
014416                          M$WORD  \T$ERRNUM
                                .MCALL  M$GNINS
                                .IRP    N,<404>
                                M$GNINS <.WORD  N>
                                .ENDM
014416                          M$GNINS <.WORD  404>
                                .IF LT SVCINS
                                .WORD   404
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        .WORD   404
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
014416  000624                                                      .WORD   404
                                                .NLIST
                                .ENDC
         000010                 .RADIX  8
                                .IF NB E502
014420                          M$WORD  E502
                                .MCALL  M$GNINS
                                .IRP    N,<E502>
                                M$GNINS <.WORD  N>
                                .ENDM
014420                          M$GNINS <.WORD  E502>
                                .IF LT SVCINS
                                .WORD   E502
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        .WORD   E502
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
014420  005437                                                      .WORD   E502
                                                .NLIST
                                .ENDC
                                .IFF
                                M$WORD  0
                                .ENDC
                                .IF NB ERR501
014422                          M$WORD  ERR501
                                .MCALL  M$GNINS
                                .IRP    N,<ERR501>
                                M$GNINS <.WORD  N>
```

```
                                                .ENDM
        014422                                  M$GNINS <.WORD  ERR501>
                                                .IF LT SVCINS
                                                .WORD   ERR501
                                                .MEXIT
                                                .ENDC
                                                .IF EQ SVCINS
                                                .LIST
                                                        .WORD   ERR501
                                                                .NLIST
                                                .MEXIT
                                                .ENDC
                                                .IF GT SVCINS
                                                .LIST
        014422  003672                                                                          .WORD   ERR501
                                                                .NLIST
                                                .ENDC
                                                .IFF
                                                M$WORD  0
                                                .ENDC
   3172 014424                                          CKLOOP                  ;BRANCH TO BGNSEG IF ERRRLOOP IS SET
                                                .MCALL  M$SVC
        014424                                  M$SVC   C$CLP1
                                                .MCALL  M$GNINS,M$TSTLAB
        014424                                  M$TSTLAB
                                                .MCALL  M$TLABEL,M$INCR
                                                .IIF LT T$TSTMAC, .MEXIT
                                                .RADIX  10
                                                M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                                .RADIX  8
                                                M$INCR  T$TSTSEQ
        014424                                  M$GNINS <TRAP   C$CLP1>
                                                .IF LT SVCINS
                                                TRAP    C$CLP1
                                                .MEXIT
                                                .ENDC
                                                .IF EQ SVCINS
                                                .LIST
                                                        TRAP    C$CLP1
                                                                .NLIST
                                                .MEXIT
                                                .ENDC
                                                .IF GT SVCINS
                                                .LIST
        014424  104406                                                                          TRAP    C$CLP1
                                                                .NLIST
                                                .ENDC
   3173 014426  112777  000017  165634  40$:    MOVB    #17,@ICRHX              ;----LOAD NOT SIC IN ACR  -- --  -- -
   3174 014434  017737  165610  002502          MOV     @IIRX,BAD               ;GET IIR1 CONTENTS
   3175 014442  005737  002502                  TST     BAD                     ;IIR1 CONTENTS SHOULD BE ZERO
   3176 014446  001406                          BEQ     50$                     ;BRANCH IF YES
   3177 014450  005037  002500                  CLR     GOOD                    ;SET UP DATA FOR ERROR MESSAGES
   3178 014454                                          ERRSOFT 405,E501,ERR501         ;ERROR HANDLER
                                                .MCALL  M$ERRINS
        014454                                  M$ERRINS        405,E501,ERR501,C$ERSOFT
                                                .MCALL  M$GNINS,M$WORD,M$TSTLAB
        014454                                  M$SVC   C$ERSOFT
```

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```
                                .MCALL  M$GNINS,M$TSTLAB
014454                          M$TSTLAB
                                .MCALL  M$TLABEL,M$INCR
                                .IIF LT T$TSTMAC, .MEXIT
                                .RADIX  10
                                M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                .RADIX  8
                                M$INCR  T$TSTSEQ
014454                          M$GNINS <TRAP   C$ERSOFT>
                                .IF LT SVCINS
                                TRAP    C$ERSOFT
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        TRAP    C$ERSOFT
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
014454  104457                                                                          TRAP    C$ERSOFT
                                                .NLIST
                                .ENDC
        000012                  .RADIX  10
                                .IF NB  405
        000625                  T$ERRNUM=405
                                .IFF
                                .ERROR  ;MISSING ERROR NR
                                .ENDC
014456                          M$WORD  \T$ERRNUM
                                .MCALL  M$GNINS
                                .IRP    N,<405>
                                M$GNINS <.WORD  N>
                                .ENDM
014456                          M$GNINS <.WORD  405>
                                .IF LT SVCINS
                                .WORD   405
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        .WORD   405
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
014456  000625                                                                          .WORD   405
                                                .NLIST
                                .ENDC
        000010                  .RADIX  8
                                .IF NB E501
014460                          M$WORD  E501
                                .MCALL  M$GNINS
                                .IRP    N,<E501>
                                M$GNINS <.WORD  N>
```

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```
                                        .ENDM
        014460                          M$GNINS <.WORD  E501>
                                        .IF LT SVCINS
                                        .WORD   E501
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                .WORD   E501
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
        014460  005376                                                                  .WORD   E501
                                                        .NLIST
                                        .ENDC
                                        .IFF
                                        M$WORD  0
                                        .ENDC
                                        .IF NB ERR501
        014462                          M$WORD  ERR501
                                        .MCALL  M$GNINS
                                        .IRP    N,<ERR501>
                                        M$GNINS <.WORD  N>
                                        .ENDM
        014462                          M$GNINS <.WORD  ERR501>
                                        .IF LT SVCINS
                                        .WORD   ERR501
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                .WORD   ERR501
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
        014462  003672                                                                  .WORD   ERR501
                                                        .NLIST
                                        .ENDC
                                        .IFF
                                        M$WORD  0
                                        .ENDC
   3179 014464                          50$:    ENDSEG
                                        .MCALL  M$POP,M$GNLS,M$SVC,M$ENDERR
        014464                          M$POP   T$NS,T$NESTLEV,T$TEMP
                                        .MCALL  M$GETS,M$DECR
                                        .IF LT  T$NESTLEV
                                        .ERROR  T$NESTLEV       ; MACRO T$NS UNDERFLOW
                                        .MEXIT
                                        .ENDC
        014464                          M$GETS  T$NS,\T$NESTLEV,T$TEMP
                000003                  T$TEMP-T$NS2
        014464                          M$DECR  T$NESTLEV
                000001                  T$NESTLEV=T$NESTLEV 1
```

```
                                .IF EQ F$SEG-T$TEMP
014464                          M$POP   T$SEK,T$SEGLEV,T$$SEG
                                .MCALL  M$GETS,M$DECR
                                .IF LT  T$SEGLEV
                                .ERROR  T$SEGLEV        ; MACRO T$SEK UNDERFLOW
                                .MEXIT
                                .ENDC
014464                          M$GETS  T$SEK,\T$SEGLEV,T$$SEG
        010000                  T$$SEG=T$SEK0
014464                          M$DECR  T$SEGLEV
        177777                  T$SEGLEV=T$SEGLEV-1
014464                          M$GNLS  T$$SEG
                                .MCALL  M$GEN
                                .IF NB T$$SEG
014464                          M$GEN   \T$$SEG,$,SVCTAG
                                .IF LE  SVCTAG
                                .IIF EQ SVCTAG,.LIST
                                10000$:
                                .IIF EQ SVCTAG,.NLIST
                                .MEXIT
                                .ENDC
                                .LIST
014464                                                                  10000$:
                                        .NLIST
                                .IFF
                                M$GEN   \S$LSYM,$,SVCTAG
                                .ENDC
014464                          M$SVC   C$ESEG
                                .MCALL  M$GNINS,M$TSTLAB
014464                          M$TSTLAB
                                .MCALL  M$TLABEL,M$INCR
                                .IIF LT T$TSTMAC, .MEXIT
                                .RADIX  10
                                M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                .RADIX  8
                                M$INCR  T$TSTSEQ
014464                          M$GNINS <TRAP   C$ESEG>
                                .IF LT SVCINS
                                TRAP    C$ESEG
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        TRAP    C$ESEG
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
014464  104405                                                              TRAP    C$ESEG
                                                .NLIST
                                .ENDC
                                .IF EQ T$SEGLEV+1
        000041                  I$SEG-F$END
                                .ENDC
                                .IFF
                                M$ENDERR        ENDSEG,T$TEMP
```

```
                                           .ENDC
 3180 014466                                       BGNSEG
                                           .MCALL  M$PUSH,M$INCR,M$SVC
                000040                     I$SEG=F$BGN
      014466                               M$PUSH  T$NS,T$NESTLEV,F$SEG
                                           .MCALL  M$INCR,M$SETS
      014466                               M$INCR  T$NESTLEV
                000002                     T$NESTLEV=T$NESTLEV+1
      014466                               M$SETS  T$NS,\T$NESTLEV,F$SEG
                000003                     T$NS2=F$SEG
                010001                     T$$SEG-S$LSYM
      014466                               M$PUSH  T$SEK,T$SEGLEV,T$$SEG
                                           .MCALL  M$INCR,M$SETS
      014466                               M$INCR  T$SEGLEV
                000000                     T$SEGLEV=T$SEGLEV+1
      014466                               M$SETS  T$SEK,\T$SEGLEV,T$$SEG
                010001                     T$SEK0=T$$SEG
      014466                               M$INCR  S$LSYM
                010002                     S$LSYM=S$LSYM+1
      014466                               M$SVC   C$BSEG
                                           .MCALL  M$GNINS,M$TSTLAB
      014466                               M$TSTLAB
                                           .MCALL  M$TLABEL,M$INCR
                                           .IIF LT T$TSTMAC, .MEXIT
                                           .RADIX  10
                                           M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                           .RADIX  8
                                           M$INCR  T$TSTSEQ
      014466                               M$GNINS <TRAP   C$BSEG>
                                           .IF LT SVCINS
                                           TRAP    C$BSEG
                                           .MEXIT
                                           .ENDC
                                           .IF EQ SVCINS
                                           .LIST
                                                   TRAP    C$BSEG
                                                           .NLIST
                                           .MEXIT
                                           .ENDC
                                           .IF GT SVCINS
                                           .LIST
      014466    104404                                                                          TRAP    C$BSEG
                                                           .NLIST
                                           .ENDC
 3181 014470    042777  000010  165602             BIC     #10,@CSRX                ;SELECT CHANNEL 1
 3182 014476    112777  000220  165564             MOVB    #220,@ICRHX              ;----LOAD SRE IN ICR1 -- -----------
 3183 014504    004737  011062                     JSP     PC,WAIT                  ;WAIT 100 US.
 3184 014510    052777  000010  165562             BIS     #10,@CSRX                ;SELECT CHANNEL 2
 3185 014516    012737  000002  002374             MOV     #2,CHAN                  ;SET CHANNEL FLAG
 3186 014524    017737  165520  002502             MOV     @IIRX,BAD                ;GET IIR2 CONTENTS
 3187 014532    005737  002502                     TST     BAD                      ;IIR2 SHOULD BE ZERO
 3188 014536    001407                             BEQ     11$                      ;BRANCH IF YES
 3189 014540    005037  002500                     CLR     GOOD                     ;SET UP DATA FOR ERROR MESSAGES
 3190 014544                                       ERRSOFT 406,E501,ERR501          ;ERROR HANDLER
                                           .MCALL  M$ERRINS
      014544                               M$ERRINS        406,E501,ERR501,C$ERSOFT
                                           .MCALL  M$GNINS,M$WORD,M$TSTLAB
```

```
        014544                          M$SVC   C$ERSOFT
                                        .MCALL  M$GNINS,M$TSTLAB
        014544                          M$TSTLAB
                                        .MCALL  M$TLABEL,M$INCR
                                        .IIF LT T$TSTMAC, .MEXIT
                                        .RADIX  10
                                        M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                        .RADIX  8
                                        M$INCR  T$TSTSEQ
        014544                          M$GNINS <TRAP   C$ERSOFT>
                                        .IF LT SVCINS
                                        TRAP    C$ERSOFT
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                TRAP    C$ERSOFT
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
        014544  104457                                                                  TRAP    C$ERSOFT
                                                        .NLIST
                                        .ENDC
                000012                  .RADIX  10
                                        .IF NB  406
                000626                  T$ERRNUM=406
                                        .IFF
                                        .ERROR  ;MISSING ERROR NR
                                        .ENDC
        014546                          M$WORD  \T$ERRNUM
                                        .MCALL  M$GNINS
                                        .IRP    N,<406>
                                        M$GNINS <.WORD  N>
                                        .ENDM
        014546                          M$GNINS <.WORD  406>
                                        .IF LT SVCINS
                                        .WORD   406
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                .WORD   406
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
        014546  000626                                                                  .WORD   406
                                                        .NLIST
                                        .ENDC
                000010                  .RADIX  8
                                        .IF NB E501
        014550                          M$WORD  E501
                                        .MCALL  M$GNINS
                                        .IRP    N,<E501>
```

```
                                M$GNINS <.WORD  N>
                                .ENDM
     014550                     M$GNINS <.WORD  E501>
                                .IF LT SVCINS
                                .WORD   E501
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        .WORD   E501
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
     014550  005376                                                             .WORD   E501
                                                .NLIST
                                .ENDC
                                .IFF
                                M$WORD  v
                                .ENDC
                                .IF NB ERR501
     014552                     M$WORD  ERR501
                                .MCALL  M$GNINS
                                .IRP    N,<ERR501>
                                M$GNINS <.WORD  N>
                                .ENDM
     014552                     M$GNINS <.WORD  ERR501>
                                .IF LT SVCINS
                                .WORD   ERR501
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        .WORD   ERR501
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
     014552  003672                                                             .WORD   ERR501
                                                .NLIST
                                .ENDC
                                .IFF
                                M$WORD  0
                                .ENDC
3191 014554                             CKLOOP                  ;BRANCH TO BGNSEG IF ERRLOOP IS SET
                                .MCALL  M$SVC
     014554                     M$SVC   C$CLP1
                                .MCALL  M$GNINS,M$TSTLAB
     014554                     M$TSTLAB
                                .MCALL  M$TLABEL,M$INCR
                                .IIF LT T$TSTMAC, .MEXIT
                                .RADIX  10
                                M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                .RADIX  8
                                M$INCR  T$TSTSEQ
```

```
     014554                                  M$GNINS <TRAP   C$CLP1>
                                             .IF LT SVCINS
                                             TRAP    C$CLP1
                                             .MEXIT
                                             .ENDC
                                             .IF EQ SVCINS
                                             .LIST
                                                     TRAP    C$CLP1
                                                             .NLIST
                                             .MEXIT
                                             .ENDC
                                             .IF GT SVCINS
                                             .LIST
     014554  104406                                                                              TRAP    C$CLP1
                                                             .NLIST
                                             .ENDC
3192 014556  017737  165474  002502  11$:    MOV     @ISRX,BAD              ;GET ISR2 CONTENTS
3193 014564  022737  120440  002502          CMP     #120440,BAD            ;ATN,NDAC,REN,ATN IN ISR2 SHOULD SET
3194 014572  001410                          BEQ     12$                    ;BRANCH IF YES
3195 014574  012737  120440  002500          MOV     #120440,GOOD           ;SET UP DATA FOR ERROR MESSAGES
3196 014602                                  ERRSOFT 407,E502,ERR501        ;ERROR HANDLER
                                             .MCALL  M$ERRINS
     014602                                  M$ERRINS        407,E502,ERR501,C$ERSOFT
                                             .MCALL  M$GNINS,M$WORD,M$TSTLAB
     014602                                  M$SVC   C$ERSOFT
                                             .MCALL  M$GNINS,M$TSTLAB
     014602                                  M$TSTLAB
                                             .MCALL  M$TLABEL,M$INCR
                                             .IIF LT T$TSTMAC, .MEXIT
                                             .RADIX  10
                                             M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                             .RADIX  8
                                             M$INCR  T$TSTSEQ
     014602                                  M$GNINS <TRAP   C$ERSOFT>
                                             .IF LT SVCINS
                                             TRAP    C$ERSOFT
                                             .MEXIT
                                             .ENDC
                                             .IF EQ SVCINS
                                             .LIST
                                                     TRAP    C$ERSOFT
                                                             .NLIST
                                             .MEXIT
                                             .ENDC
                                             .IF GT SVCINS
                                             .LIST
     014602  104457                                                                              TRAP    C$ERSOFT
                                                             .NLIST
                                             .ENDC
             000012                          .RADIX  10
                                             .IF NB  407
             000627                          T$ERRNUM=407
                                             .IFF
                                             .ERROR  ;MISSING ERROR NR
                                             .ENDC
     014604                                  M$WORD  \T$ERRNUM
                                             .MCALL  M$GNINS
```

M13


```
                                .IRP    N,<407>
                                M$GNINS <.WORD  N>
                                .ENDM
     014604                     M$GNINS <.WORD  407>
                                .IF LT SVCINS
                                .WORD   407
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        .WORD   407
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
     014604  000627                                                                  .WORD   407
                                                .NLIST
                                .ENDC
             000010             .RADIX  8
                                .IF NB E502
     014606                     M$WORD  E502
                                .MCALL  M$GNINS
                                .IRP    N,<E502>
                                M$GNINS <.WORD  N>
                                .ENDM
     014606                     M$GNINS <.WORD  E502>
                                .IF LT SVCINS
                                .WORD   E502
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        .WORD   E502
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
     014606  005437                                                                  .WORD   E502
                                                .NLIST
                                .ENDC
                                .IFF
                                M$WORD  0
                                .ENDC
                                .IF NB ERR501
     014610                     M$WORD  ERR501
                                .MCALL  M$GNINS
                                .IRP    N,<ERR501>
                                M$GNINS <.WORD  N>
                                .ENDM
     014610                     M$GNINS <.WORD  ERR501>
                                .IF LT SVCINS
                                .WORD   ERR501
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
```

```
                                        .LIST
                                                .WORD   ERR501
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
      014610  003672                                                                                    .WORD   ERR501
                                                        .NLIST
                                        .ENDC
                                        .IFF
                                        M$WORD  0
                                        .ENDC
3197  014612                                    CKLOOP                          ;BRANCH TO BGNSEG IF ERRLOOP IS SET
                                        .MCALL  M$SVC
      014612                            M$SVC   C$CLP1
                                        .MCALL  M$GNINS,M$TSTLAB
      014612                            M$TSTLAB
                                        .MCALL  M$TLABEL,M$INCR
                                        .IIF LT T$TSTMAC, .MEXIT
                                        .RADIX  10
                                        M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                        .RADIX  8
                                        M$INCR  T$TSTSEQ
      014612                            M$GNINS <TRAP   C$CLP1>
                                        .IF LT SVCINS
                                        TRAP    C$CLP1
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                TRAP    C$CLP1
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
      014612  104406                                                                                    TRAP    C$CLP1
                                                        .NLIST
                                        .ENDC
3198  014614  042777  000010  165456    12$:    BIC     #10,@CSRX               ;SELECT CHANNEL 1
3199  014622  012737  000001  002374            MOV     #1,CHAN                 ;LOAD CHANNEL FLAG
3200  014630  017737  165414  002502            MOV     @IIRX,BAD               ;GET IIR1 CONTENTS
3201  014636  005737  002502                    TST     BAD                     ;IIR1 SHOULD BE ZERO
3202  014642  001407                            BEQ     13$                     ;BRANCH IF YES
3203  014644  005037  002500                    CLR     GOOD                    ;SET UP DATA FOR ERROR MESSAGES
3204  014650                                    ERRSOFT 408,E501,ERR501         ;ERROR HANDLER
                                        .MCALL  M$ERRINS
      014650                            M$ERRINS        408,E501,ERR501,C$ERSOFT
                                        .MCALL  M$GNINS,M$WORD,M$TSTLAB
      014650                            M$SVC   C$ERSOFT
                                        .MCALL  M$GNINS,M$TSTLAB
      014650                            M$TSTLAB
                                        .MCALL  M$TLABEL,M$INCR
                                        .IIF LT T$TSTMAC, .MEXIT
                                        .RADIX  10
                                        M$TLABEL        \T$TESTNUN,\T$TSTSEQ
```

```
                                .RADIX  8
                                M$INCR  T$TSTSEQ
    014650                      M$GNINS <TRAP   C$ER_ F?>
                                .IF LT SVCINS
                                TRAP    C$ERSOFT
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        TRAP    C$ERSOFT
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
    014650  104457                                                              TRAP    C$ERSOFT
                                                .NLIST
                                .ENDC
            000012              .RADIX  10
                                .IF NB  408
            000630              T$ERRNUM=408
                                .IFF
                                .ERROR  ;MISSING ERROR-NR
                                .ENDC
    014652                      M$WORD  \T$ERRNUM
                                .MCALL  M$GNINS
                                .IRP    N,<408>
                                M$GNINS <.WORD  N>
                                .ENDM
    014652                      M$GNINS <.WORD  408>
                                .IF LT SVCINS
                                .WORD   408
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        .WORD   408
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
    014652  000630                                                              .WORD   408
                                                .NLIST
                                .ENDC
            000010              .RADIX  8
                                .IF NB E501
    014654                      M$WORD  E501
                                .MCALL  M$GNINS
                                .IRP    N,<E501>
                                M$GNINS <.WORD  N>
                                .ENDM
    014654                      M$GNINS <.WORD  E501>
                                .IF LT SVCINS
                                .WORD   E501
                                .MEXIT
                                .ENDC
```

```
                                    .IF EQ SVCINS
                                    .LIST
                                            .WORD   E501
                                                    .NLIST
                                    .MEXIT
                                    .ENDC
                                    .IF GT SVCINS
                                    .LIST
      014654  005376                                                                            .WORD   E501
                                                    .NLIST
                                    .ENDC
                                    .IFF
                                    M$WORD  0
                                    .ENDC
                                    .IF NB ERR501
      014656                        M$WORD  ERR501
                                    .MCALL  M$GNINS
                                    .IRP    N,<ERR501>
                                    M$GNINS <.WORD  N>
                                    .ENDM
      014656                        M$GNINS <.WORD  ERR501>
                                    .IF LT SVCINS
                                    .WORD   ERR501
                                    .MEXIT
                                    .ENDC
                                    .IF EQ SVCINS
                                    .LIST
                                            .WORD   ERR501
                                                    .NLIST
                                    .MEXIT
                                    .ENDC
                                    .IF GT SVCINS
                                    .LIST
      014656  003672                                                                            .WORD   ERR501
                                                    .NLIST
                                    .ENDC
                                    .IFF
                                    M$WORD  0
                                    .ENDC
 3205 014660                                CKLOOP                          ;BRANCH TO BGNSEG IF ERRLOOP IS SET
                                    .MCALL  M$SVC
      014660                        M$SVC   C$CLP1
                                    .MCALL  M$GNINS,M$TSTLAB
      014660                        M$TSTLAB
                                    .MCALL  M$TLABEL,M$INCR
                                    .IIF LT T$TSTMAC, .MEXIT
                                    .RADIX  10
                                    M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                    .RADIX  8
                                    M$INCR  T$TSTSEQ
      014660                        M$GNINS <TRAP   C$CLP1>
                                    .IF LT SVCINS
                                    TRAP    C$CLP1
                                    .MEXIT
                                    .ENDC
                                    .IF EQ SVCINS
                                    .LIST
```

```
                                                TRAP    C$CLP1
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
      014660  104406                                                                                          TRAP    C$CLP1
                                                        .NLIST
                                        .ENDC
 3206 014662  017737  165370  002502    13$:    MOV     @ISRX,BAD               ;GET ISR1 CONTENTS
 3207 014670  022737  120440  002502            CMP     #120440,BAD             ;ATN,NDAC,REN,ATN SHOULD BE SET
 3208 014676  001407                            BEQ     14$                     ;BRANCH IF YES
 3209 014700  012737  120440  002500            MOV     #120440,GOOD            ;SET UP DATA FOR ERROR MESSAGES
 3210 014706                                    ERRSOFT 409,E502,ERR501         ;ERROR HANDLER
                                        .MCALL  M$ERRINS
      014706                            M$ERRINS        409,E502,ERR501,C$ERSOFT
                                        .MCALL  M$GNINS,M$WORD,M$TSTLAB
      014706                            M$SVC   C$ERSOFT
                                        .MCALL  M$GNINS,M$TSTLAB
      014706                            M$TSTLAB
                                        .MCALL  M$TLABEL,M$INCR
                                        .IIF LT T$TSTMAC, .MEXIT
                                        .RADIX  10
                                        M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                        .RADIX  8
                                        M$INCR  T$TSTSEQ
      014706                            M$GNINS <TRAP   C$ERSOFT>
                                        .IF LT SVCINS
                                        TRAP    C$ERSOFT
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                TRAP    C$ERSOFT
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
      014706  104457                                                                                          TRAP    C$ERSOFT
                                                        .NLIST
                                        .ENDC
              000012                    .RADIX  10
                                        .IF NB  409
              000631                    T$ERRNUM=409
                                        .IFF
                                        .ERROR  ;MISSING ERROR NR
                                        .ENDC
      014710                            M$WORD  \T$ERRNUM
                                        .MCALL  M$GNINS
                                        .IRP    N,<409>
                                        M$GNINS <.WORD  N>
                                        .ENDM
      014710                            M$GNINS <.WORD  409>
                                        .IF LT SVCINS
                                        .WORD   409
                                        .MEXIT
```

```
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        .WORD   409
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
        014710  000631                                                  .WORD   409
                                                .NLIST
                                .ENDC
                000010          .RADIX  8
                                .IF NB E502
        014712                  M$WORD  E502
                                .MCALL  M$GNINS
                                .IRP    N,<E502>
                                M$GNINS <.WORD  N>
                                .ENDM
        014712                  M$GNINS <.WORD  E502>
                                .IF LT SVCINS
                                .WORD   E502
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        .WORD   E502
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
        014712  005437                                                  .WORD   E502
                                                .NLIST
                                .ENDC
                                .IFF
                                M$WORD  0
                                .ENDC
                                .IF NB ERR501
        014714                  M$WORD  ERR501
                                .MCALL  M$GNINS
                                .IRP    N,<ERR501>
                                M$GNINS <.WORD  N>
                                .ENDM
        014714                  M$GNINS <.WORD  ERR501>
                                .IF LT SVCINS
                                .WORD   ERR501
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        .WORD   ERR501
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
```

```
     014714 003672                                                        .WORD   ERR501
                                          .NLIST
                              .ENDC
                              .IFF
                              M$WORD  0
                              .ENDC
3211 014716                   14$:    ENDSEG
                              .MCALL  M$POP,M$GNLS,M$SVC,M$ENDERR
     014716                   M$POP   T$NS,T$NESTLEV,T$TEMP
                              .MCALL  M$GETS,M$DECR
                              .IF LT  T$NESTLEV
                              .ERROR  T$NESTLEV        ; MACRO T$NS UNDERFLOW
                              .MEXIT
                              .ENDC
     014716                   M$GETS  T$NS,\T$NESTLEV,T$TEMP
            000003            T$TEMP=T$NS2
     014716                   M$DECR  T$NESTLEV
            000001            T$NESTLEV=T$NESTLEV 1
                              .IF EQ F$SEG-T$TEMP
     014716                   M$POP   T$SEK,T$SEGLEV,T$$SEG
                              .MCALL  M$GETS,M$DECR
                              .IF LT  T$SEGLEV
                              .ERROR  T$SEGLEV         ; MACRO T$SEK UNDERFLOW
                              .MEXIT
                              .ENDC
     014716                   M$GETS  T$SEK,\T$SEGLEV,T$$SEG
            010001            T$$SEG=T$SEK0
     014716                   M$DECR  T$SEGLEV
            177777            T$SEGLEV=T$SEGLEV-1
     014716                   M$GNLS  T$$SEG
                              .MCALL  M$GEN
                              .IF NB T$$SEG
     014716                   M$GEN   \T$$SEG,$,SVCTAG
                              .IF LE  SVCTAG
                              .IIF EQ SVCTAG,.LIST
                              10001$:
                              .IIF EQ SVCTAG,.NLIST
                              .MEXIT
                              .ENDC
                              .LIST
     014716                                                          10001$:
                                      .NLIST
                              .IFF
                              M$GEN   \S$LSYM,$,SVCTAG
                              .ENDC
     014716                   M$SVC   C$ESEG
                              .MCALL  M$GNINS,M$TSTLAB
     014716                   M$TSTLAB
                              .MCALL  M$TLABEL,M$INCR
                              .IIF LT T$TSTMAC, .MEXIT
                              .RADIX  10
                              M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                              .RADIX  8
                              M$INCR  T$TSTSEQ
     014716                   M$GNINS <TRAP   C$ESEG>
                              .IF LT SVCINS
                              TRAP    C$ESEG
```

```
                                                 .MEXIT
                                                 .ENDC
                                                 .IF EQ SVCINS
                                                 .LIST
                                                         TRAP    C$ESEG
                                                                 .NLIST
                                                 .MEXIT
                                                 .ENDC
                                                 .IF GT SVCINS
                                                 .LIST
 014716  104405                                                                                  TRAP    C$ESEG
                                                                 .NLIST
                                                 .ENDC
                                                 .IF EQ T$SEGLEV+1
         000041                                  I$SEG=F$END
                                                 .ENDC
                                                 .IFF
                                                 M$ENDERR        ENDSEG,T$TEMP
                                                 .ENDC
 014720  112777  000020  165342                          MOVB    #20,@ICRHX              ;-----LOAD NOT SRE IN ICR1 (ACR)-----
 014726  112777  000200  165334                          MOVB    #200,@ICRHX             ;----LOAD SWRST IN ICR1 HIGH BYTE-----
 014734  112777  000000  165326                          MOVB    #0,@ICRHX               ;----LOAD NOT SWRST IN ICR1 (ACR)-----
                                                 ;+++-------  ----- ------- -  -------------------------------------------------
                                                 ;PART 2 CHECKS (SIC & SRE) OF CHANNEL 2
                                                 ;+++------  ---------------------------------------------------------------------
 014742                                                  BGNSEG
                                                 .MCALL  M$PUSH,M$INCR,M$SVC
         000040                                  I$SEG=F$BGN
 014742                                          M$PUSH  T$NS,T$NESTLEV,F$SEG
                                                 .MCALL  M$INCR,M$SETS
 014742                                          M$INCR  T$NESTLEV
         000002                                  T$NESTLEV=T$NESTLEV+1
 014742                                          M$SETS  T$NS,\T$NESTLEV,F$SEG
         000003                                  T$NS2=F$SEG
         010002                                  T$$SEG=S$LSYM
 014742                                          M$PUSH  T$SEK,T$SEGLEV,T$$SEG
                                                 .MCALL  M$INCR,M$SETS
 014742                                          M$INCR  T$SEGLEV
         000000                                  T$SEGLEV=T$SEGLEV+1
 014742                                          M$SETS  T$SEK,\T$SEGLEV,T$$SEG
         010002                                  T$SE<0=T$$SEG
 014742                                          M$INCR  S$LSYM
         010003                                  S$LSYM=S$LSYM+1
 014742                                          M$SVC   C$BSEG
                                                 .MCALL  M$GNINS,M$TSTLAB
 014742                                          M$TSTLAB
                                                 .MCALL  M$TLABEL,M$INCR
                                                 .IIF LT T$TSTMAC, .MEXIT
                                                 .RADIX  10
                                                 M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                                 .RADIX  8
                                                 M$INCR  T$TSTSEQ
 014742                                          M$GNINS <TRAP   C$BSEG>
                                                 .IF LT SVCINS
                                                 TRAP    C$BSEG
                                                 .MEXIT
                                                 .ENDC
```

```
                                        .IF EQ SVCINS
                                        .LIST
                                                TRAP    C$BSEG
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
     014742  104404                                                                     TRAP    C$BSEG
                                                        .NLIST
                                        .ENDC
3219 014744  012777  000010  165326             MOV     #10,@CSRX               ;SELECT CHANNEL 2
3220 014752  052777  000002  165320             BIS     #2,@CSRX                ;SELECT CHANNEL 2 AS SYSTEM CONTROLLER
3221 014760  112777  000217  165302             MOVB    #217,@ICRHX             ;-----LOAD SIC IN ICR2---------------
3222 014766  004737  011062                     JSR     PC,WAIT                 ;WAIT 100 US.
3223 014772  042777  000010  165300             BIC     #10,@CSRX               ;SELECT CHANNEL 1
3224 015000  012737  000001  002374             MOV     #1,CHAN                 ;LOAD CHANNEL NUMBER
3225 015006  017737  165236  002502             MOV     @IIRX,BAD               ;GET IIR1 CONTENTS
3226 015014  022737  000400  002502             CMP     #400,BAD                ;IFC BIT IN IIR1 SHOULD BE SET
3227 015022  001410                             BEQ     15$                     ;BRANCH IF YES
3228 015024  012737  000400  002500             MOV     #400,GOOD               ;SET UP DATA FOR ERROR MESSAGES
3229 015032                                     ERRSOFT 410,E501,ERR501         ;ERROR HANDLER
                                        .MCALL  M$ERRINS
     015032                             M$ERRINS        410,E501,ERR501,C$ERSOFT
                                        .MCALL  M$GNINS,M$WORD,M$TSTLAB
     015032                             M$SVC   C$ERSOFT
                                        .MCALL  M$GNINS,M$TSTLAB
     015032                             M$TSTLAB
                                        .MCALL  M$TLABEL,M$INCR
                                        .IIF LT T$TSTMAC, .MEXIT
                                        .RADIX  10
                                        M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                        .RADIX  8
                                        M$INCR  T$TSTSEQ
     015032                             M$GNINS <TRAP   C$ERSOFT>
                                        .IF LT SVCINS
                                        TRAP    C$ERSOFT
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                TRAP    C$ERSOFT
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
     015032  104457                                                                     TRAP    C$ERSOFT
                                                        .NLIST
                                        .ENDC
             000012                     .RADIX  10
                                        .IF NB  410
             000632                     T$ERRNUM=410
                                        .IFF
                                        .ERROR  ;MISSING ERROR NR
                                        .ENDC
     015034                             M$WORD  \T$ERRNUM
```

```
                                .MCALL  M$GNINS
                                .IRP    N,<410>
                                M$GNINS <.WORD  N>
                                .ENDM
015034                          M$GNINS <.WORD  410>
                                .IF LT SVCINS
                                .WORD   410
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        .WORD   410
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
015034  000632                                                                  .WORD   410
                                                .NLIST
                                .ENDC
        000010                  .RADIX  8
                                .IF NB E501
015036                          M$WORD  E501
                                .MCALL  M$GNINS
                                .IRP    N,<E501>
                                M$GNINS <.WORD  N>
                                .ENDM
015036                          M$GNINS <.WORD  E501>
                                .IF LT SVCINS
                                .WORD   E501
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        .WORD   E501
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
015036  005376                                                                  .WORD   E501
                                                .NLIST
                                .ENDC
                                .IFF
                                M$WORD  0
                                .ENDC
                                .IF NB ERR501
015040                          M$WORD  ERR501
                                .MCALL  M$GNINS
                                .IRP    N,<ERR501>
                                M$GNINS <.WORD  N>
                                .ENDM
015040                          M$GNINS <.WORD  ERR501>
                                .IF LT SVCINS
                                .WORD   ERR501
                                .MEXIT
                                .ENDC
```

```
                                        .IF EQ SVCINS
                                        .LIST
                                                .WORD   ERR501
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
     015040  003672                                                                                  .WORD   ERR501
                                                        .NLIST
                                        .ENDC
                                        .IFF
                                        M$WORD  0
                                        .ENDC
     015042                                     CKLOOP                          ;BRANCH TO BGNSEG IF ERRLOOP IS SET
                                        .MCALL  M$SVC
     015042                             M$SVC   C$CLP1
                                        .MCALL  M$GNINS,M$TSTLAB
     015042                             M$TSTLAB
                                        .MCALL  M$TLABEL,M$INCR
                                        .IIF LT T$TSTMAC, .MEXIT
                                        .RADIX  10
                                        M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                        .RADIX  8
                                        M$INCR  T$TSTSEQ
     015042                             M$GNINS <TRAP   C$CLP1>
                                        .IF LT SVCINS
                                        TRAP    C$CLP1
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                TRAP    C$CLP1
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
     015042  104406                                                                                  TRAP    C$CLP1
                                                        .NLIST
                                        .ENDC
     015044  017737  165206  002502     15$:    MOV     @ISRX,BAD               ;GET ISR1 CONTENTS
     015052  022737  121040  002502             CMP     #121040,BAD             ;ATN,NDAC,IFC,ATN  SHOULD BE SET
     015060  001410                             BEQ     16$                     ;BRANCH IF YES
     015062  012737  121040  002500             MOV     #121040,GOOD            ;SET UP DATA FOR ERROR MESSAGES
     015070                                     ERRSOFT 411,E502,ERR501         ;ERROR HANDLER
                                        .MCALL  M$ERRINS
     015070                             M$ERRINS        411,E502,ERR501,C$ERSOFT
                                        .MCALL  M$GNINS,M$WORD,M$TSTLAB
     015070                             M$SVC   C$ERSOFT
                                        .MCALL  M$GNINS,M$TSTLAB
     015070                             M$TSTLAB
                                        .MCALL  M$TLABEL,M$INCR
                                        .IIF LT T$TSTMAC, .MEXIT
                                        .RADIX  10
                                        M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                        .RADIX  8
```

K14


```
                          M$INCR  T$TSTSEQ
015070                    M$GNINS <TRAP   C$ERSOFT>
                          .IF LT SVCINS
                          TRAP    C$ERSOFT
                          .MEXIT
                          .ENDC
                          .IF EQ SVCINS
                          .LIST
                                  TRAP    C$ERSOFT
                                          .NLIST
                          .MEXIT
                          .ENDC
                          .IF GT SVCINS
                          .LIST
015070  104457                                                    TRAP    C$ERSOFT
                                          .NLIST
                          .ENDC
        000012            .RADIX  10
                          .IF NB  411
        000633            T$ERRNUM=411
                          .IFF
                          .ERROR  ;MISSING ERROR-NR
                          .ENDC
015072                    M$WORD  \T$ERRNUM
                          .MCALL  M$GNINS
                          .IRP    N,<411>
                          M$GNINS <.WORD  N>
                          .ENDM
015072                    M$GNINS <.WORD  411>
                          .IF LT SVCINS
                          .WORD   411
                          .MEXIT
                          .ENDC
                          .IF EQ SVCINS
                          .LIST
                                  .WORD   411
                                          .NLIST
                          .MEXIT
                          .ENDC
                          .IF GT SVCINS
                          .LIST
015072  000633                                                    .WORD   411
                                          .NLIST
                          .ENDC
        000010            .RADIX  8
                          .IF NB E502
015074                    M$WORD  E502
                          .MCALL  M$GNINS
                          .IRP    N,<E502>
                          M$GNINS <.WORD  N>
                          .ENDM
015074                    M$GNINS <.WORD  E502>
                          .IF LT SVCINS
                          .WORD   E502
                          .MEXIT
                          .ENDC
                          .IF EQ SVCINS
```

```
                                        .LIST
                                                .WORD   E502
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
      015074  005437                                                                            .WORD   E502
                                                        .NLIST
                                        .ENDC
                                        .IFF
                                        M$WORD  0
                                        .ENDC
                                        .IF NB ERR501
      015076                            M$WORD  ERR501
                                        .MCALL  M$GNINS
                                        .IRP    N,<ERR501>
                                        M$GNINS <.WORD  N>
                                        .ENDM
      015076                            M$GNINS <.WORD  ERR501>
                                        .IF LT SVCINS
                                        .WORD   ERR501
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                .WORD   ERR501
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
      015076  003672                                                                            .WORD   ERR501
                                                        .NLIST
                                        .ENDC
                                        .IFF
                                        M$WORD  0
                                        .ENDC
 3236 015100                                    CKLOOP                  ;BRANCH TO BGNSEG IF ERRLOOP IS SET
                                        .MCALL  M$SVC
      015100                            M$SVC   C$CLP1
                                        .MCALL  M$GNINS,M$TSTLAB
      015100                            M$TSTLAB
                                        .MCALL  M$TLABEL,M$INCR
                                        .IIF LT T$TSTMAC, .MEXIT
                                        .RADIX  10
                                        M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                        .RADIX  8
                                        M$INCR  T$TSTSEQ
      015100                            M$GNINS <TRAP   C$CLP1>
                                        .IF LT SVCINS
                                        TRAP    C$CLP1
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                TRAP    C$CLP1
```

```
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
     015100  104406                                                                               TRAP    C$CLP1
                                                        .NLIST
                                        .ENDC
     015102  052777  000010  165170     16$:    BIS     #10,@CSRX               ;SELECT CHANNEL 2
     015110  012737  000002  002374             MOV     #2,CHAN                 ;LOAD CHANNEL FLAG
     015116  017737  165126  002502             MOV     @IIRX,BAD               ;GET IIR2 CONTENTS
     015124  022737  000020  002502             CMP     #20,BAD                 ;BO BIT IN IIR2 SHOULD BE SET
     015132  001410                             BEQ     17$                     ;BRANCH IF YES
     015134  012737  000020  002500             MOV     #20,GOOD                ;SET UP DATA FOR ERROR MESSAGES
     015142                                     ERRSOFT 412,E501,ERR501         ;ERROR HANDLER
                                        .MCALL  M$ERRINS
     015142                             M$ERRINS        412,E501,ERR501,C$ERSOFT
                                        .MCALL  M$GNINS,M$WORD,M$TSTLAB
     015142                             M$SVC   C$ERSOFT
                                        .MCALL  M$GNINS,M$TSTLAB
     015142                             M$TSTLAB
                                        .MCALL  M$TLABEL,M$INCR
                                        .IIF LT T$TSTMAC, .MEXIT
                                        .RADIX  10
                                        M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                        .RADIX  8
                                        M$INCR  T$TSTSEQ
     015142                             M$GNINS <TRAP   C$ERSOFT>
                                        .IF LT SVCINS
                                        TRAP    C$ERSOFT
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                TRAP    C$ERSOFT
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
     015142  104457                                                                               TRAP    C$ERSOFT
                                                        .NLIST
                                        .ENDC
             000012                     .RADIX  10
                                        .IF NB  412
             000634                     T$ERRNUM=412
                                        .IFF
                                        .ERROR  ;MISSING ERROR NR
                                        .ENDC
     015144                             M$WORD  \T$ERRNUM
                                        .MCALL  M$GNINS
                                        .IRP    N,<412>
                                        M$GNINS <.WORD  N>
                                        .ENDM
     015144                             M$GNINS <.WORD  412>
                                        .IF LT SVCINS
                                        .WORD   412
```

```
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                .WORD   412
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
        015144  000634                                                                                  .WORD   412
                                                        .NLIST
                                        .ENDC
                000010                  .RADIX  8
                                        .IF NB E501
        015146                          M$WORD  E501
                                        .MCALL  M$GNINS
                                        .IRP    N,<E501>
                                        M$GNINS <.WORD  N>
                                        .ENDM
        015146                          M$GNINS <.WORD  E501>
                                        .IF LT SVCINS
                                        .WORD   E501
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                .WORD   E501
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
        015146  005376                                                                                  .WORD   E501
                                                        .NLIST
                                        .ENDC
                                        .IFF
                                        M$WORD  0
                                        .ENDC
                                        .IF NB ERR501
        015150                          M$WORD  ERR501
                                        .MCALL  M$GNINS
                                        .IRP    N,<ERR501>
                                        M$GNINS <.WORD  N>
                                        .ENDM
        015150                          M$GNINS <.WORD  ERR501>
                                        .IF LT SVCINS
                                        .WORD   ERR501
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                .WORD   ERR501
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
```

```
                                        .LIST
      015150  003672                                                                    .WORD   ERR501
                                                     .NLIST
                                        .ENDC
                                        .IFF
                                        M$WORD  0
                                        .ENDC
 3244 015152                                    CKLOOP                          ;BRANCH TO BGNSEG IF ERRLOPP IS SET
                                        .MCALL  M$SVC
      015152                            M$SVC   C$CLP1
                                        .MCALL  M$GNINS,M$TSTLAB
      015152                            M$TSTLAB
                                        .MCALL  M$TLABEL,M$INCR
                                        .IIF LT T$TSTMAC, .MEXIT
                                        .RADIX  10
                                        M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                        .RADIX  8
                                        M$INCR  T$TSTSEQ
      015152                            M$GNINS <TRAP   C$CLP1>
                                        .IF LT SVCINS
                                        TRAP    C$CLP1
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                TRAP    C$CLP1
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
      015152  104406                                                                    TRAP    C$CLP1
                                                        .NLIST
                                        .ENDC
 3245 015154  112777  000017  165106    17$:    MOVB    #17,@ICRHX              ;----LOAD NOT SIC IN ICR2 (ACR)-------
 3246 015162  017737  165062  002502            MOV     @IIRX,BAD               ;GET IIR2 CONTENTS
 3247 015170  005737  002502                    TST     BAD                     ;IIR2 SHOULD BE ZERO
 3248 015174  001406                            BEQ     21$                     ;BRANCH IF YES
 3249 015176  005037  002500                    CLR     GOOD                    ;SET UP DATA FOR ERROR MESSAGES
 3250 015202                                    ERRSOFT 413,E501,ERR501         ;ERROR HANDLER
                                        .MCALL  M$ERRINS
      015202                            M$ERRINS        413,E501,ERR501,C$ERSOFT
                                        .MCALL  M$GNINS,M$WORD,M$TSTLAB
      015202                            M$SVC   C$ERSOFT
                                        .MCALL  M$GNINS,M$TSTLAB
      015202                            M$TSTLAB
                                        .MCALL  M$TLABEL,M$INCR
                                        .IIF LT T$TSTMAC, .MEXIT
                                        .RADIX  10
                                        M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                        .RADIX  8
                                        M$INCR  T$TSTSEQ
      015202                            M$GNINS <TRAP   C$ERSOFT>
                                        .IF LT SVCINS
                                        TRAP    C$ERSOFT
                                        .MEXIT
                                        .ENDC
```

```
                        .IF EQ SVCINS
                        .LIST
                                TRAP    C$ERSOFT
                                        .NLIST
                        .MEXIT
                        .ENDC
                        .IF GT SVCINS
                        .LIST
015202  104457                                                  TRAP    C$ERSOFT
                                        .NLIST
                        .ENDC
        000012          .RADIX  10
                        .IF NB  413
        000635          T$ERRNUM=413
                        .IFF
                        .ERROR  ;MISSING ERROR NR
                        .ENDC
015204                  M$WORD  \T$ERRNUM
                        .MCALL  M$GNINS
                        .IRP    N,<413>
                        M$GNINS <.WORD  N>
                        .ENDM
015204                  M$GNINS <.WORD  413>
                        .IF LT SVCINS
                        .WORD   413
                        .MEXIT
                        .ENDC
                        .IF EQ SVCINS
                        .LIST
                                .WORD   413
                                        .NLIST
                        .MEXIT
                        .ENDC
                        .IF GT SVCINS
                        .LIST
015204  000635                                                  .WORD   413
                                        .NLIST
                        .ENDC
        000010          .RADIX  8
                        .IF NB E501
015206                  M$WORD  E501
                        .MCALL  M$GNINS
                        .IRP    N,<E501>
                        M$GNINS <.WORD  N>
                        .ENDM
015206                  M$GNINS <.WORD  E501>
                        .IF LT SVCINS
                        .WORD   E501
                        .MEXIT
                        .ENDC
                        .IF EQ SVCINS
                        .LIST
                                .WORD   E501
                                        .NLIST
                        .MEXIT
                        .ENDC
                        .IF GT SVCINS
```

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```
                              .LIST
     015206  005376                                                                         .WORD   E501
                                        .NLIST
                              .ENDC
                              .IFF
                              M$WORD  0
                              .ENDC
                              .IF NB ERR501
     015210                   M$WORD  ERR501
                              .MCALL  M$GNINS
                              .IRP    N,<ERR501>
                              M$GNINS <.WORD  N>
                              .ENDM
     015210                   M$GNINS <.WORD  ERR501>
                              .IF LT SVCINS
                              .WORD   ERR501
                              .MEXIT
                              .ENDC
                              .IF EQ SVCINS
                              .LIST
                                   .WORD    ERR501
                                        .NLIST
                              .MEXIT
                              .ENDC
                              .IF GT SVCINS
                              .LIST
     015210  003672                                                                         .WORD   ERR501
                                        .NLIST
                              .ENDC
                              .IFF
                              M$WORD  0
                              .ENDC
3251 015212                   21$:    ENDSEG
                              .MCALL  M$POP,M$GNLS,M$SVC,M$ENDERR
     015212                   M$POP   T$NS,T$NESTLEV,T$TEMP
                              .MCALL  M$GETS,M$DECR
                              .IF LT  T$NESTLEV
                              .ERROR  T$NESTLEV       ; MACRO T$NS UNDERFLOW
                              .MEXIT
                              .ENDC
     015212                   M$GETS  T$NS,\T$NESTLEV,T$TEMP
             000003           T$TEMP=T$NS2
     015212                   M$DECR  T$NESTLEV
             000001           T$NESTLEV=T$NESTLEV-1
                              .IF EQ F$SEG-T$TEMP
     015212                   M$POP   T$SEK,T$SEGLEV,T$$SEG
                              .MCALL  M$GETS,M$DECR
                              .IF LT  T$SEGLEV
                              .ERROR  T$SEGLEV        ; MACRO T$SEK UNDERFLOW
                              .MEXIT
                              .ENDC
     015212                   M$GETS  T$SEK,\T$SEGLEV,T$$SEG
             010002           T$$SEG=T$SEK0
     015212                   M$DECR  T$SEGLEV
             177777           T$SEGLEV=T$SEGLEV 1
     015212                   M$GNLS  T$$SFG
                              .MCALL  M$GEN
```

```
                                  .IF NB T$$SEG
     015212                       M$GEN   \T$$SEG,$,SVCTAG
                                  .IF LE  SVCTAG
                                  .IIF EQ SVCTAG,.LIST
                                  10002$:
                                  .IIF EQ SVCTAG,.NLIST
                                  .MEXIT
                                  .ENDC
                                  .LIST
     015212                                                                10002$:
                                          .NLIST
                                  .IFF
                                  M$GEN   \S$LSYM,$,SVCTAG
                                  .ENDC
     015212                       M$SVC   C$ESEG
                                  .MCALL  M$GNINS,M$TSTLAB
     015212                       M$TSTLAB
                                  .MCALL  M$TLABEL,M$INCR
                                  .IIF LT T$TSTMAC, .MEXIT
                                  .RADIX  10
                                  M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                  .RADIX  8
                                  M$INCR  T$TSTSEQ
     015212                       M$GNINS <TRAP   C$ESEG>
                                  .IF LT SVCINS
                                  TRAP    C$ESEG
                                  .MEXIT
                                  .ENDC
                                  .IF EQ SVCINS
                                  .LIST
                                          TRAP    C$ESEG
                                                  .NLIST
                                  .MEXIT
                                  .ENDC
                                  .IF GT SVCINS
                                  .LIST
     015212  104405                                                             TRAP    C$ESEG
                                                  .NLIST
                                  .ENDC
                                  .IF EQ T$SEGLEV+1
             000041               T$SEG-F$END
                                  .ENDC
                                  .IFF
                                  M$ENDERR        ENDSEG,T$TEMP
                                  .ENDC
3252 015214                               BGNSEG
                                  .MCALL  M$PUSH,M$INCR,M$SVC
             000040               T$SEG=F$BGN
     015214                       M$PUSH  T$NS,T$NESTLEV,F$SEG
                                  .MCALL  M$INCR,M$SETS
     015214                       M$INCR  T$NESTLEV
             000002               T$NESTLEV=T$NESTLEV+1
     015214                       M$SETS  T$NS,\T$NESTLEV,F$SEG
             000003               T$NS2=F$SEG
             010003               T$$SEG=S$LSYM
     015214                       M$PUSH  T$SEK,T$SEGLEV,T$$SEG
                                  .MCALL  M$INCR,M$SETS
```

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```
     015214                           M$INCR  T$SEGLEV
             000000                   T$SEGLEV=T$SEGLEV+1
     015214                           M$SETS  T$SEK,\T$SEGLEV,T$$SEG
             010003                   T$SEKO=T$$SEG
     015214                           M$INCR  S$LSYM
             010004                   S$LSYM=S$LSYM+1
     015214                           M$SVC   C$BSEG
                                      .MCALL  M$GNINS,M$TSTLAB
     015214                           M$TSTLAB
                                      .MCALL  M$TLABEL,M$INCR
                                      .IIF LT T$TSTMAC, .MEXIT
                                      .RADIX  10
                                      M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                      .RADIX  8
                                      M$INCR  T$TSTSEQ
     015214                           M$GNINS <TRAP   C$BSEG>
                                      .IF LT SVCINS
                                      TRAP    C$BSEG
                                      .MEXIT
                                      .ENDC
                                      .IF EQ SVCINS
                                      .LIST
                                              TRAP    C$BSEG
                                                      .NLIST
                                      .MEXIT
                                      .ENDC
                                      .IF GT SVCINS
                                      .LIST
     015214  104404                                                                   TRAP    C$BSEG
                                                      .NLIST
                                      .ENDC
     015216  052777  000010  165054           BIS     #10,@CSRX               ;SELECT CHANNEL 2
     015224  112777  000220  165036           MOVB    #220,@ICRHX             ;-- LOAD SRE IN ACR 2- -  ---- ---- -
     015232  004737  011062                   JSR     PC,WAIT                 ;WAIT 100 US.
     015236  042777  000010  165034           BIC     #10,@CSRX               ;SELECT CHANNEL 1
     015244  012737  000001  002374           MOV     #1,CHAN                 ;LOAD CHANNEL FLAG
     015252  017737  164772  002502           MOV     @IIRX,BAD               ;GET IIR1 CONTENTS
     015260  005737  002502                   TST     BAD                     ;IIR 1 SHOULD BE ZERO
     015264  001407                           BEQ     22$                     ;BRANCH IF YES
     015266  005037  002500                   CLR     GOOD                    ;SET UP DATA FOR ERROR MESSAGES
     015272                                   ERRSOFT 414,E501,ERR501         ;ERROR HANDLER
                                      .MCALL  M$ERRINS
     015272                           M$ERRINS        414,E501,ERR501,C$ERSOFT
                                      .MCALL  M$GNINS,M$WORD,M$TSTLAB
     015272                           M$SVC   C$ERSOFT
                                      .MCALL  M$GNINS,M$TSTLAB
     015272                           M$TSTLAB
                                      .MCALL  M$TLABEL,M$INCR
                                      .IIF LT T$TSTMAC, .MEXIT
                                      .RADIX  10
                                      M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                      .RADIX  8
                                      M$INCR  T$TSTSEQ
     015272                           M$GNINS <TRAP   C$ERSOFT>
                                      .IF LT SVCINS
                                      TRAP    C$ERSOFT
                                      .MEXIT
```

```
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        TRAP    C$ERSOFT
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
 015272  104457                                                                   TRAP    C$ERSOF'
                                                .NLIST
                                .ENDC
         000012                 .RADIX  10
                                .IF NB  414
         000636                 T$ERRNUM=414
                                .IFF
                                .ERROR  ;MISSING 'RROR-NR
                                .ENDC
 015274                         M$WORD  \T$ERRNUM
                                .MCALL  M$GNINS
                                .IRP    N,<414>
                                M$GNINS <.WORD  N>
                                .ENDM
 015274                         M$GNINS <.WORD  414>
                                .IF LT SVCINS
                                .WORD   414
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        .WORD   414
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
 015274  000636                                                                   .WORD   414
                                                .NLIST
                                .ENDC
         000010                 .RADIX  8
                                .IF NB E501
 015276                         M$WORD  E501
                                .MCALL  M$GNINS
                                .IRP    N,<E501>
                                M$GNINS <.WORD  N>
                                .ENDM
 015276                         M$GNINS <.WORD  E501>
                                .IF LT SVCINS
                                .WORD   E501
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        .WORD   E501
                                                .NLIST
                                .MEXIT
                                .ENDC
```

```
                                .IF GT SVCINS
                                .LIST
     015276  005376                                                         .WORD   E501
                                          .NLIST
                                .ENDC
                                .IFF
                                M$WORD  0
                                .ENDC
                                .IF NB ERR501
     015300                     M$WORD  ERR501
                                .MCALL  M$GNINS
                                .IRP    N,<ERR501>
                                M$GNINS <.WORD  N>
                                .ENDM
     015300                     M$GNINS <.WORD  ERR501>
                                .IF LT SVCINS
                                .WORD   ERR501
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                     .WORD   ERR501
                                          .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
     015300  003672                                                         .WORD   ERR501
                                          .NLIST
                                .ENDC
                                .IFF
                                M$WORD  0
                                .ENDC
3263 015302                          CKLOOP                    ;BRANCH TO BGNSEG IF ERRLOOP IS SET
                                .MCALL  M$SVC
     015302                     M$SVC   C$CLP1
                                .MCALL  M$GNINS,M$TSTLAB
     015302                     M$TSTLAB
                                .MCALL  M$TLABEL,M$INCR
                                .IIF LT T$TSTMAC, .MEXIT
                                .RADIX  10
                                M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                .RADIX  8
                                M$INCR  T$TSTSEQ
     015302                     M$GNINS <TRAP   C$CLP1>
                                .IF LT SVCINS
                                TRAP    C$CLP1
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                     TRAP    C$CLP1
                                          .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
```

```
      015302  104406                                                                      TRAP    C$CLP1
                                                        .NLIST
                                          .ENDC
 3264 015304  017737  164746  002502  22$:      MOV     @ISRX,BAD                ;GET ISR1 CONTENTS
 3265 015312  022737  120440  002502            CMP     #120440,BAD              ;ATN,NDAC,REN,ATN BITS  SHOULD BE SET
 3266 015320  001410                            BEQ     23$                      ;BRANCH IF YES
 3267 015322  012737  120440  002500            MOV     #120440,GOOD             ;SET UP DATA FOR ERROR MESSAGES
 3268 015330                                    ERRSOFT 415,E502,ERR501          ;ERROR HANDLER
                                          .MCALL  M$ERRINS
      015330                              M$ERRINS        415,E502,ERR501,C$ERSOFT
                                          .MCALL  M$GNINS,M$WORD,M$TSTLAB
      015330                              M$SVC   C$ERSOFT
                                          .MCALL  M$GNINS,M$TSTLAB
      015330                              M$TSTLAB
                                          .MCALL  M$TLABEL,M$INCR
                                          .IIF LT T$TSTMAC, .MEXIT
                                          .RADIX  10
                                          M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                          .RADIX  8
                                          M$INCR  T$TSTSEQ
      015330                              M$GNINS <TRAP   C$ERSOFT>
                                          .IF LT SVCINS
                                          TRAP    C$ERSOFT
                                          .MEXIT
                                          .ENDC
                                          .IF EQ SVCINS
                                          .LIST
                                                  TRAP    C$ERSOFT
                                                          .NLIST
                                          .MEXIT
                                          .ENDC
                                          .IF GT SVCINS
                                          .LIST
      015330  104457                                                                      TRAP    C$ERSOFT
                                                          .NLIST
                                          .ENDC
              000012                      .RADIX  10
                                          .IF NB  415
              000637                      T$ERRNUM=415
                                          .IFF
                                          .ERROR  ;MISSING ERROR NR
                                          .ENDC
      015332                              M$WORD  \T$ERRNUM
                                          .MCALL  M$GNINS
                                          .IRP    N,<415>
                                          M$GNINS <.WORD  N>
                                          .ENDM
      015332                              M$GNINS <.WORD  415>
                                          .IF LT SVCINS
                                          .WORD   415
                                          .MEXIT
                                          .ENDC
                                          .IF EQ SVCINS
                                          .LIST
                                                  .WORD   415
                                                          .NLIST
                                          .MEXIT
```

```
                                .ENDC
                                .IF GT SVCINS
                                .LIST
     015332  000637                                                              .WORD   415
                                          .NLIST
                                .ENDC
             000010             .RADIX  8
                                .IF NB E502
     015334                     M$WORD  E502
                                .MCALL  M$GNINS
                                .IRP    N,<E502>
                                M$GNINS <.WORD  N> .
                                .ENDM
     015334                     M$GNINS <.WORD  E502>
                                .IF LT SVCINS
                                .WORD   E502
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                     .WORD    E502
                                          .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
     015334  005437                                                              .WORD   E502
                                          .NLIST
                                .ENDC
                                .IFF
                                M$WORD  0
                                .ENDC
                                .IF NB ERR501
     015336                     M$WORD  ERR501
                                .MCALL  M$GNINS
                                .IRP    N,<ERR501>
                                M$GNINS <.WORD  N>
                                .ENDM
     015336                     M$GNINS <.WORD  ERR501>
                                .IF LT SVCINS
                                .WORD   ERR501
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                     .WORD    ERR501
                                          .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
     015336  003672                                                              .WORD   ERR501
                                          .NLIST
                                .ENDC
                                .IFF
                                M$WORD  0
                                .ENDC
```

```
 3269 015340                                 CKLOOP                              ;BRANCH TO BGNSEG IF ERRLOOP IS SET
                                     .MCALL  M$SVC
      015340                         M$SVC   C$CLP1
                                     .MCALL  M$GNINS,M$TSTLAB
      015340                         M$TSTLAB
                                     .MCALL  M$TLABEL,M$INCR
                                     .IIF LT T$TSTMAC, .MEXIT
                                     .RADIX  10
                                     M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                     .RADIX  8
                                     M$INCR  T$TSTSEQ
      015340                         M$GNINS <TRAP   C$CLP1>
                                     .IF LT SVCINS
                                     TRAP    C$CLP1
                                     .MEXIT
                                     .ENDC
                                     .IF EQ SVCINS
                                     .LIST
                                             TRAP    C$CLP1
                                                     .NLIST
                                     .MEXIT
                                     .ENDC
                                     .IF GT SVCINS
                                     .LIST
      015340  104406                                                                        TRAP    C$CLP1
                                                     .NLIST
                                     .ENDC
 3270 015342  052777  000010  164730 23$:    BIS     #10,@CSRX               ;SELECT CHANNEL 2
 3271 015350  012737  000002  002374         MOV     #2,CHAN                 ;
 3272 015356  017737  164666  002502         MOV     @IIRX,BAD               ;GET IIR2 CONTENTS
 3273 015364  005737  002502                 TST     BAD                     ;IIR 2 SHOULD BE ZERO
 3274 015370  001407                         BEQ     24$                     ;BRANCH IF YES
 3275 015372  005037  002500                 CLR     GOOD                    ;SET UP DATA FOR ERROR MESSAGES
 3276 015376                                 ERRSOFT 416,E501,ERR501         ;ERROR HANDLER
                                     .MCALL  M$ERRINS
      015376                         M$ERRINS        416,E501,ERR501,C$ERSOFT
                                     .MCALL  M$GNINS,M$WORD,M$TSTLAB
      015376                         M$SVC   C$ERSOFT
                                     .MCALL  M$GNINS,M$TSTLAB
      015376                         M$TSTLAB
                                     .MCALL  M$TLABEL,M$INCR
                                     .IIF LT T$TSTMAC, .MEXIT
                                     .RADIX  10
                                     M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                     .RADIX  8
                                     M$INCR  T$TSTSEQ
      015376                         M$GNINS <TRAP   C$ERSOFT>
                                     .IF LT SVCINS
                                     TRAP    C$ERSOFT
                                     .MEXIT
                                     .ENDC
                                     .IF EQ SVCINS
                                     .LIST
                                             TRAP    C$ERSOFT
                                                     .NLIST
                                     .MEXIT
                                     .ENDC
```

```
                                .IF GT SVCINS
                                .LIST
 015376 104457                                                                      TRAP    C$ERSOFT
                                          .NLIST
                                .ENDC
        000012                  .RADIX  10
                                .IF NB  416
        000640                  T$ERRNUM=416
                                .IFF
                                .ERROR  ;MISSING ERROR-NR
                                .ENDC
 015400                         M$WORD  \T$ERRNUM
                                .MCALL  M$GNINS
                                .IRP    N,<416>
                                M$GNINS <.WORD  N>
                                .ENDM
 015400                         M$GNINS <.WORD  416>
                                .IF LT SVCINS
                                .WORD   416
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                     .WORD    416
                                          .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
 015400 000640                                                                      .WORD   416
                                          .NLIST
                                .ENDC
        000010                  .RADIX  8
                                .IF NB E501
 015402                         M$WORD  E501
                                .MCALL  M$GNINS
                                .IRP    N,<E501>
                                M$GNINS <.WORD  N>
                                .ENDM
 015402                         M$GNINS <.WORD  E501>
                                .IF LT SVCINS
                                .WORD   E501
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                     .WORD    E501
                                          .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
 015402 005376                                                                      .WORD   E501
                                          .NLIST
                                .ENDC
                                .IFF
                                M$WORD  0
```

```
                                        .ENDC
                                        .IF NB ERR501
      015404                            M$WORD  ERR501
                                        .MCALL  M$GNINS
                                        .IRP    N,<ERR501>
                                        M$GNINS <.WORD  N>
                                        .ENDM
      015404                            M$GNINS <.WORD  ERR501>
                                        .IF LT SVCINS
                                        .WORD   ERR501
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                .WORD   ERR501
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
      015404  003672                                                                    .WORD   ERR501
                                                        .NLIST
                                        .ENDC
                                        .IFF
                                        M$WORD  0
                                        .ENDC
 3277 015406                                    CKLOOP                          ;BRANCH TO BGNSEG IF ERRLOOP IS SET
                                        .MCALL  M$SVC
      015406                            M$SVC   C$CLP1
                                        .MCALL  M$GNINS,M$TSTLAB
      015406                            M$TSTLAB
                                        .MCALL  M$TLABEL,M$INCR
                                        .IIF LT T$TSTMAC, .MEXIT
                                        .RADIX  10
                                        M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                        .RADIX  8
                                        M$INCR  T$TSTSEQ
      015406                            M$GNINS <TRAP   C$CLP1
                                        .IF LT SVCINS
                                        TRAP    C$CLP1
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                TRAP    C$CLP1
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
      015406  104406                                                                    TRAP    C$CLP1
                                                        .NLIST
                                        .ENDC
 3278 015410  017737  164642  002502    24$:    MOV     @ISRX,BAD               ;GET ISR2 CONTENTS
 3279 015416  022737  120440  002502            CMP     #120440,BAD             ;ATN,NDAC,REN,ATN SHOULD BE SET
 3280 015424  001410                            BEQ     25$                     ;BRANCH IF YES
 3281 015426  012737  120440  002500            MOV     #120440,GOOD            ;SET UP DATA FOR ERROR MESSAGES
```

```
 3282 015434                         ERRSOFT 417,E502,ERR501         ;ERROR HANDLER
                              .MCALL  M$ERRINS
      015434                  M$ERRINS        417,E502,ERR501,C$ERSOFT
                              .MCALL  M$GNINS,M$WORD,M$TSTLAB
      015434                  M$SVC   C$ERSOFT
                              .MCALL  M$GNINS,M$TSTLAB
      015434                  M$TSTLAB
                              .MCALL  M$TLABEL,M$INCR
                              .IIF LT T$TSTMAC, .MEXIT
                              .RADIX  10
                              M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                              .RADIX  8
                              M$INCR  T$TSTSEQ
      015434                  M$GNINS <TRAP   C$ERSOFT>
                              .IF LT SVCINS
                              TRAP    C$ERSOFT
                              .MEXIT
                              .ENDC
                              .IF EQ SVCINS
                              .LIST
                                      TRAP    C$ERSOFT
                                              .NLIST
                              .MEXIT
                              .ENDC
                              .IF GT SVCINS
                              .LIST
      015434  104457                                                          TRAP    C$ERSOFT
                                              .NLIST
                              .ENDC
              000012          .RADIX  10
                              .IF NB  417
              000641          T$ERRNUM=417
                              .IFF
                              .ERROR  ;MISSING ERROR NR
                              .ENDC
      015436                  M$WORD  \T$ERRNUM
                              .MCALL  M$GNINS
                              .IRP    N,<417>
                              M$GNINS <.WORD  N>
                              .ENDM
      015436                  M$GNINS <.WORD  417>
                              .IF LT SVCINS
                              .WORD   417
                              .MEXIT
                              .ENDC
                              .IF EQ SVCINS
                              .LIST
                                      .WORD   417
                                              .NLIST
                              .MEXIT
                              .ENDC
                              .IF GT SVCINS
                              .LIST
      015436  000641                                                          .WORD   417
                                              .NLIST
                              .ENDC
              000010          .RADIX  8
```

B16


```
                                .IF NB E502
      015440                    M$WORD  E502
                                .MCALL  M$GNINS
                                .IRP    N,<E502>
                                M$GNINS <.WORD  N>
                                .ENDM
      015440                    M$GNINS  .WORD  E502>
                                .IF LT SVCINS
                                .WORD   E502
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        .WORD   E502
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
      015440  005437                                                                    .WORD   E502
                                                .NLIST
                                .ENDC
                                .IFF
                                M$WORD  0
                                .ENDC
                                .IF NB ERR501
      015442                    M$WORD  ERR501
                                .MCALL  M$GNINS
                                .IRP    N,<ERR501>
                                M$GNINS <.WORD  N>
                                .ENDM
      015442                    M$GNINS <.WORD  ERR501>
                                .IF LT SVCINS
                                .WORD   ERR501
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        .WORD   ERR501
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
      015442  003672                                                                    .WORD   ERR501
                                                .NLIST
                                .ENDC
                                .IFF
                                M$WORD  0
                                .ENDC
 3283 015444                            CKLOOP                          ;BRANCH TO BGNSEG IF ERRLOOP IS SET
                                .MCALL  M$SVC
      015444                    M$SVC   C$CLP1
                                .MCALL  M$GNINS,M$TSTLAB
      015444                    M$TSTLAB
                                .MCALL  M$TLABEL,M$INCR
                                .IIF LT T$TSTMAC, .MEXIT
```

```
                                                 .RADIX  10
                                                 M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                                 .RADIX  8
                                                 M$INCR  T$TSTSEQ
      015444                                     M$GNINS <TRAP   C$CLP1>
                                                 .IF LT SVCINS
                                                 TRAP    C$CLP1
                                                 .MEXIT
                                                 .ENDC
                                                 .IF EQ SVCINS
                                                 .LIST
                                                         TRAP    C$CLP1
                                                                 .NLIST
                                                 .MEXIT
                                                 .ENDC
                                                 .IF GT SVCINS
                                                 .LIST
      015444  104406                                                                              TRAP    C$CLP1
                                                                 .NLIST
                                                 .ENDC
 3284 015446  112777  000020  164614  25$:       MOVB    #20,@ICRHX              ;----LOAD NOT SRE IN ICR2 (ACR)-------
 3285 015454  112777  000200  164606             MOVB    #200,@ICRHX             ;----LOAD SWRST IN ICR2 (ACR)---------
 3286 015462  112777  000000  164600             MOVB    #0,@ICRHX               ;----LOAD NOT SWRST IN ICR2 (ACR)-----
 3287 015470                                     ENDSEG
                                                 .MCALL  M$POP,M$GNLS,M$SVC,M$ENDERR
      015470                                     M$POP   T$NS,T$NESTLEV,T$TEMP
                                                 .MCALL  M$GETS,M$DECR
                                                 .IF LT  T$NESTLEV
                                                 .ERROR  T$NESTLEV       ; MACRO T$NS UNDERFLOW
                                                 .MEXIT
                                                 .ENDC
      015470                                     M$GETS  T$NS,\T$NESTLEV,T$TEMP
              000003                             T$TEMP=T$NS2
      015470                                     M$DECR  T$NESTLEV
              000001                             T$NESTLEV=T$NESTLEV-1
                                                 .IF EQ F$SEG-T$TEMP
      015470                                     M$POP   T$SEK,T$SEGLEV,T$$SEG
                                                 .MCALL  M$GETS,M$DECR
                                                 .IF LT  T$SEGLEV
                                                 .ERROR  T$SEGLEV        ; MACRO T$SEK UNDERFLOW
                                                 .MEXIT
                                                 .ENDC
      015470                                     M$GETS  T$SEK,\T$SEGLEV,T$$SEG
              010003                             T$$SEG=T$SEK0
      015470                                     M$DECR  T$SEGLEV
              177777                             T$SEGLEV=T$SEGLEV-1
      015470                                     M$GNLS  T$$SEG
                                                 .MCALL  M$GEN
                                                 .IF NB T$$SEG
      015470                                     M$GEN   \T$$SEG,$,SVCTAG
                                                 .IF LE  SVCTAG
                                                 .IIF EQ SVCTAG,.LIST
                                                 10003$:
                                                 .IIF EQ SVCTAG,.NLIST
                                                 .MEXIT
                                                 .ENDC
                                                 .LIST
```

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```
     015470                                                                      10003$:
                                           .NLIST
                                  .IFF
                                  M$GEN     \S$LSYM,$,SVCTAG
                                  .ENDC
     015470                       M$SVC     C$ESEG
                                  .MCALL    M$GNINS,M$TSTLAB
     015470                       M$TSTLAB
                                  .MCALL    M$TLABEL,M$INCR
                                  .IIF LT T$TSTMAC, .MEXIT
                                  .RADIX  10
                                  M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                  .RADIX  8
                                  M$INCR   T$TSTSEQ
     015470                       M$GNINS <TRAP   C$ESEG>
                                  .IF LT SVCINS
                                  TRAP     C$ESEG
                                  .MEXIT
                                  .ENDC
                                  .IF EQ SVCINS
                                  .LIST
                                           TRAP     C$ESEG
                                                    .NLIST
                                  .MEXIT
                                  .ENDC
                                  .IF GT SVCINS
                                  .LIST
     015470  104405                                                                    TRAP    C$ESEG
                                                    .NLIST
                                  .ENDC
                                  .IF EQ T$SEGLEV+1
             000041               I$SEG=F$END
                                  .ENDC
                                  .IFF
                                  M$ENDERR          ENDSEG,T$TEMP
                                  .ENDC
     015472  005737  002234                TST      QVP                     ;IS QUICK VERIFY PASS SELECTED
     015476  001010                        BNE      EXQV4                   ;IF YES EXIT TEST
     015500  005237  002322                INC      ITRCNT                  ;ITERATION COUNTER + 1
     015504  023737  002320  002322        CMP      ITRDEF,ITRCNT           ;DEFAULT ITERATION EXECUTED
     015512  001402                        BEQ      EXQV4                   ;IF YES EXIT TEST
     015514  000137  014132                JMP      ITRAC4                  ;IF NO TEST ITERATION
     015520                       EXQV4:   EXIT     TST                     ;
                                  .MCALL   M$SVC,M$EXIT,M$EXSEG,M$EXTJ,M$GETTOP,M$CHECK,M$WORD,XFER
             000041               T$FLAG=F$END
     015520                       M$CHECK TST,T$TEMP,T$FLAG
                                  .IF IDN <TST>,<TST>
             010031               T$TEMP=T$$TEST
             000040               T$FLAG=I$TST
                                  .MEXIT
                                  .ENDC
                                  .IF IDN <SUB>,<TST>
                                  T$TEMP=T$$SUB
                                  T$FLAG=I$SUB
                                  .MEXIT
                                  .ENDC
                                  .IF IDN <SEG>,<TST>
```

```
                        T$TEMP=T$$SEG
                        T$FLAG=I$SEG
                        .MEXIT
                        .ENDC
                        .IF IDN <INIT>,<TST>
                        T$TEMP=T$$INIT
                        T$FLAG=I$INIT
                        .MEXIT
                        .ENDC
                        .IF IDN <CLN>,<TST>
                        T$TEMP=T$$CLEAN
                        T$FLAG=I$CLN
                        .MEXIT
                        .ENDC
                        .IF IDN <SRV>,<TST>
                        T$TEMP=T$$SRV
                        T$FLAG=I$SRV
                        .MEXIT
                        .ENDC
                        .IF IDN <MSG>,<TST>
                        T$TEMP=T$$MSG
                        T$FLAG=F$JMP
                        .MEXIT
                        .ENDC
                        .IF IDN <RPT>,<TST>
                        T$TEMP=T$$RPT
                        T$FLAG-F$JMP
                        .MEXIT
                        .ENDC
                        .IF IDN <DU>,<TST>
                        T$TEMP=T$$DU
                        T$FLAG=F$JMP
                        .MEXIT
                        .ENDC
                        .IF IDN <AU>,<TST>
                        T$TEMP=T$$AU
                        T$FLAG-F$JMP
                        .MEXIT
                        .ENDC
                        .IF EQ T$FLAG-F$JMP
                        M$WORD  J$JMP
                        M$EXTJ  \T$TEMP
                        .MEXIT
                        .ENDC
                        .IF EQ  T$FLAG F$BGN
015520                  M$SVC   C$EXIT
                        .MCALL  M$GNINS,M$TSTLAB
015520                  M$TSTLAB
                        .MCALL  M$TLABEL,M$INCR
                        .IIF LT T$TSTMAC, .MEXIT
                        .RADIX  10
                        M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                        .RADIX  8
                        M$INCR  T$TSTSEQ
015520                  M$GNINS <TRAP   C$EXIT>
                        .IF LT SVCINS
                        TRAP    C$EXIT
```

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```
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                TRAP    C$EXIT
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
        015520  104432                                                          TRAP    C$EXIT
                                                        .NLIST
                                        .ENDC
                                        .IF IDN <SEG>,<TST>
                                        M$GETTOP T$SEK,T$SEGLEV,T$TEMP
                                        M$EXSEG \T$TEMP
                                        .IFF
        015522                          M$EXIT  \T$TEMP
                                        .MCALL  M$GNINS
        015522                          M$GNINS <.WORD  L10031-.>
                                        .IF LT SVCINS
                                        .WORD   L10031-.
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                .WORD   L10031-.
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
        015522  000052                                                          .WORD   L10031 .
                                                        .NLIST
                                        .ENDC
                                        .ENDC
                                        .MEXIT
                                        .ENDC
                                        .IF IDN <HRD>,<TST>
                                        M$GETTOP        T$NS,T$NESTLEV,T$TEMP
                                        .IF EQ  F$HARD T$TEMP
                                        .IRP    N,<\T$$HARD>
                                        XFER    L'N
                                        .ENDM
                                        .MEXIT
                                        .ENDC
                                        .ENDC
                                        .IF IDN <SFT>,<TST>
                                        M$GETTOP        T$NS,T$NESTLEV,T$TEMP
                                        .IF EQ  F$SOFT T$TEMP
                                        .IRP    N,<\T$$SOFT>
                                        XFER    L'N
                                        .ENDM
                                        .MEXIT
                                        .ENDC
                                        .ENDC
                                        .ERROR  ;ILL. "EXIT TST" STMT.
```

```

                                                .NLIST  BEX
 015524     045     123     062   TSHD4:        .ASCIZ  /*S2*ASYSTEM CONTROLLER COMMANDS TEST*N/
                                                .LIST   BEX
                                                .EVEN
 015574                                         ENDTST
                                  .MCALL  M$POP,M$GNTAG,M$SVC,M$ENDERR
                                  .IF EQ  F$BGN-I$TST
            000041                I$TST-F$END
                                  .IFF
                                  .ERROR  ;MISSING "BGNTST"
                                  .MEXIT
                                  .ENDC
 015574                           M$POP   T$NS,T$NESTLEV,T$TEMP
                                  .MCALL  M$GETS,M$DECR
                                  .IF LT  T$NESTLEV
                                  .ERROR  T$NESTLEV        ; MACRO T$NS UNDERFLOW
                                  .MEXIT
                                  .ENDC
 015574                           M$GETS  T$NS,\T$NESTLEV,T$TEMP
            000001                T$TEMP=T$NS1
 015574                           M$DECR  T$NESTLEV
            000000                T$NESTLEV=T$NESTLEV-1
                                  .IF EQ F$TEST-T$TEMP
 015574                           M$GNTAG L,T$$TEST
                                  .MCALL  M$GEN
 015574                           M$GEN   L,\T$$TEST,SVCTAG
                                  .IF LE  SVCTAG
                                  .IIF EQ SVCTAG,.LIST
                                  L10031:
                                  .IIF EQ SVCTAG,.NLIST
                                  .MEXIT
                                  .ENDC
                                  .LIST
 015574                                                                             L10031:
                                          .NLIST
            010000                S$LSYM=T$LSYM
 015574                           M$SVC   C$ETST
                                  .MCALL  M$GNINS,M$TSTLAB
 015574                           M$TSTLAB
                                  .MCALL  M$TLABEL,M$INCR
                                  .IIF LT T$TSTMAC, .MEXIT
                                  .RADIX  10
                                  M$TLABEL        \T$TESTNUM,\T$TSTSEQ
                                  .RADIX  8
                                  M$INCR  T$TSTSEQ
 015574                           M$GNINS <TRAP   C$ETST>
                                  .IF LT SVCINS
                                  TRAP    C$ETST
                                  .MEXIT
                                  .ENDC
                                  .IF EQ SVCINS
                                  .LIST
                                          TRAP    C$ETST
                                                  .NLIST
                                  .MEXIT
                                  .ENDC
```

H16


```
                                .IF GT SVCINS
                                .LIST
     015574  104401                                                         TRAP    C$ETST
                                          .NLIST
                                .ENDC
             000041             I$TST=F$END
                                .IFF
                                M$ENDERR  ENDTST,T$TEMP
                                .ENDC
```

```
                           .SBTTL  TEST 5: INTERRUPT TEST
                           ;*************************************************************************
                           ;        IEX - TEST 5
                           ;PART 1 CHECKS THE DEVICE PRIORITY LEVEL AND
                           ;        THE FUNCTION OF INTERRUPT SEQUENCE IN CHANNEL 1. INITIATING THIS
                           ;        SEQUENCE WILL BE DONE BY SETTING THE INT ENB, DMA ENB BITS IN CSR1
                           ;        AND BO BIT IN IIR1 REGISTER.
                           ;
                           ;PART 2 CHECKS THE DEVICE PRIORITY LEVEL AND
                           ;        THE FUNCTION OF INTERRUPT SEQUENCE IN CHANNEL 2. INITIATING THIS
                           ;        SEQUENCE WILL BE DONE BY SETTING THE INT ENB, DMA ENB BITS IN CSR2
                           ;        AND BO BIT IN IIR2 REGISTER.
                           ;*************************************************************************
015576                              BGNTST
                           .MCALL  M$INCR,M$GNTEST,M$PUSH,M$INCR
                           .IF NE  F$END-I$SUB
                           .ERROR  ;"BGNTST" IN SUB
                           .MEXIT
                           .ENDC
                           .IF NE  F$END-I$SEG
                           .ERROR  ;"BGNTST" IN SEG
                           .MEXIT
                           .ENDC
                           .IF NE  F$END I$TST
                           .ERROR  ;"BGNTST" IN TST
                           .MEXIT
                           .IFF
         000040            I$TST=F$BGN
                           .ENDC
                           .IF B
015576                     M$INCR  T$TESTNUM
         000005            T$TESTNUM=T$TESTNUM+1
                           .IFF
                           T$TESTNUM=
                           .ENDC
         000000            T$SUBNUM=0
         000012            .RADIX  10
015576                     M$GNTEST         \T$TESTNUM
                           .MCALL  M$GEN
015576                     M$GEN   T,5:,SVCTST
                           .IF LE  SVCTST
                           .IIF EQ SVCTST,.LIST
                           T5::
                           .IIF EQ SVCTST,.NLIST
                           .MEXIT
                           .ENDC
                           .LIST
015576                                                                  T5::
                                   .NLIST
         000010            .RADIX  8
015576                     M$PUSH  T$NS,T$NESTLEV,F$TEST
                           .MCALL  M$INCR,M$SETS
015576                     M$INCR  T$NESTLEV
         000001            T$NESTLEV=T$NESTLEV+1
015576                     M$SETS  T$NS,\T$NESTLEV,F$TEST
         000001            T$NS1 F$TEST
         010032            T$$TEST T$TAGNUM
```

J16


```
      015576                          M$INCR T$TAGNUM
             010033                   T$TAGNUM=T$TAGNUM+1
             000001                   T$TSTSEQ=1
 3316 015576 005737  002324                   TST     PNTF                 ;IS THE PNT FLAG SET
 3317 015602 001410                           BEQ     7$                   ;IF YES, PRINT THE TEST HEADER
 3318 015604                                  PRINTF  #TSHD5               ;...
                                      .MCALL  M$PRINT
                                      .IF B   #TSHD5
                                      .ERROR  ;MISSING FORMAT
                                      .MEXIT
                                      .ENDC
                                      .IF B   <>
      015604                          M$PRINT C$PNTF,#TSHD5
                                      .MCALL  M$COUNT,M$PUT,M$GNINS,M$SVC
             000001                   T$ARGCNT=1
      015604                          M$COUNT T$ARGCNT,<>,<>,<>,<>,<>,<>,<>,<>
                                      .IF NB <>
                                      M$COUNT T$ARGCNT,<>,<>,<>,<>,<>,<>,<>,<>
                                      .ENDC
                                      .IF NB <>
                                      T$ARGCNT=T$ARGCNT+1
                                      .ENDC
                                      .IRP    N,<\T$ARGCNT>
                                      M$PUT   #N,#TSHD5,<>,<>,<>,<>,<>,<>,<>,<>
                                      .ENDM
      015604                          M$PUT   #1,#TSHD5,<>,<>,<>,<>,<>,<>,<>,<>
                                      .MCALL  M$PUT1
                                      .IF NB  <#TSHD5>
      015604                          M$PUT   <#TSHD5>,<>,<>,<>,<>,<>,<>,<>,<>
                                      .MCALL  M$PUT1
                                      .IF NB  <>
                                      M$PUT   <>,<>,<>,<>,<>,<>,<>,<>,<>
                                      .ENDC
                                      .IF NB  <#TSHD5>
      015604                          M$PUT1  #TSHD5
                                      .MCALL  M$GNINS
                                      .IF B
      015604                          M$GNINS <MOV     #TSHD5,-(SP)>
                                      .IF LT SVCINS
                                      MOV     #TSHD5, (SP)
                                      .MEXIT
                                      .ENDC
                                      .IF EQ SVCINS
                                      .LIST
                                              MOV      #TSHD5,-(SP)
                                                       .NLIST
                                      .MEXIT
                                      .ENDC
                                      .IF GT SVCINS
                                      .LIST
      015604 012746  016734                                                      MOV     #TSHD5, (SP)
                                                       .NLIST
                                      .ENDC
                                      .IFF
                                      .IF DIF B,<#TSHD5>
                                      ERROR  ;ILL. ARG. "#TSHD5" ONLY "B" IS ALLOWED.
                                      .MEXIT
```

```
                                        .ENDC
                                        M$GNINS <CLR    -(SP)>
                                        M$GNINS <BISB   ,(SP)>
                                        .ENDC
                                        .ENDC
                                        .ENDC
                                        .IF NB  <#1>
      015610                            M$PUT1  #1
                                        .MCALL  M$GNINS
                                        .IF B
      015610                            M$GNINS <MOV    #1,-(SP)>
                                        .IF LT SVCINS
                                        MOV     #1,-(SP)
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                MOV     #1,(SP)
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
      015610  012746  000001                                                    MOV     #1,-(SP)
                                                        .NLIST
                                        .ENDC
                                        .IFF
                                        .IF DIF B,<#1>
                                        .ERROR  ;ILL. ARG. "#1" ONLY "B" IS ALLOWED.
                                        .MEXIT
                                        .ENDC
                                        M$GNINS <CLR    -(SP)>
                                        M$GNINS <BISB   ,(SP)>
                                        .ENDC
                                        .ENDC
      015614                            M$GNINS <MOV    SP,R0>
                                        .IF LT SVCINS
                                        MOV     SP,R0
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                MOV     SP,R0
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
      015614  010600                                                            MOV     SP,R0
                                                        .NLIST
                                        .ENDC
      015616                            M$SVC   C$PNTF
                                        .MCALL  M$GNINS,M$TSTLAB
      015616                            M$TSTLAB
                                        .MCALL  M$TLABEL,M$INCR
                                        .IIF LT T$TSTMAC, .MEXIT
                                        .RADIX  10
```

```
                                        M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                        .RADIX  8
                                        M$INCR  T$TSTSEQ
      015616                            M$GNINS <TRAP   C$PNTF>
                                        .IF LT SVCINS
                                        TRAP    C$PNTF
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                TRAP    C$PNTF
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
      015616  104417                                                                    TRAP    C$PNTF
                                                        .NLIST
                                        .ENDC
                                        .IRP    N,<\T$ARGCNT*2+2>
                                        M$GNINS <ADD    #N,SP>
                                        .ENDM
      015620                            M$GNINS <ADD    #4,SP>
                                        .IF LT SVCINS
                                        ADD     #4,SP
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                ADD     #4,SP
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
      015620  062706  000004                                                            ADD     #4,SP
                                                        .NLIST
                                        .ENDC
                                        .MEXIT
                                        .ENDC
                                        .IF B   <>
                                        M$PRINT C$PNTF,#TSHD5,<>
                                        .MEXIT
                                        .ENDC
                                        .IF B   <>
                                        M$PRINT C$PNTF,#TSHD5,<>,<>
                                        .MEXIT
                                        .ENDC
                                        .IF B   <>
                                        M$PRINT C$PNTF,#TSHD5,<>,<>,<>
                                        .MEXIT
                                        .ENDC
                                        .IF B   <>
                                        M$PRINT C$PNTF,#TSHD5,<>,<>,<>,<>
                                        .MEXIT
                                        .ENDC
                                        .IF B   <>
```

M16


```
                                        M$PRINT C$PNTF,#TSHD5,<>,<>,<>,<>,<>
                                        .MEXIT
                                        .ENDC
                                        .IF B   <>
                                        M$PRINT C$PNTF,#TSHD5,<>,<>,<>,<>,<>,<>
                                        .MEXIT
                                        .ENDC
                                        .IF B   <>
                                        M$PRINT C$PNTF,#TSHD5,<>,<>,<>,<>,<>,<>,<>
                                        .MEXIT
                                        .ENDC
                                        M$PRINT C$PNTF,#TSHD5,<>,<>,<>,<>,<>,<>,<>,<>
  3319 015624 005037  002322            7$:     CLR     ITRCNT                  ;CLEAR ITERATION COUNTER
  3320 015630 004737  010210            ITRAC5: JSR     PC,CULPA                ;RESET HARDWARE
  3321 015634 004737  010524                    JSR     PC,BGIN1                ;SET UP PARAMETER
  3322 015640 012737  000001  002374            MOV     #1,CHAN                 ;LOAD CHANNEL NO.
  3323 015646                                   BGNSEG
                                        .MCALL  M$PUSH,M$INCR,M$SVC
              000040                    I$SEG=F$BGN
       015646                           M$PUSH  T$NS,T$NESTLEV,F$SEG
                                        .MCALL  M$INCR,M$SETS
       015646                           M$INCR  T$NESTLEV
              000002                    T$NESTLEV=T$NESTLEV+1
       015646                           M$SETS  T$NS,\T$NESTLEV,F$SEG
              000003                    T$NS2=F$SEG
              010000                    T$$SEG=S$LSYM
       015646                           M$PUSH  T$SEK,T$SEGLEV,T$$SEG
                                        .MCALL  M$INCR,M$SETS
       015646                           M$INCR  T$SEGLEV
              000000                    T$SEGLEV=T$SEGLEV+1
       015646                           M$SETS  T$SEK,\T$SEGLEV,T$$SEG
              010000                    T$SEK0=T$$SEG
       015646                           M$INCR  S$LSYM
              010001                    S$LSYM=S$LSYM+1
       015646                           M$SVC   C$BSEG
                                        .MCALL  M$GNINS,M$TSTLAB
       015646                           M$TSTLAB
                                        .MCALL  M$TLABEL,M$INCR
                                        .IIF LT T$TSTMAC, .MEXIT
                                        .RADIX  10
                                        M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                        .RADIX  8
                                        M$INCR  T$TSTSEQ
       015646                           M$GNINS <TRAP   C$BSEG>
                                        .IF LT SVCINS
                                        TRAP    C$BSEG
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                TRAP    C$BSEG
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
       015646 104404                                                            TRAP    C$BSEG
```

```
                                                      .NLIST
                                        .ENDC
 3324 015650  005037  002376                   CLR     INTFC1                ;CLEAR INTERRUPT FLAG FOR CHANNEL 1
 3325 015654  005037  002400                   CLR     INTFC2                ;CLEAR INTERRUPT FLAG FOR CHANNEL 2
 3326 015660                                   SETVEC  VECC1,#INTSC1,#PRI07  ;SET VECTOR FOR CHA.1
                                        .MCALL M$PUT,M$SVC,M$GNINS
      015660                            M$PUT  #3,VECC1,#INTSC1,#PRI07
                                        .MCALL M$PUT1
                                        .IF NB <VECC1>
      015660                            M$PUT  <VECC1>,<#INTSC1>,<#PRI07>,<>,<>,<>,<>,<>,<>
                                        .MCALL M$PUT1
                                        .IF NB <#INTSC1>
      015660                            M$PUT  <#INTSC1>,<#PRI07>,<>,<>,<>,<>,<>,<>,<>
                                        .MCALL M$PUT1
                                        .IF NB <#PRI07>
      015660                            M$PUT  <#PRI07>,<>,<>,<>,<>,<>,<>,<>,<>
                                        .MCALL M$PUT1
                                        .IF NB <>
                                        M$PUT  <>,<>,<>,<>,<>,<>,<>,<>,<>
                                        .ENDC
                                        .IF NB <#PRI07>
      015660                            M$PUT1 #PRI07
                                        .MCALL M$GNINS
                                        .IF B
      015660                            M$GNINS <MOV    #PRI07,-(SP)>
                                        .IF LT SVCINS
                                        MOV    #PRI07,-(SP)
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                               MOV     #PRI07,-(SP)
                                                      .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
      015660  012746  000340                                                  MOV     #PRI07,-(SP)
                                                      .NLIST
                                        .ENDC
                                        .IFF
                                        .IF DIF B,<#PRI07>
                                        .ERROR ;ILL. ARG. "#PRI07" ONLY "B" IS ALLOWED.
                                        .MEXIT
                                        .ENDC
                                        M$GNINS <CLR    -(SP)>
                                        M$GNINS <BISB   ,(SP)>
                                        .ENDC
                                        .ENDC
                                        .ENDC
                                        .IF NB <#INTSC1>
      015664                            M$PUT1 #INTSC1
                                        .MCALL M$GNINS
                                        .IF B
      015664                            M$GNINS <MOV    #INTSC1,-(SP)>
                                        .IF LT SVCINS
                                        MOV    #INTSC1,-(SP)
```

C1


```
                                  .MEXIT
                                  .ENDC
                                  .IF EQ SVCINS
                                  .LIST
                                          MOV     #INTSC1,-(SP)
                                                  .NLIST
                                  .MEXIT
                                  .ENDC
                                  .IF GT SVCINS
                                  .LIST
015664  012746  010132                                                              MOV     #INTSC1,-(SP)
                                                  .NLIST
                                  .ENDC
                                  .IFF
                                  .IF DIF B,<#INTSC1>
                                  .ERROR  ;ILL. ARG. "#INTSC1" ONLY "B" IS ALLOWED.
                                  .MEXIT
                                  .ENDC
                                  M$GNINS <CLR    -(SP)>
                                  M$GNINS <BISB   ,(SP)>
                                  .ENDC
                                  .ENDC
                                  .ENDC
                                  .IF NB  <VECC1>
015670                            M$PUT1  VECC1
                                  .MCALL  M$GNINS
                                  .IF B
015670                            M$GNINS <MOV    VECC1,-(SP)>
                                  .IF LT SVCINS
                                  MOV     VECC1,-(SP)
                                  .MEXIT
                                  .ENDC
                                  .IF EQ SVCINS
                                  .LIST
                                          MOV     VECC1,-(SP)
                                                  .NLIST
                                  .MEXIT
                                  .ENDC
                                  .IF GT SVCINS
                                  .LIST
015670  013746  002244                                                              MOV     VECC1,-(SP)
                                                  .NLIST
                                  .ENDC
                                  .IFF
                                  .IF DIF B,<VECC1>
                                  .ERROR  ;ILL. ARG. "VECC1" ONLY "B" IS ALLOWED.
                                  .MEXIT
                                  .ENDC
                                  M$GNINS <CLR    -(SP)>
                                  M$GNINS <BISB   ,(SP)>
                                  .ENDC
                                  .ENDC
                                  .ENDC
                                  .IF NB  <#3>
015674                            M$PUT1  #3
                                  .MCALL  M$GNINS
                                  .IF B
```

```
015674                          M$GNINS <MOV    #3,-(SP)>
                                .IF LT SVCINS
                                MOV     #3, (SP)
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        MOV     #3,-(SP)
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
015674  012746  000003                                                          MOV     #3,-(SP)
                                                .NLIST
                                .ENDC
                                .IFF
                                .IF DIF B,<#3>
                                .ERROR  ;ILL. ARG. "#3" ONLY "B" IS ALLOWED.
                                .MEXIT
                                .ENDC
                                M$GNINS <CLR    -(SP)>
                                M$GNINS <BISB   ,(SP)>
                                .ENDC
                                .ENDC
015700                          M$SVC   C$SVEC
                                .MCALL  M$GNINS,M$TSTLAB
015700                          M$TSTLAB
                                .MCALL  M$TLABEL,M$INCR
                                .IIF LT T$TSTMAC, .MEXIT
                                .RADIX  10
                                M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                .RADIX  8
                                M$INCR  T$TSTSEQ
015700                          M$GNINS <TRAP   C$SVEC>
                                .IF LT SVCINS
                                TRAP    C$SVEC
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        TRAP    C$SVEC
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
015700  104437                                                                  TRAP    C$SVEC
                                                .NLIST
                                .ENDC
015702                          M$GNINS <ADD    #10,SP>
                                .IF LT SVCINS
                                ADD     #10,SP
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
```

```
                                                ADD     #10,SP
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
      015702  062706  000010                                                                    ADD     #10,SP
                                                        .NLIST
                                        .ENDC
 3327 015706                                    SETVEC  VECC2,#INTERR,#PRIO7    ;
                                        .MCALL  M$PUT,M$SVC,M$GNINS
      015706                            M$PUT   #3,VECC2,#INTERR,#PRIO7
                                        .MCALL  M$PUT1
                                        .IF NB  <VECC2>
      015706                            M$PUT   <VECC2>,<#INTERR>,<#PRIO7>,<>,<>,<>,<>,<>,<>
                                        .MCALL  M$PUT1
                                        .IF NB  <#INTERR>
      015706                            M$PUT   <#INTERR>,<#PRIO7>,<>,<>,<>,<>,<>,<>,<>
                                        .MCALL  M$PUT1
                                        .IF NB  <#PRIO7>
      015706                            M$PUT   <#PRIO7>,<>,<>,<>,<>,<>,<>,<>,<>
                                        .MCALL  M$PUT1
                                        .IF NB  <>
                                        M$PUT   <>,<>,<>,<>,<>,<>,<>,<>,<>
                                        .ENDC
                                        .IF NB  <#PRIO7>
      015706                            M$PUT1  #PRIO7
                                        .MCALL  M$GNINS
                                        .IF B
      015706                            M$GNINS <MOV    #PRIO7,-(SP)>
                                        .IF LT SVCINS
                                        MOV     #PRIO7,-(SP)
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                MOV     #PRIO7,-(SP)
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
      015706  012746  000340                                                                    MOV     #PRIO7,-(SP)
                                                        .NLIST
                                        .ENDC
                                        .IFF
                                        .IF DIF B,<#PRIO7>
                                        .ERROR  ;ILL. ARG. "#PRIO7" ONLY "B" IS ALLOWED.
                                        .MEXIT
                                        .ENDC
                                        M$GNINS <CLR    -(SP)>
                                        M$GNINS <BISB   ,(SP)>
                                        .ENDC
                                        .ENDC
                                        .ENDC
                                        .IF NB  <#INTERR>
      015712                            M$PUT1  #INTERR
```

F1


```
                                        .MCALL  M$GNINS
                                        .IF B
        015712                          M$GNINS <MOV    #INTERR,-(SP)>
                                        .IF LT SVCINS
                                        MOV     #INTERR,-(SP)
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                MOV     #INTERR,-(SP)
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
        015712  012746  010152                                                          MOV     #INTERR,-(SP)
                                                        .NLIST
                                        .ENDC
                                        .IFF
                                        .IF DIF B,<#INTERR>
                                        .ERROR  ;ILL. ARG. "#INTERR" ONLY "B" IS ALLOWED.
                                        .MEXIT
                                        .ENDC
                                        M$GNINS <CLR    -(SP)>
                                        M$GNINS <BISB   ,(SP)>
                                        .ENDC
                                        .ENDC
                                        .ENDC
                                        .IF NB  <VECC2>
        015716                          M$PUT1  VECC2
                                        .MCALL  M$GNINS
                                        .IF B
        015716                          M$GNINS <MOV    VECC2,-(SP)>
                                        .IF LT SVCINS
                                        MOV     VECC2,-(SP)
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                MOV     VECC2,-(SP)
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
        015716  013746  002246                                                          MOV     VECC2,-(SP)
                                                        .NLIST
                                        .ENDC
                                        .IFF
                                        .IF DIF B,<VECC2>
                                        .ERROR  ;ILL. ARG. "VECC2" ONLY "B" IS ALLOWED.
                                        .MEXIT
                                        .ENDC
                                        M$GNINS <CLR     (SP)>
                                        M$GNINS <BISB   ,(SP)>
                                        .ENDC
                                        .ENDC
```


G1

G1


```
                                .ENDC
                                .IF NB  <#3>
     015722                     M$PUT1  #3
                                .MCALL  M$GNINS
                                .IF B
     015722                     M$GNINS <MOV    #3, (SP)>
                                .IF LT SVCINS
                                MOV     #3,-(SP)
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        MOV     #3,-(SP)
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
     015722  012746  000003                                                     MOV     #3, (SP)
                                                .NLIST
                                .ENDC
                                .IFF
                                .IF DIF B,<#3>
                                .ERROR  ;ILL. ARG. "#3" ONLY 'B' IS ALLOWED.
                                .MEXIT
                                .ENDC
                                M$GNINS <CLR    -(SP)>
                                M$GNINS <BISB   ,(SP)>
                                .ENDC
                                .ENDC
     015726                     M$SVC   C$SVEC
                                .MCALL  M$GNINS,M$TSTLAB
     015726                     M$TSTLAB
                                .MCALL  M$TLABEL,M$INCR
                                .IIF LT T$TSTMAC, .MEXIT
                                .RADIX  10
                                M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                .RADIX  8
                                M$INCR  T$TSTSEQ
     015726                     M$GNINS <TRAP   C$SVEC>
                                .IF LT SVCINS
                                TRAP    C$SVEC
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        TRAP    C$SVEC
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
     015726  104437                                                             TRAP    C$SVEC
                                                .NLIST
                                .ENDC
     015730                     M$GNINS <ADD    #10,SP>
                                .IF LT SVCINS
```

H1

```
                                        ADD     #10,SP
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                ADD     #10,SP
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
      015730  062706  000010                                                        ADD     #10,SP
                                                        .NLIST
                                        .ENDC
 3328 015734                                    SETPRI  #PRI07                  ;NO INTERRUPT
                                        .MCALL  M$LDRO,M$SVC
      015734                            M$LDRO  #PRI07,SETPRI
                                        .MCALL  M$GNINS
                                        .IF NB #PRI07
                                        .IF DIF R0,#PRI07
      015734                            M$GNINS <MOV    #PRI07,R0>
                                        .IF LT SVCINS
                                        MOV     #PRI07,R0
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                MOV     #PRI07,R0
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
      015734  012700  000340                                                        MOV     #PRI07,R0
                                                        .NLIST
                                        .ENDC
                                        .ENDC
                                        .IFF
                                        .ERROR  ;MISSING ARG. ON "SETPRI"
                                        .ENDC
      015740                            M$SVC   C$SPRI
                                        .MCALL  M$GNINS,M$TSTLAB
      015740                            M$TSTLAB
                                        .MCALL  M$TLABEL,M$INCR
                                        .IIF LT T$TSTMAC, .MEXIT
                                        .RADIX  10
                                        M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                        .RADIX  8
                                        M$INCR  T$TSTSEQ
      015740                            M$GNINS <TRAP   C$SPRI>
                                        .IF LT SVCINS
                                        TRAP    C$SPRI
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                TRAP    C$SPRI
```

```
                                                          .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
       015740  104441                                                                              TRAP    C$SPRI
                                                          .NLIST
                                        .ENDC
  3329 015742  112777  000020  164310          MOVB       #20,@ISRLX            ;;;SET BO BIT IN ISR1
  3330 015750  052777  000101  164322          BIS        #101,@CSRX            ;;;SET INT ENB AND DMA ENB BIT IN CSR
  3331 015756  012701  000010                  MOV        #10,R1                ;;;SET PRIORITY COUNTER
  3332                                          .LIST MEB
  3333 015762                                  PRIT       INTFC1,501,ERR402     ;;;TRY WITH INTERRUPT
       015762  005737  002376                  TST        INTFC1          ;INTERRUPT OCCURED?
       015766  001040                          BNE        30000$          ;BRANCH IF YES
       015770  005301                          DEC        R1              ;CHECKSUM = 7
       015772                                  SETPRI     #PRI06          ;CHANGE PROCESSOR PRIORITY TO 6
                                        .MCALL  M$LDRO,M$SVC
       015772                           M$LDRO  #PRI06,SETPRI
                                        .MCALL  M$GNINS
                                        .IF NB #PRI06
                                        .IF DIF RO,#PRI06
       015772                           M$GNINS <MOV     #PRI06,R0>
                                        .IF LT SVCINS
                                        MOV     #PRI06,R0
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                               MOV        #PRI06,R0
                                                          .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
       015772  012700  000300                                                                      MOV     #PRI06,R0
                                                          .NLIST
                                        .ENDC
                                        .ENDC
                                        .IFF
                                        .ERROR  ;MISSING ARG. ON 'SETPRI"
                                        .ENDC
       015776                           M$SVC   C$SPRI
                                        .MCALL  M$GNINS,M$TSTLAB
       015776                           M$TSTLAB
                                        .MCALL  M$TLABEL,M$INCR
                                        .IIF LT T$TSTMAC, .MEXIT
                                        .RADIX  10
                                        M$TLABEL          \T$TESTNUN,\T$TSTSEQ
                                        .RADIX  8
                                        M$INCR  T$TSTSEQ
       015776                           M$GNINS <TRAP    C$SPRI>
                                        .IF LT SVCINS
                                        TRAP    C$SPRI
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
```

J1


```
                                .LIST
                                        TRAP    C$SPRI
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
015776  104441                                                                  TRAP    C$SPRI
                                                .NLIST
                                .ENDC
016000  005737  002376                  TST     INTFC1          ;INTERRUPT OCCURED?
016004  001031                          BNE     30000$          ;BRANCH IF YES
016006  005301                          DEC     R1              ;CHECKSUM = 6
016010                                  SETPRI  #PRI05          ;CHANGE PROCESSOR PRIORITY TO 5
                                .MCALL  M$LDRO,M$SVC
016010                          M$LDRO  #PRI05,SETPRI
                                .MCALL  M$GNINS
                                .IF NB #PRI05
                                .IF DIF R0,#PRI05
016010                          M$GNINS <MOV    #PRI05,R0>
                                .IF LT SVCINS
                                MOV     #PRI05,R0
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        MOV     #PRI05,R0
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
016010  012700  000240                                                          MOV     #PRI05,R0
                                                .NLIST
                                .ENDC
                                .ENDC
                                .IFF
                                .ERROR  ;MISSING ARG. ON "SETPRI"
                                .ENDC
016014                          M$SVC   C$SPRI
                                .MCALL  M$GNINS,M$TSTLAB
016014                          M$TSTLAB
                                .MCALL  M$TLABEL,M$INCR
                                .IIF LT T$TSTMAC, .MEXIT
                                .RADIX  10
                                M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                .RADIX  8
                                M$INCR  T$TSTSEQ
016014                          M$GNINS <TRAP   C$SPRI>
                                .IF LT SVCINS
                                TRAP    C$SPRI
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        TRAP    C$SPRI
                                                .NLIST
```

78 0018 3675-6

K1

```
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
     016014  104441                                                                 TRAP    C$SPRI
                                          .NLIST
                                .ENDC
     016016  005737  002376          TST     INTFC1          ;INTERRUPT OCCURED?
     016022  001022                  BNE     30000$          ;BRANCH IF YES
     016024  005301                  DEC     R1              ;CHECKSUM = 5
     016026                          SETPRI  #PRI04          ;CHANGE PROCESSOR PRIORITY TO 4
                                .MCALL  M$LDRO,M$SVC
     016026                     M$LDRO  #PRI04,SETPRI
                                .MCALL  M$GNINS
                                .IF NB #PRI04
                                .IF DIF RO,#PRI04
     016026                     M$GNINS <MOV     #PRI04,RO>
                                .IF LT SVCINS
                                MOV     #PRI04,RO
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                     MOV     #PRI04,RO
                                          .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
     016026  012700  000200                                                         MOV     #PRI04,RO
                                          .NLIST
                                .ENDC
                                .ENDC
                                .IFF
                                .ERROR  ;MISSING ARG. ON "SETPRI"
                                .ENDC
     016032                     M$SVC   C$SPRI
                                .MCALL  M$GNINS,M$TSTLAB
     016032                     M$TSTLAB
                                .MCALL  M$TLABEL,M$INCR
                                .IIF LT T$TSTMAC, .MEXIT
                                .RADIX  10
                                M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                .RADIX  8
                                M$INCR  T$TSTSEQ
     016032                     M$GNINS <TRAP    C$SPRI>
                                .IF LT SVCINS
                                TRAP    C$SPRI
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                     TRAP    C$SPRI
                                          .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
```

```
                                .LIST
    016032  104441                                                              TRAP    C$SPRI
                                          .NLIST
                                .ENDC
    016034  005737  002376              TST     INTFC1          ;INTERRUPT OCCURED?
    016040  001013                      BNE     30000$          ;BRANCH IF YES
    016042  005301                      DEC     R1              ;CHECKSUM = 4
    016044                              SETPRI  #PRI03          ;CHANGE PROCESSOR PRIORITY TO 3
                                .MCALL  M$LDR0,M$SVC
    016044                      M$LDR0  #PRI03,SETPRI
                                .MCALL  M$GNINS
                                .IF NB #PRI03
                                .IF DIF R0,#PRI03
    016044                      M$GNINS <MOV    #PRI03,R0>
                                .IF LT SVCINS
                                MOV     #PRI03,R0
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        MOV     #PRI03,R0
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
    016044  012700  000140                                                      MO'.    #PRI03,R0
                                          .NLIST
                                .ENDC
                                .ENDC
                                .IFF
                                .ERROR  ;MISSING ARG. ON "SETPRI"
                                .ENDC
    016050                      M$SVC   C$SPRI
                                .MCALL  M$GNINS,M$TSTLAB
    016050                      M$TSTLAB
                                .MCALL  M$TLABEL,M$INCR
                                .IIF LT T$TSTMAC, .MEXIT
                                .RADIX  10
                                M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                .RADIX  8
                                M$INCR  T$TSTSEQ
    016050                      M$GNINS <TRAP   C$SPRI>
                                .IF LT SVCINS
                                TRAP    C$SPRI
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        TRAP    C$SPRI
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
    016050  104441                                                              TRAP    C$SPRI
                                          .NLIST
```

```
                                 .ENDC
016052  005737  002376                   TST     INTFC1          ;INTERRUPT OCCURED?
016056  001004                           BNE     30000$          ;BRANCH IF YES
016060                                   ERRSOFT 501,E402,ERR402 ;NO INTERRUPT ERROR
                                 .MCALL  M$ERRINS
016060                           M$ERRINS        501,E402,ERR402,C$ERSOFT
                                 .MCALL  M$GNINS,M$WORD,M$TSTLAB
016060                           M$SVC   C$ERSOFT
                                 .MCALL  M$GNINS,M$TSTLAB
016060                           M$TSTLAB
                                 .MCALL  M$TLABEL,M$INCR
                                 .IIF LT T$TSTMAC, .MEXIT
                                 .RADIX  10
                                 M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                 .RADIX  8
                                 M$INCR  T$TSTSEQ
016060                           M$GNINS <TRAP   C$ERSOFT>
                                 .IF LT SVCINS
                                 TRAP    C$ERSOFT
                                 .MEXIT
                                 .ENDC
                                 .IF EQ SVCINS
                                 .LIST
                                         TRAP    C$ERSOFT
                                                 .NLIST
                                 .MEXIT
                                 .ENDC
                                 .IF GT SVCINS
                                 .LIST
016060  104457                                                                       TRAP    C$ERSOFT
                                                 .NLIST
                                 .ENDC
        000012                   .RADIX  10
                                 .IF NB  501
        000765                   T$ERRNUM=501
                                 .IFF
                                 .ERROR  ;MISSING ERROR NR
                                 .ENDC
016062                           M$WORD  \T$ERRNUM
                                 .MCALL  M$GNINS
                                 .IRP    N,<501>
                                 M$GNINS <.WORD  N>
                                 .ENDM
016062                           M$GNINS <.WORD  501>
                                 .IF LT SVCINS
                                 .WORD   501
                                 .MEXIT
                                 .ENDC
                                 .IF EQ SVCINS
                                 .LIST
                                         .WORD   501
                                                 .NLIST
                                 .MEXIT
                                 .ENDC
                                 .IF GT SVCINS
                                 .LIST
016062  000765                                                                       .WORD   501
```

```
                                                        .NLIST
                                        .ENDC
                000010                  .RADIX  8
                                        .IF NB E402
        016064                          M$WORD  E402
                                        .MCALL  M$GNINS
                                        .IRP    N,<E402>
                                        M$GNINS <.WORD  N>
                                        .ENDM
        016064                          M$GNINS <.WORD  E402>
                                        .IF LT SVCINS
                                        .WORD   E402
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                .WORD   E402
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
        016064  005306                                                                  .WORD   E402
                                                        .NLIST
                                        .ENDC
                                        .IFF
                                        M$WORD  0
                                        .ENDC
                                        .IF NB ERR402
        016066                          M$WORD  ERR402
                                        .MCALL  M$GNINS
                                        .IRP    N,<ERR402>
                                        M$GNINS <.WORD  N>
                                        .ENDM
        016066                          M$GNINS <.WORD  ERR402>
                                        .IF LT SVCINS
                                        .WORD   ERR402
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                .WORD   ERR402
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
        016066  003644                                                                  .WORD   ERR402
                                                        .NLIST
                                        .ENDC
                                        .IFF
                                        M$WORD  0
                                        .ENDC
        016070  000240                  30000$: NOP
   3334                                         .NLIST MEB
   3335 016072                                  SETPRI  #PRI07                  ;SET PRIORITY
                                        .MCALL  M$LDR0,M$SVC
```

```
      016072                          M$LDRO  #PRIO7,SETPRI
                                      .MCALL  M$GNINS
                                      .IF NB #PRIO7
                                      .IF DIF R0,#PRIO7
      016072                          M$GNINS <MOV    #PRIO7,R0>
                                      .IF LT SVCINS
                                      MOV     #PRIO7,R0
                                      .MEXIT
                                      .ENDC
                                      .IF EQ SVCINS
                                      .LIST
                                              MOV     #PRIO7,R0
                                                      .NLIST
                                      .MEXIT
                                      .ENDC
                                      .IF GT SVCINS
                                      .LIST
      016072  012700  000340                                                          MOV     #PRIO7,R0
                                                      .NLIST
                                      .ENDC
                                      .ENDC
                                      .IFF
                                      .ERROR  ;MISSING ARG. ON "SETPRI"
                                      .ENDC
      016076                          M$SVC   C$SPRI
                                      .MCALL  M$GNINS,M$TSTLAB
      016076                          M$TSTLAB
                                      .MCALL  M$TLABEL,M$INCR
                                      .IIF LT T$TSTMAC, .MEXIT
                                      .RADIX  10
                                      M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                      .RADIX  8
                                      M$INCR  T$TSTSEQ
      016076                          M$GNINS <TRAP   C$SPRI>
                                      .IF LT SVCINS
                                      TRAP    C$SPRI
                                      .MEXIT
                                      .ENDC
                                      .IF EQ SVCINS
                                      .LIST
                                              TRAP    C$SPRI
                                                      .NLIST
                                      .MEXIT
                                      .ENDC
                                      .IF GT SVCINS
                                      .LIST
      016076  104441                                                                  TRAP    C$SPRI
                                                      .NLIST
                                      .ENDC
      016100  106301                          ASLB    R1                      ;CREATE CORRECT PRI. FOR COMPARISON
      016102  106301                          ASLB    R1                      ;...
      016104  106301                          ASLB    R1                      ;...
      016106  106301                          ASLB    R1                      ;...
      016110  106301                          ASLB    R1                      ;...
      016112  020137  002316                  CMP     R1,PLEV                 ;CHECK INTERRUPT PRIORITY
      016116  001412                          BEQ     20$                     ;BRANCH IF INTERRUPT WAS OK
      016120  010137  002502                  MOV     R1,BAD                  ;SET UP DATA FOR ERROR MESSAGE
```

C2

```
 3344 016124  013737  002316  002500          MOV     PLEV,GOOD                ;...
 3345 016132                                  ERRSOFT 502,E403,ERR401          ;ERROR HANDLER
                                      .MCALL  M$ERRINS
      016132                          M$ERRINS        502,E403,ERR401,C$ERSOFT
                                      .MCALL  M$GNINS,M$WORD,M$TSTLAB
      016132                          M$SVC   C$ERSOFT
                                      .MCALL  M$GNINS,M$TSTLAB
      016132                          M$TSTLAB
                                      .MCALL  M$TLABEL,M$INCR
                                      .IIF LT T$TSTMAC, .MEXIT
                                      .RADIX  10
                                      M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                      .RADIX  8
                                      M$INCR  T$TSTSEQ
      016132                          M$GNINS <TRAP   C$ERSOFT>
                                      .IF LT SVCINS
                                      TRAP    C$ERSOFT
                                      .MEXIT
                                      .ENDC
                                      .IF EQ SVCINS
                                      .LIST
                                              TRAP    C$ERSOFT
                                                      .NLIST
                                      .MEXIT
                                      .ENDC
                                      .IF GT SVCINS
                                      .LIST
      016132  104457                                                                  TRAP    C$ERSOFT
                                                      .NLIST
                                      .ENDC
              000012                  .RADIX  10
                                      .IF NB  502
              000766                  T$ERRNUM=502
                                      .IFF
                                      .ERROR  ;MISSING ERROR NR
                                      .ENDC
      016134                          M$WORD  \T$ERRNUM
                                      .MCALL  M$GNINS
                                      .IRP    N,<502>
                                      M$GNINS <.WORD  N>
                                      .ENDM
      016134                          M$GNINS <.WORD  502>
                                      .IF LT SVCINS
                                      .WORD   502
                                      .MEXIT
                                      .ENDC
                                      .IF EQ SVCINS
                                      .LIST
                                              .WORD   502
                                                      .NLIST
                                      .MEXIT
                                      .ENDC
                                      .IF GT SVCINS
                                      .LIST
      016134  000766                                                                  .WORD   502
                                                      .NLIST
                                      .ENDC
```

```
            000010                  .RADIX  8
                                    .IF NB E403
     016136                         M$WORD  E403
                                    .MCALL  M$GNINS
                                    .IRP    N,<E403>
                                    M$GNINS <.WORD  N>
                                    .ENDM
     016136                         M$GNINS <.WORD  E403>
                                    .IF LT SVCINS
                                    .WORD   E403
                                    .MEXIT
                                    .ENDC
                                    .IF EQ SVCINS
                                    .LIST
                                            .WORD   E403
                                                    .NLIST
                                    .MEXIT
                                    .ENDC
                                    .IF GT SVCINS
                                    .LIST
     016136  005343                                                                 .WORD   E403
                                                    .NLIST
                                    .ENDC
                                    .IFF
                                    M$WORD  0
                                    .ENDC
                                    .IF NB ERR401
     016140                         M$WORD  ERR401
                                    .MCALL  M$GNINS
                                    .IRP    N,<ERR401>
                                    M$GNINS <.WORD  N>
                                    .ENDM
     016140                         M$GNINS <.WORD  ERR401>
                                    .IF LT SVCINS
                                    .WORD   ERR401
                                    .MEXIT
                                    .ENDC
                                    .IF EQ SVCINS
                                    .LIST
                                            .WORD   ERR401
                                                    .NLIST
                                    .MEXIT
                                    .ENDC
                                    .IF GT SVCINS
                                    .LIST
     016140  003606                                                                 .WORD   ERR401
                                                    .NLIST
                                    .ENDC
                                    .IFF
                                    M$WORD  0
                                    .ENDC
3346 016142                                 CKLOOP                  ;BRANCH BACK TO BGNSEG IF ERROR LOOP SET
                                    .MCALL  M$SVC
     016142                         M$SVC   C$CLP1
                                    .MCALL  M$GNINS,M$TSTLAB
     016142                         M$TSTLAB
                                    .MCALL  M$TLABEL,M$INCR
```

```
                                        .IIF LT T$TSTMAC, .MEXIT
                                        .RADIX  10
                                        M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                        .RADIX  8
                                        M$INCR  T$TSTSEQ
     016142                             M$GNINS <TRAP   C$CLP1>
                                        .IF LT SVCINS
                                        TRAP    C$CLP1
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                TRAP    C$CLP1
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
     016142  104406                                                                     TRAP    C$CLP1
                                                        .NLIST
                                        .ENDC
3347 016144                             20$:
3348 016144  017737  164130  002502             MOV     @CSRX,BAD               ;GET CSR1 CONTENTS
3349 016152  042737  017000  002502             BIC     #17000,BAD              ;IGNORE BIT 9-12
3350 016160  022737  000202  002502             CMP     #202,BAD                ;INT,SYS CONT SHOULD BE SET
3351 016166  001410                             BEQ     30$                     ;BRANCH IF YES
3352 016170  012737  000202  002500             MOV     #202,GOOD               ;SET UP DATA FOR ERROR MESSAGE
3353 016176                                     ERRSOFT 503,E401,ERR501         ;ERROR HANDLER
                                        .MCALL  M$ERRINS
     016176                             M$ERRINS        503,E401,ERR501,C$ERSOFT
                                        .MCALL  M$GNINS,M$WORD,M$TSTLAB
     016176                             M$SVC   C$ERSOFT
                                        .MCALL  M$GNINS,M$TSTLAB
     016176                             M$TSTLAB
                                        .MCALL  M$TLABEL,M$INCR
                                        .IIF LT T$TSTMAC, .MEXIT
                                        .RADIX  10
                                        M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                        .RADIX  8
                                        M$INCR  T$TSTSEQ
     016176                             M$GNINS <TRAP   C$ERSOFT>
                                        .IF LT SVCINS
                                        TRAP    C$ERSOFT
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                TRAP    C$ERSOFT
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
     016176  104457                                                                     TRAP    C$ERSOFT
                                                        .NLIST
                                        .ENDC
             000012                     .RADIX  10
```

```
                 .IF NB  503
        000767   T$ERRNUM=503
                 .IFF
                 .ERROR  ;MISSING ERROR-NR
                 .ENDC
016200           M$WORD  \T$ERRNUM
                 .MCALL  M$GNINS
                 .IRP    N,<503>
                 M$GNINS <.WORD  N>
                 .ENDM
016200           M$GNINS <.WORD  503>
                 .IF LT SVCINS
                 .WORD   503
                 .MEXIT
                 .ENDC
                 .IF EQ SVCINS
                 .LIST
                         .WORD   503
                                 .NLIST
                 .MEXIT
                 .ENDC
                 .IF GT SVCINS
                 .LIST
016200  000767                                          .WORD   503
                                 .NLIST
                 .ENDC
        000010   .RADIX  8
                 .IF NB E401
016202           M$WORD  E401
                 .MCALL  M$GNINS
                 .IRP    N,<E401>
                 M$GNINS <.WORD  N>
                 .ENDM
016202           M$GNINS <.WORD  E401>
                 .IF LT SVCINS
                 .WORD   E401
                 .MEXIT
                 .ENDC
                 .IF EQ SVCINS
                 .LIST
                         .WORD   E401
                                 .NLIST
                 .MEXIT
                 .ENDC
                 .IF GT SVCINS
                 .LIST
016202  005255                                          .WORD   E401
                                 .NLIST
                 .ENDC
                 .IFF
                 M$WORD  0
                 .ENDC
                 .IF NB ERR501
016204           M$WORD  ERR501
                 .MCALL  M$GNINS
                 .IRP    N,<ERR501>
                 M$GNINS <.WORD  N>
```

G2


```
                                            .ENDM
        016204                              M$GNINS <.WORD  ERR501>
                                            .IF LT SVCINS
                                            .WORD   ERR501
                                            .MEXIT
                                            .ENDC
                                            .IF EQ SVCINS
                                            .LIST
                                                    .WORD   ERR501
                                                            .NLIST
                                            .MEXIT
                                            .ENDC
                                            .IF GT SVCINS
                                            .LIST
        016204  003672                                                                                    .WORD   ERR501
                                                            .NLIST
                                            .ENDC
                                            .IFF
                                            M$WORD  0
                                            .ENDC
  3354  016206                                      CKLOOP                          ;BRANCH TO BGNSEG IF ERRLOOP IS SET
                                            .MCALL  M$SVC
        016206                              M$SVC   C$CLP1
                                            .MCALL  M$GNINS,M$TSTLAB
        016206                              M$TSTLAB
                                            .MCALL  M$TLABEL,M$INCR
                                            .IIF LT T$TSTMAC, .MEXIT
                                            .RADIX  10
                                            M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                            .RADIX  8
                                            M$INCR  T$TSTSEQ
        016206                              M$GNINS <TRAP   C$CLP1>
                                            .IF LT SVCINS
                                            TRAP    C$CLP1
                                            .MEXIT
                                            .ENDC
                                            .IF EQ SVCINS
                                            .LIST
                                                    TRAP    C$CLP1
                                                            .NLIST
                                            .MEXIT
                                            .ENDC
                                            .IF GT SVCINS
                                            .LIST
        016206  104406                                                                                    TRAP    C$CLP1
                                                            .NLIST
                                            .ENDC
  3355  016210                              30$:
  3356  016210  017737  164034  002502              MOV     @IIRX,BAD               ;GET IIR1 CONTENTS
  3357  016216  022737  000220  002502              CMP     #220,BAD                ;INTO,BO SHOULD BE SET
  3358  016224  001407                              BEQ     33$                     ;BRANCH IF YES
  3359  016226  012737  000220  002500              MOV     #220,GOOD               ;SET UP DATA FOR ERROR MESSAGE
  3360  016234                                      ERRSOFT 504,E501,ERR501         ;ERROR HANDLER
                                            .MCALL  M$ERRINS
        016234                              M$ERRINS        504,E501,ERR501,C$ERSOFT
                                            .MCALL  M$GNINS,M$WORD,M$TSTLAB
        016234                              M$SVC   C$ERSOFT
```

H2


```
                                .MCALL  M$GNINS,M$TSTLAB
     016234                     M$TSTLAB
                                .MCALL  M$TLABEL,M$INCR
                                .IIF LT T$TSTMAC, .MEXIT
                                .RADIX  10
                                M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                .RADIX  8
                                M$INCR  T$TSTSEQ
     016234                     M$GNINS <TRAP   C$ERSOFT>
                                .IF LT SVCINS
                                TRAP    C$ERSOFT
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        TRAP    C$ERSOFT
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
     016234  104457                                                         TRAP    C$ERSOFT
                                                .NLIST
                                .ENDC
             000012             .RADIX  10
                                .IF NB  504
             000770             T$ERRNUM=504
                                .IFF
                                .ERROR  ;MISSING ERROR-NR
                                .ENDC
     016236                     M$WORD  \T$ERRNUM
                                .MCALL  M$GNINS
                                .IRP    N,<504>
                                M$GNINS <.WORD  N>
                                .ENDM
     016236                     M$GNINS <.WORD  504>
                                .IF LT SVCINS
                                .WORD   504
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        .WORD   504
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
     016236  000770                                                         .WORD   504
                                                .NLIST
                                .ENDC
             000010             .RADIX  8
                                .IF NB E501
     016240                     M$WORD  E501
                                .MCALL  M$GNINS
                                .IRP    N,<E501>
                                M$GNINS <.WORD  N>
```

```
                                .ENDM
        016240                  M$GNINS <.WORD  E501>
                                .IF LT SVCINS
                                .WORD   E501
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        .WORD   E501
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
        016240  005376                                                                  .WORD   E501
                                                .NLIST
                                .ENDC
                                .IFF
                                M$WORD  0
                                .ENDC
                                .IF NB ERR501
        016242                  M$WORD  ERR501
                                .MCALL  M$GNINS
                                .IRP    N,<ERR501>
                                M$GNINS <.WORD  N>
                                .ENDM
        016242                  M$GNINS <.WORD  ERR501>
                                .IF LT SVCINS
                                .WORD   ERR501
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        .WORD   ERR501
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
        016242  003672                                                                  .WORD   ERR501
                                                .NLIST
                                .ENDC
                                .IFF
                                M$WORD  0
                                .ENDC
   3361 016244                  33$:    ENDSEG
                                .MCALL  M$POP,M$GNLS,M$SVC,M$ENDERR
        016244                  M$POP   T$NS,T$NESTLEV,T$TEMP
                                .MCALL  M$GETS,M$DECR
                                .IF LT  T$NESTLEV
                                .ERROR  T$NESTLEV       ; MACRO T$NS UNDERFLOW
                                .MEXIT
                                .ENDC
        016244                  M$GETS  T$NS,\T$NESTLEV,T$TEMP
                000003          T$TEMP=T$NS2
        016244                  M$DECR  T$NESTLEV
                000001          T$NESTLEV=T$NESTLEV 1
```

```
                                .IF EQ F$SEG-T$TEMP
     016244                     M$POP    T$SEK,T$SEGLEV,T$$SEG
                                .MCALL   M$GETS,M$DECR
                                .IF LT   T$SEGLEV
                                .ERROR   T$SEGLEV        ; MACRO T$SEK UNDERFLOW
                                .MEXIT
                                .ENDC
     016244                     M$GETS   T$SEK,\T$SEGLEV,T$$SEG
             010000             T$$SEG=T$SEK0
     016244                     M$DECR   T$SEGLEV
             177777             T$SEGLEV=T$SEGLEV 1
     016244                     M$GNLS   T$$SEG
                                .MCALL   M$GEN
                                .IF NB T$$SEG
     016244                     M$GEN    \T$$SEG,$,SVCTAG
                                .IF LE   SVCTAG
                                .IIF EQ SVCTAG,.LIST
                                10000$:
                                .IIF EQ SVCTAG,.NLIST
                                .MEXIT
                                .ENDC
                                .LIST
     016244                                                                 10000$:
                                        .NLIST
                                .IFF
                                M$GEN    \S$LSYM,$,SVCTAG
                                .ENDC
     016244                     M$SVC    C$ESEG
                                .MCALL   M$GNINS,M$TSTLAB
     016244                     M$TSTLAB
                                .MCALL   M$TLABEL,M$INCR
                                .IIF LT T$TSTMAC, .MEXIT
                                .RADIX   10
                                M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                .RADIX   8
                                M$INCR   T$TSTSEQ
     016244                     M$GNINS <TRAP    C$ESEG>
                                .IF LT SVCINS
                                TRAP     C$ESEG
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        TRAP     C$ESEG
                                                 .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
     016244  104405                                                              TRAP     C$ESEG
                                                 .NLIST
                                .ENDC
                                .IF EQ T$SEGLEV+1
             000041             I$SEG=F$END
                                .ENDC
                                .IFF
                                M$ENDERR        ENDSEG,T$TEMP
```

```
                                        .ENDC
   3362 016246                                CLRVEC  VECC2               ;RESTORE INTERRUPT VECTOR
                                        .MCALL  M$LDRO,M$SVC
        016246                          M$LDRO  VECC2,CLRVEC
                                        .MCALL  M$GNINS
                                        .IF NB VECC2
                                        .IF DIF R0,VECC2
        016246                          M$GNINS <MOV    VECC2,R0>
                                        .IF LT SVCINS
                                        MOV     VECC2,R0
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                MOV     VECC2,R0
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
        016246  013700  002246                                                          MOV     VECC2,R0
                                                        .NLIST
                                        .ENDC
                                        .ENDC
                                        .IFF
                                        .ERROR  ;MISSING ARG. ON "CLRVEC"
                                        .ENDC
        016252                          M$SVC   C$CVEC
                                        .MCALL  M$GNINS,M$TSTLAB
        016252                          M$TSTLAB
                                        .MCALL  M$TLABEL,M$INCR
                                        .IIF LT T$TSTMAC, .MEXIT
                                        .RADIX  10
                                        M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                        .RADIX  8
                                        M$INCR  T$TSTSEQ
        016252                          M$GNINS <TRAP   C$CVEC>
                                        .IF LT SVCINS
                                        TRAP    C$CVEC
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                TRAP    C$CVEC
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
        016252  104436                                                                  TRAP    C$CVEC
                                                        .NLIST
                                        .ENDC
   3363                                                                   ;(DISABLE INTERRUPT)
   3364 016254                                  CLRVEC  VECC1             ;...
                                        .MCALL  M$LDRO,M$SVC
        016254                          M$LDRO  VECC1,CLRVEC
                                        .MCALL  M$GNINS
```

```
                                   .IF NB VECC1
                                   .IF DIF R0,VECC1
     016254                        M$GNINS <MOV     VECC1,R0>
                                   .IF LT SVCINS
                                   MOV     VECC1,R0
                                   .MEXIT
                                   .ENDC
                                   .IF EQ SVCINS
                                   .LIST
                                           MOV     VECC1,R0
                                                   .NLIST
                                   .MEXIT
                                   .ENDC
                                   .IF GT SVCINS
                                   .LIST
     016254  013700  002244                                                      MOV     VECC1,R0
                                                   .NLIST
                                   .ENDC
                                   .ENDC
                                   .IFF
                                   .ERROR  ;MISSING ARG. ON "CLRVEC"
                                   .ENDC
     016260                        M$SVC   C$CVEC
                                   .MCALL  M$GNINS,M$TSTLAB
     016260                        M$TSTLAB
                                   .MCALL  M$TLABEL,M$INCR
                                   .IIF LT T$TSTMAC, .MEXIT
                                   .RADIX  10
                                   M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                   .RADIX  8
                                   M$INCR  T$TSTSEQ
     016260                        M$GNINS <TRAP   C$CVEC>
                                   .IF LT SVCINS
                                   TRAP    C$CVEC
                                   .MEXIT
                                   .ENDC
                                   .IF EQ SVCINS
                                   .LIST
                                           TRAP    C$CVEC
                                                   .NLIST
                                   .MEXIT
                                   .ENDC
                                   .IF GT SVCINS
                                   .LIST
     016260  104436                                                              TRAP    C$CVEC
                                                   .NLIST
                                   .ENDC
                                   ;+++-----------------------------------------------------------------
                                   ;PART 2 CHECK THE INTERRUPT FUNCTION AND THE PRIORITY LEVEL OF CHANNEL 2
                                   ;+++-----------------------------------------------------------------
     016262  004737  010700                JSR     PC,BGIN2                ;SET UP PARAMETER FOR CHAN 2
     016266                                SETVEC  VECC2,#INTSC2,#PRI07    ;SET VECTOR FOR CHANNEL 2
                                   .MCALL  M$PUT,M$SVC,M$GNINS
     016266                        M$PUT   #3,VECC2,#INTSC2,#PRI07
                                   .MCALL  M$PUT1
                                   .IF NB  <VECC2>
     016266                        M$PUT   <VECC2>,<#INTSC2>,<#PRI07>,<>,<>,<>,<>,<>,<>
```

```
                                        .MCALL  M$PUT1
                                        .IF NB  <#INTSC2>
        016266                          M$PUT   <#INTSC2>,<#PRI07>,<>,<>,<>,<>,<>,<>,<>
                                        .MCALL  M$PUT1
                                        .IF NB  <#PRI07>
        016266                          M$PUT   <#PRI07>,<>,<>,<>,<>,<>,<>,<>,<>
                                        .MCALL  M$PUT1
                                        .IF NB  <>
                                        M$PUT   <>,<>,<>,<>,<>,<>,<>,<>,<>
                                        .ENDC
                                        .IF NB  <#PRI07>
        016266                          M$PUT1  #PRI07
                                        .MCALL  M$GNINS
                                        .IF B
        016266                          M$GNINS <MOV    #PRI07,-(SP)>
                                        .IF LT SVCINS
                                        MOV     #PRI07,-(SP)
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                MOV     #PRI07,-(SP)
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
        016266  012746  000340                                                          MOV     #PRI07,-(SP)
                                                        .NLIST
                                        .ENDC
                                        .IFF
                                        .IF DIF B,<#PRI07>
                                        .ERROR  ;ILL. ARG. "#PRI07" ONLY "B" IS ALLOWED.
                                        .MEXIT
                                        .ENDC
                                        M$GNINS <CLR    -(SP)>
                                        M$GNINS <BISB   ,(SP)>
                                        .ENDC
                                        .ENDC
                                        .ENDC
                                        .IF NB  <#INTSC2>
        016272                          M$PUT1  #INTSC2
                                        .MCALL  M$GNINS
                                        .IF B
        016272                          M$GNINS <MOV    #INTSC2,-(SP)>
                                        .IF LT SVCINS
                                        MOV     #INTSC2,-(SP)
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                MOV     #INTSC2,-(SP)
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
```

```
        016272  012746  010142                                                          MOV     #INTSC2,-(SP)
                                                        .NLIST
                                        .ENDC
                                        .IFF
                                        .IF DIF B,<#INTSC2>
                                        .ERROR  ;ILL. ARG. "#INTSC2" ONLY "B" IS ALLOWED.
                                        .MEXIT
                                        .ENDC
                                        M$GNINS <CLR    -(SP)>
                                        M$GNINS <BISB   ,(SP)>
                                        .ENDC
                                        .ENDC
                                        .ENDC
                                        .IF NB  <VECC2>
        016276                          M$PUT1  VECC2
                                        .MCALL  M$GNINS
                                        .IF B
        016276                          M$GNINS <MOV    VECC2,-(SP)>
                                        .IF LT SVCINS
                                        MOV     VECC2,-(SP)
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                MOV     VECC2,-(SP)
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
        016276  013746  002246                                                          MOV     VECC2,-(SP)
                                                        .NLIST
                                        .ENDC
                                        .IFF
                                        .IF DIF B,<VECC2>
                                        .ERROR  ;ILL. ARG. "VECC2" ONLY "B" IS ALLOWED.
                                        .MEXIT
                                        .ENDC
                                        M$GNINS <CLR    -(SP)>
                                        M$GNINS <BISB   ,(SP)>
                                        .ENDC
                                        .ENDC
                                        .ENDC
                                        .IF NB  <#3>
        016302                          M$PUT1  #3
                                        .MCALL  M$GNINS
                                        .IF B
        016302                          M$GNINS <MOV    #3,-(SP)>
                                        .IF LT SVCINS
                                        MOV     #3,-(SP)
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                MOV     #3,-(SP)
                                                        .NLIST
                                        .MEXIT
```

```
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
       016302  012746  000003                                                   MOV     #3,-(SP)
                                                     .NLIST
                                        .ENDC
                                        .IFF
                                        .IF DIF B,<#3>
                                        .ERROR  ;ILL. ARG. "#3" ONLY "B" IS ALLOWED.
                                        .MEXIT
                                        .ENDC
                                        M$GNINS <CLR    -(SP)>
                                        M$GNINS <BISB   ,(SP)>
                                        .ENDC
                                        .ENDC
       016306                           M$SVC   C$SVEC
                                        .MCALL  M$GNINS,M$TSTLAB
       016306                           M$TSTLAB
                                        .MCALL  M$TLABEL,M$INCR
                                        .IIF LT T$TSTMAC, .MEXIT
                                        .RADIX  10
                                        M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                        .RADIX  8
                                        M$INCR  T$TSTSEQ
       016306                           M$GNINS <TRAP   C$SVEC>
                                        .IF LT SVCINS
                                        TRAP    C$SVEC
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                TRAP    C$SVEC
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
       016306  104437                                                           TRAP    C$SVEC
                                                     .NLIST
                                        .ENDC
       016310                           M$GNINS <ADD    #10,SP>
                                        .IF LT SVCINS
                                        ADD     #10,SP
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                ADD     #10,SP
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
       016310  062706  000010                                                   ADD     #10,SP
                                                     .NLIST
                                        .ENDC
  3370 016314                                   SETVEC  VECC1,#INTERR,#PRI07    ;SET VECTOR FOR CHANNEL 1
```

```
                        .MCALL  M$PUT,M$SVC,M$GNINS
016314                  M$PUT   #3,VECC1,#INTERR,#PRI07
                        .MCALL  M$PUT1
                        .IF NB  <VECC1>
016314                  M$PUT   <VECC1>,<#INTERR>,<#PRI07>,<>,<>,<>,<>,<>,<>
                        .MCALL  M$PUT1
                        .IF NB  <#INTERR>
016314                  M$PUT   <#INTERR>,<#PRI07>,<>,<>,<>,<>,<>,<>,<>
                        .MCALL  M$PUT1
                        .IF NB  <#PRI07>
016314                  M$PUT   <#PRI07>,<>,<>,<>,<>,<>,<>,<>,<>
                        .MCALL  M$PUT1
                        .IF NB  <>
                        M$PUT   <>,<>,<>,<>,<>,<>,<>,<>,<>
                        .ENDC
                        .IF NB  <#PRI07>
016314                  M$PUT1  #PRI07
                        .MCALL  M$GNINS
                        .IF B
016314                  M$GNINS <MOV     #PRI07,-(SP)>
                        .IF LT SVCINS
                        MOV     #PRI07,-(SP)
                        .MEXIT
                        .ENDC
                        .IF EQ SVCINS
                        .LIST
                                MOV     #PRI07,-(SP)
                                        .NLIST
                        .MEXIT
                        .ENDC
                        .IF GT SVCINS
                        .LIST
016314  012746  000340                                                  MOV     #PRI07,-(SP)
                                        .NLIST
                        .ENDC
                        .IFF
                        .IF DIF B,<#PRI07>
                        .ERROR  ;ILL. ARG. "#PRI07" ONLY "B" IS ALLOWED.
                        .MEXIT
                        .ENDC
                        M$GNINS <CLR     -(SP)>
                        M$GNINS <BISB    ,(SP)>
                        .ENDC
                        .ENDC
                        .ENDC
                        .IF NB  <#INTERR>
016320                  M$PUT1  #INTERR
                        .MCALL  M$GNINS
                        .IF B
016320                  M$GNINS <MOV     #INTERR,-(SP)>
                        .IF LT SVCINS
                        MOV     #INTERR, (SP)
                        .MEXIT
                        .ENDC
                        .IF EQ SVCINS
                        .LIST
                                MOV     #INTERR, (SP)
```

```
                                        .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
016320  012746  010152                                                  MOV     #INTERR,-(SP)
                                        .NLIST
                                .ENDC
                                .IFF
                                .IF DIF B,<#INTERR>
                                .ERROR  ;ILL. ARG. "#INTERR" ONLY "B" IS ALLOWED.
                                .MEXIT
                                .ENDC
                                M$GNINS <CLR    -(SP)>
                                M$GNINS <BISB   ,(SP)>
                                .ENDC
                                .ENDC
                                .ENDC
                                .IF NB  <VECC1>
016324                          M$PUT1  VECC1
                                .MCALL  M$GNINS
                                .IF B
016324                          M$GNINS <MOV    VECC1,-(SP)>
                                .IF LT SVCINS
                                MOV     VECC1,-(SP)
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        MOV     VECC1,-(SP)
                                        .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
016324  013746  002244                                                  MOV     VECC1,-(SP)
                                        .NLIST
                                .ENDC
                                .IFF
                                .IF DIF B,<VECC1>
                                .ERROR  ;ILL. ARG. "VECC1" ONLY "B" IS ALLOWED.
                                .MEXIT
                                .ENDC
                                M$GNINS <CLR    -(SP)>
                                M$GNINS <BISB   ,(SP)>
                                .ENDC
                                .ENDC
                                .ENDC
                                .IF NB  <#3>
016330                          M$PUT1  #3
                                .MCALL  M$GNINS
                                .IF B
016330                          M$GNINS <MOV    #3, (SP)>
                                .IF LT SVCINS
                                MOV     #3, (SP)
                                .MEXIT
                                .ENDC
```

```
                                .IF EQ SVCINS
                                .LIST
                                        MOV     #3,-(SP)
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
     016330  012746  000003                                                     MOV     #3,-(SP)
                                                .NLIST
                                .ENDC
                                .IFF
                                .IF DIF B,<#3>
                                .ERROR  ;ILL. ARG. "#3" ONLY "B" IS ALLOWED.
                                .MEXIT
                                .ENDC
                                M$GNINS <CLR    -(SP)>
                                M$GNINS <BISB   ,(SP)>
                                .ENDC
                                .ENDC
     016334                     M$SVC   C$SVEC
                                .MCALL  M$GNINS,M$TSTLAB
     016334                     M$TSTLAB
                                .MCALL  M$TLABEL,M$INCR
                                .IIF LT T$TSTMAC, .MEXIT
                                .RADIX  .0
                                M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                .RADIX  8
                                M$INCR  T$TSTSEQ
     016334                     M$GNINS <TRAP   C$SVEC>
                                .IF LT SVCINS
                                TRAP    C$SVEC
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        TRAP    C$SVEC
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
     016334  104437                                                             TRAP    C$SVEC
                                                .NLIST
                                .ENDC
     016336                     M$GNINS <ADD    #10,SP>
                                .IF LT SVCINS
                                ADD     #10,SP
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        ADD     #10,SP
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
```

F3


```
                                        .LIST
     016336  062706  000010                                                                  ADD     #10,SP
                                                    .NLIST
                                        .ENDC
3371 016342                                   BGNSEG
                                        .MCALL  M$PUSH,M$INCR,M$SVC
             000040                     I$SEG=F$BGN
     016342                             M$PUSH  T$NS,T$NESTLEV,F$SEG
                                        .MCALL  M$INCR,M$SETS
     016342                             M$INCR  T$NESTLEV
             000002                     T$NESTLEV=T$NESTLEV+1
     016342                             M$SETS  T$NS,\T$NESTLEV,F$SEG
             000003                     T$NS2=F$SEG
             010001                     T$$SEG=S$LSYM
     016342                             M$PUSH  T$SEK,T$SEGLEV,T$$SEG
                                        .MCALL  M$INCR,M$SETS
     016342                             M$INCR  T$SEGLEV
             000000                     T$SEGLEV=T$SEGLEV+1
     016342                             M$SETS  T$SEK,\T$SEGLEV,T$$SEG
             010001                     T$SEK0=T$$SEG
     016342                             M$INCR  S$LSYM
             010002                     S$LSYM=S$LSYM+1
     016342                             M$SVC   C$BSEG
                                        .MCALL  M$GNINS,M$TSTLAB
     016342                             M$TSTLAB
                                        .MCALL  M$TLABEL,M$INCR
                                        .IIF LT T$TSTMAC, .MEXIT
                                        .RADIX  10
                                        M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                        .RADIX  8
                                        M$INCR  T$TSTSEQ
     016342                             M$GNINS <TRAP    C$BSEG>
                                        .IF LT SVCINS
                                        TRAP    C$BSEG
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                              TRAP    C$BSEG
                                                    .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
     016342  104404                                                                          TRAP    C$BSEG
                                                    .NLIST
                                        .ENDC
3372 016344  005037  002376                   CLR     INTFC1              ;CLEAR OLD FLAG
3373 016350  005037  002400                   CLR     INTFC2              ;...
3374 016354                                   SETPRI  #PRI07              ;NO INTERRUPT
                                        .MCALL  M$LDR0,M$SVC
     016354                             M$LDR0  #PRI07,SETPRI
                                        .MCALL  M$GNINS
                                        .IF NB #PRI07
                                        .IF DIF R0,#PRI07
     016354                             M$GNINS <MOV     #PRI07,R0>
                                        .IF LT SVCINS
```

```
                                        MOV     #PRI07,R0
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                MOV     #PRI07,R0
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
      016354  012700  000340                                                    MOV     #PRI07,R0
                                                        .NLIST
                                        .ENDC
                                        .ENDC
                                        .IFF
                                        .ERROR  ;MISSING ARG. ON "SETPRI"
                                        .ENDC
      016360                            M$SVC   C$SPRI
                                        .MCALL  M$GNINS,M$TSTLAB
      016360                            M$TSTLAB
                                        .MCALL  M$TLABEL,M$INCR
                                        .IIF LT T$TSTMAC, .MEXIT
                                        .RADIX  10
                                        M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                        .RADIX  8
                                        M$INCR  T$TSTSEQ
      016360                            M$GNINS <TRAP   C$SPRI>
                                        .IF LT SVCINS
                                        TRAP    C$SPRI
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                TRAP    C$SPRI
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
      016360  104441                                                            TRAP    C$SPRI
                                                        .NLIST
                                        .ENDC
 3375 016362  112777  000020  163670            MOVB    #20,@ISRLX              ;;;SET B0 BIT IN ISR2 REGISTER
 3376 016370  052777  000101  163702            BIS     #101,@CSRX              ;;;SET INT ENB,DMA ENB IN CSR2
 3377 016376  012701  000010                    MOV     #10,R1                  ;;;SET PRIORITY COUNTER
 3378                                           .LIST MEB
 3379 016402                                    PRIT    INTFC2,505,ERR402       ;;;TRY INTERRUPT
      016402  005737  002400                    TST     INTFC2          ;INTERRUPT OCCURED?
      016406  001040                            BNE     30001$          ;BRANCH IF YES
      016410  005301                            DEC     R1              ;CHECKSUM = 7
      016412                                    SETPRI  #PRI06          ;CHANGE PROCESSOR PRIORITY TO 6
                                        .MCALL  M$LDR0,M$SVC
      016412                            M$LDR0  #PRI06,SETPRI
                                        .MCALL  M$GNINS
                                        .IF NB #PRI06
                                        .IF DIF R0,#PRI06
```

```
        016412                          M$GNINS <MOV     #PRI06,R0>
                                        .IF LT SVCINS
                                        MOV      #PRI06,R0
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                MOV      #PRI06,R0
                                                         .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
        016412  012700  000300                                                  MOV      #PRI06,R0
                                                         .NLIST
                                        .ENDC
                                        .ENDC
                                        .IFF
                                        .ERROR   ;MISSING ARG. ON "SETPRI"
                                        .ENDC
        016416                          M$SVC    C$SPRI
                                        .MCALL   M$GNINS,M$TSTLAB
        016416                          M$TSTLAB
                                        .MCALL   M$TLABEL,M$INCR
                                        .IIF LT T$TSTMAC, .MEXIT
                                        .RADIX   10
                                        M$TLABEL         \T$TESTNUN,\T$TSTSEQ
                                        .RADIX   8
                                        M$INCR   T$TSTSEQ
        016416                          M$GNINS <TRAP    C$SPRI>
                                        .IF LT SVCINS
                                        TRAP     C$SPRI
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                TRAP     C$SPRI
                                                         .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
        016416  104441                                                          TRAP     C$SPRI
                                                         .NLIST
                                        .ENDC
        016420  005737  002400                  TST      INTFC2          ;INTERRUPT OCCURED?
        016424  001031                          BNE      30001$          ;BRANCH IF YES
        016426  005301                          DEC      R1              ;CHECKSUM = 6
        016430                                  SETPRI   #PRI05          ;CHANGE PROCESSOR PRIORITY TO 5
                                        .MCALL   M$LDR0,M$SVC
        016430                          M$LDR0   #PRI05,SETPRI
                                        .MCALL   M$GNINS
                                        .IF NB #PRI05
                                        .IF DIF R0,#PRI05
        016430                          M$GNINS <MOV     #PRI05,R0>
                                        .IF LT SVCINS
                                        MOV      #PRI05,R0
```

I3


```
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                              MOV     #PRI05,R0
                                                      .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
      016430  012700  000240                                                     MOV     #PRI05,R0
                                                      .NLIST
                                        .ENDC
                                        .ENDC
                                        .IFF
                                        .ERROR  ;MISSING ARG. ON "SETPRI"
                                        .ENDC
      016434                            M$SVC   C$SPRI
                                        .MCALL  M$GNINS,M$TSTLAB
      016434                            M$TSTLAB
                                        .MCALL  M$TLABEL,M$INCR
                                        .IIF LT T$TSTMAC, .MEXIT
                                        .RADIX  10
                                        M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                        .RADIX  8
                                        M$INCR  T$TSTSEQ
      016434                            M$GNINS <TRAP   C$SPRI>
                                        .IF LT SVCINS
                                        TRAP    C$SPRI
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                              TRAP    C$SPRI
                                                      .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
      016434  104441                                                             TRAP    C$SPRI
                                                      .NLIST
                                        .ENDC
      016436  005737  002400                  TST     INTFC2          ;INTERRUPT OCCURED?
      016442  001022                          BNE     30001$          ;BRANCH IF YES
      016444  005301                          DEC     R1              ;CHECKSUM = 5
      016446                                  SETPRI  #PRI04          ;CHANGE PROCESSOR PRIORITY TO 4
                                        .MCALL  M$LDR0,M$SVC
      016446                            M$LDR0  #PRI04,SETPRI
                                        .MCALL  M$GNINS
                                        .IF NB #PRI04
                                        .IF DIF R0,#PRI04
      016446                            M$GNINS <MOV    #PRI04,R0>
                                        .IF LT SVCINS
                                        MOV     #PRI04,R0
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
```

```
                                .LIST
                                        MOV     #PRI04,R0
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
     016446  012700  000200                                                     MOV     #PRI04,R0
                                                .NLIST
                                .ENDC
                                .ENDC
                                .IFF
                                .ERROR  ;MISSING ARG. ON "SETPRI"
                                .ENDC
     016452                     M$SVC   C$SPRI
                                .MCALL  M$GNINS,M$TSTLAB
     016452                     M$TSTLAB
                                .MCALL  M$TLABEL,M$INCR
                                .IIF LT T$TSTMAC, .MEXIT
                                .RADIX  10
                                M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                .RADIX  8
                                M$INCR  T$TSTSEQ
     016452                     M$GNINS <TRAP   C$SPRI>
                                .IF LT SVCINS
                                TRAP    C$SPRI
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        TRAP    C$SPRI
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
     016452  104441                                                             TRAP    C$SPRI
                                                .NLIST
                                .ENDC
     016454  005737  002400             TST     INTFC2          ;INTERRUPT OCCURED?
     016460  001013                     BNE     30001$          ;BRANCH IF YES
     016462  005301                     DEC     R1              ;CHECKSUM = 4
     016464                             SETPRI #PRI03           ;CHANGE PROCESSOR PRIORITY TO 3
                                .MCALL  M$LDR0,M$SVC
     016464                     M$LDR0  #PRI03,SETPRI
                                .MCALL  M$GNINS
                                .IF NB #PRI03
                                .IF DIF R0,#PRI03
     016464                     M$GNINS <MOV    #PRI03,R0>
                                .IF LT SVCINS
                                MOV     #PRI03,R0
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        MOV     #PRI03,R0
                                                .NLIST
```

```
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
016464  012700  000140                                                          MOV     #PRI03,R0
                                          .NLIST
                                .ENDC
                                .ENDC
                                .IFF
                                .ERROR  ;MISSING ARG. ON "SETPRI"
                                .ENDC
016470                          M$SVC   C$SPRI
                                .MCALL  M$GNINS,M$TSTLAB
016470                          M$TSTLAB
                                .MCALL  M$TLABEL,M$INCR
                                .IIF LT T$TSTMAC, .MEXIT
                                .RADIX  10
                                M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                .RADIX  8
                                M$INCR  T$TSTSEQ
016470                          M$GNINS <TRAP   C$SPRI>
                                .IF LT SVCINS
                                TRAP    C$SPRI
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        TRAP    C$SPRI
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
016470  104441                                                                  TRAP    C$SPRI
                                          .NLIST
                                .ENDC
016472  005737  002400                  TST     INTFC2          ;INTERRUPT OCCURED?
016476  001004                          BNE     30001$          ;BRANCH IF YES
016500                                  ERRSOFT 505,E402,ERR402 ;NO INTERRUPT ERROR
                                .MCALL  M$ERRINS
016500                          M$ERRINS        505,E402,ERR402,C$ERSOFT
                                .MCALL  M$GNINS,M$WORD,M$TSTLAB
016500                          M$SVC   C$ERSOFT
                                .MCALL  M$GNINS,M$TSTLAB
016500                          M$TSTLAB
                                .MCALL  M$TLABEL,M$INCR
                                .IIF LT T$TSTMAC,  MEXIT
                                .RADIX  10
                                M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                .RADIX  8
                                M$INCR  T$TSTSEQ
016500                          M$GNINS <TRAP   C$ERSOFT>
                                .IF LT SVCINS
                                TRAP    C$ERSOFT
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
```

```
                        .LIST
                                TRAP    C$ERSOFT
                                        .NLIST
                        .MEXIT
                        .ENDC
                        .IF GT SVCINS
                        .LIST
    016500  104457                                                  TRAP    C$ERSOFT
                                        .NLIST
                        .ENDC
            000012      .RADIX  10
                        .IF NB  505
            000771      T$ERRNUM=505
                        .IFF
                        .ERROR  ;MISSING ERROR NR
                        .ENDC
    016502              M$WORD  \T$ERRNUM
                        .MCALL  M$GNINS
                        .IRP    N,<505>
                        M$GNINS <.WORD  N>
                        .ENDM
    016502              M$GNINS <.WORD  505>
                        .IF LT SVCINS
                        .WORD   505
                        .MEXIT
                        .ENDC
                        .IF EQ SVCINS
                        .LIST
                                .WORD   505
                                        .NLIST
                        .MEXIT
                        .ENDC
                        .IF GT SVCINS
                        .LIST
    016502  000771                                                  .WORD   505
                                        .NLIST
                        .ENDC
            000010      .RADIX  8
                        .IF NB E402
    016504              M$WORD  E402
                        .MCALL  M$GNINS
                        .IRP    N,<E402>
                        M$GNINS <.WORD  N>
                        .ENDM
    016504              M$GNINS <.WORD  E402>
                        .IF LT SVCINS
                        .WORD   E402
                        .MEXIT
                        .ENDC
                        .IF EQ SVCINS
                        .LIST
                                .WORD   E402
                                        .NLIST
                        .MEXIT
                        .ENDC
                        .IF GT SVCINS
                        .LIST
```

```
     016504  005306                                              .WORD   E402
                                          .NLIST
                          .ENDC
                          .IFF
                          M$WORD  0
                          .ENDC
                          .IF NB ERR402
     016506               M$WORD  ERR402
                          .MCALL  M$GNINS
                          .IRP    N,<ERR402>
                          M$GNINS <.WORD  N>
                          .ENDM
     016506               M$GNINS <.WORD  ERR402>
                          .IF LT SVCINS
                          .WORD   ERR402
                          .MEXIT
                          .ENDC
                          .IF EQ SVCINS
                          .LIST
                                  .WORD   ERR402
                                          .NLIST
                          .MEXIT
                          .ENDC
                          .IF GT SVCINS
                          .LIST
     016506  003644                                              .WORD   ERR402
                                          .NLIST
                          .ENDC
                          .IFF
                          M$WORD  0
                          .ENDC
     016510  000240       30001$: NOP
                                  .NLIST MEB
     016512                       SETPRI  #PRI07             ;SET PRIORITY
                          .MCALL  M$LDR0,M$SVC
     016512               M$LDR0  #PRI07,SETPRI
                          .MCALL  M$GNINS
                          .IF NB #PRI07
                          .IF DIF R0,#PRI07
     016512               M$GNINS <MOV    #PRI07,R0>
                          .IF LT SVCINS
                          MOV     #PRI07,R0
                          .MEXIT
                          .ENDC
                          .IF EQ SVCINS
                          .LIST
                                  MOV     #PRI07,R0
                                          .NLIST
                          .MEXIT
                          .ENDC
                          .IF GT SVCINS
                          .LIST
     016512  012700  000340                                      MOV     #PRI07,R0
                                          .NLIST
                          .ENDC
                          .ENDC
                          .IFF
```

```
                                    .ERROR  ;MISSING ARG. ON "SETPRI"
                                    .ENDC
 016516                             M$SVC   C$SPRI
                                    .MCALL  M$GNINS,M$TSTLAB
 016516                             M$TSTLAB
                                    .MCALL  M$TLABEL,M$INCR
                                    .IIF LT T$TSTMAC, .MEXIT
                                    .RADIX  10
                                    M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                    .RADIX  8
                                    M$INCR  T$TSTSEQ
 016516                             M$GNINS <TRAP   C$SPRI>
                                    .IF LT SVCINS
                                    TRAP    C$SPRI
                                    .MEXIT
                                    .ENDC
                                    .IF EQ SVCINS
                                    .LIST
                                            TRAP    C$SPRI
                                                    .NLIST
                                    .MEXIT
                                    .ENDC
                                    .IF GT SVCINS
                                    .LIST
 016516  104441                                                                         TRAP    C$SPRI
                                                    .NLIST
                                    .ENDC
 016520  106301                             ASLB    R1                      ;CREATE CORRECT PRI. FOR COMPARISON
 016522  106301                             ASLB    R1                      ;...
 016524  106301                             ASLB    R1                      ;;;;
 016526  106301                             ASLB    R1                      ;
 016530  106301                             ASLB    R1                      ;...
 016532  020137  002316                     CMP     R1,PLEV                 ;CHECK INTERRUPT PRIORITY
 016536  001412                             BEQ     40$                     ;BRANCH IF INTERRUPT PRI.WAS OK
 016540  010137  002502                     MOV     R1,BAD                  ;SET UP DATA FOR ERROR MESSAGE
 016544  013737  002316  002500             MOV     PLEV,GOOD               ;...
 016552                                     ERRSOFT 506,E403,ERR401         ;ERROR HANDLER
                                    .MCALL  M$ERRINS
 016552                             M$ERRINS        506,E403,ERR401,C$ERSOFT
                                    .MCALL  M$GNINS,M$WORD,M$TSTLAB
 016552                             M$SVC   C$ERSOFT
                                    .MCALL  M$GNINS,M$TSTLAB
 016552                             M$TSTLAB
                                    .MCALL  M$TLABEL,M$INCR
                                    .IIF LT T$TSTMAC, .MEXIT
                                    .RADIX  10
                                    M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                    .RADIX  8
                                    M$INCR  T$TSTSEQ
 016552                             M$GNINS <TRAP   C$ERSOFT>
                                    .IF LT SVCINS
                                    TRAP    C$ERSOFT
                                    .MEXIT
                                    .ENDC
                                    .IF EQ SVCINS
                                    .LIST
                                            TRAP    C$ERSOFT
```

B4


```
                                                .NLIST
                              .MEXIT
                              .ENDC
                              .IF GT SVCINS
                              .LIST
     016552  104457                                                               TRAP    C$ERSOFT
                                                .NLIST
                              .ENDC
             000012           .RADIX  10
                              .IF NB  506
             000772           T$ERRNUM=506
                              .IFF
                              .ERROR  ;MISSING ERROR NR
                              .ENDC
     016554                   M$WORD  \T$ERRNUM
                              .MCALL  M$GNINS
                              .IRP    N,<506>
                              M$GNINS <.WORD  N>
                              .ENDM
     016554                   M$GNINS <.WORD  506>
                              .IF LT SVCINS
                              .WORD   506
                              .MEXIT
                              .ENDC
                              .IF EQ SVCINS
                              .LIST
                                      .WORD   506
                                                .NLIST
                              .MEXIT
                              .ENDC
                              .IF GT SVCINS
                              .LIST
     016554  000772                                                               .WORD   506
                                                .NLIST
                              .ENDC
             000010           .RADIX  8
                              .IF NB E403
     016556                   M$WORD  E403
                              .MCALL  M$GNINS
                              .IRP    N,<E403>
                              M$GNINS <.WORD  N>
                              .ENDM
     016556                   M$GNINS <.WORD  E403>
                              .IF LT SVCINS
                              .WORD   E403
                              .MEXIT
                              .ENDC
                              .IF EQ SVCINS
                              .LIST
                                      .WORD   E403
                                                .NLIST
                              .MEXIT
                              .ENDC
                              .IF GT SVCINS
                              .LIST
     016556  005343                                                               .WORD   E403
                                                .NLIST
```

C4

```
                                        .ENDC
                                        .IFF
                                        M$WORD  0
                                        .ENDC
                                        .IF NB ERR401
      016560                            M$WORD  ERR401
                                        .MCALL  M$GNINS
                                        .IRP    N,<ERR401>
                                        M$GNINS <.WORD  N>
                                        .ENDM
      016560                            M$GNINS <.WORD  ERR401>
                                        .IF LT SVCINS
                                        .WORD   ERR401
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                .WORD   ERR401
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
      016560  003606                                                                      .WORD   ERR401
                                                        .NLIST
                                        .ENDC
                                        .IFF
                                        M$WORD  0
                                        .ENDC
 3392 016562                                    CKLOOP                         ;BRANCH TO BGNSEG IF ERRLOOP IS SET
                                        .MCALL  M$SVC
      016562                            M$SVC   C$CLP1
                                        .MCALL  M$GNINS,M$TSTLAB
      016562                            M$TSTLAB
                                        .MCALL  M$TLABEL,M$INCR
                                        .IIF LT T$TSTMAC, .MEXIT
                                        .RADIX  10
                                        M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                        .RADIX  8
                                        M$INCR  T$TSTSEQ
      016562                            M$GNINS <TRAP   C$CLP1>
                                        .IF LT SVCINS
                                        TRAP    C$CLP1
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                TRAP    C$CLP1
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
      016562  104406                                                                      TRAP    C$CLP1
                                                        .NLIST
                                        .ENDC
 3393 016564                            40$:
```

```
3394 016564 017737  163510  002502          MOV     @CSRX,BAD               ;GET CSR2 CONTENTS
3395 016572 042737  017000  002502          BIC     #17000,BAD              ;IGNORE BIT 9 12
3396 016600 022737  000212  002502          CMP     #212,BAD                ;INT,SYS CONT,MUX SHOULD BE SET
3397 016606 001410                          BEQ     43$                     ;BRANCH IF YES
3398 016610 012737  000212  002500          MOV     #212,GOOD               ;SET UP DATA FOR ERROR MESSAGE
3399 016616                                 ERRSOFT 507,E401,ERR501         ;ERROR HANDLER
                                    .MCALL  M$ERRINS
     016616                         M$ERRINS        507,E401,ERR501,C$ERSOFT
                                    .MCALL  M$GNINS,M$WORD,M$TSTLAB
     016616                         M$SVC   C$ERSOFT
                                    .MCALL  M$GNINS,M$TSTLAB
     016616                         M$TSTLAB
                                    .MCALL  M$TLABEL,M$INCR
                                    .IIF LT T$TSTMAC, .MEXIT
                                    .RADIX  10
                                    M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                    .RADIX  8
                                    M$INCR  T$TSTSEQ
     016616                         M$GNINS <TRAP   C$ERSOFT>
                                    .IF LT SVCINS
                                    TRAP    C$ERSOFT
                                    .MEXIT
                                    .ENDC
                                    .IF EQ SVCINS
                                    .LIST
                                            TRAP    C$ERSOFT
                                                    .NLIST
                                    .MEXIT
                                    .ENDC
                                    .IF GT SVCINS
                                    .LIST
     016616 104457                                                                              TRAP    C$ERSOFT
                                                    .NLIST
                                    .ENDC
            000012                  .RADIX  10
                                    .IF NB  507
            000773                  T$ERRNUM=507
                                    .IFF
                                    .ERROR  ;MISSING ERROR NR
                                    .ENDC
     016620                         M$WORD  \T$ERRNUM
                                    .MCALL  M$GNINS
                                    .IRP    N,<507>
                                    M$GNINS <.WORD  N>
                                    .ENDM
     016620                         M$GNINS <.WORD  507>
                                    .IF LT SVCINS
                                    .WORD   507
                                    .MEXIT
                                    .ENDC
                                    .IF EQ SVCINS
                                    .LIST
                                            .WORD   507
                                                    .NLIST
                                    .MEXIT
                                    .ENDC
                                    .IF GT SVCINS
```

E4


```
                                        .LIST
      016620  000773                                                                              .WORD   507
                                                    .NLIST
                                        .ENDC
              000010                    .RADIX  8
                                        .IF NB E401
      016622                            M$WORD  E401
                                        .MCALL  M$GNINS
                                        .IRP    N,<E401>
                                        M$GNINS <.WORD  N>
                                        .ENDM
      016622                            M$GNINS <.WORD  E401>
                                        .IF LT SVCINS
                                        .WORD   E401
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                              .WORD   E401
                                                    .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
      016622  005255                                                                              .WORD   E401
                                                    .NLIST
                                        .ENDC
                                        .IFF
                                        M$WORD  0
                                        .ENDC
                                        .IF NB ERR501
      016624                            M$WORD  ERR501
                                        .MCALL  M$GNINS
                                        .IRP    N,<ERR501>
                                        M$GNINS <.WORD  N>
                                        .ENDM
      016624                            M$GNINS <.WORD  ERR501>
                                        .IF LT SVCINS
                                        .WORD   ERR501
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                              .WORD   ERR501
                                                    .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
      016624  003672                                                                              .WORD   ERR501
                                                    .NLIST
                                        .ENDC
                                        .IFF
                                        M$WORD  0
                                        .ENDC
  5400 016626                                   CKLOOP                          ;BRANCH BACK TO BGNSEG IF ERRLOOP SET
                                        .MCALL  M$SVC
```

```
        016626                          M$SVC   C$CLP1
                                        .MCALL  M$GNINS,M$TSTLAB
        016626                          M$TSTLAB
                                        .MCALL  M$TLABEL,M$INCR
                                        .IIF LT T$TSTMAC, .MEXIT
                                        .RADIX  10
                                        M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                        .RADIX  8
                                        M$INCR  T$TSTSEQ
        016626                          M$GNINS <TRAP   C$CLP1>
                                        .IF LT SVCINS
                                        TRAP    C$CLP1
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                TRAP    C$CLP1
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
        016626  104406                                                                  TRAP    C$CLP1
                                                        .NLIST
                                        .ENDC
   3401 016630                          43$:
   3402 016630  017737  163414  002502          MOV     @IIRX,BAD               ;GET IIR2 CONTENTS
   3403 016636  022737  000220  002502          CMP     #220,BAD                ;INTO,BO BIT SHOULD BE SET
   3404 016644  001407                          BEQ     50$                     ;BRANCH IF YES
   3405 016646  012737  000220  002500          MOV     #220,GOOD               ;SET UP DATA FOR ERROR MESSAGE
   3406 016654                                  ERRSOFT 508,E501,ERR501         ;ERROR HANDLER
                                        .MCALL  M$ERRINS
        016654                          M$ERRINS        508,E501,ERR501,C$ERSOFT
                                        .MCALL  M$GNINS,M$WORD,M$TSTLAB
        016654                          M$SVC   C$ERSOFT
                                        .MCALL  M$GNINS,M$TSTLAB
        016654                          M$TSTLAB
                                        .MCALL  M$TLABEL,M$INCR
                                        .IIF LT T$TSTMAC, .MEXIT
                                        .RADIX  10
                                        M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                        .RADIX  8
                                        M$INCR  T$TSTSEQ
        016654                          M$GNINS <TRAP   C$ERSOFT>
                                        .IF LT SVCINS
                                        TRAP    C$ERSOFT
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                TRAP    C$ERSOFT
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
        016654  104457                                                                  TRAP    C$ERSOFT
```

G4


```
                                                .NLIST
                                    .ENDC
                000012              .RADIX  10
                                    .IF NB  508
                000774              T$ERRNUM=508
                                    .IFF
                                    .ERROR  ;MISSING ERROR-NR
                                    .ENDC
        016656                      M$WORD  \T$ERRNUM
                                    .MCALL  M$GNINS
                                    .IRP    N,<508>
                                    M$GNINS <.WORD  N>
                                    .ENDM
        016656                      M$GNINS <.WORD  508>
                                    .IF LT SVCINS
                                    .WORD   508
                                    .MEXIT
                                    .ENDC
                                    .IF EQ SVCINS
                                    .LIST
                                            .WORD   508
                                                .NLIST
                                    .MEXIT
                                    .ENDC
                                    .IF GT SVCINS
                                    .LIST
        016656  000774                                                          .WORD   508
                                                .NLIST
                                    .ENDC
                000010              .RADIX  8
                                    .IF NB E501
        016660                      M$WORD  E501
                                    .MCALL  M$GNINS
                                    .IRP    N,<E501>
                                    M$GNINS <.WORD  N>
                                    .ENDM
        016660                      M$GNINS <.WORD  E501>
                                    .IF LT SVCINS
                                    .WORD   E501
                                    .MEXIT
                                    .ENDC
                                    .IF EQ SVCINS
                                    .LIST
                                            .WORD   E501
                                                .NLIST
                                    .MEXIT
                                    .ENDC
                                    .IF GT SVCINS
                                    .LIST
        016660  005376                                                          .WORD   E501
                                                .NLIST
                                    .ENDC
                                    .IFF
                                    M$WORD  0
                                    .ENDC
                                    .IF NB ERR501
        016662                      M$WORD  ERR501
```

H4


```
                                .MCALL  M$GNINS
                                .IRP    N,<ERR501>
                                M$GNINS <.WORD  N>
                                .ENDM
     016662                     M$GNINS <.WORD  ERR501>
                                .IF LT SVCINS
                                .WORD   ERR501
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        .WORD   ERR501
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
     016662  003672                                                     .WORD   ERR501
                                                .NLIST
                                .ENDC
                                .IFF
                                M$WORD  0
                                .ENDC
3407 016664                     50$:    ENDSEG
                                .MCALL  M$POP,M$GNLS,M$SVC,M$ENDERR
     016664                     M$POP   T$NS,T$NESTLEV,T$TEMP
                                .MCALL  M$GETS,M$DECR
                                .IF LT  T$NESTLEV
                                .ERROR  T$NESTLEV       ; MACRO T$NS UNDERFLOW
                                .MEXIT
                                .ENDC
     016664                     M$GETS  T$NS,\T$NESTLEV,T$TEMP
             000003             T$TEMP=T$NS2
     016664                     M$DECR  T$NESTLEV
             000001             T$NESTLEV=T$NESTLEV-1
                                .IF EQ F$SEG-T$TEMP
     016664                     M$POP   T$SEK,T$SEGLEV,T$$SEG
                                .MCALL  M$GETS,M$DECR
                                .IF LT  T$SEGLEV
                                .ERROR  T$SEGLEV        ; MACRO T$SEK UNDERFLOW
                                .MEXIT
                                .ENDC
     016664                     M$GETS  T$SEK,\T$SEGLEV,T$$SEG
             010001             T$$SEG=T$SEK0
     016664                     M$DECR  T$SEGLEV
             177777             T$SEGLEV=T$SEGLEV-1
     016664                     M$GNLS  T$$SEG
                                .MCALL  M$GEN
                                .IF NB T$$SEG
     016664                     M$GEN   \T$$SEG,$,SVCTAG
                                .IF LE  SVCTAG
                                .IIF EQ SVCTAG,.LIST
                                10001$:
                                .IIF EQ SVCTAG,.NLIST
                                .MEXIT
                                .ENDC
                                .LIST
```

```
        016664                                                                  10001$:
                                                .NLIST
                                        .IFF
                                        M$GEN   \S$LSYM,$,SVCTAG
                                        .ENDC
        016664                          M$SVC   C$ESEG
                                        .MCALL  M$GNINS,M$TSTLAB
        016664                          M$TSTLAB
                                        .MCALL  M$TLABEL,M$INCR
                                        .IIF LT T$TSTMAC, .MEXIT
                                        .RADIX  10
                                        M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                        .RADIX  8
                                        M$INCR  T$TSTSEQ
        016664                          M$GNINS <TRAP   C$ESEG>
                                        .IF LT SVCINS
                                        TRAP    C$ESEG
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                TRAP    C$ESEG
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
        016664  104405                                                                  TRAP    C$ESEG
                                                        .NLIST
                                        .ENDC
                                        .IF EQ T$SEGLEV+1
                000041                  I$SEG=F$END
                                        .ENDC
                                        .IFF
                                        M$ENDERR        ENDSEG,T$TEMP
                                        .ENDC
   3408 016666                                  CLRVEC  VECC1                   ;RESTORE VECTOR (DISABLE INTERRUPT)
                                        .MCALL  M$LDR0,M$SVC
        016666                          M$LDR0  VECC1,CLRVEC
                                        .MCALL  M$GNINS
                                        .IF NB VECC1
                                        .IF DIF R0,VECC1
        016666                          M$GNINS <MOV    VECC1,R0>
                                        .IF LT SVCINS
                                        MOV     VECC1,R0
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                MOV     VECC1,R0
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
        016666  013700  002244                                                          MOV     VECC1,R0
                                                        .NLIST
```

```
                                        .ENDC
                                        .ENDC
                                        .IFF
                                        .ERROR  ;MISSING ARG. ON "CLRVEC"
                                        .ENDC
      016672                            M$SVC   C$CVEC
                                        .MCALL  M$GNINS,M$TSTLAB
      016672                            M$TSTLAB
                                        .MCALL  M$TLABEL,M$INCR
                                        .IIF LT T$TSTMAC, .MEXIT
                                        .RADIX  10
                                        M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                        .RADIX  8
                                        M$INCR  T$TSTSEQ
      016672                            M$GNINS <TRAP   C$CVEC>
                                        .IF LT SVCINS
                                        TRAP    C$CVEC
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                TRAP    C$CVEC
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
      016672  104436                                                                    TRAP    C$CVEC
                                                        .NLIST
                                        .ENDC
 3409 016674                                    CLRVEC  VECC2                   ;...
                                        .MCALL  M$LDRO,M$SVC
      016674                            M$LDRO  VECC2,CLRVEC
                                        .MCALL  M$GNINS
                                        .IF NB VECC2
                                        .IF DIF RO,VECC2
      016674                            M$GNINS <MOV    VECC2,RO>
                                        .IF LT SVCINS
                                        MOV     VECC2,RO
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                MOV     VECC2,RO
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
      016674  013700  002246                                                            MOV     VECC2,RO
                                                        .NLIST
                                        .ENDC
                                        .ENDC
                                        .IFF
                                        .ERROR  ;MISSING ARG. ON "CLRVEC"
                                        .ENDC
      016700                            M$SVC   C$CVEC
```

```
                                                .MCALL  M$GNINS,M$TSTLAB
      016700                                    M$TSTLAB
                                                .MCALL  M$TLABEL,M$INCR
                                                .IIF LT T$TSTMAC, .MEXIT
                                                .RADIX  10
                                                M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                                .RADIX  8
                                                M$INCR  T$TSTSEQ
      016700                                    M$GNINS <TRAP   C$CVEC>
                                                .IF LT SVCINS
                                                TRAP    C$CVEC
                                                .MEXIT
                                                .ENDC
                                                .IF EQ SVCINS
                                                .LIST
                                                        TRAP    C$CVEC
                                                                .NLIST
                                                .MEXIT
                                                .ENDC
                                                .IF GT SVCINS
                                                .LIST
      016700  104436                                                                            TRAP    C$CVEC
                                                                .NLIST
                                                .ENDC
 3410 016702  005737  002234                            TST     QVP                     ;IS QUICK VERIFY PASS SELECTED
 3411 016706  001010                                    BNE     EXQV5                   ;IF YES EXIT TEST
 3412 016710  005237  002322                            INC     ITRCNT                  ;ITERATION COUNTER + 1
 3413 016714  023737  002320  002322                    CMP     ITRDEF,ITRCNT           ;DEFAULT ITERATION EXECUTED
 3414 016722  001402                                    BEQ     EXQV5                   ;IF YES EXIT TEST
 3415 016724  000137  015630                            JMP     ITRAC5                  ;IF NO TEST ITERATION
 3416 016730                                    EXQV5:  EXIT TST
                                                .MCALL  M$SVC,M$EXIT,M$EXSEG,M$EXTJ,M$GETTOP,M$CHECK,M$WORD,XFER
              000041                            T$FLAG=F$END
      016730                                    M$CHECK TST,T$TEMP,T$FLAG
                                                .IF IDN <TST>,<TST>
              010032                            T$TEMP=T$$TEST
              000040                            T$FLAG=I$TST
                                                .MEXIT
                                                .ENDC
                                                .IF IDN <SUB>,<TST>
                                                T$TEMP=T$$SUB
                                                T$FLAG=I$SUB
                                                .MEXIT
                                                .ENDC
                                                .IF IDN <SEG>,<TST>
                                                T$TEMP=T$$SEG
                                                T$FLAG=I$SEG
                                                .MEXIT
                                                .ENDC
                                                .IF IDN <INIT>,<TST>
                                                T$TEMP=T$$INIT
                                                T$FLAG=I$INIT
                                                .MEXIT
                                                .ENDC
                                                .IF IDN <CLN>,<TST>
                                                T$TEMP=T$$CLEAN
                                                T$FLAG-I$CLN
```

L4


```
                                        .MEXIT
                                        .ENDC
                                        .IF IDN <SRV>,<TST>
                                        T$TEMP=T$$SRV
                                        T$FLAG=I$SRV
                                        .MEXIT
                                        .ENDC
                                        .IF IDN <MSG>,<TST>
                                        T$TEMP=T$$MSG
                                        T$FLAG=F$JMP
                                        .MEXIT
                                        .ENDC
                                        .IF IDN <RPT>,<TST>
                                        T$TEMP=T$$RPT
                                        T$FLAG=F$JMP
                                        .MEXIT
                                        .ENDC
                                        .IF IDN <DU>,<TST>
                                        T$TEMP=T$$DU
                                        T$FLAG=F$JMP
                                        .MEXIT
                                        .ENDC
                                        .IF IDN <AU>,<TST>
                                        T$TEMP=T$$AU
                                        T$FLAG=F$JMP
                                        .MEXIT
                                        .ENDC
                                        .IF EQ T$FLAG-F$JMP
                                        M$WORD  J$JMP
                                        M$EXTJ  \T$TEMP
                                        .MEXIT
                                        .ENDC
                                        .IF EQ  T$FLAG-F$BGN
        016730                          M$SVC   C$EXIT
                                        .MCALL  M$GNINS,M$TSTLAB
        016730                          M$TSTLAB
                                        .MCALL  M$TLABEL,M$INCR
                                        .IIF LT T$TSTMAC, .MEXIT
                                        .RADIX  10
                                        M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                        .RADIX  8
                                        M$INCR  T$TSTSEQ
        016730                          M$GNINS <TRAP   C$EXIT>
                                        .IF LT SVCINS
                                        TRAP    C$EXIT
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                TRAP    C$EXIT
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
        016730  104432                                                                  TRAP    C$EXIT
                                                        .NLIST
```

```
                                        .ENDC
                                        .IF IDN <SEG>,<TST>
                                        M$GETTOP T$SEK,T$SEGLEV,T$TEMP
                                        M$EXSEG \T$TEMP
                                        .IFF
      016732                            M$EXIT  \T$TEMP
                                        .MCALL  M$GNINS
      016732                            M$GNINS <.WORD  L10032-.>
                                        .IF LT SVCINS
                                        .WORD   L10032-.
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                .WORD   L10032-.
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
      016732  000030                                                                            .WORD   L10032-.
                                                        .NLIST
                                        .ENDC
                                        .ENDC
                                        .MEXIT
                                        .ENDC
                                        .IF IDN <HRD>,<TST>
                                        M$GETTOP        T$NS,T$NESTLEV,T$TEMP
                                        .IF EQ  F$HARD-T$TEMP
                                        .IRP    N,<\T$$HARD>
                                        XFER    L'N
                                        .ENDM
                                        .MEXIT
                                        .ENDC
                                        .ENDC
                                        .IF IDN <SFT>,<TST>
                                        M$GETTOP        T$NS,T$NESTLEV,T$TEMP
                                        .IF EQ  F$SOFT-T$TEMP
                                        .IRP    N,<\T$$SOFT>
                                        XFER    L'N
                                        .ENDM
                                        .MEXIT
                                        .ENDC
                                        .ENDC
                                        .ERROR  ;ILL. "EXIT TST" STMT.

                                                .NLIST  BEX
      016734     045     123     062    TSHD5:  .ASCIZ  /%S2%AINTERRUPT TEST%N/
                                                .LIST   BEX
                                                .EVEN
      016762                                    ENDTST
                                        .MCALL  M$POP,M$GNTAG,M$SVC,M$ENDERR
                                        .IF EQ  F$BGN I$TST
              000041                    I$TST=F$END
                                        .IFF
                                        .ERROR  ;MISSING "BGNTST"
                                        .MEXIT
```

N4


```
                                 .ENDC
016762                           M$POP    T$NS,T$NESTLEV,T$TEMP
                                 .MCALL   M$GETS,M$DECR
                                 .IF LT   T$NESTLEV
                                 .ERROR   T$NESTLEV       ; MACRO T$NS UNDERFLOW
                                 .MEXIT
                                 .ENDC
016762                           M$GETS   T$NS,\T$NESTLEV,T$TEMP
        000001                   T$TEMP=T$NS1
016762                           M$DECR   T$NESTLEV
        000000                   T$NESTLEV=T$NESTLEV 1
                                 .IF EQ F$TEST-T$TEMP
016762                           M$GNTAG L,T$$TEST
                                 .MCALL   M$GEN
016762                           M$GEN    L,\T$$TEST,SVCTAG
                                 .IF LE   SVCTAG
                                 .IIF EQ SVCTAG,.LIST
                                 L10032:
                                 .IIF EQ SVCTAG,.NLIST
                                 .MEXIT
                                 .ENDC
                                 .LIST
016762                                                                    L10032:
                                         .NLIST
        010000                   S$LSYM=T$LSYM
016762                           M$SVC    C$ETST
                                 .MCALL   M$GNINS,M$TSTLAB
016762                           M$TSTLAB
                                 .MCALL   M$TLAPEL,M$INCR
                                 .IIF LT T$TSTMAC, .MEXIT
                                 .RADIX   10
                                 M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                 .RADIX   8
                                 M$INCR   T$TSTSEQ
016762                           M$GNINS <TRAP    C$ETST>
                                 .IF LT SVCINS
                                 TRAP     C$ETST
                                 .MEXIT
                                 .ENDC
                                 .IF FQ SVCINS
                                 .LIST
                                         TRAP     C$ETST
                                                  .NLIST
                                 .MEXIT
                                 .ENDC
                                 .IF GT SVCINS
                                 .LIST
016762  104401                                                                 TRAP     C$ETST
                                                  .NLIST
                                 .ENDC
        000041                   I$TST=F$END
                                 .IFF
                                 M$ENDERR        ENDTST,T$TEMP
                                 .ENDC
```

```
                                        .SBTTL  TEST 6: ADDRESS REGISTER TEST OF CHANNEL 1
                               ;*************************************************************************
                               ;                  IEX - TEST 6
                               ;
                               ;PART 1 CHECKS THE CORRECT FUNCTION OF ADDRESS REGISTER 1 (ADR) BY LOADING ITS
                               ;       DEVICE PRIMARY ADDRESS INTO BIT A1-A5 AND RECEIVING THE ASSIGNED
                               ;       LISTEN OR TALK ADDRESS VIA THE IEC/IEEE BUS.
                               ;NOTE:  THE ULPA BIT IN THE ISR1 REGISTER IS DEPENDENT
                               ;       ON THE STATUS OF DPA1 (ODD DPA1 => ULPA IS SET)
                               ;
                               ;PART 2 CHECKS THE FUNCTION OF THE DAT BIT (DISABLES THE TALK FUNCTION),
                               ;       THE DAL BIT (DISABLES THE LISTEN FUNCTION) AND THE EDPA BIT (ENABLES
                               ;       THE DUAL PRIMARY ADDRESSING MODE, WHICH ARE ALSO PRESENT IN THE
                               ;       ADR1 REGISTER.
                               ;
                               ;IF THE QUICK VERIFY PASS IS NOT SELECTED, THE TEST ITERATION WILL DO
                               ;IT WITH DIFFERENT DPA'S.
                               ;*************************************************************************
016764                                  BGNTST
                               .MCALL   M$INCR,M$GNTEST,M$PUSH,M$INCR
                               .IF NE   F$END-I$SUB
                               .ERROR   ;"BGNTST" IN SUB
                               .MEXIT
                               .ENDC
                               .IF NE   F$END-I$SEG
                               .ERROR   ;"BGNTST" IN SEG
                               .MEXIT
                               .ENDC
                               .IF NE   F$END-I$TST
                               .ERROR   ;"BGNTST" IN TST
                               .MEXIT
                               .IFF
          000040               I$TST=F$BGN
                               .ENDC
                               .IF B
016764                         M$INCR   T$TESTNUM
          000006               T$TESTNUM=T$TESTNUM+1
                               .IFF
                               T$TESTNUM=
                               .ENDC
          000000               T$SUBNUM=0
          000012               .RADIX  10
016764                         M$GNTEST         \T$TESTNUM
                               .MCALL   M$GEN
016764                         M$GEN    T,6:,SVCTST
                               .IF LE   SVCTST
                               .IIF EQ SVCTST,.LIST
                               T6::
                               .IIF EQ SVCTST,.NLIST
                               .MEXIT
                               .ENDC
                               .LIST
016764                                                                                 T6::
                                        .NLIST
          000010               .RADIX   8
016764                         M$PUSH   T$NS,T$NESTLEV,F$TEST
                               .MCALL   M$INCR,M$SETS
```

```
        016764                          M$INCR  T$NESTLEV
               000001                   T$NESTLEV=T$NESTLEV+1
        016764                          M$SETS  T$NS,\T$NESTLEV,F$TEST
               000001                   T$NS1=F$TEST
               010033                   T$$TEST=T$TAGNUM
        016764                          M$INCR T$TAGNUM
               010034                   T$TAGNUM=T$TAGNUM+1
               000001                   T$TSTSEQ=1
   3443 016764 005737  002324                   TST     PNTF            ;IS THE PNT FLAG SET
   3444 016770 001410                           BEQ     7$              ;IF YES, PRINT THE TEST HEADER
   3445 016772                                  PRINTF  #TSHD6          ;...
                                        .MCALL  M$PRINT
                                        .IF B   #TSHD6
                                        .ERROR  ;MISSING FORMAT
                                        .MEXIT
                                        .ENDC
                                        .IF B   <>
        016772                          M$PRINT C$PNTF,#TSHD6
                                        .MCALL  M$COUNT,M$PUT,M$GNINS,M$SVC
               000001                   T$ARGCNT=1
        016772                          M$COUNT T$ARGCNT,<>,<>,<>,<>,<>,<>,<>,<>
                                        .IF NB <>
                                        M$COUNT T$ARGCNT,<>,<>,<>,<>,<>,<>,<>,<>
                                        .ENDC
                                        .IF NB <>
                                        T$ARGCNT=T$ARGCNT+1
                                        .ENDC
                                        .IRP    N,<\T$ARGCNT>
                                        M$PUT   #N,#TSHD6,<>,<>,<>,<>,<>,<>,<>,<>
                                        .ENDM
        016772                          M$PUT   #1,#TSHD6,<>,<>,<>,<>,<>,<>,<>,<>
                                        .MCALL  M$PUT1
                                        .IF NB  <#TSHD6>
        016772                          M$PUT   <#TSHD6>,<>,<>,<>,<>,<>,<>,<>,<>
                                        .MCALL  M$PUT1
                                        .IF NB  <>
                                        M$PUT   <>,<>,<>,<>,<>,<>,<>,<>,<>
                                        .ENDC
                                        .IF NB  <#TSHD6>
        016772                          M$PUT1  #TSHD6
                                        .MCALL  M$GNINS
                                        .IF B
        016772                          M$GNINS <MOV     #TSHD6,-(SP)>
                                        .IF LT SVCINS
                                        MOV     #TSHD6, (SP)
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                MOV     #TSHD6, (SP)
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
        016772 012746  023002                                                   MOV     #TSHD6,-(SP)
                                                        .NLIST
```

```
                                 .ENDC
                                 .IFF
                                 .IF DIF B,<ØTSHD6>
                                 .ERROR  ;ILL. ARG. "ØTSHD6" ONLY "B" IS ALLOWED.
                                 .MEXIT
                                 .ENDC
                                 M$GNINS <CLR    -(SP)>
                                 M$GNINS <BISB   ,(SP)>
                                 .ENDC
                                 .ENDC
                                 .ENDC
                                 .IF NB  <Ø1>
016776                           M$PUT1  Ø1
                                 .MCALL  M$GNINS
                                 .IF B
016776                           M$GNINS <MOV    Ø1,-(SP)>
                                 .IF LT SVCINS
                                 MOV     Ø1,-(SP)
                                 .MEXIT
                                 .ENDC
                                 .IF EQ SVCINS
                                 .LIST
                                         MOV     Ø1,-(SP)
                                                 .NLIST
                                 .MEXIT
                                 .ENDC
                                 .IF GT SVCINS
                                 .LIST
016776  012746  000001                                                        MOV     Ø1,-(SP)
                                                 .NLIST
                                 .ENDC
                                 .IFF
                                 .IF DIF B,<Ø1>
                                 .ERROR  ;ILL. ARG. "Ø1" ONLY "B" IS ALLOWED.
                                 .MEXIT
                                 .ENDC
                                 M$GNINS <CLR    -(SP)>
                                 M$GNINS <BISB   ,(SP)>
                                 .ENDC
                                 .ENDC
017002                           M$GNINS <MOV    SP,R0>
                                 .IF LT SVCINS
                                 MOV     SP,R0
                                 .MEXIT
                                 .ENDC
                                 .IF EQ SVCINS
                                 .LIST
                                         MOV     SP,R0
                                                 .NLIST
                                 .MEXIT
                                 .ENDC
                                 .IF GT SVCINS
                                 .LIST
017002  010600                                                                MOV     SP,R0
                                                 .NLIST
                                 .ENDC
017004                           M$SVC   C$PNTF
```

E5

E5


```
                                        .MCALL  M$GNINS,M$TSTLAB
017004                                  M$TSTLAB
                                        .MCALL  M$TLABEL,M$INCR
                                        .IIF LT T$TSTMAC, .MEXIT
                                        .RADIX  10
                                        M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                        .RADIX  8
                                        M$INCR  T$TSTSEQ
017004                                  M$GNINS <TRAP   C$PNTF>
                                        .IF LT SVCINS
                                        TRAP    C$PNTF
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                TRAP    C$PNTF
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
017004  104417                                                                                          TRAP    C$PNTF
                                                        .NLIST
                                        .ENDC
                                        .IRP    N,<\T$ARGCNT*2+2>
                                        M$GNINS <ADD    #N,SP>
                                        .ENDM
017006                                  M$GNINS <ADD    #4,SP>
                                        .IF LT SVCINS
                                        ADD     #4,SP
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                ADD     #4,SP
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
017006  062706  000004                                                                                  ADD     #4,SP
                                                        .NLIST
                                        .ENDC
                                        .MEXIT
                                        .ENDC
                                        .IF B   <>
                                        M$PRINT C$PNTF,#TSHD6,<>
                                        .MEXIT
                                        .ENDC
                                        .IF B   <>
                                        M$PRINT C$PNTF,#TSHD6,<>,<>
                                        .MEXIT
                                        .ENDC
                                        .IF B   <>
                                        M$PRINT C$PNTF,#TSHD6,<>,<>,<>
                                        .MEXIT
                                        .ENDC
```

F5

F5


```
                                                .IF B   <>
                                                M$PRINT C$PNTF,#TSHD6,<>,<>,<>,<>
                                                .MEXIT
                                                .ENDC
                                                .IF B   <>
                                                M$PRINT C$PNTF,#TSHD6,<>,<>,<>,<>,<>
                                                .MEXIT
                                                .ENDC
                                                .IF B   <>
                                                M$PRINT C$PNTF,#TSHD6,<>,<>,<>,<>,<>,<>
                                                .MEXIT
                                                .ENDC
                                                .IF B   <>
                                                M$PRINT C$PNTF,#TSHD6,<>,<>,<>,<>,<>,<>,<>
                                                .MEXIT
                                                .ENDC
                                                M$PRINT C$PNTF,#TSHD6,<>,<>,<>,<>,<>,<>,<>,<>
3446 017012 005037 002322                       7$:     CLR     ITRCNT                  ;CLEAR COUNTER
3447 017016 004737 010210                               JSR     PC,CULPA                ;CLEAR ULPA BIT IN ISR 1 AND 2
3448 017022 004737 010700                               JSR     PC,BGIN2                ;SET UP PARAMETER
3449 017026 013701 002312                       A1:     MOV     DPA1,R1                 ;GET DPA1 ADDRESS
3450 017032 062701 000040                               ADD     #40,R1                  ;CREATE MY LISTENER ADDRESS (MLA)
3451 017036 010137 002410                               MOV     R1,MLA1                 ;STORE MLA
3452 017042 032737 000001 002312                        BIT     #1,DPA1                 ;IS DPA EVEN
3453 017050 001420                                      BEQ     3$                      ;BRANCH IF YES
3454 017052 052737 000001 002434                        BIS     #1,CDAT1                ;SET ULPA BIT IN COMPARE DATA FOR ISR
3455 017060 052737 000001 002436                        BIS     #1,CDAT2                ;...
3456 017066 052737 000001 002440                        BIS     #1,CDAT3                ;...
3457 017074 052737 000001 002442                        BIS     #1,CDAT4                ;...
3458 017102 052737 000001 002444                        BIS     #1,CDAT5                ;...
3459 017110 000417                                      BR      .+40                    ;BRANCH TO BGNSEG
3460 017112 042737 000001 002434                3$:     BIC     #1,CDAT1                ;CLEAR ULPA BIT IN COMPARE DATA FOR ISR
3461 017120 042737 000001 002436                        BIC     #1,CDAT2                ;...
3462 017126 042737 000001 002440                        BIC     #1,CDAT3                ;...
3463 017134 042737 000001 002442                        BIC     #1,CDAT4                ;...
3464 017142 042737 000001 002444                        BIC     #1,CDAT5                ;...
3465 017150                                             BGNSEG
                                                .MCALL  M$PUSH,M$INCR,M$SVC
            000040                              I$SEG=F$BGN
     017150                                     M$PUSH  T$NS,T$NESTLEV,F$SEG
                                                .MCALL  M$INCR,M$SETS
     017150                                     M$INCR  T$NESTLEV
            000002                              T$NESTLEV=T$NESTLEV+1
     017150                                     M$SETS  T$NS,\T$NESTLEV,F$SEG
            000003                              T$NS2=F$SEG
            010000                              T$$SEG=S$LSYM
     017150                                     M$PUSH  T$SEK,T$SEGLEV,T$$SEG
                                                .MCALL  M$INCR,M$SETS
     017150                                     M$INCR  T$SEGLEV
            000000                              T$SEGLEV=T$SEGLEV+1
     017150                                     M$SETS  T$SEK,\T$SEGLEV,T$$SEG
            010000                              T$SEK0=T$$SEG
     017150                                     M$INCR  S$LSYM
            010001                              S$LSYM=S$LSYM+1
     017150                                     M$SVC   C$BSEG
                                                .MCALL  M$GNINS,M$TSTLAB
     017150                                     M$TSTLAB
```

78 8018 3673-4

G5

```
                                                .MCALL  M$TLABEL,M$INCR
                                                .IIF LT T$TSTMAC, .MEXIT
                                                .RADIX  10
                                                M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                                .RADIX  8
                                                M$INCR  T$TSTSEQ
      017150                                    M$GNINS <TRAP   C$BSEG>
                                                .IF LT SVCINS
                                                TRAP    C$BSEG
                                                .MEXIT
                                                .ENDC
                                                .IF EQ SVCINS
                                                .LIST
                                                        TRAP    C$BSEG
                                                                .NLIST
                                                .MEXIT
                                                .ENDC
                                                .IF GT SVCINS
                                                .LIST
      017150  104404                                                                                          TRAP    C$BSEG
                                                                .NLIST
                                                .ENDC
 3466 017152  052777  000010  163120                    BIS     #10,@CSRX               ;SELECT CHANNEL 2
 3467 017160  012737  000002  002374                    MOV     #2,CHAN                 ;LOAD CHANNEL NUMBER
 3468 017166  113777  002410  163102                    MOVB    MLA1,@IDRHX             ;-----LOAD MLA1 INTO DOR 2-----------
 3469 017174  004737  011050                            JSR     PC,LOOP                 ;WAIT A LITTLE
 3470 017200  017737  163044  002502                    MOV     @IIRX,BAD               ;GET IIR2 CONTENTS
 3471 017206  022737  000020  002502                    CMP     #20,BAD                 ;BO BIT SHOULD BE SET
 3472 017214  001410                                    BEQ     10$                     ;BRANCH IF YES
 3473 017216  012737  000020  002500                    MOV     #20,GOOD                ;SET UP DATA FOR ERROR MESSAGES
 3474 017224                                            ERRSOFT 601,E501,ERR501         ;ERROR HANDLER
                                                .MCALL  M$ERRINS
      017224                                    M$ERRINS        601,E501,ERR501,C$ERSOFT
                                                .MCALL  M$GNINS,M$WORD,M$TSTLAB
      017224                                    M$SVC   C$ERSOFT
                                                .MCALL  M$GNINS,M$TSTLAB
      017224                                    M$TSTLAB
                                                .MCALL  M$TLABEL,M$INCR
                                                .IIF LT T$TSTMAC, .MEXIT
                                                .RADIX  10
                                                M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                                .RADIX  8
                                                M$INCR  T$TSTSEQ
      017224                                    M$GNINS <TRAP   C$ERSOFT>
                                                .IF LT SVCINS
                                                TRAP    C$ERSOFT
                                                .MEXIT
                                                .ENDC
                                                .IF EQ SVCINS
                                                .LIST
                                                        TRAP    C$ERSOFT
                                                                .NLIST
                                                .MEXIT
                                                .ENDC
                                                .IF GT SVCINS
                                                .LIST
      017224  104457                                                                                          TRAP    C$ERSOFT
```

```
                                                        .NLIST
                                        .ENDC
                000012                  .RADIX  10
                                        .IF NB  601
                001131                  T$ERRNUM=601
                                        .IFF
                                        .ERROR  ;MISSING ERROR-NR
                                        .ENDC
        017226                          M$WORD  \T$ERRNUM
                                        .MCALL  M$GNINS
                                        .IRP    N,<601>
                                        M$GNINS <.WORD  N>
                                        .ENDM
        017226                          M$GNINS <.WORD  601>
                                        .IF LT SVCINS
                                        .WORD   601
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                .WORD   601
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
        017226  001131                                                                  .WORD   601
                                                        .NLIST
                                        .ENDC
                000010                  .RADIX  8
                                        .IF NB E501
        017230                          M$WORD  E501
                                        .MCALL  M$GNINS
                                        .IRP    N,<E501>
                                        M$GNINS <.WORD  N>
                                        .ENDM
        017230                          M$GNINS <.WORD  E501>
                                        .IF LT SVCINS
                                        .WORD   E501
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                .WORD   E501
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
        017230  005376                                                                  .WORD   E501
                                                        .NLIST
                                        .ENDC
                                        .IFF
                                        M$WORD  0
                                        .ENDC
                                        .IF NB ERR501
        017232                          M$WORD  ERR501
```

```
                                        .MCALL  M$GNINS
                                        .IRP    N,<ERR501>
                                        M$GNINS <.WORD  N>
                                        .ENDM
      017232                            M$GNINS <.WORD  ERR501>
                                        .IF LT SVCINS
                                        .WORD   ERR501
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                .WORD   ERR501
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
      017232  003672                                                                    .WORD   ERR501
                                                        .NLIST
                                        .ENDC
                                        .IFF
                                        M$WORD  0
                                        .ENDC
 3475 017234                                    CKLOOP                  ;BRANCH TO BGNSEG WHEN ERROR LOOP IS SET
                                        .MCALL  M$SVC
      017234                            M$SVC   C$CLP1
                                        .MCALL  M$GNINS,M$TSTLAB
      017234                            M$TSTLAB
                                        .MCALL  M$TLABEL,M$INCR
                                        .IIF LT T$TSTMAC, .MEXIT
                                        .RADIX  10
                                        M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                        .RADIX  8
                                        M$INCR  T$TSTSEQ
      017234                            M$GNINS <TRAP   C$CLP1>
                                        .IF LT SVCINS
                                        TRAP    C$CLP1
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                TRAP    C$CLP1
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
      017234  104406                                                                    TRAP    C$CLP1
                                                        .NLIST
                                        .ENDC
 3476 017236  017737  163014  002502    10$:    MOV     @ISRX,BAD               ;GET ISR2 CONTENTS
 3477 017244  022737  120040  002502            CMP     #120040,BAD             ;ATN,ATN,NDAC BIT OF ISR2 SHOULD BE SET
 3478 017252  001410                            BEQ     20$                     ;BRANCH IF YES
 3479 017254  012737  120040  002500            MOV     #120040,GOOD            ;SET UP DATA FOR ERROR MESSAGES
 3480 017262                                    ERRSOFT 602,E502,ERR501         ;ERROR HANDLER
                                        .MCALL  M$ERRINS
      017262                            M$ERRINS        602,E502,ERR501,C$ERSOFT
```

J5

```
                                .MCALL  M$GNINS,M$WORD,M$TSTLAB
017262                          M$SVC   C$ERSOFT
                                .MCALL  M$GNINS,M$TSTLAB
017262                          M$TSTLAB
                                .MCALL  M$TLABEL,M$INCR
                                .IIF LT T$TSTMAC, .MEXIT
                                .RADIX  10
                                M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                .RADIX  8
                                M$INCR  T$TSTSEQ
017262                          M$GNINS <TRAP   C$ERSOFT>
                                .IF LT SVCINS
                                TRAP    C$ERSOFT
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        TRAP    C$ERSOFT
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
017262  104457                                                                  TRAP    C$ERSOFT
                                                .NLIST
                                .ENDC
        000012                  .RADIX  10
                                .IF NB  602
        001132                  T$ERRNUM=602
                                .IFF
                                .ERROR  ;MISSING ERROR NR
                                .ENDC
017264                          M$WORD  \T$ERRNUM
                                .MCALL  M$GNINS
                                .IRP    N,<602>
                                M$GNINS <.WORD  N>
                                .ENDM
017264                          M$GNINS <.WORD  602>
                                .IF LT SVCINS
                                .WORD   602
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        .WORD   602
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
017264  001132                                                                  .WORD   602
                                                .NLIST
                                .ENDC
        000010                  .RADIX  8
                                .IF NB E502
017266                          M$WORD  E502
                                .MCALL  M$GNINS
```

K5

```
                                        .IRP    N,<E502>
                                        M$GNINS <.WORD  N>
                                        .ENDM
      017266                            M$GNINS <.WORD  E502>
                                        .IF LT SVCINS
                                        .WORD   E502
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                .WORD   E502
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
      017266  005437                                                                         .WORD   E502
                                                        .NLIST
                                        .ENDC
                                        .IFF
                                        M$WORD  0
                                        .ENDC
                                        .IF NB ERR501
      017270                            M$WORD  ERR501
                                        .MCALL  M$GNINS
                                        .IRP    N,<ERR501>
                                        M$GNINS <.WORD  N>
                                        .ENDM
      017270                            M$GNINS <.WORD  ERR501>
                                        .IF LT SVCINS
                                        .WORD   ERR501
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                .WORD   ERR501
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
      017270  003672                                                                         .WORD   ERR501
                                                        .NLIST
                                        .ENDC
                                        .IFF
                                        M$WORD  0
                                        .ENDC
 3481 017272                                    CKLOOP                  ;BRANCH TO BGNSEG WHEN ERRLOOP IS SET
                                        .MCALL  M$SVC
      017272                            M$SVC   C$CLP1
                                        .MCALL  M$GNINS,M$TSTLAB
      017272                            M$TSTLAB
                                        .MCALL  M$TLABEL,M$INCR
                                        .IIF LT T$TSTMAC, .MEXIT
                                        .RADIX  10
                                        M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                        .RADIX  8
```

L5

L5


```
                                        M$INCR  T$TSTSEQ
     017272                             M$GNINS <TRAP   C$CLP1>
                                        .IF LT SVCINS
                                        TRAP    C$CLP1
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                TRAP    C$CLP1
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
     017272  104406                                                                          TRAP    C$CLP1
                                                        .NLIST
                                        .ENDC
3482 017274  042777  000010  162776     20$:    BIC     #10,@CSRX           ;SELECT CHANNEL 1
3483 017302  012737  000001  002374             MOV     #1,CHAN             ;LOAD CHANNEL NUMBER
3484 017310  017737  162734  002502             MOV     @IIRX,BAD           ;GET IIR1 CONTENTS
3485 017316  02273?  002401  002502             CMP     #2401,BAD           ;MA,MAC,IFC,BIT IN IIR1 SHOULD BE SET
3486 017324  001410                             BEQ     30$                 ;BRANCH IF YES
3487 017326  012737  002401  002500             MOV     #2401,GOOD          ;SET UP DATA FOR ERROR MESSAGES
3488 017334                                     ERRSOFT 603,E501,ERR501     ;ERROR HANDLER
                                        .MCALL  M$ERRINS
     017334                             M$ERRINS        603,E501,ERR501,C$ERSOFT
                                        .MCALL  M$GNINS,M$WORD,M$TSTLAB
     017334                             M$SVC   C$ERSOFT
                                        .MCALL  M$GNINS,M$TSTLAB
     017334                             M$TSTLAB
                                        .MCALL  M$TLABEL,M$INCR
                                        .IIF LT T$TSTMAC, .MEXIT
                                        .RADIX  10
                                        M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                        .RADIX  8
                                        M$INCR  T$TSTSEQ
     017334                             M$GNINS <TRAP   C$ERSOFT>
                                        .IF LT SVCINS
                                        TRAP    C$ERSOFT
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                TRAP    C$ERSOFT
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .-- GT SVCINS
                                        .LIST
     017334  104457                                                                          TRAP    C$ERSOFT
                                                        .NLIST
                                        .ENDC
             000012                     .RADIX  10
                                        .IF NB  603
             001133                     T$ERRNUM=603
                                        .IFF
                                        .ERROR  ;MISSING ERROR NR
```

M5

```
                                .ENDC
017336                          M$WORD  \T$ERRNUM
                                .MCALL  M$GNINS
                                .IRP    N,<603>
                                M$GNINS <.WORD  N>
                                .ENDM
017336                          M$GNINS <.WORD  603>
                                .IF LT SVCINS
                                .WORD   603
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        .WORD   603
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
017336  001133                                                                  .WORD   603
                                                .NLIST
                                .ENDC
        000010                  .RADIX  8
                                .IF NB E501
017340                          M$WORD  E501
                                .MCALL  M$GNINS
                                .IRP    N,<E501>
                                M$GNINS <.WORD  N>
                                .ENDM
017340                          M$GNINS <.WORD  E501>
                                .IF LT SVCINS
                                .WORD   E501
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        .WORD   E501
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
017340  005376                                                                  .WORD   E501
                                                .NLIST
                                .ENDC
                                .IFF
                                M$WORD  0
                                .ENDC
                                .IF NB ERR501
017342                          M$WORD  ERR501
                                .MCALL  M$GNINS
                                .IRP    N,<ERR501>
                                M$GNINS <.WORD  N>
                                .ENDM
017342                          M$GNINS <.WORD  ERR501>
                                .IF LT SVCINS
                                .WORD   ERR501
```

N5

N5


```
                                    .MEXIT
                                    .ENDC
                                    .IF EQ SVCINS
                                    .LIST
                                            .WORD   ERR501
                                                    .NLIST
                                    .MEXIT
                                    .ENDC
                                    .IF GT SVCINS
                                    .LIST
      017342  003672                                                                                  .WORD   ERR501
                                                    .NLIST
                                    .ENDC
                                    .IFF
                                    M$WORD  0
                                    .ENDC
 3489 017344                                CKLOOP                          ;BRANCH TO BGNSEG WHEN ERRLOOP IS SET
                                    .MCALL  M$SVC
      017344                        M$SVC   C$CLP1
                                    .MCALL  M$GNINS,M$TSTLAB
      017344                        M$TSTLAB
                                    .MCALL  M$TLABEL,M$INCR
                                    .IIF LT T$TSTMAC, .MEXIT
                                    .RADIX  10
                                    M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                    .RADIX  8
                                    M$INCR  T$TSTSEQ
      017344                        M$GNINS <TRAP   C$CLP1>
                                    .IF LT SVCINS
                                    TRAP    C$CLP1
                                    .MEXIT
                                    .ENDC
                                    .IF EQ SVCINS
                                    .LIST
                                            TRAP    C$CLP1
                                                    .NLIST
                                    .MEXIT
                                    .ENDC
                                    .IF GT SVCINS
                                    .LIST
      017344  104406                                                                                  TRAP    C$CLP1
                                                    .NLIST
                                    .ENDC
 3490 017346  017737  162704  002502  30$:     MOV     @ISRX,BAD            ;GET ISR1 CONTENTS
 3491 017354  023737  002444  002502           CMP     CDAT5,BAD            ;ATN,ATN,LADS,NDAC LPAS,(ULPA) BIT SET
 3492 017362  001410                           BEQ     40$                  ;BRANCH IF YES
 3493 017364  013737  002444  002500           MOV     CDAT5,GOOD           ;SET UP DATA FOR ERROR MESSAGES
 3494 017372                                   ERRSOFT 604,E502,ERR501      ;ERROR HANDLER
                                    .MCALL  M$ERRINS
      017372                        M$ERRINS        604,E502,ERR501,C$ERSOFT
                                    .MCALL  M$GNINS,M$WORD,M$TSTLAB
      017372                        M$SVC   C$ERSOFT
                                    .MCALL  M$GNINS,M$TSTLAB
      017372                        M$TSTLAB
                                    .MCALL  M$TLABEL,M$INCR
                                    .IIF LT T$TSTMAC, .MEXIT
                                    .RADIX  10
```

```
                                M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                .RADIX  8
                                M$INCR  T$TSTSEQ
017372                          M$GNINS <TRAP   C$ERSOFT>
                                .IF LT SVCINS
                                TRAP    C$ERSOFT
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        TRAP    C$ERSOFT
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
017372  104457                                                          TRAP    C$ERSOFT
                                                .NLIST
                                .ENDC
        000012                  .RADIX  10
                                .IF NB  604
        001134                  T$ERRNUM=604
                                .IFF
                                .ERROR  ;MISSING ERROR NR
                                .ENDC
017374                          M$WORD  \T$ERRNUM
                                .MCALL  M$GNINS
                                .IRP    N,<604>
                                M$GNINS <.WORD  N>
                                .ENDM
017374                          M$GNINS <.WORD  604>
                                .IF LT SVCINS
                                .WORD   604
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        .WORD   604
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
017374  001134                                                          .WORD   604
                                                .NLIST
                                .ENDC
        000010                  .RADIX  8
                                .IF NB E502
017376                          M$WORD  E502
                                .MCALL  M$GNINS
                                .IRP    N,<E502>
                                M$GNINS <.WORD  N>
                                .ENDM
017376                          M$GNINS <.WORD  E502>
                                .IF LT SVCINS
                                .WORD   E502
                                .MEXIT
```

```
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                .WORD   E502
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
     017376  005437                                                                                   .WORD   E502
                                                        .NLIST
                                        .ENDC
                                        .IFF
                                        M$WORD  0
                                        .ENDC
                                        .IF NB ERR501
     017400                             M$WORD  ERR501
                                        .MCALL  M$GNINS
                                        .IRP    N,<ERR501>
                                        M$GNINS <.WORD  N>
                                        .ENDM
     017400                             M$GNINS <.WORD  ERR501>
                                        .IF LT SVCINS
                                        .WORD   ERR501
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                .WORD   ERR501
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
     017400  003672                                                                                   .WORD   ERR501
                                                        .NLIST
                                        .ENDC
                                        .IFF
                                        M$WORD  0
                                        .ENDC
3495 017402                                     CKLOOP                      ;BRANCH TO BGNSEG WHEN ERRLOOP IS SET
                                        .MCALL  M$SVC
     017402                             M$SVC   C$CLP1
                                        .MCALL  M$GNINS,M$TSTLAB
     017402                             M$TSTLAB
                                        .MCALL  M$TLABEL,M$INCR
                                        .IIF LT T$TSTMAC, .MEXIT
                                        .RADIX  10
                                        M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                        .RADIX  8
                                        M$INCR  T$TSTSEQ
     017402                             M$GNINS <TRAP   C$CLP1>
                                        .IF LT SVCINS
                                        TRAP    C$CLP1
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
```

```
                                         .LIST
                                                TRAP    C$CLP1
                                                        .NLIST
                                         .MEXIT
                                         .ENDC
                                         .IF GT SVCINS
                                         .LIST
      017402  104406                                                                           TRAP    C$CLP1
                                                        .NLIST
                                         .ENDC
      017404  052777  000010  162666    40$:    BIS     #10,@CSRX             ;SELECT CHANNEL 2
      017412  012737  000002  002374            MOV     #2,CHAN               ;LOAD CHANNEL NUMBER
      017420  112777  000077  162650            MOVB    #77,@IDRHX            ;-----LOAD UNL INTO DOR---------------
      017426  004737  011050                    JSR     PC,LOOP               ;WAIT A LITTLE
      017432  017737  162612  002502            MOV     @IIRX,BAD             ;GET IIR2 CONTENTS
      017440  022737  000020  002502            CMP     #20,BAD               ;CHECK BO BIT IN IIR2
      017446  001410                            BEQ     50$                   ;BRANCH IF YES
      017450  012737  000020  002500            MOV     #20,GOOD              ;SET UP DATA FOR ERROR MESSAGES
      017456                                    ERRSOFT 605,E501,ERR501       ;ERROR HANDLER
                                         .MCALL  M$ERRINS
      017456                             M$ERRINS        605,E501,ERR501,C$ERSOFT
                                         .MCALL  M$GNINS,M$WORD,M$TSTLAB
      017456                             M$SVC   C$ERSOFT
                                         .MCALL  M$GNINS,M$TSTLAB
      017456                             M$TSTLAB
                                         .MCALL  M$TLABEL,M$INCR
                                         .IIF LT T$TSTMAC, .MEXIT
                                         .RADIX  10
                                         M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                         .RADIX  8
                                         M$INCR  T$TSTSEQ
      017456                             M$GNINS <TRAP   C$ERSOFT>
                                         .IF LT SVCINS
                                         TRAP    C$ERSOFT
                                         .MEXIT
                                         .ENDC
                                         .IF EQ SVCINS
                                         .LIST
                                                TRAP    C$ERSOFT
                                                        .NLIST
                                         .MEXIT
                                         .ENDC
                                         .IF GT SVCINS
                                         .LIST
      017456  104457                                                                           TRAP    C$ERSOFT
                                                        .NLIST
                                         .ENDC
              000012                     .RADIX  10
                                         .IF NB  605
              001135                     T$ERRNUM=605
                                         .IFF
                                         .ERROR  ;MISSING ERROR NR
                                         .ENDC
      017460                             .M$WORD  \T$ERRNUM
                                         .MCALL  M$GNINS
                                         .IRP    N,<605>
                                         M$GNINS <.WORD  N>
```

78 8018 3675 6

E6

```
                                    .ENDM
        017460                      M$GNINS <.WORD  605>
                                    .IF LT SVCINS
                                    .WORD   605
                                    .MEXIT
                                    .ENDC
                                    .IF EQ SVCINS
                                    .LIST
                                            .WORD   605
                                                    .NLIST
                                    .MEXIT
                                    .ENDC
                                    .IF GT SVCINS
                                    .LIST
        017460  001135                                                          .WORD   605
                                                    .NLIST
                                    .ENDC
                000010              .RADIX  8
                                    .IF NB E501
        017462                      M$WORD  E501
                                    .MCALL  M$GNINS
                                    .IRP    N,<E501>
                                    M$GNINS <.WORD  N>
                                    .ENDM
        017462                      M$GNINS <.WORD  E501>
                                    .IF LT SVCINS
                                    .WORD   E501
                                    .MEXIT
                                    .ENDC
                                    .IF EQ SVCINS
                                    .LIST
                                            .WORD   E501
                                                    .NLIST
                                    .MEXIT
                                    .ENDC
                                    .IF GT SVCINS
                                    .LIST
        017462  005376                                                          .WORD   E501
                                                    .NLIST
                                    .ENDC
                                    .IFF
                                    M$WORD  0
                                    .ENDC
                                    .IF NB ERR501
        017464                      M$WORD  ERR501
                                    .MCALL  M$GNINS
                                    .IRP    N,<ERR501>
                                    M$GNINS <.WORD  N>
                                    .ENDM
        017464                      M$GNINS <.WORD  ERR501>
                                    .IF LT SVCINS
                                    .WORD   ERR501
                                    .MEXIT
                                    .ENDC
                                    .IF EQ SVCINS
                                    .LIST
                                            .WORD   ERR501
```

F6

```
                                                  .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
      017464  003672                                                                      .WORD   ERR501
                                                  .NLIST
                                        .ENDC
                                        .IFF
                                        M$WORD  0
                                        .ENDC
 3505 017466                                    CKLOOP                      ;BRANCH TO BGNSEG WHEN ERRLOOP IS SET
                                        .MCALL  M$SVC
      017466                            M$SVC   C$CLP1
                                        .MCALL  M$GNINS,M$TSTLAB
      017466                            M$TSTLAB
                                        .MCALL  M$TLABEL,M$INCR
                                        .IIF LT T$TSTMAC, .MEXIT
                                        .RADIX  10
                                        M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                        .RADIX  8
                                        M$INCR  T$TSTSEQ
      017466                            M$GNINS <TRAP   C$CLP1>
                                        .IF LT SVCINS
                                        TRAP    C$CLP1
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                TRAP    C$CLP1
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
      017466  104406                                                                      TRAP    C$CLP1
                                                  .NLIST
                                        .ENDC
 3506 017470  017737  162562  002502    50$:    MOV     @ISRX,BAD           ;GET ISR2 CONTENTS
 3507 017476  022737  120040  002502            CMP     #120040,BAD         ;ATN,ATN,NDAC BIT SHOULD BE SET
 3508 017504  001410                            BEQ     60$                 ;BRANCH IF YES
 3509 017506  012737  120040  002500            MOV     #120040,GOOD        ;SET UP DATA FOR ERROR MESSAGES
 3510 017514                                    ERRSOFT 606,E502,ERR501     ;ERROR HANDLER
                                        .MCALL  M$ERRINS
      017514                            M$ERRINS        606,E502,ERR501,C$ERSOFT
                                        .MCALL  M$GNINS,M$WORD,M$TSTLAB
      017514                            M$SVC   C$ERSOFT
                                        .MCALL  M$GNINS,M$TSTLAB
      017514                            M$TSTLAB
                                        .MCALL  M$TLABEL,M$INCR
                                        .IIF LT T$TSTMAC, .MEXIT
                                        .RADIX  10
                                        M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                        .RADIX  8
                                        M$INCR  T$TSTSEQ
      017514                            M$GNINS <TRAP   C$ERSOFT>
                                        .IF LT SVCINS
```

```
                                TRAP    C$ERSOFT
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        TRAP    C$ERSOFT
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
        017514  104457                                                                  TRAP    C$ERSOFT
                                                .NLIST
                                .ENDC
                000012          .RADIX  10
                                .IF NB  606
                001136          T$ERRNUM=606
                                .IFF
                                .ERROR  ;MISSING ERROR-NR
                                .ENDC
        017516                  M$WORD  \T$ERRNUM
                                .MCALL  M$GNINS
                                .IRP    N,<606>
                                M$GNINS <.WORD  N>
                                .ENDM
        017516                  M$GNINS <.WORD  606>
                                .IF LT SVCINS
                                .WORD   606
                                MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        .WORD   606
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
        017516  001136                                                                  .WORD   606
                                                .NLIST
                                .ENDC
                000010          .RADIX  8
                                .IF NB E502
        017520                  M$WORD  E502
                                .MCALL  M$GNINS
                                .IRP    N,<E502>
                                M$GNINS <.WORD  N>
                                .ENDM
        017520                  M$GNINS <.WORD  E502>
                                .IF LT SVCINS
                                .WORD   E502
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        .WORD   E502
                                                .NLIST
```

H6

```
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
       017520  005437                                                                          .WORD   E502
                                                    .NLIST
                                        .ENDC
                                        .IFF
                                        M$WORD  0
                                        .ENDC
                                        .IF NB ERR501
       017522                           M$WORD  ERR501
                                        .MCALL  M$GNINS
                                        .IRP    N,<ERR501>
                                        M$GNINS <.WORD  N>
                                        .ENDM
       017522                           M$GNINS <.WORD  ERR501>
                                        .IF LT SVCINS
                                        .WORD   ERR501
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                .WORD   ERR501
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
       017522  003672                                                                          .WORD   ERR501
                                                    .NLIST
                                        .ENDC
                                        .IFF
                                        M$WORD  0
                                        .ENDC
  3511 017524                                   CKLOOP                          ;BRANCH TO BGNSEG WHEN ERRLOOP IS SET
                                        .MCALL  M$SVC
       017524                           M$SVC   C$CLP1
                                        .MCALL  M$GNINS,M$TSTLAB
       017524                           M$TSTLAB
                                        .MCALL  M$TLABEL,M$INCR
                                        .IIF LT T$TSTMAC, .MEXIT
                                        .RADIX  10
                                        M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                        .RADIX  8
                                        M$INCR  T$TSTSEQ
       017524                           M$GNINS <TRAP   C$CLP1>
                                        .IF LT SVCINS
                                        TRAP    C$CLP1
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                TRAP    C$CLP1
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
```

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```
                                        .IF GT SVCINS
                                        .LIST
     017524  104406                                                                          TRAP    C$CLP1
                                                     .NLIST
                                        .ENDC
3512 017526  042777  000010  162544  60$:     BIC     #10,@CSRX             ;SELECT CHANNEL 1
3513 017534  012737  000001  002374           MOV     #1,CHAN               ;LOAD CHANNEL NUMBER
3514 017542  017737  162502  002502           MOV     @IIRX,BAD             ;GET IIR1 CONTENTS
3515 017550  122737  000001  002502           CMPB    #1,BAD                ;MAC BIT IN IIR1 SHOULD BE SET
3516 017556  001410                           BEQ     11$                   ;BRANCH IF YES
3517 017560  012737  000001  002500           MOV     #1,GOOD               ;SET UP DATA FOR ERROR MESSAGES
3518 017566                                   ERRSOFT 607,E501,ERR501       ;ERROR HANDLER
                                        .MCALL  M$ERRINS
     017566                             M$ERRINS        607,E501,ERR501,C$ERSOFT
                                        .MCALL  M$GNINS,M$WORD,M$TSTLAB
     017566                             M$SVC   C$ERSOFT
                                        .MCALL  M$GNINS,M$TSTLAB
     017566                             M$TSTLAB
                                        .MCALL  M$TLABEL,M$INCR
                                        .IIF LT T$TSTMAC, .MEXIT
                                        .RADIX  10
                                        M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                        .RADIX  8
                                        M$INCR  T$TSTSEQ
     017566                             M$GNINS <TRAP   C$ERSOFT>
                                        .IF LT SVCINS
                                        TRAP    C$ERSOFT
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                TRAP    C$ERSOFT
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
     017566  104457                                                                          TRAP    C$ERSOFT
                                                        .NLIST
                                        .ENDC
             000012                     .RADIX  10
                                        .IF NB  607
             001137                     T$ERRNUM=607
                                        .IFF
                                        .ERROR  ;MISSING ERROR-NR
                                        .ENDC
     017570                             M$WORD  \T$ERRNUM
                                        .MCALL  M$GNINS
                                        .IRP    N,<607>
                                        M$GNINS <.WORD  N>
                                        .ENDM
     017570                             M$GNINS <.WORD  607>
                                        .IF LT SVCINS
                                        .WORD   607
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
```

```
                                .LIST
                                        .WORD   607
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
      017570  001137                                                            .WORD   607
                                                .NLIST
                                .ENDC
              000010            .RADIX  8
                                .IF NB E501
      017572                    M$WORD  E501
                                .MCALL  M$GNINS
                                .IRP    N,<E501>
                                M$GNINS <.WORD  N>
                                .ENDM
      017572                    M$GNINS <.WORD  E501>
                                .IF LT SVCINS
                                .WORD   E501
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        .WORD   E501
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
      017572  005376                                                            .WORD   E501
                                                .NLIST
                                .ENDC
                                .IFF
                                M$WORD  0
                                .ENDC
                                .IF NB ERR501
      017574                    M$WORD  ERR501
                                .MCALL  M$GNINS
                                .IRP    N,<ERR501>
                                M$GNINS <.WORD  N>
                                .ENDM
      017574                    M$GNINS <.WORD  ERR501>
                                .IF LT SVCINS
                                .WORD   ERR501
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        .WORD   ERR501
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
      017574  003672                                                            .WORD   ERR501
                                                .NLIST
```

K6

```
                                        .ENDC
                                        .IFF
                                        M$WORD  0
                                        .ENDC
 3519 017576                                    CKLOOP                          ;BRANCH TO BGNSEG WHEN ERRLOOP IS SET
                                        .MCALL  M$SVC
      017576                            M$SVC   C$CLP1
                                        .MCALL  M$GNINS,M$TSTLAB
      017576                            M$TSTLAB
                                        .MCALL  M$TLABEL,M$INCR
                                        .IIF LT T$TSTMAC, .MEXIT
                                        .RADIX  10
                                        M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                        .RADIX  8
                                        M$INCR  T$TSTSEQ
      017576                            M$GNINS <TRAP   C$CLP1>
                                        .IF LT SVCINS
                                        TRAP    C$CLP1
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                TRAP    C$CLP1
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
      017576  104406                                                                                    TRAP    C$CLP1
                                                        .NLIST
                                        .ENDC
 3520 017600  017737  162452  002502    11$:    MOV     @ISRX,BAD               ;GET ISR1 CONTENTS
 3521 017606  023737  002434  002502            CMP     CDAT1,BAD               ;ATN,ATN,NDAC,(ULPA) BIT SHOULD BE SET
 3522 017614  001407                            BEQ     12$                     ;BRANCH IF YES
 3523 017616  013737  002434  002500            MOV     CDAT1,GOOD              ;SET UP DATA FOR ERROR MESSAGES
 3524 017624                                    ERRSOFT 608,E502,ERR501         ;ERROR HANDLER
                                        .MCALL  M$ERRINS
      017624                            M$ERRINS        608,E502,ERR501,C$ERSOFT
                                        .MCALL  M$GNINS,M$WORD,M$TSTLAB
      017624                            M$SVC   C$ERSOFT
                                        .MCALL  M$GNINS,M$TSTLAB
      017624                            M$TSTLAB
                                        .MCALL  M$TLABEL,M$INCR
                                        .IIF LT T$TSTMAC, .MEXIT
                                        .RADIX  10
                                        M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                        .RADIX  8
                                        M$INCR  T$TSTSEQ
      017624                            M$GNINS <TRAP   C$ERSOFT>
                                        .IF LT SVCINS
                                        TRAP    C$ERSOFT
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                TRAP    C$ERSOFT
                                                        .NLIST
```

L6

L6


```
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
017624  104457                                                          TRAP    C$ERSOFT
                                          .NLIST
                                .ENDC
        000012                  .RADIX  10
                                .IF NB  608
        001140                  T$ERRNUM=608
                                .IFF
                                .ERROR  ;MISSING ERROR-NR
                                .ENDC
017626                          M$WORD  \T$ERRNUM
                                .MCALL  M$GNINS
                                .IRP    N,<608>
                                M$GNINS <.WORD  N>
                                .ENDM
017626                          M$GNINS <.WORD  608>
                                .IF LT SVCINS
                                .WORD   608
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                     .WORD   608
                                          .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
017626  001140                                                          .WORD   608
                                          .NLIST
                                .ENDC
        000010                  .RADIX  8
                                .IF NB E502
017630                          M$WORD  E502
                                .MCALL  M$GNINS
                                .IRP    N,<E502>
                                M$GNINS <.WORD  N>
                                .ENDM
017630                          M$GNINS <.WORD  E502>
                                .IF LT SVCINS
                                .WORD   E502
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                     .WORD   E502
                                          .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
017630  005437                                                          .WORD   E502
                                          .NLIST
                                .ENDC
```

78 0018 3675-6

M6

```
                                        .IFF
                                        M$WORD  0
                                        .ENDC
                                        .IF NB ERR501
      017632                            M$WORD  ERR501
                                        .MCALL  M$GNINS
                                        .IRP    N,<ERR501>
                                        M$GNINS <.WORD  N>
                                        .ENDM
      017632                            M$GNINS <.WORD  ERR501>
                                        .IF LT SVCINS
                                        .WORD   ERR501
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                .WORD   ERR501
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
      017632  003672                                                            .WORD   ERR501
                                                        .NLIST
                                        .ENDC
                                        .IFF
                                        M$WORD  0
                                        .ENDC
 3525 017634                            12$:    ENDSEG
                                        .MCALL  M$POP,M$GNLS,M$SVC,M$ENDERR
      017634                            M$POP   T$NS,T$NESTLEV,T$TEMP
                                        .MCALL  M$GETS,M$DECR
                                        .IF LT  T$NESTLEV
                                        .ERROR  T$NESTLEV       ; MACRO T$NS UNDERFLOW
                                        .MEXIT
                                        .ENDC
      017634                            M$GETS  T$NS,\T$NESTLEV,T$TEMP
              000003                    T$TEMP=T$NS2
      017634                            M$DECR  T$NESTLEV
              000001                    T$NESTLEV=T$NESTLEV-1
                                        .IF EQ F$SEG-T$TEMP
      017634                            M$POP   T$SEK,T$SEGLEV,T$$SEG
                                        .MCALL  M$GETS,M$DECR
                                        .IF LT  T$SEGLEV
                                        .ERROR  T$SEGLEV        ; MACRO T$SEK UNDERFLOW
                                        .MEXIT
                                        .ENDC
      017634                            M$GETS  T$SEK,\T$SEGLEV,T$$SEG
              010000                    T$$SEG=T$SEK0
      017634                            M$DECR  T$SEGLEV
              177777                    T$SEGLEV=T$SEGLEV-1
      017634                            M$GNLS  T$$SEG
                                        .MCALL  M$GEN
                                        .IF NB T$$SEG
      017634                            M$GEN   \T$$SEG,$,SVCTAG
                                        .IF LE  SVCTAG
                                        .IIF EQ SVCTAG,.LIST
```

```
                                10000$:
                                .IIF EQ SVCTAG,.NLIST
                                .MEXIT
                                .ENDC
                                .LIST
     017634                                                                 10000$:
                                        .NLIST
                                .IFF
                                M$GEN   \S$LSYM,$,SVCTAG
                                .ENDC
     017634                     M$SVC   C$ESEG
                                .MCALL  M$GNINS,M$TSTLAB
     017634                     M$TSTLAB
                                .MCALL  M$TLABEL,M$INCR
                                .IIF LT T$TSTMAC, .MEXIT
                                .RADIX  10
                                M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                .RADIX  8
                                M$INCR  T$TSTSEQ
     017634                     M$GNINS <TRAP   C$ESEG>
                                .IF LT SVCINS
                                TRAP    C$ESEG
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        TRAP    C$ESEG
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
     017634  104405                                                              TRAP    C$ESEG
                                                .NLIST
                                .ENDC
                                .IF EQ T$SEGLEV+1
             000041             I$SEG=F$END
                                .ENDC
                                .IFF
                                M$ENDERR        ENDSEG,T$TEMP
                                .ENDC
3526 017636                             BGNSEG
                                .MCALL  M$PUSH,M$INCR,M$SVC
             000040             I$SEG=F$BGN
     017636                     M$PUSH  T$NS,T$NESTLEV,F$SEG
                                .MCALL  M$INCR,M$SETS
     017636                     M$INCR  T$NESTLEV
             000002             T$NESTLEV=T$NESTLEV+1
     017636                     M$SETS  T$NS,\T$NESTLEV,F$SEG
             000003             T$NS2=F$SEG
             010001             T$$SEG=S$LSYM
     017636                     M$PUSH  T$SEK,T$SEGLEV,T$$SEG
                                .MCALL  M$INCR,M$SETS
     017636                     M$INCR  T$SEGLEV
             000000             T$SEGLEV=T$SEGLEV+1
     017636                     M$SETS  T$SEK,\T$SEGLEV,T$$SEG
             010001             T$SEK0=T$$SEG
```

```
     017636                                        M$INCR  S$LSYM
              010002                               S$LSYM=S$LSYM+1
     017636                                        M$SVC   C$BSEG
                                                   .MCALL  M$GNINS,M$TSTLAB
     017636                                        M$TSTLAB
                                                   .MCALL  M$TLABEL,M$INCR
                                                   .IIF LT T$TSTMAC, .MEXIT
                                                   .RADIX  10
                                                   M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                                   .RADIX  8
                                                   M$INCR  T$TSTSEQ
     017636                                        M$GNINS <TRAP   C$BSEG>
                                                   .IF LT SVCINS
                                                   TRAP    C$BSEG
                                                   .MEXIT
                                                   .ENDC
                                                   .IF EQ SVCINS
                                                   .LIST
                                                           TRAP    C$BSEG
                                                                   .NLIST
                                                   .MEXIT
                                                   .ENDC
                                                   .IF GT SVCINS
                                                   .LIST
     017636   104404                                                                                       TRAP    C$BSEG
                                                                   .NLIST
                                                   .ENDC
     017640   052777  000010  162432                       BIS     #10,@CSRX               ;SELECT CHANNEL 2
     017646   012737  000002  002374                       MOV     #2,CHAN                 ;LOAD CHANNEL NUMBER
     017654   013701  002312                               MOV     DPA1,R1                 ;LOAD DPA1 IN R1
     017660   062701  000100                               ADD     #100,R1                 ;CREATE MY TALKER ADDRESS (MTA)
     017664   010137  002414                               MOV     R1,MTA1                 ;SAVE MTA
     017670                                                ENDSEG
                                                   .MCALL  M$POP,M$GNLS,M$SVC,M$ENDERR
     017670                                        M$POP   T$NS,T$NESTLEV,T$TEMP
                                                   .MCALL  M$GETS,M$DECR
                                                   .IF LT  T$NESTLEV
                                                   .ERROR  T$NESTLEV       ; MACRO T$NS UNDERFLOW
                                                   .MEXIT
                                                   .ENDC
     017670                                        M$GETS  T$NS,\T$NESTLEV,T$TEMP
              000003                               T$TEMP=T$NS2
     017670                                        M$DECR  T$NESTLEV
              000001                               T$NESTLEV=T$NESTLEV 1
                                                   .IF EQ F$SEG-T$TEMP
     017670                                        M$POP   T$SEK,T$SEGLEV,T$$SEG
                                                   .MCALL  M$GETS,M$DECR
                                                   .IF LT  T$SEGLEV
                                                   .ERROR  T$SEGLEV        ; MACRO T$SEK UNDERFLOW
                                                   .MEXIT
                                                   .ENDC
     017670                                        M$GETS  T$SEK,\T$SEGLEV,T$$SEG
              010001                               T$$SEG=T$SEK0
     017670                                        M$DECR  T$SEGLEV
              177777                               T$SEGLEV=T$SEGLEV 1
     017670                                        M$GNLS  T$$SEG
                                                   .MCALL  M$GEN
```

C7

C7


```
                                    .IF NB T$$SEG
     017670                         M$GEN   \T$$SEG,$,SVCTAG
                                    .IF LE  SVCTAG
                                    .IIF EQ SVCTAG,.LIST
                                    10001$:
                                    .IIF EQ SVCTAG,.NLIST
                                    .MEXIT
                                    .ENDC
                                    .LIST
     017670                                                                            10001$:
                                            .NLIST
                                    .IFF
                                    M$GEN   \S$LSYM,$,SVCTAG
                                    .ENDC
     017670                         M$SVC   C$ESEG
                                    .MCALL  M$GNINS,M$TSTLAB
     017670                         M$TSTLAB
                                    .MCALL  M$TLABEL,M$INCR
                                    .IIF LT T$TSTMAC, .MEXIT
                                    .RADIX  10
                                    M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                    .RADIX  8
                                    M$INCR  T$TSTSEQ
     017670                         M$GNINS <TRAP   C$ESEG>
                                    .IF LT SVCINS
                                    TRAP    C$ESEG
                                    .MEXIT
                                    .ENDC
                                    .IF EQ SVCINS
                                    .LIST
                                            TRAP    C$ESEG
                                                    .NLIST
                                    .MEXIT
                                    .ENDC
                                    .IF GT SVCINS
                                    .LIST
     017670  104405                                                                          TRAP    C$ESEG
                                                    .NLIST
                                    .ENDC
                                    .IF EQ T$SEGLEV+1
             000041                 I$SEG=F$END
                                    .ENDC
                                    .IFF
                                    M$ENDERR        ENDSEG,T$TEMP
                                    .ENDC
3533 017672                                 BGNSEG
                                    .MCALL  M$PUSH,M$INCR,M$SVC
             000040                 I$SEG=F$BGN
     017672                         M$PUSH  T$NS,T$NESTLEV,F$SEG
                                    .MCALL  M$INCR,M$SETS
     017672                         M$INCR  T$NESTLEV
             000002                 T$NESTLEV=T$NESTLEV+1
     017672                         M$SETS  T$NS,\T$NESTLEV,F$SEG
             000003                 T$NS2=F$SEG
             010002                 T$$SEG-S$LSYM
     017672                         M$PUSH  T$SEK,T$SEGLEV,T$$SEG
                                    .MCALL  M$INCR,M$SETS
```

D7

```
        017672                              M$INCR  T$SEGLEV
               000000                       T$SEGLEV=T$SEGLEV+1
        017672                              M$SETS  T$SEK,\T$SEGLEV,T$$SEG
               010002                       T$SEKO=T$$SEG
        017672                              M$INCR  S$LSYM
               010003                       S$LSYM=S$LSYM+1
        017672                              M$SVC   C$BSEG
                                            .MCALL  M$GNINS,M$TSTLAB
        017672                              M$TSTLAB
                                            .MCALL  M$TLABEL,M$INCR
                                            .IIF LT T$TSTMAC, .MEXIT
                                            .RADIX  10
                                            M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                            .RADIX  8
                                            M$INCR  T$TSTSEQ
        017672                              M$GNINS <TRAP   C$BSEG>
                                            .IF LT SVCINS
                                            TRAP    C$BSEG
                                            .MEXIT
                                            .ENDC
                                            .IF EQ SVCINS
                                            .LIST
                                                    TRAP    C$BSEG
                                                            .NLIST
                                            .MEXIT
                                            .ENDC
                                            .IF GT SVCINS
                                            .LIST
        017672 104404                                                                       TRAP    C$BSEG
                                                            .NLIST
                                            .ENDC
   3534 017674 113777 002414 162374                 MOVB    MTA1,@IDRHX             ;---LOAD TALKER ADDR. INTO DOR 2------
   3535 017702 004737 011050                        JSR     PC,LOOP                 ;WAIT A LITTLE
   3536 017706 017737 162336 002502                 MOV     @IIRX,BAD               ;GET IIR2 CONTENTS
   3537 017714 022737 000020 002502                 CMP     #20,BAD                 ;BO BIT IN IIR2 SHOULD BE SET
   3538 017722 001410                               BEQ     13$                     ;BRANCH IF YES
   3539 017724 012737 000020 002500                 MOV     #20,GOOD                ;SET UP DATA FOR ERROR MESSAGES
   3540 017732                                      ERRSOFT 609,E501,ERR501         ;ERROR HANDLER
                                            .MCALL  M$ERRINS
        017732                              M$ERRINS        609,E501,ERR501,C$ERSOFT
                                            .MCALL  M$GNINS,M$WORD,M$TSTLAB
        017732                              M$SVC   C$ERSOFT
                                            .MCALL  M$GNINS,M$TSTLAB
        017732                              M$TSTLAB
                                            .MCALL  M$TLABEL,M$INCR
                                            .IIF LT T$TSTMAC, .MEXIT
                                            .RADIX  10
                                            M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                            .RADIX  8
                                            M$INCR  T$TSTSEQ
        017732                              M$GNINS <TRAP   C$ERSOFT>
                                            .IF LT SVCINS
                                            TRAP    C$ERSOFT
                                            .MEXIT
                                            .ENDC
                                            .IF EQ SVCINS
                                            .LIST
```

E7

```
                                TRAP    C$ERSOFT
                                        .NLIST
                        .MEXIT
                        .ENDC
                        .IF GT SVCINS
                        .LIST
017732  104457                                                          TRAP    C$ERSOFT
                                        .NLIST
                        .ENDC
        000012          .RADIX  10
                        .IF NB  609
        001141          T$ERRNUM=609
                        .IFF
                        .ERROR  ;MISSING ERROR-NR
                        .ENDC
017734                  M$WORD  \T$ERRNUM
                        .MCALL  M$GNINS
                        .IRP    N,<609>
                        M$GNINS <.WORD  N>
                        .ENDM
017734                  M$GNINS <.WORD  609>
                        .IF LT SVCINS
                        .WORD   609
                        .MEXIT
                        .ENDC
                        .IF EQ SVCINS
                        .LIST
                                .WORD   609
                                        .NLIST
                        .MEXIT
                        .ENDC
                        .IF GT SVCINS
                        .LIST
017734  001141                                                          .WORD   609
                                        .NLIST
                        .ENDC
        000010          .RADIX  8
                        .IF NB E501
017736                  M$WORD  E501
                        .MCALL  M$GNINS
                        .IRP    N,<E501>
                        M$GNINS <.WORD  N>
                        .ENDM
017736                  M$GNINS <.WORD  E501>
                        .IF LT SVCINS
                        .WORD   E501
                        .MEXIT
                        .ENDC
                        .IF EQ SVCINS
                        .LIST
                                .WORD   E501
                                        .NLIST
                        .MEXIT
                        .ENDC
                        .IF GT SVCINS
                        .LIST
017736  005376                                                          .WORD   E501
```

F7

F7


```
                                                 .NLIST
                                     .ENDC
                                     .IFF
                                     M$WORD  0
                                     .ENDC
                                     .IF NB ERR501
      017740                         M$WORD  ERR501
                                     .MCALL  M$GNINS
                                     .IRP    N,<ERR501>
                                     M$GNINS <.WORD  N>
                                     .ENDM
      017740                         M$GNINS <.WORD  ERR501>
                                     .IF LT SVCINS
                                     .WORD   ERR501
                                     .MEXIT
                                     .ENDC
                                     .IF EQ SVCINS
                                     .LIST
                                             .WORD   ERR501
                                                     .NLIST
                                     .MEXIT
                                     .ENDC
                                     .IF GT SVCINS
                                     .LIST
      017740  0036"2                                                                         .WORD   ERR501
                                                     .NLIST
                                     .ENDC
                                     .IFF
                                     M$WORD  0
                                     .ENDC
 3541 01'742                                 CKLOOP                   ;BRANCH TO BGNSEG WHEN ERRLOOP IS SET
                                     .MCALL  M$SVC
      017742                         M$SVC   C$CLP1
                                     .MCALL  M$GNINS,M$TSTLAB
      017742                         M$TSTLAB
                                     .MCALL  M$TLABEL,M$INCR
                                     .IIF LT T$TSTMAC, .MEXIT
                                     .RADIX  10
                                     M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                     .RADIX  8
                                     M$INCR  T$TSTSEQ
      017742                         M$GNINS <TRAP   C$CLP1>
                                     .IF LT SVCINS
                                     TRAP    C$CLP1
                                     .MEXIT
                                     .ENDC
                                     .IF EQ SVCINS
                                     .LIST
                                             TRAP    C$CLP1
                                                     .NLIST
                                     .MEXIT
                                     .ENDC
                                     .IF GT SVCINS
                                     .LIST
      017742  104406                                                                         TRAP    C$CLP1
                                                     .NLIST
                                     .ENDC
```

78 8018 3675-4

G7

```
    3542 017744  017737  162306  002502  13$:    MOV     @ISRX,BAD               ;GET ISR2 CONTENTS
    3543 017752  022737  120040  002502          CMP     #120040,BAD             ;ATN,ATN,NDAC BIT IN ISR2 SHOULD BE SET
    3544 017760  001410                          BEQ     14$                     ;BRANCH IF YES
    3545 017762  012737  120040  002500          MOV     #120040,GOOD            ;SET UP DATA FOR ERROR MESSAGES
    3546 017770                                  ERRSOFT 610,E502,ERR501         ;ERROR HANDLER
                                         .MCALL  M$ERRINS
         017770                          M$ERRINS        610,E502,ERR501,C$ERSOFT
                                         .MCALL  M$GNINS,M$WORD,M$TSTLAB
         017770                          M$SVC   C$ERSOFT
                                         .MCALL  M$GNINS,M$TSTLAB
         017770                          M$TSTLAB
                                         .MCALL  M$TLABEL,M$INCR
                                         .IIF LT T$TSTMAC, .MEXIT
                                         .RADIX  10
                                         M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                         .RADIX  8
                                         M$INCR  T$TSTSEQ
         017770                          M$GNINS <TRAP   C$ERSOFT>
                                         .IF LT SVCINS
                                         TRAP    C$ERSOFT
                                         .MEXIT
                                         .ENDC
                                         .IF EQ SVCINS
                                         .LIST
                                                 TRAP    C$ERSOFT
                                                         .NLIST
                                         .MEXIT
                                         .ENDC
                                         .IF GT SVCINS
                                         .LIST
         017770  104457                                                                  TRAP    C$ERSOFT
                                                         .NLIST
                                         .ENDC
                 000012                  .RADIX  10
                                         .IF NB  610
                 001142                  T$ERRNUM=610
                                         .IFF
                                         .ERROR  ;MISSING ERROR NR
                                         .ENDC
         017772                          M$WORD  \T$ERRNUM
                                         .MCALL  M$GNINS
                                         .IRP    N,<610>
                                         M$GNINS <.WORD  N>
                                         .ENDM
         017772                          M$GNINS <.WORD  610>
                                         .IF LT SVCINS
                                         .WORD   610
                                         .MEXIT
                                         .ENDC
                                         .IF EQ SVCINS
                                         .LIST
                                                 .WORD   610
                                                         .NLIST
                                         .MEXIT
                                         .ENDC
                                         .IF GT SVCINS
                                         .LIST
```

```
        017772  001142                                              .WORD   610
                                          .NLIST
                              .ENDC
                000010        .RADIX  8
                              .IF NB E502
        017774                M$WORD  E502
                              .MCALL  M$GNINS
                              .IRP    N,<E502>
                              M$GNINS <.WORD  N>
                              .ENDM
        017774                M$GNINS <.WORD  E502>
                              .IF LT SVCINS
                              .WORD   E502
                              .MEXIT
                              .ENDC
                              .IF EQ SVCINS
                              .LIST
                                      .WORD   E502
                                          .NLIST
                              .MEXIT
                              .ENDC
                              .IF GT SVCINS
                              .LIST
        017774  005437                                              .WORD   E502
                                          .NLIST
                              .ENDC
                              .IFF
                              M$WORD  0
                              .ENDC
                              .IF NB ERR501
        017776                M$WORD  ERR501
                              .MCALL  M$GNINS
                              .IRP    N,<ERR501>
                              M$GNINS <.WORD  N>
                              .ENDM
        017776                M$GNINS <.WORD  ERR501>
                              .IF LT SVCINS
                              .WORD   ERR501
                              .MEXIT
                              .ENDC
                              .IF EQ SVCINS
                              .LIST
                                      .WORD   FRR501
                                          .NLIST
                              .MEXIT
                              .ENDC
                              .IF GT SVCINS
                              .LIST
        017776  003672                                              .WORD   ERR501
                                          .NLIST
                              .ENDC
                              .IFF
                              M$WORD  0
                              .ENDC
   3547 020000                        CKLOOP                 ;BRANCH TO BGNSEG WHEN ERF.OOP IS SET
                              .MCALL  M$SVC
        020000                M$SVC   C$CLP1
```

```
                                                .MCALL  M$GNINS,M$TSTLAB
     020000                                     M$TSTLAB
                                                .MCALL  M$TLABEL,M$INCR
                                                .IIF LT T$TSTMAC, .MEXIT
                                                .RADIX  10
                                                M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                                .RADIX  8
                                                M$INCR  T$TSTSEQ
     020000                                     M$GNINS <TRAP   C$CLP1>
                                                .IF LT SVCINS
                                                TRAP    C$CLP1
                                                .MEXIT
                                                .ENDC
                                                .IF EQ SVCINS
                                                .LIST
                                                        TRAP    C$CLP1
                                                                .NLIST
                                                .MEXIT
                                                .ENDC
                                                .IF GT SVCINS
                                                .LIST
     020000  104406                                                                            TRAP    C$CLP1
                                                                .NLIST
                                                .ENDC
3548 020002  042777  000010  162270  14$:       BIC     #10,@CSRX               ;SELECT CHANNEL 1
3549 020010  012737  000001  002374             MOV     #1,CHAN                 ;LOAD CHANNEL NUMBER
3550 020016  017737  162226  002502             MOV     @IIRX,BAD               ;GET IIR1 CONTENTS
3551 020024  022737  002001  002502             CMP     #2001,BAD               ;MA,MAC,BIT IN IIR1 SHOULD BE SET
3552 020032  001410                             BEQ     15$                     ;BRANCH IF YES
3553 020034  012737  002001  002500             MOV     #2001,GOOD              ;SET UP DATA FOR ERROR MESSAGES
3554 020042                                     ERRSOFT 611,E501,ERR501         ;ERROR HANDLER
                                                .MCALL  M$ERRINS
     020042                                     M$ERRINS        611,E501,ERR501,C$ERSOFT
                                                .MCALL  M$GNINS,M$WORD,M$TSTLAB
     020042                                     M$SVC   C$ERSOFT
                                                .MCALL  M$GNINS,M$TSTLAB
     020042                                     M$TSTLAB
                                                .MCALL  M$TLABEL,M$INCR
                                                .IIF LT T$TSTMAC, .MEXIT
                                                .RADIX  10
                                                M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                                .RADIX  8
                                                M$INCR  T$TSTSEQ
     020042                                     M$GNINS <TRAP   C$ERSOFT>
                                                .IF LT SVCINS
                                                TRAP    C$ERSOFT
                                                .MEXIT
                                                .ENDC
                                                .IF EQ SVCINS
                                                .LIST
                                                        TRAP    C$ERSOFT
                                                                .NLIST
                                                .MEXIT
                                                .ENDC
                                                .IF GT SVCINS
                                                .LIST
     020042  104457                                                                            TRAP    C$ERSOFT
```

J7


```
                                                        .NLIST
                                          .ENDC
                 000012                   .RADIX  10
                                          .IF NB  611
                 001143                   T$ERRNUM=611
                                          .IFF
                                          .ERROR  ;MISSING ERROR NR
                                          .ENDC
        020044                            M$WORD  \T$ERRNUM
                                          .MCALL  M$GNINS
                                          .IRP    N,<611>
                                          M$GNINS <.WORD  N>
                                          .ENDM
        020044                            M$GNINS <.WORD  611>
                                          .IF LT SVCINS
                                          .WORD   611
                                          .MEXIT
                                          .ENDC
                                          .IF EQ SVCINS
                                          .LIST
                                                  .WORD   611
                                                        .NLIST
                                          .MEXIT
                                          .ENDC
                                          .IF GT SVCINS
                                          .LIST
        020044   001143                                                                              .WORD   611
                                                        .NLIST
                                          .ENDC
                 000010                   .RADIX  8
                                          .IF NB E501
        020046                            M$WORD  E501
                                          .MCALL  M$GNINS
                                          .IRP    N,<E501>
                                          M$GNINS <.WORD  N>
                                          .ENDM
        020046                            M$GNINS <.WORD  E501>
                                          .IF LT SVCINS
                                          .WORD   E501
                                          .MEXIT
                                          .ENDC
                                          .IF EQ SVCINS
                                          .LIST
                                                  .WORD   E501
                                                        .NLIST
                                          .MEXIT
                                          .ENDC
                                          .IF GT SVCINS
                                          .LIST
        020046   005376                                                                              .WORD   E501
                                                        .NLIST
                                          .ENDC
                                          .IFF
                                          M$WORD  0
                                          .ENDC
                                          .IF NB ERR501
        020050                            M$WORD  ERR501
```

K7

```
                                        .MCALL  M$GNINS
                                        .IRP    N,<ERR501>
                                        M$GNINS <.WORD  N>
                                        .ENDM
      020050                            M$GNINS <.WORD  ERR501>
                                        .IF LT SVCINS
                                        .WORD   ERR501
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                .WORD   ERR501
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
      020050  003672                                                                            .WORD   ERR501
                                                        .NLIST
                                        .ENDC
                                        .IFF
                                        M$WORD  0
                                        .ENDC
 3555 020052                                    CKLOOP                          ;BRANCH TO BGNSEG WHEN ERRLOOP IS SET
                                        .MCALL  M$SVC
      020052                            M$SVC   C$CLP1
                                        .MCALL  M$GNINS,M$TSTLAB
      020052                            M$TSTLAB
                                        .MCALL  M$TLABEL,M$INCR
                                        .IIF LT T$TSTMAC, .MEXIT
                                        .RADIX  10
                                        M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                        .RADIX  8
                                        M$INCR  T$TSTSEQ
      020052                            M$GNINS <TRAP   C$CLP1>
                                        .IF LT SVCINS
                                        TRAP    C$CLP1
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                TRAP    C$CLP1
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
      020052  104406                                                                            TRAP    C$CLP1
                                                        .NLIST
                                        .ENDC
 3556 020054  017737  162176  002502    15$:    MOV     @ISRX,BAD               ;GET ISR1 CONTENTS
 3557 020062  023737  002440  002502            CMP     CDAT3,BAD               ;ATN,ATN,TADS,NDAC,TPAS,(ULPA) BIT  SET
 3558 020070  001410                            BEQ     16$                     ;BRANCH IF YES
 3559 020072  013737  002440  002500            MOV     CDAT3,GOOD              ;SET UP DATA FOR ERROR MESSAGE
 3560 020100                                    ERRSOFT 612,E502,ERR501         ;ERROR HANDLER
                                        .MCALL  M$ERRINS
      020100                            M$ERRINS        612,E502,ERR501,C$ERSOFT
```

```
                                    .MCALL  M$GNINS,M$WORD,M$TSTLAB
      020100                        M$SVC   C$ERSOFT
                                    .MCALL  M$GNINS,M$TSTLAB
      020100                        M$TSTLAB
                                    .MCALL  M$TLABEL,M$INCR
                                    .IIF LT T$TSTMAC, .MEXIT
                                    .RADIX  10
                                    M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                    .RADIX  8
                                    M$INCR  T$TSTSEQ
      020100                        M$GNINS <TRAP   C$ERSOFT>
                                    .IF LT SVCINS
                                    TRAP    C$ERSOFT
                                    .MEXIT
                                    .ENDC
                                    .IF EQ SVCINS
                                    .LIST
                                            TRAP    C$ERSOFT
                                                    .NLIST
                                    .MEXIT
                                    .ENDC
                                    .IF GT SVCINS
                                    .LIST
      020100  104457                                                                TRAP    C$ERSOFT
                                                    .NLIST
                                    .ENDC
              000012                .RADIX  10
                                    .IF NB  612
              001144                T$ERRNUM=612
                                    .IFF
                                    .ERROR  ;MISSING ERROR-NR
                                    .ENDC
      020102                        M$WORD  \T$ERRNUM
                                    .MCALL  M$GNINS
                                    .IRP    N,<612>
                                    M$GNINS <.WORD  N>
                                    .ENDM
      020102                        M$GNINS <.WORD  612>
                                    .IF LT SVCINS
                                    .WORD   612
                                    .MEXIT
                                    .ENDC
                                    .IF EQ SVCINS
                                    .LIST
                                            .WORD   612
                                                    .NLIST
                                    .MEXIT
                                    .ENDC
                                    .IF GT SVCINS
                                    .LIST
      020102  001144                                                                .WORD   612
                                                    .NLIST
                                    .ENDC
              000010                .RADIX  8
                                    .IF NB E502
      020104                        M$WORD  E502
                                    .MCALL  M$GNINS
```

```
                                  .IRP    N,<E502>
                                  M$GNINS <.WORD  N>
                                  .ENDM
     020104                       M$GNINS <.WORD  E502>
                                  .IF LT SVCINS
                                  .WORD   E502
                                  .MEXIT
                                  .ENDC
                                  .IF EQ SVCINS
                                  .LIST
                                          .WORD   E502
                                                  .NLIST
                                  .MEXIT
                                  .ENDC
                                  .IF GT SVCINS
                                  .LIST
     020104  005437                                                          .WORD   E502
                                                  .NLIST
                                  .ENDC
                                  .IFF
                                  M$WORD  0
                                  .ENDC
                                  .IF NB ERR501
     020106                       M$WORD  ERR501
                                  .MCALL  M$GNINS
                                  .IRP    N,<ERR501>
                                  M$GNINS <.WORD  N>
                                  .ENDM
     020106                       M$GNINS <.WORD  ERR501>
                                  .IF LT SVCINS
                                  .WORD   ERR501
                                  .MEXIT
                                  .ENDC
                                  .IF EQ SVCINS
                                  .LIST
                                          .WORD   ERR501
                                                  .NLIST
                                  .MEXIT
                                  .ENDC
                                  .IF GT SVCINS
                                  .LIST
     020106  003672                                                          .WORD   ERR501
                                                  .NLIST
                                  .ENDC
                                  .IFF
                                  M$WORD  0
                                  .ENDC
3561 020110                               CKLOOP                  ;BRANCH TO BGNSEG WHEN ERRLOOP IS SET
                                  .MCALL  M$SVC
     020110                       M$SVC   C$CLP1
                                  .MCALL  M$GNINS,M$TSTLAB
     020110                       M$TSTLAB
                                  .MCALL  M$TLABEL,M$INCR
                                  .IIF LT T$TSTMAC, .MEXIT
                                  .RADIX  10
                                  M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                  .RADIX  8
```

N7

```
                                                M$INCR  T$TSTSEQ
      020110                                    M$GNINS <TRAP   C$CLP1>
                                                .IF LT SVCINS
                                                TRAP    C$CLP1
                                                .MEXIT
                                                .ENDC
                                                .IF EQ SVCINS
                                                .LIST
                                                        TRAP    C$CLP1
                                                                .NLIST
                                                .MEXIT
                                                .ENDC
                                                .IF GT SVCINS
                                                .LIST
      020110  104406                                                                              TRAP    C$CLP1
                                                                .NLIST
                                                .ENDC
 3562 020112  052777  000010  162160            16$:    BIS     #10,@CSRX               ;SELECT CHANNEL 2
 3563 020120  012737  000002  002374                    MOV     #2,CHAN                 ;LOAD CHANNEL NUMBER
 3564 020126  112777  000137  162142                    MOVB    #137,@IDRHX             ;-----LOAD UNT INTO DOR 2------------
 3565 020134  004737  011050                            JSR     PC,LOOP                 ;WAIT A LITTLE
 3566 020140  017737  162104  002502                    MOV     @IIRX,BAD               ;GET IIR2 CONTENTS
 3567 020146  022737  000020  002502                    CMP     #20,BAD                 ;BO BIT IN IIR2 SHOULD BE SET
 3568 020154  001410                                    BEQ     21$                     ;BRANCH IF YES
 3569 020156  012737  000020  002500                    MOV     #20,GOOD                ;SET UP DATA FOR ERROR MESSAGES
 3570 020164                                            ERRSOFT 613,E501,ERR501         ;ERROR HANDLER
                                                .MCALL  M$ERRINS
      020164                                    M$ERRINS        613,E501,ERR501,C$ERSOFT
                                                .MCALL  M$GNINS,M$WORD,M$TSTLAB
      020164                                    M$SVC   C$ERSOFT
                                                .MCALL  M$GNINS,M$TSTLAB
      020164                                    M$TSTLAB
                                                .MCALL  M$TLABEL,M$INCR
                                                .IIF LT T$TSTMAC, .MEXIT
                                                .RADIX  10
                                                M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                                .RADIX  8
                                                M$INCR  T$TSTSEQ
      020164                                    M$GNINS <TRAP   C$ERSOFT>
                                                .IF LT SVCINS
                                                TRAP    C$ERSOFT
                                                .MEXIT
                                                .ENDC
                                                .IF EQ SVCINS
                                                .LIST
                                                        TRAP    C$ERSOFT
                                                                .NLIST
                                                .MEXIT
                                                .ENDC
                                                .IF GT SVCINS
                                                .LIST
      020164  104457                                                                              TRAP    C$ERSOFT
                                                                .NLIST
                                                .ENDC
              000012                            .RADIX  10
                                                .IF NB  613
              001145                            T$ERRNUM=613
```

```
                                        .IFF
                                        .ERROR  ;MISSING ERROR NR
                                        .ENDC
        020166                          M$WORD  \T$ERRNUM
                                        .MCALL  M$GNINS
                                        .IRP    N,<613>
                                        M$GNINS <.WORD  N>
                                        .ENDM
        020166                          M$GNINS <.WORD  613>
                                        .IF LT SVCINS
                                        .WORD   613
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                .WORD   613
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
        020166  001145                                                                  .WORD   613
                                                        .NLIST
                                        .ENDC
                000010                  .RADIX  8
                                        .IF NB E501
        020170                          M$WORD  E501
                                        .MCALL  M$GNINS
                                        .IRP    N,<E501>
                                        M$GNINS <.WORD  N>
                                        .ENDM
        020170                          M$GNINS <.WORD  E501>
                                        .IF LT SVCINS
                                        .WORD   E501
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                .WORD   E501
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
        020170  005376                                                                  .WORD   E501
                                                        .NLIST
                                        .ENDC
                                        .IFF
                                        M$WORD  0
                                        .ENDC
                                        .IF NB ERR501
        020172                          M$WORD  ERR501
                                        .MCALL  M$GNINS
                                        .IRP    N,<ERR501>
                                        M$GNINS <.WORD  N>
                                        .ENDM
        020172                          M$GNINS <.WORD  ERR501>
```

```
                                        .IF LT SVCINS
                                        .WORD   ERR501
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                .WORD   ERR501
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
      020172  003672                                                                    .WORD   ERR501
                                                        .NLIST
                                        .ENDC
                                        .IFF
                                        M$WORD  0
                                        .ENDC
 3571 020174                                    CKLOOP                          ;BRANCH TO BGNSEG WHEN ERRLOOP IS SET
                                        .MCALL  M$SVC
      020174                            M$SVC   C$CLP1
                                        .MCALL  M$GNINS,M$TSTLAB
      020174                            M$TSTLAB
                                        .MCALL  M$TLABEL,M$INCR
                                        .IIF LT T$TSTMAC, .MEXIT
                                        .RADIX  10
                                        M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                        .RADIX  8
                                        M$INCR  T$TSTSEQ
      020174                            M$GNINS <TRAP   C$CLP1>
                                        .IF LT SVCINS
                                        TRAP    C$CLP1
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                TRAP    C$CLP1
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
      020174  104406                                                                    TRAP    C$CLP1
                                                        .NLIST
                                        .ENDC
 3572 020176  017737  162054  002502    21$:    MOV     @ISRX,BAD               ;GET ISR2 CONTENTS
 3573 020204  022737  120040  002502            CMP     #120040,BAD             ;ATN,ATN,NDAC IN ISR2 SHOULD BE SET
 3574 020212  001410                            BEQ     22$                     ;BRANCH IF YES
 3575 020214  012737  120040  002500            MOV     #120040,GOOD            ;SET UP DATA FOR ERROR MESSAGES
 3576 020222                                    ERRSOFT 614,E502,ERR501         ;ERROR HANDLER
                                        .MCALL  M$ERRINS
      020222                            M$ERRINS        614,E502,ERR501,C$ERSOFT
                                        .MCALL  M$GNINS,M$WORD,M$TSTLAB
      020222                            M$SVC   C$ERSOFT
                                        .MCALL  M$GNINS,M$TSTLAB
      020222                            M$TSTLAB
                                        .MCALL  M$TLABEL,M$INCR
```

D8

```
                                        .IIF LT T$TSTMAC, .MEXIT
                                        .RADIX  10
                                        M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                        .RADIX  8
                                        M$INCR  T$TSTSEQ
      020222                            M$GNINS <TRAP   C$ERSOFT>
                                        .IF LT SVCINS
                                        TRAP    C$ERSOFT
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                TRAP    C$ERSOFT
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
      020222  104457                                                                  TRAP    C$ERSOFT
                                                        .NLIST
                                        .ENDC
              000012                    .RADIX  10
                                        .IF NB  614
              001146                    T$ERRNUM=614
                                        .IFF
                                        .ERROR  ;MISSING ERROR-NR
                                        .ENDC
      020224                            M$WORD  \T$ERRNUM
                                        .MCALL  M$GNINS
                                        .IRP    N,<614>
                                        M$GNINS <.WORD  N>
                                        .ENDM
      020224                            M$GNINS <.WORD  614>
                                        .IF LT SVCINS
                                        .WORD   614
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                .WORD   614
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
      020224  001146                                                                  .WORD   614
                                                        .NLIST
                                        .ENDC
              000010                    .RADIX  8
                                        .IF NB E502
      020226                            M$WORD  E502
                                        .MCALL  M$GNINS
                                        .IRP    N,<E502>
                                        M$GNINS <.WORD  N>
                                        .ENDM
      020226                            M$GNINS <.WORD  E502>
                                        .IF LT SVCINS
```

```
                                        .WORD   E502
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                .WORD   E502
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
        020226  005437                                                                  .WORD   E502
                                                        .NLIST
                                        .ENDC
                                        .IFF
                                        M$WORD  0
                                        .ENDC
                                        .IF NB ERR501
        020230                          M$WORD  ERR501
                                        .MCALL  M$GNINS
                                        .IRP    N,<ERR501>
                                        M$GNINS <.WORD  N>
                                        .ENDM
        020230                          M$GNINS <.WORD  ERR501>
                                        .IF LT SVCINS
                                        .WORD   ERR501
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                .WORD   ERR501
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
        020230  003672                                                                  .WORD   ERR501
                                                        .NLIST
                                        .ENDC
                                        .IFF
                                        M$WORD  0
                                        .ENDC
   3577 020232                                  CKLOOP                          ;BRANCH TO BGNSEG WHEN ERRLOOP IS SET
                                        .MCALL  M$SVC
        020232                          M$SVC   C$CLP1
                                        .MCALL  M$GNINS,M$TSTLAB
        020232                          M$TSTLAB
                                        .MCALL  M$TLABEL,M$INCR
                                        .IIF LT T$TSTMAC, .MEXIT
                                        .RADIX  10
                                        M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                        .RADIX  8
                                        M$INCR  T$TSTSEQ
        020232                          M$GNINS <TRAP   C$CLP1>
                                        .IF LT SVCINS
                                        TRAP    C$CLP1
                                        .MEXIT
```

```
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                              TRAP     C$CLP1
                                                       .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
      020232  104406                                                                            TRAP     C$CLP1
                                                       .NLIST
                                        .ENDC
 3578 020234  042777  000010  162036    22$:  BIC      #10,@CSRX              ;SELECT CHANNEL 1
 3579 020242  012737  000001  002374          MOV      #1,CHAN                ;LOAD CHANNEL NUMBER
 3580 020250  017737  161774  002502          MOV      @IIRX,BAD              ;GET IIR1 CONTENTS
 3581 020256  022737  000001  002502          CMP      #1,BAD                 ;MAC BIT IN IIR1 SHOULD BE SET
 3582 020264  001410                          BEQ      23$                    ;BRANCH IF YES
 3583 020266  012737  000001  002500          MOV      #1,GOOD                ;SET UP DATA FOR ERROR MESSAGES
 3584 020274                                  ERRSOFT 615,E501,ERR501         ;ERROR HANDLER
                                        .MCALL  M$ERRINS
      020274                            M$ERRINS       615,E501,ERR501,C$ERSOFT
                                        .MCALL  M$GNINS,M$WORD,M$TSTLAB
      020274                            M$SVC   C$ERSOFT
                                        .MCALL  M$GNINS,M$TSTLAB
      020274                            M$TSTLAB
                                        .MCALL  M$TLABEL,M$INCR
                                        .IIF LT T$TSTMAC, .MEXIT
                                        .RADIX  10
                                        M$TLABEL       \T$TESTNUN,\T$TSTSEQ
                                        .RADIX  8
                                        M$INCR  T$TSTSEQ
      020274                            M$GNINS <TRAP   C$ERSOFT>
                                        .IF LT SVCINS
                                        TRAP    C$ERSOFT
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                              TRAP     C$ERSOFT
                                                       .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
      020274  104457                                                                            TRAP     C$ERSOFT
                                                       .NLIST
                                        .ENDC
              000012                    .RADIX  10
                                        .IF NB  615
              001147                    T$ERRNUM=615
                                        .IFF
                                        .ERROR  ;MISSING ERROR NR
                                        .ENDC
      020276                            M$WORD  \T$ERRNUM
                                        .MCALL  M$GNINS
                                        .IRP    N,<615>
                                        M$GNINS <.WORD  N>
```

```
                                        .ENDM
        020276                          M$GNINS <.WORD  615>
                                        .IF LT SVCINS
                                        .WORD   615
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                .WORD   615
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
        020276  001147                                                                          .WORD   615
                                                        .NLIST
                                        .ENDC
                000010                  .RADIX  8
                                        .IF NB E501
        020300                          M$WORD  E501
                                        .MCALL  M$GNINS
                                        .IRP    N,<E501>
                                        M$GNINS <.WORD  N>
                                        .ENDM
        020300                          M$GNINS <.WORD  E501>
                                        .IF LT SVCINS
                                        .WORD   E501
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                .WORD   E501
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
        020300  005376                                                                          .WORD   E501
                                                        .NLIST
                                        .ENDC
                                        .IFF
                                        M$WORD  0
                                        .ENDC
                                         IF NB ERR501
        020302                          M$WORD  ERR501
                                        .MCALL  M$GNINS
                                        .IRP    N,<ERR501>
                                        M$GNINS <.WORD  N>
                                        .ENDM
        020302                          M;GNINS <.WORD  ERR501>
                                        .IF LT SVCINS
                                        .WORD   ERR501
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                .WORD   ERR501
```

H8

```
                                                    .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
      020302  003672                                                                    .WORD   ERR501
                                                    .NLIST
                                        .ENDC
                                        .IFF
                                        M$WORD  0
                                        .ENDC
3585  020304                                  CKLOOP                        ;BRANCH TO BGNSEG WHEN ERRLOOP IS SET
                                        .MCALL  M$SVC
      020304                            M$SVC   C$CLP1
                                        .MCALL  M$GNINS,M$TSTLAB
      020304                            M$TSTLAB
                                        .MCALL  M$TLABEL,M$INCR
                                        .IIF LT T$TSTMAC, .MEXIT
                                        .RADIX  10
                                        M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                        .RADIX  8
                                        M$INCR  T$TSTSEQ
      020304                            M$GNINS <TRAP   C$CLP1>
                                        .IF LT SVCINS
                                        TRAP    C$CLP1
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                TRAP    C$CLP1
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
      020304  104406                                                                    TRAP    C$CLP1
                                                    .NLIST
                                        .ENDC
3586  020306  017737  161744  002502    23$:    MOV     @ISRX,BAD               ;GET ISR1 CONTENTS
3587  020314  023737  002434  002502            CMP     CDAT1,BAD               ;ATN,ATN,NDAC,(ULPA)BITS SHOULD BE SET
3588  020322  001407                            BEQ     24$                     ;BRANCH IF YES
3589  020324  013737  002434  002500            MOV     CDAT1,GOOD              ;SET UP DATA FOR ERROR MESSAGES
3590  020332                                    ERRSOFT 616,E502,ERR501         ;ERROR HANDLER
                                        .MCALL  M$ERRINS
      020332                            M$ERRINS        616,E502,ERR501,C$ERSOFT
                                        .MCALL  M$GNINS,M$WORD,M$TSTLAB
      020332                            M$SVC   C$ERSOFT
                                        .MCALL  M$GNINS,M$TSTLAB
      020332                            M$TSTLAB
                                        .MCALL  M$TLABEL,M$INCR
                                        .IIF LT T$TSTMAC, .MEXIT
                                        .RADIX  10
                                        M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                        .RADIX  8
                                        M$INCR  T$TSTSEQ
      020332                            M$GNINS <TRAP   C$ERSOFT>
                                        .IF LT SVCINS
```

I8

```
                                        TRAP    C$ERSOFT
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                TRAP    C$ERSOFT
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
        020332  104457                                                                          TRAP    C$ERSOFT
                                                        .NLIST
                                        .ENDC
                000012                  .RADIX  10
                                        .IF NB  616
                001150                  T$ERRNUM=616
                                        .IFF
                                        .ERROR  ;MISSING ERROR-NR
                                        .ENDC
        020334                          M$WORD  \T$ERRNUM
                                        .MCALL  M$GNINS
                                        .IRP    N,<616>
                                        M$GNINS <.WORD  N>
                                        .ENDM
        020334                          M$GNINS <.WORD  616>
                                        .IF LT SVCINS
                                        .WORD   616
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                .WORD   616
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
        020334  001150                                                                          .WORD   616
                                                        .NLIST
                                        .ENDC
                000010                  .RADIX  8
                                        .IF NB E502
        020336                          M$WORD  E502
                                        .MCALL  M$GNINS
                                        .IRP    N,<E502>
                                        M$GNINS <.WORD  N>
                                        .ENDM
        020336                          M$GNINS <.WORD  E502>
                                        .IF LT SVCINS
                                        .WORD   E502
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                .WORD   E502
                                                        .NLIST
```

```
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
     020336  005437                                                                    .WORD   E502
                                          .NLIST
                                .ENDC
                                .IFF
                                M$WORD  0
                                .ENDC
                                .IF NB ERR501
     020340                     M$WORD  ERR501
                                .MCALL  M$GNINS
                                .IRP    N,<ERR501>
                                M$GNINS <.WORD  N>
                                .ENDM
     020340                     M$GNINS <.WORD  ERR501>
                                .IF LT SVCINS
                                .WORD   ERR501
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                     .WORD   ERR501
                                          .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
     020340  003672                                                                    .WORD   ERR501
                                          .NLIST
                                .ENDC
                                .IFF
                                M$WORD  0
                                .ENDC
3591 020342                     24$:    ENDSEG
                                .MCALL  M$POP,M$GNLS,M$SVC,M$ENDERR
     020342                     M$POP   T$NS,T$NESTLEV,T$TEMP
                                .MCALL  M$GETS,M$DECR
                                .IF LT  T$NESTLEV
                                .ERROR  T$NESTLEV       ; MACRO T$NS UNDERFLOW
                                .MEXIT
                                .ENDC
     020342                     M$GETS  T$NS,\T$NESTLEV,T$TEMP
             000003             T$TEMP=T$NS2
     020342                     M$DECR  T$NESTLEV
             000001             T$NESTLEV=T$NESTLEV 1
                                .IF EQ F$SEG T$TEMP
     020342                     M$POP   T$SEK,T$SEGLEV,T$$SEG
                                .MCALL  M$GETS,M$DECR
                                .IF LT  T$SEGLEV
                                .ERROR  T$SEGLEV        ; MACRO T$SEK UNDERFLOW
                                .MEXIT
                                .ENDC
     020342                     M$GETS  T$SEK,\T$SEGLEV,T$$SEG
             010002             T$$SEG=T$SEK0
     020342                     M$DECR  T$SEGLEV
```

```
                177777                  T$SEGLEV=T$SEGLEV 1
        020342                          M$GNLS  T$$SEG
                                        .MCALL  M$GEN
                                        .IF NB T$$SEG
        020342                          M$GEN   \T$$SEG,$,SVCTAG
                                        .IF LE  SVCTAG
                                        .IIF EQ SVCTAG,.LIST
                                        10002$:
                                        .IIF EQ SVCTAG,.NLIST
                                        .MEXIT
                                        .ENDC
                                        .LIST
        020342                                                                  10002$:
                                                .NLIST
                                        .IFF
                                        M$GEN   \S$LSYM,$,SVCTAG
                                        .ENDC
        020342                          M$SVC   C$ESEG
                                        .MCALL  M$GNINS,M$TSTLAB
        020342                          M$TSTLAB
                                        .MCALL  M$TLABEL,M$INCR
                                        .IIF LT T$TSTMAC, .MEXIT
                                        .RADIX  10
                                        M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                        .RADIX  8
                                        M$INCR  T$TSTSEQ
        020342                          M$GNINS <TRAP   C$ESEG>
                                        .IF LT SVCINS
                                        TRAP    C$ESEG
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                TRAP    C$ESEG
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
        020342  104405                                                              TRAP    C$ESEG
                                                        .NLIST
                                        .ENDC
                                        .IF EQ T$SEGLEV+1
                000041                  I$SEG=F$END
                                        .ENDC
                                        .IFF
                                        M$ENDERR        ENDSEG,T$TEMP
                                        .ENDC
   3592                                         ;+++------ --------- ---- ----- ----- ---- ---- ------ -------- --
   3593                                         ;PART 2 OF THE ADDRESS REGISTER TEST.
   3594                                         ;THIS PART CHECKS THE "DAL","DAT","EDPA" BITS IN THE IEEE
   3595                                         ; ADDRESS REGISTER.
   3596                                         ;+++- ---------- ---- ----   ---- --- ---- ------------------
   3597 020344  013701  002312                  MOV     DPA1,R1                 ;GET DEVICE PRIM. ADDR. 1
   3598 020350  052701  000040                  BIS     #40,R1                  ;ADD DAT BIT TO DAP1
   3599 020354  110177  161674                  MOVB    R1,@IIRHX               ;LOAD DEVICE PRIM. ADDR.1 + DAT BIT
   3600 020360                                  BGNSEG
```

```
                                         .MCALL  M$PUSH,M$INCR,M$SVC
              000040                     I$SEG=F$BGN
      020360                             M$PUSH  T$NS,T$NESTLEV,F$SEG
                                         .MCALL  M$INCR,M$SETS
      020360                             M$INCR  T$NESTLEV
              000002                     T$NESTLEV=T$NESTLEV+1
      020360                             M$SETS  T$NS,\T$NESTLEV,F$SEG
              000003                     T$NS2=F$SEG
              010003                     T$$SEG=S$LSYM
      020360                             M$PUSH  T$SEK,T$SEGLEV,T$$SEG
                                         .MCALL  M$INCR,M$SETS
      020360                             M$INCR  T$SEGLEV
              000000                     T$SEGLEV=T$SEGLEV+1
      020360                             M$SETS  T$SEK,\T$SEGLEV,T$$SEG
              010003                     T$SEK0=T$$SEG
      020360                             M$INCR  S$LSYM
              010004                     S$LSYM=S$LSYM+1
      020360                             M$SVC   C$BSEG
                                         .MCALL  M$GNINS,M$TSTLAB
      020360                             M$TSTLAB
                                         .MCALL  M$TLABEL,M$INCR
                                         .IIF LT T$TSTMAC, .MEXIT
                                         .RADIX  10
                                         M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                         .RADIX  8
                                         M$INCR  T$TSTSEQ
      020360                             M$GNINS <TRAP   C$BSEG>
                                         .IF LT SVCINS
                                         TRAP    C$BSEG
                                         .MEXIT
                                         .ENDC
                                         .IF EQ SVCINS
                                         .LIST
                                                 TRAP    C$BSEG
                                                         .NLIST
                                         .MEXIT
                                         .ENDC
                                         .IF GT SVCINS
                                         .LIST
      020360  104404                                                                         TRAP    C$BSEG
                                                         .NLIST
                                         .ENDC
      020362  052777  000010  161710             BIS     #10,@CSRX               ;SELECT CHANNEL 2
      020370  012737  000002  002374             MOV     #2,CHAN                 ;LOAD CHANNEL NUMBER
      020376  113777  002410  161672             MOVB    MLA1,@IDRHX             ;----LOAD MLA IN DOR REGISTER - -- - -
      020404  004737  011050             COPA1:  JSR     PC,LOOP                 ;WAIT A LITTLE
      020410  042777  000010  161662             BIC     #10,@CSRX               ;SELECT CHANNEL 1
      020416  012737  000001  002374             MOV     #1,CHAN                 ;LOAD CHANNEL NUMBER
      020424  017737  161626  002502             MOV     @ISRX,BAD               ;GET ISR1 CONTENTS
      020432  023737  002444  002502             CMP     CDAT5,BAD               ;ATN,ATN,LADS,NDAC,LPAS,(ULPA)BIT  SET
      020440  001410                             BEQ     40$                     ;BRANCH IF YES
      020442  013737  002444  002500             MOV     CDAT5,GOOD              ;SET UP DATA FOR ERROR MESSAGES
      020450                                     ERRSOFT 617,E502,ERR501         ;ERROR HANDLER
                                         .MCALL  M$ERRINS
      020450                             M$ERRINS        617,E502,ERR501,C$ERSOFT
                                         .MCALL  M$GNINS,M$WORD,M$TSTLAB
      020450                             M$SVC   C$ERSOFT
```

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```
                                .MCALL  M$GNINS,M$TSTLAB
020450                          M$TSTLAB
                                .MCALL  M$TLABEL,M$INCR
                                .IIF LT T$TSTMAC, .MEXIT
                                .RADIX  10
                                M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                .RADIX  8
                                M$INCR  T$TSTSEQ
020450                          M$GNINS <TRAP   C$ERSOFT>
                                .IF LT SVCINS
                                TRAP    C$ERSOFT
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        TRAP    C$ERSOFT
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
020450  104457                                                          TRAP    C$ERSOFT
                                                .NLIST
                                .ENDC
        000012                  .RADIX  10
                                .IF NB  617
        001151                  T$ERRNUM=617
                                .IFF
                                .ERROR  ;MISSING ERROR-NR
                                .ENDC
020452                          M$WORD  `T$ERRNUM
                                .MCALL  M$GNINS
                                .IRP    N,<617>
                                M$GNINS <.WORD  N>
                                .ENDM
020452                          M$GNINS <.WORD  617>
                                .IF LT SVCINS
                                .WORD   617
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        .WORD   617
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
020452  001151                                                          .WORD   617
                                                .NLIST
                                .ENDC
        000010                  .RADIX  8
                                .IF NB E502
020454                          M$WORD  E502
                                .MCALL  M$GNINS
                                .IRP    N,<E502>
                                M$GNINS <.WORD  N>
```

```
                                .ENDM
     020454                     M$GNINS <.WORD  E502>
                                .IF LT SVCINS
                                .WORD   E502
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        .WORD   E502
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
     020454  005437                                                          .WORD   E502
                                                .NLIST
                                .ENDC
                                .IFF
                                M$WORD  0
                                .ENDC
                                .IF NB ERR501
     020456                     M$WORD  ERR501
                                .MCALL  M$GNINS
                                .IRP    N,<ERR501>
                                M$GNINS <.WORD  N>
                                .ENDM
     020456                     M$GNINS <.WORD  ERR501>
                                .IF LT SVCINS
                                .WORD   ERR501
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        .WORD   ERR501
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
     020456  003672                                                          .WORD   ERR501
                                                .NLIST
                                .ENDC
                                .IFF
                                M$WORD  0
                                .ENDC
3612 020460                             CKLOOP                  ;BRANCH TO BGNSEG WHEN ERRLOOP IS SET
                                .MCALL  M$SVC
     020460                     M$SVC   C$CLP1
                                .MCALL  M$GNINS,M$TSTLAB
     020460                     M$TSTLAB
                                .MCALL  M$TLABEL,M$INCR
                                .IIF LT T$TSTMAC, .MEXIT
                                .RADIX  10
                                M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                .RADIX  8
                                M$INCR  T$TSTSEQ
     020460                     M$GNINS <TRAP   C$CLP1>
```

```
                                        .IF LT SVCINS
                                        TRAP    C$CLP1
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                TRAP    C$CLP1
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
      020460  104406                                                                              TRAP    C$CLP1
                                                        .NLIST
                                        .ENDC
      020462  052777  000010  161610    40$:    BIS     #10,@CSRX               ;SELECT CHANNEL 2
      020470  012737  000002  002374            MOV     #2,CHAN                 ;LOAD CHANNEL NUMBER
      020476  112777  000077  161572            MOVB    #77,@IDRHX              ;-----LOAD UNL INTO DOR---------------
      020504  004737  011050                    JSR     PC,LOOP                 ;WAIT A LITTLE
      020510  042777  000010  161562            BIC     #10,@CSRX               ;SELECT CHANNEL 1
      020516  012737  000001  002374            MOV     #1,CHAN                 ;LOAD CHANNEL NUMBER
      020524  017737  161526  002502            MOV     @ISRX,BAD               ;GET ISR1 CONTENTS
      020532  023737  002434  002502            CMP     CDAT1,BAD               ;ATN,ATN,NDAC,(ULPA)BIT SHOULD BE SET
      020540  001407                            BEQ     12$                     ;BRANCH IF YES
      020542  013737  002434  002500            MOV     CDAT1,GOOD              ;SET UP DATA FOR ERROR MESSAGES
      020550                                    ERRSOFT 618,E502,ERR501         ;ERROR HANDLER
                                        .MCALL  M$ERRINS
      020550                            M$ERRINS        618,E502,ERR501,C$ERSOFT
                                        .MCALL  M$GNINS,M$WORD,M$TSTLAB
      020550                            M$SVC   C$ERSOFT
                                        .MCALL  M$GNINS,M$TSTLAB
      020550                            M$TSTLAB
                                        .MCALL  M$TLABEL,M$INCR
                                        .IIF LT T$TSTMAC, .MEXIT
                                        .RADIX  10
                                        M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                        .RADIX  8
                                        M$INCR  T$TSTSEQ
      020550                            M$GNINS <TRAP   C$ERSOFT>
                                        .IF LT SVCINS
                                        TRAP    C$ERSOFT
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                TRAP    C$ERSOFT
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
      020550  104457                                                                              TRAP    C$ERSOFT
                                                        .NLIST
                                        .ENDC
              000012                    .RADIX  10
                                        .IF NB  618
              001152                    T$ERRNUM=618
```

```
                                    .IFF
                                    .ERROR  ;MISSING ERROR NR
                                    .ENDC
      020552                        M$WORD  \T$ERRNUM
                                    .MCALL  M$GNINS
                                    .IRP    N,<618>
                                    M$GNINS <.WORD  N>
                                    .ENDM
      020552                        M$GNINS <.WORD  618>
                                    .IF LT SVCINS
                                    .WORD   618
                                    .MEXIT
                                    .ENDC
                                    .IF EQ SVCINS
                                    .LIST
                                            .WORD   618
                                                    .NLIST
                                    .MEXIT
                                    .ENDC
                                    .IF GT SVCINS
                                    .LIST
      020552  001152                                                                    .WORD   618
                                                    .NLIST
                                    .ENDC
              000010                .RADIX  8
                                    .IF NB E502
      020554                        M$WORD  E502
                                    .MCALL  M$GNINS
                                    .IRP    N,<E502>
                                    M$GNINS <.WORD  N>
                                    .ENDM
      020554                        M$GNINS <.WORD  E502>
                                    .IF LT SVCINS
                                    .WORD   E502
                                    .MEXIT
                                    .ENDC
                                    .IF EQ SVCINS
                                    .LIST
                                            .WORD   E502
                                                    .NLIST
                                    .MEXIT
                                    .ENDC
                                    .IF GT SVCINS
                                    .LIST
      020554  005437                                                                    .WORD   E502
                                                    .NLIST
                                    .ENDC
                                    .IFF
                                    M$WORD  0
                                    .ENDC
                                    .IF NB ERR501
      020556                        M$WORD  ERR501
                                    .MCALL  M$GNINS
                                    .IRP    N,<ERR501>
                                    M$GNINS <.WORD  N>
                                    .ENDM
      020556                        M$GNINS <.WORD  ERR501>
```

D9

```
                                .IF LT SVCINS
                                .WORD   ERR501
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        .WORD   ERR501
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
      020556  003672                                                                            .WORD   ERR501
                                                .NLIST
                                .ENDC
                                .IFF
                                M$WORD  0
                                .ENDC
 3624 020560                    12$:    ENDSEG
                                .MCALL  M$POP,M$GNLS,M$SVC,M$ENDERR
      020560                    M$POP   T$NS,T$NESTLEV,T$TEMP
                                .MCALL  M$GETS,M$DECR
                                .IF LT  T$NESTLEV
                                .ERROR  T$NESTLEV       ; MACRO T$NS UNDERFLOW
                                .MEXIT
                                .ENDC
      020560                    M$GETS  T$NS,\T$NESTLEV,T$TEMP
              000003            T$TEMP=T$NS2
      020560                    M$DECR  T$NESTLEV
              000001            T$NESTLEV=T$NESTLEV-1
                                .IF EQ F$SEG-T$TEMP
      020560                    M$POP   T$SEK,T$SEGLEV,T$$SEG
                                .MCALL  M$GETS,M$DECR
                                .IF LT  T$SEGLEV
                                .ERROR  T$SEGLEV        ; MACRO T$SEK UNDERFLOW
                                .MEXIT
                                .ENDC
      020560                    M$GETS  T$SEK,\T$SEGLEV,T$$SEG
              010003            T$$SEG=T$SEK0
      020560                    M$DECR  T$SEGLEV
              177777            T$SEGLEV=T$SEGLEV-1
      020560                    M$GNLS  T$$SEG
                                .MCALL  M$GEN
                                .IF NB T$$SEG
      020560                    M$GEN   \T$$SEG,$,SVCTAG
                                .IF LE  SVCTAG
                                .IIF EQ SVCTAG,.LIST
                                10003$:
                                .IIF EQ SVCTAG,.NLIST
                                .MEXIT
                                .ENDC
                                .LIST
      020560                                                                          10003$:
                                        .NLIST
                                .IFF
                                M$GEN   \S$LSYM,$,SVCTAG
                                .ENDC
```

E9

```
        020560                          M$SVC   C$ESEG
                                        .MCALL  M$GNINS,M$TSTLAB
        020560                          M$TSTLAB
                                        .MCALL  M$TLABEL,M$INCR
                                        .IIF LT T$TSTMAC, .MEXIT
                                        .RADIX  10
                                        M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                        .RADIX  8
                                        M$INCR  T$TSTSEQ
        020560                          M$GNINS <TRAP   C$ESEG>
                                        .IF LT SVCINS
                                        TRAP    C$ESEG
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                TRAP    C$ESEG
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
        020560  104405                                                                  TRAP    C$ESEG
                                                        .NLIST
                                        .ENDC
                                        .IF EQ T$SEGLEV+1
                000041                  I$SEG=F$END
                                        .ENDC
                                        .IFF
                                        M$ENDERR        ENDSEG,T$TEMP
                                        .ENDC
   3625 020562                                  BGNSEG
                                        .MCALL  M$PUSH,M$INCR,M$SVC
                000040                  I$SEG=F$BGN
        020562                          M$PUSH  T$NS,T$NESTLEV,F$SEG
                                        .MCALL  M$INCR,M$SETS
        020562                          M$INCR  T$NESTLEV
                000002                  T$NESTLEV=T$NESTLEV+1
        020562                          M$SETS  T$NS,\T$NESTLEV,F$SEG
                000003                  T$NS?=F$SEG
                010004                  T$$SEG=S$LSYM
        020562                          M$PUSH  T$SEK,T$SEGLEV,T$$SEG
                                        .MCALL  M$INCR,M$SETS
        020562                          M$INCR  T$SEGLEV
                0??000                  T$SEGLEV=T$SEGLEV+1
        020562                          M$SETS  T$SEK,\T$SEGLEV,T$$SEG
                010004                  T$SEKO=T$$SEG
        020562                          M$INCR  S$LSYM
                010005                  S$LSYM=S$LSYM+1
        020562                          M$SVC   C$BSEG
                                        .MCALL  M$GNINS,M$TSTLAB
        020562                          M$TSTLAB
                                        .MCALL  M$TLABEL,M$INCR
                                        .IIF LT T$TSTMAC, .MEXIT
                                        .RADIX  10
                                        M$TLABFL        \T$TESTNUN,\T$TSTSEQ
                                        .RADIX  8
```

F9


```
                                                M$INCR  T$TSTSEQ
     020562                                     M$GNINS <TRAP   C$BSEG>
                                                .IF LT SVCINS
                                                TRAP    C$BSEG
                                                .MEXIT
                                                .ENDC
                                                .IF EQ SVCINS
                                                .LIST
                                                        TRAP    C$BSEG
                                                                .NLIST
                                                .MEXIT
                                                .ENDC
                                                .IF GT SVCINS
                                                .LIST
     020562  104404                                                                                 TRAP    C$BSEG
                                                                .NLIST
                                                .ENDC
3626 020564  052777  000010  161506                     BIS     #10,@CSRX               ;SELECT CHANNEL 2
3627 020572  012737  000002  002374                     MOV     #2,CHAN                 ;LOAD CHANNEL NUMBER
3628 020600  113777  002414  161470                     MOVB    MTA1,@IDRHX             ;-----LOAD MTA1 IN DOR REGISTER (IDR2)
3629 020606  004737  011050                             JSR     PC,LOOP                 ;WAIT A LITTLE
3630 020612  042777  000010  161460                     BIC     #10,@CSRX               ;SELECT CHANNEL 1
3631 020620  012737  000001  002374                     MOV     #1,CHAN                 ;LOAD CHANNEL NUMBER
3632 020626  017737  161424  002502                     MOV     @ISRX,BAD               ;GET ISR1 CONTENTS
3633 020634  023737  002436  002502                     CMP     CDAT2,BAD               ;ATN,ATN,NDAC,TPAS,(ULPA)SHOULD BE SET
3634 020642  001407                                     BEQ     33$                     ;BRANCH IF YES
3635 020644  013737  002436  002500                     MOV     CDAT2,GOOD              ;SET UP DATA FOR ERROR MESSAGE
3636 020652                                             ERRSOFT 619,E502,ERR501         ;ERROR HANDLER
                                                .MCALL  M$ERRINS
     020652                                     M$ERRINS        619,E502,ERR501,C$ERSOFT
                                                .MCALL  M$GNINS,M$WORD,M$TSTLAB
     020652                                     M$SVC   C$ERSOFT
                                                .MCALL  M$GNINS,M$TSTLAB
     020652                                     M$TSTLAB
                                                .MCALL  M$TLABEL,M$INCR
                                                .IIF LT T$TSTMAC, .MEXIT
                                                .RADIX  10
                                                M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                                .RADIX  8
                                                M$INCR  T$TSTSEQ
     020652                                     M$GNINS <TRAP   C$ERSOFT>
                                                .IF LT SVCINS
                                                TRAP    C$ERSOFT
                                                .MEXIT
                                                .ENDC
                                                .IF EQ SVCINS
                                                .LIST
                                                        TRAP    C$ERSOFT
                                                                .NLIST
                                                .MEXIT
                                                .ENDC
                                                .IF GT SVCINS
                                                .LIST
     020652  104457                                                                                 TRAP    C$ERSOFT
                                                                .NLIST
                                                .ENDC
             000012                             .RADIX  10
```

G9

```
                                        .IF NB  619
                001153                  T$ERRNUM=619
                                        .IFF
                                        .ERROR  ;MISSING ERROR NR
                                        .ENDC
        020654                          M$WORD  \T$ERRNUM
                                        .MCALL  M$GNINS
                                        .IRP    N,<619>
                                        M$GNINS <.WORD  N>
                                        .ENDM
        020654                          M$GNINS <.WORD  619>
                                        .IF LT SVCINS
                                        .WORD   619
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                .WORD   619
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
        020654  001153                                                                          .WORD   619
                                                        .NLIST
                                        .ENDC
                000010                  .RADIX  8
                                        .IF NB E502
        020656                          M$WORD  E502
                                        .MCALL  M$GNINS
                                        .IRP    N,<E502>
                                        M$GNINS <.WORD  N>
                                        .ENDM
        020656                          M$GNINS <.WORD  E502>
                                        .IF LT SVCINS
                                        .WORD   E502
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                .WORD   E502
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
        020656  005437                                                                          .WORD   E502
                                                        .NLIST
                                        .ENDC
                                        .IFF
                                        M$WORD  0
                                        .ENDC
                                        .IF NB ERR501
        020660                          M$WORD  ERR501
                                        .MCALL  M$GNINS
                                        .IRP    N,<ERR501>
                                        M$GNINS <.WORD  N>
```

```
                                .ENDM
      020660                    M$GNINS <.WORD  ERR501>
                                .IF LT SVCINS
                                .WORD   ERR501
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        .WORD   ERR501
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
      020660  003672                                                    .WORD   ERR501
                                                .NLIST
                                .ENDC
                                .IFF
                                M$WORD  0
                                .ENDC
 3637 020662                    33$:    ENDSEG
                                .MCALL  M$POP,M$GNLS,M$SVC,M$ENDERR
      020662                    M$POP   T$NS,T$NESTLEV,T$TEMP
                                .MCALL  M$GETS,M$DECR
                                .IF LT  T$NESTLEV
                                .ERROR  T$NESTLEV       ; MACRO T$NS UNDERFLOW
                                .MEXIT
                                .ENDC
      020662                    M$GETS  T$NS,\T$NESTLEV,T$TEMP
              000003            T$TEMP=T$NS2
      020662                    M$DECR  T$NESTLEV
              000001            T$NESTLEV=T$NESTLEV-1
                                .IF EQ F$SEG-T$TEMP
      020662                    M$POP   T$SEK,T$SEGLEV,T$$SEG
                                .MCALL  M$GETS,M$DECR
                                .IF LT  T$SEGLEV
                                .ERROR  T$SEGLEV        ; MACRO T$SEK UNDERFLOW
                                .MEXIT
                                .ENDC
      020662                    M$GETS  T$SEK,\T$SEGLEV,T$$SEG
              010004            T$$SEG=T$SEK0
      020662                    M$DECR  T$SEGLEV
              177777            T$SEGLEV=T$SEGLEV-1
      020662                    M$GNLS  T$$SEG
                                .MCALL  M$GEN
                                .IF NB T$$SEG
      020662                    M$GEN   \T$$SEG,$,SVCTAG
                                .IF LE  SVCTAG
                                .IIF EQ SVCTAG,.LIST
                                10004$:
                                .IIF EQ SVCTAG,.NLIST
                                .MEXIT
                                .ENDC
                                .LIST
      020662                                                    10004$:
                                        .NLIST
                                .IFF
```

```
                                        M$GEN   \S$LSYM,$,SVCTAG
                                        .ENDC
     020662                             M$SVC   C$ESEG
                                        .MCALL  M$GNINS,M$TSTLAB
     020662                             M$TSTLAB
                                        .MCALL  M$TLABEL,M$INCR
                                        .IIF LT T$TSTMAC, .MEXIT
                                        .RADIX  10
                                        M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                        .RADIX  8
                                        M$INCR  T$TSTSEQ
     020662                             M$GNINS <TRAP   C$ESEG>
                                        .IF LT SVCINS
                                        TRAP    C$ESEG
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                TRAP    C$ESEG
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
     020662  104405                                                             TRAP    C$ESEG
                                                        .NLIST
                                        .ENDC
                                        .IF EQ T$SEGLEV+1
             000041                     I$SEG=F$END
                                        .ENDC
                                        .IFF
                                        M$ENDERR        ENDSEG,T$TEMP
                                        .ENDC
3638 020664  013701  002312                     MOV     DPA1,R1         ;GET DEVICE PRIM. ADDR. 1
3639 020670  052701  000100                     BIS     #100,R1         ;SET DAL BIT
3640 020674  110177  161354                     MOVB    R1,@IIRHX       ;----LOAD DPA1 + DAL BIT INTO ADR 1--
3641 020700  052777  000010  161372             BIS     #10,@CSRX       ;SELECT CHANNEL 2
3642 020706  012737  000002  002374             MOV     #2,CHAN         ;LOAD CHANNEL NUMBER
3643 020714                                     BGNSEG
                                        .MCALL  M$PUSH,M$INCR,M$SVC
             000040                     I$SEG=F$BGN
     020714                             M$PUSH  T$NS,T$NESTLEV,F$SEG
                                        .MCALL  M$INCR,M$SETS
     020714                             M$INCR  T$NESTLEV
             000002                     T$NESTLEV=T$NESTLEV+1
     020714                             M$SETS  T$NS,\T$NESTLEV,F$SEG
             000003                     T$NS2=F$SEG
             010005                     T$$SEG=S$LSYM
     020714                             M$PUSH  T$SEK,T$SEGLEV,T$$SEG
                                        .MCALL  M$INCR,M$SETS
     020714                             M$INCR  T$SEGLEV
             000000                     T$SEGLEV=T$SEGLEV+1
     020714                             M$SETS  T$SEK,\T$SEGLEV,T$$SEG
             010005                     T$SEK0=T$$SEG
     020714                             M$INCR  S$LSYM
             010006                     S$LSYM=S$LSYM+1
     020714                             M$SVC   C$BSEG
```

```
                                        .MCALL  M$GNINS,M$TSTLAB
      020714                            M$TSTLAB
                                        .MCALL  M$TLABEL,M$INCR
                                        .IIF LT T$TSTMAC, .MEXIT
                                        .RADIX  10
                                        M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                        .RADIX  8
                                        M$INCR  T$TSTSEQ
      020714                            M$GNINS <TRAP   C$BSEG>
                                        .IF LT SVCINS
                                        TRAP    C$BSEG
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                TRAP    C$BSEG
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
      020714  104404                                                                        TRAP    C$BSEG
                                                        .NLIST
                                        .ENDC
 3644 020716  113777  002410  161352            MOVB    MLA1,@IDRHX             ;----LOAD MLA1 INTO DOR 2------------
 3645 020724  004737  011050                    JSR     PC,LOOP                 ;WAIT A LITTLE
 3646 020730  042777  000010  161342            BIC     #10,@CSRX               ;SELECT CHANNEL 1
 3647 020736  012737  000001  002374            MOV     #1,CHAN                 ;LOAD CHANNEL NUMBER
 3648 020744  017737  161306  002502            MOV     @ISRX,BAD               ;GET ISR1 CONTENTS
 3649 020752  023737  002442  002502            CMP     CDAT4,BAD               ;ATN,ATN,NDAC,LPAS,(ULPA)BITS SET
 3650 020760  001407                            BEQ     36$                     ;BRANCH IF YES
 3651 020762  013737  002442  002500            MOV     CDAT4,GOOD              ;SET UP DATA FOR ERROR MESSAGE
 3652 020770                                    ERRSOFT 620,E502,ERR501         ;ERROR HANDLER
                                        .MCALL  M$ERRINS
      020770                            M$ERRINS        620,E502,ERR501,C$ERSOFT
                                        .MCALL  M$GNINS,M$WORD,M$TSTLAB
      020770                            M$SVC   C$ERSOFT
                                        .MCALL  M$GNINS,M$TSTLAB
      020770                            M$TSTLAB
                                        .MCALL  M$TLABEL,M$INCR
                                        .IIF LT T$TSTMAC, .MEXIT
                                        .RADIX  10
                                        M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                        .RADIX  8
                                        M$INCR  T$TSTSEQ
      020770                            M$GNINS <TRAP   C$ERSOFT>
                                        .IF LT SVCINS
                                        TRAP    C$ERSOFT
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                TRAP    C$ERSOFT
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
```

78 8018 3675-6

K9

K9


```
                                .LIST
020770  104457                                                                  TRAP    C$ERSOFT
                                          .NLIST
                                .ENDC
        000012                  .RADIX  10
                                .IF NB  620
        001154                  T$ERRNUM=620
                                .IFF
                                .ERROR  ;MISSING ERROR NR
                                .ENDC
020772                          M$WORD  \T$ERRNUM
                                .MCALL  M$GNINS
                                .IRP    N,<620>
                                M$GNINS <.WORD  N>
                                .ENDM
020772                          M$GNINS <.WORD  620>
                                .IF LT SVCINS
                                .WORD   620
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                     .WORD    620
                                          .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
020772  001154                                                                  .WORD   620
                                          .NLIST
                                .ENDC
        000010                  .RADIX  8
                                .IF NB E502
020774                          M$WORD  E502
                                .MCALL  M$GNINS
                                .IRP    N,<E502>
                                M$GNINS <.WORD  N>
                                .ENDM
020774                          M$GNINS <.WORD  E502>
                                .IF LT SVCINS
                                .WORD   E502
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                     .WORD    E502
                                          .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
020774  005437                                                                  .WORD   E502
                                          .NLIST
                                .ENDC
                                .IFF
                                M$WORD  0
                                .ENDC
```

L9

```
                                .IF NB ERR501
     020776                     M$WORD  ERR501
                                .MCALL  M$GNINS
                                .IRP    N,<ERR501>
                                M$GNINS <.WORD  N>
                                .ENDM
     020776                     M$GNINS <.WORD  ERR501>
                                .IF LT SVCINS
                                .WORD   ERR501
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        .WORD   ERR501
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
     020776  003672                                                             .WORD   ERR501
                                                .NLIST
                                .ENDC
                                .IFF
                                M$WORD  0
                                .ENDC
3653 021000                     36$:    ENDSEG
                                .MCALL  M$POP,M$GNLS,M$SVC,M$ENDERR
     021000                     M$POP   T$NS,T$NESTLEV,T$TEMP
                                .MCALL  M$GETS,M$DECR
                                .IF LT  T$NESTLEV
                                .ERROR  T$NESTLEV       ; MACRO T$NS UNDERFLOW
                                .MEXIT
                                .ENDC
     021000                     M$GETS  T$NS,\T$NESTLEV,T$TEMP
             000003             T$TEMP=T$NS2
     021000                     M$DECR  T$NESTLEV
             000001             T$NESTLEV=T$NESTLEV-1
                                .IF EQ F$SEG-T$TEMP
     021000                     M$POP   T$SEK,T$SEGLEV,T$$SEG
                                .MCALL  M$GETS,M$DECR
                                .IF LT  T$SEGLEV
                                .ERROR  T$SEGLEV        ; MACRO T$SE< UNDERFLOW
                                .MEXIT
                                .ENDC
     021000                     M$GETS  T$SEK,\T$SEGLEV,T$$SEG
             010005             T$$SEG=T$SEK0
     021000                     M$DECR  T$SEGLEV
             177777             T$SEGLEV=T$SEGLEV-1
     021000                     M$GNLS  T$$SEG
                                .MCALL  M$GEN
                                .IF NB T$$SEG
     021000                     M$GEN   \T$$SEG,$,SVCTAG
                                .IF LE  SVCTAG
                                .IIF EQ SVCTAG,.LIST
                                10005$:
                                .IIF EQ SVCTAG,.NLIST
                                .MEXIT
```

```
                                .ENDC
                                .LIST
      021000                                                                    10005$:
                                        .NLIST
                                .IFF
                                M$GEN   \S$LSYM,$, ..TAG
                                .ENDC
      021000                    M$SVC   C$ESEG
                                .MCALL  M$GNINS,M$TSTLAB
      021000                    M$TSTLAB
                                .MCALL  M$TLABEL,M$INCR
                                .IIF LT T$TSTMAC, .MEXIT
                                .RADIX  10
                                M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                .RADIX  8
                                M$INCR  T$TSTSEQ
      021000                    M$GNINS <TRAP   C$ESEG>
                                .IF LT SVCINS
                                TRAP    C$ESEG
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        TRAP    C$ESEG
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
      021000  104405                                                                 TRAP    C$ESEG
                                                .NLIST
                                .ENDC
                                .IF EQ T$SEGLEV+1
              000041            I$SEG=F$END
                                .ENDC
                                .IFF
                                M$ENDERR        ENDSEG,T$TEMP
                                .ENDC
 3654 021002                            BGNSEG
                                .MCALL  M$PUSH,M$INCR,M$SVC
              000040            I$SEG=F$BGN
      021002                    M$PUSH  T$NS,T$NESTLEV,F$SEG
                                .MCALL  M$INCR,M$SETS
      021002                    M$INCR  T$NESTLEV
              000002            T$NESTLEV=T$NESTLEV+1
      021002                    M$SETS  T$NS,\T$NESTLEV,F$SEG
              000003            T$NS2=F$SEG
              010006            T$$SEG=S$LSYM
      021002                    M$PUSH  T$SEK,T$SEGLEV,T$$SEG
                                .MCALL  M$INCR,M$SETS
      021002                    M$INCR  T$SEGLEV
              000000            T$SEGLEV=T$SEGLEV+1
      021002                    M$SETS  T$SEK,\T$SEGLEV,T$$SEG
              010006            T$SEK0=T$$SEG
      021002                    M$INCR  S$LSYM
              010007            S$LSYM=S$LSYM+1
      021002                    M$SVC   C$BSEG
```

N9

```
                                        .MCALL  M$GNINS,M$TSTLAB
     021002                             M$TSTLAB
                                        .MCALL  M$TLABEL,M$INCR
                                        .IIF LT T$TSTMAC, .MEXIT
                                        .RADIX  10
                                        M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                        .RADIX  8
                                        M$INCR  T$TSTSEQ
     021002                             M$GNINS <TRAP   C$BSEG>
                                        .IF LT SVCINS
                                        TRAP    C$BSEG
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                TRAP    C$BSEG
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
                                                                                TRAP    C$BSEG
     021002  104404
                                                        .NLIST
                                        .ENDC
     021004  052777  000010  161266             BIS     #10,@CSRX               ;SELECT CHANNEL 2
     021012  012737  000002  002374             MOV     #2,CHAN                 ;GET CHANNEL NUMBER
     021020  113777  002414  161250             MOVB    MTA1,@IDRHX             ;----LOAD MTA1 INTO DOR 2-- -  -------
     021026  004737  011050                     JSR     PC,LOOP                 ;WAIT A LITTLE
     021032  042777  000010  161240             BIC     #10,@CSRX               ;SELECT CHANNEL 1
     021040  012737  000001  002374             MOV     #1,CHAN                 ;LOAD CHANNEL NUMBER
     021046  017737  161204  002502             MOV     @ISRX,BAD               ;GET ISR1 CONTENTS
     021054  023737  002440  002502             CMP     CDAT3,BAD               ;ATN,ATN,TADS,NDAC,TPAS,(ULPA) BITS  SET
     021062  001410                             BEQ     16$                     ;BRANCH IF YES
     021064  013737  002440  002500             MOV     CDAT3,GOOD              ;SET UP DATA FOR ERROR MESSAGE
     021072                                     ERRSOFT 621,E502,ERR501         ;ERROR HANDLER
                                        .MCALL  M$ERRINS
     021072                             M$ERRINS        621,E502,ERR501,C$ERSOFT
                                        .MCALL  M$GNINS,M$WORD,M$TSTLAB
     021072                             M$SVC   C$ERSOFT
                                        .MCALL  M$GNINS,M$TSTLAB
     021072                             M$TSTLAB
                                        .MCALL  M$TLABEL,M$INCR
                                        .IIF LT T$TSTMAC, .MEXIT
                                        .RADIX  10
                                        M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                        .RADIX  8
                                        M$INCR  T$TSTSEQ
     021072                             M$GNINS <TRAP   C$ERSOFT>
                                        .IF LT SVCINS
                                        TRAP    C$ERSOFT
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                TRAP    C$ERSOFT
                                                        .NLIST
                                        .MEXIT
```

B10


```
                                .ENDC
                                .IF GT SVCINS
                                .LIST
     021072  104457                                                                     TRAP    C$ERSOFT
                                          .NLIST
                                .ENDC
             000012             .RADIX  10
                                .IF NB  621
             001155             T$ERRNUM=621
                                .IFF
                                .ERROR  ;MISSING ERROR-NR
                                .ENDC
     C21074                     M$WORD  \T$ERRNUM
                                .MCALL  M$GNINS
                                .IRP    N,<621>
                                M$GNINS <.WORD  N>
                                .ENDM
     021074                     M$GNINS <.WORD  621>
                                .IF LT SVCINS
                                .WORD   621
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                     .WORD   621
                                          .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
     021074  001155                                                                     .WORD   621
                                          .NLIST
                                .ENDC
             000010             .RADIX  8
                                .IF NB E502
     021076                     M$WORD  E502
                                .MCALL  M$GNINS
                                .IRP    N,<E502>
                                M$GNINS <.WORD  N>
                                .ENDM
     021076                     M$GNINS <.WORD  E502>
                                .IF LT SVCINS
                                .WORD   E502
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                     .WORD   E502
                                          .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
     021076  005437                                                                     .WORD   E502
                                          .NLIST
                                .ENDC
                                .IFF
```

C10

```
                                        M$WORD  0
                                        .ENDC
                                        .IF NB ERR501
      021100                            M$WORD  ERR501
                                        .MCALL  M$GNINS
                                        .IRP    N,<ERR501>
                                        M$GNINS <.WORD  N>
                                        .ENDM
      021100                            M$GNINS <.WORD  ERR501>
                                        .IF LT SVCINS
                                        .WORD   ERR501
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                .WORD   ERR501
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
      021100  003672                                                                              .WORD   ERR501
                                                        .NLIST
                                        .ENDC
                                        .IFF
                                        M$WORD  0
                                        .ENDC
 3666 021102                                    C<LOOP                          ;BRANCH TO BGNSEG WHEN ERRLOOP IS SET
                                        .MCALL  M$SVC
      021102                            M$SVC   C$CLP1
                                        .MCALL  M$GNINS,M$TSTLAB
      021102                            M$TSTLAB
                                        .MCALL  M$TLABEL,M$INCR
                                        .IIF LT T$TSTMAC, .MEXIT
                                        .RADIX  10
                                        M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                        .RADIX  8
                                        M$INCR  T$TSTSEQ
      021102                            M$GNINS <TRAP   C$CLP1>
                                        .IF LT SVCINS
                                        TRAP    C$CLP1
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                TRAP    C$CLP1
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
      021102  104406                                                                              TRAP    C$CLP1
                                                        .NLIST
                                        .ENDC
 3667 021104  052777  000010  161166    16$:    BIS     #10,@CSRX               ;SELECT CHANNEL 2
 3668 021112  012737  000002  002374            MOV     #2,CHAN                 ;LOAD CHANNEL NUMBER
 3669 021120  112777  000137  161150            MOVB    #137,@IDRHX             ;- -- LOAD UNT INTO DDR 2-- -  -  -
```

TEST 6: ADDRESS REGISTER TEST OF CHANNEL 1

```
3670 021126  004737  011050                    JSR     PC,LOOP                 ;WAIT A LITTLE
3671 021132  042777  000010  161140            BIC     #10,@CSRX               ;SELECT CHANNEL 1
3672 021140  012737  000001  002374            MOV     #1,CHAN                 ;LOAD CHANNEL NUMBER
3673 021146  017737  161104  002502            MOV     @ISRX,BAD               ;GET ISR1 CONTENTS
3674 021154  023737  002434  002502            CMP     CDAT1,BAD               ;ATN,ATN,NDAC,(ULPA)BITS SHOULD BE SET
3675 021162  001407                            BEQ     24$                     ;BRANCH IF YES
3676 021164  013737  002434  002500            MOV     CDAT1,GOOD              ;SET UP DATA FOR ERROR MESSAGES
3677 021172                                    ERRSOFT 622,E502,ERR501         ;ERROR HANDLER
                                       .MCALL  M$ERRINS
     021172                            M$ERRINS        622,E502,ERR501,C$ERSOFT
                                       .MCALL  M$GNINS,M$WORD,M$TSTLAB
     021172                            M$SVC   C$ERSOFT
                                       .MCALL  M$GNINS,M$TSTLAB
     021172                            M$TSTLAB
                                       .MCALL  M$TLABEL,M$INCR
                                       .IIF LT T$TSTMAC, .MEXIT
                                       .RADIX  10
                                       M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                       .RADIX  8
                                       M$INCR  T$TSTSEQ
     021172                            M$GNINS <TRAP   C$ERSOFT>
                                       .IF LT SVCINS
                                       TRAP    C$ERSOFT
                                       .MEXIT
                                       .ENDC
                                       .IF EQ SVCINS
                                       .LIST
                                               TRAP    C$ERSOFT
                                                       .NLIST
                                       .MEXIT
                                       .ENDC
                                       .IF GT SVCINS
                                       .LIST
     021172  104457                                                                            TRAP    C$ERSOFT
                                                       .NLIST
                                       .ENDC
             000012                    .RADIX  10
                                       .IF NB  622
             001156                    T$ERRNUM=622
                                       .IFF
                                       .ERROR  ;MISSING ERROR-NR
                                       .ENDC
     021174                            M$WORD  \T$ERRNUM
                                       .MCALL  M$GNINS
                                       .IRP    N,<622>
                                       M$GNINS <.WORD  N>
                                       .ENDM
     021174                            M$GNINS <.WORD  622>
                                       .IF LT SVCINS
                                       .WORD   622
                                       .MEXIT
                                       .ENDC
                                       .IF EQ SVCINS
                                       .LIST
                                               .WORD   622
                                                       .NLIST
                                       .MEXIT
```

E10

E10


```
                                .ENDC
                                .IF GT SVCINS
                                .LIST
      021174  001156                                                                 .WORD   622
                                          .NLIST
                                .ENDC
              000010            .RADIX  8
                                .IF NB E502
      021176                    M$WORD  E502
                                .MCALL  M$GNINS
                                .IRP    N,<E502>
                                M$GNINS <.WORD  N>
                                .ENDM
      021176                    M$GNINS <.WORD  E502>
                                .IF LT SVCINS
                                .WORD   E502
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                     .WORD   E502
                                          .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
      021176  005437                                                                 .WORD   E502
                                          .NLIST
                                .ENDC
                                .IFF
                                M$WORD  0
                                .ENDC
                                .IF NB ERR501
      021200                    M$WORD  ERR501
                                .MCALL  M$GNINS
                                .IRP    N,<ERR501>
                                M$GNINS <.WORD  N>
                                .ENDM
      021200                    M$GNINS <.WORD  ERR501>
                                .IF LT SVCINS
                                .WORD   ERR501
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                     .WORD   ERR501
                                          .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
      021200  003672                                                                 .WORD   ERR501
                                          .NLIST
                                .ENDC
                                .IFF
                                M$WORD  0
                                .ENDC
```

F10

```
3678 021202                    24$:    ENDSEG
                               .MCALL  M$POP,M$GNLS,M$SVC,M$ENDERR
     021202                    M$POP   T$NS,T$NESTLEV,T$TEMP
                               .MCALL  M$GETS,M$DECR
                               .IF LT  T$NESTLEV
                               .ERROR  T$NESTLEV        ; MACRJ T$NS UNDERFLOW
                               .MEXIT
                               .ENDC
     021202                    M$GETS  T$NS,\T$NESTLEV,T$TEMP
            000003             T$TEMP=T$NS2
     021202                    M$DECR  T$NESTLEV
            000001             T$NESTLEV=T$NESTLEV-1
                               .IF EQ F$SEG-T$TEMP
     021202                    M$POP   T$SEK,T$SEGLEV,T$$SEG
                               .MCALL  M$GETS,M$DECR
                               .IF LT  T$SEGLEV
                               .ERROR  T$SEGLEV         ; MACRO T$SEK UNDERFLOW
                               .MEXIT
                               .ENDC
     021202                    M$GETS  T$SEK,\T$SEGLEV,T$$SEG
            010006             T$$SEG=T$SEKO
     021202                    M$DECR  T$SEGLEV
            177777             T$SEGLEV=T$SEGLEV-1
     021202                    M$GNLS  T$$SEG
                               .MCALL  M$GEN
                               .IF NB T$$SEG
     021202                    M$GEN   \T$$SEG,$,SVCTAG
                               .IF LE  SVCTAG
                               .IIF EQ SVCTAG,.LIST
                               10006$:
                               .IIF EQ SVCTAG,.NLIST
                               .MEXIT
                               .ENDC
                               .LIST
     021202                                                                 10006$:
                                       .NLIST
                               .IFF
                               M$GEN   \S$LSYM,$,SVCTAG
                               .ENDC
     021202                    M$SVC   C$ESEG
                               .MCALL  M$GNINS,M$TSTLAB
     021202                    M$TSTLAB
                               .MCALL  M$TLABEL,M$INCR
                               .IIF LT T$TSTMAC, .MEXIT
                               .RADIX  10
                               M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                               .RADIX  8
                               M$INCR  T$TSTSEQ
     021202                    M$GNINS <TRAP    C$ESEG>
                               .IF LT SVCINS
                               TRAP    C$ESEG
                               .MEXIT
                               .ENDC
                               .IF EQ SVCINS
                               .LIST
                                       TRAP    C$ESEG
                                               .NLIST
```

```
                                                .MEXIT
                                                .ENDC
                                                .IF GT SVCINS
                                                .LIST
     021202  104405                                                                                   TRAP     C$ESEG
                                                               .NLIST
                                                .ENDC
                                                .IF EQ T$SEGLEV+1
             000041                             I$SEG=F$END
                                                .ENDC
                                                .IFF
                                                M$ENDERR       ENDSEG,T$TEMP
                                                .ENDC
3679 021204  022737  000036  002312                     CMP    #36,DPA1                ;IS LAST DPA1 ADDRESS EXECUTED
3680 021212  001002                                     BNE    25$                     ;BRANCH IF NO
3681 021214  000137  022640                             JMP    TQVP6                   ;BRANCH IF YES
3682 021220  042777  000010  161052  25$:               BIC    #10,@CSRX               ;SELECT CHANNEL 1
3683 021226  013701  002312                             MOV    DPA1,R1                 ;GET DPA1
3684 021232  052701  000200                             BIS    #200,R1                 ;SET EDPA BIT
3685 021236  110177  161012                             MOVB   R1,@IIRHX               ;----LOAD DPA1 & EDPA BIT INTO ADR 1----
3686 021242                                             BGNSEG
                                                .MCALL  M$PUSH,M$INCR,M$SVC
             000040                             I$SEG=F$BGN
     021242                                     M$PUSH  T$NS,T$NESTLEV,F$SEG
                                                .MCALL  M$INCR,M$SETS
     021242                                     M$INCR  T$NESTLEV
             000002                             T$NESTLEV=T$NESTLEV+1
     021242                                     M$SETS  T$NS,\T$NESTLEV,F$SEG
             000003                             T$NS2=F$SEG
             010007                             T$$SEG=S$LSYM
     021242                                     M$PUSH  T$SEK,T$SEGLEV,T$$SEG
                                                .MCALL  M$INCR,M$SETS
     021242                                     M$INCR  T$SEGLEV
             000000                             T$SEGLEV=T$SEGLEV+1
     021242                                     M$SETS  T$SEK,\T$SEGLEV,T$$SEG
             010007                             T$SEK0=T$$SEG
     021242                                     M$INCR  S$LSYM
             010010                             S$LSYM=S$LSYM+1
     021242                                     M$SVC   C$BSEG
                                                .MCALL  M$GNINS,M$TSTLAB
     021242                                     M$TSTLAB
                                                .MCALL  M$TLABEL,M$INCR
                                                .IIF LT T$TSTMAC, .MEXIT
                                                .RADIX  10
                                                M$TLABEL       \T$TESTNUN,\T$TSTSEQ
                                                .RADIX  8
                                                M$INCR  T$TSTSEQ
     021242                                     M$GNINS <TRAP   C$BSEG>
                                                .IF LT SVCINS
                                                TRAP    C$BSEG
                                                .MEXIT
                                                .ENDC
                                                .IF EQ SVCINS
                                                .LIST
                                                        TRAP   C$BSEG
                                                               .NLIST
                                                .MEXIT
```

```
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
      021242  104404                                                                         TRAP    C$BSEG
                                                     .NLIST
                                        .ENDC
 3687 021244  052777  000010  161026          BIS     #10,@CSRX            ;SELECT CHANNEL 2
 3688 021252  012737  000002  002374          MOV     #2,CHAN              ;LOAD CHANNEL NUMBER
 3689 021260  113777  002410  161010          MOVB    MLA1,@IDRHX          ;----LOAD MLA1 INTO DOR 2---------------
 3690 021266  004737  011050          COPB1:  JSR     PC,LOOP              ;WAIT A LITTLE
 3691 021272  042777  000010  161000          BIC     #10,@CSRX            ;SELECT CHANNEL 1
 3692 021300  012737  000001  002374          MOV     #1,CHAN              ;LOAD CHANNEL NUMBER
 3693 021306  017737  160744  002502          MOV     @ISRX,BAD            ;GET ISR1 CONTENTS
 3694 021314  023737  002444  002502          CMP     CDAT5,BAD            ;ATN,ATN,LADS,NDAC,LPAS,(ULPA) BIT SET
 3695 021322  001410                          BEQ     40$                  ;BRANCH IF YES
 3696 021324  013737  002444  002500          MOV     CDAT5,GOOD           ;SET UP DATA FOR ERROR MESSAGES
 3697 021332                                  ERRSOFT 623,E502,ERR501      ;ERROR HANDLER
                                        .MCALL  M$ERRINS
      021332                            M$ERRINS        623,E502,ERR501,C$ERSOFT
                                        .MCALL  M$GNINS,M$WORD,M$TSTLAB
      021332                            M$SVC   C$ERSOFT
                                        .MCALL  M$GNINS,M$TSTLAB
      021332                            M$TSTLAB
                                        .MCALL  M$TLABEL,M$INCR
                                        .IIF LT T$TSTMAC, .MEXIT
                                        .RADIX  10
                                        M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                        .RADIX  8
                                        M$INCR  T$TSTSEQ
      021332                            M$GNINS <TRAP   C$ERSOFT>
                                        .IF LT SVCINS
                                        TRAP    C$ERSOFT
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                TRAP    C$ERSOFT
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
      021332  104457                                                                         TRAP    C$ERSOFT
                                                        .NLIST
                                        .ENDC
              000012                    .RADIX  10
                                        .IF NB  623
              001157                    T$ERRNUM=623
                                        .IFF
                                        .ERROR  ;MISSING ERROR NR
                                        .ENDC
      021334                            M$WORD  \T$ERRNUM
                                        .MCALL  M$GNINS
                                        .IRP    N,<623>
                                        M$GNINS <.WORD  N>
                                        .ENDM
      021334                            M$GNINS <.WORD  623>
```

```
                                        .IF LT SVCINS
                                        .WORD   623
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                .WORD   623
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
        021334  001157                                                                  .WORD   623
                                                        .NLIST
                                        .ENDC
                000010                  .RADIX  8
                                        .IF NB E502
        021336                          M$WORD  E502
                                        .MCALL  M$GNINS
                                        .IRP    N,<E502>
                                        M$GNINS <.WORD  N>
                                        .ENDM
        021336                          M$GNINS <.WORD  E502>
                                        .IF LT SVCINS
                                        .WORD   E502
                                        .MEXIT
                                        .ENDC
        '                               .IF EQ SVCINS
                                        .LIST
                                                .WORD   E502
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
        021336  005437                                                                  .WORD   E502
                                                        .NLIST
                                        .ENDC
                                        .IFF
                                        M$WORD  0
                                        .ENDC
                                        .IF NB ERR501
        021340                          M$WORD  ERR501
                                        .MCALL  M$GNINS
                                        .IRP    N,<ERR501>
                                        M$GNINS <.WORD  N>
                                        .ENDM
        021340                          M$GNINS <.WORD  ERR501>
                                        .IF LT SVCINS
                                        .WORD   ERR501
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                .WORD   ERR501
                                                        .NLIST
                                        .MEXIT
```

J10

```
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
      021340  003672                                                                          .WORD   ERR501
                                                    .NLIST
                                        .ENDC
                                        .IFF
                                        M$WORD  0
                                        .ENDC
 3698 021342                                    CKLOOP                          ;BRANCH TO BGNSEG WHEN ERRLOOP IS SET
                                        .MCALL  M$SVC
      021342                            M$SVC   C$CLP1
                                        .MCALL  M$GNINS,M$TSTLAB
      021342                            M$TSTLAB
                                        .MCALL  M$TLABEL,M$INCR
                                        .IIF LT T$TSTMAC, .MEXIT
                                        .RADIX  10
                                        M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                        .RADIX  8
                                        M$INCR  T$TSTSEQ
      021342                            M$GNINS <TRAP   C$CLP1>
                                        .IF LT SVCINS
                                        TRAP    C$CLP1
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                TRAP    C$CLP1
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
      021342  104406                                                                          TRAP    C$CLP1
                                                        .NLIST
                                        .ENDC
 3699 021344  052777  000010  160726    40$:    BIS     #10,@CSRX               ;SELECT CHANNEL 2
 3700 021352  012737  000002  002374            MOV     #2,CHAN                 ;LOAD CHANNEL NUMBER
 3701 021360  112777  000077  160710            MOVB    #77,@IDRHX              ;----LOAD UNL INTO DOR 2---------- -----
 3702 021366  004737  011050                    JSR     PC,LOOP                 ;WAIT A LITTLE
 3703 021372  042777  000010  160700            BIC     #10,@CSRX               ;SELECT CHANNEL 1
 3704 021400  012737  000001  002374            MOV     #1,CHAN                 ;LOAD CHANNEL NUMBER
 3705 021406  017737  160644  002502            MOV     @ISRX,BAD               ;GET ISR1 CONTENTS
 3706 021414  023737  002434  002502            CMP     CDAT1,BAD               ;ATN,ATN,NDAC,(ULPA)BITS SHOULD BE SET
 3707 021422  001407                            BEQ     12$                     ;BRANCH IF YES
 3708 021424  013737  002434  002500            MOV     CDAT1,GOOD              ;SET UP DATA FOR ERROR MESSAGES
 3709 021432                                    ERRSOFT 624,E502,ERR501         ;ERROR HANDLER
                                        .MCALL  M$ERRINS
      021432                            M$ERRINS        624,E502,ERR501,C$ERSOFT
                                        .MCALL  M$GNINS,M$WORD,M$TSTLAB
      021432                            M$SVC   C$ERSOFT
                                        .MCALL  M$GNINS,M$TSTLAB
      021432                            M$TSTLAB
                                        .MCALL  M$TLABEL,M$INCR
                                        .IIF LT T$TSTMAC, .MEXIT
                                        .RADIX  10
                                        M$TLABEL        \T$TESTNUN,\T$TSTSEQ
```

K10


```
                                .RADIX  8
                                M$INCR  T$TSTSEQ
     021432                     M$GNINS <TRAP   C$ERSOFT>
                                .IF LT SVCINS
                                TRAP    C$ERSOFT
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        TRAP    C$ERSOFT
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
     021432  104457                                                     TRAP    C$ERSOFT
                                                .NLIST
                                .ENDC
             000012             .RADIX  10
                                .IF NB  624
             001160             T$ERRNUM=624
                                .IFF
                                .ERROR  ;MISSING ERROR-NR
                                .ENDC
     021434                     M$WORD  \T$ERRNUM
                                .MCALL  M$GNINS
                                .IRP    N,<624>
                                M$GNINS <.WORD  N>
                                .ENDM
     021434                     M$GNINS <.WORD  624>
                                .IF LT SVCINS
                                .WORD   624
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        .WORD   624
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
     021434  001160                                                     .WORD   624
                                                .NLIST
                                .ENDC
             000010             .RADIX  8
                                .IF NB E502
     021436                     M$WORD  E502
                                .MCALL  M$GNINS
                                .IRP    N,<E502>
                                M$GNINS <.WORD  N>
                                .ENDM
     021436                     M$GNINS <.WORD  E502>
                                .IF LT SVCINS
                                .WORD   E502
                                .MEXIT
                                .ENDC
```


L10

```
                                .IF EQ SVCINS
                                .LIST
                                        .WORD   E502
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
      021436  005437                                                          .WORD   E502
                                                .NLIST
                                .ENDC
                                .IFF
                                M$WORD  0
                                .ENDC
                                .IF NB ERR501
      021440                    M$WORD  ERR501
                                .MCALL  M$GNINS
                                .IRP    N,<ERR501>
                                M$GNINS <.WORD  N>
                                .ENDM
      021440                    M$GNINS <.WORD  ERR501>
                                .IF LT SVCINS
                                .WORD   ERR501
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        .WORD   ERR501
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
      021440  003672                                                          .WORD   ERR501
                                                .NLIST
                                .ENDC
                                .IFF
                                M$WORD  0
                                .ENDC
 3710 021442                    12$:    ENDSEG
                                .MCALL  M$POP,M$GNLS,M$SVC,M$ENDERR
      021442                    M$POP   T$NS,T$NESTLEV,T$TEMP
                                .MCALL  M$GETS,M$DECR
                                .IF LT  T$NESTLEV
                                .ERROR  T$NESTLEV       ; MACRO T$NS UNDERFLOW
                                .MEXIT
                                .ENDC
      021442                    M$GETS  T$NS,\T$NESTLEV,T$TEMP
              000003            T$TEMP=T$NS2
      021442                    M$DECR  T$NESTLEV
              000001            T$NESTLEV=T$NESTLEV-1
                                .IF EQ F$SEG-T$TEMP
      021442                    M$POP   T$SEK,T$SEGLEV,T$$SEG
                                .MCALL  M$GETS,M$DECR
                                .IF LT  T$SEGLEV
                                .ERROR  T$SEGLEV        ; MACRO T$SEK UNDERFLOW
                                .MEXIT
```

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M10

```
                                        .ENDC
     021442                             M$GETS  T$SEK,\T$SEGLEV,T$$SEG
            010007                      T$$SEG=T$SEKO
     021442                             M$DECR  T$SEGLEV
            177777                      T$SEGLEV=T$SEGLEV-1
     021442                             M$GNLS  T$$SEG
                                        .MCALL  M$GEN
                                        .IF NB T$$SEG
     021442                             M$GEN   \T$$SEG,$,SVCTAG
                                        .IF LE  SVCTAG
                                        .IIF EQ SVCTAG,.LIST
                                        10007$:
                                        .IIF EQ SVCTAG,.NLIST
                                        .MEXIT
                                        .ENDC
                                        .LIST
     021442                                                                             10007$:
                                                .NLIST
                                        .IFF
                                        M$GEN   \S$LSYM,$,SVCTAG
                                        .ENDC
     021442                             M$SVC   C$ESEG
                                        .MCALL  M$GNINS,M$TSTLAB
     021442                             M$TSTLAB
                                        .MCALL  M$TLABEL,M$INCR
                                        .IIF LT T$TSTMAC, .MEXIT
                                        .RADIX  10
                                        M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                        .RADIX  8
                                        M$INCR  T$TSTSEQ
     021442                             M$GNINS <TRAP   C$ESEG>
                                        .IF LT SVCINS
                                        TRAP    C$ESEG
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                TRAP    C$ESEG
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
     021442 104405                                                                          TRAP    C$ESEG
                                                        .NLIST
                                        .ENDC
                                        .IF EQ T$SEGLEV+1
            000041                      I$SEG=F$END
                                        .ENDC
                                        .IFF
                                        M$ENDERR        ENDSEG,T$TEMP
                                        .ENDC
3711 021444 052777 000010 160626                BIS     #10,@CSRX               ;SELECT CHANNEL 2
3712 021452 012737 000002 002374                MOV     #2,CHAN                 ;LOAD CHANNEL NUMBER
3713 021460 113701 002410                       MOVB    MLA1,R1                 ;GET MY LISTENER ADDRESS
3714 021464 032737 000001 002312                BIT     #1,DPA1                 ;IS DPA ODD
3715 021472 001021                              BNE     13$                     ;BRANCH IF YES
```

N10

```
3716 021474  105201                             INCB    R1                      ;CHANCH MLA1 TO ODD
3717 021476  052737  000001  002434             BIS     #1,CDAT1                ;SET ULPA BIT IN COMPARE DATA FOR ISR
3718 021504  052737  000001  002436             BIS     #1,CDAT2                ;...
3719 021512  052737  000001  002440             BIS     #1,CDAT3                ;...
3720 021520  052737  000001  002442             BIS     #1,CDAT4                ;...
3721 021526  052737  000001  002444             BIS     #1,CDAT5                ;...
3722 021534  000420                             BR      .+42                    ;BRANCH TO BGNSEG
3723 021536  105301                     13$:    DECB    R1                      ;CHANGE MLA1 TO EVEN
3724 021540  042737  000001  002434             BIC     #1,CDAT1                ;CLEAR ULPA BIT IN COMPARE DATA FOR ISR
3725 021546  042737  000001  002436             BIC     #1,CDAT2                ;...
3726 021554  042737  000001  002440             BIC     #1,CDAT3                ;...
3727 021562  042737  000001  002442             BIC     #1,CDAT4                ;...
3728 021570  042737  000001  002444             BIC     #1,CDAT5                ;...
3729 021576                                     BGNSEG
                                        .MCALL  M$PUSH,M$INCR,M$SVC
             000040                     I$SEG=F$BGN
     021576                             M$PUSH  T$NS,T$NESTLEV,F$SEG
                                        .MCALL  M$INCR,M$SETS
     021576                             M$INCR  T$NESTLEV
             000002                     T$NESTLEV=T$NESTLEV+1
     021576                             M$SETS  T$NS,\T$NESTLEV,F$SEG
             000003                     T$NS2=F$SEG
             010010                     T$$SEG=S$LSYM
     021576                             M$PUSH  T$SEK,T$SEGLEV,T$$SEG
                                        .MCALL  M$INCR,M$SETS
     021576                             M$INCR  T$SEGLEV
             000000                     T$SEGLEV=T$SEGLEV+1
     021576                             M$SETS  T$SEK,\T$SEGLEV,T$$SEG
             010010                     T$SEK0=T$$SEG
     021576                             M$INCR  S$LSYM
             010011                     S$LSYM=S$LSYM+1
     021576                             M$SVC   C$BSEG
                                        .MCALL  M$GNINS,M$TSTLAB
     021576                             M$TSTLAB
                                        .MCALL  M$TLABEL,M$INCR
                                        .IIF LT T$TSTMAC, .MEXIT
                                        .RADIX  10
                                        M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                        .RADIX  8
                                        M$INCR  T$TSTSEQ                        :
     021576                             M$GNINS <TRAP   C$BSEG>
                                        .IF LT SVCINS
                                        TRAP    C$BSEG
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                TRAP    C$BSEG
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
                                                                                            TRAP    C$BSEG
     021576  104404
                                                        .NLIST
                                        .ENDC
3730 021600  052777  000010  160472             BIS     #10,@CSRX               ;SELECT CHANNEL 2
```

B11

TEST 6: ADDRESS REGISTER TEST OF CHANNEL 1

```
021606  012737  000002  002374           MOV     #2,CHAN                    ;LOAD CHANNEL NUMBER
021614  110177  160456                   MOVB    R1,@IDRHX                  ;--- LOAD NEW MLA1 INTO DOR 2----------
021620  004737  011050          COPC1:   JSR     PC,LOOP                    ;WAIT A LITTLE
021624  042777  000010  160446           BIC     #10,@CSRX                  ;SELECT CHANNEL 1
021632  012737  000001  002374           MOV     #1,CHAN                    ;LOAD CHANNEL NUMBER
021640  017737  160412  002502           MOV     @ISRX,BAD                  ;GET ISR1 CONTENTS
021646  023737  002444  002502           CMP     CDAT5,BAD                  ;ATN,ATN,LADS,NDAC,(ULPA),LPAS BITS SET
021654  001410                           BEQ     40$                        ;BRANCH IF YES
021656  013737  002444  002500           MOV     CDAT5,GOOD                 ;SET UP DATA FOR ERROR MESSAGES
021664                                   ERRSOFT 625,E502,ERR501            ;ERROR HANDLER
                                .MCALL   M$ERRINS
021664                          M$ERRINS         625,E502,ERR501,C$ERSOFT
                                .MCALL   M$GNINS,M$WORD,M$TSTLAB
021664                          M$SVC    C$ERSOFT
                                .MCALL   M$GNINS,M$TSTLAB
021664                          M$TSTLAB
                                .MCALL   M$TLABEL,M$INCR
                                .IIF LT T$TSTMAC, .MEXIT
                                .RADIX   10
                                M$TLABEL         \T$TESTNUN,\T$TSTSEQ
                                .RADIX   8
                                M$INCR   T$TSTSEQ
021664                          M$GNINS <TRAP    C$ERSOFT>
                                .IF LT SVCINS
                                TRAP     C$ERSOFT
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                         TRAP    C$ERSOFT
                                                 .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
021664  104457                                                                                TRAP    C$ERSOFT
                                                 .NLIST
                                .ENDC
        000012                  .RADIX   10
                                .IF NB   625
        001161                  T$ERRNUM=625
                                .IFF
                                .ERROR   ;MISSING ERROR NR
                                .ENDC
021666                          M$WORD   \T$ERRNUM
                                .MCALL   M$GNINS
                                .IRP     N,<625>
                                M$GNINS <.WORD   N>
                                .ENDM
021666                          M$GNINS <.WORD   625>
                                .IF LT SVCINS
                                .WORD    625
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                         .WORD   625
```

C11

```
                                        .NLIST
                        .MEXIT
                        .ENDC
                        .IF GT SVCINS
                        .LIST
021666  001161                                                          .WORD   625
                                        .NLIST
                        .ENDC
        000010          .RADIX  8
                        .IF NB E502
021670                  M$WORD  E502
                        .MCALL  M$GNINS
                        .IRP    N,<E502>
                        M$GNINS <.WORD  N>
                        .ENDM
021670                  M$GNINS <.WORD  E502>
                        .IF LT SVCINS
                        .WORD   E502
                        .MEXIT
                        .ENDC
                        .IF EQ SVCINS
                        .LIST
                                .WORD   E502
                                        .NLIST
                        .MEXIT
                        .ENDC
                        .IF GT SVCINS
                        .LIST
021670  005437                                                          .WORD   E502
                                        .NLIST
                        .ENDC
                        .IFF
                        M$WORD  0
                        .ENDC
                        .IF NB ERR501
021672                  M$WORD  ERR501
                        .MCALL  M$GNINS
                        .IRP    N,<ERR501>
                        M$GNINS <.WORD  N>
                        .ENDM
021672                  M$GNINS <.WORD  ERR501>
                        .IF LT SVCINS
                        .WORD   ERR501
                        .MEXIT
                        .ENDC
                        .IF EQ SVCINS
                        .LIST
                                .WORD   ERR501
                                        .NLIST
                        .MEXIT
                        .ENDC
                        .IF GT SVCINS
                        .LIST
021672  003672                                                          .WORD   ERR501
                                        .NLIST
                        .ENDC
                        .IFF
```

D11


```
                                        M$WORD  0
                                        .ENDC
  3741 021674                                   CKLOOP                          ;BRANCH TO BGNSEG WHEN ERRLOOP IS SET
                                        .MCALL  M$SVC
       021674                           M$SVC   C$CLP1
                                        .MCALL  M$GNINS,M$TSTLAB
       021674                           M$TSTLAB
                                        .MCALL  M$TLABEL,M$INCR
                                        .IIF LT T$TSTMAC, .MEXIT
                                        .RADIX  10
                                        M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                        .RADIX  8
                                        M$INCR  T$TSTSEQ
       021674                           M$GNINS <TRAP   C$CLP1>
                                        .IF LT SVCINS
                                        TRAP    C$CLP1
                                        .MEXIT
                                        .ENDC
                                        .IF EG SVCINS
                                        .LIST
                                                TRAP    C$CLP1
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
       021674  104406                                                                            TRAP    C$CLP1
                                                        .NLIST
                                        .ENDC
  3742 021676  052777  000010  160374   40$:    BIS     #10,@CSRX               ;SELECT CHANNEL 2
  3743 021704  012737  000002  002374           MOV     #2,CHAN                 ;LOAD CHANNEL NUMBER
  3744 021712  112777  000077  160356           MOVB    #77,@IDRHX              ;-----LOAD UNL INTO DOR 2------------
  3745 021720  004737  011050                   JSR     PC,LOOP                 ;WAIT A LITTLE
  3746 021724  042777  000010  160346           BIC     #10,@CSRX               ;SELECT CHANNEL 1
  3747 021732  012737  000001  002374           MOV     #1,CHAN                 ;LOAD CHANNEL NUMBER
  3748 021740  017737  160312  002502           MOV     @ISRX,BAD               ;GET ISR1 CONTENTS
  3749 021746  023737  002434  002502           CMP     CDAT1,BAD               ;ATN,ATN,NDAC,(ULPA)BIT SHOULD BE SET
  3750 021754  001407                           BEQ     12$                     ;BRANCH IF YES
  3751 021756  013737  002434  002500           MOV     CDAT1,GOOD              ;SET UP DATA FOR ERROR MESSAGES
  3752 021764                                   ERRSOFT 626,E502,ERR501         ;ERROR HANDLER
                                        .MCALL  M$ERRINS
       021764                           M$ERRINS        626,E502,ERR501,C$ERSOFT
                                        .MCALL  M$GNINS,M$WORD,M$TSTLAB
       021764                           M$SVC   C$ERSOFT
                                        .MCALL  M$GNINS,M$TSTLAB
       021764                           M$TSTLAB
                                        .MCALL  M$TLABEL,M$INCR
                                        .IIF LT T$TSTMAC, .MEXIT
                                        .RADIX  10
                                        M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                        .RADIX  8
                                        M$INCR  T$TSTSEQ
       021764                           M$GNINS <TRAP   C$ERSOFT>
                                        .IF LT SVCINS
                                        TRAP    C$ERSOFT
                                        .MEXIT
                                        .ENDC
```

E11

```
                                .IF EQ SVCINS
                                .LIST
                                        TRAP    C$ERSOFT
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
        021764  104457                                                                  TRAP    C$ERSOFT
                                                .NLIST
                                .ENDC
                000012          .RADIX  10
                                .IF NB  626
                001162          T$ERRNUM=626
                                .IFF
                                .ERROR  ;MISSING ERROR-NR
                                .ENDC
        021766                  M$WORD  \T$ERRNUM
                                .MCALL  M$GNINS
                                .IRP    N,<626>
                                M$GNINS <.WORD  N>
                                .ENDM
        021766                  M$GNINS <.WORD  626>
                                .IF LT SVCINS
                                .WORD   626
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        .WORD   626
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
        021766  001162                                                                  .WORD   626
                                                .NLIST
                                .ENDC
                000010          .RADIX  8
                                .IF NB E502
        021770                  M$WORD  E502
                                .MCALL  M$GNINS
                                .IRP    N,<E502>
                                M$GNINS <.WORD  N>
                                .ENDM
        021770                  M$GNINS <.WORD  E502>
                                .IF LT SVCINS
                                .WORD   E502
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        .WORD   E502
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
```

F11


```
                                .LIST
      021770  005437                                                          .WORD   E502
                                          .NLIST
                                .ENDC
                                .IFF
                                M$WORD  0
                                .ENDC
                                .IF NB ERR501
      021772                    M$WORD  ERR501
                                .MCALL  M$GNINS
                                .IRP    N,<ERR501>
                                M$GNINS <.WORD  N>
                                .ENDM
      021772                    M$GNINS <.WORD  ERR501>
                                .IF LT SVCINS
                                .WORD   ERR501
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                     .WORD    ERR501
                                          .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
      021772  003672                                                          .WORD   ERR501
                                          .NLIST
                                .ENDC
                                .IFF
                                M$WORD  0
                                .ENDC
 3753 021774                    12$:    ENDSEG
                                .MCALL  M$POP,M$GNLS,M$SVC,M$ENDERR
      021774                    M$POP   T$NS,T$NESTLEV,T$TEMP
                                .MCALL  M$GETS,M$DECR
                                .IF LT  T$NESTLEV
                                .ERROR  T$NESTLEV       ; MACRO T$NS UNDERFLOW
                                .MEXIT
                                .ENDC
      021774                    M$GETS  T$NS,\T$NESTLEV,T$TEMP
              000003            T$TEMP=T$NS2
      021774                    M$DECR  T$NESTLEV
              000001            T$NESTLEV=T$NESTLEV-1
                                .IF EQ F$SEG-T$TEMP
      021774                    M$POP   T$SEK,T$SEGLEV,T$$SEG
                                .MCALL  M$GETS,M$DECR
                                .IF LT  T$SEGLEV
                                .ERROR  T$SEGLEV        ; MACRO T$SEK UNDERFLOW
                                .MEXIT
                                .ENDC
      021774                    M$GETS  T$SEK,\T$SEGLEV,T$$SEG
              010010            T$$SEG=T$SEK0
      021774                    M$DECR  T$SEGLEV
              177777            T$SEGLEV=T$SEGLEV-1
      021774                    M$GNLS  T$$SEG
                                .MCALL  M$GEN
```

G11

```
                                        .IF NB T$$SEG
      021774                            M$GEN   \T$$SEG,$,SVCTAG
                                        .IF LE  SVCTAG
                                        .IIF EQ SVCTAG,.LIST
                                        10010$:
                                        .IIF EQ SVCTAG,.NLIST
                                        .MEXIT
                                        .ENDC
                                        .LIST
      021774                                                                            10010$:
                                                .NLIST
                                        .IFF
                                        M$GEN   \S$LSYM,$,SVCTAG
                                        .ENDC
      021774                            M$SVC   C$ESEG
                                        .MCALL  M$GNINS,M$TSTLAB
      021774                            M$TSTLAB
                                        .MCALL  M$TLABEL,M$INCR
                                        .IIF LT T$TSTMAC, .MEXIT
                                        .RADIX  10
                                        M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                        .RADIX  8
                                        M$INCR  T$TSTSEQ
      021774                            M$GNINS <TRAP   C$ESEG>
                                        .IF LT SVCINS
                                        TRAP    C$ESEG
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                TRAP    C$ESEG
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
      021774  104405                                                                          TRAP    C$ESEG
                                                        .NLIST
                                        .ENDC
                                        .IF EQ T$SEGLEV+1
              000041                    I$SEG=F$END
                                        .ENDC
                                        .IFF
                                        M$ENDERR        ENDSEG,T$TEMP
                                        .ENDC
 3754 021776  032737  000001  002312            BIT     #1,DPA1                 ;IS DPA EVEN
 3755 022004  001420                            BEQ     17$                     ;BRANCH IF YES
 3756 022006  052737  000001  002434            BIS     #1,CDAT1                ;SET ULPA BIT IN COMPARE DATA FOR ISR
 3757 022014  052737  000001  002436            BIS     #1,CDAT2                ;...
 3758 022022  052737  000001  002440            BIS     #1,CDAT3                ;...
 3759 022030  052737  000001  002442            BIS     #1,CDAT4                ;...
 3760 022036  052737  000001  002444            BIS     #1,CDAT5                ;...
 3761 022044  000417                            BR      .+40                    ;BRANCH TO BGNSEG
 3762 022046  042737  000001  002434  17$:      BIC     #1,CDAT1                ;CLEAR ULPA BIT IN COMPARE DATA FOR ISR
 3763 022054  042737  000001  002436            BIC     #1,CDAT2                ;...
 3764 022062  042737  000001  002440            BIC     #1,CDAT3                ;..
 3765 022070  042737  000001  002442            BIC     #1,CDAT4                ;...
```

```
 3766 022076  042737  000001  002444          BIC     #1,CDAT5                        ;...
 3767 022104                                  BGNSEG
                                     .MCALL   M$PUSH,M$INCR,M$SVC
              000040                 I$SEG=F$BGN
      022104                         M$PUSH   T$NS,T$NESTLEV,F$SEG
                                     .MCALL   M$INCR,M$SETS
      022104                         M$INCR   T$NESTLEV
              000002                 T$NESTLEV=T$NESTLEV+1
      022104                         M$SETS   T$NS,\T$NESTLEV,F$SEG
              000003                 T$NS2=F$SEG
              010011                 T$$SEG=S$LSYM
      022104                         M$PUSH   T$SEK,T$SEGLEV,T$$SEG
                                     .MCALL   M$INCR,M$SETS
      022104                         M$INCR   T$SEGLEV
              000000                 T$SEGLEV=T$SEGLEV+1
      022104                         M$SETS   T$SEK,\T$SEGLEV,T$$SEG
              010011                 T$SEK0=T$$SEG
      022104                         M$INCR   S$LSYM
              010012                 S$LSYM=S$LSYM+1
      022104                         M$SVC    C$BSEG
                                     .MCALL   M$GNINS,M$TSTLAB
      022104                         M$TSTLAB
                                     .MCALL   M$TLABEL,M$INCR
                                     .IIF LT T$TSTMAC, .MEXIT
                                     .RADIX  10
                                     M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                     .RADIX  8
                                     M$INCR   T$TSTSEQ
      022104                         M$GNINS <TRAP   C$BSEG>
                                     .IF LT SVCINS
                                     TRAP     C$BSEG
                                     .MEXIT
                                     .ENDC
                                     .IF EQ SVCINS
                                     .LIST
                                              TRAP    C$BSEG
                                                      .NLIST
                                     .MEXIT
                                     .ENDC
                                     .IF GT SVCINS
                                     .LIST
                                                                                                 TRAP    C$BSEG
      022104  104404
                                                      .NLIST
                                     .ENDC
 3768 022106  052777  000010  160164          BIS     #10,@CSRX                       ;SELECT CHANNEL 2
 3769 022114  012737  000002  002374          MOV     #2,CHAN                         ;LOAD CHANNEL NUMBER
 3770 022122  113777  002414  160146          MOVB    MTA1,@IDRHX                     ;----LOAD MTA INTO DOR 2  --------  --
 3771 022130  004737  011050                  JSR     PC,LOOP                         ;WAIT A LITTLE
 3772 022134  042777  000010  160136          BIC     #10,@CSRX                       ;SELECT CHANNEL 1
 3773 022142  012737  000001  002374          MOV     #1,CHAN                         ;LOAD CHANNEL NUMBER
 3774 022150  017737  160102  002502          MOV     @ISRX,BAD                       ;GET ISR1 CONTENTS
 3775 022156  023737  002440  002502          CMP     CDAT3,BAD                       ;ATN,ATN,TADS,NDAC,TPAS,(ULPA) BIT  SET
 3776 022164  001410                          BEQ     16$                             ;BRANCH IF YES
 3777 022166  013737  002440  002500          MOV     CDAT3,GOOD                      ;SET UP DATA FOR ERROR MESSAGE
 3778 022174                                  ERRSOFT 627,E502,ERR501                 ;ERROR HANDLER
                                     .MCALL   M$ERRINS
      022174                         M$ERRINS        627,E502,ERR501,C$ERSOFT
```

```
                                .MCALL  M$GNINS,M$WORD,M$TSTLAB
     022174                     M$SVC   C$ERSOFT
                                .MCALL  M$GNINS,M$TSTLAB
     022174                     M$TSTLAB
                                .MCALL  M$TLABEL,M$INCR
                                .IIF LT T$TSTMAC, .MEXIT
                                .RADIX  10
                                M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                .RADIX  8
                                M$INCR  T$TSTSEQ
     022174                     M$GNINS <TRAP   C$ERSOFT>
                                .IF LT SVCINS
                                TRAP    C$ERSOFT
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        TRAP    C$ERSOFT
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
     022174  104457                                                     TRAP    C$ERSOFT
                                                .NLIST
                                .ENDC
             000012             .RADIX  10
                                .IF NB  627
             001163             T$ERRNUM=627
                                .IFF
                                .ERROR  ;MISSING ERROR-NR
                                .ENDC
     022176                     M$WORD  \T$ERRNUM
                                .MCALL  M$GNINS
                                .IRP    N,<627>
                                M$GNINS <.WORD  N>
                                .ENDM
     022176                     M$GNINS <.WORD  627>
                                .IF LT SVCINS
                                .WORD   627
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        .WORD   627
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
     022176  001163                                                     .WORD   627
                                                .NLIST
                                .ENDC
             000010             .RADIX  8
                                .IF NB E502
     022200                     M$WORD  E502
                                .MCALL  M$GNINS
```

J11


```
                                        .IRP    N,<E502>
                                        M$GNINS <.WORD  N>
                                        .ENDM
       022200                           M$GNINS <.WORD  E502>
                                        .IF LT SVCINS
                                        .WORD   E502
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                .WORD   E502
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
       022200  005437                                                                           .WORD   E502
                                                        .NLIST
                                        .ENDC
                                        .IFF
                                        M$WORD  0
                                        .ENDC
                                        .IF NB ERR501
       022202                           M$WORD  ERR501
                                        .MCALL  M$GNINS
                                        .IRP    N,<ERR501>
                                        M$GNINS <.WORD  N>
                                        .ENDM
       022202                           M$GNINS <.WORD  ERR501>
                                        .IF LT SVCINS
                                        .WORD   ERR501
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                .WORD   ERR501
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
       022202  003672                                                                           .WORD   ERR501
                                                        .NLIST
                                        .ENDC
                                        .IFF
                                        M$WORD  0
                                        .ENDC
  3779 022204                                   CKLOOP                  ;BRANCH TO BGNSEG WHEN ERRLOOP IS SET
                                        .MCALL  M$SVC
       022204                           M$SVC   C$CLP1
                                        .MCALL  M$GNINS,M$TSTLAB
       022204                           M$TSTLAB
                                        .MCALL  M$TLABEL,M$INCR
                                        .IIF LT T$TSTMAC, .MEXIT
                                        .RADIX  10
                                        M$ LABEL        \T$TESTNUN,\T$TSTSEQ
                                        .RADIX  8
```

K11

K11


```
                                           M$INCR  T$TSTSEQ
      022204                               M$GNINS <TRAP   C$CLP1>
                                           .IF LT SVCINS
                                           TRAP    C$CLP1
                                           .MEXIT
                                           .ENDC
                                           .IF EQ SVCINS
                                           .LIST
                                                   TRAP    C$CLP1
                                                           .NLIST
                                           .MEXIT
                                           .ENDC
                                           .IF GT SVCINS
                                           .LIST
      022204  104406                                                                          TRAP    C$CLP1
                                                           .NLIST
                                           .ENDC
 3780 022206  052777  000010  160064       16$:    BIS     #10,@CSRX          ;SELECT CHANNEL 2
 3781 022214  012737  000002  002374               MOV     #2,CHAN            ;LOAD CHANNEL NUMBER
 3782 022222  112777  000137  160046               MOVB    #137,@IDRHX        ;----LOAD UNT INTO DOR 2-----------------
 3783 022230  004737  011050                       JSR     PC,LOOP            ;WAIT A LITTLE
 3784 022234  042777  000010  160036               BIC     #10,@CSRX          ;SELECT CHANNEL 1
 3785 022242  012737  000001  002374               MOV     #1,CHAN            ;LOAD CHANNEL NUMBER
 3786 022250  017737  160002  002502               MOV     @ISRX,BAD          ;GET ISR1 CONTENTS
 3787 022256  023737  002434  002502               CMP     CDAT1,BAD          ;ATN,ATN,NDAC,(ULPA)SHOULD BE SET
 3788 022264  001407                               BEQ     24$                ;BRANCH IF YES
 3789 022266  013737  002434  002500               MOV     CDAT1,GOOD         ;SET UP DATA FOR ERROR MESSAGES
 3790 022274                                       ERRSOFT 628,E502,ERR501    ;ERROR HANDLER
                                           .MCALL  M$ERRINS
      022274                               M$ERRINS        628,E502,ERR501,C$ERSOFT
                                           .MCALL  M$GNINS,M$WORD,M$TSTLAB
      022274                               M$SVC   C$ERSOFT
                                           .MCALL  M$GNINS,M$TSTLAB
      022274                               M$TSTLAB
                                           .MCALL  M$TLABEL,M$INCR
                                           .IIF LT T$TSTMAC, .MEXIT
                                           .RADIX  10
                                           M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                           .RADIX  8
                                           M$INCR  T$TSTSEQ
      022274                               M$GNINS <TRAP   C$ERSOFT>
                                           .IF LT SVCINS
                                           TRAP    C$ERSOFT
                                           .MEXIT
                                           .ENDC
                                           .IF EQ SVCINS
                                           .LIST
                                                   TRAP    C$ERSOFT
                                                           .NLIST
                                           .MEXIT
                                           .ENDC
                                           .IF GT SVCINS
                                           .LIST
      022274  104457                                                                          TRAP    C$ERSOFT
                                                           .NLIST
                                           .ENDC
              000012                       .RADIX  10
```

L11

```
                                .IF NB  628
        001164                  T$ERRNUM=628
                                .IFF
                                .ERROR  ;MISSING ERROR NR
                                .ENDC
022276                          M$WORD  \T$ERRNUM
                                .MCALL  M$GNINS
                                .IRP    N,<628>
                                M$GNINS <.WORD  N>
                                .ENDM
022276                          M$GNINS <.WORD  628>
                                .IF LT SVCINS
                                .WORD   628
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        .WORD   628
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
022276  001164                                                          .WORD   628
                                                .NLIST
                                .ENDC
        000010                  .RADIX  8
                                .IF NB E502
022300                          M$WORD  E502
                                .MCALL  M$GNINS
                                .IRP    N,<E502>
                                M$GNINS <.WORD  N>
                                .ENDM
022300                          M$GNINS <.WORD  E502>
                                .IF LT SVCINS
                                .WORD   E502
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        .WORD   E502
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
022300  005437                                                          .WORD   E502
                                                .NLIST
                                .ENDC
                                .IFF
                                M$WORD  0
                                .ENDC
                                .IF NB ERR501
022302                          M$WORD  ERR501
                                .MCALL  M$GNINS
                                .IRP    N,<ERR501>
                                M$GNINS <.WORD  N>
```

```
                                .ENDM
      022302                    M$GNINS <.WORD  ERR501>
                                .IF LT SVCINS
                                .WORD   ERR501
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        .WORD   ERR501
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
      022302 003672                                                                     .WORD   ERR501
                                                .NLIST
                                .ENDC
                                .IFF
                                M$WORD  0
                                .ENDC
 3791 022304                    24$:    ENDSEG
                                .MCALL  M$POP,M$GNLS,M$SVC,M$ENDERR
      022304                    M$POP   T$NS,T$NESTLEV,T$TEMP
                                .MCALL  M$GETS,M$DECR
                                .IF LT  T$NESTLEV
                                .ERROR  T$NESTLEV       ; MACRO T$NS UNDERFLOW
                                .MEXIT
                                .ENDC
      022304                    M$GETS  T$NS,\T$NESTLEV,T$TEMP
             000003             T$TEMP=T$NS2
      022304                    M$DECR  T$NESTLEV
             000001             T$NESTLEV=T$NESTLEV-1
                                .IF EQ F$SEG-T$TEMP
      022304                    M$POP   T$SEK,T$SEGLEV,T$$SEG
                                .MCALL  M$GETS,M$DECR
                                .IF LT  T$SEGLEV
                                .ERROR  T$SEGLEV        ; MACRO T$SEK UNDERFLOW
                                .MEXIT
                                .ENDC
      022304                    M$GETS  T$SEK,\T$SEGLEV,T$$SEG
             010011             T$$SEG=T$SEK0
      022304                    M$DECR  T$SEGLEV
             177777             T$SEGLEV=T$SEGLEV-1
      022304                    M$GNLS  T$$SEG
                                .MCALL  M$GEN
                                .IF NB T$$SEG
      022304                    M$GEN   \T$$SEG,$,SVCTAG
                                .IF LE  SVCTAG
                                .IIF EQ SVCTAG,.LIST
                                10011$:
                                .IIF EQ SVCTAG,.NLIST
                                .MEXIT
                                .ENDC
                                .LIST
      022304                                                                    10011$:
                                        .NLIST
                                .IFF
```

```
                                        M$GEN   \S$LSYM,$,SVCTAG
                                        .ENDC
     022304                             M$SVC   C$ESEG
                                        .MCALL  M$GNINS,M$TSTLAB
     022304                             M$TSTLAB
                                        .MCALL  M$TLABEL,M$INCR
                                        .IIF LT T$TSTMAC, .MEXIT
                                        .RADIX  10
                                        M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                        .RADIX  8
                                        M$INCR  T$TSTSEQ
     022304                             M$GNINS <TRAP   C$ESEG>
                                        .IF LT SVCINS
                                        TRAP    C$ESEG
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                TRAP    C$ESEG
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
                                                                                TRAP    C$ESEG
     022304  104405
                                                        .NLIST
                                        .ENDC
                                        .IF EQ T$SEGLEV+1
             000041                     I$SEG=F$END
                                        .ENDC
                                        .IFF
                                        M$ENDERR        ENDSEG,T$TEMP
                                        .ENDC
3792 022306  052777  000010  157764             BIS     #10,@CSRX               ;SELECT CHANNEL 2
3793 022314  012737  000002  002374             MOV     #2,CHAN                 ;LOAD CHANNEL NUMBER
3794 022322  013701  002414                     MOV     MTA1,R1                 ;GET TALKER ADDRESS
3795 022326  032737  000001  002312             BIT     #1,DPA1                 ;IS DPA1 ODD
3796 022334  001021                             BNE     25$                     ;BRANCH IF YES
3797 022336  105201                             INCB    R1                      ;CHANGE MTA1 TO ODD
3798 022340  052737  000001  002434             BIS     #1,CDAT1                ;SET ULPA BIT IN COMPARE DATA FOR ISR
3799 022346  052737  000001  002436             BIS     #1,CDAT2                ;...
3800 022354  052737  000001  002440             BIS     #1,CDAT3                ;...
3801 022362  052737  000001  002442             BIS     #1,CDAT4                ;...
3802 022370  052737  000001  002444             BIS     #1,CDAT5                ;...
3803 022376  000420                             BR      .+42                    ;BRANCH TO BGNSEG
3804 022400  105301                     25$:    DECB    R1                      ;CHANGE MTA1 TO EVEN
3805 022402  042737  000001  002434             BIC     #1,CDAT1                ;CLEAR ULPA BIT IN COMMPARE DATA FOR ISR
3806 022410  042737  000001  002436             BIC     #1,CDAT2                ;...
3807 022416  042737  000001  002440             BIC     #1,CDAT3                ;...
3808 022424  042737  000001  002442             BIC     #1,CDAT4                ;...
3809 022432  042737  000001  002444             BIC     #1,CDAT5                ;...
3810 022440                                     BGNSEG
                                        .MCALL  M$PUSH,M$INCR,M$SVC
             000040                     I$SEG=F$BGN
     022440                             M$PUSH  T$NS,T$NESTLEV,F$SEG
                                        .MCALL  M$INCR,M$SETS
     022440                             M$INCR  T$NESTLEV
```

B12


```
            000002                          T$NESTLEV=T$NESTLEV+1
     022440                                 M$SETS  T$NS,\T$NESTLEV,F$SEG
            000003                          T$NS2=F$SEG
            010012                          T$$SEG=S$LSYM
     022440                                 M$PUSH  T$SEK,T$SEGLEV,T$$SEG
                                            .MCALL  M$INCR,M$SETS
     022440                                 M$INCR  T$SEGLEV
            000000                          T$SEGLEV=T$SEGLEV+1
     022440                                 M$SETS  T$SEK,\T$SEGLEV,T$$SEG
            010012                          T$SEKO=T$$SEG
     022440                                 M$INCR  S$LSYM
            010013                          S$LSYM=S$LSYM+1
     022440                                 M$SVC   C$BSEG
                                            .MCALL  M$GNINS,M$TSTLAB
     022440                                 M$TSTLAB
                                            .MCALL  M$TLABEL,M$INCR
                                            .IIF LT T$TSTMAC, .MEXIT
                                            .RADIX  10
                                            M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                            .RADIX  8
                                            M$INCR  T$TSTSEQ
     022440                                 M$GNINS <TRAP   C$BSEG>
                                            .IF LT SVCINS
                                            TRAP    C$BSEG
                                            .MEXIT
                                            .ENDC
                                            .IF EQ SVCINS
                                            .LIST
                                                    TRAP    C$BSEG
                                                            .NLIST
                                            .MEXIT
                                            .ENDC
                                            .IF GT SVCINS
                                            .LIST
     022440 104404                                                                                    TRAP    C$BSEG
                                                            .NLIST
                                            .ENDC
3811 022442 052777 000010 157630                    BIS     #10,@CSRX               ;SELECT CHANNEL 2
3812 022450 012737 000002 002374                    MOV     #2,CHAN                 ;LOAD CHANNEL NUMBER
3813 022456 110177 157614                           MOVB    R1,@IDRHX               ;----LOAD NEW MTA INTO DOR 2-----------
3814 022462 004737 011050              COPD1:       JSR     PC,LOOP                 ;WAIT A LITTLE
3815 022466 042777 000010 157604                    BIC     #10,@CSRX               ;SELECT CHANNEL 1
3816 022474 012737 000001 002374                    MOV     #1,CHAN                 ;LOAD CHANNEL NUMBER
3817 022502 017737 157550 002502                    MOV     @ISRX,BAD               ;GET ISR1 CONTENTS
3818 022510 023737 002440 002502                    CMP     CDAT3,BAD               ;ATN,ATN,TADS,NDAC,(ULPA),TPAS BIT SET
3819 022516 001410                                  BEQ     16$                     ;BRANCH IF YES
3820 022520 013737 002440 002500                    MOV     CDAT3,GOOD              ;SET UP DATA FOR ERROR MESSAGE
3821 022526                                         ERRSOFT 629,E502,ERR501         ;ERROR HANDLER
                                            .MCALL  M$ERRINS
     022526                                 M$ERRINS        629,E502,ERR501,C$ERSOFT
                                            .MCALL  M$GNINS,M$WORD,M$TSTLAB
     022526                                 M$SVC   C$ERSOFT
                                            .MCALL  M$GNINS,M$TSTLAB
     022526                                 M$TSTLAB
                                            .MCALL  M$TLABEL,M$INCR
                                            .IIF LT T$TSTMAC, .MEXIT
                                            .RADIX  10
```

C12

```
                                M$TLABEL        \T$TESTNUN,\T$*TSTSEQ
                                .RADIX  8
                                M$INCR  T$TSTSEQ
        022526                  M$GNINS <TRAP   C$ERSOFT>
                                .IF LT SVCINS
                                TRAP    C$ERSOFT
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        TRAP    C$ERSOFT
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
        022526  104457                                                  TRAP    C$ERSOFT
                                                .NLIST
                                .ENDC
                000012          .RADIX  10
                                .IF NB  629
                001165          T$ERRNUM=629
                                .IFF
                                .ERROR  ;MISSING ERROR-NR
                                .ENDC
        022530                  M$WORD  \T$ERRNUM
                                .MCALL  M$GNINS
                                .IRP    N,<629>
                                M$GNINS <.WORD  N>
                                .ENDM
        022530                  M$GNINS <.WORD  629>
                                .IF LT SVCINS
                                .WORD   629
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        .WORD   629
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
        022530  001165                                                  .WORD   629
                                                .NLIST
                                .ENDC
                000010          .RADIX  8
                                .IF NB E502
        022532                  M$WORD  E502
                                .MCALL  M$GNINS
                                .IRP    N,<E502>
                                M$GNINS <.WORD  N>
                                .ENDM
        022532                  M$GNINS <.WORD  E502>
                                .IF LT SVCINS
                                .WORD   E502
                                .MEXIT
```

D12


```
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        .WORD   E502
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
      022532  005437                                                                    .WORD   E502
                                                .NLIST
                                .ENDC
                                .IFF
                                M$WORD  0
                                .ENDC
                                .IF NB ERR501
      022534                    M$WORD  ERR501
                                .MCALL  M$GNINS
                                .IRP    N,<ERR501>
                                M$GNINS <.WORD  N>
                                .ENDM
      022534                    M$GNINS <.WORD  ERR501>
                                .IF LT SVCINS
                                .WORD   ERR501
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        .WORD   ERR501
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .L ST
      022534  003672                                                                    .WORD   ERR501
                                                .NLIST
                                .ENDC
                                .IFF
                                M$WORD  0
                                .ENDC
 3822 022536                            CKLOOP                          ;BRANCH TO BGNSEG WHEN ERRLOOP IS SET
                                .MCALL  M$SVC
      022536                    M$SVC   C$CLP1
                                .MCALL  M$GNINS,M$TSTLAB
      022536                    M$TSTLAB
                                .MCALL  M$TLABEL,M$INCR
                                .IIF LT T$TSTMAC, .MEXIT
                                .RADIX  10
                                M$TLABEL        \T$TESTNUN,\T$TS'SEQ
                                .RADIX  8
                                M$INCR  T$TSTSEQ
      022536                    M$GNINS <TRAP   C$CLP1>
                                .IF LT SVCINS
                                TRAP    C$CLP1
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
```


E12

```
                                        .LIST
                                                TRAP    C$CLP1
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
      022536  104406                                                                    TRAP    C$CLP1
                                                        .NLIST
                                        .ENDC
 3823 022540  052777  000010  157532    16$:    BIS     #10,@CSRX               ;SELECT CHANNEL 2
 3824 022546  012737  000002  0.2374            MOV     #2,CHAN                 ;LOAD CHANNEL NUMBER
 3825 022554  112777  000137  .57514            MOVB    #137,@IDRHX             ;----LOAD UNT INTO DOR 2---------------
 3826 022562  004737  011050                    JSR     PC,LOOP                 ;WAIT A LITTLE
 3827 022566  042777  000010  157504            BIC     #10,@CSRX               ;SELECT CHANNEL 1
 3828 022574  012737  000001  002374            MOV     #1,CHAN                 ;LOAD CHANNEL NUMBER
 3829 022602  017737  157450  002502            MOV     @ISRX,BAD               ;GET ISR1 CONTENTS
 3830 022610  023737  002434  002502            CMP     CDAT1,BAD               ;ATN,ATN,NDAC,(ULPA)SHOULD BE SET
 3831 022616  001407                            BEQ     24$                     ;BRANCH IF YES
 3832 022620  013737  002434  002500            MOV     CDAT1,GOOD              ;SET UP DATA FOR ERROR MESSAGES
 3833 022626                                    ERRSOFT 630,E502,ERR501         ;ERROR HANDLER
                                        .MCALL  M$ERRINS
      022626                            M$ERRINS        630,E502,ERR501,C$ERSOFT
                                        .MCALL  M$GNINS,M$WORD,M$TSTLAB
      022626                            M$SVC   C$ERSOFT
                                        .MCALL  M$GNINS,M$TSTLAB
      022626                            M$TSTLAB
                                        .MCALL  M$TLABEL,M$INCR
                                        .IIF LT T$TSTMAC, .MEXIT
                                        .RADIX  10
                                        M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                        .RADIX  8
                                        M$INCR  T$TSTSEQ
      022626                            M$GNINS <TRAP   C$ERSOFT>
                                        .IF LT SVCINS
                                        TRAP    C$ERSOFT
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                TRAP    C$ERSOFT
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
      022626  104457                                                                    TRAP    C$ERSOFT
                                                        .NLIST
                                        .ENDC
              000012                    .RADIX  10
                                        .IF NB  630
              001166                    T$ERRNUM=630
                                        .IFF
                                        .ERROR  ;MISSING ERROR NR
                                        .ENDC
      022630                            M$WORD  \T$ERRNUM
                                        .MCALL  M$GNINS
```

```
                                        .IRP     N,<630>
                                        M$GNINS <.WORD  N>
                                        .ENDM
        022630                          M$GNINS <.WORD  630>
                                        .IF LT SVCINS
                                        .WORD   630
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                .WORD   630
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
        022630  001166                                                                  .WORD   630
                                                        .NLIST
                                        .ENDC
                000010                  .RADIX  8
                                        .IF NB E502
        022632                          M$WORD  E502
                                        .MCALL  M$GNINS
                                        .IRP     N,<E502>
                                        M$GNINS <.WORD  N>
                                        .ENDM
        022632                          M$GNINS <.WORD  E502>
                                        .IF LT SVCINS
                                        .WORD   E502
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                .WORD   E502
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
        022632  005437                                                                  .WORD   E502
                                                        .NLIST
                                        .ENDC
                                        .IFF
                                        M$WORD  0
                                        .ENDC
                                        .IF NB ERR501
        022634                          M$WORD  ERR501
                                        .MCALL  M$GNINS
                                        .IRP     N,<ERR501>
                                        M$GNINS <.WORD  N>
                                        .ENDM
        022634                          M$GNINS <.WORD  ERR501>
                                        .IF LT SVCINS
                                        .WORD   ERR501
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
```

```
                              .LIST
                                      .WORD   ERR501
                                              .NLIST
                              .MEXIT
                              .ENDC
                              .IF GT SVCINS
                              .LIST
       022634  003672                                                          .WORD   ERR501
                                              .NLIST
                              .ENDC
                              .IFF
                              M$WORD  0
                              .ENDC
  3834 022636                 24$:    ENDSEG
                              .MCALL  M$POP,M$GNLS,M$SVC,M$ENDERR
       022636                 M$POP   T$NS,T$NESTLEV,T$TEMP
                              .MCALL  M$GETS,M$DECR
                              .IF LT  T$NESTLEV
                              .ERROR  T$NESTLEV        ; MACRO T$NS UNDERFLOW
                              .MEXIT
                              .ENDC
       022636                 M$GETS  T$NS,\T$NESTLEV,T$TEMP
               000003         T$TEMP=T$NS2
       022636                 M$DECR  T$NESTLEV
               000001         T$NESTLEV=T$NESTLEV-1
                              .IF EQ F$SEG-T$TEMP
       022636                 M$POP   T$SEK,T$SEGLEV,T$$SEG
                              .MCALL  M$GETS,M$DECR
                              .IF LT  T$SEGLEV
                              .ERROR  T$SEGLEV         ; MACRO T$SE< UNDERFLOW
                              .MEXIT
                              .ENDC
       022636                 M$GETS  T$SEK,\T$SEGLEV,T$$SEG
               010012         T$$SEG=T$SEK0
       022636                 M$DECR  T$SEGLEV
               177777         T$SEGLEV=T$SEGLEV-1
       022636                 M$GNLS  T$$SEG
                              .MCALL  M$GEN
                              .IF NB T$$SEG
       022636                 M$GEN   \T$$SEG,$,SVCTAG
                              .IF LE  SVCTAG
                              .IIF EQ SVCTAG,.LIST
                              10012$:
                              .IIF EQ SVCTAG,.NLIST
                              .MEXIT
                              .ENDC
                              .LIST
       022636                                                          10012$:
                                      .NLIST
                              .IFF
                              M$GEN   \S$LSYM,$,SVCTAG
                              .ENDC
       022636                 M$SVC   C$ESEG
                              .MCALL  M$GNINS,M$TSTLAB
       022636                 M$TSTLAB
                              .MCALL  M$TLABEL,M$INCR
                              .IIF LT T$TSTMAC, .MEXIT
```

```
                                        .RADIX  10
                                        M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                        .RADIX  8
                                        M$INCR  T$TSTSEQ
     022636                             M$GNINS <TRAP   C$ESEG>
                                        .IF LT SVCINS
                                        TRAP    C$ESEG
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                TRAP    C$ESEG
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
     022636  104405                                                                      TRAP    C$ESEG
                                                        .NLIST
                                        .ENDC
                                        .IF EQ T$SEGLEV+1
             000041                     I$SEG=F$END
                                        .ENDC
                                        .IFF
                                        M$ENDERR        ENDSEG,T$TEMP
                                        .ENDC
3835 022640  005737  002234             TQVP6:  TST     QVP                     ;IS QUICK VERIFY PASS SELECTED
3836 022644  001054                             BNE     EXQV6                   ;IF YES EXIT TEST
3837 022646  005737  002322                     TST     ITRCNT                  ;IS THIS THE FIRST TIME THROUGH THE TEST
3838 022652  001007                             BNE     1$                      ;BRANCH IF NO
3839 022654  013737  002312  002406             MOV     DPA1,SDPA               ;SAVE ENTERED DPA1
3840 022662  005037  002312                     CLR     DPA1                    ;CLR DPA1
3841 022666  005237  002322                     INC     ITRCNT                  ;SET FLAG TO SEE FIRST TIME PASS
3842 022672  005237  002312             1$:     INC     DPA1                    ;GET NEW DPA1
3843 022676  023737  002312  002314             CMP     DPA1,DPA2               ;IS DPA1 = DPA2
3844 022704  001002                             BNE     2$                      ;BRANCH IF NO
3845 022706  005237  002312                     INC     DPA1                    ;INCREMENT DPA1
3846 022712  022737  000037  002312     2$:     CMP     #37,DPA1                ;ALL DONE
3847 022720  001423                             BEQ     3$                      ;BRANCH IF YES
3848 022722  052777  000010  157350             BIS     #10,@CSRX               ;SELECT CHANNEL 2
3849 022730  112777  000217  157332             MOVB    #217,@ICRHX             ; ---LOAD SIC INTO ACR 2
3850 022736  004737  011062                     JSR     PC,WAIT                 ;WAIT A LITTLE
3851 022742  112777  000017  157320             MOVB    #17,@ICRHX              ;----LOAD NOT SIC INTO ACR 2
3852 022750  042777  000010  157322             BIC     #10,@CSRX               ;SELECT CHANNEL 1
3853 022756  113777  002312  157270             MOVB    DPA1,@IIRHX             ;LOAD NEW DPA1 INTO ADR1
3854 022764  000137  017026                     JMP     A1                      ;REPEAT THE TEST WITH THE NEW DPA1
3855 022770  013737  002406  002312     3$:     MOV     SDPA,DPA1               ;RESTOR ENTERED DPA1
3856 022776                             EXQV6:  EXIT    TST
                                        .MCALL  M$SVC,M$EXIT,M$EXSEG,M$EXTJ,M$GETTOP,M$CHECK,M$WORD,XFER
             000041                     T$FLAG=F$END
     022776                             M$CHECK TST,T$TEMP,T$FLAG
                                        .IF IDN <TST>,<TST>
             010033                     T$TEMP=T$$TEST
             000040                     T$FLAG=I$TST
                                        .MEXIT
                                        .ENDC
                                        .IF IDN <SUB>,<TST>
```

```
                        T$TEMP=T$$SUB
                        T$FLAG=I$SUB
                        .MEXIT
                        .ENDC
                        .IF IDN <SEG>,<TST>
                        T$TEMP=T$$SEG
                        T$FLAG=I$SEG
                        .MEXIT
                        .ENDC
                        .IF IDN <INIT>,<TST>
                        T$TEMP=T$$INIT
                        T$FLAG=I$INIT
                        .MEXIT
                        .ENDC
                        .IF IDN <CLN>,<TST>
                        T$TEMP=T$$CLEAN
                        T$FLAG=I$CLN
                        .MEXIT
                        .ENDC
                        .IF IDN <SRV>,<TST>
                        T$TEMP=T$$SRV
                        T$FLAG=I$SRV
                        .MEXIT
                        .ENDC
                        .IF IDN <MSG>,<TST>
                        T$TEMP=T$$MSG
                        T$FLAG=F$JMP
                        .MEXIT
                        .ENDC
                        .IF IDN <RPT>,<TST>
                        T$TEMP=T$$RPT
                        T$FLAG=F$JMP
                        .MEXIT
                        .ENDC
                        .IF IDN <DU>,<TST>
                        T$TEMP=T$$DU
                        T$FLAG=F$JMP
                        .MEXIT
                        .ENDC
                        .IF IDN <AU>,<TST>
                        T$TEMP=T$$AU
                        T$FLAG=F$JMP
                        .MEXIT
                        .ENDC
                        .IF EQ T$FLAG F$JMP
                        M$WORD  J$JMP
                        M$EXTJ  \T$TEMP
                        .MEXIT
                        .ENDC
                        .IF EQ  T$FLAG-F$BGN
    022776              M$SVC   C$EXIT
                        .MCALL  M$GNINS,M$TSTLAB
    022776              M$TSTLAB
                        .MCALL  M$TLABEL,M$INCR
                        .IIF LT T$TSTMAC, .MEXIT
                        .RADIX  10
                        M$TLABEL        \T$TESTNUN,\T$TSTSEQ
```

```
                                        .RADIX  8
                                        M$INCR  T$TSTSEQ
        022776                          M$GNINS <TRAP   C$EXIT>
                                        .IF LT SVCINS
                                        TRAP    C$EXIT
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                TRAP    C$EXIT
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
        022776  104432                                                                          TRAP    C$EXIT
                                                        .NLIST
                                        .ENDC
                                        .IF IDN <SEG>,<TST>
                                        M$GETTOP T$SEK,T$SEGLEV,T$TEMP
                                        M$EXSEG \T$TEMP
                                        .IFF
        023000                          M$EXIT  \T$TEMP
                                        .MCALL  M$GNINS
        023000                          M$GNINS <.WORD  L10033 .>
                                        .IF LT SVCINS
                                        .WORD   L10033-.
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                .WORD   L10033-.
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
        023000  000062                                                                          .WORD   L10033-.
                                                        .NLIST
                                        .ENDC
                                        .ENDC
                                        .MEXIT
                                        .ENDC
                                        .IF IDN <HRD>,<TST>
                                        M$GETTOP        T$NS,T$NESTLEV,T$TEMP
                                        .IF EQ  F$HARD-T$TEMP
                                        .IRP    N,<\T$$HARD>
                                        XFER    L'N
                                        .ENDM
                                        .MEXIT
                                        .ENDC
                                        .ENDC
                                        .IF IDN <SFT>,<TST>
                                        M$GETTOP        T$NS,T$NESTLEV,T$TEMP
                                        .IF EQ  F$SOFT-T$TEMP
                                        .IRP    N,<\T$$SOFT>
                                        XFER    L'N
```

7B 8018 3675-4

```
                                        .ENDM
                                        .MEXIT
                                        .ENDC
                                        .ENDC
                                        .ERROR  ;ILL. "EXIT TST" STMT.
3857
3858                                            .NLIST  BEX
3859 023002    045    123    062    TSHD6:      .ASCIZ  /*S2*AADDRESS REGISTER TEST (ICR) OF CHANNEL 1*N/
3860                                            .LIST   BEX
3861                                            .EVEN
3862 023062                                     ENDTST
                                        .MCALL  M$POP,M$GNTAG,M$SVC,M$ENDERR
                                        .IF EQ  F$BGN-I$TST
            000041                      I$TST=F$END
                                        .IFF
                                        .ERROR  ;MISSING "BGNTST"
                                        .MEXIT
                                        .ENDC
     023062                             M$POP   T$NS,T$NESTLEV,T$TEMP
                                        .MCALL  M$GETS,M$DECR
                                        .IF LT  T$NESTLEV
                                        .ERROR  T$NESTLEV       ; MACRO T$NS UNDERFLOW
                                        .MEXIT
                                        .ENDC
     023062                             M$GETS  T$NS,\T$NESTLEV,T$TEMP
            000001                      T$TEMP=T$NS1
     023062                             M$DECR  T$NESTLEV
            000000                      T$NESTLEV=T$NESTLEV-1
                                        .IF EQ F$TEST-T$TEMP
     023062                             M$GNTAG L,T$$TEST
                                        .MCALL  M$GEN
     023062                             M$GEN   L,\T$$TEST,SVCTAG
                                        .IF LE  SVCTAG
                                        .IIF EQ SVCTAG,.LIST
                                        L10033:
                                        .IIF EQ SVCTAG,.NLIST
                                        .MEXIT
                                        .ENDC
                                        .LIST
     023062                                                                                  L10033:
                                                .NLIST
            010000                      S$LSYM=T$LSYM
     023062                             M$SVC   C$ETST
                                        .MCALL  M$GNINS,M$TSTLAB
     023062                             M$TSTLAB
                                        .MCALL  M$TLABEL,M$INCR
                                        .IIF LT T$TSTMAC, .MEXIT
                                        .RADIX  10
                                        M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                        .RADIX  8
                                        M$INCR  T$TSTSEQ
     023062                             M$GNINS <TRAP   C$ETST>
                                        .IF LT SVCINS
                                        TRAP    C$ETST
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
```

```
                                  .LIST
                                           TRAP      C$ETST
                                                     .NLIST
                                  .MEXIT
                                  .ENDC
                                  .IF GT SVCINS
                                  .LIST
        023062  104401                                                                          TRAP     C$ETST
                                                     .NLIST
                                  .ENDC
                000041            I$TST-F$END
                                  .IFF
                                  M$ENDERR           ENDTST,T$TEMP
                                  .ENDC
```

M12

```
                                  .SBTTL  TEST 7: ADDRESS REGISTER TEST OF CHANNEL 2
                          ;**************************************************************************
                          ;THIS TEST IS THE SAME TEST AS TEST 6 EXCEPT THE CHANNEL IS CHANGED
                          ;
                          ;PART 1 CHECKS THE CORRECT FUNCTION OF ADDRESS REGISTER 2 (ADR) BY
                          ;       LOADING ITS DEVICE PRIMARY ADDRESS INTO BIT A1-A5 AND RECEIVING
                          ;       THE ASSIGNED LISTEN OR TALK ADDRESS VIA THE IEC/IEEE BUS.
                          ;NOTE:  THE ULPA BIT IN THE ISR2 REGISTER IS DEPENDENT ON THE STATUS OF
                          ;       DPA2 (ODD DPA2 => ULPA IS SET)
                          ;
                          ;PART 2 CHECKS THE FUNCTION OF THE DAT BIT (DISABLES THE TALK FUNCTION),
                          ;       THE DAL BIT (DISABLES THE LISTEN FUNCTION) AND THE EDPA BIT
                          ;       (ENABLES THE DUAL PRIMARY ADDRESSING MODE), WHICH ARE ALSO
                          ;       PRESENT IN THE ADR2 REGISTER.
                          ;IF THE QUICK VERIFY PASS IS NOT SELECTED, THE TEST ITERATION
                          ;WILL DO IT WITH DIFFERENT DPA'S.
                          ;*************************************************************
023064                            BGNTST
                          .MCALL  M$INCR,M$GNTEST,M$PUSH,M$INCR
                          .IF NE  F$END-I$SUB
                          .ERROR  ;"BGNTST" IN SUB
                          .MEXIT
                          .ENDC
                          .IF NE  F$END I$SEG
                          .ERROR  ;"BGNTST" IN SEG
                          .MEXIT
                          .ENDC
                          .IF NE  F$END-I$TST
                          .ERROR  ;"BGNTST" IN TST
                          .MEXIT
                          .IFF
          000040          I$TST=F$BGN
                          .ENDC
                          .IF B
023064                    M$INCR  T$TESTNUM
          000007          T$TESTNUM=T$TESTNUM+1
                          .IFF
                          T$TESTNUM=
                          .ENDC
          000000          T$SUBNUM=0
          000012          .RADIX  10
023064                    M$GNTEST        \T$TESTNUM
                          .MCALL  M$GEN
023064                    M$GEN   T,7:,SVCTST
                          .IF LE  SVCTST
                          .IIF EQ SVCTST,.LIST
                          T7::
                          .IIF EQ SVCTST,.NLIST
                          .MEXIT
                          .ENDC
                          .LIST
023064                                                                       T7::
                                  .NLIST
          000010          .RADIX  8
023064                    M$PUSH  T$NS,T$NESTLEV,F$TEST
                          .MCALL  M$INCR,M$SETS
023064                    M$INCR  T$NESTLEV
```

```
             000001                  T$NESTLEV=T$NESTLEV+1
      023064                         M$SETS  T$NS,\T$NESTLEV,F$TEST
             000001                  T$NS1=F$TEST
             010034                  T$$TEST=T$TAGNUM
      023064                         M$INCR T$TAGNUM
             010035                  T$TAGNUM=T$TAGNUM+1
             000001                  T$TSTSEQ=1
      023064 005737  002324                  TST     PNTF                ;IS THE PNT FLAG SET
      023070 001410                          BEQ     7$                  ;IF YES, PRINT THE TEST HEADER
      023072                                 PRINTF  #TSHD7              ;...
                                     .MCALL  M$PRINT
                                     .IF B   #TSHD7
                                     .ERROR  ;MISSING FORMAT
                                     .MEXIT
                                     .ENDC
                                     .IF B   <>
      023072                         M$PRINT C$PNTF,#TSHD7
                                     .MCALL  M$COUNT,M$PUT,M$GNINS,M$SVC
             000001                  T$ARGCNT=1
      023072                         M$COUNT T$ARGCNT,<>,<>,<>,<>,<>,<>,<>,<>
                                     .IF NB <>
                                     M$COUNT T$ARGCNT,<>,<>,<>,<>,<>,<>,<>,<>
                                     .ENDC
                                     .IF NB <>
                                     T$ARGCNT=T$ARGCNT+1
                                     .ENDC
                                     .IRP    N,<\T$ARGCNT>
                                     M$PUT   #N,#TSHD7,<>,<>,<>,<>,<>,<>,<>,<>
                                     .ENDM
      023072                         M$PUT   #1,#TSHD7,<>,<>,<>,<>,<>,<>,<>,<>
                                     .MCALL  M$PUT1
                                     .IF NB  <#TSHD7>
      023072                         M$PUT   <#TSHD7>,<>,<>,<>,<>,<>,<>,<>,<>
                                     .MCALL  M$PUT1
                                     .IF NB  <>
      .                              M$PUT   <>,<>,<>,<>,<>,<>,<>,<>,<>
                                     .ENDC
                                     .IF NB  <#TSHD7>
      023072                         M$PUT1  #TSHD7
                                     .MCALL  M$GNINS
                                     .IF B
      023072                         M$GNINS <MOV     #TSHD7, (SP)>
                                     .IF LT SVCINS
                                     MOV     #TSHD7,-(SP)
                                     .MEXIT
                                     .ENDC
                                     .IF EQ SVCINS
                                     .LIST
                                             MOV     #TSHD7, (SP)
                                                     .NLIST
                                     .MEXIT
                                     .ENDC
                                     .IF GT SVCINS
                                     .LIST
      023072 012746  027336                                                          MOV     #TSHD7, (SP)
                                                     .NLIST
                                     .ENDC
```

```
                                        .IFF
                                        .IF DIF B,<ØTSHD7>
                                        .ERROR  ;ILL. ARG. "ØTSHD7" ONLY "B" IS ALLOWED.
                                        .MEXIT
                                        .ENDC
                                        M$GNINS <CLR    -(SP)>
                                        M$GNINS <BISB   ,(SP)>
                                        .ENDC
                                        .ENDC
                                        .ENDC
                                        .IF NB  <Ø1>
       023076                           M$PUT1  Ø1
                                        .MCALL  M$GNINS
                                        .IF B
       023076                           M$GNINS <MOV    Ø1, (SP)>
                                        .IF LT SVCINS
                                        MOV     Ø1,-(SP)
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                MOV     Ø1,-(SP)
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
       023076  012746  000001                                                   MOV     Ø1,-(SP)
                                                        .NLIST
                                        .ENDC
                                        .IFF
                                        .IF DIF B,<Ø1>
                                        .ERROR  ;ILL. ARG. "Ø1" ONLY "B" IS ALLOWED.
                                        .MEXIT
                                        .ENDC
                                        M$GNINS <CLR    -(SP)>
                                        M$GNINS <BISB   ,(SP)>
                                        .ENDC
                                        .ENDC
       023102                           M$GNINS <MOV    SP,RO>
                                        .IF LT SVCINS
                                        MOV     SP,RO
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                MOV     SP,RO
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
       023102  010600                                                           MOV     SP,RO
                                                        .NLIST
                                        .ENDC
       023104                           M$SVC   C$PNTF
                                        .MCALL  M$GNINS,M$TSTLAB
```

C13


```
        023104                          M$TSTLAB
                                        .MCALL  M$TLABEL,M$INCR
                                        .IIF LT T$TSTMAC, .MEXIT
                                        .RADIX  10
                                        M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                        .RADIX  8
                                        M$INCR  T$TSTSEQ
        023104                          M$GNINS <TRAP   C$PNTF>
                                        .IF LT SVCINS
                                        TRAP    C$PNTF
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                TRAP    C$PNTF
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
        023104  104417                                                          TRAP    C$PNTF
                                                        .NLIST
                                        .ENDC
                                        .IRP    N,<\T$ARGCNT*2+2>
                                        M$GNINS <ADD    #N,SP>
                                        .ENDM
        023106                          M$GNINS <ADD    #4,SP>
                                        .IF LT SVCINS
                                        ADD     #4,SP
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                ADD     #4,SP
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
        023106  062706  000004                                                  ADD     #4,SP
                                                        .NLIST
                                        .ENDC
                                        .MEXIT
                                        .ENDC
                                        .IF B   <>
                                        M$PRINT C$PNTF,#TSHD7,<>
                                        .MEXIT
                                        .ENDC
                                        .IF B   <>
                                        M$PRINT C$PNTF,#TSHD7,<>,<>
                                        .MEXIT
                                        .ENDC
                                        .IF B   <>
                                        M$PRINT C$PNTF,#TSHD7,<>,<>,<>
                                        .MEXIT
                                        .ENDC
                                        .IF B   <>
```

TEST 7: ADDRESS REGISTER TEST OF CHANNEL 2

```
                                                M$PRINT C$PNTF,#TSHD7,<>,<>,<>,<>
                                                .MEXIT
                                                .ENDC
                                                .IF B   <>
                                                M$PRINT C$PNTF,#TSHD7,<>,<>,<>,<>,<>
                                                .MEXIT
                                                .ENDC
                                                .IF B   <>
                                                M$PRINT C$PNTF,#TSHD7,<>,<>,<>,<>,<>,<>
                                                .MEXIT
                                                .ENDC
                                                .IF B   <>
                                                M$PRINT C$PNTF,#TSHD7,<>,<>,<>,<>,<>,<>,<>
                                                .MEXIT
                                                .ENDC
                                                M$PRINT C$PNTF,#TSHD7,<>,<>,<>,<>,<>,<>,<>,<>
3885 023112 005037 002322               7$:     CLR     ITRCNT                  ;CLEAR ITERATION COUNTER
3886 023116 004737 010210                       JSR     PC,CULPA                ;CLEAR ULPA BIT IN ISR 1 AND 2
3887 023122 004737 010524                       JSR     PC,BGIN1                ;SET UP PARAMETER
3888 023126 013701 002314               A2:     MOV     DPA2,R1                 ;GET DPA2 ADDRESS
3889 023132 062701 000040                       ADD     #40,R1                  ;CREATE MY LISTENER ADDRESS (MLA)
3890 023136 010137 002412                       MOV     R1,MLA2                 ;STORE MLA
3891 023142 032737 000001 002314                BIT     #1,DPA2                 ;IS DPA EVEN
3892 023150 001420                              BEQ     3$                      ;BRANCH IF YES
3893 023152 052737 000001 002434                BIS     #1,CDAT1                ;SET ULPA BIT IN COMPARE DATA FOR ISR
3894 023160 052737 000001 002436                BIS     #1,CDAT2                ;...
3895 023166 052737 000001 002440                BIS     #1,CDAT3                ;...
3896 023174 052737 000001 002442                BIS     #1,CDAT4                ;...
3897 023202 052737 000001 002444                BIS     #1,CDAT5                ;...
3898 023210 000417                              BR      .+40                    ;BRANCH TO BGNSEG
3899 023212 042737 000001 002434        3$:     BIC     #1,CDAT1                ;CLEAR ULPA BIT IN COMPARE DATA FOR ISR
3900 023220 042737 000001 002436                BIC     #1,CDAT2                ;...
3901 023226 042737 000001 002440                BIC     #1,CDAT3                ;...
3902 023234 042737 000001 002442                BIC     #1,CDAT4                ;...
3903 023242 042737 000001 002444                BIC     #1,CDAT5                ;...
3904 023250                                         BGNSEG
                                                .MCALL  M$PUSH,M$INCR,M$SVC
            000040                              I$SEG=F$BGN
     023250                                     M$PUSH  T$NS,T$NESTLEV,F$SEG
                                                .MCALL  M$INCR,M$SETS
     023250                                     M$INCR  T$NESTLEV
            000002                              T$NESTLEV=T$NESTLEV+1
     023250                                     M$SETS  T$NS,\T$NESTLEV,F$SEG
            000003                              T$NS2=F$SEG
            010000                              T$$SEG=S$LSYM
     023250                                     M$PUSH  T$SEK,T$SEGLEV,T$$SEG
                                                .MCALL  M$INCR,M$SETS
     023250                                     M$INCR  T$SEGLEV
            000000                              T$SEGLEV=T$SEGLEV+1
     023250                                     M$SETS  T$SEK,\T$SEGLEV,T$$SEG
            010000                              T$SEK0=T$$SEG
     023250                                     M$INCR  S$LSYM
            010001                              S$LSYM=S$LSYM+1
     023250                                     M$SVC   C$BSEG
                                                .MCALL  M$GNINS,M$TSTLAB
     023250                                     M$TSTLAB
                                                .MCALL  M$TLABEL,M$INCR
```

```
                                          .IIF LT T$TSTMAC, .MEXIT
                                          .RADIX  10
                                          M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                          .RADIX  8
                                          M$INCR  T$TSTSEQ
     023250                               M$GNINS <TRAP   C$BSEG>
                                          .IF LT SVCINS
                                          TRAP    C$BSEG
                                          .MEXIT
                                          .ENDC
                                          .IF EQ SVCINS
                                          .LIST
                                                  TRAP    C$BSEG
                                                          .NLIST
                                          .MEXIT
                                          .ENDC
                                          .IF GT SVCINS
                                          .LIST
     023250  104404                                                                           TRAP    C$BSEG
                                                          .NLIST
                                          .ENDC
     023252  042777  000010  157020               BIC     #10,@CSRX               ;SELECT CHANNEL 1
     023260  012737  000001  002374               MOV     #1,CHAN                 ;LOAD CHANNEL NUMBER
     023266  113777  002412  157002               MOVB    MLA2,@IDRHX             ;LOAD LISTENER ADDRESS OF CHANNEL 1
     023274  004737  011050                       JSR     PC,LOOP                 ;WAIT A LITTLE
     023300  017737  156744  002402               MOV     @IIRX,RSAVE             ;GET IIR1 CONTENTS
     023306  022737  000020  002402               CMP     #20,RSAVE               ;IS BO BIT OF IIR1 SET
     023314  001413                               BEQ     10$                     ;BRANCH IF YES
     023316  012737  000020  002500               MOV     #20,GOOD                ;SET UP DATA FOR ERROR MESSAGES
     023324  013737  002402  002502               MOV     RSAVE,BAD               ;...
     023332                                       ERRSOFT 701,E501,ERR501         ;ERROR HANDLER
                                          .MCALL  M$ERRINS
     023332                               M$ERRINS        701,E501,ERR501,C$ERSOFT
                                          .MCALL  M$GNINS,M$WORD,M$TSTLAB
     023332                               M$SVC   C$ERSOFT
                                          .MCALL  M$GNINS,M$TSTLAB
     023332                               M$TSTLAB
                                          .MCALL  M$TLABEL,M$INCR
                                          .IIF LT T$TSTMAC, .MEXIT
                                          .RADIX  10
                                          M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                          .RADIX  8
                                          M$INCR  T$TSTSEQ
     023332                               M$GNINS <TRAP   C$ERSOFT>
                                          .IF LT SVCINS
                                          TRAP    C$ERSOFT
                                          .MEXIT
                                          .ENDC
                                          .IF EQ SVCINS
                                          .LIST
                                                  TRAP    C$ERSOFT
                                                          .NLIST
                                          .MEXIT
                                          .ENDC
                                          .IF GT SVCINS
                                          .LIST
     023332  104457                                                                           TRAP    C$ERSOFT
```

```
                                                    .NLIST
                                  .ENDC
          000012                  .RADIX  10
                                  .IF NB  701
          001275                  T$ERRNUM=701
                                  .IFF
                                  .ERROR  ;MISSING ERROR-NR
                                  .ENDC
 023334                           M$WORD  \T$ERRNUM
                                  .MCALL  M$GNINS
                                  .IRP    N,<701>
                                  M$GNINS <.WORD  N>
                                  .ENDM
 023334                           M$GNINS <.WORD  701>
                                  .IF LT SVCINS
                                  .WORD   701
                                  .MEXIT
                                  .ENDC
                                  .IF EQ SVCINS
                                  .LIST
                                          .WORD   701
                                                    .NLIST
                                  .MEXIT
                                  .ENDC
                                  .IF GT SVCINS
                                  .LIST
 023334   001275                                                                    .WORD   701
                                                    .NLIST
                                  .ENDC
          000010                  .RADIX  8
                                  .IF NB E501
 023336                           M$WORD  E501
                                  .MCALL  M$GNINS
                                  .IRP    N,<E501>
                                  M$GNINS <.WORD  N>
                                  .ENDM
 023336                           M$GNINS <.WORD  E501>
                                  .IF LT SVCINS
                                  .WORD   E501
                                  .MEXIT
                                  .ENDC
                                  .IF EQ SVCINS
                                  .LIST
                                          .WORD   E501
                                                    .NLIST
                                  .MEXIT
                                  .ENDC
                                  .IF GT SVCINS
                                  .LIST
 023336   005376                                                                    .WORD   E501
                                                    .NLIST
                                  .ENDC
                                  .IFF
                                  M$WORD  0
                                  .ENDC
                                  .IF NB ERR501
 023340                           M$WORD  ERR501
```

TEST 7: ADDRESS REGISTER TEST OF CHANNEL 2

```
                                    .MCALL  M$GNINS
                                    .IRP    N,<ERR501>
                                    M$GNINS <.WORD  N>
                                    .ENDM
     023340                         M$GNINS <.WORD  ERR501>
                                    .IF LT SVCINS
                                    .WORD   ERR501
                                    .MEXIT
                                    .ENDC
                                    .IF EQ SVCINS
                                    .LIST
                                            .WORD   ERR501
                                                    .NLIST
                                    .MEXIT
                                    .ENDC
                                    .IF GT SVCINS
                                    .LIST
     023340  003672                                                                         .WORD   ERR501
                                                    .NLIST
                                    .ENDC
                                    .IFF
                                    M$WORD  0
                                    .ENDC
     023342                                 CKLOOP                          ;BRANCH TO BGNSEG WHEN ERROR LOOP IS SET
                                    .MCALL  M$SVC
     023342                         M$SVC   C$CLP1
                                    .MCALL  M$GNINS,M$TSTLAB
     023342                         M$TSTLAB
                                    .MCALL  M$TLABEL,M$INCR
                                    .IIF LT T$TSTMAC, .MEXIT
                                    .RADIX  10
                                    M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                    .RADIX  8
                                    M$INCR  T$TSTSEQ
     023342                         M$GNINS <TRAP   C$CLP1>
                                    .IF LT SVCINS
                                    TRAP    C$CLP1
                                    .MEXIT
                                    .ENDC
                                    .IF EQ SVCINS
                                    .LIST
                                            TRAP    C$CLP1
                                                    .NLIST
                                    .MEXIT
                                    .ENDC
                                    .IF GT SVCINS
                                    .LIST
     023342  104406                                                                         TRAP    C$CLP1
                                                    .NLIST
                                    .ENDC
     023344                         10$:
     023344  017737  156706  002402         MOV     @ISRX,RSAVE             ;GET ISR1 CONTENTS
     023352  022737  120040  002402         CMP     #120040,RSAVE           ;ATN,ATN,NDAC BIT OF ISR1 SHOULD BE SET
     023360  001413                         BEQ     20$                     ;BRANCH IF YES
     023362  012737  120040  002500         MOV     #120040,GOOD            ;SET UP DATA FOR ERROR MESSAGES
     023370  013737  002402  002502         MOV     RSAVE,BAD               ;...
     023376                                 ERRSOFT 702,E502,ERR501         ;ERROR HANDLER
```

```
                                        .MCALL  M$ERRINS
        023376                          M$ERRINS        702,E502,ERR501,C$ERSOFT
                                        .MCALL  M$GNINS,M$WORD,M$TSTLAB
        023376                          M$SVC   C$ERSOFT
                                        .MCALL  M$GNINS,M$TSTLAB
        023376                          M$TSTLAB
                                        .MCALL  M$TLABEL,M$INCR
                                        .IIF LT T$TSTMAC, .MEXIT
                                        .RADIX  10
                                        M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                        .RADIX  8
                                        M$INCR  T$TSTSEQ
        023376                          M$GNINS <TRAP   C$ERSOFT>
                                        .IF LT SVCINS
                                        TRAP    C$ERSOFT
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                TRAP    C$ERSOFT
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
        023376  104457                                                                  TRAP    C$ERSOFT
                                                        .NLIST
                                        .ENDC
                000012                  .RADIX  10
                                        .IF NB  702
                001276                  T$ERRNUM=702
                                        .IFF
                                        .ERROR  ;MISSING ERROR NR
                                        .ENDC
        023400                          M$WORD  \T$ERRNUM
                                        .MCALL  M$GNINS
                                        .IRP    N,<702>
                                        M$GNINS <.WORD  N>
                                        .ENDM
        023400                          M$GNINS <.WORD  702>
                                        .IF LT SVCINS
                                        .WORD   702
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                .WORD   702
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
        023400  001276                                                                  .WORD   702
                                                        .NLIST
                                        .ENDC
                000010                  .RADIX  8
                                        .IF NB E502
```

```
        023402                       M$WORD  E502
                                     .MCALL  M$GNINS
                                     .IRP    N,<E502>
                                     M$GNINS <.WORD  N>
                                     .ENDM
        023402                       M$GNINS <.WORD  E502>
                                     .IF LT SVCINS
                                     .WORD   E502
                                     .MEXIT
                                     .ENDC
                                     .IF EQ SVCINS
                                     .LIST
                                             .WORD   E502
                                                     .NLIST
                                     .MEXIT
                                     .ENDC
                                     .IF GT SVCINS
                                     .LIST
        023402  005437                                                           .WORD   E502
                                                     .NLIST
                                     .ENDC
                                     .IFF
                                     M$WORD  0
                                     .ENDC
                                     .IF NB ERR501
        023404                       M$WORD  ERR501
                                     .MCALL  M$GNINS
                                     .IRP    N,<ERR501>
                                     M$GNINS <.WORD  N>
                                     .ENDM
        023404                       M$GNINS <.WORD  ERR501>
                                     .IF LT SVCINS
                                     .WORD   ERR501
                                     .MEXIT
                                     .ENDC
                                     .IF EQ SVCINS
                                     .LIST
                                             .WORD   ERR501
                                                     .NLIST
                                     .MEXIT
                                     .ENDC
                                     .IF GT SVCINS
                                     .LIST
        023404  003672                                                           .WORD   ERR501
                                                     .NLIST
                                     .ENDC
                                     .IFF
                                     M$WORD  0
                                     .ENDC
   3923 023406                               CKLOOP                  ;BRANCH TO BGNSEG WHEN ERRLOOP IS SET
                                     .MCALL  M$SVC
        023406                       M$SVC   C$CLP1
                                     .MCALL  M$GNINS,M$TSTLAB
        023406                       M$TSTLAB
                                     .MCALL  M$TLABEL,M$INCR
                                     .IIF LT T$TSTMAC, .MEXIT
                                     .RADIX  10
```

```
                                          M$TLABEL       \T$TESTNUN,\T$TSTSEQ
                                          .RADIX  8
                                          M$INCR  T$TSTSEQ
      023406                              M$GNINS <TRAP   C$CLP1>
                                          .IF LT SVCINS
                                          TRAP    C$CLP1
                                          .MEXIT
                                          .ENDC
                                          .IF EQ SVCINS
                                          .LIST
                                                  TRAP    C$CLP1
                                                          .NLIST
                                          .MEXIT
                                          .ENDC
                                          .IF GT SVCINS
                                          .LIST
      023406  104406                                                                       TRAP    C$CLP1
                                                          .NLIST
                                          .ENDC
 3924 023410  052777  000010  156662  20$:    BIS     #10,@CSRX          ;SELECT CHANNEL 2
 3925 023416  012737  000002  002374          MOV     #2,CHAN            ;LOAD CHANNEL NUMBER
 3926 023424  017737  156620  002402          MOV     @IIRX,RSAVE        ;GET IIR2 CONTENTS
 3927 023432  022737  002401  002402          CMP     #2401,RSAVE        ;MA,MAC,IFC BIT IN IIR2 SHOULD BE SET
 3928 023440  001413                          BEQ     30$                ;BRANCH IF YES
 3929 023442  012737  002401  002500          MOV     #2401,GOOD         ;SET UP DATA FOR ERROR MESSAGES
 3930 023450  013737  002402  002502          MOV     RSAVE,BAD          ;...
 3931 023456                                  ERRSOFT 703,E501,ERR501    ;ERROR HANDLER
                                          .MCALL  M$ERRINS
      023456                              M$ERRINS        703,E501,ERR501,C$ERSOFT
                                          .MCALL  M$GNINS,M$WORD,M$TSTLAB
      023456                              M$SVC   C$ERSOFT
                                          .MCALL  M$GNINS,M$TSTLAB
      023456                              M$TSTLAB
                                          .MCALL  M$TLABEL,M$INCR
                                          .IIF LT T$TSTMAC, .MEXIT
                                          .RADIX  10
                                          M$TLABEL       \T$TESTNUN,\T$TSTSEQ
                                          .RADIX  8
                                          M$INCR  T$TSTSEQ
      023456                              M$GNINS <TRAP   C$ERSOFT>
                                          .IF LT SVCINS
                                          TRAP    C$ERSOFT
                                          .MEXIT
                                          .ENDC
                                          .IF EQ SVCINS
                                          .LIST
                                                  TRAP    C$ERSOFT
                                                          .NLIST
                                          .MEXIT
                                          .ENDC
                                          .IF GT SVCINS
                                          .LIST
      023456  104457                                                                       TRAP    C$ERSOFT
                                                          .NLIST
                                          .ENDC
              000012                      .RADIX  10
                                          .IF NB  703
```

```
         001277            T$ERRNUM=703
                           .IFF
                           .ERROR  ;MISSING ERROR-NR
                           .ENDC
023460                     M$WORD  \T$ERRNUM
                           .MCALL  M$GNINS
                           .IRP    N,<703>
                           M$GNINS <.WORD  N>
                           .ENDM
023460                     M$GNINS <.WORD  703>
                           .IF LT SVCINS
                           .WORD   703
                           .MEXIT
                           .ENDC
                           .IF EQ SVCINS
                           .LIST
                                   .WORD   703
                                           .NLIST
                           .MEXIT
                           .ENDC
                           .IF GT SVCINS
                           .LIST
023460   001277                                                        .WORD   703
                                           .NLIST
                           .ENDC
         000010            .RADIX  8
                           .IF NB E501
023462                     M$WORD  E501
                           .MCALL  M$GNINS
                           .IRP    N,<E501>
                           M$GNINS <.WORD  N>
                           .ENDM
023462                     M$GNINS <.WORD  E501>
                           .IF LT SVCINS
                           .WORD   E501
                           .MEXIT
                           .ENDC
                           .IF EQ SVCINS
                           .LIST
                                   .WORD   E501
                                           .NLIST
                           .MEXIT
                           .ENDC
                           .IF GT SVCINS
                           .LIST
023462   005376                                                        .WORD   E501
                                           .NLIST
                           .ENDC
                           .IFF
                           M$WORD  0
                           .ENDC
                           .IF NB ERR501
023464                     M$WORD  ERR501
                           .MCALL  M$GNINS
                           .IRP    N,<ERR501>
                           M$GNINS <.WORD  N>
                           .ENDM
```

```
       023464                         M$GNINS <.WORD  ERR501>
                                      .IF LT SVCINS
                                      .WORD   ERR501
                                      .MEXIT
                                      .ENDC
                                      .IF EQ SVCINS
                                      .LIST
                                              .WORD   ERR501
                                                      .NLIST
                                      .MEXIT
                                      .ENDC
                                      .IF GT SVCINS
                                      .LIST
       023464  003672                                                                 .WORD   ERR501
                                                      .NLIST
                                      .ENDC
                                      .IFF
                                      M$WORD  0
                                      .ENDC
  3932 023466                                 CKLOOP                     ;BRANCH TO BGNSEG WHEN ERRLOOP IS SET
                                      .MCALL  M$SVC
       023466                         M$SVC   C$CLP1
                                      .MCALL  M$GNINS,M$TSTLAB
       023466                         M$TSTLAB
                                      .MCALL  M$TLABEL,M$INCR
                                      .IIF LT T$TSTMAC, .MEXIT
                                      .RADIX  10
                                      M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                      .RADIX  8
                                      M$INCR  T$TSTSEQ
       023466                         M$GNINS <TRAP   C$CLP1>
                                      .IF LT SVCINS
                                      TRAP    C$CLP1
                                      .MEXIT
                                      .ENDC
                                      .IF EQ SVCINS
                                      .LIST
                                              TRAP    C$CLP1
                                                      .NLIST
                                      .MEXIT
                                      .ENDC
                                      .IF GT SVCINS
                                      .LIST
       023466  104406                                                                 TRAP    C$CLP1
                                                      .NLIST
                                      .ENDC
  3933 023470  017737  156562  002402 30$:    MOV     @ISRX,RSAVE        ;GET ISR2 CONTENTS
  3934 023476  023737  002444  002402         CMP     CDAT5,RSAVE        ;ATN,ATN,LADS,NDAC,LPAS,(ULPA) BIT SET
  3935 023504  001413                         BEQ     40$                ;BRANCH IF YES
  3936 023506  013737  002444  002500         MOV     CDAT5,GOOD         ;SET UP DATA FOR ERROR MESSAGES
  3937 023514  013737  002402  002502         MOV     RSAVE,BAD          ;...
  3938 023522                                 ERRSOFT 704,E502,ERR501    ;ERROR HANDLER
                                      .MCALL  M$ERRINS
       023522                         M$ERRINS        704,E502,ERR501,C$ERSOFT
                                      .MCALL  M$GNINS,M$WORD,M$TSTLAB
       023522                         M$SVC   C$ERSOFT
                                      .MCALL  M$GNINS,M$TSTLAB
```

```
023522                  M$TSTLAB
                        .MCALL  M$TLABEL,M$INCR
                        .IIF LT T$TSTMAC, .MEXIT
                        .RADIX  10
                        M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                        .RADIX  8
                        M$INCR  T$TSTSEQ
023522                  M$GNINS <TRAP   C$ERSOFT>
                        .IF LT SVCINS
                        TRAP    C$ERSOFT
                        .MEXIT
                        .ENDC
                        .IF EQ SVCINS
                        .LIST
                                TRAP    C$ERSOFT
                                        .NLIST
                        .MEXIT
                        .ENDC
                        .IF GT SVCINS
                        .LIST
023522  104457                                                          TRAP    C$ERSOFT
                                        .NLIST
                        .ENDC
        000012          .RADIX  10
                        .IF NB  704
        001300          T$ERRNUM=704
                        .IFF
                        .ERROR  ;MISSING ERROR-NR
                        .ENDC
023524                  M$WORD  \T$ERRNUM
                        .MCALL  M$GNINS
                        .IRP    N,<704>
                        M$GNINS <.WORD  N>
                        .ENDM
023524                  M$GNINS <.WORD  704>
                        .IF LT SVCINS
                        .WORD   704
                        .MEXIT
                        .ENDC
                        .IF EQ SVCINS
                        .LIST
                                .WORD   704
                                        .NLIST
                        .MEXIT
                        .ENDC
                        .IF GT SVCINS
                        .LIST
023524  001300                                                          .WORD   704
                                        .NLIST
                        .ENDC
        000010          .RADIX  8
                        .IF NB E502
023526                  M$WORD  E502
                        .MCALL  M$GNINS
                        .IRP    N,<E502>
                        M$GNINS <.WORD  N>
                        .ENDM
```

N13


```
     023526                         M$GNINS <.WORD  E502>
                                    .IF LT SVCINS
                                    .WORD   E502
                                    .MEXIT
                                    .ENDC
                                    .IF EQ SVCINS
                                    .LIST
                                            .WORD   E502
                                                    .NLIST
                                    .MEXIT
                                    .ENDC
                                    .IF GT SVCINS
                                    .LIST
     023526  005437                                                               .WORD   E502
                                                    .NLIST
                                    .ENDC
                                    .IFF
                                    M$WORD  0
                                    .ENDC
                                    .IF NB ERR501
     023530                         M$WORD  ERR501
                                    .MCALL  M$GNINS
                                    .IRP    N,<ERR501>
                                    M$GNINS <.WORD  N>
                                    .ENDM
     023530                         M$GNINS <.WORD  ERR501>
                                    .IF LT SVCINS
                                    .WORD   ERR501
                                    .MEXIT
                                    .ENDC
                                    .IF EQ SVCINS
                                    .LIST
                                            .WORD   ERR501
                                                    .NLIST
                                    .MEXIT
                                    .ENDC
                                    .IF GT SVCINS
                                    .LIST
     023530  003672                                                               .WORD   ERR501
                                                    .NLIST
                                    .ENDC
                                    .IFF
                                    M$WORD  0
                                    .ENDC
3939 023532                                 CKLOOP                  ;BRANCH TO BGNSEG WHEN ERRLOOP IS SET
                                    .MCALL  M$SVC
     023532                         M$SVC   C$CLP1
                                    .MCALL  M$GNINS,M$TSTLAB
     023532                         M$TSTLAB
                                    .MCALL  M$TLABEL,M$INCR
                                    .IIF LT T$TSTMAC, .MEXIT
                                    .RADIX  10
                                    M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                    .RADIX  8
                                    M$INCR  T$TSTSEQ
     023532                         M$GNINS <TRAP   C$CLP1>
                                    .IF LT SVCINS
```

```
                                                TRAP    C$CLP1
                                                .MEXIT
                                                .ENDC
                                                .IF EQ SVCINS
                                                .LIST
                                                        TRAP    C$CLP1
                                                                .NLIST
                                                .MEXIT
                                                .ENDC
                                                .IF GT SVCINS
                                                .LIST
        023532  104406                                                                          TRAP    C$CLP1
                                                                .NLIST
                                                .ENDC
3940    023534  042777  000010  156536          40$:    BIC     #10,    @CSRX           ;SELECT CHANNEL 1
3941    023542  012737  000001  002374                  MOV     #1,CHAN                 ;LOAD CHANNEL NUMBER
3942    023550  112777  000077  156520                  MOVB    #77,@IDRHX              ;LOAD UNL INTO DOR
3943    023556  004737  011050                          JSR     PC,LOOP                 ;WAIT A LITTLE
3944    023562  017737  156462  002402                  MOV     @IIRX,RSAVE             ;GET IIR1 CONTENTS
3945    023570  022737  000020  002402                  CMP     #20,RSAVE               ;CHECK BO BIT IN IIR1
3946    023576  001413                                  BEQ     50$                     ;BRANCH IF YES
3947    023600  012737  000020  002500                  MOV     #20,GOOD                ;SET UP DATA FOR ERROR MESSAGES
3948    023606  013737  002402  002502                  MOV     RSAVE,BAD               ;...
3949    023614                                          ERRSOFT 705,E501,ERR501         ;ERROR HANDLER
                                                .MCALL  M$ERRINS
        023614                                  M$ERRINS        705,E501,ERR501,C$ERSOFT
                                                .MCALL  M$GNINS,M$WORD,M$TSTLAB
        023614                                  M$SVC   C$ERSOFT
                                                .MCALL  M$GNINS,M$TSTLAB
        023614                                  M$TSTLAB
                                                .MCALL  M$TLABEL,M$INCR
                                                .IIF LT T$TSTMAC, .MEXIT
                                                .RADIX  10
                                                M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                                .RADIX  8
                                                M$INCR  T$TSTSEQ
        023614                                  M$GNINS <TRAP   C$ERSOFT>
                                                .IF LT SVCINS
                                                TRAP    C$ERSOFT
                                                .MEXIT
                                                .ENDC
                                                .IF EQ SVCINS
                                                .LIST
                                                        TRAP    C$ERSOFT
                                                                .NLIST
                                                .MEXIT
                                                .ENDC
                                                .IF GT SVCINS
                                                .LIST
        023614  104457                                                                          TRAP    C$ERSOFT
                                                                .NLIST
                                                .ENDC
                000012                          .RADIX  10
                                                .IF NB  705
                001301                          T$ERRNUM=705
                                                .IFF
                                                .ERROR  ;MISSING ERROR NR
```

```
                                        .ENDC
        023616                          M$WORD  \T$ERRNUM
                                        .MCALL  M$GNINS
                                        .IRP    N,<705>
                                        M$GNINS <.WORD  N>
                                        .ENDM
        023616                          M$GNINS <.WORD  705>
                                        .IF LT SVCINS
                                        .WORD   705
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                .WORD   705
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
        023616  001301                                                                  .WORD   705
                                                        .NLIST
                                        .ENDC
                000010                  .RADIX  8
                                        .IF NB E501
        023620                          M$WORD  E501
                                        .MCALL  M$GNINS
                                        .IRP    N,<E501>
                                        M$GNINS <.WORD  N>
                                        .ENDM
        023620                          M$GNINS <.WORD  E501>
                                        .IF LT SVCINS
                                        .WORD   E501
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                .WORD   E501
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
        023620  005376                                                                  .WORD   E501
                                                        .NLIST
                                        .ENDC
                                        .IFF
                                        M$WORD  0
                                        .ENDC
                                        .IF NB ERR501
        023622                          M$WORD  ERR501
                                        .MCALL  M$GNINS
                                        .IRP    N,<ERR501>
                                        M$GNINS <.WORD  N>
                                        .ENDM
        023622                          M$GNINS <.WORD  ERR501>
                                        .IF LT SVCINS
                                        .WORD   ERR501
```

```
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                              .WORD   ERR501
                                                      .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
      023622  003672                                                                   .WORD   ERR501
                                                      .NLIST
                                        .ENDC
                                        .IFF
                                        M$WORD  0
                                        .ENDC
 3950 023624                                  CKLOOP                    ;BRANCH TO BGNSEG WHEN ERRLOOP IS SET
                                        .MCALL  M$SVC
      023624                            M$SVC   C$C_P1
                                        .MCALL  M$GNINS,M$TSTLAB
      023624                            M$TSTLAB
                                        .MCALL  M$TLABEL,M$INCR
                                        .IIF LT T$TSTMAC, .MEXIT
                                        .RADIX  10
                                        M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                        .RADIX  8
                                        M$INCR  T$TSTSEQ
      023624                            M$GNINS <TRAP   C$CLP1>
                                        .IF LT SVCINS
                                        TRAP    C$CLP1
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                              TRAP    C$CLP1
                                                      .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
      023624  104406                                                                   TRAP    C$CLP1
                                                      .NLIST
                                        .ENDC
 3951 023626  017737  156424  002402    50$:    MOV     @ISRX,RSAVE       ;GET ISR1 CONTENS
 3952 023634  022737  120040  002402            CMP     #120040,RSAVE     ;ATN,ATN,NDAC BIT IN ISR1 SHOULD BE SET
 3953 023642  001413                            BEQ     60$               ;BRANCH IF YES
 3954 023644  012737  120040  002500            MOV     #120040,GOOD      ;SET UP DATA FOR ERROR MESSAGES
 3955 023652  013737  002402  002502            MOV     RSAVE,BAD         ;...
 3956 023660                                    ERRSOFT 706,E502,ERR501   ;ERROR HANDLER
                                        .MCALL  M$ERRINS
      023660                            M$ERRINS        706,E502,ERR501,C$ERSOFT
                                        .MCALL  M$GNINS,M$WORD,M$TSTLAB
      023660                            M$SVC   C$ERSOFT
                                        .MCALL  M$GNINS,M$TSTLAB
      023660                            M$TSTLAB
                                        .MCALL  M$TLABEL,M$INCR
                                        .IIF LT T$TSTMAC, .MEXIT
```

```
                                .RADIX  10
                                M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                .RADIX  8
                                M$INCR  T$TSTSEQ
023660                          M$GNINS <TRAP   C$ERSOFT>
                                .IF LT SVCINS
                                TRAP    C$ERSOFT
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        TRAP    C$ERSOFT
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
023660  104457                                                                  TRAP    C$ERSOFT
                                                .NLIST
                                .ENDC
        000012                  .RADIX  10
                                .IF NB  706
        001302                  T$ERRNUM=706
                                .IFF
                                .ERROR  ;MISSING ERROR NR
                                .ENDC
023662                          M$WORD  \T$ERRNUM
                                .MCALL  M$GNINS
                                .IRP    N,<706>
                                M$GNINS <.WORD  N>
                                .ENDM
023662                          M$GNINS <.WORD  706>
                                .IF LT SVCINS
                                .WORD   706
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        .WORD   706
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
023662  001302                                                                  .WORD   706
                                                .NLIST
                                .ENDC
        000010                  .RADIX  8
                                .IF NB E502
023664                          M$WORD  E502
                                .MCALL  M$GNINS
                                .IRP    N,<E502>
                                M$GNINS <.WORD  N>
                                .ENDM
023664                          M$GNINS <.WORD  E502>
                                .IF LT SVCINS
                                .WORD   E502
```

```
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        .WORD   E502
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
      023664  005437                                                                        .WORD   E502
                                                .NLIST
                                .ENDC
                                .IFF
                                M$WORD  0
                                .ENDC
                                .IF NB ERR501
      023666                    M$WORD  ERR501
                                .MCALL  M$GNINS
                                .IRP    N,<ERR501>
                                M$GNINS <.WORD  N>
                                .ENDM
      023666                    M$GNINS <.WORD  ERR501>
                                .IF LT SVCINS
                                .WORD   ERR501
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        .WORD   ERR501
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
      023666  003672                                                                        .WORD   ERR501
                                                .NLIST
                                .ENDC
                                .IFF
                                M$WORD  0
                                .ENDC
 3957 023670                            CKLOOP                          ;BRANCH TO BGNSEG WHEN ERRLOOP IS SET
                                .MCALL  M$SVC
      023670                    M$SVC   C$CLP1
                                .MCALL  M$GNINS,M$TSTLAB
      023670                    M$TSTLAB
                                .MCALL  M$TLABEL,M$INCR
                                .IIF LT T$TSTMAC, .MEXIT
                                .RADIX  10
                                M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                .RADIX  8
                                M$INCR  T$TSTSEQ
      023670                    M$GNINS <TRAP   C$CLP1>
                                .IF LT SVCINS
                                TRAP    C$CLP1
                                .MEXIT
                                .ENDC
```

G14


```
                                        .IF EQ SVCINS
                                        .LIST
                                                TRAP    C$CLP1
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
     023670  104406                                                                                   TRAP    C$CLP1
                                                        .NLIST
                                        .ENDC
3958 023672  052777  000010  156400     60$:    BIS     #10,@CSRX               ;SELECT CHANNEL 2
3959 023700  012737  000002  002374             MOV     #2,CHAN                 ;LOAD CHANNEL NUMBER
3960 023706  017737  156336  002402             MOV     @IIRX,RSAVE             ;GET IIR2 CONTENTS
3961 023714  022737  000001  002402             CMP     #1,RSAVE                ;MAC BIT IN IIR2 SHOULD BE SET
3962 023722  001413                             BEQ     11$                     ;BRANCH IF YES
3963 023724  012737  000001  002500             MOV     #1,GOOD                 ;SET UP DATA FOR ERROR MESSAGES
3964 023732  013737  002402  002502             MOV     RSAVE,BAD               ;...
3965 023740                                     ERRSOFT 707,E501,ERR501         ;ERROR HANDLER
                                        .MCALL  M$ERRINS
     023740                             M$ERRINS        707,E501,ERR501,C$ERSOFT
                                        .MCALL  M$GNINS,M$WORD,M$TSTLAB
     023740                             M$SVC   C$ERSOFT
                                        .MCALL  M$GNINS,M$TSTLAB
     023740                             M$TSTLAB
                                        .MCALL  M$TLABEL,M$INCR
                                        .IIF LT T$TSTMAC, .MEXIT
                                        .RADIX  10
                                        M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                        .RADIX  8
                                        M$INCR  T$TSTSEQ
     023740                             M$GNINS <TRAP   C$ERSOFT>
                                        .IF LT SVCINS
                                        TRAP    C$ERSOFT
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                TRAP    C$ERSOFT
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
     023740  104457                                                                                   TRAP    C$ERSOFT
                                                        .NLIST
                                        .ENDC
             000012                     .RADIX  10
                                        .IF NB  707
             001303                     T$ERRNUM=707
                                        .IFF
                                        .ERROR  ;MISSING ERROR NR
                                        .ENDC
     023742                             M$WORD  \T$ERRNUM
                                        .MCALL  M$GNINS
                                        .IRP    N,<707>
                                        M$GNINS <.WORD  N>
```

```
                                  .ENDM
      023742                      M$GNINS <.WORD  707>
                                  .IF LT SVCINS
                                  .WORD   707
                                  .MEXIT
                                  .ENDC
                                  .IF EQ SVCINS
                                  .LIST
                                          .WORD   707
                                                  .NLIST
                                  .MEXIT
                                  .ENDC
                                  .IF GT SVCINS
                                  .LIST
      023742  001303                                                                    .WORD   707
                                                  .NLIST
                                  .ENDC
              000010              .RADIX  8
                                  .IF NB E501
      023744                      M$WORD  E501
                                  .MCALL  M$GNINS
                                  .IRP    N,<E501>
                                  M$GNINS <.WORD  N>
                                  .ENDM
      023744                      M$GNINS <.WORD  E501>
                                  .IF LT SVCINS
                                  .WORD   E501
                                  .MEXIT
                                  .ENDC
                                  .IF EQ SVCINS
                                  .LIST
                                          .WORD   E501
                                                  .NLIST
                                  .MEXIT
                                  .ENDC
                                  .IF GT SVCINS
                                  .LIST
      023744  005376                                                                    .WORD   E501
                                                  .NLIST
                                  .ENDC
                                  .IFF
                                  M$WORD  0
                                  .ENDC
                                  .IF NB ERR501
      023746                      M$WORD  ERR501
                                  .MCALL  M$GNINS
                                  .IRP    N,<ERR501>
                                  M$GNINS <.WORD  N>
                                  .ENDM
      023746                      M$GNINS <.WORD  ERR501>
                                  .IF LT SVCINS
                                  .WORD   ERR501
                                  .MEXIT
                                  .ENDC
                                  .IF EQ SVCINS
                                  .LIST
                                          .WORD   ERR501
```

```
                                                .NLIST
                              .MEXIT
                              .ENDC
                              .IF GT SVCINS
                              .LIST
      023746  003672                                                                  .WORD   ERR501
                                                .NLIST
                              .ENDC
                              .IFF
                              M$WORD  0
                              .ENDC
 3966 023750                            CKLOOP                    ;BRANCH TO BGNSEG WHEN ERRLOOP IS SET
                              .MCALL  M$SVC
      023750                  M$SVC   C$CLP1
                              .MCALL  M$GNINS,M$TSTLAB
      023750                  M$TSTLAB
                              .MCALL  M$TLABEL,M$INCR
                              .IIF LT T$TSTMAC, .MEXIT
                              .RADIX  10
                              M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                              .RADIX  8
                              M$INCR  T$TSTSEQ
      023750                  M$GNINS <TRAP   C$CLP1>
                              .IF LT SVCINS
                              TRAP    C$CLP1
                              .MEXIT
                              .ENDC
                              .IF EQ SVCINS
                              .LIST
                                      TRAP    C$CLP1
                                              .NLIST
                              .MEXIT
                              .ENDC
                              .IF GT SVCINS
                              .LIST
      023750  104406                                                                  TRAP    C$CLP1
                                                .NLIST
                              .ENDC
 3967 023752  017737  156300  002402  11$:    MOV     @ISRX,RSAVE             ;GET ISR2 CONTENTS
 3968 023760  023737  002434  002402          CMP     CDAT1,RSAVE             ;ATN,ATN,NDAC,(ULPA) BIT SHOULD BE SET
 3969 023766  001412                          BEQ     12$                     ;BRANCH IF YES
 3970 023770  013737  002434  002500          MOV     CDAT1,GOOD              ;SET UP DATA FOR ERROR MESSAGES
 3971 023776  013737  002402  002502          MOV     RSAVE,BAD               ;...
 3972 024004                                  ERRSOFT 708,E502,ERR501         ;ERROR HANDLER
                              .MCALL  M$ERRINS
      024004                  M$ERRINS        708,E502,ERR501,C$ERSOFT
                              .MCALL  M$GNINS,M$WORD,M$TSTLAB
      024004                  M$SVC   C$ERSOFT
                              .MCALL  M$GNINS,M$TSTLAB
      024004                  M$TSTLAB
                              .MCALL  M$TLABEL,M$INCR
                              .IIF LT T$TSTMAC, .MEXIT
                              .RADIX  10
                              M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                              .RADIX  8
                              M$INCR  T$TSTSEQ
      024004                  M$GNINS <TRAP   C$ERSOFT>
```

J14


```
                                .IF LT SVCINS
                                TRAP    C$ERSOFT
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        TRAP    C$ERSOFT
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
        024004  104457                                                  TRAP    C$ERSOFT
                                                .NLIST
                                .ENDC
                000012          .RADIX  10
                                .IF NB  708
                001304          T$ERRNUM=708
                                .IFF
                                .ERROR  ;MISSING ERROR NR
                                .ENDC
        024006                  M$WORD  \T$ERRNUM
                                .MCALL  M$GNINS
                                .IRP    N,<708>
                                M$GNINS <.WORD  N>
                                .ENDM
        024006                  M$GNINS <.WORD  708>
                                .IF LT SVCINS
                                .WORD   708
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        .WORD   708
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
        024006  001304                                                  .WORD   708
                                                .NLIST
                                .ENDC
                000010          .RADIX  8
                                .IF NB E502
        024010                  M$WORD  E502
                                .MCALL  M$GNINS
                                .IRP    N,<E502>
                                M$GNINS <.WORD  N>
                                .ENDM
        024010                  M$GNINS <.WORD  E502>
                                .IF LT SVCINS
                                .WORD   E502
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        .WORD   E502
```

```
                                          .NLIST
                          .MEXIT
                          .ENDC
                          .IF GT SVCINS
                          .LIST
      024010 005437                                                     .WORD   E502
                                          .NLIST
                          .ENDC
                          .IFF
                          M$WORD  0
                          .ENDC
                          .IF NB ERR501
      024012              M$WORD  ERR501
                          .MCALL  M$GNINS
                          .IRP    N,<ERR501>
                          M$GNINS <.WORD  N>
                          .ENDM
      024012              M$GNINS <.WORD  ERR501>
                          .IF LT SVCINS
                          .WORD   ERR501
                          .MEXIT
                          .ENDC
                          .IF EQ SVCINS
                          .LIST
                                  .WORD   ERR501
                                          .NLIST
                          .MEXIT
                          .ENDC
                          .IF GT SVCINS
                          .LIST
      024012 003672                                                     .WORD   ERR501
                                          .NLIST
                          .ENDC
                          .IFF
                          M$WORD  0
                          .ENDC
 3973 024014              12$:    ENDSEG
                          .MCALL  M$POP,M$GNLS,M$SVC,M$ENDERR
      024014              M$POP   T$NS,T$NESTLEV,T$TEMP
                          .MCALL  M$GETS,M$DECR
                          .IF LT  T$NESTLEV
                          .ERROR  T$NESTLEV       ; MACRO T$NS UNDERFLOW
                          .MEXIT
                          .ENDC
      024014              M$GETS  T$NS,\T$NESTLEV,T$TEMP
             000003       T$TEMP=T$NS2
      024014              M$DECR  T$NESTLEV
             000001       T$NESTLEV=T$NESTLEV 1
                          .IF EQ F$SEG T$TEMP
      024014              M$POP   T$SEK,T$SEGLEV,T$$SEG
                          .MCALL  M$GETS,M$DECR
                          .IF LT  T$SEGLEV
                          .ERROR  T$SEGLEV        ; MACRO T$SEK UNDERFLOW
                          .MEXIT
                          .ENDC
      024014              M$GETS  T$SEK,\T$SEGLEV,T$$SEG
             010000       T$$SEG=T$SEK0
```

L14


```
        024014                      M$DECR  T$SEGLEV
               177777               T$SEGLEV=T$SEGLEV-1
        024014                      M$GNLS  T$$SEG
                                    .MCALL  M$GEN
                                    .IF NB T$$SEG
        024014                      M$GEN   \T$$SEG,$,SVCTAG
                                    .IF LE  SVCTAG
                                    .IIF EQ SVCTAG,.LIST
                                    10000$:
                                    .IIF EQ SVCTAG,.NLIST
                                    .MEXIT
                                    .ENDC
                                    .LIST
        024014                                                                  10000$:
                                            .NLIST
                                    .IFF
                                    M$GEN   \S$LSYM,$,SVCTAG
                                    .ENDC
        024014                      M$SVC   C$ESEG
                                    .MCALL  M$GNINS,M$TSTLAB
        024014                      M$TSTLAB
                                    .MCALL  M$TLABEL,M$INCR
                                    .IIF LT T$TSTMAC, .MEXIT
                                    .RADIX  10
                                    M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                    .RADIX  8
                                    M$INCR  T$TSTSEQ
        024014                      M$GNINS <TRAP   C$ESEG>
                                    .IF LT SVCINS
                                    TRAP    C$ESEG
                                    .MEXIT
                                    .ENDC
                                    .IF EQ SVCINS
                                    .LIST
                                            TRAP    C$ESEG
                                                    .NLIST
                                    .MEXIT
                                    .ENDC
                                    .IF GT SVCINS
                                    .LIST
        024014 104405                                                                   TRAP    C$ESEG
                                                    .NLIST
                                    .ENDC
                                    .IF EQ T$SEGLEV+1
               000041               I$SEG=F$END
                                    .ENDC
                                    .IFF
                                    M$ENDERR        ENDSEG,T$TEMP
                                    .ENDC
   3974 024016                              BGNSEG
                                    .MCALL  M$PUSH,M$INCR,M$SVC
               000040               I$SEG-F$BGN
        024016                      M$PUSH  T$NS,T$NESTLEV,F$SEG
                                    .MCALL  M$INCR,M$SETS
        024016                      M$INCR  T$NESTLEV
               000002               T$NESTLEV=T$NESTLEV+1
        024016                      M$SETS  T$NS,\T$NESTLEV,F$SEG
```

TEST 7: ADDRESS REGISTER TEST OF CHANNEL 2

```
         000003                          T$NS2=F$SEG
         010001                          T$$SEG=S$LSYM
024016                                   M$PUSH  T$SEK,T$SEGLEV,T$$SEG
                                         .MCALL  M$INCR,M$SETS
024016                                   M$INCR  T$SEGLEV
         000000                          T$SEGLEV=T$SEGLEV+1
024016                                   M$SETS  T$SEK,\T$SEGLEV,T$$SEG
         010001                          T$SEK0=T$$SEG
024016                                   M$INCR  S$LSYM
         010002                          S$LSYM=S$LSYM+1
024016                                   M$SVC   C$BSEG
                                         .MCALL  M$GNINS,M$TSTLAB
024016                                   M$TSTLAB
                                         .MCALL  M$TLABEL,M$INCR
                                         .IIF LT T$TSTMAC, .MEXIT
                                         .RADIX  10
                                         M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                         .RADIX  8
                                         M$INCR  T$TSTSEQ
024016                                   M$GNINS <TRAP    C$BSEG>
                                         .IF LT SVCINS
                                         TRAP    C$BSEG
                                         .MEXIT
                                         .ENDC
                                         .IF EQ SVCINS
                                         .LIST
                                                 TRAP    C$BSEG
                                                         .NLIST
                                         .MEXIT
                                         .ENDC
                                         .IF GT SVCINS
                                         .LIST
024016   104404                                                                   TRAP    C$BSEG
                                                         .NLIST
                                         .ENDC
024020   042777  000010  156252                  BIC     #10,@CSRX               ;SELECT CHANNEL 1
024026   012737  000001  002374                  MOV     #1,CHAN                 ;LOAD CHANNEL NUMBER
024034   013701  002314                          MOV     DPA2,R1                 ;LOAD DPA2 IN R1
024040   062701  000100                          ADD     #100,R1                 ;CREATE MY TALKER ADDRESS (MTA)
024044   010137  002416                          MOV     R1,MTA2                 ;SAVE MTA
024050                                           ENDSEG
                                         .MCALL  M$POP,M$GNLS,M$SVC,M$ENDERR
024050                                   M$POP   T$NS,T$NESTLEV,T$TEMP
                                         .MCALL  M$GETS,M$DECR
                                         .IF LT  T$NESTLEV
                                         .ERROR  T$NESTLEV       ; MACRO T$NS UNDERFLOW
                                         .MEXIT
                                         .ENDC
024050                                   M$GETS  T$NS,\T$NESTLEV,T$TEMP
         000003                          T$TEMP=T$NS2
024050                                   M$DECR  T$NESTLEV
         000001                          T$NESTLEV=T$NESTLEV-1
                                         .IF EQ F$SEG-T$TEMP
024050                                   M$POP   T$SEK,T$SEGLEV,T$$SEG
                                         .MCALL  M$GETS,M$DECR
                                         .IF LT  T$SEGLEV
                                         .ERROR  T$SEGLEV        ; MACRO T$SEK UNDERFLOW
```

```
                                  .MEXIT
                                  .ENDC
     024050                       M$GETS  T$SEK,\T$SEGLEV,T$$SEG
            010001                T$$SEG=T$SEKO
     024050                       M$DECR  T$SEGLEV
            177777                T$SEGLEV=T$SEGLEV-1
     024050                       M$GNLS  T$$SEG
                                  .MCALL  M$GEN
                                  .IF NB T$$SEG
     024050                       M$GEN   \T$$SEG,$,SVCTAG
                                  .IF LE  SVCTAG
                                  .IIF EQ SVCTAG,.LIST
                                  10001$:
                                  .IIF EQ SVCTAG,.NLIST
                                  .MEXIT
                                  .ENDC
                                  .LIST
     024050                                                              10001$:
                                          .NLIST
                                  .IFF
                                  M$GEN   \S$LSYM,$,SVCTAG
                                  .ENDC
     024050                       M$SVC   C$ESEG
                                  .MCALL  M$GNINS,M$TSTLAB
     024050                       M$TSTLAB
                                  .MCALL  M$TLABEL,M$INCR
                                  .IIF LT T$TSTMAC, .MEXIT
                                  .RADIX  10
                                  M$TLABEL     + \T$TESTNUN,\T$TSTSEQ
                                  .RADIX  8
                                  M$INCR  T$TSTSEQ
     024050                       M$GNINS <TRAP   C$ESEG>
                                  .IF LT SVCINS
                                  TRAP    C$ESEG
                                  .MEXIT
                                  .ENDC
                                  .IF EQ SVCINS
                                  .LIST
                                          TRAP    C$ESEG
                                                  .NLIST
                                  .MEXIT
                                  .ENDC
                                  .IF GT SVCINS
                                  .LIST
     024050 104405                                                           TRAP    C$ESEG
                                                  .NLIST
                                  .ENDC
                                  .IF EQ T$SEGLEV+1
            000041                I$SEG=F$END
                                  .ENDC
                                  .IFF
                                  M$ENDERR        ENDSEG,T$TEMP
                                  .ENDC
3981 024052                               BGNSEG
                                  .MCALL  M$PUSH,M$INCR,M$SVC
            000040                I$SEG=F$BGN
     024052                       M$PUSH  T$NS,T$NESTLEV,F$SEG
```

```
                                        .MCALL  M$INCR,M$SETS
     024052                             M$INCR  T$NESTLEV
            000002                      T$NESTLEV=T$NESTLEV+1
     024052                             M$SETS  T$NS,\T$NESTLEV,F$SEG
            000003                      T$NS2=F$SEG
            010002                      T$$SEG=S$LSYM
     024052                             M$PUSH  T$SEK,T$SEGLEV,T$$SEG
                                        .MCALL  M$INCR,M$SETS
     024052                             M$INCR  T$SEGLEV
            000000                      T$SEGLEV=T$SEGLEV+1
     024052                             M$SETS  T$SEK,\T$SEGLEV,T$$SEG
            010002                      T$SEK0=T$$SEG
     024052                             M$INCR  S$LSYM
            010003                      S$LSYM=S$LSYM+1
     024052                             M$SVC   C$BSEG
                                        .MCALL  M$GNINS,M$TSTLAB
     024052                             M$TSTLAB
                                        .MCALL  M$TLABEL,M$INCR
                                        .IIF LT T$TSTMAC, .MEXIT
                                        .RADIX  10
                                        M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                        .RADIX  8
                                        M$INCR  T$TSTSEQ
     024052                             M$GNINS <TRAP   C$BSEG>
                                        .IF LT SVCINS
                                        TRAP    C$BSEG
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                TRAP    C$BSEG
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
     024052 104404                                                                      TRAP    C$BSEG
                                                        .NLIST
                                        .ENDC
3982 024054 113777 002416 156214                MOVB    MTA2,@IDRHX             ;LOAD TALKER ADDR. INTO DOR
3983 024062 004737 011050                       JSR     PC,LOOP                 ;WAIT A LITTLE
3984 024066 017737 156156 002402                MOV     @IIRX,RSAVE             ;GET IIR1 CONTENTS
3985 024074 022737 000020 002402                CMP     #20,RSAVE               ;B0 BIT IN IIR1 SHOULD BE SET
3986 024102 001413                              BEQ     13$                     ;BRANCH IF YES
3987 024104 012737 000020 002500                MOV     #20,GOOD                ;SET UP DATA FOR ERROR MESSAGES
3988 024112 013737 002402 002502                MOV     RSAVE,BAD               ;...
3989 024120                                     ERRSOFT 709,E501,ERR501         ;ERROR HANDLER
                                        .MCALL  M$ERRINS
     024120                             M$ERRINS        709,E501,ERR501,C$ERSOFT
                                        .MCALL  M$GNINS,M$WORD,M$TSTLAB
     024120                             M$SVC   C$ERSOFT
                                        .MCALL  M$GNINS,M$TSTLAB
     024120                             M$TSTLAB
                                        .MCALL  M$TLABEL,M$INCR
                                        .IIF LT T$TSTMAC, .MEXIT
                                        .RADIX  10
                                        M$TLABEL        \T$TESTNUN,\T$TSTSEQ
```

```
                                .RADIX  8
                                M$INCR  T$TSTSEQ
024120                          M$GNINS <TRAP   C$ERSOFT>
                                .IF LT SVCINS
                                TRAP    C$ERSOFT
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        TRAP    C$ERSOFT
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
024120  104457                                                          TRAP    C$ERSOFT
                                                .NLIST
                                .ENDC
        000012                  .RADIX  10
                                .IF NB  709
        001305                  T$ERRNUM=709
                                .IFF
                                .ERROR  ;MISSING ERROR NR
                                .ENDC
024122                          M$WORD  \T$ERRNUM
                                .MCALL  M$GNINS
                                .IRP    N,<709>
                                M$GNINS <.WORD  N>
                                .ENDM
024122                          M$GNINS <.WORD  709>
                                .IF LT SVCINS
                                .WORD   709
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        .WORD   709
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
024122  001305                                                          .WORD   709
                                                .NLIST
                                .ENDC
        000010                  .RADIX  8
                                .IF NB E501
024124                          M$WORD  E501
                                .MCALL  M$GNINS
                                .IRP    N,<E501>
                                M$GNINS <.WORD  N>
                                .ENDM
024124                          M$GNINS <.WORD  E501>
                                .IF LT SVCINS
                                .WORD   E501
                                .MEXIT
                                .ENDC
```

```
                        .IF EQ SVCINS
                        .LIST
                                .WORD   E501
                                        .NLIST
                        .MEXIT
                        .ENDC
                        .IF GT SVCINS
                        .LIST
      024124  005376                                                          .WORD   E501
                                        .NLIST
                        .ENDC
                        .IFF
                        M$WORD  0
                        .ENDC
                        .IF NB ERR501
      024126            M$WORD  ERR501
                        .MCALL  M$GNINS
                        .IRP    N,<ERR501>
                        M$GNINS <.WORD  N>
                        .ENDM
      024126            M$GNINS <.WORD  ERR501>
                        .IF LT SVCINS
                        .WORD   ERR501
                        .MEXIT
                        .ENDC
                        .IF EQ SVCINS
                        .LIST
                                .WORD   ERR501
                                        .NLIST
                        .MEXIT
                        .ENDC
                        .IF GT SVCINS
                        .LIST
      024126  003672                                                          .WORD   ERR501
                                        .NLIST
                        .ENDC
                        .IFF
                        M$WORD  0
                        .ENDC
 3990 024130                    CKLOOP                          ;BRANCH TO BGNSEG WHEN ERRLOOP IS SET
                        .MCALL  M$SVC
      024130            M$SVC   C$CLP1
                        .MCALL  M$GNINS,M$TSTLAB
      024130            M$TSTLAB
                        .MCALL  M$TLABEL,M$INCR
                        .IIF LT T$TSTMAC, .MEXIT
                        .RADIX  10
                        M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                        .RADIX  8
                        M$INCR  T$TSTSEQ
      024130            M$GNINS <TRAP   C$CLP1>
                        .IF LT SVCINS
                        TRAP    C$CLP1
                        .MEXIT
                        .ENDC
                        .IF EQ SVCINS
                        .LIST
```

```
                                                TRAP    C$CLP1
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
      024130  104406                                                                     TRAP    C$CLP1
                                                        .NLIST
                                        .ENDC
 3991 024132  017737  156120  002402    13$:    MOV     @ISRX,RSAVE             ;GET ISR1 CONTENTS
 3992 024140  022737  120040  002402            CMP     #120040,RSAVE           ;ATN,ATN,NDAC BIT IN ISR1 SHOULD BE SET
 3993 024146  001413                            BEQ     14$                     ;BRANCH IF YES
 3994 024150  012737  120040  002500            MOV     #120040,GOOD            ;SET UP DATA FOR ERROR MESSAGES
 3995 024156  013737  002402  002502            MOV     RSAVE,BAD               ;...
 3996 024164                                    ERRSOFT 710,E502,ERR501         ;ERROR HANDLER
                                        .MCALL  M$ERRINS
      024164                            M$ERRINS        710,E502,ERR501,C$ERSOFT
                                        .MCALL  M$GNINS,M$WORD,M$TSTLAB
      024164                            M$SVC   C$ERSOFT
                                        .MCALL  M$GNINS,M$TSTLAB
      024164                            M$TSTLAB
                                        .MCALL  M$TLABEL,M$INCR
                                        .IIF LT T$TSTMAC, .MEXIT
                                        .RADIX  10
                                        M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                        .RADIX  8
                                        M$INCR  T$TSTSEQ
      024164                            M$GNINS <TRAP   C$ERSOFT>
                                        .IF LT SVCINS
                                        TRAP    C$ERSOFT
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                TRAP    C$ERSOFT
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
      024164  104457                                                                     TRAP    C$ERSOFT
                                                        .NLIST
                                        .ENDC
              000012                    .RADIX  10
                                        .IF NB  710
              001306                    T$ERRNUM=710
                                        .IFF
                                        .ERROR  ;MISSING ERROR NR
                                        .ENDC
      024166                            M$WORD  \T$ERRNUM
                                        .MCALL  M$GNINS
                                        .IRP    N,<710>
                                        M$GNINS <.WORD  N>
                                        .ENDM
      024166                            M$GNINS <.WORD  710>
                                        .IF LT SVCINS
                                        .WORD   710
```

F15


```
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        .WORD   710
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
        024166  001306                                                                  .WORD   710
                                                .NLIST
                                .ENDC
                000010          .RADIX  8
                                .IF NB E502
        024170                  M$WORD  E502
                                .MCALL  M$GNINS
                                .IRP    N,<E502>
                                M$GNINS <.WORD  N>
                                .ENDM
        024170                  M$GNINS <.WORD  E502>
                                .IF LT SVCINS
                                .WORD   E502
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        .WORD   E502
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
        024170  005437                                                                  .WORD   E502
                                                .NLIST
                                .ENDC
                                .IFF
                                M$WORD  0
                                .ENDC
                                .IF NB ERR501
        024172                  M$WORD  ERR501
                                .MCALL  M$GNINS
                                .IRP    N,<ERR501>
                                M$GNINS <.WORD  N>
                                .ENDM
        024172                  M$GNINS <.WORD  ERR501>
                                .IF LT SVCINS
                                .WORD   ERR501
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        .WORD   ERR501
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
```

G15


```
                                                 .LIST
      024172  003672                                                                          .WORD   ERR501
                                                                .NLIST
                                                 .ENDC
                                                 .IFF
                                                 M$WORD  0
                                                 .ENDC
 3997 024174                                              CKLOOP                     ;BRANCH TO BGNSEG WHEN ERRLOOP IS SET
                                                 .MCALL  M$SVC
      024174                                     M$SVC   C$CLP1
                                                 .MCALL  M$GNINS,M$TSTLAB
      024174                                     M$TSTLAB
                                                 .MCALL  M$TLABEL,M$INCR
                                                 .IIF LT T$TSTMAC, .MEXIT
                                                 .RADIX  10
                                                 M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                                 .RADIX  8
                                                 M$INCR  T$TSTSEQ
      024174                                     M$GNIN_ <TRAP   C$CLP1>
                                                 .IF LT SVCINS
                                                 TRAP    C$CLP1
                                                 .MEXIT
                                                 .ENDC
                                                 .IF EQ SVCINS
                                                 .LIST
                                                          TRAP    C$CLP1
                                                                  .NLIST
                                                 .MEXIT
                                                 .ENDC
                                                 .IF GT SVCINS
                                                 .LIST
      024174  104406                                                                          TRAP    C$CLP1
                                                                  .NLIST
                                                 .ENDC
 3998 024176  052777  000010  156074             14$:     BIS     #10,@CSRX          ;SELECT CHANNEL 2
 3999 024204  012737  000002  002374                      MOV     #2,CHAN            ;LOAD CHANNEL NUMBER
 4000 024212  017737  156032  002402                      MOV     @IIRX,RSAVE        ;GET IIR2 CONTENTS
 4001 024220  022737  002001  002402                      CMP     #2001,RSAVE        ;MA,MAC BIT IN IIR2 SHOULD BE SET
 4002 024226  001413                                      BEQ     15$                ;BRANCH IF YES
 4003 024230  012737  002001  002500                      MOV     #2001,GOOD         ;SET UP DATA FOR ERROR MESSAGES
 4004 024236  013737  002402  002502                      MOV     RSAVE,BAD          ;...
 4005 024244                                              ERRSOFT 711,E501,ERR501    ;ERROR HANDLER
                                                 .MCALL  M$ERRINS
      024244                                     M$ERRINS        711,E501,ERR501,C$ERSOFT
                                                 .MCALL  M$GNINS,M$WORD,M$TSTLAB
      024244                                     M$SVC   C$ERSOFT
                                                 .MCALL  M$GNINS,M$TSTLAB
      024244                                     M$TSTLAB
                                                 .MCALL  M$TLABEL,M$INCR
                                                 .IIF LT T$TSTMAC, .MEXIT
                                                 .RADIX  10
                                                 M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                                 .RADIX  8
                                                 M$INCR  T$TSTSEQ
      024244                                     M$GNINS <TRAP   C$ERSOFT>
                                                 .IF LT SVCINS
                                                 TRAP    C$ERSOFT
```

```
                              .MEXIT
                              .ENDC
                              .IF EQ SVCINS
                              .LIST
                                      TRAP    C$ERSOFT
                                              .NLIST
                              .MEXIT
                              .ENDC
                              .IF GT SVCINS
                              .LIST
     024244  104457                                                               TRAP    C$ERSOFT
                                              .NLIST
                              .ENDC
             000012           .RADIX  10
                              .IF NB  711
             001307           T$ERRNUM=711
                              .IFF
                              .ERROR  ;MISSING ERROR-NR
                              .ENDC
     024246                   M$WORD  \T$ERRNUM
                              .MCALL  M$GNINS
                              .IRP    N,<711>
                              M$GNINS <.WORD  N>
                              .ENDM
     024246                   M$GNINS <.WORD  711>
                              .IF LT SVCINS
                              .WORD   711
                              .MEXIT
                              .ENDC
                              .IF EQ SVCINS
                              .LIST
                                      .WORD   711
                                              .NLIST
                              .MEXIT
                              .ENDC
                              .IF GT SVCINS
                              .LIST
     024246  001307                                                               .WORD   711
                                              .NLIST
                              .ENDC
             000010           .RADIX  8
                              .IF NB E501
     024250                   M$WORD  E501
                              .MCALL  M$GNINS
                              .IRP    N,<E501>
                              M$GNINS <.WORD  N>
                              .ENDM
     024250                   M$GNINS <.WORD  E501>
                              .IF LT SVCINS
                              .WORD   E501
                              .MEXIT
                              .ENDC
                              .IF EQ SVCINS
                              .LIST
                                      .WORD   E501
                                              .NLIST
                              .MEXIT
```

```
                              .ENDC
                              .IF GT SVCINS
                              .LIST
      024250  005376                                                              .WORD   E501
                                        .NLIST
                              .ENDC
                              .IFF
                              M$WORD  0
                              .ENDC
                              .IF NB ERR501
      024252                  M$WORD  ERR501
                              .MCALL  M$GNINS
                              .IRP    N,<ERR501>
                              M$GNINS <.WORD  N>
                              .ENDM
      024252                  M$GNINS <.WORD  ERR501>
                              .IF LT SVCINS
                              .WORD   ERR501
                              .MEXIT
                              .ENDC
                              .IF EQ SVCINS
                              .LIST
                                   .WORD   ERR501
                                        .NLIST
                              .MEXIT
                              .ENDC
                              .IF GT SVCINS
                              .LIST
      024252  003672                                                              .WORD   ERR501
                                        .NLIST
                              .ENDC
                              .IFF
                              M$WORD  0
                              .ENDC
 4006 024254                       CKLOOP                        ;BRANCH TO BGNSEG WHEN ERRLOOP IS SET
                              .MCALL  M$SVC
      024254                  M$SVC   C$CLP1
                              .MCALL  M$GNINS,M$TSTLAB
      024254                  M$TSTLAB
                              .MCALL  M$TLABEL,M$INCR
                              .IIF LT T$TSTMAC, .MEXIT
                              .RADIX  10
                              M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                              .RADIX  8
                              M$INCR  T$TSTSEQ
      024254                  M$GNINS <TRAP   C$CLP1>
                              .IF LT SVCINS
                              TRAP    C$CLP1
                              .MEXIT
                              .ENDC
                              .IF EQ SVCINS
                              .LIST
                                   TRAP    C$CLP1
                                        .NLIST
                              .MEXIT
                              .ENDC
                              .IF GT SVCINS
```

J15

TEST 7: ADDRESS REGISTER TEST OF CHANNEL 2

```
                                                .LIST
       024254  104406                                                                          TRAP    C$CLP1
                                                          .NLIST
                                                .ENDC
 4007  024256  017737  155774  002402   15$:    MOV       @ISRX,RSAVE          ;GET ISR2 CONTENTS
 4008  024264  023737  002440  002402           CMP       CDAT3,RSAVE          ;ATN,ATN,TADS,NDAC,TPAS,(ULPA) BIT SET
 4009  024272  001413                           BEQ       16$                  ;BRANCH IF YES
 4010  024274  013737  002402  002502           MOV       RSAVE,BAD            ;SET UP DATA FOR ERROR MESSAGES
 4011  024302  013737  002440  002500           MOV       CDAT3,GOOD           ;...
 4012  024310                                   ERRSOFT   712,E502,ERR501      ;ERROR HANDLER
                                                .MCALL  M$ERRINS
       024310                                   M$ERRINS          712,E502,ERR501,C$ERSOFT
                                                .MCALL  M$GNINS,M$WORD,M$TSTLAB
       024310                                   M$SVC   C$ERSOFT
                                                .MCALL  M$GNINS,M$TSTLAB
       024310                                   M$TSTLAB
                                                .MCALL  M$TLABEL,M$INCR
                                                .IIF LT T$TSTMAC, .MEXIT
                                                .RADIX  10
                                                M$TLABEL          \T$TESTNUN,\T$TSTSEQ
                                                .RADIX  8
                                                M$INCR  T$TSTSEQ
       024310                                   M$GNINS <TRAP     C$ERSOFT>
                                                .IF LT SVCINS
                                                TRAP    C$ERSOFT
                                                .MEXIT
                                                .ENDC
                                                .IF EQ SVCINS
                                                .LIST
                                                        TRAP      C$ERSOFT
                                                                  .NLIST
                                                .MEXIT
                                                .ENDC
                                                .IF GT SVCINS
                                                .LIST
       024310  104457                                                                          TRAP    C$ERSOFT
                                                                  .NLIST
                                                .ENDC
               000012                           .RADIX  10
                                                .IF NB  712
               001310                           T$ERRNUM=712
                                                .IFF
                                                .ERROR  ;MISSING ERROR NR
                                                .ENDC
       024312                                   M$WORD  \T$ERRNUM
                                                .MCALL  M$GNINS
                                                .IRP    N,<712>
                                                M$GNINS <.WORD    N>
                                                .ENDM
       024312                                   M$GNINS <.WORD    712>
                                                .IF LT SVCINS
                                                .WORD   712
                                                .MEXIT
                                                .ENDC
                                                .IF EQ SVCINS
                                                .LIST
                                                        .WORD     712
```

```
                                                .NLIST
                        .MEXIT
                        .ENDC
                        .IF GT SVCINS
                        .LIST
024312  001310                                                          .WORD   712
                                                .NLIST
                        .ENDC
        000010          .RADIX  8
                        .IF NB E502
024314                  M$WORD  E502
                        .MCALL  M$GNINS
                        .IRP    N,<E502>
                        M$GNINS <.WORD  N>
                        .ENDM
024314                  M$GNINS <.WORD  E502>
                        .IF LT SVCINS
                        .WORD   E502
                        .MEXIT
                        .ENDC
                        .IF EQ SVCINS
                        .LIST
                                .WORD   E502
                                                .NLIST
                        .MEXIT
                        .ENDC
                        .IF GT SVCINS
                        .LIST
024314  005437                                                          .WORD   E502
                                                .NLIST
                        .ENDC
                        .IFF
                        M$WORD  0
                        .ENDC
                        .IF NB ERR501
024316                  M$WORD  ERR501
                        .MCALL  M$GNINS
                        .IRP    N,<ERR501>
                        M$GNINS <.WORD  N>
                        .ENDM
024316                  M$GNINS <.WORD  ERR501>
                        .IF LT SVCINS
                        .WORD   ERR501
                        .MEXIT
                        .ENDC
                        .IF EQ SVCINS
                        .LIST
                                .WORD   ERR501
                                                .NLIST
                        .MEXIT
                        .ENDC
                        .IF GT SVCINS
                        .LIST
024316  003672                                                          .WORD   ERR501
                                                .NLIST
                        .ENDC
                        .IFF
```

```
                                        M$WORD  0
                                        .ENDC
  4013 024320                                   CKLOOP                          ;BRANCH TO BGNSEG WHEN ERRLOOP IS SET
                                        .MCALL  M$SVC
       024320                           M$SVC   C$CLP1
                                        .MCALL  M$GNINS,M$TSTLAB
       024320                           M$TSTLAB
                                        .MCALL  M$TLABEL,M$INCR
                                        .IIF LT T$TSTMAC, .MEXIT
                                        .RADIX  10
                                        M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                        .RADIX  8
                                        M$INCR  T$TSTSEQ
       024320                           M$GNINS <TRAP   C$CLP1>
                                        .IF LT SVCINS
                                        TRAP    C$CLP1
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                TRAP    C$CLP1
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
       024320  104406                                                                   TRAP    C$CLP1
                                                        .NLIST
                                        .ENDC
  4014 024322  042777  000010  155750   16$:    BIC     #10,@CSRX               ;SELECT CHANNEL 1
  4015 024330  012737  000001  002374           MOV     #1,CHAN                 ;LOAD CHANNEL NUMBER
  4016 024336  112777  000137  155732           MOVB    #137,@IDRHX             ;LOAD UNT INTO DOR
  4017 024344  004737  011050                   JSR     PC,LOOP                 ;WAIT A LITTLE
  4018 024350  017737  155674  002402           MOV     @IIRX,RSAVE             ;GET IIR1 CONTENTS
  4019 024356  022737  000020  002402           CMP     #20,RSAVE               ;B0 BIT IN IIR1 SHOULD BE SET
  4020 024364  001413                           BEQ     21$                     ;BRANCH IF YES
  4021 024366  012737  000020  002500           MOV     #20,GOOD                ;SET UP DATA FOR ERROR MESSAGES
  4022 024374  013737  002402  002502           MOV     RSAVE,BAD               ;...
  4023 024402                                   ERRSOFT 713,E501,ERR501         ;ERROR HANDLER
                                        .MCALL  M$ERRINS
       024402                           M$ERRINS        713,E501,ERR501,C$ERSOFT
                                        .MCALL  M$GNINS,M$WORD,M$TSTLAB
       024402                           M$SVC   C$ERSOFT
                                        .MCALL  M$GNINS,M$TSTLAB
       024402                           M$TSTLAB
                                        .MCALL  M$TLABEL,M$INCR
                                        .IIF LT T$TSTMAC, .MEXIT
                                        .RADIX  10
                                        M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                        .RADIX  8
                                        M$INCR  T$TSTSEQ
       024402                           M$GNINS <TRAP   C$ERSOFT>
                                        .IF LT SVCINS
                                        TRAP    C$ERSOFT
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
```

```
                                .LIST
                                        TRAP    C$ERSOFT
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
        024402  104457                                                          TRAP    C$ERSOFT
                                                .NLIST
                                .ENDC
                000012          .RADIX  10
                                .IF NB  713
                001311          T$ERRNUM=713
                                .IFF
                                .ERROR  ;MISSING ERROR-NR
                                .ENDC
        024404                  M$WORD  \T$ERRNUM
                                .MCALL  M$GNINS
                                .IRP    N,<713>
                                M$GNINS <.WORD  N>
                                .ENDM
        024404                  M$GNINS <.WORD  713>
                                .IF LT SVCINS
                                .WORD   713
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        .WORD   713
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
        024404  001311                                                          .WORD   713
                                                .NLIST
                                .ENDC
                000010          .RADIX  8
                                .IF NB E501
        024406                  M$WORD  E501
                                .MCALL  M$GNINS
                                .IRP    N,<E501>
                                M$GNINS <.WORD  N>
                                .ENDM
        024406                  M$GNINS <.WORD  E501>
                                .IF LT SVCINS
                                .WORD   E501
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        .WORD   E501
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
```

N15


```
        024406  005376                                                          .WORD   E501
                                                .NLIST
                                .ENDC
                                .IFF
                                M$WORD  0
                                .ENDC
                                .IF NB ERR501
        024410                  M$WORD  ERR501
                                .MCALL  M$GNINS
                                .IRP    N,<ERR501>
                                M$GNINS <.WORD  N>
                                .ENDM
        024410                  M$GNINS <.WORD  ERR501>
                                .IF LT SVCINS
                                .WORD   ERR501
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        .WORD   ERR501
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
        024410  003672                                                          .WORD   ERR501
                                                .NLIST
                                .ENDC
                                .IFF
                                M$WORD  0
                                .ENDC
   4024 024412                          CKLOOP                  ;BRANCH TO BGNSEG WHEN ERRLOOP IS SET
                                .MCALL  M$SVC
        024412                  M$SVC   C$CLP1
                                .MCALL  M$GNINS,M$TSTLAB
        024412                  M$TSTLAB
                                .MCALL  M$TLABEL,M$INCR
                                .IIF LT T$TSTMAC, .MEXIT
                                .RADIX  10
                                M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                .RADIX  8
                                M$INCR  T$TSTSEQ
        024412                  M$GNINS <TRAP   C$CLP1>
                                .IF LT SVCINS
                                TRAP    C$CLP1
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        TRAP    C$CLP1
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
        024412  104406                                                          TRAP    C$CLP1
                                                .NLIST
```

```
                                          .ENDC
 4025 024414  017737  155636  002402  21$:     MOV     @ISRX,RSAVE             ;GET ISR1 CONTENTS
 4026 024422  022737  120040  002402           CMP     #120040,RSAVE           ;ATN,ATN,NDAC IN ISR1 SHOULD BE SET
 4027 024430  001413                           BEQ     22$                     ;BRANCH IF YES
 4028 024432  012737  120040  002500           MOV     #120040,GOOD            ;SET UP DATA FOR ERROR MESSAGES
 4029 024440  013737  002402  002502           MOV     RSAVE,BAD               ;...
 4030 024446                                   ERRSOFT 714,E502,ERR501         ;ERROR HANDLER
                                          .MCALL  M$ERRINS
      024446                              M$ERRINS        714,E502,ERR501,C$ERSOFT
                                          .MCALL  M$GNINS,M$WORD,M$TSTLAB
      024446                              M$SVC   C$ERSOFT
                                          .MCALL  M$GNINS,M$TSTLAB
      024446                              M$TSTLAB
                                          .MCALL  M$TLABEL,M$INCR
                                          .IIF LT T$TSTMAC, .MEXIT
                                          .RADIX  10
                                          M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                          .RADIX  8
                                          M$INCR  T$TSTSEQ
      024446                              M$GNINS <TRAP   C$ERSOFT>
                                          .IF LT SVCINS
                                          TRAP    C$ERSOFT
                                          .MEXIT
                                          .ENDC
                                          .IF EQ SVCINS
                                          .LIST
                                                  TRAP    C$ERSOFT
                                                          .NLIST
                                          .MEXIT
                                          .ENDC
                                          .IF GT SVCINS
                                          .LIST
      024446  104457                                                                                    TRAP    C$ERSOFT
                                                          .NLIST
                                          .ENDC
              000012                      .RADIX  10
                                          .IF NB  714
              001312                      T$ERRNUM=714
                                          .IFF
                                          .ERROR  ;MISSING ERROR-NR
                                          .ENDC
      024450                              M$WORD  \T$ERRNUM
                                          .MCALL  M$GNINS
                                          .IRP    N,<714>
                                          M$GNINS <.WORD  N>
                                          .ENDM
      024450                              M$GNINS <.WORD  714>
                                          .IF LT SVCINS
                                          .WORD   714
                                          .MEXIT
                                          .ENDC
                                          .IF EQ SVCINS
                                          .LIST
                                                  .WORD   714
                                                          .NLIST
                                          .MEXIT
                                          .ENDC
```

```
                                .IF GT SVCINS
                                .LIST
     024450  001312                                                     .WORD   714
                                          .NLIST
                                .ENDC
             000010             .RADIX  8
                                .IF NB E502
     024452                     M$WORD  E502
                                .MCALL  M$GNINS
                                .IRP    N,<E502>
                                M$GNINS <.WORD  N>
                                .ENDM
     024452                     M$GNINS <.WORD  E502>
                                .IF LT SVCINS
                                .WORD   E502
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                     .WORD   E502
                                          .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
     024452  005437                                                     .WORD   E502
                                          .NLIST
                                .ENDC
                                .IFF
                                M$WORD  0
                                .ENDC
                                .IF NB ERR501
     024454                     M$WORD  ERR501
                                .MCALL  M$GNINS
                                .IRP    N,<ERR501>
                                M$GNINS <.WORD  N>
                                .ENDM
     024454                     M$GNINS <.WORD  ERR501>
                                .IF LT SVCINS
                                .WORD   ERR501
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                     .WORD   ERR501
                                          .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
     024454  003672                                                     .WORD   ERR501
                                          .NLIST
                                .ENDC
                                .IFF
                                M$WORD  0
                                .ENDC
4031 024456                          CKLOOP                     ;BRANCH TO BGNSEG WHEN ERRLOOP IS SET
```

D16


```
                                                .MCALL  M$SVC
        024456                                  M$SVC   C$CLP1
                                                .MCALL  M$GNINS,M$TSTLAB
        024456                                  M$TSTLAB
                                                .MCALL  M$TLABEL,M$INCR
                                                .IIF LT T$TSTMAC, .MEXIT
                                                .RADIX  10
                                                M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                                .RADIX  8
                                                M$INCR  T$TSTSEQ
        024456                                  M$GNINS <TRAP   C$CLP1>
                                                .IF LT SVCINS
                                                TRAP    C$CLP1
                                                .MEXIT
                                                .ENDC
                                                .IF EQ SVCINS
                                                .LIST
                                                        TRAP    C$CLP1
                                                                .NLIST
                                                .MEXIT
                                                .ENDC
                                                .IF GT SVCINS
                                                .LIST
        024456  104406                                                                                  TRAP    C$CLP1
                                                                .NLIST
                                                .ENDC
   4032 024460  052777  000010  155612  22$:    BIS     #10,@CSRX               ;SELECT CHANNEL 2
   4033 024466  012737  000002  002374          MOV     #2,CHAN                 ;LOAD CHANNEL NUMBER
   4034 024474  017737  155550  002402          MOV     @IIRX,RSAVE             ;GET IIR2 CONTENTS
   4035 024502  022737  000001  002402          CMP     #1,RSAVE                ;MAC BIT IN IIR2 SHOULD BE SET
   4036 024510  001413                          BEQ     23$                     ;BRANCH IF YES
   4037 024512  012737  000001  002500          MOV     #1,GOOD                 ;SET UP DATA FOR ERROR MESSAGES
   4038 024520  013737  002402  002502          MOV     RSAVE,BAD               ;...
   4039 024526                                  ERRSOFT 715,E501,ERR501         ;ERROR HANDLER
                                                .MCALL  M$ERRINS
        024526                                  M$ERRINS        715,E501,ERR501,C$ERSOFT
                                                .MCALL  M$GNINS,M$WORD,M$TSTLAB
        024526                                  M$SVC   C$ERSOFT
                                                .MCALL  M$GNINS,M$TSTLAB
        024526                                  M$TSTLAB
                                                .MCALL  M$TLABEL,M$INCR
                                                .IIF LT T$TSTMAC, .MEXIT
                                                .RADIX  10
                                                M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                                .RADIX  8
                                                M$INCR  T$TSTSEQ
        024526                                  M$GNINS <TRAP   C$ERSOFT>
                                                .IF LT SVCINS
                                                TRAP    C$ERSOFT
                                                .MEXIT
                                                .ENDC
                                                .IF EQ SVCINS
                                                .LIST
                                                        TRAP    C$ERSOFT
                                                                .NLIST
                                                .MEXIT
                                                .ENDC
```

```
                              .IF GT SVCINS
                              .LIST
024526  104457                                                            TRAP    C$ERSOFT
                                        .NLIST
                              .ENDC
        000012                .RADIX  10
                              .IF NB  715
        001313                T$ERRNUM=715
                              .IFF
                              .ERROR  ;MISSING ERROR-NR
                              .ENDC
024530                        M$WORD  \T$ERRNUM
                              .MCALL  M$GNINS
                              .IRP    N,<715>
                              M$GNINS <.WORD  N>
                              .ENDM
024530                        M$GNINS <.WORD  715>
                              .IF LT SVCINS
                              .WORD   715
                              .MEXIT
                              .ENDC
                              .IF EQ SVCINS
                              .LIST
                                   .WORD   715
                                        .NLIST
                              .MEXIT
                              .ENDC
                              .IF GT SVCINS
                              .LIST
024530  001313                                                            .WORD   715
                                        .NLIST
                              .ENDC
        000010                .RADIX  8
                              .IF NB E501
024532                        M$WORD  E501
                              .MCALL  M$GNINS
                              .IRP    N,<E501>
                              M$GNINS <.WORD  N>
                              .ENDM
024532                        M$GNINS <.WORD  E501>
                              .IF LT SVCINS
                              .WORD   E501
                              .MEXIT
                              .ENDC
                              .IF EQ SVCINS
                              .LIST
                                   .WORD   E501
                                        .NLIST
                              .MEXIT
                              .ENDC
                              .IF GT SVCINS
                              .LIST
024532  005376                                                            .WORD   E501
                                        .NLIST
                              .ENDC
                              .IFF
                              M$WORD  0
```

```
                                                .ENDC
                                                .IF NB ERR501
      024534                                    M$WORD  ERR501
                                                .MCALL  M$GNINS
                                                .IRP    N,<ERR501>
                                                M$GNINS <.WORD  N>
                                                .ENDM
      024534                                    M$GNINS <.WORD  ERR501>
                                                .IF LT SVCINS
                                                .WORD   ERR501
                                                .MEXIT
                                                .ENDC
                                                .IF EQ SVCINS
                                                .LIST
                                                        .WORD   ERR501
                                                                .NLIST
                                                .MEXIT
                                                .ENDC
                                                .IF GT SVCINS
                                                .LIST
      024534  003672                                                                    .WORD   ERR501
                                                                .NLIST
                                                .ENDC
                                                .IFF
                                                M$WORD  0
                                                .ENDC
 4040 024536                                            CKLOOP                  ;BRANCH TO BGNSEG WHEN ERRLOOP IS SET
                                                .MCALL  M$SVC
      024536                                    M$SVC   C$CLP1
                                                .MCALL  M$GNINS,M$TSTLAB
      024536                                    M$TSTLAB
                                                .MCALL  M$TLABEL,M$INCR
                                                .IIF LT T$TSTMAC, .MEXIT
                                                .RADIX  10
                                                M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                                .RADIX  8
                                                M$INCR  T$TSTSEQ
      024536                                    M$GNINS <TRAP   C$CLP1>
                                                .IF LT SVCINS
                                                TRAP    C$CLP1
                                                .MEXIT
                                                .ENDC
                                                .IF EQ SVCINS
                                                .LIST
                                                        TRAP    C$CLP1
                                                                .NLIST
                                                .MEXIT
                                                .ENDC
                                                .IF GT SVCINS
                                                .LIST
      024536  104406                                                                    TRAP    C$CLP1
                                                                .NLIST
                                                .ENDC
 4041 024540  017737  155512  002402    23$:    MOV     @ISRX,RSAVE     ;GET ISR2 CONTENTS
 4042 024546  023737  002434  002402            CMP     CDAT1,RSAVE     ;ATN,ATN,NDAC,(ULPA)BIT SHOULD BE SET
 4043 024554  001412                            BEQ     24$             ;BRANCH IF YES
 4044 024556  013737  002434  002500            MOV     CDAT1,GOOD      ;SET UP DATA FOR ERROR MESSAGES
```

G16


```
 4045 024564  013737  002402  002502          MOV     RSAVE,BAD                 ;...
 4046 024572                                  ERRSOFT 716,E502,ERR501           ;ERROR HANDLER
                                      .MCALL  M$ERRINS
      024572                          M$ERRINS        716,E502,ERR501,C$ERSOFT
                                      .MCALL  M$GNINS,M$WORD,M$TSTLAB
      024572                          M$SVC   C$ERSOFT
                                      .MCALL  M$GNINS,M$TSTLAB
      024572                          M$TSTLAB
                                      .MCALL  M$TLABEL,M$INCR
                                      .IIF LT T$TSTMAC, .MEXIT
                                      .RADIX  10
                                      M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                      .RADIX  8
                                      M$INCR  T$TSTSEQ
      024572                          M$GNINS <TRAP   C$ERSOFT>
                                      .IF LT SVCINS
                                      TRAP    C$ERSOFT
                                      .MEXIT
                                      .ENDC
                                      .IF EQ SVCINS
                                      .LIST
                                              TRAP    C$ERSOFT
                                                      .NLIST
                                      .MEXIT
                                      .ENDC
                                      .IF GT SVCINS
                                      .LIST
      024572  104457                                                                        TRAP    C$ERSOFT
                                                      .NLIST
                                      .ENDC
              000012                  .RADIX  10
                                      .IF NB  716
              001314                  T$ERRNUM=716
                                      .IFF
                                      .ERROR  ;MISSING ERROR NR
                                      .ENDC
      024574                          M$WORD  \T$ERRNUM
                                      .MCALL  M$GNINS
                                      .IRP    N,<716>
                                      M$GNINS <.WORD  N>
                                      .ENDM
      024574                          M$GNINS <.WORD  716>
                                      .IF LT SVCINS
                                      .WORD   716
                                      .MEXIT
                                      .ENDC
                                      .IF EQ SVCINS
                                      .LIST
                                              .WORD   716
                                                      .NLIST
                                      .MEXIT
                                      .ENDC
                                      .IF GT SVCINS
                                      .LIST
      024574  001314                                                                        .WORD   716
                                                      .NLIST
                                      .ENDC
```

H16


```
             000010                 .RADIX  8
                                    .IF NB E502
       024576                       M$WORD  E502
                                    .MCALL  M$GNINS
                                    .IRP    N,<E502>
                                    M$GNINS <.WORD  N>
                                    .ENDM
       024576                       M$GNINS <.WORD  E502>
                                    .IF LT SVCINS
                                    .WORD   E502
                                    .MEXIT
                                    .ENDC
                                    .IF EQ SVCINS
                                    .LIST
                                            .WORD   E502
                                                    .NLIST
                                    .MEXIT
                                    .ENDC
                                    .IF GT SVCINS
                                    .LIST
       024576  005437                                                                        .WORD   E502
                                                    .NLIST
                                    .ENDC
                                    .IFF
                                    M$WORD  0
                                    .ENDC
                                    .IF NB ERR501
       024600                       M$WORD  ERR501
                                    .MCALL  M$GNINS
                                    .IRP    N,<ERR501>
                                    '1$GNINS <.WORD  N>
                                    .ENDM
       024600                       M$GNINS <.WORD  ERR501>
                                    .IF LT SVCINS
                                    .WORD   ERR501
                                    .MEXIT
                                    .ENDC
                                    .IF EQ SVCINS
                                    .LIST
                                            .WORD   ERR501
                                                    .NLIST
                                    .MEXIT
                                    .ENDC
                                    .IF GT SVCINS
                                    .LIST
       024600  003672                                                                        .WORD   ERR501
                                                    .NLIST
                                    .ENDC
                                    .IFF
                                    M$WORD  0
                                    .ENDC
  4047 024602                       24$:    ENDSEG
                                    .MCALL  M$POP,M$GNLS,M$SVC,M$ENDERR
       024602                       M$POP   T$NS,T$NESTLEV,T$TEMP
                                    .MCALL  M$GETS,M$DECR
                                    .IF LT  T$NESTLEV
                                    .ERROR  T$NESTLEV       ; MACRO T$NS UNDERFLOW
```

```
                                .MEXIT
                                .ENDC
024602                          M$GETS  T$NS,\T$NESTLEV,T$TEMP
        000003                  T$TEMP=T$NS2
024602                          M$DECR  T$NESTLEV
        000001                  T$NESTLEV=T$NESTLEV-1
                                .IF EQ F$SEG-T$TEMP
024602                          M$POP   T$SEK,T$SEGLEV,T$$SEG
                                .MCALL  M$GETS,M$DECR
                                .IF LT  T$SEGLEV
                                .ERROR  T$SEGLEV        ; MACRO T$SEK UNDERFLOW
                                .MEXIT
                                .ENDC
024602                          M$GETS  T$SEK,\T$SEGLEV,T$$SEG
        010002                  T$$SEG=T$SEK0
024602                          M$DECR  T$SEGLEV
        177777                  T$SEGLEV=T$SEGLEV-1
024602                          M$GNLS  T$$SEG
                                .MCALL  M$GEN
                                .IF NB T$$SEG
024602                          M$GEN   \T$$SEG,$,SVCTAG
                                .IF LE  SVCTAG
                                .IIF EQ SVCTAG,.LIST
                                10002$:
                                .IIF EQ SVCTAG,.NLIST
                                .MEXIT
                                .ENDC
                                .LIST
024602                                                                          10002$:
                                        .NLIST
                                .IFF
                                M$GEN   \S$LSYM,$,SVCTAG
                                .ENDC
024602                          M$SVC   C$ESEG
                                .MCALL  M$GNINS,M$TSTLAB
024602                          M$TSTLAB
                                .MCALL  M$TLABEL,M$INCR
                                .IIF LT T$TSTMAC, .MEXIT
                                .RADIX  10
                                M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                .RADIX  8
                                M$INCR  T$TSTSEQ
024602                          M$GNINS <TRAP   C$ESEG>
                                .IF LT SVCINS
                                TRAP    C$ESEG
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        TRAP    C$ESEG
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
024602  104405                                                                          TRAP    C$ESEG
                                                .NLIST
```

```
                                .ENDC
                                .IF EQ T$SEGLEV+1
         000041                 T$SEG=F$END
                                .ENDC
                                .IFF
                                M$ENDERR        ENDSEG,T$TEMP
                                .ENDC
                                        ;+++---  ----------------------------------------------------------
                                        ;PART 2 OF THE ADDRESS REGISTER TEST.
                                        ;THIS PART CHECKS THE "DAL","DAT","EDPA" BITS IN THE ADDRESS REGISTER.
                                        ;+++-- --  --------------------------------------------------------
 024604  013701  002314                 MOV     DPA2,R1                 ;GET DEVICE PRIM. ADDR. 2
 024610  052701  000040                 BIS     #40,R1                  ;ADD DAT BIT TO DAP2-
 024614  110177  155434                 MOVB    R1,@IIRHX               ;LOAD DEVICE PRIM. ADDR.2 + DAT BIT
 024620                                 BGNSEG
                                .MCALL  M$PUSH,M$INCR,M$SVC
         000040                 T$SEG=F$BGN
 024620                         M$PUSH  T$NS,T$NESTLEV,F$SEG
                                .MCALL  M$INCR,M$SETS
 024620                         M$INCR  T$NESTLEV
         000002                 T$NESTLEV=T$NESTLEV+1
 024620                         M$SETS  T$NS,\T$NESTLEV,F$SEG
         000003                 T$NS2-F$SEG
         010003                 T$$SEG=S$LSYM
 024620                         M$PUSH  T$SEK,T$SEGLEV,T$$SEG
                                .MCALL  M$INCR,M$SETS
 024620                         M$INCR  T$SEGLEV
         000000                 T$SEGLEV=T$SEGLEV+1
 024620                         M$SETS  T$SEK,\T$SEGLEV,T$$SEG
         010003                 T$SEK0=T$$SEG
 024620                         M$INCR  S$LSYM
         010004                 S$LSYM=S$LSYM+1
 024620                         M$SVC   C$BSEG
                                .MCALL  M$GNINS,M$TSTLAB
 024620                         M$TSTLAB
                                .MCALL  M$TLABEL,M$INCR
                                .IIF LT T$TSTMAC, .MEXIT
                                .RADIX  10
                                M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                .RADIX  8
                                M$INCR  T$TSTSEQ
 024620                         M$GNINS <TRAP   C$BSEG>
                                .IF LT SVCINS
                                TRAP    C$BSEG
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        TRAP    C$BSEG
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
 024620  104404                                                                 TRAP    C$BSEG
                                                .NLIST
                                .ENDC
```

K16


```
4056 024622  042777  000010  155450  COPA2:  BIC     #10,@CSRX               ;SELECT CHANNEL 1
4057 024630  113777  002412  155440          MOVB    MLA2,@IDRHX             ;----LOAD MLA IN DCR1 REGISTER------
4058 024636  004737  011050                  JSR     PC,LOOP                 ;WAIT A LITTLE
4059 024642  052777  000010  155430          BIS     #10,@CSRX               ;SELECT CHANNEL 2
4060 024650  012737  000002  002374          MOV     #2,CHAN                 ;LOAD CHANNEL NUMBER
4061 024656  017737  155374  002402          MOV     @ISRX,RSAVE             ;GET ISR2 CONTENTS
4062 024664  023737  002444  002402          CMP     CDAT5,RSAVE             ;ATN,ATN,LADS,NDAC,LPAS,(ULPA) BIT SET
4063 024672  001413                          BEQ     40$                     ;BRANCH IF YES
4064 024674  013737  002444  002500          MOV     CDAT5,GOOD              ;SET UP DATA FOR ERROR MESSAGES
4065 024702  013737  002402  002502          MOV     RSAVE,BAD               ;...
4066 024710                                  ERRSOFT 717,E502,ERR501         ;ERROR HANDLER
                                        .MCALL  M$ERRINS
     024710                             M$ERRINS        717,E502,ERR501,C$ERSOFT
                                        .MCALL  M$GNINS,M$WORD,M$TSTLAB
     024710                             M$SVC   C$ERSOFT
                                        .MCALL  M$GNINS,M$TSTLAB
     024710                             M$TSTLAB
                                        .MCALL  M$TLABEL,M$INCR
                                        .IIF LT T$TSTMAC, .MEXIT
                                        .RADIX  10
                                        M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                        .RADIX  8
                                        M$INCR  T$TSTSEQ
     024710                             M$GNINS <TRAP   C$ERSOFT>
                                        .IF LT SVCINS
                                        TRAP    C$ERSOFT
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                TRAP    C$ERSOFT
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
     024710  104457                                                                      TRAP    C$ERSOFT
                                                        .NLIST
                                        .ENDC
             000012                     .RADIX  10
                                        .IF NB  717
             001315                     T$ERRNUM=717
                                        .IFF
                                        .ERROR  ;MISSING ERROR NR
                                        .ENDC
     024712                             M$WORD  \T$ERRNUM
                                        .MCALL  M$GNINS
                                        .IRP    N,<717>
                                        M$GNINS <.WORD  N>
                                        .ENDM
     024712                             M$GNINS <.WORD  717>
                                        .IF LT SVCINS
                                        .WORD   717
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
```

```
                                        .WORD   717
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
        024712  001315                                                          .WORD   717
                                                .NLIST
                                .ENDC
                000010          .RADIX  8
                                .IF NB E502
        024714                  M$WORD  E502
                                .MCALL  M$GNINS
                                .IRP    N,<E502>
                                M$GNINS <.WORD  N>
                                .ENDM
        024714                  M$GNINS <.WORD  E502>
                                .IF LT SVCINS
                                .WORD   E502
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        .WORD   E502
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
        024714  005437                                                          .WORD   E502
                                                .NLIST
                                .ENDC
                                .IFF
                                M$WORD  0
                                .ENDC
                                .IF NB ERR501
        024716                  M$WORD  ERR501
                                .MCALL  M$GNINS
                                .IRP    N,<ERR501>
                                M$GNINS <.WORD  N>
                                .ENDM
        024716                  M$GNINS <.WORD  ERR501>
                                .IF LT SVCINS
                                .WORD   ERR501
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        .WORD   ERR501
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
        024716  003672                                                          .WORD   ERR501
                                                .NLIST
                                .ENDC
```

```
                                        .IFF
                                        M$WORD  0
                                        .ENDC
4067 024720                                     CKLOOP                          ;BRANCH TO BGNSEG WHEN ERRLOOP IS SET
                                        .MCALL  M$SVC
     024720                             M$SVC   C$CLP1
                                        .MCALL  M$GNINS,M$TSTLAB
     024720                             M$TSTLAB
                                        .MCALL  M$TLABEL,M$INCR
                                        .IIF LT T$TSTMAC, .MEXIT
                                        .RADIX  10
                                        M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                        .RADIX  8
                                        M$INCR  T$TSTSEQ
     024720                             M$GNINS <TRAP   C$CLP1>
                                        .IF LT SVCINS
                                        TRAP    C$CLP1
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                TRAP    C$CLP1
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
     024720  104406                                                                             TRAP    C$CLP1
                                                        .NLIST
                                        .ENDC
4068 024722  042777  000010  155350     40$:    BIC     #10,@CSRX               ;SELECT CHANNEL 1
4069 024730  012737  000001  002374             MOV     #1,CHAN                 ;LOAD CHANNEL NUMBER
4070 024736  112777  000077  155332             MOVB    #77,@IDRHX              ;-----LOAD UNL INTO DOR--------------
4071 024744  004737  011050                     JSR     PC,LOOP                 ;WAIT A LITTLE
4072 024750  052777  000010  155322             BIS     #10,@CSRX               ;SELECT CHANNEL 2
4073 024756  012737  000002  002374             MOV     #2,CHAN                 ;LOAD CHANNEL NUMBER
4074 024764  017737  155266  002402             MOV     @ISRX,RSAVE             ;GET ISR2 CONTENTS
4075 024772  023737  002434  002402             CMP     CDAT1,RSAVE             ;ATN,ATN,NDAC,(ULPA) BIT SHOULD BE SET
4076 025000  001412                             BEQ     12$                     ;BRANCH IF YES
4077 025002  013737  002434  002500             MOV     CDAT1,GOOD              ;SET UP DATA FOR ERROR MESSAGES
4078 025010  013737  002402  002502             MOV     RSAVE,BAD               ;...
4079 025016                                     ERRSOFT 718,E502,ERR501         ;ERROR HANDLER
                                        .MCALL  M$ERRINS
     025016                             M$ERRINS        718,E502,ERR501,C$ERSOFT
                                        .MCALL  M$GNINS,M$WORD,M$TSTLAB
     025016                             M$SVC   C$ERSOFT
                                        .MCALL  M$GNINS,M$TSTLAB
     025016                             M$TSTLAB
                                        .MCALL  M$TLABEL,M$INCR
                                        .IIF LT T$TSTMAC, .MEXIT
                                        .RADIX  10
                                        M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                        .RADIX  8
                                        M$INCR  T$TSTSEQ
     025016                             M$GNINS <TRAP   C$ERSOFT>
                                        .IF LT SVCINS
                                        TRAP    C$ERSOFT
```

```
                        .MEXIT
                        .ENDC
                        .IF EQ SVCINS
                        .LIST
                                TRAP    C$ERSOFT
                                        .NLIST
                        .MEXIT
                        .ENDC
                        .IF GT SVCINS
                        .LIST
025016  [illegible]                                             TRAP    C$ERSOFT
                                        .NLIST
                        .ENDC
        000012          .RADIX  10
                        .IF NB  718
        001316          T$ERRNUM=718
                        .IFF
                        .ERROR  ;MISSING ERROR-NR
                        .ENDC
025020                  M$WORD  \T$ERRNUM
                        .MCALL  M$GNINS
                        .IRP    N,<718>
                        M$GNINS <.WORD  N>
                        .ENDM
025020                  M$GNINS <.WORD  718>
                        .IF LT SVCINS
                        .WORD   718
                        .MEXIT
                        .ENDC
                        .IF EQ SVCINS
                        .LIST
                                .WORD   718
                                        .NLIST
                        .MEXIT
                        .ENDC
                        .IF GT SVCINS
                        .LIST
025020  001316                                                  .WORD   718
                                        .NLIST
                        .ENDC
        000010          .RADIX  8
                        .IF NB E502
025022                  M$WORD  E502
                        .MCALL  M$GNINS
                        .IRP    N,<E502>
                        M$GNINS <.WORD  N>
                        .ENDM
025022                  M$GNINS <.WORD  E502>
                        .IF LT SVCINS
                        .WORD   E502
                        .MEXIT
                        .ENDC
                        .IF EQ SVCINS
                        .LIST
                                .WORD   E502
                                        .NLIST
                        .MEXIT
```

C1

```
                                .ENDC
                                .IF GT SVCINS
                                .LIST
      025022  005437                                                         .WORD   E502
                                          .NLIST
                                .ENDC
                                .IFF
                                M$WORD  0
                                .ENDC
                                .IF NB ERR501
      025024                    M$WORD  ERR501
                                .MCALL  M$GNINS
                                .IRP    N,<ERR501>
                                M$GNINS <.WORD  N>
                                .ENDM
      025024                    M$GNINS <.WORD  ERR501>
                                .IF LT SVCINS
                                .WORD   ERR501
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                     .WORD   ERR501
                                          .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
      025024  003672                                                         .WORD   ERR501
                                          .NLIST
                                .ENDC
                                .IFF
                                M$WORD  0
                                .ENDC
4080  025026                    12$:    ENDSEG
                                .MCALL  M$POP,M$GNLS,M$SVC,M$ENDERR
      025026                    M$POP   T$NS,T$NESTLEV,T$TEMP
                                .MCALL  M$GETS,M$DECR
                                .IF LT  T$NESTLEV
                                .ERROR  T$NESTLEV       ; MACRO T$NS UNDERFLOW
                                .MEXIT
                                .ENDC
      025026                    M$GETS  T$NS,\T$NESTLEV,T$TEMP
              000003            T$TEMP=T$NS2
      025026                    M$DECR  T$NESTLEV
              000001            T$NESTLEV=T$NESTLEV-1
                                .IF EQ F$SEG-T$TEMP
      025026                    M$POP   T$SEK,T$SEGLEV,T$$SEG
                                .MCALL  M$GETS,M$DECR
                                .IF LT  T$SEGLEV
                                .ERROR  T$SEGLEV        ; MACRO T$SEK UNDERFLOW
                                .MEXIT
                                .ENDC
      025026                    M$GETS  T$SEK,\T$SEGLEV,T$$SEG
              010003            T$$SEG=T$SEK0
      025026                    M$DECR  T$SEGLEV
              177777            T$SEGLEV=T$SEGLEV 1
```

```
025026                  M$GNLS  T$$SEG
                        .MCALL  M$GEN
                        .IF NB T$$SEG
025026                  M$GEN    \T$$SEG,$,SVCTAG
                        .IF LE   SVCTAG
                        .IIF EQ SVCTAG,.LIST
                        10003$:
                        .IIF EQ SVCTAG,.NLIST
                        .MEXIT
                        .ENDC
                        .LIST
025026                                                          10003$:
                                .NLIST
                        .IFF
                        M$GEN    \S$LSYM,$,SVCTAG
                        .ENDC
025026                  M$SVC    C$ESEG
                        .MCALL  M$GNINS,M$TSTLAB
025026                  M$TSTLAB
                        .MCALL  M$TLABEL,M$INCR
                        .IIF LT T$TSTMAC, .MEXIT
                        .RADIX  10
                        M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                        .RADIX  8
                        M$INCR  T$TSTSEQ
025026                  M$GNINS <TRAP   C$ESEG>
                        .IF LT SVCINS
                        TRAP    C$ESEG
                        .MEXIT
                        .ENDC
                        .IF EQ SVCINS
                        .LIST
                                RAP     C$ESEG
                                        .NLIST
                        .MEXIT
                        .ENDC
                        .IF GT SVCINS
                        .LIST
025026  104405                                                      TRAP    C$ESEG
                                        .NLIST
                        .ENDC
                        .IF EQ T$SEGLEV+1
        000041          T$SEG=F$END
                        .ENDC
                        .IFF
                        M$ENDERR        ENDSEG,T$TEMP
                        .ENDC
025030                          BGNSEG
                        .MCALL  M$PUSH,M$INCR,M$SVC
        000040          T$SEG-F$BGN
025030                  M$PUSH  T$NS,T$NESTLEV,F$SEG
                        .MCALL  M$INCR,M$SETS
025030                  M$INCR  T$NESTLEV
        000002          T$NESTLEV=T$NESTLEV+1
025030                  M$SETS  T$NS,\T$NESTLEV,F$SEG
        000003          T$NS2-F$SEG
        010004          T$$SEG S$LSYM
```

TEST 7: ADDRESS REGISTER TEST OF CHANNEL 2

```
     025030                                        M$PUSH  T$SEK,T$SEGLEV,T$$SEG
                                                   .MCALL  M$INCR,M$SETS
     025030                                        M$INCR  T$SEGLEV
            000000                                 T$SEGLEV=T$SEGLEV+1
     025030                                        M$SETS  T$SEK,\T$SEGLEV,T$$SEG
            010004                                 T$SEK0=T$$SEG
     025030                                        M$INCR  S$LSYM
            010005                                 S$LSYM=S$LSYM+1
     025030                                        M$SVC   C$BSEG
                                                   .MCALL  M$GNINS,M$TSTLAB
     025030                                        M$TSTLAB
                                                   .MCALL  M$TLABEL,M$INCR
                                                   .IIF LT T$TSTMAC, .MEXIT
                                                   .RADIX  10
                                                   M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                                   .RADIX  8
                                                   M$INCR  T$TSTSEQ
     025030                                        M$GNINS <TRAP   C$BSEG>
                                                   .IF LT SVCINS
                                                   TRAP    C$BSEG
                                                   .MEXIT
                                                   .ENDC
                                                   .IF EQ SVCINS
                                                   .LIST
                                                           TRAP    C$BSEG
                                                                   .NLIST
                                                   .MEXIT
                                                   .ENDC
                                                   .IF GT SVCINS
                                                   .LIST
     025030 104404                                                                                  TRAP    C$BSEG
                                                                   .NLIST
                                                   .ENDC
     025032 042777 000010 155240                           BIC     #10,@CSRX               ;SELECT CHANNEL 1
     025040 012737 000001 002374                           MOV     #1,CHAN                 ;LOAD CHANNEL NUMBER
     025046 113777 002416 155222                           MOVB    MTA2,@IDRHX             ;---LOAD MTA2 IN DOR1 REGISTER (IDR1)-
     025054 004737 011050                                  JSR     PC,LOOP                 ;WAIT A LITTLE
     025060 052777 000010 155212                           BIS     #10,@CSRX               ;SELECT CHANNEL 2
     025066 012737 000002 002374                           MOV     #2,CHAN                 ;LOAD CHANNEL NUMBER
     025074 017737 155156 002402                           MOV     @ISRX,RSAVE             ;GET ISR2 CONTENTS
     025102 023737 002436 002402                           CMP     CDAT2,RSAVE             ;ATN,ATN,NDAC,TPAS,(ULPA) SHOULD SET
     025110 001412                                         BEQ     33$                     ;BRANCH IF YES
     025112 013737 002402 002502                           MOV     RSAVE,BAD               ;SET UP DATA FOR ERROR MESSAGES
     025120 013737 002436 002500                           MOV     CDAT2,GOOD              ;...
     025126                                                ERRSOFT 719,E502,ERR501         ;ERROR HANDLER
                                                   .MCALL  M$ERRINS
     025126                                        M$ERRINS        719,E502,ERR501,C$ERSOFT
                                                   .MCALL  M$GNINS,M$WORD,M$TSTLAB
     025126                                        M$SVC   C$ERSOFT
                                                   .MCALL  M$GNINS,M$TSTLAB
     025126                                        M$TSTLAB
                                                   .MCALL  M$TLABEL,M$INCR
                                                   .IIF LT T$TSTMAC, .MEXIT
                                                   .RADIX  10
                                                   M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                                   .RADIX  8
                                                   M$INCR  T$TSTSEQ
```

F1


```
025126                          M$GNINS <TRAP   C$ERSOFT>
                                .IF LT SVCINS
                                TRAP    C$ERSOFT
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        TRAP    C$ERSOFT
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
025126  104457                                                          TRAP    C$ERSOFT
                                                .NLIST
                                .ENDC
        000012                  .RADIX  10
                                .IF NB  719
        001317                  T$ERRNUM=719
                                .IFF
                                .ERROR  ;MISSING ERROR-NR
                                .ENDC
025130                          M$WORD  \T$ERRNUM
                                .MCALL  M$GNINS
                                .IRP    N,<719>
                                M$GNINS <.WORD  N>
                                .ENDM
025130                          M$GNINS <.WORD  719>
                                .IF LT SVCINS
                                .WORD   719
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        .WORD   719
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
025130  001317                                                          .WORD   719
                                                .NLIST
                                .ENDC
        000010                  .RADIX  8
                                .IF NB E502
025132                          M$WORD  E502
                                .MCALL  M$GNINS
                                .IRP    N,<E502>
                                M$GNINS <.WORD  N>
                                .ENDM
025132                          M$GNINS <.WORD  E502>
                                .IF LT SVCINS
                                .WORD   E502
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
```

G1

```
                                .WORD   E502
                                        .NLIST
                        .MEXIT
                        .ENDC
                        .IF GT SVCINS
                        .LIST
     025132  005437                                                  .WORD   E502
                                        .NLIST
                        .ENDC
                        .IFF
                        M$WORD  0
                        .ENDC
                        .IF NB ERR501
     025134             M$WORD  ERR501
                        .MCALL  M$GNINS
                        .IRP    N,<ERR501>
                        M$GNINS <.WORD  N>
                        .ENDM
     025134             M$GNINS <.WORD  ERR501>
                        .IF LT SVCINS
                        .WORD   ERR501
                        .MEXIT
                        .ENDC
                        .IF EQ SVCINS
                        .LIST
                                .WORD   ERR501
                                        .NLIST
                        .MEXIT
                        .ENDC
                        .IF GT SVCINS
                        .LIST
     025134  003672                                                  .WORD   ERR501
                                        .NLIST
                        .ENDC
                        .IFF
                        M$WORD  0
                        .ENDC
4094 025136             33$:    ENDSEG
                        .MCALL  M$POP,M$GNLS,M$SVC,M$ENDERR
     025136             M$POP   T$NS,T$NESTLEV,T$TEMP
                        .MCALL  M$GETS,M$DECR
                        .IF LT  T$NESTLEV
                        .ERROR  T$NESTLEV       ; MACRO T$NS UNDERFLOW
                        .MEXIT
                        .ENDC
     025136             M$GETS  T$NS,\T$NESTLEV,T$TEMP
             000003     T$TEMP=T$NS2
     025136             M$DECR  T$NESTLEV
             000001     T$NESTLEV=T$NESTLEV-1
                        .IF EQ F$SEG-T$TEMP
     025136             M$POP   T$SEK,T$SEGLEV,T$$SEG
                        .MCALL  M$GETS,M$DECR
                        .IF LT  T$SEGLEV
                        .ERROR  T$SEGLEV        ; MACRO T$SEK UNDERFLOW
                        .MEXIT
                        .ENDC
     025136             M$GETS  T$SEK,\T$SEGLEV,T$$SEG
```

H1


```
                010004                  T$$SEG=T$SEKO
        025136                          M$DECR  T$SEGLEV
                177777                  T$SEGLEV=T$SEGLEV-1
        025136                          M$GNLS  T$$SEG
                                        .MCALL  M$GEN
                                        .IF NB T$$SEG
        025136                          M$GEN   \T$$SEG,$,SVCTAG
                                        .IF LE  SVCTAG
                                        .IIF EQ SVCTAG,.LIST
                                        10004$:
                                        .IIF EQ SVCTAG,.NLIST
                                        .MEXIT
                                        .ENDC
                                        .LIST
        025136                                                                          10004$:
                                                .NLIST
                                        .IFF
                                        M$GEN   \S$LSYM,$,SVCTAG
                                        .ENDC
        025136                          M$SVC   C$ESEG
                                        .MCALL  M$GNINS,M$TSTLAB
        025136                          M$TSTLAB
                                        .MCALL  M$TLABEL,M$INCR
                                        .IIF LT T$TSTMAC, .MEXIT
                                        .RADIX  10
                                        M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                        .RADIX  8
                                        M$INCR  T$TSTSEQ
        025136                          M$GNINS <TRAP   C$ESEG>
                                        .IF LT SVCINS
                                        TRAP    C$ESEG
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                TRAP    C$ESEG
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
        025136  104405                                                                        TRAP    C$ESEG
                                                        .NLIST
                                        .ENDC
                                        .IF EQ T$SEGLEV+1
                000041                  T$SEG=F$END
                                        .ENDC
                                        .IFF
                                        M$ENDERR        ENDSEG,T$TEMP
                                        .ENDC
4095    025140  013701  002314                  MOV     DPA2,R1                 ;GET DEVICE PRIM. ADDR. 2
4096    025144  052701  000100                  BIS     #100,R1                 ;SET DAL BIT
4097    025150  110177  155100                  MOVB    R1,@IIRHX               ;  -LOAD DPA2 PLUS DAL BIT IN ADDR. 2-
4098    025154                                  BGNSEG
                                        .MCALL  M$PUSH,M$INCR,M$SVC
                000040                  T$SEG=F$BGN
        025154                          M$PUSH  T$NS,T$NESTLEV,F$SEG
```

```
                                                .MCALL  M$INCR,M$SETS
        025154                                  M$INCR  T$NESTLEV
                000002                          T$NESTLEV=T$NESTLEV+1
        025154                                  M$SETS  T$NS,\T$NESTLEV,F$SEG
                000003                          T$NS2=F$SEG
                010005                          T$$SEG=S$LSYM
        025154                                  M$PUSH  T$SEK,T$SEGLEV,T$$SEG
                                                .MCALL  M$INCR,M$SETS
        025154                                  M$INCR  T$SEGLEV
                000000                          T$SEGLEV=T$SEGLEV+1
        025154                                  M$SETS  T$SEK,\T$SEGLEV,T$$SEG
                010005                          T$SEKO=T$$SEG
        025154                                  M$INCR  S$LSYM
                010006                          S$LSYM=S$LSYM+1
        025154                                  M$SVC   C$BSEG
                                                .MCALL  M$GNINS,M$TSTLAB
        025154                                  M$TSTLAB
                                                .MCALL  M$TLABEL,M$INCR
                                                .IIF LT T$TSTMAC, .MEXIT
                                                .RADIX  10
                                                M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                                .RADIX  8
                                                M$INCR  T$TSTSEQ
        025154                                  M$GNINS <TRAP   C$BSEG>
                                                .IF LT SVCINS
                                                TRAP    C$BSEG
                                                .MEXIT
                                                .ENDC
                                                .IF EQ SVCINS
                                                .LIST
                                                        TRAP    C$BSEG
                                                                .NLIST
                                                .MEXIT
                                                .ENDC
                                                .IF GT SVCINS
                                                .LIST
        025154  104404                                                                                  TRAP    C$BSEG
                                                                .NLIST
                                                .ENDC
   4099 025156  042777  000010  155114                  BIC     #10,@CSRX               ;SELECT CHANNEL 1
   4100 025164  012737  000001  002374                  MOV     #1,CHAN                 ;LOAD CHANNEL NUMBER
   4101 025172  113777  002412  155076                  MOVB    MLA2,@IDRHX             ;----LOAD MLA IN DOR1 ---  -- -------
   4102 025200  004737  011050                          JSR     PC,LOOP                 ;WAIT A LITTLE
   4103 025204  052777  000010  155066                  BIS     #10,@CSRX               ;SELECT CHANNEL 2
   4104 025212  012737  000002  002374                  MOV     #2,CHAN                 ;LOAD CHANNEL NUMBER
   4105 025220  017737  155032  002402                  MOV     @ISRX,RSAVE             ;GET ISR2 CONTENTS
   4106 025226  023737  002442  002402                  CMP     CDAT4,RSAVE             ;ATN,ATN,NDAC,LPAS,(ULPA) BITS SET
   4107 025234  001412                                  BEQ     36$                     ;BRANCH IF YES
   4108 025236  013737  002402  002502                  MOV     RSAVE,BAD               ;SET UP DATA FOR ERROR MESSAGES
   4109 025244  013737  002442  002500                  MOV     CDAT4,GOOD              ;...
   4110 025252                                          ERRSOFT 720,E502,ERR501         ;ERROR HANDLER
                                                .MCALL  M$ERRINS
        025252                                  M$ERRINS        720,E502,ERR501,C$ERSOFT
                                                .MCALL  M$GNINS,M$WORD,M$TSTLAB
        025252                                  M$SVC   C$ERSOFT
                                                .MCALL  M$GNINS,M$TSTLAB
        025252                                  M$TSTLAB
```

```
                                .MCALL  M$TLABEL,M$INCR
                                .IIF LT T$TSTMAC, .MEXIT
                                .RADIX  10
                                M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                .RADIX  8
                                M$INCR  T$TSTSEQ
     025252                     M$GNINS <TRAP   C$ERSOFT>
                                .IF LT SVCINS
                                TRAP    C$ERSOFT
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        TRAP    C$ERSOFT
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
     025252  104457                                                             TRAP    C$ERSOFT
                                                .NLIST
                                .ENDC
             000012             .RADIX  10
                                .IF NB  720
             001320             T$ERRNUM=720
                                .IFF
                                .ERROR  ;MISSING ERROR NR
                                .ENDC
     025254                     M$WORD  \T$ERRNUM
                                .MCALL  M$GNINS
                                .IRP    N,<720>
                                M$GNINS <.WORD  N>
                                .ENDM
     025254                     M$GNINS <.WORD  720>
                                .IF LT SVCINS
                                .WORD   720
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        .WORD   720
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
     025254  001320                                                             .WORD   720
                                                .NLIST
                                .ENDC
             000010             .RADIX  8
                                .IF NB E502
     025256                     M$WORD  E502
                                .MCALL  M$GNINS
                                .IRP    N,<E502>
                                M$GNINS <.WORD  N>
                                .ENDM
     025256                     M$GNINS <.WORD  E502>
```

K1

```
                              .IF LT SVCINS
                              .WORD   E502
                              .MEXIT
                              .ENDC
                              .IF EQ SVCINS
                              .LIST
                                      .WORD   E502
                                              .NLIST
                              .MEXIT
                              .ENDC
                              .IF GT SVCINS
                              .LIST
     025256  005437                                                     .WORD   E502
                                              .NLIST
                              .ENDC
                              .IFF
                              M$WORD  0
                              .ENDC
                              .IF NB ERR501
     025260                   M$WORD  ERR501
                              .MCALL  M$GNINS
                              .IRP    N,<ERR501>
                              M$GNINS <.WORD  N>
                              .ENDM
     025260                   M$GNINS <.WORD  ERR501>
                              .IF LT SVCINS
                              .WORD   ERR501
                              .MEXIT
                              .ENDC
                              .IF EQ SVCINS
                              .LIST
                                      .WORD   ERR501
                                              .NLIST
                              .MEXIT
                              .ENDC
                              .IF GT SVCINS
                              .LIST
     025260  003672                                                     .WORD   ERR501
                                              .NLIST
                              .ENDC
                              .IFF
                              M$WORD  0
                              .ENDC
4111 025262                   36$:    ENDSEG
                              .MCALL  M$POP,M$GNLS,M$SVC,M$ENDERR
     025262                   M$POP   T$NS,T$NESTLEV,T$TEMP
                              .MCALL  M$GETS,M$DECR
                              .IF LT  T$NESTLEV
                              .ERROR  T$NESTLEV       ; MACRO T$NS UNDERFLOW
                              .MEXIT
                              .ENDC
     025262                   M$GETS  T$NS,\T$NESTLEV,T$TEMP
             000003           T$TEMP=T$NS2
     025262                   M$DECR  T$NESTLEV
             000001           T$NESTLEV=T$NESTLEV 1
                              .IF EQ F$SEG T$TEMP
     025262                   M$POP   T$SEK,T$SEGLEV,T$$SEG
```

L1


```
                                        .MCALL  M$GETS,M$DECR
                                        .IF LT  T$SEGLEV
                                        .ERROR  T$SEGLEV        ; MACRO T$SEK UNDERFLOW
                                        .MEXIT
                                        .ENDC
      025262                            M$GETS  T$SEK,\T$SEGLEV,T$$SEG
             010005                     T$$SEG=T$SEKO
      025262                            M$DECR  T$SEGLEV
             177777                     T$SEGLEV=T$SEGLEV-1
      025262                            M$GNLS  T$$SEG
                                        .MCALL  M$GEN
                                        .IF NB T$$SEG
      025262                            M$GEN   \T$$SEG,$,SVCTAG
                                        .IF LE  SVCTAG
                                        .IIF EQ SVCTAG,.LIST
                                        10005$:
                                        .IIF EQ SVCTAG,.NLIST
                                        .MEXIT
                                        .ENDC
                                        .LIST
      025262                                                                            10005$:
                                                .NLIST
                                        .IFF
                                        M$GEN   \S$LSYM,$,SVCTAG
                                        .ENDC
      025262                            M$SVC   C$ESEG
                                        .MCALL  M$GNINS,M$TSTLAB
      025262                            M$TSTLAB
                                        .MCALL  M$TLABEL,M$INCR
                                        .IIF LT T$TSTMAC, .MEXIT
                                        .RADIX  10
                                        M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                        .RADIX  8
                                        M$INCR  T$TSTSEQ
      025262                            M$GNINS <TRAP   C$ESEG>
                                        .IF LT SVCINS
                                        TRAP    C$ESEG
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                TRAP    C$ESEG
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
      025262 104405                                                                          TRAP    C$ESEG
                                                        .NLIST
                                        .ENDC
                                        .IF EQ T$SEGLEV+1
             000041                     I$SEG=F$END
                                        .ENDC
                                        .IFF
                                        M$ENDERR        ENDSEG,T$TEMP
                                        .ENDC
4112  025264                                    BGNSEG
```

M1

```
                                        .MCALL  M$PUSH,M$INCR,M$SVC
                000040                  I$SEG=F$BGN
         025264                         M$PUSH  T$NS,T$NESTLEV,F$SEG
                                        .MCALL  M$INCR,M$SETS
         025264                         M$INCR  T$NESTLEV
                000002                  T$NESTLEV=T$NESTLEV+1
         025264                         M$SETS  T$NS,\T$NESTLEV,F$SEG
                000003                  T$NS2=F$SEG
                010006                  T$$SEG=S$LSYM
         025264                         M$PUSH  T$SEK,T$SEGLEV,T$$SEG
                                        .MCALL  M$INCR,M$SETS
         025264                         M$INCR  T$SEGLEV
                000000                  T$SEGLEV=T$SEGLEV+1
         025264                         M$SETS  T$SEK,\T$SEGLEV,T$$SEG
                010006                  T$SEK0=T$$SEG
         025264                         M$INCR  S$LSYM
                010007                  S$LSYM=S$LSYM+1
         025264                         M$SVC   C$BSEG
                                        .MCALL  M$GNINS,M$TSTLAB
         025264                         M$TSTLAB
                                        .MCALL  M$TLABEL,M$INCR
                                        .IIF LT T$TSTMAC, .MEXIT
                                        .RADIX  10
                                        M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                        .RADIX  8
                                        M$INCR  T$TSTSEQ
         025264                         M$GNINS <TRAP   C$BSEG>
                                        .IF LT SVCINS
                                        TRAP    C$BSEG
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                TRAP    C$BSEG
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
         025264 104404                                                                  TRAP    C$BSEG
                                                        .NLIST
                                        .ENDC
    4113 025266 042777 000010 155004            BIC     #10,@CSRX               ;SELECT CHANNEL 1
    4114 025274 012737 000001 002374            MOV     #1,CHAN                 ;GET CHANNEL NUMBER
    4115 025302 113777 002416 154766            MOVB    MTA2,@IDRHX             ;----LOAD MTA2 IN DOR1 REGISTER----
    4116 025310 004737 011050                   JSR     PC,LOOP                 ;WAIT A LITTLE
    4117 025314 052777 000010 154756            BIS     #10,@CSRX               ;SELECT CHANNEL 2
    4118 025322 012737 000002 002374            MOV     #2,CHAN                 ;LOAD CHANNEL NUMBER
    4119 025330 017737 154722 002402            MOV     @ISRX,RSAVE             ;GET ISR2 CONTENTS
    4120 025336 023737 002440 002402            CMP     CDAT3,RSAVE             ;ATN,ATN,TADS,NDAC,TPAS,(ULPA) BIT SET
    4121 025344 001413                          BEQ     16$                     ;BRANCH IF YES
    4122 025346 013737 002402 002502            MOV     RSAVE,BAD               ;SET UP DATA FOR ERROR MESSAGES
    4123 025354 013737 002440 002500            MOV     CDAT3,GOOD              ;...
    4124 025362                                 ERRSOFT 721,E502,ERR501         ;ERROR HANDLER
                                        .MCALL  M$ERRINS
         025362                         M$ERRINS        721,E502,ERR501,C$ERSOFT
                                        .MCALL  M$GNINS,M$WORD,M$TSTLAB
```

```
        025362                          M$SVC   C$ERSOFT
                                        .MCALL  M$GNINS,M$TSTLAB
        025362                          M$TSTLAB
                                        .MCALL  M$TLABEL,M$INCR
                                        .IIF LT T$TSTMAC, .MEXIT
                                        .RADIX  10
                                        M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                        .RADIX  8
                                        M$INCR  T$TSTSEQ
        025362                          M$GNINS <TRAP   C$ERSOFT>
                                        .IF LT SVCINS
                                        TRAP    C$ERSOFT
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                TRAP    C$ERSOFT
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
        025362  104457                                                                  TRAP    C$ERSOFT
                                                        .NLIST
                                        .ENDC
                000012                  .RADIX  10
                                        .IF NB  721
                001321                  T$ERRNUM=721
                                        .IFF
                                        .ERROR  ;MISSING ERROR-NR
                                        .ENDC
        025364                          M$WORD  \T$ERRNUM
                                        .MCALL  M$GNINS
                                        .IRP    N,<721>
                                        M$GNINS <.WORD  N>
                                        .ENDM
        025364                          M$GNINS <.WORD  721>
                                        .IF LT SVCINS
                                        .WORD   721
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                .WORD   721
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
        025364  001321                                                                  .WORD   721
                                                        .NLIST
                                        .ENDC
                000010                  .RADIX  8
                                        .IF NB E502
        025366                          M$WORD  E502
                                        .MCALL  M$GNINS
                                        .IRP    N,<E502>
```

```
                                        M$GNINS <.WORD  N>
                                        .ENDM
      025366                            M$GNINS <.WORD  E502>
                                        .IF LT SVCINS
                                        .WORD   E502
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                .WORD   E502
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
      025366  005437                                                                    .WORD   E502
                                                        .NLIST
                                        .ENDC
                                        .IFF
                                        M$WORD  0
                                        .ENDC
                                        .IF NB ERR501
      025370                            M$WORD  ERR501
                                        .MCALL  M$GNINS
                                        .IRP    N,<ERR501>
                                        M$GNINS <.WORD  N>
                                        .ENDM
      025370                            M$GNINS <.WORD  ERR501>
                                        .IF LT SVCINS
                                        .WORD   ERR501
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                .WORD   ERR501
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
      025370  003672                                                                    .WORD   ERR501
                                                        .NLIST
                                        .ENDC
                                        .IFF
                                        M$WORD  0
                                        .ENDC
 4125 025372                                    CKLOOP                  ;BRANCH TO BGNSEG WHEN ERRLOOP IS SET
                                        .MCALL  M$SVC
      025372                            M$SVC   C$CLP1
                                        .MCALL  M$GNINS,M$TSTLAB
      025372                            M$TSTLAB
                                        .MCALL  M$TLABEL,M$INCR
                                        .IIF LT T$TSTMAC, .MEXIT
                                        .RADIX  10
                                        M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                        .RADIX  8
                                        M$INCR  T$TSTSEQ
```

```
     025372                                 M$GNINS <TRAP    C$CLP1>
                                            .IF LT SVCINS
                                            TRAP     C$CLP1
                                            .MEXIT
                                            .ENDC
                                            .IF EQ SVCINS
                                            .LIST
                                                     TRAP     C$CLP1
                                                              .NLIST
                                            .MEXIT
                                            .ENDC
                                            .IF GT SVCINS
                                            .LIST
     025372  104406                                                                                  TRAP     C$CLP1
                                                              .NLIST
                                            .ENDC
     025374  042777  000010  154676         16$:     BIC      #10,@CSRX            ;SELECT CHANNEL 1
     025402  012737  000001  002374                  MOV      #1,CHAN              ;LOAD CHANNEL NUMBER
     025410  112777  000137  154660                  MOVB     #137,@IDRHX          ;-----LOAD UNT INTO DOR---------------
     025416  004737  011050                          JSR      PC,LOOP              ;WAIT A LITTLE
     025422  052777  000010  154650                  BIS      #10,@CSRX            ;SELECT CHANNEL 2
     025430  012737  000002  002374                  MOV      #2,CHAN              ;LOAD CHANNEL NUMBER
     025436  017737  154614  002402                  MOV      @ISRX,RSAVE          ;GET ISR2 CONTENTS
     025444  023737  002434  002402                  CMP      CDAT1,RSAVE          ;ATN,ATN,NDAC,(ULPA) SHOULD BE SET
     025452  001412                                  BEQ      24$                  ;BRANCH IF YES
     025454  013737  002434  002500                  MOV      CDAT1,GOOD           ;SET UP DATA FOR ERROR MESSAGES
     025462  013737  002402  002502                  MOV      RSAVE,BAD            ;...
     025470                                          ERRSOFT  722,E502,ERR501      ;ERROR HANDLER
                                            .MCALL   M$ERRINS
     025470                                 M$ERRINS          722,E502,ERR501,C$ERSOFT
                                            .MCALL   M$GNINS,M$WORD,M$TSTLAB
     025470                                 M$SVC    C$ERSOFT
                                            .MCALL   M$GNINS,M$TSTLAB
     025470                                 M$TSTLAB
                                            .MCALL   M$TLABEL,M$INCR
                                            .IIF LT T$TSTMAC, .MEXIT
                                            .RADIX  10
                                            M$TLABEL          \T$TESTNUN,\T$TSTSEQ
                                            .RADIX  8
                                            M$INCR   T$TSTSEQ
     025470                                 M$GNINS <TRAP    C$ERSOFT>
                                            .IF LT SVCINS
                                            TRAP     C$ERSOFT
                                            .MEXIT
                                            .ENDC
                                            .IF EQ SVCINS
                                            .LIST
                                                     TRAP     C$ERSOFT
                                                              .NLIST
                                            .MEXIT
                                            .ENDC
                                            .IF GT SVCINS
                                            .LIST
     025470  104457                                                                                  TRAP     C$ERSOFT
                                                              .NLIST
                                            .ENDC
             000012                         .RADIX  10
```

```
                                .IF NB  722
            001322              T$ERRNUM=722
                                .IFF
                                .ERROR  ;MISSING ERROR-NR
                                .ENDC
    025472                      M$WORD  \T$ERRNUM
                                .MCALL  M$GNINS
                                .IRP    N,<722>
                                M$GNINS <.WORD  N>
                                .ENDM
    025472                      M$GNINS <.WORD  722>
                                .IF LT SVCINS
                                .WORD   722
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        .WORD   722
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
    025472  001322                                                          .WORD   722
                                                .NLIST
                                .ENDC
            000010              .RADIX  8
                                .IF NB E502
    025474                      M$WORD  E502
                                .MCALL  M$GNINS
                                .IRP    N,<E502>
                                M$GNINS <.WORD  N>
                                .ENDM
    025474                      M$GNINS <.WORD  E502>
                                .IF LT SVCINS
                                .WORD   E502
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        .WORD   E502
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
    025474  005437                                                          .WORD   E502
                                                .NLIST
                                .ENDC
                                .IFF
                                M$WORD  0
                                .ENDC
                                .IF NB ERR501
    025476                      M$WORD  ERR501
                                .MCALL  M$GNINS
                                .IRP    N,<ERR501>
                                M$GNINS <.WORD  N>
```

```
                                   .ENDM
     025476                        M$GNINS <.WORD  ERR501>
                                   .IF LT S'CINS
                                   .WORD   ERR501
                                   .MEXIT
                                   .ENDC
                                   .IF EQ SVCINS
                                   .LIST
                                         .WORD   ERR501
                                                 .NLIST
                                   .MEXIT
                                   .ENDC
                                   .IF GT SVCINS
                                   .LIST
     025476  003672                                                                  .WORD   ERR501
                                                 .NLIST
                                   .ENDC
                                   .IFF
                                   M$WORD  0
                                   .ENDC
4138 025500                        24$:    ENDSEG
                                   .MCALL  M$POP,M$GNLS,M$SVC,M$ENDFRR
     025500                        M$POP   T$NS,T$NESTLEV,T$TEMP
                                   .MCALL  M$GETS,M$DECR
                                   .IF LT  T$NESTLEV
                                   .ERROR  T$NESTLEV       ; MACRO T$NS UNDERFLOW
                                   .MEXIT
                                   .ENDC
     025500                        M$GETS  T$NS,\T$NESTLEV,T$TEMP
             000003                T$TEMP=T$NS2
     025500                        M$DECR  T$NESTLEV
             000001                T$NESTLEV=T$NESTLEV 1
                                   .IF EQ F$SEG-T$TEMP
     025500                        M$POP   T$SEK,T$SEGLEV,T$$SEG
                                   .MCALL  M$GETS,M$DECR
                                   .IF LT  T$SEGLEV
                                   .ERROR  T$SEGLEV        ; MACRO T$SEK UNDERFLOW
                                   .MEXIT
                                   .ENDC
     025500                        M$GETS  T$SEK,\T$SEGLEV,T$$SEG
             010006                T$$SEG=T$SEKO
     025500                        M$DECR  T$SEGLEV
             177777                T$SEGLEV=T$SEGLEV-1
     025500                        M$GNLS  T$$SEG
                                   .MCALL  M$GEN
                                   .IF NB T$$SEG
     025500                        M$GEN   \T$$SEG,$,SVCTAG
                                   .IF LE  SVCTAG
                                   .IIF EQ SVCTAG,.LIST
                                   10006$:
                                   .IIF EQ SVCTAG,.NLIST
                                   .MEXIT
                                   .ENDC
                                   .LIST
     025500                                                                    10006$:
                                         .NLIST
                                   .IFF
```

```
                                        M$GEN   \S$LSYM,$,SVCTAG
                                        .ENDC
       025500                           M$SVC   C$ESEG
                                        .MCALL  M$GNINS,M$TSTLAB
       025500                           M$TSTLAB
                                        .MCALL  M$TLABEL,M$INCR
                                        .IIF LT T$TSTMAC, .MEXIT
                                        .RADIX  10
                                        M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                        .RADIX  8
                                        M$INCR  T$TSTSEQ
       025500                           M$GNINS <TRAP   C$ESEG>
                                        .IF LT SVCINS
                                        TRAP    C$ESEG
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                TRAP    C$ESEG
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
       025500  104405                                                                   TRAP    C$ESEG
                                                        .NLIST
                                        .ENDC
                                        .IF EQ T$SEGLEV+1
               000041                   I$SEG=F$END
                                        .ENDC
                                        .IFF
                                        M$ENDERR        ENDSEG,T$TEMP
                                        .ENDC
  4139 025502  022737  000036  002314           CMP     #36,DPA2                ;IS LAST DPA ADDRESS SELECTED
  4140 025510  001002                           BNE     25$                     ;BRANCH IF NO
  4141 025512  000137  027174                   JMP     TQVP7                   ;
  4142 025516  052777  000010  154554  25$:     BIS     #10,@CSRX               ;SELECT CHANNEL 2
  4143 025524  013701  002314                   MOV     DPA2,R1                 ;GET DPA2
  4144 025530  052701  000200                   BIS     #200,R1                 ;--------SET EDPA BIT--- ------------
  4145 025534  110177  154514                   MOVB    R1,@IIRHX               ;LOAD DPA2 & EDPA BIT INTO ADDR.
  4146 025540                                   BGNSEG
                                        .MCALL  M$PUSH,M$INCR,M$SVC
               000040                   I$SEG=F$BGN
       025540                           M$PUSH  T$NS,T$NESTLEV,F$SEG
                                        .MCALL  M$INCR,M$SETS
       025540                           M$INCR  T$NESTLEV
               000002                   T$NESTLEV=T$NESTLEV+1
       025540                           M$SETS  T$NS,\T$NESTLEV,F$SEG
               000003                   T$NS2=F$SEG
               010007                   T$$SEG=S$LSYM
       025540                           M$PUSH  T$SEK,T$SEGLEV,T$$SEG
                                        .MCALL  M$INCR,M$SETS
       025540                           M$INCR  T$SEGLEV
               000000                   T$SEGLEV=T$SEGLEV+1
       025540                           M$SETS  T$SEK,\T$SEGLEV,T$$SEG
               010007                   T$SEKO=T$$SEG
       025540                           M$INCR  S$LSYM
```

```
        010010                          S$LSYM=S$LSYM+1
 025540                                 M$SVC   C$BSEG
                                        .MCALL  M$GNINS,M$TSTLAB
 025540                                 M$TSTLAB
                                        .MCALL  M$TLABEL,M$INCR
                                        .IIF LT T$TSTMAC, .MEXIT
                                        .RADIX  10
                                        M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                        .RADIX  8
                                        M$INCR  T$TSTSEQ
 025540                                 M$GNINS <TRAP   C$BSEG>
                                        .IF LT SVCINS
                                        TRAP    C$BSEG
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                TRAP    C$BSEG
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
 025540 104404                                                                                  TRAP    C$BSEG
                                                        .NLIST
                                        .ENDC
 025542 042777  000010  154530                  BIC     #10,@CSRX               ;SELECT CHANNEL 1
 025550 012737  000001  002374                  MOV     #1,CHAN                 ;LOAD CHANNEL NUMBER
 025556 113777  002412  154512                  MOVB    MLA2,@IDRHX             ;---LOAD MLA2 INTO DOR1 REGISTER----
 025564 004737  011050                  COPB2:  JSR     PC,LOOP                 ;WAIT A LITTLE
 025570 052777  000010  154502                  BIS     #10,@CSRX               ;SELECT CHANNEL 2
 025576 012737  000002  002374                  MOV     #2,CHAN                 ;LOAD CHANNEL NUMBER
 025604 017737  154446  002402                  MOV     @ISRX,RSAVE             ;GET ISR2 CONTENTS
 025612 023737  002444  002402                  CMP     CDAT5,RSAVE             ;ATN,ATN,LADS,NDAC,LPAS,(ULPA) BIT SET
 025620 001413                                  BEQ     40$                     ;BRANCH IF YES
 025622 013737  002444  002500                  MOV     CDAT5,GOOD              ;SET UP DATA FOR ERROR MESSAGES
 025630 013737  002402  002502                  MOV     RSAVE,BAD               ;...
 025636                                         ERRSOFT 723,E502,ERR501         ;ERROR HANDLER
                                        .MCALL  M$ERRINS
 025636                                 M$ERRINS        723,E502,ERR501,C$ERSOFT
                                        .MCALL  M$GNINS,M$WORD,M$TSTLAB
 025636                                 M$SVC   C$ERSOFT
                                        .MCALL  M$GNINS,M$TSTLAB
 025636                                 M$TSTLAB
                                        .MCALL  M$TLABEL,M$INCR
                                        .IIF LT T$TSTMAC, .MEXIT
                                        .RADIX  10
                                        M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                        .RADIX  8
                                        M$INCR  T$TSTSEQ
 025636                                 M$GNINS <TRAP   C$ERSOFT>
                                        .IF LT SVCINS
                                        TRAP    C$ERSOFT
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
```

```
                                        TRAP    C$ERSOFT
                                                .NLIST
                              .MEXIT
                              .ENDC
                              .IF GT SVCINS
                              .LIST
025636  104457                                                              TRAP    C$ERSOFT
                                                .NLIST
                              .ENDC
        000012                .RADIX  10
                              .IF NB  723
        001323                T$ERRNUM=723
                              .IFF
                              .ERROR  ;MISSING ERROR-NR
                              .ENDC
025640                        M$WORD  \T$ERRNUM
                              .MCALL  M$GNINS
                              .IRP    N,<723>
                              M$GNINS <.WORD  N>
                              .ENDM
025640                        M$GNINS <.WORD  723>
                              .IF LT SVCINS
                              .WORD   723
                              .MEXIT
                              .ENDC
                              .IF EQ SVCINS
                              .LIST
                                        .WORD   723
                                                .NLIST
                              .MEXIT
                              .ENDC
                              .IF GT SVCINS
                              .LIST
025640  001323                                                              .WORD   723
                                                .NLIST
                              .ENDC
        000010                .RADIX  8
                              .IF NB E502
025642                        M$WORD  E502
                              .MCALL  M$GNINS
                              .IRP    N,<E502>
                              M$GNINS <.WORD  N>
                              .ENDM
025642                        M$GNINS <.WORD  E502>
                              .IF LT SVCINS
                              .WORD   E502
                              .MEXIT
                              .ENDC
                              .IF EQ SVCINS
                              .LIST
                                        .WORD   E502
                                                .NLIST
                              .MEXIT
                              .ENDC
                              .IF GT SVCINS
                              .LIST
025642  005437                                                              .WORD   E502
```

I2


```
                                                .NLIST
                                    .ENDC
                                    .IFF
                                    M$WORD  0
                                    .ENDC
                                    .IF NB ERR501
      025644                        M$WORD  ERR501
                                    .MCALL  M$GNINS
                                    .IRP    N,<ERR501>
                                    M$GNINS <.WORD  N>
                                    .ENDM
      025644                        M$GNINS <.WORD  ERR501>
                                    .IF LT SVCINS
                                    .WORD   ERR501
                                    .MEXIT
                                    .ENDC
                                    .IF EQ SVCINS
                                    .LIST
                                            .WORD   ERR501
                                                    .NLIST
                                    .MEXIT
                                    .ENDC
                                    .IF GT SVCINS
                                    .LIST
      025644  003672                                                                  .WORD   ERR501
                                                    .NLIST
                                    .ENDC
                                    .IFF
                                    M$WORD  0
                                    .ENDC
 4159 025646                                CKLOOP                      ;BRANCH TO BGNSEG WHEN ERRLOOP IS SET
                                    .MCALL  M$SVC
      025646                        M$SVC   C$CLP1
                                    .MCALL  M$GNINS,M$TSTLAB
      025646                        M$TSTLAB
                                    .MCALL  M$TLABEL,M$INCR
                                    .IIF LT T$TSTMAC, .MEXIT
                                    .RADIX  10
                                    M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                    .RADIX  8
                                    M$INCR  T$TSTSEQ
      025646                        M$GNINS <TRAP   C$CLP1>
                                    .IF LT SVCINS
                                    TRAP    C$CLP1
                                    .MEXIT
                                    .ENDC
                                    .IF EQ SVCINS
                                    .LIST
                                            TRAP    C$CLP1
                                                    .NLIST
                                    .MEXIT
                                    .ENDC
                                    .IF GT SVCINS
                                    .LIST
      025646  104406                                                                  TRAP    C$CLP1
                                                    .NLIST
                                    .ENDC
```

```
025650 042777 000010 154422 40$:    BIC     #10,@CSRX               ;SELECT CHANNEL 1
025656 012737 000001 002374         MOV     #1,CHAN                 ;LOAD CHANNEL NUMBER
025664 112777 000077 154404         MOVB    #77,@IDRHX              ;---LOAD UNL INTO DOR--------------
025672 004737 011050                JSR     PC,LOOP                 ;WAIT A LITTLE
025676 052777 000010 154374         BIS     #10,@CSRX               ;SELECT CHANNEL 2
025704 012737 000002 002374         MOV     #2,CHAN                 ;LOAD CHANNEL NUMBER
025712 017737 154340 002402         MOV     @ISRX,RSAVE             ;GET ISR2 CONTENTS
025720 023737 002434 002402         CMP     CDAT1,RSAVE             ;ATN,ATN,NDAC,(ULPA) BIT SHOULD BE SET
025726 001412                       BEQ     12$                     ;BRANCH IF YES
025730 013737 002434 002500         MOV     CDAT1,GOOD              ;SET UP DATA FOR ERROR MESSAGES
025736 013737 002402 002502         MOV     RSAVE,BAD               ;...
025744                              ERRSOFT 724,E502,ERR501         ;ERROR HANDLER
                            .MCALL  M$ERRINS
025744                      M$ERRINS        724,E502,ERR501,C$ERSOFT
                            .MCALL  M$GNINS,M$WORD,M$TSTLAB
025744                      M$SVC   C$ERSOFT
                            .MCALL  M$GNINS,M$TSTLAB
025744                      M$TSTLAB
                            .MCALL  M$TLABEL,M$INCR
                            .IIF LT T$TSTMAC, .MEXIT
                            .RADIX  10
                            M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                            .RADIX  8
                            M$INCR  T$TSTSEQ
025744                      M$GNINS <TRAP   C$ERSOFT>
                            .IF LT SVCINS
                            TRAP    C$ERSOFT
                            .MEXIT
                            .ENDC
                            .IF EQ SVCINS
                            .LIST
                                    TRAP    C$ERSOFT
                                            .NLIST
                            .MEXIT
                            .ENDC
                            .IF GT SVCINS
                            .LIST
025744 104457                                                              TRAP    C$ERSOFT
                                            .NLIST
                            .ENDC
       000012               .RADIX  10
                            .IF NB  724
       001324               T$ERRNUM=724
                            .IFF
                            .ERROR  ;MISSING ERROR-NR
                            .ENDC
025746                      M$WORD  \T$ERRNUM
                            .MCALL  M$GN"NS
                            .IRP    N,<724>
                            M$GNINS <.WORD  N>
                            .ENDM
025746                      M$GNINS <.WORD  724>
                            .IF LT SVCINS
                            .WORD   724
                            .MEXIT
                            .ENDC
                            .IF EQ SVCINS
```

```
                                .LIST
                                        .WORD   724
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
        025746  001324                                                          .WORD   724
                                                .NLIST
                                .ENDC
                000010          .RADIX  8
                                .IF NB E502
        025750                  M$WORD  E502
                                .MCALL  M$GNINS
                                .IRP    N,<E502>
                                M$GNINS <.WORD  N>
                                .ENDM
        025750                  M$GNINS <.WORD  E502>
                                .IF LT SVCINS
                                .WORD   E502
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        .WORD   E502
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
        025750  005437                                                          .WORD   E502
                                                .NLIST
                                .ENDC
                                .IFF
                                M$WORD  0
                                .ENDC
                                .IF NB ERR501
        025752                  M$WORD  ERR501
                                .MCALL  M$GNINS
                                .IRP    N,<ERR501>
                                M$GNINS <.WORD  N>
                                .ENDM
        025752                  M$GNINS <.WORD  ERR501>
                                .IF LT SVCINS
                                .WORD   ERR501
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        .WORD   ERR501
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
        025752  003672                                                          .WORD   ERR501
                                                .NLIST
```

```
                                        .ENDC
                                        .IFF
                                        M$WORD  0
                                        .ENDC
  4172 025754                           12$:    ENDSEG
                                        .MCALL  M$POP,M$GNLS,M$SVC,M$ENDERR
       025754                           M$POP   T$NS,T$NESTLEV,T$TEMP
                                        .MCALL  M$GETS,M$DECR
                                        .IF LT  T$NESTLEV
                                        .ERROR  T$NESTLEV       ; MACRO T$NS UNDERFLOW
                                        .MEXIT
                                        .ENDC
       025754                           M$GETS  T$NS,\T$NESTLEV,T$TEMP
              000003                    T$TEMP=T$NS2
       025754                           M$DECR  T$NESTLEV
              000001                    T$NESTLEV=T$NESTLEV-1
                                        .IF EQ F$SEG-T$TEMP
       025754                           M$POP   T$SEK,T$SEGLEV,T$$SEG
                                        .MCALL  M$GETS,M$DECR
                                        .IF LT  T$SEGLEV
                                        .ERROR  T$SEGLEV        ; MACRO T$SEK UNDERFLOW
                                        .MEXIT
                                        .ENDC
       025754                           M$GETS  T$SEK,\T$SEGLEV,T$$SEG
              010007                    T$$SEG=T$SEK0
       025754                           M$DECR  T$SEGLEV
              177777                    T$SEGLEV=T$SEGLEV-1
       025754                           M$GNLS  T$$SEG
                                        .MCALL  M$GEN
                                        .IF NB T'$SEG
       025754                           M$GEN   \T$$SEG,$,SVCTAG
                                        .IF LE  SVCTAG
                                        .IIF EQ SVCTAG,.LIST
                                        10007$:
                                        .IIF EQ SVCTAG,.NLIST
                                        .MEXIT
                                        .ENDC
                                        .LIST
       025754                                                                          10007$:
                                                .NLIST
                                        .IFF
                                        M$GEN   \S$LSYM,$,SVCTAG
                                        .ENDC
       025754                           M$SVC   C$ESEG
                                        .MCALL  M$GNINS,M$TSTLAB
       025754                           M$TSTLAB
                                        .MCALL  M$TLABEL,M$INCR
                                        .IIF LT T$TSTMAC, .MEXIT
                                        .RADIX  10
                                        M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                        .RADIX  8
                                        M$INCR  T$TSTSEQ
       025754                           M$GNINS <TRAP   C$ESEG>
                                        .IF LT SVCINS
                                        TRAP    C$ESEG
                                        .MEXIT
                                        .ENDC
```

```
                                         .IF EQ SVCINS
                                         .LIST
                                                 TRAP     C$ESEG
                                                          .NLIST
                                         .MEXIT
                                         .ENDC
                                         .IF GT SVCINS
                                         .LIST
      025754  104405                                                                                    TRAP     C$ESEG
                                                          .NLIST
                                         .ENDC
                                         .IF EQ T$SEGLEV+1
              000041                     I$SEG=F$END
                                         .ENDC
                                         .IFF
                                         M$ENDERR         ENDSEG,T$TEMP
                                         .ENDC
      025756  042777  000010  154314             BIC      #10,@CSRX                ;SELECT CHANNEL 1
      025764  012737  000001  002374             MOV      #1,CHAN                  ;LOAD CHANNEL NUMBER
      025772  113701  002412                     MOVB     MLA2,R1                  ;GET MY LISTENER ADDRESS
      025776  032737  000001  002314             BIT      #1,DPA2                  ;IS DPA EVEN
      026004  001021                             BNE      3$                       ;BRANCH IF YES
      026006  105201                             INCB     R1                       ;CHANGE MLA2 TO ODD
      026010  052737  000001  002434             BIS      #1,CDAT1                 ;SET ULPA BIT IN COMPARE DATA FOR ISR
      026016  052737  000001  002436             BIS      #1,CDAT2                 ;...
      026024  052737  000001  002440             BIS      #1,CDAT3                 ;...
      026032  052737  000001  002442             BIS      #1,CDAT4                 ;...
      026040  052737  000001  002444             BIS      #1,CDAT5                 ;...
      026046  000420                             BR       .+42                     ;BRANCH TO BGNSEG
      026050  105301                     3$:     DECB     R1                       ;CHANGE MLA2 TO EVEN
      026052  042737  000001  002434             BIC      #1,CDAT1                 ;CLEAR ULPA BIT IN COMPARE DATA FOR ISR
      026060  042737  000001  002436             BIC      #1,CDAT2                 ;...
      026066  042737  000001  002440             BIC      #1,CDAT3                 ;...
      026074  042737  000001  002442             BIC      #1,CDAT4                 ;...
      026102  042737  000001  002444             BIC      #1,CDAT5                 ;...
      026110                                     BGNSEG
                                         .MCALL   M$PUSH,M$INCR,M$SVC
              000040                     I$SEG=F$BGN
      026110                             M$PUSH   T$NS,T$NESTLEV,F$SEG
                                         .MCALL   M$INCR,M$SETS
      026110                             M$INCR   T$NESTLEV
              000002                     T$NESTLEV=T$NESTLEV+1
      026110                             M$SETS   T$NS,\T$NESTLEV,F$SEG
              000003                     T$NS2=F$SEG
              010010                     T$$SEG=S$LSYM
      026110                             M$PUSH   T$SEK,T$SEGLEV,T$$SEG
                                         .MCALL   M$INCR,M$SETS
      026110                             M$INCR   T$SEGLEV
              000000                     T$SEGLEV=T$SEGLEV+1
      026110                             M$SETS   T$SEK,\T$SEGLEV,T$$SEG
              010010                     T$SEK0=T$$SEG
      026110                             M$INCR   S$LSYM
              010011                     S$LSYM=S$LSYM+1
      026110                             M$SVC    C$BSEG
                                         .MCALL   M$GNINS,M$TSTLAB
      026110                             M$TSTLAB
                                         .MCALL   M$TLABEL,M$INCR
```

```
                                        .IIF LT T$TSTMAC, .MEXIT
                                        .RADIX  10
                                        M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                        .RADIX  8
                                        M$INCR  T$TSTSEQ
     026110                             M$GNINS <TRAP   C$BSEG>
                                        .IF LT SVCINS
                                        TRAP    C$BSEG
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                TRAP    C$BSEG
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
     026110  104404                                                                             TRAP    C$BSEG
                                                        .NLIST
                                        .ENDC
4192 026112  042777  000010  154160             BIC     #10,@CSRX                  ;SELECT CHANNEL 1
4193 026120  110177  154152                     MOVB    R1,@IDRHX                  ;-----LOAD NEW MLA1 INTO DOR---------
4194 026124  004737  011050             COPC2:  JSR     PC,LOOP                    ;WAIT A LITTLE
4195 026130  052777  000010  154142             BIS     #10,@CSRX                  ;SELECT CHANNEL 2
4196 026136  012737  000002  002374             MOV     #2,CHAN                    ;LOAD CHANNEL NUMBER
4197 026144  017737  154106  002402             MOV     @ISRX,RSAVE                ;GET ISR2 CONTENTS
4198 026152  023737  002444  002402             CMP     CDAT5,RSAVE                ;ATN,ATN,LADS,NDAC,(ULPA),LPAS BIT SET
4199 026160  001413                             BEQ     40$                        ;BRANCH IF YES
4200 026162  013737  002444  002500             MOV     CDAT5,GOOD                 ;SET UP DATA FOR ERROR MESSAGES
4201 026170  013737  002402  002502             MOV     RSAVE,BAD                  ;...
4202 026176                                     ERRSOFT 725,E502,ERR501            ;ERROR HANDLER
                                        .MCALL  M$ERRINS
     026176                             M$ERRINS        725,E502,ERR501,C$ERSOFT
                                        .MCALL  M$GNINS,M$WORD,M$TSTLAB
     026176                             M$SVC   C$ERSOFT
                                        .MCALL  M$GNINS,M$TSTLAB
     026176                             M$TSTLAB
                                        .MCALL  M$TLABEL,M$INCR
                                        .IIF LT T$TSTMAC, .MEXIT
                                        .RADIX  10
                                        M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                        .RADIX  8
                                        M$INCR  T$TSTSEQ
     026176                             M$GNINS <TRAP   C$ERSOFT>
                                        .IF LT SVCINS
                                        TRAP    C$ERSOFT
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                TRAP    C$ERSOFT
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
```

```
026176  104457                                                   TRAP      C$ERSOFT
                                     .NLIST
                          .ENDC
        000012            .RADIX  10
                          .IF NB  725
        001325            T$ERRNUM=725
                          .IFF
                          .ERROR  ;MISSING ERROR-NR
                          .ENDC
026200                    M$WORD  \T$ERRNUM
                          .MCALL  M$GNINS
                          .IRP    N,<725>
                          M$GNINS <.WORD  N>
                          .ENDM
026200                    M$GNINS <.WORD  725>
                          .IF LT SVCINS
                          .WORD   725
                          .MEXIT
                          .ENDC
                          .IF EQ SVCINS
                          .LIST
                                  .WORD   725
                                     .NLIST
                          .MEXIT
                          .ENDC
                          .IF GT SVCINS
                          .LIST
026200  001325                                                   .WORD     725
                                     .NLIST
                          .ENDC
        000010            .RADIX  8
                          .IF NB E502
026202                    M$WORD  E502
                          .MCALL  M$GNINS
                          .IRP    N,<E502>
                          M$GNINS <.WORD  N>
                          .ENDM
026202                    M$GNINS <.WORD  E502>
                          .IF LT SVCINS
                          .WORD   E502
                          .MEXIT
                          .ENDC
                          .IF EQ SVCINS
                          .LIST
                                  .WORD   E502
                                     .NLIST
                          .MEXIT
                          .ENDC
                          .IF GT SVCINS
                          .LIST
026202  005437                                                   .WORD     E502
                                     .NLIST
                          .ENDC
                          .IFF
                          M$WORD  0
                          .ENDC
                          .IF NB ERR501
```

```
     026204                                   M$WORD  ERR501
                                              .MCALL  M$GNINS
                                              .IRP    N,<ERR501>
                                              M$GNINS <.WORD  N>
                                              .ENDM
     026204                                   M$GNINS <.WORD  ERR501>
                                              .IF LT SVCINS
                                              .WORD   ERR501
                                              .MEXIT
                                              .ENDC
                                              .IF EQ SVCINS
                                              .LIST
                                                      .WORD   ERR501
                                                              .NLIST
                                              .MEXIT
                                              .ENDC
                                              .IF GT SVCINS
                                              .LIST
     026204  003672                                                                                  .WORD   ERR501
                                                              .NLIST
                                              .ENDC
                                              .IFF
                                              M$WORD  0
                                              .ENDC
     026206                                           CKLOOP                     ;BRANCH TO BGNSEG WHEN ERRLOOP IS SET
                                              .MCALL  M$SVC
     026206                                   M$SVC   C$CLP1
                                              .MCALL  M$GNINS,M$TSTLAB
     026206                                   M$TSTLAB
                                              .MCALL  M$TLABEL,M$INCR
                                              .IIF LT T$TSTMAC, .MEXIT
                                              .RADIX  10
                                              M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                              .RADIX  8
                                              M$INCR  T$TSTSEQ
     026206                                   M$GNINS <TRAP   C$CLP1>
                                              .IF LT SVCINS
                                              TRAP    C$CLP1
                                              .MEXIT
                                              .ENDC
                                              .IF EQ SVCINS
                                              .LIST
                                                      TRAP    C$CLP1
                                                              .NLIST
                                              .MEXIT
                                              .ENDC
                                              .IF GT SVCINS
                                              .LIST
     026206  104406                                                                                  TRAP    C$CLP1
                                                              .NLIST
                                              .ENDC
     026210  042777  000010  154062   40$:    BIC     #10,@CSRX          ;SELECT CHANNEL 1
     026216  012737  000001  002374           MOV     #1,CHAN            ;LOAD CHANNEL NUMBER
     026224  112777  000077  154044           MOVB    #77,@IDRHX         ;----LOAD UNL INTO DOR    -    -
     026232  004737  011050                   JSR     PC,LOOP            ;WAIT A LITTLE
     026236  052777  000010  154034           BIS     #10,@CSRX          ;SELECT CHANNEL 2
     026244  012737  000002  002374           MOV     #2,CHAN            ;LOAD CHANNEL NUMBER
```

```
   4210 026252  017737  154000  002402          MOV     @#SRX,RSAVE             ;GET ISR2 CONTENTS
   4211 026260  023737  002434  002402          CMP     CDAT1,RSAVE             ;ATN,ATN,NDAC,(ULPA) BIT SHOULD BE SET
   4212 026266  001412                          BEQ     12$                     ;BRANCH IF YES
   4213 026270  013737  002434  002500          MOV     CDAT1,GOOD              ;SET UP DATA FOR ERROR MESSAGES
   4214 026276  013737  002402  002502          MOV     RSAVE,BAD               ;...
   4215 026304                                  ERRSOFT 726,E502,ERR501         ;ERROR HANDLER
                                        .MCALL  M$ERRINS
        026304                          M$ERRINS        726,E502,ERR501,C$ERSOFT
                                        .MCALL  M$GNINS,M$WORD,M$TSTLAB
        026304                          M$SVC   C$ERSOFT
                                        .MCALL  M$GNINS,M$TSTLAB
        026304                          M$TSTLAB
                                        .MCALL  M$TLABEL,M$INCR
                                        .IIF LT T$TSTMAC, .MEXIT
                                        .RADIX  10
                                        M$TLABEL        \T$TESTNUM,\T$TSTSEQ
                                        .RADIX  8
                                        M$INCR  T$TSTSEQ
        026304                          M$GNINS <TRAP   C$ERSOFT>
                                        .IF LT SVCINS
                                        TRAP    C$ERSOFT
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                TRAP    C$ERSOFT
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
        026304  104457                                                                            TRAP    C$ERSOFT
                                                        .NLIST
                                        .ENDC
                000012                  .RADIX  10
                                        .IF NB  726
                001326                  T$ERRNUM=726
                                        .IFF
                                        .ERROR  ;MISSING ERROR NR
                                        .ENDC
        026306                          M$WORD  \T$ERRNUM
                                        .MCALL  M$GNINS
                                        .IRP    N,<726>
                                        M$GNINS <.WORD  N>
                                        .ENDM
        026306                          M$GNINS <.WORD  726>
                                        .IF LT SVCINS
                                        .WORD   726
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                .WORD   726
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
```

```
                                        .LIST
       026306  001326                                                                        .WORD   726
                                                     .NLIST
                                        .ENDC
               000010                   .RADIX  8
                                        .IF NB E502
       026310                           M$WORD  E502
                                        .MCALL  M$GNINS
                                        .IRP    N,<E502>
                                        M$GNINS <.WORD  N>
                                        .ENDM
       026310                           M$GNINS <.WORD  E502>
                                        .IF LT SVCINS
                                        .WORD   E502
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                .WORD   E502
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
       026310  005437                                                                        .WORD   E502
                                                        .NLIST
                                        .ENDC
                                        .IFF
                                        M$WORD  0
                                        .ENDC
                                        .IF NB ERR501
       026312                           M$WORD  ERR501
                                        .MCALL  M$GNINS
                                        .IRP    N,<FRR501>
                                        M$GNINS <.WORD  N>
                                        .ENDM
       026312                           M$GNINS <.WORD  ERR501>
                                        .IF LT SVCINS
                                        .WORD   ERR501
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                .WORD   ERR501
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
       026312  003672                                                                        .WORD   ERR501
                                                        .NLIST
                                        .ENDC
                                        .IFF
                                        M$WORD  0
                                        .ENDC
   4216 026314                          12$:    ENDSEG
                                        .MCALL  M$POP,M$GNLS,M$SVC,M$ENDERR
```

```
026314                          M$POP    T$NS,T$NESTLEV,T$TEMP
                                .MCALL   M$GETS,M$DECR
                                .IF LT   T$NESTLEV
                                .ERROR   T$NESTLEV        ; MACRO T$NS UNDERFLOW
                                .MEXIT
                                .ENDC
026314                          M$GETS   T$NS,\T$NESTLEV,T$TEMP
        000003                  T$TEMP=T$NS2
026314                          M$DECR   T$NESTLEV
        000001                  T$NESTLEV=T$NESTLEV-1
                                .IF EQ F$SEG-T$TEMP
026314                          M$POP    T$SEK,T$SEGLEV,T$$SEG
                                .MCALL   M$GETS,M$DECR
                                .IF LT   T$SEGLEV
                                .ERROR   T$SEGLEV         ; MACRO T$SEK UNDERFLOW
                                .MEXIT
                                .ENDC
026314                          M$GETS   T$SEK,\T$SEGLEV,T$$SEG
        010010                  T$$SEG=T$SEK0
026314                          M$DECR   T$SEGLEV
        177777                  T$SEGLEV-T$SEGLEV-1
026314                          M$GNLS   T$$SEG
                                .MCALL   M$GEN
                                .IF NB T$$SEG
026314                          M$GEN    \T$$SEG,$,SVCTAG
                                .IF LE   SVCTAG
                                .IIF EQ SVCTAG,.LIST
                                10010$:
                                .IIF EQ SVCTAG,.NLIST
                                .MEXIT
                                .ENDC
                                .LIST
026314                                                                      10010$:
                                        .NLIST
                                .IFF
                                M$GEN    \S$LSYM,$,SVCTAG
                                .ENDC
026314                          M$SVC    C$ESEG
                                .MCALL   M$GNINS,M$TSTLAB
026314                          M$TSTLAB
                                .MCALL   M$TLABEL,M$INCR
                                .IIF LT T$TSTMAC, .MEXIT
                                .RADIX   10
                                M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                .RADIX   8
                                M$INCR   T$TSTSEQ
026314                          M$GNINS <TRAP    C$ESEG>
                                .IF LT SVCINS
                                TRAP     C$ESEG
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        TRAP     C$ESEG
                                                 .NLIST
                                .MEXIT
                                .ENDC
```

```
                                        .IF GT SVCINS
                                        .LIST
 026314  104405                                                                              TRAP    C$ESEG
                                                     .NLIST
                                        .ENDC
                                        .IF EQ T$SEGLEV+1
         000041                         I$SEG=F$END
                                        .ENDC
                                        .IFF
                                        M$ENDERR        ENDSEG,T$TEMP
                                        .ENDC
 026316  032737  000001  002314               BIT     #1,DPA2            ;IS DPA EVEN
 026324  001420                               BEQ     3$                 ;BRANCH IF YES
 026326  052737  000001  002434               BIS     #1,CDAT1           ;SET ULPA BIT IN COMPARE DATA FOR ISR
 026334  052737  000001  002436               BIS     #1,CDAT2           ;...
 026342  052737  000001  002440               BIS     #1,CDAT3           ;...
 026350  052737  000001  002442               BIS     #1,CDAT4           ;...
 026356  052737  000001  002444               BIS     #1,CDAT5           ;...
 026364  000417                               BR      .+40               ;BRANCH TO BGNSEG
 026366  042737  000001  002434   3$:         BIC     #1,CDAT1           ;CLEAR ULPA BIT IN COMPARE DATA FOR ISR
 026374  042737  000001  002436               BIC     #1,CDAT2           ;...
 026402  042737  000001  002440               BIC     #1,CDAT3           ;...
 026410  042737  000001  002442               BIC     #1,CDAT4           ;...
 026416  042737  000001  002444               BIC     #1,CDAT5           ;...
 026424                                       BGNSEG
                                        .MCALL  M$PUSH,M$INCR,M$SVC
         000040                         I$SEG=F$BGN
 026424                                 M$PUSH  T$NS,T$NESTLEV,F$SEG
                                        .MCALL  M$INCR,M$SETS
 026424                                 M$INCR  T$NESTLEV
         000002                         T$NESTLEV=T$NESTLEV+1
 026424                                 M$SETS  T$NS,\T$NESTLEV,F$SEG
         000003                         T$NS2=F$SEG
         010011                         T$$SEG=S$LSYM
 026424                                 M$PUSH  T$SEK,T$SEGLEV,T$$SEG
                                        .MCALL  M$INCR,M$SETS
 026424                                 M$INCR  T$SEGLEV
         000000                         T$SEGLEV=T$SEGLEV+1
 026424                                 M$SETS  T$SEK,\T$SEGLEV,T$$SEG
         010011                         T$SEK0=T$$SEG
 026424                                 M$INCR  S$LSYM
         010012                         S$LSYM=S$LSYM+1
 026424                                 M$SVC   C$BSEG
                                        .MCALL  M$GNINS,M$TSTLAB
 026424                                 M$TSTLAB
                                        .MCALL  M$TLABEL,M$INCR
                                        .IIF LT T$TSTMAC, .MEXIT
                                        .RADIX  10
                                        M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                        .RADIX  8
                                        M$INCR  T$TSTSEQ
 026424                                 M$GNINS <TRAP   C$BSEG>
                                        .IF LT SVCINS
                                        TRAP    C$BSEG
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
```

```
                                              .LIST
                                                       TRAP     C$BSEG
                                                                .NLIST
                                              .MEXIT
                                              .ENDC
                                              .IF GI SVCINS
                                              .LIST
     026424  104404                                                                                    TRAP     C$BSEG
                                                                .NLIST
                                              .ENDC
     026426  042777  000010  153644                   BIC      #10,@CSRX                ;SELECT CHANNEL 1
     026434  012737  000001  002374                   MOV      #1,CHAN                  ;LOAD CHANNEL NUMBER
     026442  113777  002416  153626                   MOVB     MTA2,@IDRHX              ;----LOAD MTA INTO DOR1 REGISTER------
     026450  004737  011050                           JSR      PC,LOOP                  ;WAIT A LITTLE
     026454  052777  000010  153616                   BIS      #10,@CSRX                ;SELECT CHANNEL 2
     026462  012737  000002  002374                   MOV      #2,CHAN                  ;LOAD CHANNEL NUMBER
     026470  017737  153562  002402                   MOV      @ISRX,RSAVE              ;GET ISR2 CONTENTS
     026476  023737  002440  002402                   CMP      CDAT3,RSAVE              ;ATN,ATN,TADS,NDAC,TPAS,(ULPA) BIT SET
     026504  001413                                   BEQ      16$                      ;BRANCH IF YES
     026506  013737  002402  002502                   MOV      RSAVE,BAD                ;SET UP DATA FOR ERROR MESSAGES
     026514  013737  002440  002500                   MOV      CDAT3,GOOD               ;...
     026522                                           ERRSOFT  727,E502,ERR501          ;ERROR HANDLER
                                              .MCALL   M$ERRINS
     026522                                   M$ERRINS          727,E502,ERR501,C$ERSOFT
                                              .MCALL   M$GNINS,M$WORD,M$TSTLAB
     026522                                   M$SVC    C$ERSOFT
                                              .MCALL   M$GNINS,M$TSTLAB
     026522                                   M$TSTLAB
                                              .MCALL   M$TLABEL,M$INCR
                                              .IIF LT T$TSTMAC, .MEXIT
                                              .RADIX   10
                                              M$TLABEL          \T$TESTNUN,\T$TSTSEQ
                                              .RADIX   8
                                              M$INCR   T$TSTSEQ
     026522                                   M$GNINS <TRAP    C$ERSOFT>
                                              .IF LT SVCINS
                                              TRAP     C$ERSOFT
                                              .MEXIT
                                              .ENDC
                                              .IF EQ SVCINS
                                              .LIST
                                                       TRAP     C$ERSOFT
                                                                .NLIST
                                              .MEXIT
                                              .ENDC
                                              .IF GT SVCINS
                                              .LIST
     026522  104457                                                                                    TRAP     C$ERSOFT
                                                                .NLIST
                                              .ENDC
             000012                           .RADIX   10
                                              .IF NB   727
             001327                           T$ERRNUM=727
                                              .IFF
                                              .ERROR   ;MISSING ERROR-NR
                                              .ENDC
     026524                                   M$WORD   \T$ERRNUM
```

I3


```
                          .MCALL  M$GNINS
                          .IRP    N,<727>
                          M$GNINS <.WORD  N>
                          .ENDM
   026524                 M$GNINS <.WORD  727>
                          .IF LT SVCINS
                          .WORD   727
                          .MEXIT
                          .ENDC
                          .IF EQ SVCINS
                          .LIST
                                  .WORD   727
                                          .NLIST
                          .MEXIT
                          .ENDC
                          .IF GT SVCINS
                          .LIST
   026524  001327                                                         .WORD   727
                                          .NLIST
                          .ENDC
           000010         .RADIX  8
                          .IF NB E502
   026526                 M$WORD  E502
                          .MCALL  M$GNINS
                          .IRP    N,<E502>
                          M$GNINS <.WORD  N>
                          .ENDM
   026526                 M$GNINS <.WORD  E502>
                          .IF LT SVCINS
                          .WORD   E502
                          .MEXIT
                          .ENDC
                          .IF EQ SVCINS
                          .LIST
                                  .WORD   E502
                                          .NLIST
                          .MEXIT
                          .ENDC
                          .IF GT SVCINS
                          .LIST
   026526  005437                                                         .WORD   E502
                                          .NLIST
                          .ENDC
                          .IFF
                          M$WORD  0
                          .ENDC
                          .IF NB ERR501
   026530                 M$WORD  ERR501
                          .MCALL  M$GNINS
                          .IRP    N,<ERR501>
                          M$GNINS <.WORD  N>
                          .ENDM
   026530                 M$GNINS <.WORD  ERR501>
                          .IF LT SVCINS
                          .WORD   ERR501
                          .MEXIT
                          .ENDC
```

```
                                        .IF EQ SVCINS
                                        .LIST
                                                .WORD   ERR501
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
      026530  003672                                                                            .WORD   ERR501
                                                        .NLIST
                                        .ENDC
                                        .IFF
                                        M$WORD  0
                                        .ENDC
 4243 026532                                    CKLOOP                          ;BRANCH TO BGNSEG WHEN ERRLOOP IS SET
                                        .MCALL  M$SVC
      026532                            M$SVC   C$CLP1
                                        .MCALL  M$GNINS,M$TSTLAB
      026532                            M$TSTLAB
                                        .MCALL  M$TLABEL,M$INCR
                                        .IIF LT T$TSTMAC, .MEXIT
                                        .RADIX  10
                                        M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                        .RADIX  8
                                        M$INCR  T$TSTSEQ
      026532                            M$GNINS <TRAP   C$CLP1>
                                        .IF LT SVCINS
                                        TRAP    C$CLP1
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                TRAP    C$CLP1
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
      026532  104406                                                                            TRAP    C$CLP1
                                                        .NLIST
                                        .ENDC
 4244 026534  042777  000010  153536    16$:    BIC     #10,@CSRX               ;SELECT CHANNEL 1
 4245 026542  012737  000001  002374            MOV     #1,CHAN                 ;LOAD CHANNEL NUMBER
 4246 026550  112777  000137  153520            MOVB    #137,@IDRHX             ;-----LOAD UNT INTO DOR------------
 4247 026556  004737  011050                    JSR     PC,LOOP                 ;WAIT A LITTLE
 4248 026562  052777  000010  153510            BIS     #10,@CSRX               ;SELECT CHANNEL 2
 4249 026570  012737  000002  002374            MOV     #2,CHAN                 ;LOAD CHANNEL NUMBER
 4250 026576  017737  153454  002402            MOV     @ISRX,RSAVE             ;GET ISR2 CONTENTS
 4251 026604  023737  002434  002402            CMP     CDAT1,RSAVE             ;ATN,ATN,NDAC,(ULPA) SHOULD BE SET
 4252 026612  001412                            BEQ     24$                     ;BRANCH IF YES
 4253 026614  013737  002434  002500            MOV     CDAT1,GOOD              ;SET UP DATA FOR ERROR MESSAGES
 4254 026622  013737  002402  002502            MOV     RSAVE,BAD               ;...
 4255 026630                                    ERRSOFT 728,E502,ERR501         ;ERROR HANDLER
                                        .MCALL  M$ERRINS
      026630                            M$ERRINS        728,E502,ERR501,C$ERSOFT
                                        .MCALL  M$GNINS,M$WORD,M$TSTLAB
      026630                            M$SVC   C$ERSOFT
```

```
                        .MCALL  M$GNINS,M$TSTLAB
026630                  M$TSTLAB
                        .MCALL  M$TLABEL,M$INCR
                        .IIF LT T$TSTMAC, .MEXIT
                        .RADIX  10
                        M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                        .RADIX  8
                        M$INCR  T$TSTSEQ
026630                  M$GNINS <TRAP   C$ERSOFT>
                        .IF LT SVCINS
                        TRAP    C$ERSOFT
                        .MEXIT
                        .ENDC
                        .IF EQ SVCINS
                        .LIST
                                TRAP    C$ERSOFT
                                        .NLIST
                        .MEXIT
                        .ENDC
                        .IF GT SVCINS
                        .LIST
026630  104457                                                  TRAP    C$ERSOFT
                                        .NLIST
                        .ENDC
        000012          .RADIX  10
                        .IF NB  728
        001330          T$ERRNUM=728
                        .IFF
                        .ERROR  ;MISSING ERROR-NR
                        .ENDC
026632                  M$WORD  \T$ERRNUM
                        .MCALL  M$GNINS
                        .IRP    N,<728>
                        M$GNINS <.WORD  N>
                        .ENDM
026632                  M$GNINS <.WORD  728>
                        .IF LT SVCINS
                        .WORD   728
                        .MEXIT
                        .ENDC
                        .IF EQ SVCINS
                        .LIST
                                .WORD   728
                                        .NLIST
                        .MEXIT
                        .ENDC
                        .IF GT SVCINS
                        .LIST
026632  001330                                                  .WORD   728
                                        .NLIST
                        .ENDC
        000010          .RADIX  8
                        .IF NB E502
026634                  M$WORD  E502
                        .MCALL  M$GNINS
                        .IRP    N,<E502>
                        M$GNINS <.WORD  N>
```

```
                                        .ENDM
      026634                            M$GNINS <.WORD  E502>
                                        .IF LT SVCINS
                                        .WORD   E502
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                .WORD   E502
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
      026634  005437                                                            .WORD   E502
                                                        .NLIST
                                        .ENDC
                                        .IFF
                                        M$WORD  0
                                        .ENDC
                                        .IF NB ERR501
      026636                            M$WORD  ERR501
                                        .MCALL  M$GNINS
                                        .IRP    N,<ERR501>
                                        M$GNINS <.WORD  N>
                                        .ENDM
      026636                            M$GNINS <.WORD  ERR501>
                                        .IF LT SVCINS
                                        .WORD   ERR501
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                .WORD   ERR501
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
      026636  003672                                                            .WORD   ERR501
                                                        .NLIST
                                        .ENDC
                                        .IFF
                                        M$WORD  0
                                        .ENDC
 4256 026640                            24$:    ENDSEG
                                        .MCALL  M$POP,M$GNLS,M$SVC,M$ENDERR
      026640                            M$POP   T$NS,T$NESTLEV,T$TEMP
                                        .MCALL  M$GETS,M$DECR
                                        .IF LT  T$NESTLEV
                                        .ERROR  T$NESTLEV       ; MACRO T$NS UNDERFLOW
                                        .MEXIT
                                        .ENDC
      026640                            M$GETS  T$NS,\T$NESTLEV,T$TEMP
              000003                    T$TEMP=T$NS2
      026640                            M$DECR  T$NESTLEV
              000001                    T$NESTLEV-T$NESTLEV 1
```

```
                                .IF EQ F$SEG-T$TEMP
026640                          M$POP   T$SEK,T$SEGLEV,T$$SEG
                                .MCALL  M$GETS,M$DECR
                                .IF LT  T$SEGLEV
                                .ERROR  T$SEGLEV        ; MACRO T$SEK UNDERFLOW
                                .MEXIT
                                .ENDC
026640                          M$GETS  T$SEK,\T$SEGLEV,T$$SEG
        010011                  T$$SEG=T$SEK0
026640                          M$DECR  T$SEGLEV
        177777                  T$SEGLEV=T$SEGLEV-1
026640                          M$GNLS  T$$SEG
                                .MCALL  M$GEN
                                .IF NB T$$SEG
026640                          M$GEN   \T$$SEG,$,SVCTAG
                                .IF LE  SVCTAG
                                .IIF EQ SVCTAG,.LIST
                                10011$:
                                .IIF EQ SVCTAG,.NLIST
                                .MEXIT
                                .ENDC
                                .LIST
026640                                                                  10011$:
                                        .NLIST
                                .IFF
                                M$GEN   \S$LSYM,$,SVCTAG
                                .ENDC
026640                          M$SVC   C$ESEG
                                .MCALL  M$GNINS,M$TSTLAB
026640                          M$TSTLAB
                                .MCALL  M$TLABEL,M$INCR
                                .IIF LT T$TSTMAC, .MEXIT
                                .RADIX  10
                                M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                .RADIX  8
                                M$INCR  T$TSTSEQ
026640                          M$GNINS <TRAP   C$ESEG>
                                .IF LT SVCINS
                                TRAP    C$ESEG
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        TRAP    C$ESEG
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
026640  104405                                                                  TRAP    C$ESEG
                                                .NLIST
                                .ENDC
                                .IF EQ T$SEGLEV+1
        000041                  I$SEG=F$END
                                .ENDC
                                .IFF
                                M$ENDERR        ENDSEG,T$TEMP
```

N3


```
                                                .ENDC
  4257 026642                                           BGNSEG
                                                .MCALL  M$PUSH,M$INCR,M$SVC
               000040                           I$SEG=F$BGN
       026642                                   M$PUSH  T$NS,T$NESTLEV,F$SEG
                                                .MCALL  M$INCR,M$SETS
       026642                                   M$INCR  T$NESTLEV
               000002                           T$NESTLEV=T$NESTLEV+1
       026642                                   M$SETS  T$NS,\T$NESTLEV,F$SEG
               000003                           T$NS2=F$SEG
               010012                           T$$SEG=S$LSYM
       026642                                   M$PUSH  T$SEK,T$SEGLEV,T$$SEG
                                                .MCALL  M$INCR,M$SETS
       026642                                   M$INCR  T$SEGLEV
               000000                           T$SEGLEV=T$SEGLEV+1
       026642                                   M$SETS  T$SEK,\T$SEGLEV,T$$SEG
               010012                           T$SEK0=T$$SEG
       026642                                   M$INCR  S$LSYM
               010013                           S$LSYM=S$LSYM+1
       026642                                   M$SVC   C$BSEG
                                                .MCALL  M$GNINS,M$TSTLAB
       026642                                   M$TSTLAB
                                                .MCALL  M$TLABEL,M$INCR
                                                .IIF LT T$TSTMAC, .MEXIT
                                                .RADIX  10
                                                M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                                .RADIX  8
                                                M$INCR  T$TSTSEQ
       026642                                   M$GNINS <TRAP   C$BSEG>
                                                .IF LT SVCINS
                                                TRAP    C$BSEG
                                                .MEXIT
                                                .ENDC
                                                .IF EQ SVCINS
                                                .LIST
                                                        TRAP    C$BSEG
                                                                .NLIST
                                                .MEXIT
                                                .ENDC
                                                .IF GT SVCINS
                                                .LIST
                                                                                        TRAP    C$BSEG
       026642  104404
                                                                .NLIST
                                                .ENDC
  4258 026644  042777  000010  153426                   BIC     #10,@CSRX               ;SELECT CHANNEL 1
  4259 026652  012737  000001  002374                   MOV     #1,CHAN                 ;LOAD CHANNEL NUMBER
  4260 026660  013701  002416                           MOV     MTA2,R1                 ;GET TALKER ADDRESS
  4261 026664  032737  000001  002314                   BIT     #1,DPA2                 ;IS DPA ODD
  4262 026672  001021                                   BNE     25$                     ;BRANCH IF YES
  4263 026674  105201                                   INCB    R1                      ;CHANGE MTA2 TO ODD
  4264 026676  052737  000001  002434                   BIS     #1,CDAT1                ;SET ULPA BIT IN COMPARE DATA FOR ISR
  4265 026704  052737  000001  002436                   BIS     #1,CDAT2                ;...
  4266 026712  052737  000001  002440                   BIS     #1,CDAT3                ;...
  4267 026720  052737  000001  002442                   BIS     #1,CDAT4                ;...
  4268 026726  052737  000001  002444                   BIS     #1,CDAT5                ;...
  4269 026734  000420                                   BR      .+42                    ;BRANCH TO LOAD NEW MTA
  4270 026736  105301                           25$:    DECB    R1                      ;CHANGE MTA2 TO EVEN
```

TEST 7: ADDRESS REGISTER TEST OF CHANNEL 2

```
     026740  042737  000001  002434           BIC     #1,CDAT1            ;CLEAR ULPA BIT IN COMPARE DATA FOR ISR
     026746  042737  000001  002436           BIC     #1,CDAT2            ;...
     026754  042737  000001  002440           BIC     #1,CDAT3            ;...
     026762  042737  000001  002442           BIC     #1,CDAT4            ;...
     026770  042737  000001  002444           BIC     #1,CDAT5            ;...
     026776  110177  153274                   MOVB    R1,@IDRHX           ;----LOAD NEW MTA INTO DOR REGISTER---
     027002  004737  011050          COPD2:   JSR     PC,LOOP             ;WAIT A LITTLE
     027006  052777  000010  153264           BIS     #10,@CSRX           ;SELECT CHANNEL 2
     027014  012737  000002  002374           MOV     #2,CHAN             ;LOAD CHANNEL NUMBER
     027022  017737  153230  002402           MOV     @ISRX,RSAVE         ;GET ISR2 CONTENTS
     027030  023737  002440  002402           CMP     CDAT3,RSAVE         ;ATN,ATN,TADS,NDAC,TPAS,(ULPA) BIT SET
     027036  001413                           BEQ     16$                 ;BRANCH IF YES
     027040  013737  002402  002502           MOV     RSAVE,BAD           ;SET UP DATA FOR ERROR MESSAGES
     027046  013737  002440  002500           MOV     CDAT3,GOOD          ;...
     027054                                   ERRSOFT 729,E502,ERR501     ;ERROR HANDLER
                                     .MCALL   M$ERRINS
     027054                          M$ERRINS         729,E502,ERR501,C$ERSOFT
                                     .MCALL   M$GNINS,M$WORD,M$TSTLAB
     027054                          M$SVC    C$ERSOFT
                                     .MCALL   M$GNINS,M$TSTLAB
     027054                          M$TSTLAB
                                     .MCALL   M$TLABEL,M$INCR
                                     .IIF LT  T$TSTMAC, .MEXIT
                                     .RADIX   10
                                     M$TLABEL         \T$TESTNUN,\T$TSTSEQ
                                     .RADIX   8
                                     M$INCR   T$TSTSEQ
     027054                          M$GNINS <TRAP    C$ERSOFT>
                                     .IF LT SVCINS
                                     TRAP     C$ERSOFT
                                     .MEXIT
                                     .ENDC
                                     .IF EQ SVCINS
                                     .LIST
                                              TRAP    C$ERSOFT
                                                      .NLIST
                                     .MEXIT
                                     .ENDC
                                     .IF GT SVCINS
                                     .LIST
     027054  104457                                                                  TRAP    C$ERSOFT
                                                      .NLIST
                                     .ENDC
             000012                  .RADIX   10
                                     .IF NB   729
             001331                  T$ERRNUM=729
                                     .IFF
                                     .ERROR   ;MISSING ERROR NR
                                     .ENDC
     027056                          M$WORD   \T$ERRNUM
                                     .MCALL   M$GNINS
                                     .IRP     N,<729>
                                     M$GNINS <.WORD   N>
                                     .ENDM
     027056                          M$GNINS <.WORD   729>
                                     .IF LT SVCINS
                                     .WORD    729
```

```
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        .WORD   729
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
        027056  001331                                                                  .WORD   729
                                                .NLIST
                                .ENDC
                000010          .RADIX  8
                                .IF NB E502
        027060                  M$WORD  E502
                                .MCALL  M$GNINS
                                .IRP    N,<E502>
                                M$GNINS <.WORD  N>
                                .ENDM
        027060                  M$GNINS <.WORD  E502>
                                .IF LT SVCINS
                                .WORD   E502
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        .WORD   E502
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
        027060  005437                                                                  .WORD   E502
                                                .NLIST
                                .ENDC
                                .IFF
                                M$WORD  0
                                .ENDC
                                .IF NB ERR501
        027062                  M$WORD  ERR501
                                .MCALL  M$GNINS
                                .IRP    N,<ERR501>
                                M$GNINS <.WORD  N>
                                .ENDM
        027062                  M$GNINS <.WORD  ERR501>
                                .IF LT SVCINS
                                .WORD   ERR501
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        .WORD   ERR501
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
```

```
                                        .LIST
     027062  003672                                                                              .WORD   ERR501
                                                       .NLIST
                                        .ENDC
                                        .IFF
                                        M$WORD  0
                                        .ENDC
     027064                                     CKLOOP                        ;BRANCH TO BGNSEG WHEN ERRLOOP IS SET
                                        .MCALL  M$SVC
     027064                             M$SVC   C$CLP1
                                        .MCALL  M$GNINS,M$TSTLAB
     027064                             M$TSTLAB
                                        .MCALL  M$TLABEL,M$INCR
                                        .IIF LT T$TSTMAC, .MEXIT
                                        .RADIX  10
                                        M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                        .RADIX  8
                                        M$INCR  T$TSTSEQ
     027064                             M$GNINS <TRAP   C$CLP1>
                                        .IF LT SVCINS
                                        TRAP    C$CLP1
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                TRAP    C$CLP1
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
     027064  104406                                                                              TRAP    C$CLP1
                                                        .NLIST
                                        .ENDC
     027066  042777  000010  153204     16$:    BIC     #10,@CSRX             ;SELECT CHANNEL 1
     027074  012737  000001  002374             MOV     #1,CHAN               ;LOAD CHANNEL NUMBER
     027102  112777  000137  153166             MOVB    #137,@IDRHX           ;-----LOAD UNT INTO DOR-------------
     027110  004737  011050                     JSR     PC,LOOP               ;WAIT A LITTLE
     027114  052777  000010  153156             BIS     #10,@CSRX             ;SELECT CHANNEL 2
     027122  012737  000002  002374             MOV     #2,CHAN               ;LOAD CHANNEL NUMBER
     027130  017737  153122  002402             MOV     @ISRX,RSAVE           ;GET ISR2 CONTENTS
     027136  023737  002434  002402             CMP     CDAT1,RSAVE           ;ATN,ATN,NDAC,(ULPA) SHOULD BE SET
     027144  001412                             BEQ     24$                   ;BRANCH IF YES
     027146  013737  002434  002500             MOV     CDAT1,GOOD            ;SET UP DATA FOR ERROR MESSAGES
     027154  013737  002402  002502             MOV     RSAVE,BAD             ;...
     027162                                     ERRSOFT 730,E502,ERR501       ;ERROR HANDLER
                                        .MCALL  M$ERRINS
     027162                             M$ERRINS        730,E502,ERR501,C$ERSOFT
                                        .MCALL  M$GNINS,M$WORD,M$TSTLAB
     027162                             M$SVC   C$ERSOFT
                                        .MCALL  M$GNINS,M$TSTLAB
     027162                             M$TSTLAB
                                        .MCALL  M$TLABEL,M$INCR
                                        .IIF LT T$TSTMAC, .MEXIT
                                        .RADIX  10
                                        M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                        .RADIX  8
```

```
                                M$INCR  T$TSTSEQ
027162                          M$GNINS <TRAP   C$ERSOFT>
                                .IF LT SVCINS
                                TRAP    C$ERSOFT
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        TRAP    C$ERSOFT
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
027162  104457                                                                  TRAP    C$ERSOFT
                                                .NLIST
                                .ENDC
        000012                  .RADIX  10
                                .IF NB  730
        001332                  T$ERRNUM=730
                                .IFF
                                .ERROR  ;MISSING ERROR-NR
                                .ENDC
027164                          M$WORD  \T$ERRNUM
                                .MCALL  M$GNINS
                                .IRP    N,<730>
                                M$GNINS <.WCRD  N>
                                .ENDM
027164                          M$GNINS <.WORD  730>
                                .IF LT SVCINS
                                .WORD   730
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        .WORD   730
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
027164  001332                                                                  .WORD   730
                                                .NLIST
                                .ENDC
        000010                  .RADIX  8
                                .IF NB E502
027166                          M$WORD  E502
                                .MCALL  M$GNINS
                                .IRP    N,<E502>
                                M$GNINS <.WORD  N>
                                .ENDM
027166                          M$GNINS <.WORD  E502>
                                .IF LT SVCINS
                                .WORD   E502
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
```

```
                                .LIST
                                        .WORD   E502
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
      027166  005437                                                                    .WORD   E502
                                                .NLIST
                                .ENDC
                                .IFF
                                M$WORD  0
                                .ENDC
                                .IF NB ERR501
      027170                    M$WORD  ERR501
                                .MCALL  M$GNINS
                                .IRP    N,<ERR501>
                                M$GNINS <.WORD  N>
                                .ENDM
      027170                    M$GNINS <.WORD  ERR501>
                                .IF LT SVCINS
                                .WORD   ERR501
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        .WORD   ERR501
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
      027170  003672                                                                    .WORD   ERR501
                                                .NLIST
                                .ENDC
                                .IFF
                                M$WORD  0
                                .ENDC
 4299 027172                    24$:    ENDSEG
                                .MCALL  M$POP,M$GNLS,M$SVC,M$ENDERR
      027172                    M$POP   T$NS,T$NESTLEV,T$TEMP
                                .MCALL  M$GETS,M$DECR
                                .IF LT  T$NESTLEV
                                .ERROR  T$NESTLEV       ; MACRO T$NS UNDERFLOW
                                .MEXIT
                                .ENDC
      027172                    M$GETS  T$NS,\T$NESTLEV,T$TEMP
              000003            T$TEMP=T$NS2
      027172                    M$DECR  T$NESTLEV
              000001            T$NESTLEV=T$NESTLEV-1
                                .IF EQ F$SEG-T$TEMP
      027172                    M$POP   T$SEK,T$SEGLEV,T$$SEG
                                .MCALL  M$GETS,M$DECR
                                .IF LT  T$SEGLEV
                                .ERROR  T$SEGLEV        ; MACRO T$SEK UNDERFLOW
                                .MEXIT
                                .ENDC
```

```
      027172                                M$GETS  T$SEK,\T$SEGLEV,T$$SEG
             010012                         T$$SEG=T$SEKO
      027172                                M$DECR  T$SEGLEV
             177777                         T$SEGLEV=T$SEGLEV-1
      027172                                M$GNLS  T$$SEG
                                            .MCALL  M$GEN
                                            .IF NB T$$SEG
      027172                                M$GEN   \T$$SEG,$,SVCTAG
                                            .IF LE  SVCTAG
                                            .IIF EQ SVCTAG,.LIST
                                            10012$:
                                            .IIF EQ SVCTAG,.NLIST
                                            .MEXIT
                                            .ENDC
                                            .LIST
      027172                                                                        10012$:
                                                    .NLIST
                                            .IFF
                                            M$GEN   \S$LSYM,$,SVCTAG
                                            .ENDC
      027172                                M$SVC   C$ESEG
                                            .MCALL  M$GNINS,M$TSTLAB
      027172                                M$TSTLAB
                                            .MCALL  M$TLABEL,M$INCR
                                            .IIF LT T$TSTMAC, .MEXIT
                                            .RADIX  10
                                            M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                            .RADIX  8
                                            M$INCR  T$TSTSEQ
      027172                                M$GNINS <TRAP   C$ESEG>
                                            .IF LT SVCINS
                                            TRAP    C$ESEG
                                            .MEXIT
                                            .ENDC
                                            .IF EQ SVCINS
                                            .LIST
                                                    TRAP    C$ESEG
                                                            .NLIST
                                            .MEXIT
                                            .ENDC
                                            .IF GT SVCINS
                                            .LIST
      027172 104405                                                                       TRAP    C$ESEG
                                                            .NLIST
                                            .ENDC
                                            .IF EQ T$SEGLEV+1
             000041                         I$SEG=F$END
                                            .ENDC
                                            .IFF
                                            M$ENDERR        ENDSEG,T$TEMP
                                            .ENDC
 4300 027174 005737 002234                  TQVP7:  TST     QVP             ;IS QUICK VERIFY PASS SELECTED
 4301 027200 001054                                 BNE     EXQV7           ;IF YES EXIT TEST
 4302 027202 005737 002322                          TST     ITRCNT          ;IS THIS THE FIRST TIME THRU THE TEST
 4303 027206 001007                                 BNE     1$              ;BRANCH IF NO
 4304 027210 013737 002314 002406                   MOV     DPA2,SDPA       ;SAVE ENTERED DPA2
 4305 027216 005037 002314                          CLR     DPA2            ;CLR DPA2
```

TEST 7: ADDRESS REGISTER TEST OF CHANNEL 2

```
 4306 027222  005237  002322                    INC     ITRCNT                  ;SET FLAG TO SEE FIRST TIME PASS
 4307 027226  005237  002314            1$:     INC     DPA2                    ;GET NEW DPA2
 4308 027232  023737  002314  002312            CMP     DPA2,DPA1               ;IS DPA2 = DPA1
 4309 027240  001002                            BNE     2$                      ;BRANCH IF NO
 4310 027242  005237  002314                    INC     DPA2                    ;INCREMENT DPA2
 4311 027246  022737  000037  002314    2$:     CMP     #37,DPA2                ;ALL DONE
 4312 027254  001423                            BEQ     3$                      ;BRANCH IF YES
 4313 027256  042777  000010  153014            BIC     #10,@CSRX               ;SELECT CHANNEL 1
 4314 027264  112777  000217  152776            MOVB    #217,@ICRHX             ;----LOAD SIC INTO ACR 1
 4315 027272  004737  011062                    JSR     PC,WAIT                 ;WAIT A LITTLE
 4316 027276  112777  000017  152764            MOVB    #17,@ICRHX              ;----LOAD NOT SIC INTO ACR 1
 4317 027304  052777  000010  152766            BIS     #10,@CSRX               ;SELECT CHANNEL 2
 4318 027312  113777  002314  152734            MOVB    DPA2,@IIRHX             ;LOAD NEW DPA2 INTO ADR2
 4319 027320  000137  023126                    JMP     A2                      ;REPET THE TEST WITH THE NEW DPA1
 4320 027324  013737  002406  002314    3$:     MOV     SDPA,DPA2               ;RESTOR ENTERD DPA2
 4321 027332                                  EXQV7:  EXIT TST
                                        .MCALL  M$SVC,M$EXIT,M$EXSEG,M$EXTJ,M$GETTOP,M$CHECK,M$WORD,XFER
              000041                    T$FLAG=F$END
      027332                            M$CHECK TST,T$TEMP,T$FLAG
                                        .IF IDN <TST>,<TST>
              010034                    T$TEMP=T$$TEST
              000040                    T$FLAG=I$TST
                                        .MEXIT
                                        .ENDC
                                        .IF IDN <SUB>,<TST>
                                        T$TEMP=T$$SUB
                                        T$FLAG=I$SUB
                                        .MEXIT
                                        .ENDC
                                        .IF IDN <SEG>,<TST>
                                        T$TEMP=T$$SEG
                                        T$FLAG=I$SEG
                                        .MEXIT
                                        .ENDC
                                        .IF IDN <INIT>,<TST>
                                        T$TEMP=T$$INIT
                                        T$FLAG=I$INIT
                                        .MEXIT
                                        .ENDC
                                        .IF IDN <CLN>,<TST>
                                        T$TEMP=T$$CLEAN
                                        T$FLAG=I$CLN
                                        .MEXIT
                                        .ENDC
                                        .IF IDN <SRV>,<TST>
                                        T$TEMP=T$$SRV
                                        T$FLAG=I$SRV
                                        .MEXIT
                                        .ENDC
                                        .IF IDN <MSG>,<TST>
                                        T$TEMP=T$$MSG
                                        T$FLAG=F$JMP
                                        .MEXIT
                                        .ENDC
                                        .IF IDN <RPT>,<TST>
                                        T$TEMP-T$$RPT
                                        T$FLAG-F$JMP
```

```
                                        .MEXIT
                                        .ENDC
                                        .IF IDN <DU>,<TST>
                                        T$TEMP=T$$DU
                                        T$FLAG=F$JMP
                                        .MEXIT
                                        .ENDC
                                        .IF IDN <AU>,<TST>
                                        T$TEMP=T$$AU
                                        T$FLAG=F$JMP
                                        .MEXIT
                                        .ENDC
                                        .IF EQ T$FLAG-F$JMP
                                        M$WORD  J$JMP
                                        M$EXTJ  \T$TEMP
                                        .MEXIT
                                        .ENDC
                                        .IF EQ  T$FLAG-F$BGN
      027332                            M$SVC   C$EXIT
                                        .MCALL  M$GNINS,M$TSTLAB
      027332                            M$TSTLAB
                                        .MCALL  M$TLABEL,M$INCR
                                        .IIF LT T$TSTMAC, .MEXIT
                                        .RADIX  10
                                        M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                        .RADIX  8
                                        M$INCR  T$TSTSEQ
      027332                            M$GNINS <TRAP   C$EXIT>
                                        .IF LT SVCINS
                                        TRAP    C$EXIT
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                TRAP    C$EXIT
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
      027332  104432                                                                    TRAP    C$EXIT
                                                        .NLIST
                                        .ENDC
                                        .IF IDN <SEG>,<TST>
                                        M$GETTOP T$SEK,T$SEGLEV,T$TEMP
                                        M$EXSEG \T$TEMP
                                        .IFF
      027334                            M$EXIT  \T$TEMP
                                        .MCALL  M$GNINS
      027334                            M$GNINS <.WORD  L10034-.>
                                        .IF LT SVCINS
                                        .WORD   L10034-.
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                .WORD   L10034-.
```

```
                                                .NLIST
                                 .MEXIT
                                 .ENDC
                                 .IF GT SVCINS
                                 .LIST
    027334  000062                                                                      .WORD   L10034-.
                                                .NLIST
                                 .ENDC
                                 .ENDC
                                 .MEXIT
                                 .ENDC
                                 .IF IDN <HRD>,<TST>
                                 M$GETTOP       T$NS,T$NESTLEV,T$TEMP
                                 .IF EQ  F$HARD-T$TEMP
                                 .IRP    N,<\T$$HARD>
                                 XFER    L'N
                                 .ENDM
                                 .MEXIT
                                 .ENDC
                                 .ENDC
                                 .IF IDN <SFT>,<TST>
                                 M$GETTOP       T$NS,T$NESTLEV,T$TEMP
                                 .IF EQ  F$SOFT-T$TEMP
                                 .IRP    N,<\T$$SOFT>
                                 XFER    L'N
                                 .ENDM
                                 .MEXIT
                                 .ENDC
                                 .ENDC
                                 .ERROR  ;ILL. "EXIT TST" STMT.

                                      .NLIST  BEX
    027336     045     123     062 TSHD7:  .ASCIZ  /*S2*AADDRESS REGISTER TEST (ICR) OF CHANNEL 2*N/
                                      .LIST   BEX
                                      .EVEN
    027416                            ENDTST
                                 .MCALL  M$POP,M$GNTAG,M$SVC,M$ENDERR
                                 .IF EQ  F$BGN-I$TST
            000041               I$TST=F$END
                                 .IFF
                                 .ERROR  ;MISSING "BGNTST"
                                 .MEXIT
                                 .ENDC
    027416                       M$POP   T$NS,T$NESTLEV,T$TEMP
                                 .MCALL  M$GETS,M$DECR
                                 .IF LT  T$NESTLEV
                                 .ERROR  T$NESTLEV       ; MACRO T$NS UNDERFLOW
                                 .MEXIT
                                 .ENDC
    027416                       M$GETS  T$NS,\T$NESTLEV,T$TEMP
            000001               T$TEMP=T$NS1
    027416                       M$DECR  T$NESTLEV
            000000               T$NESTLEV=T$NESTLEV-1
                                 .IF EQ F$TEST T$TEMP
    027416                       M$GNTAG L,T$$TEST
                                 .MCALL  M$GEN
    027416                       M$GEN   L,\T$$TEST,SVCTAG
```

```
                                .IF LE  SVCTAG
                                .IIF EQ SVCTAG,.LIST
                                L10034:
                                .IIF EQ SVCTAG,.NLIST
                                .MEXIT
                                .ENDC
                                .LIST
     027416                                                             L10034:
                                        .NLIST
             010000             S$LSYM=T$LSYM
     027416                     M$SVC   C$ETST
                                .MCALL  M$GNINS,M$TSTLAB
     027416                     M$TSTLAB
                                .MCALL  M$TLABEL,M$INCR
                                .IIF LT T$TSTMAC, .MEXIT
                                .RADIX  10
                                M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                .RADIX  8
                                M$INCR  T$TSTSEQ
     027416                     M$GNINS <TRAP   C$ETST>
                                .IF LT SVCINS
                                TRAP    C$ETST
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        TRAP    C$ETST
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
     027416  104401                                                          TRAP    C$ETST
                                                .NLIST
                                .ENDC
             000041             I$TST=F$END
                                .IFF
                                M$ENDERR        ENDTST,T$TEMP
                                .ENDC
```

```
                                .SBTTL  TEST 8: DATA TRANSFER TEST
                                ;*********************************************************************
                                ;       IEX - TEST 8
                                ;THIS TEST IS DIVIDED INTO TWO PARTS
                                ;IT CHECKS THE DATA OUT (DOR) AND DATA IN (DIR) REGISTERS
                                ;
                                ;PART 1 CHECKS THE DOR AND DIR REGISTER BY LOADING THE DOR1 WITH A
                                ;       DATA BYTE AND READING IT FROM THE DIR2
                                ;       (PROGRAMMED DATA TRANSFER FROM CHAN.1 TO CHAN.2).
                                ;
                                ;PART 2 CHECKS THE DOR AND DIR REGISTER BY LOADING THE DOR2 WITH A
                                ;       DATA BYTE AND READING IT FROM THE DIR1
                                ;       (PROGRAMMED DATA TRANSFER FROM CHAN.2 TO CHAN.1).
                                ;
                                ;IF THE QUICK VERIFY PASS IS NOT SELECTED, THE TEST ITERATION IS
                                ;CARRIED OUT WITH A DIFFERENT DATA PATTERN
                                ;*********************************************************************
027420                                  BGNTST
                                .MCALL  M$INCR,M$GNTEST,M$PUSH,M$INCR
                                .IF NE  F$END-I$SUB
                                .ERROR  ;"BGNTST" IN SUB
                                .MEXIT
                                .ENDC
                                .IF NE  F$END-I$SEG
                                .ERROR  ;"BGNTST" IN SEG
                                .MEXIT
                                .ENDC
                                .IF NE  F$END-I$TST
                                .ERROR  ;"BGNTST" IN TST
                                .MEXIT
                                .IFF
               000040           I$TST=F$BGN
                                .ENDC
                                .IF B
027420                          M$INCR  T$TESTNUM
               000010           T$TESTNUM=T$TESTNUM+1
                                .IFF
                                T$TESTNUM=
                                .ENDC
               000000           T$SUBNUM=0
               000012           .RADIX  10
027420                          M$GNTEST        \T$TESTNUM
                                .MCALL  M$GEN
027420                          M$GEN   T,8:,SVCTST
                                .IF LE  SVCTST
                                .IIF EQ SVCTST,.LIST
                                T8::
                                .IIF EQ SVCTST,.NLIST
                                .MEXIT
                                .ENDC
                                .LIST
027420                                                                          T8::
                                         .NLIST
               000010           .RADIX  8
027420                          M$PUSH  T$NS,T$NESTLEV,F$TEST
                                .MCALL  M$INCR,M$SETS
027420                          M$INCR  T$NESTLEV
```

```
                000001                  T$NESTLEV=T$NESTLEV+1
        027420                          M$SETS  T$NS,\T$NESTLEV,F$TEST
                000001                  T$NS1=F$TEST
                010035                  T$$TEST=T$TAGNUM
        027420                          M$INCR T$TAGNUM
                010036                  T$TAGNUM=T$TAGNUM+1
                000001                  T$TSTSEQ=1
        027420  005737  002324                  TST     PNTF                    ;IS THE PNT FLAG SET
        027424  001410                          BEQ     7$                      ;IF YES, PRINT THE TEST HEADER
        027426                                  PRINTF  #TSHD8                  ;...
                                        .MCALL  M$PRINT
                                        .IF B   #TSHD8
                                        .ERROR  ;MISSING FORMAT
                                        .MEXIT
                                        .ENDC
                                        .IF B   <>
        027426                          M$PRINT C$PNTF,#TSHD8
                                        .MCALL  M$COUNT,M$PUT,M$GNINS,M$SVC
                000001                  T$ARGCNT=1
        027426                          M$COUNT T$ARGCNT,<>,<>,<>,<>,<>,<>,<>,<>
                                        .IF NB <>
                                        M$COUNT T$ARGCNT,<>,<>,<>,<>,<>,<>,<>,<>
                                        .ENDC
                                        .IF NB <>
                                        T$ARGCNT=T$ARGCNT+1
                                        .ENDC
                                        .IRP    N,<\T$ARGCNT>
                                        M$PUT   #N,#TSHD8,<>,<>,<>,<>,<>,<>,<>,<>
                                        .ENDM
        027426                          M$PUT   #1,#TSHD8,<>,<>,<>,<>,<>,<>,<>,<>
                                        .MCALL  M$PUT1
                                        .IF NB  <#TSHD8>
        027426                          M$PUT   <#TSHD8>,<>,<>,<>,<>,<>,<>,<>,<>
                                        .MCALL  M$PUT1
                                        .IF NB  <>
                                        M$PUT   <>,<>,<>,<>,<>,<>,<>,<>,<>
                                        .ENDC
                                        .IF NB  <#TSHD8>
        027426                          M$PUT1  #TSHD8
                                        .MCALL  M$GNINS
                                        .IF B
        027426                          M$GNINS <MOV    #TSHD8,-(SP)>
                                        .IF LT SVCINS
                                        MOV     #TSHD8,-(SP)
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                MOV     #TSHD8,-(SP)
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
        027426  012746  031732                                                  MOV     #TSHD8, (SP)
                                                        .NLIST
                                        .ENDC
```

```
                                        .IFF
                                        .IF DIF B,<#TSHD8>
                                        .ERROR  ;ILL. ARG. "#TSHD8" ONLY "B" IS ALLOWED.
                                        .MEXIT
                                        .ENDC
                                        M$GNINS <CLR    -(SP)>
                                        M$GNINS ^ISB    ,(SP)>
                                        .ENDC
                                        .ENDC
                                        .ENDC
                                        .IF NB  <#1>
      027432                            M$PUT1  #1
                                        .MCALL  M$GNINS
                                        .IF B
      027432                            M$GNINS <MOV    #1,-(SP)>
                                        .IF LT SVCINS
                                        MOV     #1,-(SP)
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                MOV     #1,-(SP)
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
      027432  012746  000001                                                    MOV     #1,-(SP)
                                                        .NLIST
                                        .ENDC
                                        .IFF
                                        .IF DIF B,<#1>
                                        .ERROR  ;ILL. ARG. "#1" ONLY "B" IS ALLOWED.
                                        .MEXIT
                                        .ENDC
                                        M$GNINS <CLR    -(SP)>
                                        M$GNINS <BISB   ,(SP)>
                                        .ENDC
                                        .ENDC
      027436                            M$GNINS <MOV    SP,R0>
                                        .IF LT SVCINS
                                        MOV     SP,R0
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                MOV     SP,R0
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
      027436  010600                                                            MOV     SP,R0
                                                        .NLIST
                                        .ENDC
      027440                            M$SVC   C$PNTF
                                        .MCALL  M$GNINS,M$TSTLAB
```

```
        027440                          M$TSTLAB
                                        .MCALL  M$TLABEL,M$INCR
                                        .IIF LT T$TSTMAC, .MEXIT
                                        .RADIX  10
                                        M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                        .RADIX  8
                                        M$INCR  T$TSTSEQ
        027440                          M$GNINS <TRAP   C$PNTF>
                                        .IF LT SVCINS
                                        TRAP    C$PNTF
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                TRAP    C$PNTF
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
        027440  104417                                                          TRAP    C$PNTF
                                                        .NLIST
                                        .ENDC
                                        .IRP    N,<\T$ARGCNT*2+2>
                                        M$GNINS <ADD    #N,SP>
                                        .ENDM
        027442                          M$GNINS <ADD    #4,SP>
                                        .IF LT SVCINS
                                        ADD     #4,SP
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                ADD     #4,SP
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
        027442  062706  000004                                                  ADD     #4,SP
                                                        .NLIST
                                        .ENDC
                                        .MEXIT
                                        .ENDC
                                        .IF B   <>
                                        M$PRINT C$PNTF,#TSHD8,<>
                                        .MEXIT
                                        .ENDC
                                        .IF B   <>
                                        M$PRINT C$PNTF,#TSHD8,<>,<>
                                        .MEXIT
                                        .ENDC
                                        .IF B   <>
                                        M$PRINT C$PNTF,#TSHD8,<>,<>,<>
                                        .MEXIT
                                        .ENDC
                                        .IF B   <>
```

```
                                M$PRINT C$PNTF,ØTSHD8,<>,<>,<>,<>
                                .MEXIT
                                .ENDC
                                .IF B   <>
                                M$PRINT C$PNTF,ØTSHD8,<>,<>,<>,<>,<>
                                .MEXIT
                                .ENDC
                                .IF B   <>
                                M$PRINT C$PNTF,ØTSHD8,<>,<>,<>,<>,<>,<>
                                .MEXIT
                                .ENDC
                                .IF B   <>
                                M$PRINT C$PNTF,ØTSHD8,<>,<>,<>,<>,<>,<>,<>
                                .MEXIT
                                .ENDC
                                M$PRINT C$PNTF,ØTSHD8,<>,<>,<>,<>,<>,<>,<>,<>
027446  005037  002322          7$:     CLR     ITRCNT                  ;CLEAR COUNTER
027452  004737  010210                  JSR     PC,CULPA                ;CLEAR ULPA BIT IN ISR 1 AND 2
027456  004737  010524                  JSR     PC,BGIN1                ;SET UP PARAMETER
027462                                  BGNSEG
                                .MCALL  M$PUSH,M$INCR,M$SVC
        000040                  I$SEG=F$BGN
027462                          M$PUSH  T$NS,T$NESTLEV,F$SEG
                                .MCALL  M$INCR,M$SETS
027462                          M$INCR  T$NESTLEV
        000002                  T$NESTLEV=T$NESTLEV+1
027462                          M$SETS  T$NS,\T$NESTLEV,F$SEG
        000003                  T$NS2=F$SEG
        010000                  T$$SEG=S$LSYM
027462                          M$PUSH  T$SEK,T$SEGLEV,T$$SEG
                                .MCALL  M$INCR,M$SETS
027462                          M$INCR  T$SEGLEV
        000000                  T$SEGLEV=T$SEGLEV+1
027462                          M$SETS  T$SEK,\T$SEGLEV,T$$SEG
        010000                  T$SEK0=T$$SEG
027462                          M$INCR  S$LSYM
        010001                  S$LSYM=S$LSYM+1
027462                          M$SVC   C$BSEG
                                .MCALL  M$GNINS,M$TSTLAB
027462                          M$TSTLAB
                                .MCALL  M$TLABEL,M$INCR
                                .IIF LT T$TSTMAC, .MEXIT
                                .RADIX  10
                                M$TLABEL        \ $TESTNUM,\T$TSTSEQ
                                .RADIX  8
                                M$INCR  T$TSTSEQ
027462                          M$GNINS <TRAP   C$BSEG>
                                .IF LT SVCINS
                                TRAP    C$BSEG
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        TRAP    C$BSEG
                                                .NLIST
                                .MEXIT
                                .ENDC
```

D5

```
                                        .IF GT SVCINS
                                        .LIST
027462  104404                                                                                  TRAP    C$BSEG
                                                    .NLIST
                                        .ENDC
027464  112777  000212  152576                MOVB    #212,@ICRHX             ;----LOAD TON IN ACR 1 (ICR1)-------
027472  017737  152560  002502                MOV     @ISRX,BAD               ;GET ISR1 CONTENTS
027500  022737  120042  002502                CMP     #120042,BAD             ;ATN,NDAC,ATN,TADS SHOULD BE SET
027506  001407                                BEQ     4$                      ;BRANCH IF YES
027510  012737  120042  002500                MOV     #120042,GOOD            ;SET UP DATA FOR ERROR MESSAGE
027516                                        ERRSOFT 801,E502,ERR501         ;ERROR HANDLER
                                        .MCALL  M$ERRINS
027516                                  M$ERRINS        801,E502,ERR501,C$ERSOFT
                                        .MCALL  M$GNINS,M$WORD,M$TSTLAB
027516                                  M$SVC   C$ERSOFT
                                        .MCALL  M$GNINS,M$TSTLAB
027516                                  M$TSTLAB
                                        .MCALL  M$TLABEL,M$INCR
                                        .IIF LT T$TSTMAC, .MEXIT
                                        .RADIX  10
                                        M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                        .RADIX  8
                                        M$INCR  T$TSTSEQ
027516                                  M$GNINS <TRAP   C$ERSOFT>
                                        .IF LT SVCINS
                                        TRAP    C$ERSOFT
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                TRAP    C$ERSOFT
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
027516  104457                                                                                  TRAP    C$ERSOFT
                                                        .NLIST
                                        .ENDC
        000012                          .RADIX  10
                                        .IF NB  801
        001441                          T$ERRNUM 801
                                        .IFF
                                        .ERROR  ;MISSING ERROR-NR
                                        .ENDC
027520                                  M$WORD  \T$ERRNUM
                                        .MCALL  M$GNINS
                                        .IRP    N,<801>
                                        M$GNINS <.WORD  N>
                                        .ENDM
027520                                  M$GNINS <.WORD  801>
                                        .IF LT SVCINS
                                        .WORD   801
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
```

E5

```
                                  .WORD   801
                                          .NLIST
                             .MEXIT
                             .ENDC
                             .IF GT SVCINS
                             .LIST
027520  001441                                                          .WORD   801
                                          .NLIST
                             .ENDC
        000010               .RADIX  8
                             .IF NB E502
027522                       M$WORD  E502
                             .MCALL  M$GNINS
                             .IRP    N,<E502>
                             M$GNINS <.WORD  N>
                             .ENDM
027522                       M$GNINS <.WORD  E502>
                             .IF LT SVCINS
                             .WORD   E502
                             .MEXIT
                             .ENDC
                             .IF EQ SVCINS
                             .LIST
                                  .WORD   E502
                                          .NLIST
                             .MEXIT
                             .ENDC
                             .IF GT SVCINS
                             .LIST
027522  005437                                                          .WORD   E502
                                          .NLIST
                             .ENDC
                             .IFF
                             M$WORD  0
                             .ENDC
                             .IF NB ERR501
027524                       M$WORD  ERR501
                             .MCALL  M$GNINS
                             .IRP    N,<ERR501>
                             M$GNINS <.WORD  N>
                             .ENDM
027524                       M$GNINS <.WORD  ERR501>
                             .IF LT SVCINS
                             .WORD   ERR501
                             .MEXIT
                             .ENDC
                             .IF EQ SVCINS
                             .LIST
                                  .WORD   ERR501
                                          .NLIST
                             .MEXIT
                             .ENDC
                             .IF GT SVCINS
                             .LIST
027524  003672                                                          .WORD   ERR501
                                          .NLIST
                             .ENDC
```

F5


```
                                        .IFF
                                        M$WORD  0
                                        .ENDC
    4360 027526                         4$:     ENDSEG
                                        .MCALL  M$POP,M$GNLS,M$SVC,M$ENDERR
         027526                         M$POP   T$NS,T$NESTLEV,T$TEMP
                                        .MCALL  M$GETS,M$DECR
                                        .IF LT  T$NESTLEV
                                        .ERROR  T$NESTLEV           ; MACRO T$NS UNDERFLOW
                                        .MEXIT
                                        .ENDC
         027526                         M$GETS  T$NS,\T$NESTLEV,T$TEMP
                000003                  T$TEMP=T$NS2
         027526                         M$DECR  T$NESTLEV
                000001                  T$NESTLEV=T$NESTLEV-1
                                        .IF EQ F$SEG-T$TEMP
         027526                         M$POP   T$SEK,T$SEGLEV,T$$SEG
                                        .MCALL  M$GETS,M$DECR
                                        .IF LT  T$SEGLEV
                                        .ERROR  T$SEGLEV            ; MACRO T$SEK UNDERFLOW
                                        .MEXIT
                                        .ENDC
         027526                         M$GETS  T$SEK,\T$SEGLEV,T$$SEG
                010000                  T$$SEG=T$SEK0
         027526                         M$DECR  T$SEGLEV
                177777                  T$SEGLEV=T$SEGLEV-1
         027526                         M$GNLS  T$$SEG
                                        .MCALL  M$GEN
                                        .IF NB T$$SEG
         027526                         M$GEN   \T$$SEG,$,SVCTAG
                                        .IF LE  SVCTAG
                                        .IIF EQ SVCTAG,.LIST
                                        10000$:
                                        .IIF EQ SVCTAG,.NLIST
                                        .MEXIT
                                        .ENDC
                                        .LIST
         027526                                                                         10000$:
                                                .NLIST
                                        .IFF
                                        M$GEN   \S$LSYM,$,SVCTAG
                                        .ENDC
         027526                         M$SVC   C$ESEG
                                        .MCALL  M$GNINS,M$TSTLAB
         027526                         M$TSTLAB
                                        .MCALL  M$TLABEL,M$INCR
                                        .IIF LT T$TSTMAC, .MEXIT
                                        .RADIX  10
                                        M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                        .RADIX  8
                                        M$INCR  T$TSTSEQ
         027526                         M$GNINS <TRAP   C$ESEG>
                                        .IF LT SVCINS
                                        TRAP    C$ESEG
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
```

G5

```
                                         .LIST
                                                 TRAP    C$ESEG
                                                         .NLIST
                                         .MEXIT
                                         .ENDC
                                         .IF GT SVCINS
                                         .LIST
      027526  104405                                                                     TRAP    C$ESEG
                                                         .NLIST
                                         .ENDC
                                         .IF EQ T$SEGLEV+1
              000041                     I$SEG=F$END
                                         .ENDC
                                         .IFF
                                         M$ENDERR        ENDSEG,T$TEMP
                                         .ENDC
      027530  013701  002314                     MOV     DPA2,R1                 ;GET DPA2 ADDRESS
      027534  062701  000040                     ADD     #40,R1                  ;CREATE MY LISTENER ADDRESS (MLA)
      027540  010137  002412                     MOV     R1,MLA2                 ;STORE MLA
      027544  032737  000001  002314             BIT     #1,DPA2                 ;IS DPA EVEN
      027552  001412                             BEQ     3$                      ;BRANCH IF YES
      027554  052737  000001  002434             BIS     #1,CDAT1                ;SET ULPA BIT IN COMPARE DATA FOR ISR
      027562  052737  000001  002450             BIS     #1,CDAT7                ;...
      027570  052737  000001  002444             BIS     #1,CDAT5                ;...
      027576  000411                             BR      .+24                    ;BRANCH TO BGNSEG
      027600  042737  000001  002434     3$:     BIC     #1,CDAT1                ;CLEAR ULPA BIT IN COMPARE DATA FOR ISR
      027606  042737  000001  002450             BIC     #1,CDAT7                ;...
      027614  042737  000001  002444             BIC     #1,CDAT5                ;...
      027622                                     BGNSEG
                                         .MCALL  M$PUSH,M$INCR,M$SVC
              000040                     I$SEG=F$BGN
      027622                             M$PUSH  T$NS,T$NESTLEV,F$SEG
                                         .MCALL  M$INCR,M$SETS
      027622                             M$INCR  T$NESTLEV
              000002                     T$NESTLEV=T$NESTLEV+1
      027622                             M$SETS  T$NS,\T$NESTLEV,F$SEG
              000003                     T$NS2=F$SEG
              010001                     T$$SEG=S$LSYM
      027622                             M$PUSH  T$SEK,T$SEGLEV,T$$SEG
                                         .MCALL  M$INCR,M$SETS
      027622                             M$INCR  T$SEGLEV
              000000                     T$SEGLEV=T$SEGLEV+1
      027622                             M$SETS  T$SEK,\T$SEGLEV,T$$SEG
              010001                     T$SEK0=T$$SEG
      027622                             M$INCR  S$LSYM
              010002                     S$LSYM=S$LSYM+1
      027622                             M$SVC   C$BSEG
                                         .MCALL  M$GNINS,M$TSTLAB
      027622                             M$TSTLAB
                                         .MCALL  M$TLABEL,M$INCR
                                         .IIF LT T$TSTMAC, .MEXIT
                                         .RADIX  10
                                         M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                         .RADIX  8
                                         M$INCR  T$TSTSEQ
      027622                             M$GNINS <TRAP   C$BSEG>
                                         .IF LT SVCINS
```

```
                                                TRAP    C$BSEG
                                                .MEXIT
                                                .ENDC
                                                .IF EQ SVCINS
                                                .LIST
                                                        TRAP    C$BSEG
                                                                .NLIST
                                                .MEXIT
                                                .ENDC
                                                .IF GT SVCINS
                                                .LIST
        027622  104404                                                                          TRAP    C$BSEG
                                                                .NLIST
                                                .ENDC
   4374 027624  042777  000010  152446                  BIC     #10,@CSRX               ;SELECT CHANNEL 1
   4375 027632  012737  000001  002374                  MOV     #1,CHAN                 ;LOAD CHANNEL NUMBER
   4376 027640  113777  002412  152430                  MOVB    MLA2,@IDRHX             ;----LOAD LISTENER ADDRESS OF CHANNEL 1
   4377 027646  004737  011050                          JSR     PC,LOOP                 ;WAIT A LITTLE
   4378 027652  052777  000010  152420                  BIS     #10,@CSRX               ;SELECT CHANNEL 2
   4379 027660  012737  000002  002374                  MOV     #2,CHAN                 ;LOAD CHANNEL NUMBER
   4380 027666  017737  152356  002502                  MOV     @IIRX,BAD               ;GET IIR2 CONTENTS
   4381 027674  022737  002401  002502                  CMP     #2401,BAD               ;MA,MAC,IFC BIT IN IIR2 SHOULD BE SET
   4382 027702  001410                                  BEQ     20$                     ;BRANCH IF YES
   4383 027704  012737  002401  002500                  MOV     #2401,GOOD              ;SET UP DATA FOR ERROR MESSAGES
   4384 027712                                          ERRSOFT 802,E501,ERR501         ;ERROR HANDLER
                                                .MCALL  M$ERRINS
        027712                                  M$ERRINS        802,E501,ERR501,C$ERSOFT
                                                .MCALL  M$GNINS,M$WORD,M$TSTLAB
        027712                                  M$SVC   C$ERSOFT
                                                .MCALL  M$GNINS,M$TSTLAB
        027712                                  M$TSTLAB
                                                .MCALL  M$TLABEL,M$INCR
                                                .IIF LT T$TSTMAC, .MEXIT
                                                .RADIX  10
                                                M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                                .RADIX  8
                                                M$INCR  T$TSTSEQ
        027712                                  M$GNINS <TRAP   C$ERSOFT>
                                                .IF LT SVCINS
                                                TRAP    C$ERSOFT
                                                .MEXIT
                                                .ENDC
                                                .IF EQ SVCINS
                                                .LIST
                                                        TRAP    C$ERSOFT
                                                                .NLIST
                                                .MEXIT
                                                .ENDC
                                                .IF GT SVCINS
                                                .LIST
        027712  104457                                                                          TRAP    C$ERSOFT
                                                                .NLIST
                                                .ENDC
                000012                          .RADIX  10
                                                .IF NB  802
                001442                          T$ERRNUM=802
                                                .IFF
```

```
                                .ERROR  ;MISSING ERROR NR
                                .ENDC
027714                          M$WORD  \T$ERRNUM
                                .MCALL  M$GNINS
                                .IRP    N,<802>
                                M$GNINS <.WORD  N>
                                .ENDM
027714                          M$GNINS <.WORD  802>
                                .IF LT SVCINS
                                .WORD   802
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        .WORD   802
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
027714  001442                                                                  .WORD   802
                                                .NLIST
                                .ENDC
        000010                  .RADIX  8
                                .IF NB E501
027716                          M$WORD  E501
                                .MCALL  M$GNINS
                                .IRP    N,<E501>
                                M$GNINS <.WORD  N>
                                .ENDM
027716                          M$GNINS <.WORD  E501>
                                .IF LT SVCINS
                                .WORD   E501
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        .WORD   E501
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
027716  005376                                                                  .WORD   E501
                                                .NLIST
                                .ENDC
                                .IFF
                                M$WORD  0
                                .ENDC
                                .IF NB ERR501
027720                          M$WORD  ERR501
                                .MCALL  M$GNINS
                                .IRP    N,<ERR501>
                                M$GNINS <.WORD  N>
                                .ENDM
027720                          M$GNINS <.WORD  ERR501>
                                .IF LT SVCINS
```

J5

```
                                        .WORD   ERR501
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                .WORD   ERR501
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
      027720  003672                                                                        .WORD   ERR501
                                                        .NLIST
                                        .ENDC
                                        .IFF
                                        M$WORD  0
                                        .ENDC
 4385 027722                                    CKLOOP                          ;BRANCH TO BGNSEG WHEN ERRLOOP IS SET
                                        .MCALL  M$SVC
      027722                            M$SVC   C$CLP1
                                        .MCALL  M$GNINS,M$TSTLAB
      027722                            M$TSTLAB
                                        .MCALL  M$TLABEL,M$INCR
                                        .IIF LT T$TSTMAC, .MEXIT
                                        .RADIX  10
                                        M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                        .RADIX  8
                                        M$INCR  T$TSTSEQ
      027722                            M$GNINS <TRAP   C$CLP1>
                                        .IF LT SVCINS
                                        TRAP    C$CLP1
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                TRAP    C$CLP1
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
      027722  104406                                                                        TRAP    C$CLP1
                                                        .NLIST
                                        .ENDC
 4386 027724  017737  152326  002502    20$:    MOV     @ISRX,BAD               ;GET ISR2 CONTENTS
 4387 027732  023737  002444  002502            CMP     CDAT5,BAD               ;ATN,ATN,LADS,NDAC,LPAS,(ULPA) BIT SET
 4388 027740  001410                            BEQ     30$                     ;BRANCH IF YES
 4389 027742  013737  002444  002500            MOV     CDAT5,GOOD              ;SET UP DATA FOR ERROR MESSAGES
 4390 027750                                    ERRSOFT 803,E502,ERR501         ;ERROR HANDLER
                                         MCALL  M$ERRINS
      027750                            M$ERRINS        803,E502,ERR501,C$ERSOFT
                                        .MCALL  M$GNINS,M$WORD,M$TSTLAB
      027750                            M$SVC   C$ERSOFT
                                        .MCALL  M$GNINS,M$TSTLAB
      027750                            M$TSTLAB
                                        .MCALL  M$TLABEL,M$INCR
                                        .IIF LT T$TSTMAC, .MEXIT
```

K5

K5


```
                                .RADIX  10
                                M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                .RADIX  8
                                M$INCR  T$TSTSEQ
     027750                     M$GNINS <TRAP   C$ERSOFT>
                                .IF LT SVCINS
                                TRAP    C$ERSOFT
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        TRAP    C$ERSOFT
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
     027750  104457                                                             TRAP    C$ERSOFT
                                                .NLIST
                                .ENDC
             000012             .RADIX  10
                                .IF NB  803
             001443             T$ERRNUM=803
                                .IFF
                                .ERROR  ;MISSING ERROR NR
                                .ENDC
     027752                     M$WORD  \T$ERRNUM
                                .MCALL  M$GNINS
                                .IRP    N,<803>
                                M$GNINS <.WORD  N>
                                .ENDM
     027752                     M$GNINS <.WORD  803>
                                .IF LT SVCINS
                                .WORD   803
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        .WORD   803
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
     027752  001443                                                             .WORD   803
                                                .NLIST
                                .ENDC
             000010             .RADIX  8
                                .IF NB E502
     027754                     M$WORD  E502
                                .MCALL  M$GNINS
                                .IRP    N,<E502>
                                M$GNINS <.WORD  N>
                                .ENDM
     027754                     M$GNINS <.WORD  E502>
                                .IF LT SVCINS
                                .WORD   E502
```

L5

```
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        .WORD   E502
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
     027754  005437                                                                          .WORD   E502
                                                .NLIST
                                .ENDC
                                .IFF
                                M$WORD  0
                                .ENDC
                                .IF NB ERR501
     027756                     M$WORD  ERR501
                                .MCALL  M$GNINS
                                .IRP    N,<ERR501>
                                M$GNINS <.WORD  N>
                                .ENDM
     027756                     M$GNINS <.WORD  ERR501>
                                .IF LT SVCINS
                                .WORD   ERR501
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        .WORD   ERR501
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
     027756  003672                                                                          .WORD   ERR501
                                                .NLIST
                                .ENDC
                                .IFF
                                M$WORD  0
                                .ENDC
4391 027760                             CKLOOP                          ;BRANCH TO BGNSEG WHEN ERRLOOP IS SET
                                .MCALL  M$SVC
     027760                     M$SVC   C$CLP1
                                .MCALL  M$GNINS,M$TSTLAB
     027760                     M$TSTLAB
                                .MCALL  M$TLABEL,M$INCR
                                .IIF LT T$TSTMAC, .MEXIT
                                .RADIX  10
                                M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                .RADIX  8
                                M$INCR  T$TSTSEQ
     027760                     M$GNINS <TRAP   C$CLP1>
                                .IF LT SVCINS
                                TRAP    C$CLP1
                                .MEXIT
                                .ENDC
```

```
                                                .IF EQ SVCINS
                                                .LIST
                                                        TRAP    C$CLP1
                                                                .NLIST
                                                .MEXIT
                                                .ENDC
                                                .IF GT SVCINS
                                                .LIST
      027760  104406                                                                    TRAP    C$CLP1
                                                                .NLIST
                                                .ENDC
4392  027762  042777  000010  152310  30$:      BIC     #10,@CSRX               ;SELECT CHANNEL 1
4393  027770  012737  000001  002374            MOV     #1,CHAN                 ;LOAD CHANNEL NUMBER
4394  027776  112777  000013  152264            MOVB    #13,@ICRHX              ;----LOAD GTS INTO ACR1 (ICR1)----------
4395  030004  052777  000010  152266  40$:      BIS     #10,@CSRX               ;SELECT CHANNEL 2
4396  030012  012737  000002  002374            MOV     #2,CHAN                 ;LOAD CHANNEL NUMBER
4397  030020  017737  152232  002502            MOV     @ISRX,BAD               ;GET ISR2 CONTENTS
4398  030026  023737  002450  002502            CMP     CDAT7,BAD               ;NDAC,LADS,LPAS,(ULPA) SHOULD BE SET
4399  030034  001407                            BEQ     41$                     ;BRANCH IF YES
4400  030036  013737  002450  002500            MOV     CDAT7,GOOD              ;SET UP DATA FOR ERROR MESSAGE
4401  030044                                    ERRSOFT 804,E502,ERR501         ;ERROR HANDLER
                                                .MCALL  M$ERRINS
      030044                                    M$ERRINS        804,E502,ERR501,C$ERSOFT
                                                .MCALL  M$GNINS,M$WORD,M$TSTLAB
      030044                                    M$SVC   C$ERSOFT
                                                .MCALL  M$GNINS,M$TSTLAB
      030044                                    M$TSTLAB
                                                .MCALL  M$TLABEL,M$INCR
                                                .IIF LT T$TSTMAC, .MEXIT
                                                .RADIX  10
                                                M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                                .RADIX  8
                                                M$INCR  T$TSTSEQ
      030044                                    M$GNINS <TRAP   C$ERSOFT>
                                                .IF LT SVCINS
                                                TRAP    C$ERSOFT
                                                .MEXIT
                                                .ENDC
                                                .IF EQ SVCINS
                                                .LIST
                                                        TRAP    C$ERSOFT
                                                                .NLIST
                                                .MEXIT
                                                .ENDC
                                                .IF GT SVCINS
                                                .LIST
      030044  104457                                                                    TRAP    C$ERSOFT
                                                                .NLIST
                                                .ENDC
              000012                            .RADIX  10
                                                .IF NB  804
              001444                            T$ERRNUM=804
                                                .IFF
                                                .ERROR  ;MISSING ERROR NR
                                                .ENDC
      030046                                    M$WORD  \T$ERRNUM
                                                .MCALL  M$GNINS
```

```
                              .IRP    N,<804>
                              M$GNINS <.WORD  N>
                              .ENDM
     030046                   M$GNINS <.WORD  804>
                              .IF LT SVCINS
                              .WORD   804
                              .MEXIT
                              .ENDC
                              .IF EQ SVCINS
                              .LIST
                                      .WORD   804
                                              .NLIST
                              .MEXIT
                              .ENDC
                              .IF GT SVCINS
                              .LIST
     030046  001444                                                                   .WORD   804
                                              .NLIST
                              .ENDC
             000010           .RADIX  8
                              .IF NB E502
     030050                   M$WORD  E502
                              .MCALL  M$GNINS
                              .IRP    N,<E502>
                              M$GNINS <.WORD  N>
                              .ENDM
     030050                   M$GNINS <.WORD  E502>
                              .IF LT SVCINS
                              .WORD   E502
                              .MEXIT
                              .ENDC
                              .IF EQ SVCINS
                              .LIST
                                      .WORD   E502
                                              .NLIST
                              .MEXIT
                              .ENDC
                              .IF GT SVCINS
                              .LIST
     030050  005437                                                                   .WORD   E502
                                              .NLIST
                              .ENDC
                              .IFF
                              M$WORD  0
                              .ENDC
                              .IF NB ERR501
     030052                   M$WORD  ERR501
                              .MCALL  M$GNINS
                              .IRP    N,<ERR501>
                              M$GNINS <.WORD  N>
                              .ENDM
     030052                   M$GNINS <.WORD  ERR501>
                              .IF LT SVCINS
                              .WORD   ERR501
                              .MEXIT
                              .ENDC
                              .IF EQ SVCINS
```

B6


```
                              .LIST
                                      .WORD   ERR501
                                              .NLIST
                              .MEXIT
                              .ENDC
                              .IF GT SVCINS
                              .LIST
      030052  003672                                                              .WORD   ERR501
                                              .NLIST
                              .ENDC
                              .IFF
                              M$WORD  0
                              .ENDC
4402  030054                  41$:    ENDSEG
                              .MCALL  M$POP,M$GNLS,M$SVC,M$ENDERR
      030054                  M$POP   T$NS,T$NESTLEV,T$TEMP
                              .MCALL  M$GETS,M$DECR
                              .IF LT  T$NESTLEV
                              .ERROR  T$NESTLEV        ; MACRO T$NS UNDERFLOW
                              .MEXIT
                              .ENDC
      030054                  M$GETS  T$NS,\T$NESTLEV,T$TEMP
              000003          T$TEMP=T$NS2
      030054                  M$DECR  T$NESTLEV
              000001          T$NESTLEV=T$NESTLEV-1
                              .IF EQ F$SEG-T$TEMP
      030054                  M$POP   T$SEK,T$SEGLEV,T$$SEG
                              .MCALL  M$GETS,M$DECR
                              .IF LT  T$SEGLEV
                              .ERROR  T$SEGLEV         ; MACRO T$SEK UNDERFLOW
                              .MEXIT
                              .ENDC
      030054                  M$GETS  T$SEK,\T$SEGLEV,T$$SEG
              010001          T$$SEG=T$SEK0
      030054                  M$DECR  T$SEGLEV
              177777          T$SEGLEV=T$SEGLEV-1
      030054                  M$GNLS  T$$SEG
                              .MCALL  M$GEN
                              .IF NB T$$SEG
      030054                  M$GEN   \T$$SEG,$,SVCTAG
                              .IF LE  SVCTAG
                              .IIF EQ SVCTAG,.LIST
                              10001$:
                              .IIF EQ SVCTAG,.NLIST
                              .MEXIT
                              .ENDC
                              .LIST
      030054                                                               10001$:
                                      .NLIST
                              .IFF
                              M$GEN   \S$LSYM,$,SVCTAG
                              .ENDC
      030054                  M$SVC   C$ESEG
                              .MCALL  M$GNINS,M$TSTLAB
      030054                  M$TSTLAB
                              .MCALL  M$TLABEL,M$INCR
                              .IIF LT T$TSTMAC, .MEXIT
```

C6

```
                                              .RADIX  10
                                              M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                              .RADIX  8
                                              M$INCR  T$TSTSEQ
      030054                                  M$GNINS <TRAP   C$ESEG>
                                              .IF LT SVCINS
                                              TRAP    C$ESEG
                                              .MEXIT
                                              .ENDC
                                              .IF EQ SVCINS
                                              .LIST
                                                      TRAP    C$ESEG
                                                              .NLIST
                                              .MEXIT
                                              .ENDC
                                              .IF GT SVCINS
                                              .LIST
      030054  104405                                                                          TRAP    C$ESEG
                                                              .NLIST
                                              .ENDC
                                              .IF EQ T$SEGLEV+1
              000041                          I$SEG=F$END
                                              .ENDC
                                              .IFF
                                              M$ENDERR        ENDSEG,T$TEMP
                                              .ENDC
 4403 030056  012705  000252                          MOV     #252,R5                 ;-------GET DATA PATTERN--  ---------
 4404 030062                                  A81:    BGNSEG
                                              .MCALL  M$PUSH,M$INCR,M$SVC
              000040                          I$SEG=F$BGN
      030062                                  M$PUSH  T$NS,T$NESTLEV,F$SEG
                                              .MCALL  M$INCR,M$SETS
      030062                                  M$INCR  T$NESTLEV
              000002                          T$NESTLEV=T$NESTLEV+1
      030062                                  M$SETS  T$NS,\T$NESTLEV,F$SEG
              000003                          T$NS2=F$SEG
              010002                          T$$SEG=S$LSYM
      030062                                  M$PUSH  T$SEK,T$SEGLEV,T$$SEG
                                              .MCALL  M$INCR,M$SETS
      030062                                  M$INCR  T$SEGLEV
              000000                          T$SEGLEV=T$SEGLEV+1
      030062                                  M$SETS  T$SEK,\T$SEGLEV,T$$SEG
              010002                          T$SEK0=T$$SEG
      030062                                  M$INCR  S$LSYM
              010003                          S$LSYM=S$LSYM+1
      030062                                  M$SVC   C$BSEG
                                              .MCALL  M$GNINS,M$TSTLAB
      030062                                  M$TSTLAB
                                              .MCALL  M$TLABEL,M$INCR
                                              .IIF LT T$TSTMAC, .MEXIT
                                              .RADIX  10
                                              M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                              .RADIX  8
                                              M$INCR  T$TSTSEQ
      030062                                  M$GNINS <TRAP   C$BSEG>
                                              .IF LT SVCINS
                                              TRAP    C$BSEG
```

```
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                TRAP    C$BSEG
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
     030062  104404                                                                             TRAP    C$BSEG
                                                        .NLIST
                                        .ENDC
4405 030064  042777  000010  152206             BIC     #10,@CSRX               ;SELECT CHANNEL 1
4406 030072  012737  000001  002374             MOV     #1,CHAN                 ;LOAD CHANNEL NUMBER
4407 030100  110577  152172                     MOVB    R5,@IDRHX               ;LOAD DATA PATTERN INTO DOR1
4408 030104  004737  011050                     JSR     PC,LOOP                 ;WAIT A LITTLE
4409 030110  017737  152134  002402             MOV     @IIRX,RSAVE             ;GET IIR1 CONTENTS
4410 030116  022737  000020  002402             CMP     #20,RSAVE               ;B0 BIT IN IIR1 SHOULD BE SET
4411 030124  001413                             BEQ     42$                     ;BRANCH IF YES
4412 030126  012737  000020  002500             MOV     #20,GOOD                ;SET UP DATA FOR ERROR MESSAGE
4413 030134  013737  002402  002502             MOV     RSAVE,BAD               ;...
4414 030142                                     ERRSOFT 805,E501,ERR501         ;ERROR HANDLER
                                        .MCALL  M$ERRINS
     030142                             M$ERRINS        805,E501,ERR501,C$ERSOFT
                                        .MCALL  M$GNINS,M$WORD,M$TSTLAB
     030142                             M$SVC   C$ERSOFT
                                        .MCALL  M$GNINS,M$TSTLAB
     030142                             M$TSTLAB
                                        .MCALL  M$TLABEL,M$INCR
                                        .IIF LT T$TSTMAC, .MEXIT
                                        .RADIX  10
                                        M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                        .RADIX  8
                                        M$INCR  T$TSTSEQ
     030142                             M$GNINS <TRAP   C$ERSOFT>
                                        .IF LT SVCINS
                                        TRAP    C$ERSOFT
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                TRAP    C$ERSOFT
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
     030142  104457                                                                             TRAP    C$ERSOFT
                                                        .NLIST
                                        .ENDC
             000012                     .RADIX  10
                                        .IF NB  805
             001445                     T$ERRNUM=805
                                        .IFF
                                        .ERROR  ;MISSING ERROR NR
                                        .ENDC
```

E6

SEQ 0690

```
        030144                          M$WORD  \T$ERRNUM
                                        .MCALL  M$GNINS
                                        .IRP    N,<805>
                                        M$GNINS <.WORD  N>
                                        .ENDM
        030144                          M$GNINS <.WORD  805>
                                        .IF LT SVCINS
                                        .WORD   805
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                .WORD   805
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
        030144  001445                                                                  .WORD   805
                                                        .NLIST
                                        .ENDC
                000010                  .RADIX  8
                                        .IF NB E501
        030146                          M$WORD  E501
                                        .MCALL  M$GNINS
                                        .IRP    N,<E501>
                                        M$GNINS <.WORD  N>
                                        .ENDM
        030146                          M$GNINS <.WORD  E501>
                                        .IF LT SVCINS
                                        .WORD   E501
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                .WORD   E501
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
        030146  005376                                                                  .WORD   E501
                                                        .NLIST
                                        .ENDC
                                        .IFF
                                        M$WORD  0
                                        .ENDC
                                        .IF NB ERR501
        030150                          M$WORD  ERR501
                                        .MCALL  M$GNINS
                                        .IRP    N,<ERR501>
                                        M$GNINS <.WORD  N>
                                        .ENDM
        030150                          M$GNINS <.WORD  ERR501>
                                        .IF LT SVCINS
                                        .WORD   ERR501
                                        .MEXIT
```

F6

F6


```
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                .WORD   ERR501
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
      030150  003672                                                                        .WORD   ERR501
                                                        .NLIST
                                        .ENDC
                                        .IFF
                                        M$WORD  0
                                        .ENDC
 4415 030152                                    CKLOOP                          ;BRANCH TO BGNSEG IF ERRLOOP WAS SET
                                        .MCALL  M$SVC
      030152                            M$SVC   C$CLP1
                                        .MCALL  M$GNINS,M$TSTLAB
      030152                            M$TSTLAB
                                        .MCALL  M$TLABEL,M$INCR
                                        .IIF LT T$TSTMAC, .MEXIT
                                        .RADIX  10
                                        M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                        .RADIX  8
                                        M$INCR  T$TSTSEQ
      030152                            M$GNINS <TRAP   C$CLP1>
                                        .IF LT SVCINS
                                        TRAP    C$CLP1
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                TRAP    C$CLP1
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
      030152  104406                                                                        TRAP    C$CLP1
                                                        .NLIST
                                        .ENDC
 4416 030154  052777  000010  152116    42$:    BIS     #10,@CSRX               ;SELECT CHANNEL 2
 4417 030162  012737  000002  002374            MOV     #2,CHAN                 ;LOAD CHANNEL NUMBER
 4418 030170  017737  152054  002402            MOV     @IIRX,RSAVE             ;GET IIR2 CONTENTS
 4419 030176  022737  000040  002402            CMP     #40,RSAVE               ;BI BIT IN IIR2 SHOULD BE SET
 4420 030204  001413                            BEQ     43$                     ;BRANCH IF YES
 4421 030206  012737  000040  002500            MOV     #40,GOOD                ;SET UP DATA FOR ERROR MESSAGE
 4422 030214  013737  002402  002502            MOV     RSAVE,BAD               ;...
 4423 030222                                    ERRSOFT 806,E501,ERR501         ;ERROR HANDLER
                                        .MCALL  M$ERRINS
      030222                            M$ERRINS        806,E501,ERR501,C$ERSOFT
                                        .MCALL  M$GNINS,M$WORD,M$TSTLAB
      030222                            M$SVC   C$ERSOFT
                                        .MCALL  M$GNINS,M$TSTLAB
      030222                            M$TSTLAB
                                        .MCALL  M$TLABEL,M$INCR
```

G6

```
                          .IIF LT T$TSTMAC, .MEXIT
                          .RADIX  10
                          M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                          .RADIX  8
                          M$INCR  T$TSTSEQ
030222                    M$GNINS <TRAP   C$ERSOFT>
                          .IF LT SVCINS
                          TRAP    C$ERSOFT
                          .MEXIT
                          .ENDC
                          .IF EQ SVCINS
                          .LIST
                                  TRAP    C$ERSOFT
                                          .NLIST
                          .MEXIT
                          .ENDC
                          .IF GT SVCINS
                          .LIST
030222  104457                                                          TRAP    C$ERSOFT
                                          .NLIST
                          .ENDC
        000012            .RADIX  10
                          .IF NB  806
        001446            T$ERRNUM=806
                          .IFF
                          .ERROR  ;MISSING ERROR-NR
                          .ENDC
030224                    M$WORD  \T$ERRNUM
                          .MCALL  M$GNINS
                          .IRP    N,<806>
                          M$GNINS <.WORD  N>
                          .ENDM
030224                    M$GNINS <.WORD  806>
                          .IF LT SVCINS
                          .WORD   806
                          .MEXIT
                          .ENDC
                          .IF EQ SVCINS
                          .LIST
                                  .WORD   806
                                          .NLIST
                          .MEXIT
                          .ENDC
                          .IF GT SVCINS
                          .LIST
030224  001446                                                          .WORD   806
                                          .NLIST
                          .ENDC
        000010            .RADIX  8
                          .IF NB E501
030226                    M$WORD  E501
                          .MCALL  M$GNINS
                          .IRP    N,<E501>
                          M$GNINS <.WORD  N>
                          .ENDM
030226                    M$GNINS <.WORD  E501>
                          .IF LT SVCINS
```

7880 8 3673 6

```
                                .WORD   E501
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        .WORD   E501
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
      030226  005376                                                          .WORD   E501
                                                .NLIST
                                .ENDC
                                .IFF
                                M$WORD  0
                                .ENDC
                                .IF NB ERR501
      030230                    M$WORD  ERR501
                                .MCALL  M$GNINS
                                .IRP    N,<ERR501>
                                M$GNINS <.WORD  N>
                                .ENDM
      030230                    M$GNINS <.WORD  ERR501>
                                .IF LT SVCINS
                                .WORD   ERR501
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        .WORD   ERR501
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
      030230  003672                                                          .WORD   ERR501
                                                .NLIST
                                .ENDC
                                .IFF
                                M$WORD  0
                                .ENDC
 4424 030232                            CKLOOP                  ;
                                .MCALL  M$SVC
      030232                    M$SVC   C$CLP1
                                .MCALL  M$GNINS,M$TSTLAB
      030232                    M$TSTLAB
                                .MCALL  M$TLABEL,M$INCR
                                .IIF LT T$TSTMAC, .MEXIT
                                .RADIX  10
                                M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                .RADIX  8
                                M$INCR  T$TSTSEQ
      030232                    M$GNINS <TRAP   C$CLP1>
                                .IF LT SVCINS
                                TRAP    C$CLP1
                                .MEXIT
```

I6

```
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                              TRAP    C$CLP1
                                                      .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
      030232  104406                                                                 TRAP    C$CLP1
                                                      .NLIST
                                        .ENDC
 4425 030234  017737  152032  002402  43$:    MOV     @IDRX,RSAVE           ;READ DATA FROM DIR REGISTER
 4426 030242  105037  002402                  CLRB    RSAVE                 ;CLEAR LOW BYTE OF IDR
 4427 030246  000337  002402                  SWAB    RSAVE                 ;SWAB DATA FOR COMPARE
 4428 030252  120537  002402                  CMPB    R5,RSAVE              ;CORRECT DATA RECEIVED
 4429 030256  001414                          BEQ     44$                   ;BRANCH IF YES
 4430 030260  000305                          SWAB    R5                    ;SWAB HIGH AND LOW BYTE
 4431 030262  105005                          CLRB    R5                    ;CLEAR HIGH BYTE OF R5
 4432 030264  000305                          SWAB    R5                    ;SWAB HIGH AND LOW BYTE
 4433 030266  010537  002500                  MOV     R5,GOOD               ;SET UP DATA FOR ERROR MESSAGE
 4434 030272  013737  002402  002502          MOV     RSAVE,BAD             ;...
 4435 030300                                  ERRSOFT 807,E801,ERR501       ;ERROR HANDLER
                                        .MCALL  M$ERRINS
      030300                            M$ERRINS        807,E801,ERR501,C$ERSOFT
                                        .MCALL  M$GNINS,M$WORD,M$TSTLAB
      030300                            M$SVC   C$ERSOFT
                                        .MCALL  M$GNINS,M$TSTLAB
      030300                            M$TSTLAB
                                        .MCALL  M$TLABEL,M$INCR
                                        .IIF LT T$TSTMAC, .MEXIT
                                        .RADIX  10
                                        M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                        .RADIX  8
                                        M$INCR  T$TSTSEQ
      030300                            M$GNINS <TRAP   C$ERSOFT>
                                        .IF LT SVCINS
                                        TRAP    C$ERSOFT
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                              TRAP    C$ERSOFT
                                                      .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
      030300  104457                                                                 TRAP    C$ERSOFT
                                                      .NLIST
                                        .ENDC
              000012                    .RADIX  10
                                        .IF NB  807
              001447                    T$ERRNUM=807
                                        .IFF
                                        .ERROR  ;MISSING ERROR NR
                                        .ENDC
```

J6


```
        030302                          M$WORD  \T$ERRNUM
                                        .MCALL  M$GNINS
                                        .IRP    N,<807>
                                        M$GNINS <.WORD  N>
                                        .ENDM
        030302                          M$GNINS <.WORD  807>
                                        .IF LT SVCINS
                                        .WORD   807
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                .WORD   807
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
        030302  001447                                                                  .WORD   807
                                                        .NLIST
                                        .ENDC
                000010                  .RADIX  8
                                        .IF NB E801
        030304                          M$WORD  E801
                                        .MCALL  M$GNINS
                                        .IRP    N,<E801>
                                        M$GNINS <.WORD  N>
                                        .ENDM
        030304                          M$GNINS <.WORD  E801>
                                        .IF LT SVCINS
                                        .WORD   E801
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                .WORD   E801
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
        030304  005500                                                                  .WORD   E801
                                                        .NLIST
                                        .ENDC
                                        .IFF
                                        M$WORD  0
                                        .ENDC
                                        .IF NB ERR501
        030306                          M$WORD  ERR501
                                        .MCALL  M$GNINS
                                        .IRP    N,<ERR501>
                                        M$GNINS <.WORD  N>
                                        .ENDM
        030306                          M$GNINS <.WORD  ERR501>
                                        .IF LT SVCINS
                                        .WORD   ERR501
                                        .MEXIT
```

78 8018 3675 6

K6

```
                                   .ENDC
                                   .IF EQ SVCINS
                                   .LIST
                                           .WORD   ERR501
                                                   .NLIST
                                   .MEXIT
                                   .ENDC
                                   .IF GT SVCINS
                                   .LIST
      030306  003672                                                                   .WORD   ERR501
                                                   .NLIST
                                   .ENDC
                                   .IFF
                                   M$WORD  0
                                   .ENDC
 4436 030310                       44$:    ENDSEG
                                   .MCALL  M$POP,M$GNLS,M$SVC,M$ENDERR
      030310                       M$POP   T$NS,T$NESTLEV,T$TEMP
                                   .MCALL  M$GETS,M$DECR
                                   .IF LT  T$NESTLEV
                                   .ERROR  T$NESTLEV       ; MACRO T$NS UNDERFLOW
                                   .MEXIT
                                   .ENDC
      030310                       M$GETS  T$NS,\T$NESTLEV,T$TEMP
              000003               T$TEMP=T$NS2
      030310                       M$DECR  T$NESTLEV
              000001               T$NESTLEV=T$NESTLEV-1
                                   .IF EQ F$SEG-T$TEMP
      030310                       M$POP   T$SEK,T$SEGLEV,T$$SEG
                                   .MCALL  M$GETS,M$DECR
                                   .IF LT  T$SEGLEV
                                   .ERROR  T$SEGLEV        ; MACRO T$SEK UNDERFLOW
                                   .MEXIT
                                   .ENDC
      030310                       M$GETS  T$SEK,\T$SEGLEV,T$$SEG
              010002               T$$SEG=T$SEK0
      030310                       M$DECR  T$SEGLEV
              177777               T$SEGLEV=T$SEGLEV-1
      030310                       M$GNLS  T$$SEG
                                   .MCALL  M$GEN
                                   .IF NB T$$SEG
      030310                       M$GEN   \T$$SEG,$,SVCTAG
                                   .IF LE  SVCTAG
                                   .IIF EQ SVCTAG,.LIST
                                   10002$:
                                   .IIF EQ SVCTAG,.NLIST
                                   .MEXIT
                                   .ENDC
                                   .LIST
      030310                                                                   10002$:
                                           .NLIST
                                   .IFF
                                   M$GEN   \S$LSYM,$,SVCTAG
                                   .ENDC
      030310                       M$SVC   C$ESEG
                                   .MCALL  M$GNINS,M$TSTLAB
      030310                       M$TSTLAB
```

L6

```
                                        .MCALL  M$TLABEL,M$INCR
                                        .IIF LT T$TSTMAC, .MEXIT
                                        .RADIX  10
                                        M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                        .RADIX  8
                                        M$INCR  T$TSTSEQ
      030310                            M$GNINS <TRAP   C$ESEG>
                                        .IF LT SVCINS
                                        TRAP    C$ESEG
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                TRAP    C$ESEG
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
      030310  104405                                                                                    TRAP    C$ESEG
                                                        .NLIST
                                        .ENDC
                                        .IF EQ T$SEGLEV+1
              000041                    I$SEG=F$END
                                        .ENDC
                                        .IFF
                                        M$ENDERR        ENDSEG,T$TEMP
                                        .ENDC
 4437 030312  005737  002234                    TST     QVP                     ;IS QUICK VERIFY PASS SELECTED
 4438 030316  001010                            BNE     50$                     ;BRANCH IF YES
 4439 030320  062705  000021                    ADD     #21,R5                  ;CREATE NEW TRANSMIT DATA
 4440 030324  005237  002322                    INC     ITRCNT                  ;INCREMENT ITERATION COUNTERB
 4441 030330  023737  002320  002322            CMP     ITRDEF,ITRCNT           ;ALL DONE
 4442 030336  001251                            BNE     A81                     ;BRANCH IF NO
 4443 030340                          50$:    BGNSEG
                                        .MCALL  M$PUSH,M$INCR,M$SVC
              000040                    I$SEG=F$BGN
      030340                            M$PUSH  T$NS,T$NESTLEV,F$SEG
                                        .MCALL  M$INCR,M$SETS
      030340                            M$INCR  T$NESTLEV
              000002                    T$NESTLEV=T$NESTLEV+1
      030340                            M$SETS  T$NS,\T$NESTLEV,F$SEG
              000003                    T$NS2=F$SEG
              010003                    T$$SEG=S$LSYM
      030340                            M$PUSH  T$SEK,T$SEGLEV,T$$SEG
                                        .MCALL  M$INCR,M$SETS
      030340                            M$INCR  T$SEGLEV
              000000                    T$SEGLEV=T$SEGLEV+1
      030340                            M$SETS  T$SEK,\T$SEGLEV,T$$SEG
              010003                    T$SEK0=T$$SEG
      030340                            M$INCR  S$LSYM
              010004                    S$LSYM=S$LSYM+1
      030340                            M$SVC   C$BSEG
                                        .MCALL  M$GNINS,M$TSTLAB
      030340                            M$TSTLAB
                                        .MCALL  M$TLABEL,M$INCR
                                        .IIF LT T$TSTMAC, .MEXIT
```

```
                                                  .RADIX  10
                                                  M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                                  .RADIX  8
                                                  M$INCR  T$TSTSEQ
      030340                                      M$GNINS <TRAP   C$BSEG>
                                                  .IF LT SVCINS
                                                  TRAP    C$BSEG
                                                  .MEXIT
                                                  .ENDC
                                                  .IF EQ SVCINS
                                                  .LIST
                                                          TRAP    C$BSEG
                                                                  .NLIST
                                                  .MEXIT
                                                  .ENDC
                                                  .IF GT SVCINS
                                                  .LIST
      030340  104404                                                                                   TRAP    C$BSEG
                                                                  .NLIST
                                                  .ENDC
 4444 030342  042777  000010  151730                      BIC     #10,@CSRX               ;SELECT CHANNEL 1
 4445 030350  012737  000001  002374                      MOV     #1,CHAN                 ;LOAD CHANNEL NUMBER
 4446 030356  112777  000014  151704                      MOVB    #14,@ICRHX              ;-----LOAD TCA BIT INTO ACR1------
 4447 030364  004737  011050                              JSR     PC,LOOP                 ;WAIT A LITTLE FOR THE B0 BIT
 4448 030370  017737  151654  002502                      MOV     @IIRX,BAD               ;GET IIR1 CONTENTS
 4449 030376  022737  000020  002502                      CMP     #20,BAD                 ;B0 IN IIR1 SHOULD BE SET
 4450 030404  001410                                      BEQ     51$                     ;BRANCH IF YES
 4451 030406  012737  000020  002500                      MOV     #20,GOOD                ;SET UP DATA FOR ERROR MESSAGE
 4452 030414                                              ERRSOFT 808,E501,ERR501         ;ERROR HANDLER
                                                  .MCALL  M$ERRINS
      030414                                      M$ERRINS        808,E501,ERR501,C$ERSOFT
                                                  .MCALL  M$GNINS,M$WORD,M$TSTLAB
      030414                                      M$SVC   C$ERSOFT
                                                  .MCALL  M$GNINS,M$TSTLAB
      030414                                      M$TSTLAB
                                                  .MCALL  M$TLABEL,M$INCR
                                                  .IIF LT T$TSTMAC, .MEXIT
                                                  .RADIX  10
                                                  M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                                  .RADIX  8
                                                  M$INCR  T$TSTSEQ
      030414                                      M$GNINS <TRAP   C$ERSOFT>
                                                  .IF LT SVCINS
                                                  TRAP    C$ERSOFT
                                                  .MEXIT
                                                  .ENDC
                                                  .IF EQ SVCINS
                                                  .LIST
                                                          TRAP    C$ERSOFT
                                                                  .NLIST
                                                  .MEXIT
                                                  .ENDC
                                                  .IF GT SVCINS
                                                  .LIST
      030414  104457                                                                                   TRAP    C$ERSOFT
                                                                  .NLIST
                                                  .ENDC
```

N6

```
                000012                  .RADIX  10
                                        .IF NB  808
                001450                  T$ERRNUM=808
                                        .IFF
                                        .ERROR  ;MISSING ERROR-NR
                                        .ENDC
        030416                          M$WORD  \T$ERRNUM
                                        .MCALL  M$GNINS
                                        .IRP    N,<808>
                                        M$GNINS <.WORD  N>
                                        .ENDM
        030416                          M$GNINS <.WORD  808>
                                        .IF LT SVCINS
                                        .WORD   808
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                .WORD   808
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
        030416  001450                                                          .WORD   808
                                                        .NLIST
                                        .ENDC
                000010                  .RADIX  8
                                        .IF NB E501
        030420                          M$WORD  E501
                                        .MCALL  M$GNINS
                                        .IRP    N,<E501>
                                        M$GNINS <.WORD  N>
                                        .ENDM
        030420                          M$GNINS <.WORD  E501>
                                        .IF LT SVCINS
                                        .WORD   E501
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                .WORD   E501
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
        030420  005376                                                          .WORD   E501
                                                        .NLIST
                                        .ENDC
                                        .IFF
                                        M$WORD  0
                                        .ENDC
                                        .IF NB ERR501
        030422                          M$WORD  ERR501
                                        .MCALL  M$GNINS
                                        .IRP    N,<ERR501>
```

```
                                 M$GNINS <.WORD  N>
                                 .ENDM
     030422                      M$GNINS <.WORD  ERR501>
                                 .IF LT SVCINS
                                 .WORD   ERR501
                                 .MEXIT
                                 .ENDC
                                 .IF EQ SVCINS
                                 .LIST
                                         .WORD   ERR501
                                                 .NLIST
                                 .MEXIT
                                 .ENDC
                                 .IF GT SVCINS
                                 .LIST
     030422  003672                                                      .WORD   ERR501
                                                 .NLIST
                                 .ENDC
                                 .IFF
                                 M$WORD  0
                                 .ENDC
4453 030424                              CKLOOP                 ;BRANCH BACK TO BGNSEG IF ERRLOOP IS SET
                                 .MCALL  M$SVC
     030424                      M$SVC   C$CLP1
                                 .MCALL  M$GNINS,M$TSTLAB
     030424                      M$TSTLAB
                                 .MCALL  M$TLABEL,M$INCR
                                 .IIF LT T$TSTMAC, .MEXIT
                                 .RADIX  10
                                 M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                 .RADIX  8
                                 M$INCR  T$TSTSEQ
     030424                      M$GNINS <TRAP   C$CLP1>
                                 .IF LT SVCINS
                                 TRAP    C$CLP1
                                 .MEXIT
                                 .ENDC
                                 .IF EQ SVCINS
                                 .LIST
                                         TRAP    C$CLP1
                                                 .NLIST
                                 .MEXIT
                                 .ENDC
                                 .IF GT SVCINS
                                 .LIST
     030424  104406                                                      TRAP    C$CLP1
                                                 .NLIST
                                 .ENDC
4454 030426  112777 000012 151634 51$:   MOVB    #12,@ICRHX     ;----LOAD NOT TON INTO ACR1 ---------
4455 030434  112777 000077 151634        MOVB    #77,@IDRHX     ;----LOAD UNL INTO DOR1---- ----------
4456 030442  004737 011050               JSR     PC,LOOP        ;WAIT A LITTLE
4457 030446  017737 151604 002502        MOV     @ISRX,BAD      ;GET ISR1 CONTENTS
4458 030454  022737 120040 002502        CMP     #120040,BAD    ;ATN,NDAC,ATN, SHOULD BET SET
4459 030462  001410                      BEQ     53$            ;BRANCH IF YES
4460 030464  012737 120040 002500        MOV     #120040,GOOD   ;SET UP DATA FOR ERROR MESSAGE
4461 030472                              ERRSOFT 809,E502,ERR501 ;...
                                 .MCALL  M$ERRINS
```

```
        030472                          M$ERRINS        809,E502,ERR501,C$ERSOFT
                                        .MCALL  M$GNINS,M$WORD,M$TSTLAB
        030472                          M$SVC   C$ERSOFT
                                        .MCALL  M$GNINS,M$TSTLAB
        030472                          M$TSTLAB
                                        .MCALL  M$TLABEL,M$INCR
                                        .IIF LT T$TSTMAC, .MEXIT
                                        .RADIX  10
                                        M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                        .RADIX  8
                                        M$INCR  T$TSTSEQ
        030472                          M$GNINS <TRAP   C$ERSOFT>
                                        .IF LT SVCINS
                                        TRAP    C$ERSOFT
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                TRAP    C$ERSOFT
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
        030472  104457                                                                          TRAP    C$ERSOFT
                                                        .NLIST
                                        .ENDC
                000012                  .RADIX  10
                                        .IF NB  809
                001451                  T$ERRNUM=809
                                        .IFF
                                        .ERROR  ;MISSING ERROR-NR
                                        .ENDC
        030474                          M$WORD  \T$ERRNUM
                                        .MCALL  M$GNINS
                                        .IRP    N,<809>
                                        M$GNINS <.WORD  N>
                                        .ENDM
        030474                          M$GNINS <.WORD  809>
                                        .IF LT SVCINS
                                        .WORD   809
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                .WORD   809
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
        030474  001451                                                                          .WORD   809
                                                        .NLIST
                                        .ENDC
                000010                  .RADIX  8
                                        .IF NB E502
        030476                          M$WORD  E502
```

D7

```
                                        .MCALL  M$GNINS
                                        .IRP    N,<E502>
                                        M$GNINS <.WORD  N>
                                        .ENDM
      030476                            M$GNINS <.WORD  E502>
                                        .IF LT SVCINS
                                        .WORD   E502
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                .WORD   E502
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
      030476  005437                                                                    .WORD   E502
                                                        .NLIST
                                        .ENDC
                                        .IFF
                                        M$WORD  0
                                        .ENDC
                                        .IF NB ERR501
      030500                            M$WORD  ERR501
                                        .MCALL  M$GNINS
                                        .IRP    N,<ERR501>
                                        M$GNINS <.WORD  N>
                                        .ENDM
      030500                            M$GNINS <.WORD  ERR501>
                                        .IF LT SVCINS
                                        .WORD   ERR501
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                .WORD   ERR501
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
      030500  003672                                                                    .WORD   ERR501
                                                        .NLIST
                                        .ENDC
                                        .IFF
                                        M$WORD  0
                                        .ENDC
 4462 030502                                    CKLOOP                  ;BRANLH BACK TO BGNSEG IF ERRLOOP IS SET
                                        .MCALL  M$SVC
      030502                            M$SVC   C$CLP1
                                        .MCALL  M$GNINS,M$TSTLAB
      030502                            M$TSTLAB
                                        .MCALL  M$TLABEL,M$INCR
                                        .IIF LT T$TSTMAC, .MEXIT
                                        .RADIX  10
                                        M$TLABEL        \T$TESTNUN,\T$TSTSEQ
```

E7

```
                                        .RADIX  8
                                        M$INCR  T$TSTSEQ
       030502                           M$GNINS <TRAP    C$CLP1>
                                        .IF LT SVCINS
                                        TRAP    C$CLP1
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                TRAP    C$CLP1
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
       030502  104406                                                                   TRAP    C$CLP1
                                                        .NLIST
                                        .ENDC
  4463 030504  052777  000010  151566   53$:    BIS     #10,@CSRX               ;SELECT CHANNEL 2
  4464 030512  012737  000002  002374           MOV     #2,CHAN                 ;LOAD CHANNEL NUMBER
  4465 030520  017737  151532  002502           MOV     @ISRX,BAD               ;GET ISR2 CONTENTS
  4466 030526  023737  002434  002502           CMP     CDAT1,BAD               ;ATN,NDAC,ATN,(ULPA) SHOULD BE SET
  4467 030534  001410                           BEQ     55$                     ;BRANCH IF YES
  4468 030536  013737  002434  002500           MOV     CDAT1,GOOD              ;SET UP DATA FOR ERROR MESSAGE
  4469 030544                                   ERRSOFT 810,E502,ERR501         ;ERROR HANDLER
                                        .MCALL  M$ERRINS
       030544                           M$ERRINS        810,E502,ERR501,C$ERSOFT
                                        .MCALL  M$GNINS,M$WORD,M$TSTLAB
       030544                           M$SVC   C$ERSOFT
                                        .MCALL  M$GNINS,M$TSTLAB
       030544                           M$TSTLAB
                                        .MCALL  M$TLABEL,M$INCR
                                        .IIF LT T$TSTMAC, .MEXIT
                                        .RADIX  10
                                        M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                        .RADIX  8
                                        M$INCR  T$TSTSEQ
       030544                           M$GNINS <TRAP    C$ERSOFT>
                                        .IF LT SVCINS
                                        TRAP    C$ERSOFT
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                TRAP    C$ERSOFT
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
       030544  104457                                                                   TRAP    C$ERSOFT
                                                        .NLIST
                                        .ENDC
               000012                   .RADIX  10
                                        .IF NB  810
               001452                   T$ERRNUM=810
                                        .IFF
```

F7

```
                                        .ERROR  ;MISSING ERROR NR
                                        .ENDC
      030546                            M$WORD  \T$ERRNUM
                                        .MCALL  M$GNINS
                                        .IRP    N,<810>
                                        M$GNINS <.WORD  N>
                                        .ENDM
      030546                            M$GNINS <.WORD  810>
                                        .IF LT SVCINS
                                        .WORD   810
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                .WORD   810
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
      030546  001452                                                                            .WORD   810
                                                        .NLIST
                                        .ENDC
              000010                    .RADIX  8
                                        .IF NB E502
      030550                            M$WORD  E502
                                        .MCALL  M$GNINS
                                        .IRP    N,<E502>
                                        M$GNINS <.WORD  N>
                                        .ENDM
      030550                            M$GNINS <.WORD  E502>
                                        .IF LT SVCINS
                                        .WORD   E502
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                .WORD   E502
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
      030550  005437                                                                            .WORD   E502
                                                        .NLIST
                                        .ENDC
                                        .IFF
                                        M$WORD  0
                                        .ENDC
                                        .IF NB ERR501
      030552                            M$WORD  ERR501
                                        .MCALL  M$GNINS
                                        .IRP    N,<ERR501>
                                        M$GNINS <.WORD  N>
                                        .ENDM
      030552                            M$GNINS <.WORD  ERR501>
                                        .IF LT SVCINS
```

G7

```
                                  .WORD   ERR501
                                  .MEXIT
                                  .ENDC
                                  .IF EQ SVCINS
                                  .LIST
                                          .WORD   ERR501
                                                  .NLIST
                                  .MEXIT
                                  .ENDC
                                  .IF GT SVCINS
                                  .LIST
      030552  003672                                                                      .WORD   ERR501
                                                  .NLIST
                                  .ENDC
                                  .IFF
                                  M$WORD  0
                                  .ENDC
 4470 030554                              CKLOOP                          ;BRANCH TO BGNSEG IF ERROR LOOP IS SET
                                  .MCALL  M$SVC
      030554                      M$SVC   C$CLP1
                                  .MCALL  M$GNINS,M$TSTLAB
      030554                      M$TSTLAB
                                  .MCALL  M$TLABEL,M$INCR
                                  .IIF LT T$TSTMAC, .MEXIT
                                  .RADIX  10
                                  M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                  .RADIX  8
                                  M$INCR  T$TSTSEQ
      030554                      M$GNINS <TRAP   C$CLP1>
                                  .IF LT SVCINS
                                  TRAP    C$CLP1
                                  .MEXIT
                                  .ENDC
                                  .IF EQ SVCINS
                                  .LIST
                                          TRAP    C$CLP1
                                                  .NLIST
                                  .MEXIT
                                  .ENDC
                                  .IF GT SVCINS
                                  .LIST
      030554  104406                                                                      TRAP    C$CLP1
                                                  .NLIST
                                  .ENDC
 4471 030556                      55$:    ENDSEG
                                  .MCALL  M$POP,M$GNLS,M$SVC,M$ENDERR
      030556                      M$POP   T$NS,T$NESTLEV,T$TEMP
                                  .MCALL  M$GETS,M$DECR
                                  .IF LT  T$NESTLEV
                                  .ERROR  T$NESTLEV       ; MACRO T$NS UNDERFLOW
                                  .MEXIT
                                  .ENDC
      030556                      M$GETS  T$NS,\T$NESTLEV,T$TEMP
              000003              T$TEMP=T$NS2
      030556                      M$DECR  T$NESTLEV
              000001              T$NESTLEV=T$NESTLEV 1
                                  .IF EQ F$SEG-T$TEMP
```

H7

```
030556                  M$POP   T$SEK,T$SEGLEV,T$$SEG
                        .MCALL  M$GETS,M$DECR
                        .IF LT  T$SEGLEV
                        .ERROR  T$SEGLEV        ; MACRO T$SEK UNDERFLOW
                        .MEXIT
                        .ENDC
030556                  M$GETS  T$SEK,\T$SEGLEV,T$$SEG
        010003          T$$SEG=T$SEK0
030556                  M$DECR  T$SEGLEV
        177777          T$SEGLEV=T$SEGLEV 1
030556                  M$GNLS  T$$SEG
                        .MCALL  M$GEN
                        .IF NB T$$SEG
030556                  M$GEN   \T$$SEG,$,SVCTAG
                        .IF LE  SVCTAG
                        .IIF EQ SVCTAG,.LIST
                        10003$:
                        .IIF EQ SVCTAG,.NLIST
                        .MEXIT
                        .ENDC
                        .LIST
030556                                                          10003$:
                                .NLIST
                        .IFF
                        M$GEN   \S$LSYM,$,SVCTAG
                        .ENDC
030556                  M$SVC   C$ESEG
                        .MCALL  M$GNINS,M$TSTLAB
030556                  M$TSTLAB
                        .MCALL  M$TLABEL,M$INCR
                        .IIF LT T$TSTMAC, .MEXIT
                        .RADIX  10
                        M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                        .RADIX  8
                        M$INCR  T$TSTSEQ
030556                  M$GNINS <TRAP   C$ESEG>
                        .IF LT SVCINS
                        TRAP    C$ESEG
                        .MEXIT
                        .ENDC
                        .IF EQ SVCINS
                        .LIST
                                TRAP    C$ESEG
                                        .NLIST
                        .MEXIT
                        .ENDC
                        .IF GT SVCINS
                        .LIST
030556  104405                                                      TRAP    C$ESEG
                                        .NLIST
                        .ENDC
                        .IF EQ T$SEGLEV+1
        000041          I$SEG=F$END
                        .ENDC
                        .IFF
                        M$ENDERR        ENDSEG,T$TEMP
                        .ENDC
```

```
                                              ;+++--------------------------------------------------------------
                                              ;PART 2 OF DATA TRANSFER TEST
                                              ;THIS PART CHECKS THE DATA TRANSFER FROM CHANNEL 2 TO CHANNEL 1
                                              ;+++--------------------------------------------------------------

 030560  004737  010210                               JSR     PC,CULPA                 ;CLEAR ULPA BIT IN ISR 1 AND 2
 030564  004737  010700                               JSR     PC,BGIN2                 ;SET UP PARAMETER
 030570  005037  002322                               CLR     ITRCNT                   ;CLEAR COUNTER
 030574  112777  000010  151476                       MOVB    #10,@CSRX                ;SELECT CHANNEL 2
 030602  012737  000002  002374                       MOV     #2,CHAN                  ;LOAD CHANNEL NUMBER
 030610  052777  000002  151462                       BIS     #2,@CSRX                 ;SELECT CHANNEL 2 AS SYSTEM CONTROLLER
 030616  112777  000217  151444                       MOVB    #217,@ICRHX              ;-----LOAD SIC IN ACR 2--------
 030624  004737  011062                               JSR     PC,WAIT                  ;WAIT 100 US
 030630  112777  000017  151432                       MOVB    #17,@ICRHX               ;-----LOAD NOT SIC IN ACR 2----------
 030636                                               BGNSEG
                                              .MCALL  M$PUSH,M$INCR,M$SVC
         000040                               I$SEG=F$BGN
 030636                                       M$PUSH  T$NS,T$NESTLEV,F$SEG
                                              .MCALL  M$INCR,M$SETS
 030636                                       M$INCR  T$NESTLEV
         000002                               T$NESTLEV=T$NESTLEV+1
 030636                                       M$SETS  T$NS,\T$NESTLEV,F$SEG
         000003                               T$NS2=F$SEG
         010004                               T$$SEG=S$LSYM
 030636                                       M$PUSH  T$SEK,T$SEGLEV,T$$SEG
                                              .MCALL  M$INCR,M$SETS
 030636                                       M$INCR  T$SEGLEV
         000000                               T$SEGLEV=T$SEGLEV+1
 030636                                       M$SETS  T$SEK,\T$SEGLEV,T$$SEG
         010004                               T$SEK0=T$$SEG
 030636                                       M$INCR  S$LSYM
         010005                               S$LSYM=S$LSYM+1
 030636                                       M$SVC   C$BSEG
                                              .MCALL  M$GNINS,M$TSTLAB
 030636                                       M$TSTLAB
                                              .MCALL  M$TLABEL,M$INCR
                                              .IIF LT T$TSTMAC, .MEXIT
                                              .RADIX  10
                                              M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                              .RADIX  8
                                              M$INCR  T$TSTSEQ
 030636                                       M$GNINS <TRAP   C$BSEG>
                                              .IF LT SVCINS
                                              TRAP    C$BSEG
                                              .MEXIT
                                              .ENDC
                                              .IF EQ SVCINS
                                              .LIST
                                                      TRAP    C$BSEG
                                                              .NLIST
                                              .MEXIT
                                              .ENDC
                                              .IF GT SVCINS
                                              .LIST
 030636  104404                                                                                    TRAP    C$BSEG
                                                              .NLIST
                                              .ENDC
```

J7

```
   4487 030640  112777  000212  151422          MOVB    #212,@ICRHX              ;-----LOAD TON IN ACR 2 (ICR2)-------
   4488 030646  017737  151404  002402          MOV     @ISRX,RSAVE              ;GET ISR2 CONTENTS
   4489 030654  022737  120042  002402          CMP     #120042,RSAVE            ;ATN,NDAC,ATN,TADS, SHOULD BE SET
   4490 030662  001412                          BEQ     4$                       ;BRANCH IF YES
   4491 030664  012737  120042  002500          MOV     #120042,GOOD             ;SET UP DATA FOR ERROR MESSAGE
   4492 030672  013737  002402  002502          MOV     RSAVE,BAD                ;...
   4493 030700                                  ERRSOFT 811,E502,ERR501          ;ERROR HANDLER
                                       .MCALL  M$ERRINS
        030700                         M$ERRINS        811,E502,ERR501,C$ERSOFT
                                       .MCALL  M$GNINS,M$WORD,M$TSTLAB
        030700                         M$SVC   C$ERSOFT
                                       .MCALL  M$GNINS,M$TSTLAB
        030700                         M$TSTLAB
                                       .MCALL  M$TLABEL,M$INCR
                                       .IIF LT T$TSTMAC, .MEXIT
                                       .RADIX  10
                                       M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                       .RADIX  8
                                       M$INCR  T$TSTSEQ
        030700                         M$GNINS <TRAP   C$ERSOFT>
                                       .IF LT SVCINS
                                       TRAP    C$ERSOFT
                                       .MEXIT
                                       .ENDC
                                       .IF EQ SVCINS
                                       .LIST
                                               TRAP    C$ERSOFT
                                                       .NLIST
                                       .MEXIT
                                       .ENDC
                                       .IF GT SVCINS
                                       .LIST
        030700  104457                                                                         TRAP    C$ERSOFT
                                                       .NLIST
                                       .ENDC
                000012                 .RADIX  10
                                       .IF NB  811
                001453                 T$ERRNUM=811
                                       .IFF
                                       .ERROR  ;MISSING ERROR NR
                                       .ENDC
        030702                         M$WORD  \T$ERRNUM
                                       .MCALL  M$GNINS
                                       .IRP    N,<811>
                                       M$GNINS <.WORD  N>
                                       .ENDM
        030702                         M$GNINS <.WORD  811>
                                       .IF LT SVCINS
                                       .WORD   811
                                       .MEXIT
                                       .ENDC
                                       .IF EQ SVCINS
                                       .LIST
                                               .WORD   811
                                                       .NLIST
                                       .MEXIT
                                       .ENDC
```

```
                                .IF GT SVCINS
                                .LIST
     030702  001453                                                         .WORD   811
                                          .NLIST
                                .ENDC
             000010             .RADIX  8
                                .IF NB E502
     030704                     M$WORD  E502
                                .MCALL  M$GNINS
                                .IRP    N,<E502>
                                M$GNINS <.WORD  N>
                                .ENDM
     030704                     M$GNINS <.WORD  E502>
                                .IF LT SVCINS
                                .WORD   E502
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                     .WORD   E502
                                          .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
     030704  005437                                                         .WORD   E502
                                          .NLIST
                                .ENDC
                                .IFF
                                M$WORD  0
                                .ENDC
                                .IF NB ERR501
     030706                     M$WORD  ERR501
                                .MCALL  M$GNINS
                                .IRP    N,<ERR501>
                                M$GNINS <.WORD  N>
                                .ENDM
     030706                     M$GNINS <.WORD  ERR501>
                                .IF LT SVCINS
                                .WORD   ERR501
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                     .WORD   ERR501
                                          .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
     030706  003672                                                         .WORD   ERR501
                                          .NLIST
                                .ENDC
                                .IFF
                                M$WORD  0
                                .ENDC
 4494 030710                    4$:     ENDSEG
```

L7

```
                                .MCALL  M$POP,M$GNLS,M$SVC,M$ENDERR
     030710                     M$POP   T$NS,T$NESTLEV,T$TEMP
                                .MCALL  M$GETS,M$DECR
                                .IF LT  T$NESTLEV
                                .ERROR  T$NESTLEV       ; MACRO T$NS UNDERFLOW
                                .MEXIT
                                .ENDC
     030710                     M$GETS  T$NS,\T$NESTLEV,T$TEMP
             000003             T$TEMP=T$NS2
     030710                     M$DECR  T$NESTLEV
             000001             T$NESTLEV=T$NESTLEV-1
                                .IF EQ F$SEG-T$TEMP
     030710                     M$POP   T$SEK,T$SEGLEV,T$$SEG
                                .MCALL  M$GETS,M$DECR
                                .IF LT  T$SEGLEV
                                .ERROR  T$SEGLEV        ; MACRO T$SEK UNDERFLOW
                                .MEXIT
                                .ENDC
     030710                     M$GETS  T$SEK,\T$SEGLEV,T$$SEG
             010004             T$$SEG=T$SEK0
     030710                     M$DECR  T$SEGLEV
             177777             T$SEGLEV=T$SEGLEV-1
     030710                     M$GNLS  T$$SEG
                                .MCALL  M$GEN
                                .IF NB T$$SEG
     030710                     M$GEN   \T$$SEG,$,SVCTAG
                                .IF LE  SVCTAG
                                .IIF EQ SVCTAG,.LIST
                                10004$:
                                .IIF EQ SVCTAG,.NLIST
                                .MEXIT
                                .ENDC
                                .LIST
     030710                                                             10004$:
                                        .NLIST
                                .IFF
                                M$GEN   \S$LSYM,$,SVCTAG
                                .ENDC
     030710                     M$SVC   C$ESEG
                                .MCALL  M$GNINS,M$TSTLAB
     030710                     M$TSTLAB
                                .MCALL  M$TLABEL,M$INCR
                                .IIF LT T$TSTMAC, .MEXIT
                                .RADIX  10
                                M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                .RADIX  8
                                M$INCR  T$TSTSEQ
     030710                     M$GNINS <TRAP   C$ESEG>
                                .IF LT SVCINS
                                TRAP    C$ESEG
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        TRAP    C$ESEG
                                                .NLIST
                                .MEXIT
```

```
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
      030710  104405                                                                            TRAP    C$ESEG
                                                     .NLIST
                                        .ENDC
                                        .IF EQ T$SEGLEV+1
              000041                    I$SEG=F$END
                                        .ENDC
                                        .IFF
                                        M$ENDERR        ENDSEG,T$TEMP
                                        .ENDC
 4495 030712  013701  002312                    MOV     DPA1,R1                 ;GET DPA1 ADDRESS
 4496 030716  062701  000040                    ADD     #40,R1                  ;CREATE MY LISTENER ADDRESS (MLA)
 4497 030722  010137  002410                    MOV     R1,MLA1                 ;STORE MLA
 4498 030726  032737  000001  002312            BIT     #1,DPA1                 ;IS DPA EVEN
 4499 030734  001412                            BEQ     3$                      ;BRANCH IF YES
 4500 030736  052737  000001  002434            BIS     #1,CDAT1                ;SET ULPA BIT IN COMPARE DATA FOR ISR
 4501 030744  052737  000001  002450            BIS     #1,CDAT7                ;...
 4502 030752  052737  000001  002444            BIS     #1,CDAT5                ;...
 4503 030760  000411                            BR      .+24                    ;BRANCH TO BGNSEG
 4504 030762  042737  000001  002434  3$:       BIC     #1,CDAT1                ;CLEAR ULPA BIT IN COMPARE DATA FOR ISR
 4505 030770  042737  000001  002450            BIC     #1,CDAT7                ;...
 4506 030776  042737  000001  002444            BIC     #1,CDAT5                ;...
 4507 031004                                    BGNSEG
                                        .MCALL  M$PUSH,M$INCR,M$SVC
              000040                    I$SEG=F$BGN
      031004                            M$PUSH  T$NS,T$NESTLEV,F$SEG
                                        .MCALL  M$INCR,M$SETS
      031004                            M$INCR  T$NESTLEV
              000002                    T$NESTLEV=T$NESTLEV+1
      031004                            M$SETS  T$NS,\T$NESTLEV,F$SEG
              000003                    T$NS2=F$SEG
              010005                    T$$SEG=S$LSYM
      031004                            M$PUSH  T$SEK,T$SEGLEV,T$$SEG
                                        .MCALL  M$INCR,M$SETS
      031004                            M$INCR  T$SEGLEV
              000000                    T$SEGLEV=T$SEGLEV+1
      031004                            M$SETS  T$SEK,\T$SEGLEV,T$$SEG
              010005                    T$SEK0=T$$SEG
      031004                            M$INCR  S$LSYM
              010006                    S$LSYM=S$LSYM+1
      031004                            M$SVC   C$BSEG
                                        .MCALL  M$GNINS,M$TSTLAB
      031004                            M$TSTLAB
                                        .MCALL  M$TLABEL,M$INCR
                                        .IIF LT T$TSTMAC, .MEXIT
                                        .RADIX  10
                                        M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                        .RADIX  8
                                        M$INCR  T$TSTSEQ
      031004                            M$GNINS <TRAP   C$BSEG>
                                        .IF LT SVCINS
                                        TRAP    C$BSEG
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
```

```
                                        .LIST
                                                TRAP    C$BSEG
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
      031004  104404                                                                    TRAP    C$BSEG
                                                        .NLIST
                                        .ENDC
 4508 031006  052777  000010  151264            BIS     #10,@CSRX               ;SELECT CHANNEL 2
 4509 031014  012737  000002  002374            MOV     #2,CHAN                 ;LOAD CHANNEL NUMBER
 4510 031022  113777  002410  151246            MOVB    MLA1,@IDRHX             ;-----LOAD LISTENER ADDRESS OF CHANNEL 2
 4511 031030  004737  011050                    JSR     PC,LOOP                 ;WAIT A LITTLE
 4512 031034  042777  000010  151236            BIC     #10,@CSRX               ;SELECT CHANNEL 1
 4513 031042  012737  000001  002374            MOV     #1,CHAN                 ;LOAD CHANNEL NUMBER
 4514 031050  017737  151174  002502            MOV     @IIRX,BAD               ;GET IIR1 CONTENTS
 4515 031056  022737  002401  002502            CMP     #2401,BAD               ;MA,MAC,IFC BIT IN IIR1 SHOULD BE SET
 4516 031064  001410                            BEQ     20$                     ;BRANCH IF YES
 4517 031066  012737  002401  002500            MOV     #2401,GOOD              ;SET UP DATA FOR ERROR MESSAGES
 4518 031074                                    ERRSOFT 812,E501,ERR501         ;ERROR HANDLER
                                        .MCALL  M$ERRINS
      031074                            M$ERRINS        812,E501,ERR501,C$ERSOFT
                                        .MCALL  M$GNINS,M$WORD,M$TSTLAB
      031074                            M$SVC   C$ERSOFT
                                        .MCALL  M$GNINS,M$TSTLAB
      031074                            M$TSTLAB
                                        .MCALL  M$TLABEL,M$INCR
                                        .IIF LT T$TSTMAC, .MEXIT
                                        .RADIX  10
                                        M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                        .RADIX  8
                                        M$INCR  T$TSTSEQ
      031074                            M$GNINS <TRAP   C$ERSOFT>
                                        .IF LT SVCINS
                                        TRAP    C$ERSOFT
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                TRAP    C$ERSOFT
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
      031074  104457                                                                    TRAP    C$ERSOFT
                                                        .NLIST
                                        .ENDC
              000012                    .RADIX  10
                                        .IF NB  812
              001454                    T$ERRNUM=812
                                        .IFF
                                        .ERROR  ;MISSING ERROR-NR
                                        .ENDC
      031076                            M$WORD  \T$ERRNUM
                                        .MCALL  M$GNINS
```

B5


```
                                  .IRP     N,<812>
                                  M$GNINS <.WORD  N>
                                  .ENDM
      031076                      M$GNINS <.WORD  812>
                                  .IF LT SVCINS
                                  .WORD    812
                                  .MEXIT
                                  .ENDC
                                  .IF EQ SVCINS
                                  .LIST
                                          .WORD   812
                                                  .NLIST
                                  .MEXIT
                                  .ENDC
                                  .IF GT SVCINS
                                  .LIST
      031076  001454                                                                   .WORD   812
                                                  .NLIST
                                  .ENDC
              000010              .RADIX  8
                                  .IF NB E501
      031100                      M$WORD  E501
                                  .MCALL  M$GNINS
                                  .IRP     N,<E501>
                                  M$GNINS <.WORD  N>
                                  .ENDM
      031100                      M$GNINS <.WORD  E501>
                                  .IF LT SVCINS
                                  .WORD    E501
                                  .MEXIT
                                  .ENDC
                                  .IF EQ SVCINS
                                  .LIST
                                          .WORD   E501
                                                  .NLIST
                                  .MEXIT
                                  .ENDC
                                  .IF GT SVCINS
                                  .LIST
      031100  005376                                                                   .WORD   E501
                                                  .NLIST
                                  .ENDC
                                  .IFF
                                  M$WORD  0
                                  .ENDC
                                  .IF NB ERR501
      031102                      M$WORD  ERR501
                                  .MCALL  M$GNINS
                                  .IRP     N,<ERR501>
                                  M$GNINS <.WORD  N>
                                  .ENDM
      031102                      M$GNINS <.WORD  ERR501>
                                  .IF LT SVCINS
                                  .WORD    ERR501
                                  .MEXIT
                                  .ENDC
                                  .IF EQ SVCINS
```

C8

```
                                  .LIST
                                          .WORD   ERR501
                                                  .NLIST
                                  .MEXIT
                                  .ENDC
                                  .IF GT SVCINS
                                  .LIST
     031102  003672                                                                               .WORD   ERR501
                                                  .NLIST
                                  .ENDC
                                  .IFF
                                  M$WORD  0
                                  .ENDC
4519 031104                               CKLOOP                        ;BRANCH TO BGNSEG WHEN ERRLOOP IS SET
                                  .MCALL  M$SVC
     031104                       M$SVC   C$CLP1
                                  .MCALL  M$GNINS,M$TSTLAB
     031104                       M$TSTLAB
                                  .MCALL  M$TLABEL,M$INCR
                                  .IIF LT T$TSTMAC, .MEXIT
                                  .RADIX  10
                                  M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                  .RADIX  8
                                  M$INCR  T$TSTSEQ
     031104                       M$GNINS <TRAP   C$CLP1>
                                  .IF LT SVCINS
                                  TRAP    C$CLP1
                                  .MEXIT
                                  .ENDC
                                  .IF EQ SVCINS
                                  .LIST
                                          TRAP    C$CLP1
                                                  .NLIST
                                  .MEXIT
                                  .ENDC
                                  .IF GT SVCINS
                                  .LIST
     031104  104406                                                                               TRAP    C$CLP1
                                                  .NLIST
                                  .ENDC
4520 031106  017737  151144  002502  20$:  MOV     @ISRX,BAD               ;GET ISR1 CONTENTS
4521 031114  023737  002444  002502        CMP     CDAT5,BAD               ;ATN,ATN,LADS,NDAC,LPAS,(ULPA) BIT SET
4522 031122  001410                        BEQ     30$                     ;BRANCH IF YES
4523 031124  013737  002444  002500        MOV     CDAT5,GOOD              ;SET UP DATA FOR ERROR MESSAGES
4524 031132                                ERRSOFT 813,E502,ERR501         ;ERROR HANDLER
                                  .MCALL  M$ERRINS
     031132                       M$ERRINS        813,E502,ERR501,C$ERSOFT
                                  .MCALL  M$GNINS,M$WORD,M$TSTLAB
     031132                       M$SVC   C$ERSOFT
                                  .MCALL  M$GNINS,M$TSTLAB
     031132                       M$TSTLAB
                                  .MCALL  M$TLABEL,M$INCR
                                  .IIF LT T$TSTMAC, .MEXIT
                                  .RADIX  10
                                  M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                  .RADIX  8
                                  M$INCR  T$TSTSEQ
```

D8

D8


```
        031132                          M$GNINS <TRAP    C$ERSOFT>
                                        .IF LT SVCINS
                                        TRAP    C$ERSOFT
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                TRAP    C$ERSOFT
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
        031132  104457                                                                          TRAP    C$ERSOFT
                                                        .NLIST
                                        .ENDC
                000012                  .RADIX  10
                                        .IF NB  813
                001455                  T$ERRNUM-813
                                        .IFF
                                        .ERROR  ;MISSING ERROR-NR
                                        .ENDC
        031134                          M$WORD  \T$ERRNUM
                                        .MCALL  M$GNINS
                                        .IRP    N,<813>
                                        M$GNINS <.WORD  N>
                                        .ENDM
        031134                          M$GNINS <.WORD  813>
                                        .IF LT SVCINS
                                        .WORD   813
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                .WORD   813
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
        031134  001455                                                                          .WORD   813
                                                        .NLIST
                                        .ENDC
                000010                  .RADIX  8
                                        .IF NB E502
        031136                          M$WORD  E502
                                        .MCALL  M$GNINS
                                        .IRP    N,<E502>
                                        M$GNINS <.WORD  N>
                                        .ENDM
        031136                          M$GNINS <.WORD  E502>
                                        .IF LT SVCINS
                                        .WORD   E502
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
```

E8

```
                                        .WORD   E502
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
      031136  005437                                                                    .WORD   E502
                                                .NLIST
                                .ENDC
                                .IFF
                                M$WORD  0
                                .ENDC
                                .IF NB ERR501
      031140                    M$WORD  ERR501
                                .MCALL  M$GNINS
                                .IRP    N,<ERR501>
                                M$GNINS <.WORD  N>
                                .ENDM
      031140                    M$GNINS <.WORD  ERR501>
                                .IF LT SVCINS
                                .WORD   ERR501
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        .WORD   ERR501
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
      031140  003672                                                                    .WORD   ERR501
                                                .NLIST
                                .ENDC
                                .IFF
                                M$WORD  0
                                .ENDC
 4525 031142                            CKLOOP                          ;BRANCH TO BGNSEG WHEN ERRLOOP IS SET
                                .MCALL  M$SVC
      031142                    M$SVC   C$CLP1
                                .MCALL  M$GNINS,M$TSTLAB
      031142                    M$TSTLAB
                                .MCALL  M$TLABEL,M$INCR
                                .IIF LT T$TSTMAC, .MEXIT
                                .RADIX  10
                                M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                .RADIX  8
                                M$INCR  T$TSTSEQ
      031142                    M$GNINS <TRAP   C$CLP1>
                                .IF LT SVCINS
                                TRAP    C$CLP1
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        TRAP    C$CLP1
                                                .NLIST
```

F8

```
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
      031142  104406                                                                         TRAP    C$CLP1
                                                    .NLIST
                                        .ENDC
4526  031144  052777  000010  151126   30$:    BIS     #10,@CSRX               ;SELECT CHANNEL 2
4527  031152  012737  000002  002374           MOV     #2,CHAN                 ;LOAD CHANNEL NUMBER
4528  031160  112777  000013  151102           MOVB    #13,@ICRHX              ;-----LOAD GTS INTO ACR2 (ICR2)-------
4529  031166  042777  000010  151104   40$:    BIC     #10,@CSRX               ;SELECT CHANNEL 1
4530  031174  012737  000001  002374           MOV     #1,CHAN                 ;LOAD CHANNEL NUMBER
4531  031202  017737  151050  002502           MOV     @ISRX,BAD               ;GET ISR1 CONTENTS
4532  031210  023737  002450  002502           CMP     CDAT7,BAD               ;NDAC,LADS,LPAS,(ULPA) SHOULD BE SET
4533  031216  001407                           BEQ     41$                     ;BRANCH IF YES
4534  031220  013737  002450  002500           MOV     CDAT7,GOOD              ;SET UP DATA FOR ERROR MESSAGE
4535  031226                                   ERRSOFT 814,E502,ERR501         ;
                                        .MCALL  M$ERRINS
      031226                            M$ERRINS        814,E502,ERR501,C$ERSOFT
                                        .MCALL  M$GNINS,M$WORD,M$TSTLAB
      031226                            M$SVC   C$ERSOFT
                                        .MCALL  M$GNINS,M$TSTLAB
      031226                            M$TSTLAB
                                        .MCALL  M$TLABEL,M$INCR
                                        .IIF LT T$TSTMAC, .MEXIT
                                        .RADIX  10
                                        M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                        .RADIX  8
                                        M$INCR  T$TSTSEQ
      031226                            M$GNINS <TRAP    C$ERSOFT>
                                        .IF LT SVCINS
                                        TRAP    C$ERSOFT
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                TRAP    C$ERSOFT
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
      031226  104457                                                                         TRAP    C$ERSOFT
                                                        .NLIST
                                        .ENDC
              000012                    .RADIX  10
                                        .IF NB  814
              001456                    T$ERRNUM=814
                                        .IFF
                                        .ERROR  ;MISSING ERROR NR
                                        .ENDC
      031230                            M$WORD  \T$ERRNUM
                                        .MCALL  M$GNINS
                                        .IRP    N,<814>
                                        M$GNINS <.WORD  N>
                                        .ENDM
      031230                            M$GNINS <.WORD  814>
```

```
                        .IF LT SVCINS
                        .WORD   814
                        .MEXIT
                        .ENDC
                        .IF EQ SVCINS
                        .LIST
                                .WORD   814
                                        .NLIST
                        .MEXIT
                        .ENDC
                        .IF GT SVCINS
                        .LIST
031230  001456                                                  .WORD   814
                                        .NLIST
                        .ENDC
        000010          .RADIX  8
                        .IF NB E502
031232                  M$WORD  E502
                        .MCALL  M$GNINS
                        .IRP    N,<E502>
                        M$GNINS <.WORD  N>
                        .ENDM
031232                  M$GNINS <.WORD  E502>
                        .IF LT SVCINS
                        .WORD   E502
                        .MEXIT
                        .ENDC
                        .IF EQ SVCINS
                        .LIST
                                .WORD   E502
                                        .NLIST
                        .MEXIT
                        .ENDC
                        .IF GT SVCINS
                        .LIST
031232  005437                                                  .WORD   E502
                                        .NLIST
                        .ENDC
                        .IFF
                        M$WORD  0
                        .ENDC
                        .IF NB ERR501
031234                  M$WORD  ERR501
                        .MCALL  M$GNINS
                        .IRP    N,<ERR501>
                        M$GNINS <.WORD  N>
                        .ENDM
031234                  M$GNINS <.WORD  ERR501>
                        .IF LT SVCINS
                        .WORD   ERR501
                        .MEXIT
                        .ENDC
                        .IF EQ SVCINS
                        .LIST
                                .WORD   ERR501
                                        .NLIST
                        .MEXIT
```

H8


```
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
       031234  003672                                                                       .WORD   ERR501
                                                     .NLIST
                                        .ENDC
                                        .IFF
                                        M$WORD  0
                                        .ENDC
  4536 031236                           41$:    ENDSEG
                                        .MCALL  M$POP,M$GNLS,M$SVC,M$ENDERR
       031236                           M$POP   T$NS,T$NESTLEV,T$TEMP
                                        .MCALL  M$GETS,M$DECR
                                        .IF LT  T$NESTLEV
                                        .ERROR  T$NESTLEV       ; MACRO T$NS UNDERFLOW
                                        .MEXIT
                                        .ENDC
       031236                           M$GETS  T$NS,\T$NESTLEV,T$TEMP
               000003                   T$TEMP=T$NS2
       031236                           M$DECR  T$NESTLEV
               000001                   T$NESTLEV=T$NESTLEV-1
                                        .IF EQ F$SEG-T$TEMP
       031236                           M$POP   T$SEK,T$SEGLEV,T$$SEG
                                        .MCALL  M$GETS,M$DECR
                                        .IF LT  T$SEGLEV
                                        .ERROR  T$SEGLEV        ; MACRO T$SEK UNDERFLOW
                                        .MEXIT
                                        .ENDC
       031236                           M$GETS  T$SEK,\T$SEGLEV,T$$SEG
               010005                   T$$SEG=T$SEK0
       031236                           M$DECR  T$SEGLEV
               177777                   T$SEGLEV=T$SEGLEV-1
       031236                           M$GNLS  T$$SEG
                                        .MCALL  M$GEN
                                        .IF NB T$$SEG
       031236                           M$GEN   \T$$SEG,$,SVCTAG
                                        .IF LE  SVCTAG
                                        .IIF EQ SVCTAG,.LIST
                                        10005$:
                                        .IIF EQ SVCTAG,.NLIST
                                        .MEXIT
                                        .ENDC
                                        .LIST
       031236                                                                         10005$:
                                                .NLIST
                                        .IFF
                                        M$GEN   \S$LSYM,$,SVCTAG
                                        .ENDC
       031236                           M$SVC   C$ESEG
                                        .MCALL  M$GNINS,M$TSTLAB
       031236                           M$TSTLAB
                                        .MCALL  M$TLABEL,M$INCR
                                        .IIF LT T$TSTMAC, .MEXIT
                                        .RADIX  10
                                        M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                        .RADIX  8
                                        M$INCR  T$TSTSEQ
```

I8

```
     031236                        M$GNINS <TRAP   C$ESEG>
                                   .IF LT SVCINS
                                   TRAP    C$ESEG
                                   .MEXIT
                                   .ENDC
                                   .IF EQ SVCINS
                                   .LIST
                                           TRAP    C$ESEG
                                                   .NLIST
                                   .MEXIT
                                   .ENDC
                                   .IF GT SVCINS
                                   .LIST
     031236  104405                                                          TRAP    C$ESEG
                                                   .NLIST
                                   .ENDC
                                   .IF EQ T$SEGLEV+1
             000041                I$SEG=F$END
                                   .ENDC
                                   .IFF
                                   M$ENDERR        ENDSEG,T$TEMP
                                   .ENDC
4537 031240  112705  000252                MOVB    #252,R5                 ;GET DATA PATTERN
4538 031244                        A82:    BGNSEG
                                   .MCALL  M$PUSH,M$INCR,M$SVC
             000040                I$SEG=F$BGN
     031244                        M$PUSH  T$NS,T$NESTLEV,F$SEG
                                   .MCALL  M$INCR,M$SETS
     031244                        M$INCR  T$NESTLEV
             000002                T$NESTLEV=T$NESTLEV+1
     031244                        M$SETS  T$NS,\T$NESTLEV,F$SEG
             000003                T$NS2=F$SEG
             010006                T$$SEG-S$LSYM
     031244                        M$PUSH  T$SEK,T$SEGLEV,T$$SEG
                                   .MCALL  M$INCR,M$SETS
     031244                        M$INCR  T$SEGLEV
             000000                T$SEGLEV=T$SEGLEV+1
     031244                        M$SETS  T$SEK,\T$SEGLEV,T$$SEG
             010006                T$SEK0=T$$SEG
     031244                        M$INCR  S$LSYM
             010007                S$LSYM=S$LSYM+1
     031244                        M$SVC   C$BSEG
                                   .MCALL  M$GNINS,M$TSTLAB
     031244                        M$TSTLAB
                                   .MCALL  M$TLABEL,M$INCR
                                   .IIF LT T$TSTMAC, .MEXIT
                                   .RADIX  10
                                   M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                   .RADIX  8
                                   M$INCR  T$TSTSEQ
     031244                        M$GNINS <TRAP   C$BSEG>
                                   .IF LT SVCINS
                                   TRAP    C$BSEG
                                   .MEXIT
                                   .ENDC
                                   .IF EQ SVCINS
                                   .LIST
```

```
                                                TRAP    C$BSEG
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
     031244  104404                                                                     TRAP    C$BSEG
                                                        .NLIST
                                        .ENDC
4539 031246  052777  000010  151024             BIS     #10,@CSRX               ;SELECT CHANNEL 2
4540 031254  012737  000002  002374             MOV     #2,CHAN                 ;LOAD CHANNEL NUMBER
4541 031262  110577  151010                     MOVB    R5,@IDRHX               ;----LOAD DATA PATTERN INTO DDR2--------
4542 031266  004737  011050                     JSR     PC,LOOP                 ;WAIT A LITTLE
4543 031272  017737  150752  002502             MOV     @IIRX,BAD               ;GET IIR2 CONTENTS
4544 031300  022737  000020  002502             CMP     #20,BAD                 ;B0 BIT IN IIR2 SHOULD BE SET
4545 031306  001410                             BEQ     42$                     ;BRANCH IF YES
4546 031310  012737  000020  002500             MOV     #20,GOOD                ;SET UP DATA FOR ERROR MESSAGE
4547 031316                                     ERRSOFT 815,E501,ERR501         ;ERROR HANDLER
                                        .MCALL  M$ERRINS
     031316                             M$ERRINS        815,E501,ERR501,C$ERSOFT
                                        .MCALL  M$GNINS,M$WORD,M$TSTLAB
     031316                             M$SVC   C$ERSOFT
                                        .MCALL  M$GNINS,M$TSTLAB
     031316                             M$TSTLAB
                                        .MCALL  M$TLABEL,M$INCR
                                        .IIF LT T$TSTMAC, .MEXIT
                                        .RADIX  10
                                        M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                        .RADIX  8
                                        M$INCR  T$TSTSEQ
     031316                             M$GNINS <TRAP   C$ERSOFT>
                                        .IF LT SVCINS
                                        TRAP    C$ERSOFT
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                TRAP    C$ERSOFT
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
     031316  104457                                                                     TRAP    C$ERSOFT
                                                        .NLIST
                                        .ENDC
             000012                     .RADIX  10
                                        .IF NB  815
             001457                     T$ERRNUM-815
                                        .IFF
                                        .ERROR  ;MISSING ERROR-NR
                                        .ENDC
     031320                             M$WORD  \T$ERRNUM
                                        .MCALL  M$GNINS
                                        .IRP    N,<815>
                                        M$GNINS <.WORD  N>
                                        .ENDM
```

```
031320                  M$GNINS <.WORD  815>
                        .IF LT SVCINS
                        .WORD   815
                        .MEXIT
                        .ENDC
                        .IF EQ SVCINS
                        .LIST
                                .WORD   815
                                        .NLIST
                        .MEXIT
                        .ENDC
                        .IF GT SVCINS
                        .LIST
031320  001457                                                          .WORD   815
                                        .NLIST
                        .ENDC
        000010          .RADIX  8
                        .IF NB E501
031322                  M$WORD  E501
                        .MCALL  M$GNINS
                        .IRP    N,<E501>
                        M$GNINS <.WORD  N>
                        .ENDM
031322                  M$GNINS <.WORD  E501>
                        .IF LT SVCINS
                        .WORD   E501
                        .MEXIT
                        .ENDC
                        .IF EQ SVCINS
                        .LIST
                                .WORD   E501
                                        .NLIST
                        .MEXIT
                        .ENDC
                        .IF GT SVCINS
                        .LIST
031322  005376                                                          .WORD   E501
                                        .NLIST
                        .ENDC
                        .IFF
                        M$WORD  0
                        .ENDC
                        .IF NB ERR501
031324                  M$WORD  ERR501
                        .MCALL  M$GNINS
                        .IRP    N,<ERR501>
                        M$GNINS <.WORD  N>
                        .ENDM
031324                  M$GNINS <.WORD  ERR501>
                        .IF LT SVCINS
                        .WORD   ERR501
                        .MEXIT
                        .ENDC
                        .IF EQ SVCINS
                        .LIST
                                .WORD   ERR501
                                        .NLIST
```

```
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
      031324  003672                                                                                   .WORD   ERR501
                                                      .NLIST
                                        .ENDC
                                        .IFF
                                        M$WORD  0
                                        .ENDC
 4548 031326                                   CKLOOP                     ;BRANCH TO BGNSEG IF ERRLOOP WAS SET
                                        .MCALL  M$SVC
      031326                            M$SVC   C$CLP1
                                        .MCALL  M$GNINS,M$TSTLAB
      031326                            M$TSTLAB
                                        .MCALL  M$TLABEL,M$INCR
                                        .IIF LT T$TSTMAC, .MEXIT
                                        .RADIX  10
                                        M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                        .RADIX  8
                                        M$INCR  T$TSTSEQ
      031326                            M$GNINS <TRAP   C$CLP1>
                                        .IF LT SVCINS
                                        TRAP    C$CLP1
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                TRAP    C$CLP1
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
      031326  104406                                                                                   TRAP    C$CLP1
                                                        .NLIST
                                        .ENDC
 4549 031330  042777  000010  150742    42$:    BIC     #10,@CSRX         ;SELECT CHANNEL 1
 4550 031336  012737  000001  002374            MOV     #1,CHAN           ;LOAD CHANNEL NUMBER
 4551 031344  017737  150700  002502            MOV     @IIRX,BAD         ;GET IIR1 CONTENTS
 4552 031352  022737  000040  002502            CMP     #40,BAD           ;BI BIT IN IIR1 SHOULD BE SET
 4553 031360  001410                            BEQ     43$               ;BRANCH IF YES
 4554 031362  012737  000040  002500            MOV     #40,GOOD          ;SET UP DATA FOR ERROR MESSAGE
 4555 031370                                    ERRSOFT 816,E501,ERR501   ;ERROR HANDLER
                                        .MCALL  M$ERRINS
      031370                            M$ERRINS        816,E501,ERR501,C$ERSOFT
                                        .MCALL  M$GNINS,M$WORD,M$TSTLAB
      031370                            M$SVC   C$ERSOFT
                                        .MCALL  M$GNINS,M$TSTLAB
      031370                            M$TSTLAB
                                        .MCALL  M$TLABEL,M$INCR
                                        .IIF LT T$TSTMAC, .MEXIT
                                        .RADIX  10
                                        M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                        .RADIX  8
                                        M$INCR  T$TSTSEQ
      031370                            M$GNINS <TRAP   C$ERSOF
```

M8

```
                                        .IF LT SVCINS
                                        TRAP    C$ERSOFT
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                TRAP    C$ERSOFT
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
        031370  104457                                                                  TRAP    C$ERSOFT
                                                        .NLIST
                                        .ENDC
                000012                  .RADIX  10
                                        .IF NB  816
                001460                  T$ERRNUM=816
                                        .IFF
                                        .ERROR  ;MISSING ERROR-NR
                                        .ENDC
        031372                          M$WORD  \T$ERRNUM
                                        .MCALL  M$GNINS
                                        .IRP    N,<816>
                                        M$GNINS <.WORD  N>
                                        .ENDM
        031372                          M$GNINS <.WORD  816>
                                        .IF LT SVCINS
                                        .WORD   816
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                .WORD   816
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
        031372  001460                                                                  .WORD   816
                                                        .NLIST
                                        .ENDC
                000010                  .RADIX  8
                                        .IF NB E501
        031374                          M$WORD  E501
                                        .MCALL  M$GNINS
                                        .IRP    N,<E501>
                                        M$GNINS <.WORD  N>
                                        .ENDM
        031374                          M$GNINS <.WORD  E501>
                                        .IF LT SVCINS
                                        .WORD   E501
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                .WORD   E501
```

```
                                                      .NLIST
                                      .MEXIT
                                      .ENDC
                                      .IF GT SVCINS
                                      .LIST
      031374  005376                                                                       .WORD   E501
                                                      .NLIST
                                      .ENDC
                                      .IFF
                                      M$WORD  0
                                      .ENDC
                                      .IF NB ERR501
      031376                          M$WORD  ERR501
                                      .MCALL  M$GNINS
                                      .IRP    N,<ERR501>
                                      M$GNINS <.WORD  N>
                                      .ENDM
      031376                          M$GNINS <.WORD  ERR501>
                                      .IF LT SVCINS
                                      .WORD   ERR501
                                      .MEXIT
                                      .ENDC
                                      .IF EQ SVCINS
                                      .LIST
                                              .WORD   ERR501
                                                      .NLIST
                                      .MEXIT
                                      .ENDC
                                      .IF GT SVCINS
                                      .LIST
      031376  003672                                                                       .WORD   ERR501
                                                      .NLIST
                                      .ENDC
                                      .IFF
                                      M$WORD  0
                                      .ENDC
 4556 031400                                  CKLOOP                            ;
                                      .MCALL  M$SVC
      031400                          M$SVC   C$CLP1
                                      .MCALL  M$GNINS,M$TSTLAB
      031400                          M$TSTLAB
                                      .MCALL  M$TLABEL,M$INCR
                                      .IIF LT T$TSTMAC, .MEXIT
                                      .RADIX  10
                                      M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                      .RADIX  8
                                      M$INCR  T$TSTSEQ
      031400                          M$GNINS <TRAP   C$CLP1>
                                      .IF LT SVCINS
                                      TRAP    C$CLP1
                                      .MEXIT
                                      .E'DC
                                      .IF EQ SVCINS
                                      .LIST
                                              TRAP    C$CLP1
                                                      .NLIST
                                      .MEXIT
```

```
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
031400  104406                                                                                  TRAP    C$CLP1
                                                    .NLIST
                                        .ENDC
031402  017737  150664  002402  43$:    MOV     @IDRX,RSAVE             ;READ DATA FROM DIR1 REGISTER
031410  105037  002402                  CLRB    RSAVE                   ;CLEAR LOW BYTE OF IDR
031414  000337  002402                  SWAB    RSAVE                   ;SWAB DATA FOR COMPARE
031420  120537  002402                  CMPB    R5,RSAVE                ;CORRECT DATA RECEIVED
031424  001414                          BEQ     44$                     ;BRANCH IF YES
031426  000305                          SWAB    R5                      ;SWAB HIGH AND LOW BYTE
031430  105005                          CLRB    R5                      ;CLEAR HIGH BYTE OF R5
031432  000305                          SWAB    R5                      ;SWAB HIGH AND LOW BYTE
031434  010537  002500                  MOV     R5,GOOD                 ;SET UP DATA FOR ERROR MESSAGE
031440  013737  002402  002502          MOV     RSAVE,BAD               ;...
031446                                  ERRSOFT 817,E802,ERR501         ;ERROR HANDLER
                                        .MCALL  M$ERRINS
031446                                  M$ERRINS        817,E802,ERR501,C$ERSOFT
                                        .MCALL  M$GNINS,M$WORD,M$TSTLAB
031446                                  M$SVC   C$ERSOFT
                                        .MCALL  M$GNINS,M$TSTLAB
031446                                  M$TSTLAB
                                        .MCALL  M$TLABEL,M$INCR
                                        .IIF LT T$TSTMAC, .MEXIT
                                        .RADIX  10
                                        M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                        .RADIX  8
                                        M$INCR  T$TSTSEQ
031446                                  M$GNINS <TRAP   C$ERSOFT>
                                        .IF LT SVCINS
                                        TRAP    C$ERSOFT
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                TRAP    C$ERSOFT
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
031446  104457                                                                                  TRAP    C$ERSOFT
                                                        .NLIST
                                        .ENDC
        000012                          .RADIX  10
                                        .IF NB  817
        001461                          T$ERRNUM=817
                                        .IFF
                                        .ERROR  ;MISSING ERROR-NR
                                        .ENDC
031450                                  M$WORD  \T$ERRNUM
                                        .MCALL  M$GNINS
                                        .IRP    N,<817>
                                        M$GNINS <.WORD  N>
                                        .ENDM
031450                                  M$GNINS <.WORD  817>
```

```
                                .IF LT SVCINS
                                .WORD   817
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        .WORD   817
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
     031450  001461                                                                     .WORD   817
                                                .NLIST
                                .ENDC
             000010             .RADIX  8
                                .IF NB E802
     031452                     M$WORD  E802
                                .MCALL  M$GNINS
                                .IRP    N,<E802>
                                M$GNINS <.WORD  N>
                                .ENDM
     031452                     M$GNINS <.WORD  E802>
                                .IF LT SVCINS
                                .WORD   E802
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        .WORD   E802
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
     031452  005556                                                                     .WORD   E802
                                                .NLIST
                                .ENDC
                                .IFF
                                M$WORD  0
                                .ENDC
                                .IF NB ERR501
     031454                     M$WORD  ERR501
                                .MCALL  M$GNINS
                                .IRP    N,<ERR501>
                                M$GNINS <.WORD  N>
                                .ENDM
     031454                     M$GNINS <.WORD  ERR501>
                                .IF LT SVCINS
                                .WORD   ERR501
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        .WORD   ERR501
                                                .NLIST
                                .MEXIT
```

D9

```
                                .ENDC
                                .IF GT SVCINS
                                .LIST
      031454  003672                                                                .WORD   ERR501
                                          .NLIST
                                .ENDC
                                .IFF
                                M$WORD  0
                                .ENDC
 4568 031456                    44$:    ENDSEG
                                .MCALL  M$POP,M$GNLS,M$SVC,M$ENDERR
      031456                    M$POP   T$NS,T$NESTLEV,T$TEMP
                                .MCALL  M$GETS,M$DECR
                                .IF LT  T$NESTLEV
                                .ERROR  T$NESTLEV       ; MACRO T$NS UNDERFLOW
                                .MEXIT
                                .ENDC
      031456                    M$GETS  T$NS,\T$NESTLEV,T$TEMP
              000003            T$TEMP=T$NS2
      031456                    M$DECR  T$NESTLEV
              000001            T$NESTLEV=T$NESTLEV-1
                                .IF EQ F$SEG-T$TEMP
      031456                    M$POP   T$SEK,T$SEGLEV,T$$SEG
                                .MCALL  M$GETS,M$DECR
                                .IF LT  T$SEGLEV
                                .ERROR  T$SEGLEV        ; MACRO T$SEK UNDERFLOW
                                .MEXIT
                                .ENDC
      031456                    M$GETS  T$SEK,\T$SEGLEV,T$$SEG
              010006            T$$SEG=T$SEK0
      031456                    M$DECR  T$SEGLEV
              177777            T$SEGLEV=T$SEGLEV-1
      031456                    M$GNLS  T$$SEG
                                .MCALL  M$GEN
                                .IF NB T$$SEG
      031456                    M$GEN   \T$$SEG,$,SVCTAG
                                .IF LE  SVCTAG
                                .IIF EQ SVCTAG,.LIST
                                10006$:
                                .IIF EQ SVCTAG,.NLIST
                                .MEXIT
                                .ENDC
                                .LIST
      031456                                                                 10006$:
                                        .NLIST
                                .TFF
                                M$GEN   \S$LSYM,$,SVCTAG
                                .ENDC
      031456                    M$SVC   C$ESEG
                                .MCALL  M$GNINS,M$TSTLAB
      031456                    M$TSTLAB
                                .MCALL  M$TLABEL,M$INCR
                                .IIF LT T$TSTMAC, .MEXIT
                                .RADIX  10
                                M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                .RADIX  8
                                M$INCR  T$TSTSEQ
```

E9


```
      031456                                  M$GNINS <TRAP   C$ESEG>
                                              .IF LT SVCINS
                                              TRAP     C$ESEG
                                              .MEXIT
                                              .ENDC
                                              .IF EQ SVCINS
                                              .LIST
                                                      TRAP     C$ESEG
                                                               .NLIST
                                              .MEXIT
                                              .ENDC
                                              .IF GT SVCINS
                                              .LIST
      031456  104405                                                                                  TRAP    C$ESEG
                                                               .NLIST
                                              .ENDC
                                              .IF EQ T$SEGLEV+1
              000041                          I$SEG=F$END
                                              .ENDC
                                              .IFF
                                              M$ENDERR         ENDSEG,T$TEMP
                                              .ENDC
 4569 031460  005737  002234                          TST      QVP                    ;IS QUICK VERIFY PASS SELECTED
 4570 031464  001010                                  BNE      50$                    ;BRANCH IF YES
 4571 031466  062705  000021                          ADD      #21,R5                 ;CREATE NEW TRANSMIT DATA
 4572 031472  005237  002322                          INC      ITRCNT                 ;INCREMENT ITERATION COUNTER
 4573 031476  023737  002320  002322                  CMP      ITRDEF,ITRCNT          ;ALL DONE
 4574 031504  001257                                  BNE      A82                    ;BRANCH IF NO
 4575 031506                                  50$:    BGNSEG
                                              .MCALL  M$PUSH,M$INCR,M$SVC
              000040                          I$SEG=F$BGN
      031506                                  M$PUSH  T$NS,T$NESTLEV,F$SEG
                                              .MCALL  M$INCR,M$SETS
      031506                                  M$INCR  T$NESTLEV
              000002                          T$NESTLEV=T$NESTLEV+1
      031506                                  M$SETS  T$NS,\T$NESTLEV,F$SEG
              000003                          T$NS2=F$SEG
              010007                          T$$SEG=S$LSYM
      031506                                  M$PUSH  T$SEK,T$SEGLEV,T$$SEG
                                              .MCALL  M$INCR,M$SETS
      031506                                  M$INCR  T$SEGLEV
              000000                          T$SEGLEV=T$SEGLEV+1
      031506                                  M$SETS  T$SEK,\T$SEGLEV,T$$SEG
              010007                          T$SEK0=T$$SEG
      031506                                  M$INCR  S$LSYM
              010010                          S$LSYM=S$LSYM+1
      031506                                  M$SVC   C$BSEG
                                              .MCALL  M$GNINS,M$TSTLAB
      031506                                  M$TSTLAB
                                              .MCALL  M$TLABEL,M$INCR
                                              .IIF LT T$TSTMAC, .MEXIT
                                              .RADIX  10
                                              M$TLABEL         \T$TESTNUN,\T$TSTSEQ
                                              .RADIX  8
                                              M$INCR  T$TSTSEQ
      031506                                  M$GNINS <TRAP   C$BSEG>
                                              .IF LT SVCINS
```

F9

F9


```
                                             TRAP    C$BSEG
                                             .MEXIT
                                             .ENDC
                                             .IF EQ SVCINS
                                             .LIST
                                                     TRAP    C$BSEG
                                                             .NLIST
                                             .MEXIT
                                             .ENDC
                                             .IF GT SVCINS
                                             .LIST
       031506  104404                                                                              TRAP    C$BSEG
                                                             .NLIST
                                             .ENDC
  4576 031510  052777  000010  150562               BIS      #10,@CSRX           ;SELECT CHANNEL 2
  4577 031516  012737  000002  002374               MOV      #2,CHAN             ;LOAD CHANNEL NUMBER
  4578 031524  112777  000014  150536               MOVB     #14,@ICRHX          ;-----LOAD TCA BIT INTO ACR2------
  4579 031532  004737  011050                       JSR      PC,LOOP             ;WAIT A LITTLE FOR THE BO BIT
  4580 031536  017737  150506  002502               MOV      @IIRX,BAD           ;GET IIR2 CONTENTS
  4581 031544  022737  000020  002502               CMP      #20,BAD             ;BO BIT  SHOULD BE SET
  4582 031552  001410                               BEQ      51$                 ;BRANCH IF YES
  4583 031554  012737  000020  002500               MOV      #20,GOOD            ;SET UP DATA FOR ERROR MESSAGE
  4584 031562                                       ERRSOFT 818,E501,ERR501      ;ERROR HANDLER
                                             .MCALL  M$ERRINS
       031562                                M$ERRINS        818,E501,ERR501,C$ERSOFT
                                             .MCALL  M$GNINS,M$WORD,M$TSTLAB
       031562                                M$SVC   C$ERSOFT
                                             .MCALL  M$GNINS,M$TSTLAB
       031562                                M$TSTLAB
                                             .MCALL  M$TLABEL,M$INCR
                                             .IIF LT T$TSTMAC, .MEXIT
                                             .RADIX  10
                                             M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                             .RADIX  8
                                             M$INCR  T$TSTSEQ
       031562                                M$GNINS <TRAP   C$ERSOFT>
                                             .IF LT SVCINS
                                             TRAP    C$ERSOFT
                                             .MEXIT
                                             .ENDC
                                             .IF EQ SVCINS
                                             .LIST
                                                     TRAP    C$ERSOFT
                                                             .NLIST
                                             .MEXIT
                                             .ENDC
                                             .IF GT SVCINS
                                             .LIST
       031562  104457                                                                              TRAP    C$ERSOFT
                                                             .NLIST
                                             .ENDC
               000012                        .RADIX  10
                                             .IF NB  818
               001462                        T$ERRNUM=818
                                             .IFF
                                             .ERROR  ;MISSING ERROR NR
                                             .ENDC
```

78 8018 3475-6

G9

G9


```
        031564                          M$WORD  \T$ERRNUM
                                        .MCALL  M$GNINS
                                        .IRP    N,<818>
                                        M$GNINS <.WORD  N>
                                        .ENDM
        031564                          M$GNINS <.WORD  818>
                                        .Ir LT SVCINS
                                        .WORD   818
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                .WORD   818
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
        031564  001462                                                                  .WORD   818
                                                        .NLIST
                                        .ENDC
                000010                  .RADIX  8
                                        .IF NB E501
        031566                          M$WORD  E501
                                        .MCALL  M$GNINS
                                        .IRP    N,<E501>
                                        M$GNINS <.WORD  N>
                                        .ENDM
        031566                          M$GNINS <.WORD  E501>
                                        .IF LT SVCINS
                                        .WORD   E501
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                .WORD   E501
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
        031566  005376                                                                  .WORD   E501
                                                        .NLIST
                                        .ENDC
                                        .IFF
                                        M$WORD  0
                                        .ENDC
                                        .IF NB ERR501
        031570                          M$WORD  ERR501
                                        .MCALL  M$GNINS
                                        .IRP    N,<ERR501>
                                        M$GNINS <.WORD  N>
                                        .ENDM
        031570                          M$GNINS <.WORD  ERR501>
                                        .IF LT SVCINS
                                        .WORD   ERR501
                                        .MEXIT
```

H9

H9


```
                                                .ENDC
                                                .IF EQ SVCINS
                                                .LIST
                                                        .WORD   ERR501
                                                                .NLIST
                                                .MEXIT
                                                .ENDC
                                                .IF GT SVCINS
                                                .LIST
      031570  0036,2                                                                                  .WORD   ERR501
                                                                .NLIST
                                                .ENDC
                                                .IFF
                                                M$WORD  0
                                                .ENDC
 4585 031572                                            CKLOOP                          ;BRANCH BACK TO BGNSEG IF ERRLOOP IS SET
                                                .MCALL  M$SVC
      031572                                    M$SVC   C$CLP1
                                                .MCALL  M$GNINS,M$TSTLAB
      031572                                    M$TSTLAB
                                                .MCALL  M$TLABEL,M$INCR
                                                .IIF LT T$TSTMAC, .MEXIT
                                                .RADIX  10
                                                M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                                .RADIX  8
                                                M$INCR  T$TSTSEQ
      031572                                    M$GNINS <TRAP   C$CLP1>
                                                .IF LT SVCINS
                                                TRAP    C$CLP1
                                                .MEXIT
                                                .ENDC
                                                .IF EQ SVCINS
                                                .LIST
                                                        TRAP    C$CLP1
                                                                .NLIST
                                                .MEXIT
                                                .ENDC
                                                .IF GT SVCINS
                                                .LIST
      031572  104406                                                                                  TRAP    C$CLP1
                                                                .NLIST
                                                .ENDC
 4586 031574  112777  000012  150466    51$:    MOVB    #12,@ICRHX              ;-----LOAD NOT TON INTO ACR2 ----------
 4587 031602  112777  000077  150466            MOVB    #77,@IDRHX              ;-----LOAD UNL INTO DOR2------------ -
 4588 031610  004737  011050                    JSR     PC,LOOP                 ;WAIT A LITTLE
 4589 031614  017737  150436  002502            MOV     @ISRX,BAD               ;GET ISR2 CONTENTS
 4590 031622  022737  120040  002502            CMP     #120040,BAD             ;ATN,NDAC,ATN SHOULD BET SET
 4591 031630  001410                            BEQ     53$                     ;BRANCH IF YES
 4592 031632  012737  120040  002500            MOV     #120040,GOOD            ;SET UP DATA FOR ERROR MESSAGE
 4593 031640                                    ERRSOFT 819,E502,ERR501         ;...
                                                .MCALL  M$ERRINS
      031640                                    M$ERRINS        819,E502,ERR501,C$ERSOFT
                                                .MCALL  M$GNINS,M$WORD,M$TSTLAB
      031640                                    M$SVC   C$ERSOFT
                                                .MCALL  M$GNINS,M$TSTLAB
      031640                                    M$TSTLAB
                                                .MCALL  M$TLABEL,M$INCR
```

T9

```
                                .IIF LT T$TSTMAC, .MEXIT
                                .RADIX  10
                                M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                .RADIX  8
                                M$INCR  T$TSTSEQ
     031640                     M$GNINS <TRAP   C$ERSOFT>
                                .IF LT SVCINS
                                TRAP    C$ERSOFT
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        TRAP    C$ERSOFT
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
     031640  104457                                                         TRAP    C$ERSOFT
                                                .NLIST
                                .ENDC
             000012             .RADIX  10
                                .IF NB  819
             001463             T$ERRNUM=819
                                .IFF
                                .ERROR  ;MISSING ERROR NR
                                .ENDC
     031642                     M$WORD  \T$ERRNUM
                                .MCALL  M$GNINS
                                .IRP    N,<819>
                                M$GNINS <.WORD  N>
                                .ENDM
     031642                     M$GNINS <.WORD  819>
                                .IF LT SVCINS
                                .WORD   819
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        .WORD   819
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
     031642  001463                                                         .WORD   819
                                                .NLIST
                                .ENDC
             000010             .RADIX  8
                                .IF NB E502
     031644                     M$WORD  E502
                                .MCALL  M$GNINS
                                .IRP    N,<E502>
                                M$GNINS <.WORD  N>
                                .ENDM
     031644                     M$GNINS <.WORD  E502>
                                .IF LT SVCINS
```

```
                                .WORD   E502
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        .WORD   E502
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
      031644  005437                                                                    .WORD   E502
                                                .NLIST
                                .ENDC
                                .IFF
                                M$WORD  0
                                .ENDC
                                .IF NB ERR501
      031646                    M$WORD  ERR501
                                .MCALL  M$GNINS
                                .IRP    N,<ERR501>
                                M$GNINS <.WORD  N>
                                .ENDM
      031646                    M$GNINS <.WORD  ERR501>
                                .IF LT SVCINS
                                .WORD   ERR501
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        .WORD   ERR501
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
      031646  003672                                                                    .WORD   ERR501
                                                .NLIST
                                .ENDC
                                .IFF
                                M$WORD  0
                                .ENDC
 4594 031650                            CKLOOP                          ;BRANCH BACK TO BGNSEG IF ERRLOOP IS SET
                                .MCALL  M$SVC
      031650                    M$SVC   C$CLP1
                                .MCALL  M$GNINS,M$TSTLAB
      031650                    M$TSTLAB
                                .MCALL  M$TLABEL,M$INCR
                                .IIF LT T$TSTMAC, .MEXIT
                                .RADIX  10
                                M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                .RADIX  8
                                M$INCR  T$TSTSEQ
      031650                    M$GNINS <TRAP   C$CLP1>
                                .IF LT SVCINS
                                TRAP    C$CLP1
                                .MEXIT
```

K9

```
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                TRAP    C$CLP1
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
      031650  104406                                                                    TRAP    C$CLP1
                                                        .NLIST
                                        .ENDC
4595  031652  042777  000010  150420   53$:     BIC     #10,@CSRX               ;SELECT CHANNEL 1
4596  031660  012737  000001  002374            MOV     #1,CHAN                 ;LOAD CHANNEL NUMBER
4597  031666  017737  150364  002502            MOV     @ISRX,BAD               ;GET ISR1 CONTENTS
4598  031674  023737  002434  002502            CMP     CDAT1,BAD               ;ATN,NDAC,ATN,(ULPA) SHOULD BE SET
4599  031702  001410                            BEQ     55$                     ;BRANCH IF YES
4600  031704  013737  002434  002500            MOV     CDAT1,GOOD              ;SET UP DATA FOR ERROR MESSAGE
4601  031712                                    ERRSOFT 820,E502,ERR501         ;ERROR HANDLER
                                        .MCALL  M$ERRINS
      031712                            M$ERRINS        820,E502,ERR501,C$ERSOFT
                                        .MCALL  M$GNINS,M$WORD,M$TSTLAB
      031712                            M$SVC   C$ERSOFT
                                        .MCALL  M$GNINS,M$TSTLAB
      031712                            M$TSTLAB
                                        .MCALL  M$TLABEL,M$INCR
                                        .IIF LT T$TSTMAC, .MEXIT
                                        .RADIX  10
                                        M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                        .RADIX  8
                                        M$INCR  T$TSTSEQ
      031712                            M$GNINS <TRAP   C$ERSOFT>
                                        .IF LT SVCINS
                                        TRAP    C$ERSOFT
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                TRAP    C$ERSOFT
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
      031712  104457                                                                    TRAP    C$ERSOFT
                                                        .NLIST
                                        .ENDC
              000012                    .RADIX  10
                                        .IF NB  820
              001464                    T$ERRNUM=820
                                        .IFF
                                        .ERROR  ;MISSING ERROR NR
                                        .ENDC
      031714                            M$WORD  \T$ERRNUM
                                        .MCALL  M$GNINS
                                        .IRP    N,<820>
                                        M$GNINS <.WORD  N>
```

L9


```
                        .ENDM
031714                  M$GNINS <.WORD  820>
                        .IF LT SVCINS
                        .WORD   820
                        .MEXIT
                        .ENDC
                        .IF EQ SVCINS
                        .LIST
                                .WORD   820
                                        .NLIST
                        .MEXIT
                        .ENDC
                        .IF GT SVCINS
                        .LIST
031714  001464                                                  .WORD   820
                                        .NLIST
                        .ENDC
        000010          .RADIX  8
                        .IF NB E502
031716                  M$WORD  E502
                        .MCALL  M$GNINS
                        .IRP    N,<E502>
                        M$GNINS <.WORD  N>
                        .ENDM
031716                  M$GNINS <.WORD  E502>
                        .IF LT SVCINS
                        .WORD   E502
                        .MEXIT
                        .ENDC
                        .IF EQ SVCINS
                        .LIST
                                .WORD   E502
                                        .NLIST
                        .MEXIT
                        .ENDC
                        .IF GT SVCINS
                        .LIST
031716  005437                                                  .WORD   E502
                                        .NLIST
                        .ENDC
                        .IFF
                        M$WORD  0
                        .ENDC
                        .IF NB ERR501
031720                  M$WORD  ERR501
                        .MCALL  M$GNINS
                        .IRP    N,<ERR501>
                        M$GNINS <.WORD  N>
                        .ENDM
031720                  M$GNINS <.WORD  ERR501>
                        .IF LT SVCINS
                        .WORD   ERR501
                        .MEXIT
                        .ENDC
                        .IF EQ SVCINS
                        .LIST
                                .WORD   ERR501
```

M9

```
                                                  .NLIST
                                     .MEXIT
                                     .ENDC
                                     .IF GT SVCINS
                                     .LIST
        031720  003672                                                                           .WORD   ERR501
                                                  .NLIST
                                     .ENDC
                                     .IFF
                                     M$WORD  0
                                     .ENDC
   4602 031722                             CKLOOP                           ;BRANCH TO BGNSEG IF ERRORLOOP IS SET
                                     .MCALL  M$SVC
        031722                       M$SVC   C$CLP1
                                     .MCALL  M$GN..'S,M$TSTLAB
        031722                       M$TSTLAB
                                     .MCALL  M$TLABEL,M$INCR
                                     .IIF LT T$TSTMAC, .MEXIT
                                     .RADIX  10
                                     M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                     .RADIX  8
                                     M$INCR  T$TSTSEQ
        031722                       M$GNINS <TRAP   C$CLP1>
                                     .IF LT SVCINS
                                     TRAP    C$CLP1
                                     .MEXIT
                                     .ENDC
                                     .IF EQ SVCINS
                                     .LIST
                                             TRAP    C$CLP1
                                                     .NLIST
                                     .MEXIT
                                     .ENDC
                                     .IF GT SVCINS
                                     .LIST
        031722  104406                                                                           TRAP    C$CLP1
                                                  .NLIST
                                     .ENDC
   4603 031724                       55$:    ENDSEG
                                     .MCALL  M$POP,M$GNLS,M$SVC,M$ENDERR
        031724                       M$POP   T$NS,T$NESTLEV,T$TEMP
                                     .MCALL  M$GETS,M$DECR
                                     .IF LT  T$NESTLEV
                                     .ERROR  T$NESTLEV       ; MACRO T$NS UNDERFLOW
                                     .MEXIT
                                     .ENDC
        031724                       M$GETS  T$NS,\T$NESTLEV,T$TEMP
                000003               T$TEMP=T$NS2
        031724                       M$DECR  T$NESTLEV
                000001               T$NESTLEV=T$NESTLEV-1
                                     .IF EQ F$SEG-T$TEMP
        031724                       M$POP   T$SEK,T$SEGLEV,T$$SEG
                                     .MCALL  M$GETS,M$DECR
                                     .IF LT  T$SEGLEV
                                     .ERROR  T$SEGLEV        ; MACRO T$SEK UNDERFLOW
                                     .MEXIT
                                     .ENDC
```

```
        031724                          M$GETS  T$SEK,\T$SEGLEV,T$$SEG
                010007                  T$$SEG=T$SEKO
        031724                          M$DECR  T$SEGLEV
                177777                  T$SEGLEV=T$SEGLEV-1
        031724                          M$GNLS  T$$SEG
                                        .MCALL  M$GEN
                                        .IF NB T$$SEG
        031724                          M$GEN   \T$$SEG,$,SVCTAG
                                        .IF LE  SVCTAG
                                        .IIF EQ SVCTAG,.LIST
                                        10007$:
                                        .IIF EQ SVCTAG,.NLIST
                                        .MEXIT
                                        .ENDC
                                        .LIST
        031724                                                                          10007$:
                                                .NLIST
                                        .IFF
                                        M$GEN   \S$LSYM,$,SVCTAG
                                        .ENDC
        031724                          M$SVC   C$ESEG
                                        .MCALL  M$GNINS,M$TSTLAB
        031724                          M$TSTLAB
                                        .MCALL  M$TLABEL,M$INCR
                                        .IIF LT T$TSTMAC, .MEXIT
                                        .RADIX  10
                                        M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                        .RADIX  8
                                        M$INCR  T$TSTSEQ
        031724                          M$GNINS <TRAP   C$ESEG>
                                        .IF LT SVCINS
                                        TRAP    C$ESEG
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                TRAP    C$ESEG
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
        031724  104405                                                                          TRAP    C$ESEG
                                                        .NLIST
                                        .ENDC
                                        .IF EQ T$SEGLEV+1
                000041                  I$SEG=F$END
                                        .ENDC
                                        .IFF
                                        M$ENDERR        ENDSEG,T$TEMP
                                        .ENDC
   4604 031726                                  EXIT TST
                                        .MCALL  M$SVC,M$EXIT,M$EXSEG,M$EXTJ,M$GETTOP,M$CHECK,M$WORD,XFER
                000041                  T$FLAG=F$END
        031726                          M$CHECK TST,T$TEMP,T$FLAG
                                        .IF IDN <TST>,<TST>
                010035                  T$TEMP=T$$TEST
```

```
              000040              T$FLAG=I$TST
                                  .MEXIT
                                  .ENDC
                                  .IF IDN <SUB>,<TST>
                                  T$TEMP=T$$SUB
                                  T$FLAG=I$SUB
                                  .MEXIT
                                  .ENDC
                                  .IF IDN <SEG>,<TST>
                                  T$TEMP=T$$SEG
                                  T$FLAG=I$SEG
                                  .MEXIT
                                  .ENDC
                                  .IF IDN <INIT>,<TST>
                                  T$TEMP=T$$INIT
                                  T$FLAG=I$INIT
                                  .MEXIT
                                  .ENDC
                                  .IF IDN <CLN>,<TST>
                                  T$TEMP=T$$CLEAN
                                  T$FLAG=I$CLN
                                  .MEXIT
                                  .ENDC
                                  .IF IDN <SRV>,<TST>
                                  T$TEMP=T$$SRV
                                  T$FLAG=I$SRV
                                  .MEXIT
                                  .ENDC
                                  .IF IDN <MSG>,<TST>
                                  T$TEMP=T$$MSG
                                  T$FLAG=F$JMP
                                  .MEXIT
                                  .ENDC
                                  .IF IDN <RPT>,<TST>
                                  T$TEMP=T$$RPT
                                  T$FLAG=F$JMP
                                  .MEXIT
                                  .ENDC
                                  .IF IDN <DU>,<TST>
                                  T$TEMP=T$$DU
                                  T$FLAG=F$JMP
                                  .MEXIT
                                  .ENDC
                                  .IF IDN <AU>,<TST>
                                  T$TEMP=T$$AU
                                  T$FLAG=F$JMP
                                  .MEXIT
                                  .ENDC
                                  .IF EQ T$FLAG F$JMP
                                  M$WORD  J$JMP
                                  M$EXTJ  \T$TEMP
                                  .MEXIT
                                  .ENDC
                                  .IF EQ  T$FLAG F$BGN
     031726                       M$SVC   C$EXIT
                                  .MCALL  M$GNINS,M$TSTLAB
     031726                       M$TSTLAB
```

```
                        .MCALL  M$TLABEL,M$INCR
                        .IIF LT T$TSTMAC, .MEXIT
                        .RADIX  10
                        M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                        .RADIX  8
                        M$INCR  T$TSTSEQ
031726                  M$GNINS <TRAP   C$EXIT>
                        .IF LT SVCINS
                        TRAP    C$EXIT
                        .MEXIT
                        .ENDC
                        .IF EQ SVCINS
                        .LIST
                                TRAP    C$EXIT
                                        .NLIST
                        .MEXIT
                        .ENDC
                        .IF GT SVCINS
                        .LIST
031726  104432                                                          TRAP    C$EXIT
                                        .NLIST
                        .ENDC
                        .IF IDN <SEG>,<TST>
                        M$GETTOP T$SEK,T$SEGLEV,T$TEMP
                        M$EXSEG \T$TEMP
                        .IFF
031730                  M$EXIT  \T$TEMP
                        .MCALL  M$GNINS
031730                  M$GNINS <.WORD  L10035-.>
                        .IF LT SVCINS
                        .WORD   L10035-.
                        .MEXIT
                        .ENDC
                        .IF EQ SVCINS
                        .LIST
                                .WORD   L10035-.
                                        .NLIST
                        .MEXIT
                        .ENDC
                        .IF GT SVCINS
                        .LIST
031730  000034                                                          .WORD   L10035-.
                                        .NLIST
                        .ENDC
                        .ENDC
                        .MEXIT
                        .ENDC
                        .IF IDN <HRD>,<TST>
                        M$GETTOP        T$NS,T$NESTLEV,T$TEMP
                        .IF EQ  F$HARD T$TEMP
                        .IRP    N,<\T$$HARD>
                        XFER    L'N
                        .ENDM
                        .MEXIT
                        .ENDC
                        .ENDC
                        .IF IDN <SFT>,<TST>
```

```
                                                    M$GETTOP        T$NS,T$NESTLEV,T$TEMP
                                                    .IF FG  F$SOFT-T$TEMP
                                                    .IRP    N,<\T$$SOFT>
                                                    XFER    L'N
                                                    .ENDM
                                                    .MEXIT
                                                    .ENDC
                                                    .ENDC
                                                    .ERROR  ;ILL. "EXIT TST" STMT.
   4605
   4606                                                     .NLIST  BEX
   4607 031732     045      123      062    TSHD8:  .ASCIZ  /*S2*ADATA TRANSFER TEST*N/
   4608                                                     .LIST   BEX
   4609                                                     .EVEN
   4610 031764                                              ENDTST
                                                    .MCALL  M$POP,M$GNTAG,M$SVC,M$ENDERR
                                                    .IF EQ  F$BGN-I$TST
               000041                               I$TST=F$END
                                                    .IFF
                                                    .ERROR  ;MISSING "BGNTST"
                                                    .MEXIT
                                                    .ENDC
        031764                                      M$POP   T$NS,T$NESTLEV,T$TEMP
                                                    .MCALL  M$GETS,M$DECR
                                                    .IF LT  T$NESTLEV
                                                    .ERROR  T$NESTLEV       ; MACRO T$NS UNDERFLOW
                                                    .MEXIT
                                                    .ENDC
        031764                                      M$GETS  T$NS,\T$NESTLEV,T$TEMP
               000001                               T$TEMP=T$NS1
        031764                                      M$DECR  T$NESTLEV
               000000                               T$NESTLEV=T$NESTLEV-1
                                                    .IF EQ F$TEST-T$TEMP
        031764                                      M$GNTAG L,T$$TEST
                                                    .MCALL  M$GEN
        031764                                      M$GEN   L,\T$$TEST,SVCTAG
                                                    .IF LE  SVCTAG
                                                    .IIF EQ SVCTAG,.LIST
                                                    L10035:
                                                    .IIF EQ SVCTAG,.NLIST
                                                    .MEXIT
                                                    .ENDC
                                                    .LIST
        031764                                                                                L10035:
                                                            .NLIST
               010000                               S$LSYM=T$LSYM
        031764                                      M$SVC   C$ETST
                                                    .MCALL  M$GNINS,M$TSTLAB
        031764                                      M$TSTLAB
                                                    .MCALL  M$TLABEL,M$INCR
                                                    .IIF LT T$TSTMAC, .MEXIT
                                                    .RADIX  10
                                                    M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                                    .RADIX  8
                                                    M$INCR  T$TSTSEQ
        031764                                      M$GNINS <TRAP   C$ETST>
                                                    .IF LT SVCINS
```

E10

```
                                TRAP    C$ETST
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        TRAP    C$ETST
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
     031764  104401                                                                  TRAP    C$ETST
                                                .NLIST
                                .ENDC
             000041             I$TST=F$END
                                .IFF
                                M$ENDERR        ENDTST,T$TEMP
                                .ENDC
```

```
                                    .SBTTL  TEST 9: SECONDARY ADDRESSING TEST OF CHANNEL 1 (LISTENER)
                                    ;*******************************************************************
                                    ;                 IEX - TEST 9
                                    ;THIS TEST CHECKS THE EXTENDED LISTENER INTERFACE FUNCTION .
                                    ;
                                    ;PURPOSE OF THIS TEST IS TO CHECK THE SECONDARY ADDRESSING
                                    ;FEATURE OF CHANNEL 1 BY MEANS OF RECEIVING A VALID AS WELL AS AN INVALID
                                    ;MY SECONDARY ADDRESS (MSA1).
                                    ;********************  **********************************************
     031766                                 BGNTST
                                    .MCALL  M$INCR,M$GNTEST,M$PUSH,M$INCR
                                    .IF NE  F$END-I$SUB
                                    .ERROR  ;"BGNTST" IN SUB
                                    .MEXIT
                                    .ENDC
                                    .IF NE  F$END-I$SEG
                                    .ERROR  ;"BGNTST" IN SEG
                                    .MEXIT
                                    .ENDC
                                    .IF NE  F$END-I$TST
                                    .ERROR  ;"BGNTST" IN TST
                                    .MEXIT
                                    .IFF
            000040                  I$TST=F$BGN
                                    .ENDC
                                    .IF B
     031766                         M$INCR  T$TESTNUM
            000011                  T$TESTNUM=T$TESTNUM+1
                                    .IFF
                                    T$TESTNUM=
                                    .ENDC
            000000                  T$SUBNUM=0
            000012                  .RADIX  10
     031766                         M$GNTEST        \T$TESTNUM
                                    .MCALL  M$GEN
     031766                         M$GEN   T,9:,SVCTST
                                    .IF LE  SVCTST
                                    .IIF EQ SVCTST,.LIST
                                    T9::
                                    .IIF EQ SVCTST,.NLIST
                                    .MEXIT
                                    .ENDC
                                    .LIST
     031766                                                                 T9::
                                            .NLIST
            000010                  .RADIX  8
     031766                         M$PUSH  T$NS,T$NESTLEV,F$TEST
                                    .MCALL  M$INCR,M$SETS
     031766                         M$INCR  T$NESTLEV
            000001                  T$NESTLEV=T$NESTLEV+1
     031766                         M$SETS  T$NS,\T$NESTLEV,F$TEST
            000001                  T$NS1=F$TEST
            010036                  T$$TEST=T$TAGNUM
     031766                         M$INCR T$TAGNUM
            010037                  T$TAGNUM=T$TAGNUM+1
            000001                  T$TSTSEQ=1
     031766 005737  002324                  TST     PNTF                ;IS THE PNT FLAG SET
```

```
4623 031772  001410               BEQ     7$                      ;IF YES, PRINT THE TEST HEADER
4624 031774                       PRINTF  #TSHD9                  ;...
                          .MCALL  M$PRINT
                          .IF B   #TSHD9
                          .ERROR  ;MISSING FORMAT
                          .MEXIT
                          .ENDC
                          .IF B   <>
     031774               M$PRINT C$PNTF,#TSHD9
                          .MCALL  M$COUNT,M$PUT,M$GNINS,M$SVC
             000001       T$ARGCNT=1
     031774               M$COUNT T$ARGCNT,<>,<>,<>,<>,<>,<>,<>,<>
                          .IF NB <>
                          M$COUNT T$ARGCNT,<>,<>,<>,<>,<>,<>,<>,<>
                          .ENDC
                          .IF NB <>
                          T$ARGCNT=T$ARGCNT+1
                          .ENDC
                          .IRP    N,<\T$ARGCNT>
                          M$PUT   #N,#TSHD9,<>,<>,<>,<>,<>,<>,<>,<>
                          .ENDM
     031774               M$PUT   #1,#TSHD9,<>,<>,<>,<>,<>,<>,<>,<>
                          .MCALL  M$PUT1
                          .IF NB  <#TSHD9>
     031774               M$PUT   <#TSHD9>,<>,<>,<>,<>,<>,<>,<>,<>
                          .MCALL  M$PUT1
                          .IF NB  <>
                          M$PUT   <>,<>,<>,<>,<>,<>,<>,<>,<>
                          .ENDC
                          .IF NB  <#TSHD9>
     031774               M$PUT1  #TSHD9
                          .MCALL  M$GNINS
                          .IF B
     031774               M$GNINS <MOV    #TSHD9,-(SP)>
                          .IF LT SVCINS
                          MOV     #TSHD9,-(SP)
                          .MEXIT
                          .ENDC
                          .IF EQ SVCINS
                          .LIST
                                  MOV     #TSHD9,-(SP)
                                          .NLIST
                          .MEXIT
                          .ENDC
                          .IF GT SVCINS
                          .LIST
     031774  012746  033456                                                             MOV     #TSHD9, (SP)
                                          .NLIST
                          .ENDC
                          .IFF
                          .IF DIF B,<#TSHD9>
                          .ERROR  ;ILL. ARG. "#TSHD9" ONLY "B" IS ALLOWED.
                          .MEXIT
                          .ENDC
                          M$GNINS <CLR    -(SP)>
                          M$GNINS <BISB   ,(SP)>
                          .ENDC
```

```
                                .ENDC
                                .ENDC
                                .IF NB  <#1>
032000                          M$PUT1  #1
                                .MCALL  M$GNINS
                                .IF B
032000                          M$GNINS <MOV    #1,-(SP)>
                                .IF LT SVCINS
                                MOV     #1,-(SP)
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        MOV     #1,-(SP)
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
032000  012746  000001                                                  MOV     #1,-(SP)
                                                .NLIST
                                .ENDC
                                .IFF
                                .IF DIF B,<#1>
                                .ERROR  ;ILL. ARG. "#1" ONLY "B" IS ALLOWED.
                                .MEXIT
                                .ENDC
                                M$GNINS <CLR    -(SP)>
                                M$GNINS <BISB   ,(SP)>
                                .ENDC
                                .ENDC
032004                          M$GNINS <MOV    SP,R0>
                                .IF LT SVCINS
                                MOV     SP,R0
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        MOV     SP,R0
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
032004  010600                                                          MOV     SP,R0
                                                .NLIST
                                .ENDC
032006                          M$SVC   C$PNTF
                                .MCALL  M$GNINS,M$TSTLAB
032006                          M$TSTLAB
                                .MCALL  M$TLABEL,M$INCR
                                .IIF LT T$TSTMAC, .MEXIT
                                .RADIX  10
                                M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                .RADIX  8
                                M$INCR  T$TSTSEQ
032006                          M$GNINS <TRAP   C$PNTF>
```

```
                                        .IF LT SVCINS
                                        TRAP    C$PNTF
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                TRAP    C$PNTF
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
        032006  104417                                                                          TRAP    C$PNTF
                                                        .NLIST
                                        .ENDC
                                        .IRP    N,<\T$ARGCNT*2+2>
                                        M$GNINS <ADD    #N,SP>
                                        .ENDM
        032010                          M$GNINS <ADD    #4,SP>
                                        .IF LT SVCINS
                                        ADD     #4,SP
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                ADD     #4,SP
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
        032010  062706  000004                                                                  ADD     #4,SP
                                                        .NLIST
                                        .ENDC
                                        .MEXIT
                                        .ENDC
                                        .IF B   <>
                                        M$PRINT C$PNTF,#TSHD9,<>
                                        .MEXIT
                                        .ENDC
                                        .IF B   <>
                                        M$PRINT C$PNTF,#TSHD9,<>,<>
                                        .MEXIT
                                        .ENDC
                                        .IF B   <>
                                        M$PRINT C$PNTF,#TSHD9,<>,<>,<>
                                        .MEXIT
                                        .ENDC
                                        .IF B   <>
                                        M$PRINT C$PNTF,#TSHD9,<>,<>,<>,<>
                                        .MEXIT
                                        .ENDC
                                        .IF B   <>
                                        M$PRINT C$PNTF,#TSHD9,<>,<>,<>,<>,<>
                                        .MEXIT
                                        .ENDC
                                        .IF B   <>
```

```
                                        M$PRINT C$PNTF,#TSHD9,<>,<>,<>,<>,<>,<>
                                        .MEXIT
                                        .ENDC
                                        .IF B   <>
                                        M$PRINT C$PNTF,#TSHD9,<>,<>,<>,<>,<>,<>,<>
                                        .MEXIT
                                        .ENDC
                                        M$PRINT C$PNTF,#TSHD9,<>,<>,<>,<>,<>,<>,<>,<>
4625 032014  005037  002322             7$:     CLR     ITRCNT                  ;CLEAR COUNTER
4626 032020  004737  010210                     JSR     PC,CULPA                ;CLEAR ULPA BIT IN ISR 1 AND 2
4627 032024  004737  010700                     JSR     PC,BGIN2                ;SET UP PARAMETER
4628 032030  042777  000010  150242     A9:     BIC     #10,@CSRX               ;SELECT CHANNEL 1
4629 032036  112777  000223  150224             MOVB    #223,@ICRHX             ;-----LOAD DAI INTO ACR1----------
4630 032044  112777  000020  150210             MOVB    #20,@ISRHX              ;-----LOAD APT BIT INTO ISR1------
4631 032052  013701  002312                     MOV     DPA1,R1                 ;GET DPA1 ADDRESS
4632 032056  062701  000040                     ADD     #40,R1                  ;CREATE MY LISTENER ADDRESS (MLA)
4633 032062  010137  002410                     MOV     R1,MLA1                 ;STORE MLA
4634 032066  032737  000001  002312             BIT     #1,DPA1                 ;IS DPA EVEN
4635 032074  001412                             BEQ     3$                      ;BRANCH IF YES
4636 032076  052737  000001  002446             BIS     #1,CDAT6                ;SET ULPA BIT IN COMPARE DATA FOR ISR
4637 032104  052737  000001  002442             BIS     #1,CDAT4                ;...
4638 032112  052737  000001  002444             BIS     #1,CDAT5                ;...
4639 032120  000411                             BR      .+24                    ;BRANCH TO BGNSEG
4640 032122  042737  000001  002446     3$:     BIC     #1,CDAT6                ;CLEAR ULPA BIT IN COMPARE DATA FOR ISR
4641 032130  042737  000001  002442             BIC     #1,CDAT4                ;...
4642 032136  042737  000001  002444             BIC     #1,CDAT5                ;...
4643 032144                                     BGNSEG
                                        .MCALL  M$PUSH,M$INCR,M$SVC
             000040                     I$SEG=F$BGN
     032144                             M$PUSH  T$NS,T$NESTLEV,F$SEG
                                        .MCALL  M$INCR,M$SETS
     032144                             M$INCR  T$NESTLEV
             000002                     T$NESTLEV=T$NESTLEV+1
     032144                             M$SETS  T$NS,\T$NESTLEV,F$SEG
             000003                     T$NS2=F$SEG
             010000                     T$$SEG=S$LSYM
     032144                             M$PUSH  T$SEK,T$SEGLEV,T$$SEG
                                        .MCALL  M$INCR,M$SETS
     032144                             M$INCR  T$SEGLEV
             000000                     T$SEGLEV=T$SEGLEV+1
     032144                             M$SETS  T$SEK,\T$SEGLEV,T$$SEG
             010000                     T$SEK0=T$$SEG
     032144                             M$INCR  S$LSYM
             010001                     S$LSYM-S$LSYM+1
     032144                             M$SVC   C$BSEG
                                        .MCALL  M$GNINS,M$TSTLAB
     032144                             M$TSTLAB
                                        .MCALL  M$TLABEL,M$INCR
                                        .IIF LT T$TSTMAC, .MEXIT
                                        .RADIX  10
                                        M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                        .RADIX  8
                                        M$INCR  T$TSTSEQ
     032144                             M$GNINS <TRAP   C$BSEG>
                                        .IF LT SVCINS
                                        TRAP    C$BSEG
                                        .MEXIT
```

K10

```
                                          .ENDC
                                          .IF EQ SVCINS
                                          .LIST
                                                  TRAP    C$BSEG
                                                          .NLIST
                                          .MEXIT
                                          .ENDC
                                          .IF GT SVCINS
                                          .LIST
      032144  104404                                                                        TRAP    C$BSEG
                                                          .NLIST
                                          .ENDC
 4644 032146  052777  000010  150124              BIS     #10,@CSRX              ;SELECT CHANNEL 2
 4645 032154  012737  000002  002374              MOV     #2,CHAN                ;LOAD CHANNEL NUMBER
 4646 032162  113777  002410  150106              MOVB    MLA1,@IDRHX            ;----LOAD LISTENER ADDRESS OF CHAN. 1
 4647 032170  004737  011050                      JSR     PC,LOOP                ;WAIT A LITTLE
 4648 032174  042777  000010  150076              BIC     #10,@CSRX              ;SELECT CHANNEL 1
 4649 032202  012737  000001  002374              MOV     #1,CHAN                ;LOAD CHANNEL NUMBER
 4650 032210  017737  150034  002502              MOV     @IIRX,BAD              ;GET IIR1 CONTENTS
 4651 032216  022737  000400  002502              CMP     #400,BAD               ;IFC,BIT IN IIR1 SHOULD BE SET
 4652 032224  001410                              BEQ     30$                    ;BRANCH IF YES
 4653 032226  012737  000400  002500              MOV     #400,GOOD              ;SET UP DATA FOR ERROR MESSAGES
 4654 032234                                      ERRSOFT 901,E501,ERR501        ;ERROR HANDLER
                                          .MCALL  M$ERRINS
      032234                              M$ERRINS        901,E501,ERR501,C$ERSOFT
                                          .MCALL  M$GNINS,M$WORD,M$TSTLAB
      032234                              M$SVC   C$ERSOFT
                                          .MCALL  M$GNINS,M$TSTLAB
      032234                              M$TSTLAB
                                          .MCALL  M$TLABEL,M$INCR
                                          .IIF LT T$TSTMAC, .MEXIT
                                          .RADIX  10
                                          M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                          .RADIX  8
                                          M$INCR  T$TSTSEQ
      032234                              M$GNINS <TRAP   C$ERSOFT>
                                          .IF LT SVCINS
                                          TRAP    C$ERSOFT
                                          .MEXIT
                                          .ENDC
                                          .IF EQ SVCINS
                                          .LIST
                                                  TRAP    C$ERSOFT
                                                          .NLIST
                                          .MEXIT
                                          .ENDC
                                          .IF GT SVCINS
                                          .LIST
      032234  104457                                                                        TRAP    C$ERSOFT
                                                          .NLIST
                                          .ENDC
              000012                      .RADIX  10
                                          .IF NB  901
              001605                      T$ERRNUM=901
                                          .IFF
                                          .ERROR  ;MISSING ERROR NR
                                          .ENDC
```

```
032236                  M$WORD  \T$ERRNUM
                        .MCALL  M$GNINS
                        .IRP    N,<901>
                        M$GNINS <.WORD  N>
                        .ENDM
032236                  M$GNINS <.WORD  901>
                        .IF LT SVCINS
                        .WORD   901
                        .MEXIT
                        .ENDC
                        .IF EQ SVCINS
                        .LIST
                                .WORD   901
                                        .NLIST
                        .MEXIT
                        .ENDC
                        .IF GT SVCINS
                        .LIST
032236  001605                                                  .WORD   901
                                        .NLIST
                        .ENDC
        000010          .RADIX  8
                        .IF NB E501
032240                  M$WORD  E501
                        .MCALL  M$GNINS
                        .IRP    N,<E501>
                        M$GNINS <.WORD  N>
                        .ENDM
032240                  M$GNINS <.WORD  E501>
                        .IF LT SVCINS
                        .WORD   E501
                        .MEXIT
                        .ENDC
                        .IF EQ SVCINS
                        .LIST
                                .WORD   E501
                                        .NLIST
                        .MEXIT
                        .ENDC
                        .IF GT SVCINS
                        .LIST
032240  005376                                                  .WORD   E501
                                        .NLIST
                        .ENDC
                        .IFF
                        M$WORD  0
                        .ENDC
                        .IF NB ERR501
032242                  M$WORD  ERR501
                        .MCALL  M$GNINS
                        .IRP    N,<ERR501>
                        M$GNINS <.WORD  N>
                        .ENDM
032242                  M$GNINS <.WORD  ERR501>
                        .IF LT SVCINS
                        .WORD   ERR501
                        .MEXIT
```


M10

```
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                .WORD   ERR501
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
       032242  003672                                                                   .WORD   ERR501
                                                        .NLIST
                                        .ENDC
                                        .IFF
                                        M$WORD  0
                                        .ENDC
  4655 032244                                   CKLOOP                          ;BRANCH TO BGNSEG WHEN ERRLOOP IS SET
                                        .MCALL  M$SVC
       032244                           M$SVC   C$CLP1
                                        .MCALL  M$GNINS,M$TSTLAB
       032244                           M$TSTLAB
                                        .MCALL  M$TLABEL,M$INCR
                                        .IIF LT T$TSTMAC, .MEXIT
                                        .RADIX  10
                                        M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                        .RADIX  8
                                        M$INCR  T$TSTSEQ
       032244                           M$GNINS <TRAP   C$CLP1>
                                        .IF LT SVCINS
                                        TRAP    C$CLP1
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                TRAP    C$CLP1
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
       032244  104406                                                                   TRAP    C$CLP1
                                                        .NLIST
                                        .ENDC
  4656 032246  017737  150004  002502   30$:    MOV     @ISRX,BAD               ;GET ISR1 CONTENTS
  4657 032254  023737  002442  002502           CMP     CDAT4,BAD               ;ATN,ATN,NDAC LPAS,(ULPA) BIT SET
  4658 032262  001410                           BEQ     40$                     ;BRANCH IF YES
  4659 032264  013737  002442  002500           MOV     CDAT4,GOOD              ;SET UP DATA FOR ERROR MESSAGES
  4660 032272                                   ERRSOFT 902,E502,ERR501         ;ERROR HANDLER
                                        .MCALL  M$ERRINS
       032272                           M$ERRINS        902,E502,ERR501,C$ERSOFT
                                        .MCALL  M$GNINS,M$WORD,M$TSTLAB
       032272                           M$SVC   C$ERSOFT
                                        .MCALL  M$GNINS,M$TSTLAB
       032272                           M$TSTLAB
                                        .MCALL  M$TLABEL,M$INCR
                                        .IIF LT T$TSTMAC, .MEXIT
                                        .RADIX  10
                                        M$TLABEL        \T$TESTNUN,\T$TSTSEQ
```


N10

```
                                        .RADIX  8
                                        M$INCR  T$TSTSEQ
        032272                          M$GNINS <TRAP    C$ERSOFT>
                                        .IF LT SVCINS
                                        TRAP    C$ERSOFT
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                TRAP    C$ERSOFT
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
        032272  104457                                                                  TRAP    C$ERSOFT
                                                        .NLIST
                                        .ENDC
                000012                  .RADIX  10
                                        .IF NB  902
                001606                  T$ERRNUM=902
                                        .IFF
                                        .ERROR  ;MISSING ERROR-NR
                                        .ENDC
        032274                          M$WORD  \T$ERRNUM
                                        .MCALL  M$GNINS
                                        .IRP    N,<902>
                                        M$GNINS <.WORD  N>
                                        .ENDM
        032274                          M$GNINS <.WORD  902>
                                        .IF LT SVCINS
                                        .WORD   902
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                .WORD   902
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
        032274  001606                                                                  .WORD   902
                                                        .NLIST
                                        .ENDC
                000010                  .RADIX  8
                                        .IF NB E502
        032276                          M$WORD  E502
                                        .MCALL  M$GNINS
                                        .IRP    N,<E502>
                                        M$GNINS <.WORD  N>
                                        .ENDM
        032276                          M$GNINS <.WORD  E502>
                                        .IF LT SVCINS
                                        .WORD   E502
                                        .MEXIT
                                        .ENDC
```

```
                                .IF EQ SVCINS
                                .LIST
                                        .WORD   E502
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
     032276  005437                                                             .WORD   E502
                                                .NLIST
                                .ENDC
                                .IFF
                                M$WORD  0
                                .ENDC
                                .IF NB ERR501
     032300                     M$WORD  ERR501
                                .MCALL  M$GNINS
                                .IRP    N,<ERR501>
                                M$GNINS <.WORD  N>
                                .ENDM
     032300                     M$GNINS <.WORD  ERR501>
                                .IF LT SVCINS
                                .WORD   ERR501
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        .WORD   ERR501
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
     032300  003672                                                             .WORD   ERR501
                                                .NLIST
                                .ENDC
                                .IFF
                                M$WORD  0
                                .ENDC
4661 032302                             CKLOOP                  ;BRANCH TO BGNSEG WHEN ERRLOOP IS SET
                                .MCALL  M$SVC
     032302                     M$SVC   C$CLP1
                                .MCALL  M$GNINS,M$TSTLAB
     032302                     M$TSTLAB
                                .MCALL  M$TLABEL,M$INCR
                                .IIF LT T$TSTMAC, .MEXIT
                                .RADIX  10
                                M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                .RADIX  8
                                M$INCR  T$TSTSEQ
     032302                     M$GNINS <TRAP   C$CLP1>
                                .IF LT SVCINS
                                TRAP    C$CLP1
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
```

```
                                          TRAP    C$CLP1
                                                  .NLIST
                                  .MEXIT
                                  .ENDC
                                  .IF GT SVCINS
                                  .LIST
032302  104406                                                                  TRAP    C$CLP1
                                                  .NLIST
                                  .ENDC
032304  052777  000010  147766    40$:    BIS     #10,@CSRX             ;SELECT CHANNEL 2
032312  012737  000002  002374            MOV     #2,CHAN               ;LOAD CHANNEL NUMBER
032320  013701  002410                    MOV     MLA1,R1               ;GET MLA1
032324  062701  000100                    ADD     #100,R1               ;CREATE MSA1
032330  010137  002420                    MOV     R1,MSA1               ;STORE MSA1 TO LOCATION MSA1
032334  113777  002420  147734            MOVB    MSA1,@IDRHX           ;------LOAD MSA1 INTO DOR2----------
032342  004737  011050                    JSR     PC,LOOP               ;WAIT A LITTLE
032346  017737  147676  002502            MOV     @IIRX,BAD             ;GET IIR2 CONTENTS
032354  022737  000000  002502            CMP     #0,BAD                ;IIR2  SHOULD BE ZERO
032362  001407                            BEQ     41$                   ;BRANCH IF YES
032364  005037  002500                    CLR     GOOD                  ;SET UP DATA FOR ERROR MESSAGE
032370                                    ERRSOFT 903,E501,ERR501       ;ERROR HANDLER
                                  .MCALL  M$ERRINS
032370                            M$ERRINS        903,E501,ERR501,C$ERSOFT
                                  .MCALL  M$GNINS,M$WORD,M$TSTLAB
032370                            M$SVC   C$ERSOFT
                                  .MCALL  M$GNINS,M$TSTLAB
032370                            M$TSTLAB
                                  .MCALL  M$TLABEL,M$INCR
                                  .IIF LT T$TSTMAC, .MEXIT
                                  .RADIX  10
                                  M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                  .RADIX  8
                                  M$INCR  T$TSTSEQ
032370                            M$GNINS <TRAP   C$ERSOFT>
                                  .IF LT SVCINS
                                  TRAP    C$ERSOFT
                                  .MEXIT
                                  .ENDC
                                  .IF EQ SVCINS
                                  .LIST
                                          TRAP    C$ERSOFT
                                                  .NLIST
                                  .MEXIT
                                  .ENDC
                                  .IF CT SVCINS
                                  .LIST
032370  104457                                                                  TRAP    C$ERSOFT
                                                  .NLIST
                                  .ENDC
        000012                    .RADIX  10
                                  .IF NB  903
        001607                    T$ERRNUM=903
                                  .IFF
                                  .ERROR  ;MISSING ERROR NR
                                  .ENDC
032372                            M$WORD  \T$ERRNUM
                                  .MCALL  M$GNINS
```

```
                                        .IRP    N,<903>
                                        M$GNINS <.WORD  N>
                                        .ENDM
        032372                          M$GNINS <.WORD  903>
                                        .IF LT SVCINS
                                        .WORD   903
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                .WORD   903
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
        032372  001607                                                          .WORD   903
                                                        .NLIST
                                        .ENDC
                000010                  .RADIX  8
                                        .IF NB E501
        032374                          M$WORD  E501
                                        .MCALL  M$GNINS
                                        .IRP    N,<E501>
                                        M$GNINS <.WORD  N>
                                        .ENDM
        032374                          M$GNINS <.WORD  E501>
                                        .IF LT SVCINS
                                        .WORD   E501
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                .WORD   E501
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
        032374  005376                                                          .WORD   E501
                                                        .NLIST
                                        .ENDC
                                        .IFF
                                        M$WORD  0
                                        .ENDC
                                        .IF NB ERR501
        032376                          M$WORD  ERR501
                                        .MCALL  M$GNINS
                                        .IRP    N,<ERR501>
                                        M$GNINS <.WORD  N>
                                        .ENDM
        032376                          M$GNINS <.WORD  ERR501>
                                        .IF LT SVCINS
                                        .WORD   ERR501
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
```

```
                                        .LIST
                                                .WORD   ERR501
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
      032376  003672                                                                          .WORD   ERR501
                                                        .NLIST
                                        .ENDC
                                        .IFF
                                        M$WORD  0
                                        .ENDC
 4674 032400                                    CKLOOP                  ;BRANCH BACK TO BGNSEG IF ERRLOOP IS SET
                                        .MCALL  M$SVC
      032400                            M$SVC   C$CLP1
                                        .MCALL  M$GNINS,M$TSTLAB
      032400                            M$TSTLAB
                                        .MCALL  M$TLABEL,M$INCR
                                        .IIF LT T$TSTMAC, .MEXIT
                                        .RADIX  10
                                        M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                        .RADIX  8
                                        M$INCR  T$TSTSEQ
      032400                            M$GNINS <TRAP   C$CLP1>
                                        .IF LT SVCINS
                                        TRAP    C$CLP1
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                TRAP    C$CLP1
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
      032400  104406                                                                          TRAP    C$CLP1
                                                        .NLIST
                                        .ENDC
 4675 032402  042777  000010  147670    41$:    BIC     #10,@CSRX       ;SELECT CHANNEL 1
 4676 032410  012737  000001  002374            MOV     #1,CHAN         ;LOAD CHANNEL NUMBER
 4677 032416  017737  147626  002502            MOV     @IIRX,BAD       ;GET IIR1 CONTENTS
 4678 032424  022737  010100  002502            CMP     #10100,BAD      ;APT,INT1 BIT IN IIR1 SHOULD BE SET
 4679 032432  001410                            BEQ     42$             ;BRANCH IF YES
 4680 032434  012737  010100  002500            MOV     #10100,GOOD     ;SET UP DATA FOR ERROR MESSAGE
 4681 032442                                    ERRSOFT 904,E501,ERR501 ;ERROR HANDLER
                                        .MCALL  M$ERRINS
      032442                            M$ERRINS        904,E501,ERR501,C$ERSOFT
                                        .MCALL  M$GNINS,M$WORD,M$TSTLAB
      032442                            M$SVC   C$ERSOFT
                                        .MCALL  M$GNINS,M$TSTLAB
      032442                            M$TSTLAB
                                        .MCALL  M$TLABEL,M$INCR
                                        .IIF LT T$TSTMAC, .MEXIT
                                        .RADIX  10
                                        M$TLABEL        \T$TESTNUN,\T$TSTSEQ
```

78 8018 3675 6

F11

F11


```
                                        .RADIX  8
                                        M$INCR  T$TSTSEQ
       032442                           M$GNINS <TRAP   C$ERSOFT>
                                        .IF LT SVCINS
                                        TRAP    C$ERSOFT
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                TRAP    C$ERSOFT
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
       032442  104457                                                                                   TRAP    C$ERSOFT
                                                        .NLIST
                                        .ENDC
               000012                   .RADIX  10
                                        .IF NB  904
               001610                   T$ERRNUM=904
                                        .IFF
                                        .ERROR  ;MISSING ERROR NR
                                        .ENDC
       032444                           M$WORD  \T$ERRNUM
                                        .MCALL  M$GNINS
                                        .IRP    N,<904>
                                        M$GNINS <.WORD  N>
                                        .ENDM
       032444                           M$GNINS <.WORD  904>
                                        .IF LT SVCINS
                                        .WORD   904
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                .WORD   904
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
       032444  001610                                                                                   .WORD   904
                                                        .NLIST
                                        .ENDC
               000010                   .RADIX  8
                                        .IF NB E501
       032446                           M$WORD  E501
                                        .MCALL  M$GNINS
                                        .IRP    N,<E501>
                                        M$GNINS <.WORD  N>
                                        .ENDM
       032446                           M$GNINS <.WORD  E501>
                                        .IF LT SVCINS
                                        .WORD   E501
                                        .MEXIT
                                        .ENDC
```

78 8018 3673 6

G11

```
                                        .IF EQ SVCINS
                                        .LIST
                                                .WORD   E501
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
        032446  005376                                                                          .WORD   E501
                                                        .NLIST
                                        .ENDC
                                        .IFF
                                        M$WORD  0
                                        .ENDC
                                        .IF NB ERR501
        032450                          M$WORD  ERR501
                                        .MCALL  M$GNINS
                                        .IRP    N,<ERR501>
                                        M$GNINS <.WORD  N>
                                        .ENDM
        032450                          M$GNINS <.WORD  ERR501>
                                        .IF LT SVCINS
                                        .WORD   ERR501
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                .WORD   ERR501
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
        032450  003672                                                                          .WORD   ERR501
                                                        .NLIST
                                        .ENDC
                                        .IFF
                                        M$WORD  0
                                        .ENDC
   4682 032452                                  CKLOOP                          ;BRANCH BACK TO BGNSEG IF ERRLOOP IS SET
                                        .MCALL  M$SVC
        032452                          M$SVC   C$CLP1
                                        .MCALL  M$GNINS,M$TSTLAB
        032452                          M$TSTLAB
                                        .MCALL  M$TLABEL,M$INCR
                                        .IIF LT T$TSTMAC, .MEXIT
                                        .RADIX  10
                                        M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                        .RADIX  8
                                        M$INCR  T$TSTSEQ
        032452                          M$GNINS <TRAP   C$CLP1>
                                        .IF LT SVCINS
                                        TRAP    C$CLP1
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
```

```
                                                        TRAP    C$CLP1
                                                                .NLIST
                                                .MEXIT
                                                .ENDC
                                                .IF GT SVCINS
                                                .LIST
     032452  104406                                                                                  TRAP    C$CLP1
                                                                .NLIST
                                                .ENDC
4683 032454  017737  147576  002502     42$:    MOV     @ISRX,BAD               ;GET ISR1 CONTENTS
4684 032462  023737  002446  002502             CMP     CDAT6,BAD               ;ATN,DAV,NDAC,NRFD,ATN,LPAS(ULPA) IS SET
4685 032470  001410                             BEQ     43$                     ;BRANCH IF YES
4686 032472  013737  002446  002500             MOV     CDAT6,GOOD              ;SET UP DATA FOR ERROR MESSAGE
4687 032500                                     ERRSOFT 905,E502,ERR501         ;ERROR HANDLER
                                                .MCALL  M$ERRINS
     032500                                     M$ERRINS        905,E502,ERR501,C$ERSOFT
                                                .MCALL  M$GNINS,M$WORD,M$TSTLAB
     032500                                     M$SVC   C$ERSOFT
                                                .MCALL  M$GNINS,M$TSTLAB
     032500                                     M$TSTLAB
                                                .MCALL  M$TLABEL,M$INCR
                                                .IIF LT T$TSTMAC, .MEXIT
                                                .RADIX  10
                                                M$TLABEL        \T$TESTNUM,\T$TSTSEQ
                                                .RADIX  8
                                                M$INCR  T$TSTSEQ
     032500                                     M$GNINS <TRAP   C$ERSOFT>
                                                .IF LT SVCINS
                                                TRAP    C$ERSOFT
                                                .MEXIT
                                                .ENDC
                                                .IF EQ SVCINS
                                                .LIST
                                                        TRAP    C$ERSOFT
                                                                .NLIST
                                                .MEXIT
                                                .ENDC
                                                .IF GT SVCINS
                                                .LIST
     032500  104457                                                                                  TRAP    C$ERSOFT
                                                                .NLIST
                                                .ENDC
             000012                             .RADIX  10
                                                .IF NB  905
             001611                             T$ERRNUM=905
                                                .IFF
                                                .ERROR  ;MISSING ERROR NR
                                                .ENDC
     032502                                     M$WORD  \T$ERRNUM
                                                .MCALL  M$GNINS
                                                .IRP    N,<905>
                                                M$GNINS <.WORD  N>
                                                .ENDM
     032502                                     M$GNINS <.WORD  905>
                                                .IF LT SVCINS
                                                .WORD   905
                                                .MEXIT
```

```
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                .WORD   905
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
        032502  001611                                                                          .WORD   905
                                                        .NLIST
                                        .ENDC
                000010                  .RADIX  8
                                        .IF NB E502
        0325C-                          M$WORD  E502
                                        .MCALL  M$GNINS
                                        .IRP    N,<E502>
                                        M$GNINS <.WORD  N>
                                        .ENDM
        032504                          M$GNINS <.WORD  E502>
                                        .IF LT SVCINS
                                        .WORD   E502
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                .WORD   E502
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
        032504  005437                                                                          .WORD   E502
                                                        .NLIST
                                        .ENDC
                                        .IFF
                                        M$WORD  0
                                        .ENDC
                                        .IF NB ERR501
        032506                          M$WORD  ERR501
                                        .MCALL  M$GNINS
                                        .IRP    N,<ERR501>
                                        M$GNINS <.WORD  N>
                                        .ENDM
        032506                          M$GNINS <.WORD  ERR501>
                                        .IF LT SVCINS
                                        .WORD   ERR501
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                .WORD   ERR501
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
```

J11


```
       032506  003672                                                                                    .WORD   ERR501
                                                                      .NLIST
                                                      .ENDC
                                                      .IFF
                                                      M$WORD  0
                                                      .ENDC
  4688 032510                                                 CKLOOP                           ;BRANCH BACK TO BGNSEG IF ERRLOOP IS SET
                                                      .MCALL  M$SVC
       032510                                         M$SVC   C$CLP1
                                                      .MCALL  M$GNINS,M$TSTLAB
       032510                                         M$TSTLAB
                                                      .MCALL  M$TLABEL,M$INCR
                                                      .IIF LT T$TSTMAC, .MEXIT
                                                      .RADIX  10
                                                      M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                                      .RADIX  8
                                                      M$INCR  T$TSTSEQ
       032510                                         M$GNINS <TRAP   C$CLP1>
                                                      .IF LT SVCINS
                                                      TRAP    C$CLP1
                                                      .MEXIT
                                                      .ENDC
                                                      .IF EQ SVCINS
                                                      .LIST
                                                              TRAP    C$CLP1
                                                                      .NLIST
                                                      .MEXIT
                                                      .ENDC
                                                      .IF GT SVCINS
                                                      .LIST
       032510  104406                                                                                    TRAP    C$CLP1
                                                                      .NLIST
                                                      .ENDC
  4689 032512  017737  147546  002502                 43$:    MOV     @ICRX,BAD                ;GET ICR1 CONTENTS
  4690 032520  123737  002420  002502                         CMPB    MSA1,BAD                 ;MSA1 ADDRESS SHOULD BE SET
  4691 032526  001410                                         BEQ     44$                      ;BRANCH IF YES
  4692 032530  013737  002420  002500                         MOV     MSA1,GOOD                ;SET UP DATA FOR ERROR MESSAGE
  4693 032536                                                 ERRSOFT 906,E901,ERR501          ;ERROR HANDLER
                                                      .MCALL  M$ERRINS
       032536                                         M$ERRINS        906,E901,ERR501,C$ERSOFT
                                                      .MCALL  M$GNINS,M$WORD,M$TSTLAB
       032536                                         M$SVC   C$ERSOFT
                                                      .MCALL  M$GNINS,M$TSTLAB
       032536                                         M$TSTLAB
                                                      .MCALL  M$TLABEL,M$INCR
                                                      .IIF LT T$TSTMAC, .MEXIT
                                                      .RADIX  10
                                                      M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                                      .RADIX  8
                                                      M$INCR  T$TSTSEQ
       032536                                         M$GNINS <TRAP   C$ERSOFT>
                                                      .IF LT SVCINS
                                                      TRAP    C$ERSOFT
                                                      .MEXIT
                                                      .ENDC
                                                      .IF EQ SVCINS
                                                      .LIST
```

K11

```
                                        TRAP    C$ERSOFT
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
        032536  104457                                                  TRAP    C$ERSOFT
                                                .NLIST
                                .ENDC
                000012          .RADIX  10
                                .IF NB  906
                001612          T$ERRNUM=906
                                .IFF
                                .ERROR  ;MISSING ERROR-NR
                                .ENDC
        032540                  M$WORD  \T$ERRNUM
                                .MCALL  M$GNINS
                                .IRP    N,<906>
                                M$GNINS <.WORD  N>
                                .ENDM
        032540                  M$GNINS <.WORD  906>
                                .IF LT SVCINS
                                .WORD   906
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        .WORD   906
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
        032540  001612                                                  .WORD   906
                                                .NLIST
                                .ENDC
                000010          .RADIX  8
                                .IF NB E901
        032542                  M$WORD  E901
                                .MCALL  M$GNINS
                                .IRP    N,<E901>
                                M$GNINS <.WORD  N>
                                .ENDM
        032542                  M$GNINS <.WORD  E901>
                                .IF LT SVCINS
                                .WORD   E901
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        .WORD   E901
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
        032542  005634                                                  .WORD   E901
```

L11

```
                                        .NLIST
                        .ENDC
                        .IFF
                        M$WORD  0
                        .ENDC
                        .IF NB ERR501
     032544             M$WORD  ERR501
                        .MCALL  M$GNINS
                        .IRP    N,<ERR501>
                        M$GNINS <.WORD  N>
                        .ENDM
     032544             M$GNINS <.WORD  ERR501>
                        .IF LT SVCINS
                        .WORD   ERR501
                        .MEXIT
                        .ENDC
                        .IF EQ SVCINS
                        .LIST
                                .WORD   ERR501
                                        .NLIST
                        .MEXIT
                        .ENDC
                        .IF GT SVCINS
                        .LIST
     032544  003672                                                     .WORD   ERR501
                                        .NLIST
                        .ENDC
                        .IFF
                        M$WORD  0
                        .ENDC
4694 032546                     CKLOOP                          ;BRANCH BACK TO BGNSEG IF ERRLOOP IS SET
                        .MCALL  M$SVC
     032546             M$SVC   C$CLP1
                        .MCALL  M$GNINS,M$TSTLAB
     032546             M$TSTLAB
                        .MCALL  M$TLABEL,M$INCR
                        .IIF LT T$TSTMAC, .MEXIT
                        .RADIX  10
                        M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                        .RADIX  8
                        M$INCR  T$TSTSEQ
     032546             M$GNINS <TRAP   C$CLP1>
                        .IF LT SVCINS
                        TRAP    C$CLP1
                        .MEXIT
                        .ENDC
                        .IF EQ SVCINS
                        .LIST
                                TRAP    C$CLP1
                                        .NLIST
                        .MEXIT
                        .ENDC
                        .IF GT SVCINS
                        .LIST
     032546  104406                                                     TRAP    C$CLP1
                                        .NLIST
                        .ENDC
```


M11

```
 032550  052777  000010  147522  44$:    BIS     #10,@CSRX               ;SELECT CHANNEL 2
 032556  012737  000002  002374          MOV     #2,CHAN                 ;LOAD CHANNEL NUMBER
 032564  017737  147466  002502          MOV     @ISRX,BAD               ;GET ISR2 CONTENTS
 032572  022737  170040  002502          CMP     #170040,BAD             ;ATN,DAV,NDAC,ATN,NRFD SHOULD BE SET
 032600  001410                          BEQ     45$                     ;BRANCH IF YES
 032602  012737  170040  002500          MOV     #170040,GOOD            ;SET UP DATA FOR ERROR MESSAGE
 032610                                  ERRSOFT 907,E502,ERR501         ;ERROR HANDLER
                                 .MCALL  M$ERRINS
    032610                       M$ERRINS        907,E502,ERR501,C$ERSOFT
                                 .MCALL  M$GNINS,M$WORD,M$TSTLAB
    032610                       M$SVC   C$ERSOFT
                                 .MCALL  M$GNINS,M$TSTLAB
    032610                       M$TSTLAB
                                 .MCALL  M$TLABEL,M$INCR
                                 .IIF LT T$TSTMAC, .MEXIT
                                 .RADIX  10
                                 M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                 .RADIX  8
                                 M$INCR  T$TSTSEQ
    032610                       M$GNINS <TRAP   C$ERSOFT>
                                 .IF LT SVCINS
                                 TRAP    C$ERSOFT
                                 .MEXIT
                                 .ENDC
                                 .IF EQ SVCINS
                                 .LIST
                                         TRAP    C$ERSOFT
                                                 .NLIST
                                 .MEXIT
                                 .ENDC
                                 .IF GT SVCINS
                                 .LIST
    032610  104457                                                               TRAP    C$ERSOFT
                                                 .NLIST
                                 .ENDC
            000012               .RADIX  10
                                 .IF NB  907
            001613               T$ERRNUM=907
                                 .IFF
                                 .ERROR  ;MISSING ERROR-NR
                                 .ENDC
    032612                       M$WORD  \T$ERRNUM
                                 .MCALL  M$GNINS
                                 .IRP    N,<907>
                                 M$GNINS <.WORD  N>
                                 .ENDM
    032612                       M$GNINS <.WORD  907>
                                 .IF LT SVCINS
                                 .WORD   907
                                 .MEXIT
                                 .ENDC
                                 .IF EQ SVCINS
                                 .LIST
                                         .WORD   907
                                                 .NLIST
                                 .MEXIT
                                 .ENDC
```

```
                                .IF GT SVCINS
                                .LIST
      032612  001613                                                                    .WORD   907
                                          .NLIST
                                .ENDC
              000010            .RADIX  8
                                .IF NB E502
      032614                    M$WORD  E502
                                .MCALL  M$GNINS
                                .IRP    N,<E502>
                                M$GNINS <.WORD  N>
                                .ENDM
      032614                    M$GNINS <.WORD  E502>
                                .IF LT SVCINS
                                .WORD   E502
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                     .WORD   E502
                                          .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
      032614  005437                                                                    .WORD   E502
                                          .NLIST
                                .ENDC
                                .IFF
                                M$WORD  0
                                .ENDC
                                .IF NB ERR501
      032616                    M$WORD  ERR501
                                .MCALL  M$GNINS
                                .IRP    N,<ERR501>
                                M$GNINS <.WORD  N>
                                .ENDM
      032616                    M$GNINS <.WORD  ERR501>
                                .IF LT SVCINS
                                .WORD   ERR501
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                     .WORD   ERR501
                                          .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
      032616  003672                                                                    .WORD   ERR501
                                          .NLIST
                                .ENDC
                                .IFF
                                M$WORD  0
                                .ENDC
 4702 032620                        CKLOOP                          ;BRANCH BACK TO BGNSEG IF ERRLOOP IS SET
```

TEST 9: SECONDARY ADDRESSING TEST OF CHANNEL 1 (LISTENER)

```
                                        .MCALL  M$SVC
     032620                             M$SVC   C$CLP1
                                        .MCALL  M$GNINS,M$TSTLAB
     032620                             M$TSTLAB
                                        .MCALL  M$TLABEL,M$INCR
                                        .IIF LT T$TSTMAC, .MEXIT
                                        .RADIX  10
                                        M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                        .RADIX  8
                                        M$INCR  T$TSTSEQ
     032620                             M$GNINS <TRAP   C$CLP1>
                                        .IF LT SVCINS
                                        TRAP    C$CLP1
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                TRAP    C$CLP1
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
     032620  104406                                                                                     TRAP    C$CLP1
                                                        .NLIST
                                        .ENDC
     032622  042777  000010  147450     45$:    BIC     #10,@CSRX               ;SELECT CHANNEL 1
     032630  012737  000001  002374             MOV     #1,CHAN                 ;LOAD CHANNEL NUMBER
     032636  112777  000201  147424             MOVB    #201,@ICRHX             ;-----LOAD DACR INTO ACR1-----------
     032644  017737  147406  002402             MOV     @ISRX,RSAVE             ;GET ISR1 CONTENTS
     032652  023737  002444  002402             CMP     CDAT5,RSAVE             ;ATN,NDAC,ATN,LADS,LPAS (ULPA) IS SET
     032660  001413                             BEQ     46$                     ;BRANCH IF YES
     032662  013737  002444  002500             MOV     CDAT5,GOOD              ;SET UP DATA FOR ERROR MESSAGE
     032670  013737  002402  002502             MOV     RSAVE,BAD               ;...
     032676                                     ERRSOFT 908,E502,ERR501         ;ERROR HANDLER
                                        .MCALL  M$ERRINS
     032676                             M$ERRINS        908,E502,ERR501,C$ERSOFT
                                        .MCALL  M$GNINS,M$WORD,M$TSTLAB
     032676                             M$SVC   C$ERSOFT
                                        .MCALL  M$GNINS,M$TSTLAB
     032676                             M$TSTLAB
                                        .MCALL  M$TLABEL,M$INCR
                                        .IIF LT T$TSTMAC, .MEXIT
                                        .RADIX  10
                                        M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                        .RADIX  8
                                        M$INCR  T$TSTSEQ
     032676                             M$GNINS <TRAP   C$ERSOFT>
                                        .IF LT SVCINS
                                        TRAP    C$ERSOFT
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                TRAP    C$ERSOFT
                                                        .NLIST
                                        .MEXIT
```

```
                                   .ENDC
                                   .IF GT SVCINS
                                   .LIST
      032676  104457                                                             TRAP    C$ERSOFT
                                               .NLIST
                                   .ENDC
              000012               .RADIX  10
                                   .IF NB  908
              001614               T$ERRNUM=908
                                   .IFF
                                   .ERROR  ;MISSING ERROR-NR
                                   .ENDC
      032700                       M$WORD  \T$ERRNUM
                                   .MCALL  M$GNINS
                                   .IRP    N,<908>
                                   M$GNINS <.WORD  N>
                                   .ENDM
      032700                       M$GNINS <.WORD  908>
                                   .IF LT SVCINS
                                   .WORD   908
                                   .MEXIT
                                   .ENDC
                                   .IF EQ SVCINS
                                   .LIST
                                           .WORD   908
                                                   .NLIST
                                   .MEXIT
                                   .ENDC
                                   .IF GT SVCINS
                                   .LIST
      032700  001614                                                             .WORD   908
                                               .NLIST
                                   .ENDC
              000010               .RADIX  8
                                   .IF NB E502
      032702                       M$WORD  E502
                                   .MCALL  M$GNINS
                                   .IRP    N,<E502>
                                   M$GNINS <.WORD  N>
                                   .ENDM
      032702                       M$GNINS <.WORD  E502>
                                   .IF LT SVCINS
                                   .WORD   E502
                                   .MEXIT
                                   .ENDC
                                   .IF EQ SVCINS
                                   .LIST
                                           .WORD   E502
                                                   .NLIST
                                   .MEXIT
                                   .ENDC
                                   .IF GT SVCINS
                                   .LIST
      032702  005437                                                             .WORD   E502
                                               .NLIST
                                   .ENDC
                                   .IFF
```

D12


```
                                        M$WORD  0
                                        .ENDC
                                        .IF NB ERR501
      032704                            M$WORD  ERR501
                                        .MCALL  M$GNINS
                                        .IRP    N,<ERR501>
                                        M$GNINS <.WORD  N>
                                        .ENDM
      032704                            M$GNINS <.WORD  ERR501>
                                        .IF LT SVCINS
                                        .WORD   ERR501
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                .WORD   ERR501
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
      032704  003672                                                                    .WORD   ERR501
                                                        .NLIST
                                        .ENDC
                                        .IFF
                                        M$WORD  0
                                        .ENDC
 4712 032706                                    CKLOOP                  ;BRANCH BACK TO BGNSEG IF ERRLOOP IS SET
                                        .MCALL  M$SVC
      032706                            M$SVC   C$CLP1
                                        .MCALL  M$GNINS,M$TSTLAB
      032706                            M$TSTLAB
                                        .MCALL  M$TLABEL,M$INCR
                                        .IIF LT T$TSTMAC, .MEXIT
                                        .RADIX  10
                                        M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                        .RADIX  8
                                        M$INCR  T$TSTSEQ
      032706                            M$GNINS <TRAP   C$CLP1>
                                        .IF LT SVCINS
                                        TRAP    C$CLP1
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                TRAP    C$CLP1
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
      032706  104406                                                                    TRAP    C$CLP1
                                                        .NLIST
                                        .ENDC
 4713 032710  052777  000010  147362    46$:    BIS     #10,@CSRX       ;SELECT CHANNEL 2
 4714 032716  012737  000002  002374            MOV     #2,CHAN         ;LOAD CHANNEL NUMBER
 4715 032724  017737  147320  002402            MOV     @IIRX,RSAVE     ;GET IIR2 CONTENTS
```


E12

```
4716 032732 022737 000020 002402          CMP     #20,RSAVE              ;B0 BIT SHOULD BE SET
4717 032740 001413                         BEQ     50$                    ;BRANCH IF YES
4718 032742 012737 000020 002500          MOV     #20,GOOD               ;SET UP DATA FOR ERROR MESSAGE
4719 032750 013737 002402 002502          MOV     RSAVE,BAD              ;...
4720 032756                               ERRSOFT 909,E501,ERR501        ;ERROR HANDLER
                                  .MCALL  M$ERRINS
     032756                       M$ERRINS        909,E501,ERR501,C$ERSOFT
                                  .MCALL  M$GNINS,M$WORD,M$TSTLAB
     032756                       M$SVC   C$ERSOFT
                                  .MCALL  M$GNINS,M$TSTLAB
     032756                       M$TSTLAB
                                  .MCALL  M$TLABEL,M$INCR
                                  .IIF LT T$TSTMAC, .MEXIT
                                  .RADIX  10
                                  M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                  .RADIX  8
                                  M$INCR  T$TSTSEQ
     032756                       M$GNINS <TRAP   C$ERSOFT>
                                  .IF LT SVCINS
                                  TRAP    C$ERSOFT
                                  .MEXIT
                                  .ENDC
                                  .IF EQ SVCINS
                                  .LIST
                                          TRAP    C$ERSOFT
                                                  .NLIST
                                  .MEXIT
                                  .ENDC
                                  .IF GT SVCINS
                                  .LIST
     032756 104457                                                                      TRAP    C$ERSOFT
                                                  .NLIST
                                  .ENDC
            000012                .RADIX  10
                                  .IF NB  909
            001615                T$ERRNUM=909
                                  .IFF
                                  .ERROR  ;MISSING ERROR-NR
                                  .ENDC
     032760                       M$WORD  \T$ERRNUM
                                  .MCALL  M$GNINS
                                  .IRP    N,<909>
                                  M$GNINS <.WORD  N>
                                  .ENDM
     032760                       M$GNINS <.WORD  909>
                                  .IF LT SVCINS
                                  .WORD   909
                                  .MEXIT
                                  .ENDC
                                  .IF EQ SVCINS
                                  .LIST
                                          .WORD   909
                                                  .NLIST
                                  .MEXIT
                                  .ENDC
                                  .IF GT SVCINS
                                  .LIST
```

```
       032760  001615                                        .WORD   909
                                          .NLIST
                           .ENDC
               000010      .RADIX  8
                           .IF NB E501
       032762              M$WORD  E501
                           .MCALL  M$GNINS
                           .IRP    N,<E501>
                           M$GNINS <.WORD  N>
                           .ENDM
       032762              M$GNINS <.WORD  E501>
                           .IF LT SVCINS
                           .WORD   E501
                           .MEXIT
                           .ENDC
                           .IF EQ SVCINS
                           .LIST
                                   .WORD   E501
                                          .NLIST
                           .MEXIT
                           .ENDC
                           .IF GT SVCINS
                           .LIST
       032762  005376                                        .WORD   E501
                                          .NLIST
                           .ENDC
                           .IFF
                           M$WORD  0
                           .ENDC
                           .IF NB ERR501
       032764              M$WORD  ERR501
                           .MCALL  M$GNINS
                           .IRP    N,<ERR501>
                           M$GNINS <.WORD  N>
                           .ENDM
       032764              M$GNINS <.WORD  ERR501>
                           .IF LT SVCINS
                           .WORD   ERR501
                           .MEXIT
                           .ENDC
                           .IF EQ SVCINS
                           .LIST
                                   .WORD   ERR501
                                          .NLIST
                           .MEXIT
                           .ENDC
                           .IF GT SVCINS
                           .LIST
       032764  003672                                        .WORD   ERR501
                                          .NLIST
                           .ENDC
                           .IFF
                           M$WORD  0
                           .ENDC
  4721 032766                      CKLOOP              ;BRANCH BACK TO BGNSEG IF ERRLOOP IS SET
                           .MCALL  M$SVC
       032766              M$SVC   C$CLP1
```

G12

TEST 9: SECONDARY ADDRESSING TEST OF CHANNEL 1 (LISTENER)

```
                                                  .MCALL  M$GNINS,M$TSTLAB
     032766                                       M$TSTLAB
                                                  .MCALL  M$TLABEL,M$INCR
                                                  .IIF LT T$TSTMAC, .MEXIT
                                                  .RADIX  10
                                                  M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                                  .RADIX  8
                                                  M$INCR  T$TSTSEQ
     032766                                       M$GNINS <TRAP   C$CLP1>
                                                  .IF LT SVCINS
                                                  TRAP    C$CLP1
                                                  .MEXIT
                                                  .ENDC
                                                  .IF EQ SVCINS
                                                  .LIST
                                                          TRAP    C$CLP1
                                                                  .NLIST
                                                  .MEXIT
                                                  .ENDC
                                                  .IF GT SVCINS
                                                  .LIST
     032766  104406                                                                                TRAP    C$CLP1
                                                                  .NLIST
                                                  .ENDC
4722 032770  112777  000077  147300               50$:    MOVB    #77,@IDRHX              ;---LOAD UNL INTO DOR2- --------- ------
4723 032776                                               ENDSEG
                                                  .MCALL  M$POP,M$GNLS,M$SVC,M$ENDERR
     032776                                       M$POP   T$NS,T$NESTLEV,T$TEMP
                                                  .MCALL  M$GETS,M$DECR
                                                  .IF LT  T$NESTLEV
                                                  .ERROR  T$NESTLEV       ; MACRO T$NS UNDERFLOW
                                                  .MEXIT
                                                  .ENDC
     032776                                       M$GETS  T$NS,\T$NESTLEV,T$TEMP
             000003                               T$TEMP=T$NS2
     032776                                       M$DECR  T$NESTLEV
             000001                               T$NESTLEV=T$NESTLEV-1
                                                  .IF EQ F$SEG-T$TEMP
     032776                                       M$POP   T$SEK,T$SEGLEV,T$$SEG
                                                  .MCALL  M$GETS,M$DECR
                                                  .IF LT  T$SEGLEV
                                                  .ERROR  T$SEGLEV        ; MACRO T$SEK UNDERFLOW
                                                  .MEXIT
                                                  .ENDC
     032776                                       M$GETS  T$SEK,\T$SEGLEV,T$$SEG
             010000                               T$$SEG=T$SEK0
     032776                                       M$DECR  T$SEGLEV
             177777                               T$SEGLEV=T$SEGLEV-1
     032776                                       M$GNLS  T$$SEG
                                                  .MCALL  M$GEN
                                                  .IF NB T$$SEG
     032776                                       M$GEN   \T$$SEG,$,SVCTAG
                                                  .IF LE  SVCTAG
                                                  .IIF EQ SVCTAG,.LIST
                                                  10000$:
                                                  .IIF EQ SVCTAG,.NLIST
                                                  .MEXIT
```

H12

```
                                .ENDC
                                .LIST
       032776                                                                10000$:
                                        .NLIST
                                .IFF
                                M$GEN   \S$LSYM,$,SVCTAG
                                .ENDC
       032776                   M$SVC   C$ESEG
                                .MCALL  M$GNINS,M$TSTLAB
       032776                   M$TSTLAB
                                .MCALL  M$TLABEL,M$INCR
                                .IIF LT T$TSTMAC, .MEXIT
                                .RADIX  10
                                M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                .RADIX  8
                                M$INCR  T$TSTSEQ
       032776                   M$GNINS <TRAP   C$ESEG>
                                .IF LT SVCINS
                                TRAP    C$ESEG
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        TRAP    C$ESEG
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
       032776  104405                                                             TRAP    C$ESEG
                                                .NLIST
                                .ENDC
                                .IF EQ T$SEGLEV+1
               000041           I$SEG=F$END
                                .ENDC
                                .IFF
                                M$ENDERR        ENDSEG,T$TEMP
                                .ENDC
  4724 033000                   COPA9:  BGNSEG
                                .MCALL  M$PUSH,M$INCR,M$SVC
               000040           I$SEG=F$BGN
       033000                   M$PUSH  T$NS,T$NESTLEV,F$SEG
                                .MCALL  M$INCR,M$SETS
       033000                   M$INCR  T$NESTLEV
               000002           T$NESTLEV=T$NESTLEV+1
       033000                   M$SETS  T$NS,\T$NESTLEV,F$SEG
               000003           T$NS2=F$SEG
               010001           T$$SEG=S$LSYM
       033000                   M$PUSH  T$SEK,T$SEGLEV,T$$SEG
                                .MCALL  M$INCR,M$SETS
       033000                   M$INCR  T$SEGLEV
               000000           T$SEGLEV=T$SEGLEV+1
       033000                   M$SETS  T$SEK,\T$SEGLEV,T$$SEG
               010001           T$SEK0=T$$SEG
       033000                   M$INCR  S$LSYM
               010002           S$LSYM=S$LSYM+1
       033000                   M$SVC   C$BSEG
```

TEST 9: SECONDARY ADDRESSING TEST OF CHANNEL 1 (LISTENER)

```
                                                .MCALL  M$GNINS,M$TSTLAB
     033000                                     M$TSTLAB
                                                .MCALL  M$TLABEL,M$INCR
                                                .IIF LT T$TSTMAC, .MEXIT
                                                .RADIX  10
                                                M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                                .RADIX  8
                                                M$INCR  T$TSTSEQ
     033000                                     M$GNINS <TRAP   C$BSEG>
                                                .IF LT SVCINS
                                                TRAP    C$BSEG
                                                .MEXIT
                                                .ENDC
                                                .IF EQ SVCINS
                                                .LIST
                                                        TRAP    C$BSEG
                                                                .NLIST
                                                .MEXIT
                                                .ENDC
                                                .IF GT SVCINS
                                                .LIST
     033000  104404                                                                                     TRAP    C$BSEG
                                                                .NLIST
                                                .ENDC
     033002  052777  000010  147270                     BIS     #10,@CSRX               ;SELECT CHANNEL 2
     033010  012737  000002  002374                     MOV     #2,CHAN                 ;LOAD CHANNEL NUMBER
     033016  113777  002410  147252                     MOVB    MLA1,@IDRHX             ;----LOAD LISTENER ADDRESS OF CHANNEL 2--
     033024  004737  011050                             JSR     PC,LOOP                 ;WAIT A LITTLE
     033030  042777  000010  147242                     BIC     #10,@CSRX               ;SELECT CHANNEL 1
     033036  012737  000001  002374                     MOV     #1,CHAN                 ;LOAD CHANNEL NUMBER
     033044  017737  147200  002502                     MOV     @IIRX,BAD               ;GET IIR1 CONTENTS
     033052  022737  000001  002502                     CMP     #1,BAD                  ;MAC BIT IN IIR1 SHOULD BE SET
     033060  001410                                     BEQ     30$                     ;BRANCH IF YES
     033062  012737  000001  002500                     MOV     #1,GOOD                 ;SET UP DATA FOR ERROR MESSAGES
     033070                                             ERRSOFT 910,E501,ERR501         ;ERROR HANDLER
                                                .MCALL  M$ERRINS
     033070                                     M$ERRINS        910,E501,ERR501,C$ERSOFT
                                                .MCALL  M$GNINS,M$WORD,M$TSTLAB
     033070                                     M$SVC   C$ERSOFT
                                                ..1CALL  M$GNINS,M$TSTLAB
     033070                                     M$TSTLAB
                                                .MCALL  M$TLABEL,M$INCR
                                                .IIF LT T$TSTMAC, .MEXIT
                                                .RADIX  10
                                                M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                                .RADIX  8
                                                M$INCR  T$TSTSEQ
     033070                                     M$GNINS <TRAP   C$ERSOFT>
                                                .IF LT SVCINS
                                                TRAP    C$ERSOFT
                                                .MEXIT
                                                .ENDC
                                                .IF EQ SVCINS
                                                .LIST
                                                        TRAP    C$ERSOFT
                                                                .NL1ST
                                                .MEXIT
```

J12

```
                        .ENDC
                        .IF GT SVCINS
                        .LIST
033070  104457                                                  TRAP    C$ERSOFT
                                .NLIST
                        .ENDC
        000012          .RADIX  10
                        .IF NB  910
        001616          T$ERRNUM=910
                        .IFF
                        .ERROR  ;MISSING ERROR NR
                        .ENDC
033072                  M$WORD  \T$ERRNUM
                        .MCALL  M$GNINS
                        .IRP    N,<910>
                        M$GNINS <.WORD  N>
                        .ENDM
033072                  M$GNINS <.WORD  910>
                        .IF LT SVCINS
                        .WORD   910
                        .MEXIT
                        .ENDC
                        .IF EQ SVCINS
                        .LIST
                                .WORD   910
                                .NLIST
                        .MEXIT
                        .ENDC
                        .IF GT SVCINS
                        .LIST
033072  001616                                                  .WORD   910
                                .NLIST
                        .ENDC
        000010          .RADIX  8
                        .IF NB E501
033074                  M$WORD  E501
                        .MCALL  M$GNINS
                        .IRP    N,<E501>
                        M$GNINS <.WORD  N>
                        .ENDM
033074                  M$GNINS <.WORD  E501>
                        .IF LT SVCINS
                        .WORD   E501
                        .MEXIT
                        .ENDC
                        .IF EQ SVCINS
                        .LIST
                                .WORD   E501
                                .NLIST
                        .MEXIT
                        .ENDC
                        .IF GT SVCINS
                        .LIST
033074  005376                                                  .WORD   E501
                                .NLIST
                        .ENDC
                        .IFF
```

78 8018 36754

K12

```
                                        M$WORD  0
                                        .ENDC
                                        .IF NB ERR501
      033076                            M$WORD  ERR501
                                        .MCALL  M$GNINS
                                        .IRP    N,<ERR501>
                                        M$GNINS <.WORD  N>
                                        .ENDM
      033076                            M$GNINS <.WORD  ERR501>
                                        .IF LT SVCINS
                                        .WORD   ERR501
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                .WORD   ERR501
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
      033076  003672                                                                    .WORD   ERR501
                                                        .NLIST
                                        .ENDC
                                        .IFF
                                        M$WORD  0
                                        .ENDC
4736  033100                                    CKLOOP                  ;BRANCH TO BGNSEG WHEN ERRLOOP IS SET
                                        .MCALL  M$SVC
      033100                            M$SVC   C$CLP1
                                        .MCALL  M$GNINS,M$TSTLAB
      033100                            M$TSTLAB
                                        .MCALL  M$TLABEL,M$INCR
                                        .IIF LT T$TSTMAC, .MEXIT
                                        .RADIX  10
                                        M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                        .RADIX  8
                                        M$INCR  T$TSTSEQ
      033100                            M$GNINS <TRAP   C$CLP1>
                                        .IF LT SVCINS
                                        TRAP    C$CLP1
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                TRAP    C$CLP1
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
      033100  104406                                                                    TRAP    C$CLP1
                                                        .NLIST
                                        .ENDC
4737  033102  052777  000010  147170    30$:    BIS     #10,@CSRX       ;SELECT CHANNEL 2
4738  033110  012737  000002  002374            MOV     #2,CHAN         ;LOAD CHANNEL NUMBER
4739  033116  013701  002410                    MOV     MLA1,R1         ;GET MLA1
```

TEST 9: SECONDARY ADDRESSING TEST OF CHANNEL 1 (LISTENER)

```
033122  062701  000100                    ADD     #100,R1                  ;CREATE MSA1
033126  010137  002420                    MOV     R1,MSA1                  ;STORE MSA1 TO LOCATION MSA1
033132  113777  002420  147136            MOVB    MSA1,@IDRHX              ;------LOAD MSA1 INTO DOR2----------
033140  004737  011050                    JSR     PC,LOOP                  ;WAIT A LITTLE
033144  042777  000010  147126            BIC     #10,@CSRX                ;SELECT CHANNEL 1
033152  012737  000001  002374            MOV     #1,CHAN                  ;LOAD CHANNEL NUMBER
033160  112777  000001  147102            MOVB    #1,@ICRHX                ;-----LOAD NOT DACR INTO ACR1--- ----
033166  017737  147056  002502            MOV     @IIRX,BAD                ;READ IIR1 FOR CLEAR THE BITS
033174  017737  147056  002502            MOV     @ISRX,BAD                ;GET ISR1 CONTENTS
033202  023737  002442  002502            CMP     CDAT4,BAD                ;ATN,NDAC,ATN,LPAS (ULPA) IS SET
033210  001410                            BEQ     46$                      ;BRANCH IF YES
033212  013737  002442  002500            MOV     CDAT4,GOOD               ;SET UP DATA FOR ERROR MESSAGE
033220                                    ERRSOFT 911,E502,ERR501          ;ERROR HANDLER
                                  .MCALL  M$ERRINS
033220                            M$ERRINS        911,E502,ERR501,C$ERSOFT
                                  .MCALL  M$GNINS,M$WORD,M$TSTLAB
033220                            M$SVC   C$ERSOFT
                                  .MCALL  M$GNINS,M$TSTLAB
033220                            M$TSTLAB
                                  .MCALL  M$TLABEL,M$INCR
                                  .IIF LT T$TSTMAC, .MEXIT
                                  .RADIX  10
                                  M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                  .RADIX  8
                                  M$INCR  T$TSTSEQ
033220                            M$GNINS <TRAP   C$ERSOFT>
                                  .IF LT SVCINS
                                  TRAP    C$ERSOFT
                                  .MEXIT
                                  .ENDC
                                  .IF EQ SVCINS
                                  .LIST
                                          TRAP    C$ERSOFT
                                                  .NLIST
                                  .MEXIT
                                  .ENDC
                                  .IF GT SVCINS
                                  .LIST
033220  104457                                                                                   TRAP    C$ERSOFT
                                                  .NLIST
                                  .ENDC
        000012                    .RADIX  10
                                  .IF NB  911
        001617                    T$ERRNUM=911
                                  .IFF
                                  .ERROR  ;MISSING ERROR-NR
                                  .ENDC
033222                            M$WORD  \T$ERRNUM
                                  .MCALL  M$GNINS
                                  .IRP    N,<911>
                                  M$GNINS <.WORD  N>
                                  .ENDM
033222                            M$GNINS <.WORD  911>
                                  .IF LT SVCINS
                                  .WORD   911
                                  .MEXIT
                                  .ENDC
```

```
                        .IF EQ SVCINS
                        .LIST
                                .WORD   911
                                        .NLIST
                        .MEXIT
                        .ENDC
                        .IF GT SVCINS
                        .LIST
033222  001617                                                          .WORD   911
                                        .NLIST
                        .ENDC
        000010          .RADIX  8
                        .IF NB E502
033224                  M$WORD  E502
                        .MCALL  M$GNINS
                        .IRP    N,<E502>
                        M$GNINS <.WORD  N>
                        .ENDM
033224                  M$GNINS <.WORD  E502>
                        .IF LT SVCINS
                        .WORD   E502
                        .MEXIT
                        .ENDC
                        .IF EQ SVCINS
                        .LIST
                                .WORD   E502
                                        .NLIST
                        .MEXIT
                        .ENDC
                        .IF GT SVCINS
                        .LIST
033224  005437                                                          .WORD   E502
                                        .NLIST
                        .ENDC
                        .IFF
                        M$WORD  0
                        .ENDC
                        .IF NB ERR501
033226                  M$WORD  ERR501
                        .MCALL  M$GNINS
                        .IRP    N,<ERR501>
                        M$GNINS <.WORD  N>
                        .ENDM
033226                  M$GNINS <.WORD  ERR501>
                        .IF LT SVCINS
                        .WORD   ERR501
                        .MEXIT
                        .ENDC
                        .IF EQ SVCINS
                        .LIST
                                .WORD   ERR501
                                        .NLIST
                        .MEXIT
                        .ENDC
                        .IF GT SVCINS
                        .LIST
033226  003672                                                          .WORD   ERR501
```

```
                                                        .NLIST
                                        .ENDC
                                        .IFF
                                        M$WORD  0
                                        .ENDC
 4753 033230                                    CKLOOP                          ;BRANCH BACK TO BGNSEG IF ERRLOOP IS SET
                                        .MCALL  M$SVC
      033230                            M$SVC   C$CLP1
                                        .MCALL  M$GNINS,M$TSTLAB
      033230                            M$TSTLAB
                                        .MCALL  M$TLABEL,M$INCR
                                        .IIF LT T$TSTMAC, .MEXIT
                                        .RADIX  10
                                        M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                        .RADIX  8
                                        M$INCR  T$TSTSEQ
      033230                            M$GNINS <TRAP   C$CLP1>
                                        .IF LT SVCINS
                                        TRAP    C$CLP1
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                TRAP    C$CLP1
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
      033230 104406                                                                             TRAP    C$CLP1
                                                        .NLIST
                                        .ENDC
 4754 033232 052777 000010 147040       46$:    BIS     #10,@CSRX               ;SELECT CHANNEL 2
 4755 033240 012737 000002 002374               MOV     #2,CHAN                 ;LOAD CHANNEL NUMBER
 4756 033246 017737 146776 002502               MOV     @IIRX,BAD               ;GET IIR2 CONTENTS
 4757 033254 022737 000020 002502               CMP     ;20,BAD                 ;BO BIT SHOULD BE SET
 4758 033262 001410                             BEQ     50$                     ;BRANCH IF YES
 4759 033264 012737 000020 002500               MOV     #20,GOOD                ;SET UP DATA FOR ERROR MESSAGE
 4760 033272                                    ERRSOFT 912,E501,ERR501         ;ERROR HANDLER
                                        .MCALL  M$ERRINS
      033272                            M$ERRINS        912,E501,ERR501,C$ERSOFT
                                        .MCALL  M$GNINS,M$WORD,M$TSTLAB
      033272                            M$SVC   C$ERSOFT
                                        .MCALL  M$GNINS,M$TSTLAB
      033272                            M$TSTLAB
                                        .MCALL  M$TLABEL,M$INCR
                                        .IIF LT T$TSTMAC, .MEXIT
                                        .RADIX  10
                                        M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                        .RADIX  8
                                        M$INCR  T$TSTSEQ
      033272                            M$GNINS <TRAP   C$ERSOFT>
                                        .IF LT SVCINS
                                        TRAP    C$ERSOFT
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
```

B13


```
                          .LIST
                                  TRAP      C$ERSOFT
                                            .NLIST
                          .MEXIT
                          .ENDC
                          .IF GT SVCINS
                          .LIST
033272  104457                                                              TRAP      C$ERSOFT
                                            .NLIST
                          .ENDC
        000012            .RADIX  10
                          .IF NB  912
        001620            T$ERRNUM=912
                          .IFF
                          .ERROR  ;MISSING ERROR-NR
                          .ENDC
033274                    M$WORD  \T$ERRNUM
                          .MCALL  M$GNINS
                          .IRP    N,<912>
                          M$GNINS <.WORD  N>
                          .ENDM
033274                    M$GNINS <.WORD  912>
                          .IF LT SVCINS
                          .WORD   912
                          .MEXIT
                          .ENDC
                          .IF EQ SVCINS
                          .LIST
                                  .WORD     912
                                            .NLIST
                          .MEXIT
                          .ENDC
                          .IF GT SVCINS
                          .LIST
033274  001620                                                              .WORD     912
                                            .NLIST
                          .ENDC
        000010            .RADIX  8
                          .IF NB E501
033276                    M$WORD  E501
                          .MCALL  M$GNINS
                          .IRP    N,<E501>
                          M$GNINS <.WORD  N>
                          .ENDM
033276                    M$GNINS <.WORD  E501>
                          .IF LT SVCINS
                          .WORD   E501
                          .MEXIT
                          .ENDC
                          .IF EQ SVCINS
                          .LIST
                                  .WORD     E501
                                            .NLIST
                          .MEXIT
                          .ENDC
                          .IF GT SVCINS
                          .LIST
```


C13

```
      033276  005376                                                     .WORD   E501
                                                .NLIST
                                .ENDC
                                .IFF
                                M$WORD  0
                                .ENDC
                                .IF NB ERR501
      033300                    M$WORD  ERR501
                                .MCALL  M$GNINS
                                .IRP    N,<ERR501>
                                M$GNINS <.WORD  N>
                                .ENDM
      033300                    M$GNINS <.WORD  ERR501>
                                .IF LT SVCINS
                                .WORD   ERR501
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        .WORD   ERR501
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
      033300  003672                                                     .WORD   ERR501
                                                .NLIST
                                .ENDC
                                .IFF
                                M$WORD  0
                                .ENDC
 4761 033302                            CKLOOP                  ;BRANCH BACK TO BGNSEG IF ERRLOOP IS SET
                                .MCALL  M$SVC
      033302                    M$SVC   C$CLP1
                                .MCALL  M$GNINS,M$TSTLAB
      033302                    M$TSTLAB
                                .MCALL  M$TLABEL,M$INCR
                                .IIF LT T$TSTMAC, .MEXIT
                                .RADIX  10
                                M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                .RADIX  8
                                M$INCR  T$TSTSEQ
      033302                    M$GNINS <TRAP   C$CLP1>
                                .IF LT SVCINS
                                TRAP    C$CLP1
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        TRAP    C$CLP1
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
      033302  104406                                                     TRAP    C$CLP1
                                                .NLIST
```

```
                                        .ENDC
 4762 033304  112777  000077  146764    50$:    MOVB    #77,@IDRHX              ;---LOAD UNL INTO COR2------------------
 4763 033312                                    ENDSEG
                                        .MCALL  M$POP,M$GNLS,M$SVC,M$ENDERR
      033312                            M$POP   T$NS,T$NESTLEV,T$TEMP
                                        .MCALL  M$GETS,M$DECR
                                        .IF LT  T$NESTLEV
                                        .ERROR  T$NESTLEV       ; MACRO T$NS UNDERFLOW
                                        .MEXIT
                                        .ENDC
      033312                            M$GETS  T$NS,\T$NESTLEV,T$TEMP
              000003                    T$TEMP=T$NS2
      033312                            M$DECR  T$NESTLEV
              000001                    T$NESTLEV=T$NESTLEV-1
                                        .IF EQ F$SEG-T$TEMP
      033312                            M$POP   T$SEK,T$SEGLEV,T$$SEG
                                        .MCALL  M$GETS,M$DECR
                                        .IF LT  T$SEGLEV
                                        .ERROR  T$SEGLEV        ; MACRO T$SEK UNDERFLOW
                                        .MEXIT
                                        .ENDC
      033312                            M$GETS  T$SEK,\T$SEGLEV,T$$SEG
              010001                    T$$SEG-T$SEK0
      033312                            M$DECR  T$SEGLEV
              177777                    T$SEGLEV=T$SEGLEV-1
      033312                            M$GNLS  T$$SEG
                                        .MCALL  M$GEN
                                        .IF NB T$$SEG
      033312                            M$GEN   \T$$SEG,$,SVCTAG
                                        .IF LE  SVCTAG
                                        .IIF EQ SVCTAG,.LIST
                                        10001$:
                                        .IIF EQ SVCTAG,.NLIST
                                        .MEXIT
                                        .ENDC
                                        .LIST
      033312                                                                        10001$:
                                                .NLIST
                                        .IFF
                                        M$GEN   \S$LSYM,$,SVCTAG
                                        .ENDC
      033312                            M$SVC   C$ESEG
                                        .MCALL  M$GNINS,M$TSTLAB
      033312                            M$TSTLAB
                                        .MCALL  M$TLABEL,M$INCR
                                        .IIF LT T$TSTMAC, .MEXIT
                                        .RADIX  10
                                        M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                        .RADIX  8
                                        M$INCR  T$TSTSEQ
      033312                            M$GNINS <TRAP   C$ESEG>
                                        .IF LT SVCINS
                                        TRAP    C$ESEG
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
```

TEST 9: SECONDARY ADDRESSING TEST OF CHANNEL 1 (LISTENER)

```
                                                TRAP    C$ESEG
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
     033312  104405                                                                             TRAP    C$ESEG
                                                        .NLIST
                                        .ENDC
                                        .IF EQ T$SEGLEV+1
             000041                     I$SEG=F$END
                                        .ENDC
                                        .IFF
                                        M$ENDERR        ENDSEG,T$TEMP
                                        .ENDC
     033314  005737  002234                     TST     QVP                     ;IS QUICK VERIFY PASS SELECTED
     033320  001054                             BNE     EXQV9                   ;IF YES EXIT TEST
     033322  005737  002322                     TST     ITRCNT                  ;IS THIS THE FIRST TIME THROUGH THE TEST
     033326  001007                             BNE     1$                      ;BRANCH IF NO
     033330  013737  002312  002406             MOV     DPA1,SDPA               ;SAVE ENTERED DPA1
     033336  005037  002312                     CLR     DPA1                    ;CLR DPA1
     033342  005237  002322                     INC     ITRCNT                  ;SET FLAG TO SEE FIRST TIME PASS
     033346  005237  002312             1$:     INC     DPA1                    ;GET NEW DPA1
     033352  023737  002312  002314             CMP     DPA1,DPA2               ;IS DPA1 = DPA2
     033360  001002                             BNE     2$                      ;BRANCH IF NO
     033362  005237  002312                     INC     DPA1                    ;INCREMENT DPA1
     033366  022737  000037  002312     2$:     CMP     #37,DPA1                ;ALL DONE
     033374  001423                             BEQ     3$                      ;BRANCH IF YES
     033376  052777  000010  146674             BIS     #10,@CSRX               ;SELECT CHANNEL 2
     033404  112777  000217  146656             MOVB    #217,@ICRHX             ;----LOAD SIC INTO ACR 2 ---- -
     033412  004737  011062                     JSR     PC,WAIT                 ;WAIT A LITTLE
     033416  112777  000017  146644             MOVB    #17,@ICRHX              ;----LOAD NOT SIC INTO ACR 2--- -
     033424  042777  000010  146646             BIC     #10,@CSRX               ;SELECT CHANNEL 1
     033432  113777  002312  146614             MOVB    DPA1,@IIRHX             ;LOAD NEW DPA1 INTO ADR1
     033440  000137  032030                     JMP     A9                      ;REPET THE TEST WITH THE NEW DPA1
     033444  013737  002406  002312     3$:     MOV     SDPA,DPA1               ;RESTORE ENTERED DPA1
     033452                             EXQV9:  EXIT TST
                                        .MCALL  M$SVC,M$EXIT,M$EXSEG,M$EXTJ,M$GETTOP,M$CHECK,M$WORD,XFER
             000041                     T$FLAG=F$END
     033452                             M$CHECK TST,T$TEMP,T$FLAG
                                        .IF IDN <TST>,<TST>
             010036                     T$TEMP=T$$TEST
             000040                     T$FLAG=I$TST
                                        .MEXIT
                                        .ENDC
                                        .IF IDN <SUB>,<TST>
                                        T$TEMP=T$$SUB
                                        T$FLAC=I$SUB
                                        .MEXIT
                                        .ENDC
                                        .IF IDN <SEG>,<TST>
                                        T$TEMP T$$SEG
                                        T$FLAG=I$SEG
                                        .MEXIT
                                        .ENDC
                                        .IF IDN <INIT>,<TST>
                                        T$TEMP=T$$INIT
```

```
                                        T$FLAG=I$INIT
                                        .MEXIT
                                        .ENDC
                                        .IF IDN <CLN>,<TST>
                                        T$TEMP=T$$CLEAN
                                        T$FLAG=I$CLN
                                        .MEXIT
                                        .ENDC
                                        .IF IDN <SRV>,<TST>
                                        T$TEMP=T$$SRV
                                        T$FLAG=I$SRV
                                        .MEXIT
                                        .ENDC
                                        .IF IDN <MSG>,<TST>
                                        T$TEMP=T$$MSG
                                        T$FLAG=F$JMP
                                        .MEXIT
                                        .ENDC
                                        .IF IDN <RPT>,<TST>
                                        T$TEMP=T$$RPT
                                        T$FLAG=F$JMP
                                        .MEXIT
                                        .ENDC
                                        .IF IDN <DU>,<TST>
                                        T$TEMP=T$$DU
                                        T$FLAG=F$JMP
                                        .MEXIT
                                        .ENDC
                                        .IF IDN <AU>,<TST>
                                        T$TEMP=T$$AU
                                        T$FLAG=F$JMP
                                        .MEXIT
                                        .ENDC
                                        .IF EQ T$FLAG F$JMP
                                        M$WORD  J$JMP
                                        M$EXTJ  \T$TEMP
                                        .MEXIT
                                        .ENDC
                                        .IF EQ  T$FLAG F$BGN
        033452                          M$SVC   C$EXIT
                                        .MCALL  M$GNINS,M$TSTLAB
        033452                          M$TSTLAB
                                        .MCALL  M$TLABEL,M$INCR
                                        .IIF LT T$TSTMAC, .MEXIT
                                        .RADIX  10
                                        M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                        .RADIX  8
                                        M$INCR  T$TSTSEQ
        033452                          M$GNINS <TRAP   C$EXI">
                                        .IF LT SVCINS
                                        TRAP    C$EXIT
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                TRAP    C$EXIT
                                                        .NLIST
```

```
                              .MEXIT
                              .ENDC
                              .IF GT SVCINS
                              .LIST
     033452  104432                                                            TRAP    C$EXIT
                                        .NLIST
                              .ENDC
                              .IF IDN <SEG>,<TST>
                              M$GETTOP T$SEK,T$SEGLEV,T$TEMP
                              M$EXSEG \T$TEMP
                              .IFF
     033454                   M$EXIT  \T$TEMP
                              .MCALL  M$GNINS
     033454                   M$GNINS <.WORD  L10036-.>
                              .IF LT SVCINS
                              .WORD   L10036-.
                              .MEXIT
                              .ENDC
                              .IF EQ SVCINS
                              .LIST
                                   .WORD   L10036-.
                                        .NLIST
                              .MEXIT
                              .ENDC
                              .IF GT SVCINS
                              .LIST
     033454  000074                                                            .WORD   L10036-.
                                        .NLIST
                              .ENDC
                              .ENDC
                              .MEXIT
                              .ENDC
                              .IF IDN <HRD>,<TST>
                              M$GETTOP          T$NS,T$NESTLEV,T$TEMP
                              .IF EQ  F$HARD-T$TEMP
                              .IRP    N,<\T$$HARD>
                              XFER    L'N
                              .ENDM
                              .MEXIT
                              .ENDC
                              .ENDC
                              .IF IDN <SFT>,<TST>
                              M$GETTOP          T$NS,T$NESTLEV,T$TEMP
                              .IF EQ  F$SOFT-T$TEMP
                              .IRP    N,<\T$$SOFT>
                              XFER    L'N
                              .ENDM
                              .MEXIT
                              .ENDC
                              .ENDC
                              .ERROR  ;ILL. "EXIT TST" STMT.

                                   .NLIST  BEX
     033456    045    123    062 TSHD9:  .ASCIZ  /*S2*ASECONDARY ADDRESSING TEST OF CHANNEL 1 (LISTENER)*N/
                                   .LIST   BEX
                                   .EVEN
     033550                        ENDTST
```

H13


```
                                .MCALL  M$POP,M$GNTAG,M$SVC,M$ENDERR
                                .IF EQ  F$BGN-I$TST
          000041                I$TST=F$END
                                .IFF
                                .ERROR  ;MISSING "BGNTST"
                                .MEXIT
                                .ENDC
 033550                         M$POP   T$NS,T$NESTLEV,T$TEMP
                                .MCALL  M$GETS,M$DECR
                                .IF LT  T$NESTLEV
                                .ERROR  T$NESTLEV       ; MACRO T$NS UNDERFLOW
                                .MEXIT
                                .ENDC
 033550                         M$GETS  T$NS,\T$NESTLEV,T$TEMP
          000001                T$TEMP=T$NS1
 033550                         M$DECR  T$NESTLEV
          000000                T$NESTLEV=T$NESTLEV-1
                                .IF EQ F$TEST-T$TEMP
 033550                         M$GNTAG L,T$$TEST
                                .MCALL  M$GEN
 033550                         M$GEN   L,\T$$TEST,SVCTAG
                                .IF LE  SVCTAG
                                .IIF EQ SVCTAG,.LIST
                                L10036:
                                .IIF EQ SVCTAG,.NLIST
                                .MEXIT
                                .ENDC
                                .LIST
 033550                                                                L10036:
                                        .NLIST
          010000                S$LSYM=T$LSYM
 033550                         M$SVC   C$ETST
                                .MCALL  M$GNINS,M$TSTLAB
 033550                         M$TSTLAB
                                .MCALL  M$TLABEL,M$INCR
                                .IIF LT T$TSTMAC, .MEXIT
                                .RADIX  10
                                M$TLABEL        \T$TESTNUM,\T$TSTSEQ
                                .RADIX  8
                                M$INCR  T$TSTSEQ
 033550                         M$GNINS <TRAP   C$ETST>
                                .IF LT SVCINS
                                TRAP    C$ETST
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        TRAP    C$ETST
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
 033550  104401                                                            TRAP    C$ETST
                                                .NLIST
                                .ENDC
          000041                I$TST F$END
```

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```
                        .IFF
                        M$ENDERR        ENDTST,T$TEMP
                        .ENDC
```


1'3

```
                                .SBTTL  TEST 10: SECONDARY ADDRESSING TEST OF CHANNEL 1 (TALKER)
                                ;*************************************************************************
                                ;                       IEX - TEST 10
                                ;THIS TEST CHECKS THE EXTENDED TALKER INTERFACE FUNCTION .
                                ;
                                ;PURPOSE OF THIS TEST IS TO CHECK THE SECONDARY ADDRESSING
                                ;FEATURE OF CHANNEL 1 BY MEANS OF RECEIVING A VALID AS WELL AS AN INVALID
                                ;MY SECONDARY ADDRESS (MSA1).
                                ;*************************************************************************
033552                                  BGNTST
                                .MCALL  M$INCR,M$GNTEST,M$PUSH,M$INCR
                                .IF NE  F$END-I$SUB
                                .ERROR  ;"BGNTST" IN SUB
                                .MEXIT
                                .ENDC
                                .IF NE  F$END-I$SEG
                                .ERROR  ;"BGNTST" IN SEG
                                .MEXIT
                                .ENDC
                                .IF NE  F$END-I$TST
                                .ERROR  ;"BGNTST" IN TST
                                .MEXIT
                                .IFF
        000040                  I$TST=F$BGN
                                .ENDC
                                .IF B
033552                          M$INCR  T$TESTNUM
        000012                  T$TESTNUM=T$TESTNUM+1
                                .IFF
                                T$TESTNUM=
                                .ENDC
        000000                  T$SUBNUM=0
        000012                  .RADIX  10
033552                          M$GNTEST        \T$TESTNUM
                                .MCALL  M$GEN
033552                          M$GEN   T,10:,SVCTST
                                .IF LE  SVCTST
                                .IIF EQ SVCTST,.LIST
                                T10::
                                .IIF EQ SVCTST,.NLIST
                                .MEXIT
                                .ENDC
                                .LIST
033552                                                                  T10::
                                        .NLIST
        000010                  .RADIX  8
033552                          M$PUSH  T$NS,T$NESTLEV,F$TEST
                                .MCALL  M$INCR,M$SETS
033552                          M$INCR  T$NESTLEV
        000001                  T$NESTLEV=T$NESTLEV+1
033552                          M$SETS  T$NS,\T$NESTLEV,F$TEST
        000001                  T$NS1=F$TEST
        010037                  T$$TEST=T$TAGNUM
033552                          M$INCR T$TAGNUM
        010040                  T$TAGNUM=T$TAGNUM+1
        000001                  T$TSTSEQ=1
033552  005737  002324                  TST     PNTF                    ;IS THE PNT FLAG SET
```

```
 4804 033556  001410                 BEQ     7$                        ;IF YES, PRINT THE TEST HEADER
 4805 033560                         PRINTF  #TSHD10                   ;...
                               .MCALL  M$PRINT
                               .IF B   #TSHD10
                               .ERROR  ;MISSING FORMAT
                               .MEXIT
                               .ENDC
                               .IF B   <>
      033560                   M$PRINT C$PNTF,#TSHD10
                               .MCALL  M$COUNT,M$PUT,M$GNINS,M$SVC
              000001           T$ARGCNT=1
      033560                   M$COUNT T$ARGCNT,<>,<>,<>,<>,<>,<>,<>,<>
                               .IF NB <>
                               M$COUNT T$ARGCNT,<>,<>,<>,<>,<>,<>,<>,<>
                               .ENDC
                               .IF NB <>
                               T$ARGCNT=T$ARGCNT+1
                               .ENDC
                               .IRP    N,<\T$ARGCNT>
                               M$PUT   #N,#TSHD10,<>,<>,<>,<>,<>,<>,<>,<>
                               .ENDM
      033560                   M$PUT   #1,#TSHD10,<>,<>,<>,<>,<>,<>,<>,<>
                               .MCALL  M$PUT1
                               .IF NB  <#TSHD10>
      033560                   M$PUT   <#TSHD10>,<>,<>,<>,<>,<>,<>,<>,<>
                               .MCALL  M$PUT1
                               .IF NB  <>
                               M$PUT   <>,<>,<>,<>,<>,<>,<>,<>,<>
                               .ENDC
                               .IF NB  <#TSHD10>
      033560                   M$PUT1  #TSHD10
                               .MCALL  M$GNINS
                               .IF B
      033560                   M$GNINS <MOV    #TSHD10,-(SP)>
                               .IF LT SVCINS
                               MOV     #TSHD10,-(SP)
                               .MEXIT
                               .ENDC
                               .IF EQ SVCINS
                               .LIST
                                       MOV     #TSHD10,-(SP)
                                               .NLIST
                               .MEXIT
                               .ENDC
                               .IF GT SVCINS
                               .LIST
      033560  012746  035226                                                   MOV     #TSHD10,(SP)
                                               .NLIST
                               .ENDC
                               .IFF
                               .IF DIF B,<#TSHD10>
                               .ERROR  ;ILL. ARG. "#TSHD10" ONLY "B" IS ALLOWED.
                               .MEXIT
                               .ENDC
                               M$GNINS <CLR    (SP)>
                               M$GNINS <BISB   ,(SP)>
                               .ENDC
```

```
                                        .ENDC
                                        .ENDC
                                        .IF NB  <#1>
     033564                             M$PUT1  #1
                                        .MCALL  M$GNINS
                                        .IF B
     033564                             M$GNINS <MOV    #1,-(SP)>
                                        .IF LT SVCINS
                                        MOV     #1,-(SP)
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                MOV     #1,-(SP)
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
     033564  012746  000001                                                            MOV     #1,-(SP)
                                                        .NLIST
                                        .ENDC
                                        .IFF
                                        .IF DIF B,<#1>
                                        .ERROR  ;ILL. ARG. "#1" ONLY "B" IS ALLOWED.
                                        .MEXIT
                                        .ENDC
                                        M$GNINS <CLR    -(SP)>
                                        M$GNINS <BISB   ,(SP)>
                                        .ENDC
                                        .ENDC
     033570                             M$GNINS <MOV    SP,R0>
                                        .IF LT SVCINS
                                        MOV     SP,R0
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                MOV     SP,R0
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
     033570  010600                                                                    MOV     SP,R0
                                                        .NLIST
                                        .ENDC
     033572                             M$SVC   C$PNTF
                                        .MCALL  M$GNINS,M$TSTLAB
     033572                             M$TSTLAB
                                        .MCALL  M$TLABEL,M$INCR
                                        .IIF LT T$TSTMAC, .MEXIT
                                        .RADIX  10
                                        M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                        .RADIX  8
                                        M$INCR  T$TSTSEQ
     033572                             M$GNINS <TRAP   C$PNTF>
```

```
                                        .IF LT SVCINS
                                        TRAP    C$PNTF
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                TRAP    C$PNTF
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
033572  104417                                                                  TRAP    C$PNTF
                                                        .NLIST
                                        .ENDC
                                        .IRP    N,<\T$ARGCNT*2+2>
                                        M$GNINS <ADD    #N,SP>
                                        .ENDM
033574                                  M$GNINS <ADD    #4,SP>
                                        .IF LT SVCINS
                                        ADD     #4,SP
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                ADD     #4,SP
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
033574  062706  000004                                                          ADD     #4,SP
                                                        .NLIST
                                        .ENDC
                                        .MEXIT
                                        .ENDC
                                        .IF B   <>
                                        M$PRINT C$PNTF,#TSHD10,<>
                                        .MEXIT
                                        .ENDC
                                        .IF B   <>
                                        M$PRINT C$PNTF,#TSHD10,<>,<>
                                        .MEXIT
                                        .ENDC
                                        .IF B   <>
                                        M$PRINT C$PNTF,#TSHD10,<>,<>,<>
                                        .MEXIT
                                        .ENDC
                                        .IF B   <>
                                        M$PRINT C$PNTF,#TSHD10,<>,<>,<>,<>
                                        .MEXIT
                                        .ENDC
                                        .IF B   <>
                                        M$PRINT C$PNTF,#TSHD10,<>,<>,<>,<>,<>
                                        .MEXIT
                                        .ENDC
                                        .IF B   <>
```

```
                                        M$PRINT C$PNTF,#TSHD10,<>,<>,<>,<>,<>,<>
                                        .MEXIT
                                        .ENDC
                                        .IF B   <>
                                        M$PRINT C$PNTF,#TSHD10,<>,<>,<>,<>,<>,<>,<>
                                        .MEXIT
                                        .ENDC
                                        M$PRINT C$PNTF,#TSHD10,<>,<>,<>,<>,<>,<>,<>,<>
 4806 033600 005037 002322              7$:     CLR     ITRCNT                  ;CLEAR ITERATION COUNTER
 4807 033604 004737 010210                      JSR     PC,CULPA                ;CLEAR ULPA BIT IN ISR 1 AND 2
 4808 033610 004737 010700                      JSR     PC,BGIN2                ;SET UP PARAMETER
 4809 033614 042777 000010 146456       A10:    BIC     #10,@CSRX               ;SELECT CHANNEL 1
 4810 033622 112777 000223 146440               MOVB    #223,@ICRHX             ;----LOAD DAI INTO ACR1----------------
 4811 033630 112777 000020 146424               MOVB    #20,@ISRHX              ;----LOAD APT BIT INTO ISR1------------
 4812 033636 013701 002312                      MOV     DPA1,R1                 ;GET DPA1 ADDRESS
 4813 033642 062701 000100                      ADD     #100,R1                 ;CREATE MY TALKER ADDRESS (MTA)
 4814 033646 010137 002414                      MOV     R1,MTA1                 ;STORE MTA
 4815 033652 032737 000001 002312               BIT     #1,DPA1                 ;IS DPA EVEN
 4816 033660 001412                             BEQ     3$                      ;BRANCH IF YES
 4817 033662 052737 000001 002452               BIS     #1,CDAT8                ;SET ULPA BIT IN COMPARE DATA FOR ISR
 4818 033670 052737 000001 002436               BIS     #1,CDAT2                ;...
 4819 033676 052737 000001 002440               BIS     #1,CDAT3                ;...
 4820 033704 000411                             BR      .+24                    ;BRANCH TO BGNSEG
 4821 033706 042737 000001 002452       3$:     BIC     #1,CDAT8                ;CLEAR ULPA BIT IN COMPARE DATA FOR ISR
 4822 033714 042737 000001 002436               BIC     #1,CDAT2                ;...
 4823 033722 042737 000001 002440               BIC     #1,CDAT3                ;...
 4824 033730                                    BGNSEG
                                        .MCALL  M$PUSH,M$INCR,M$SVC
             000040                     I$SEG=F$BGN
      033730                            M$PUSH  T$NS,T$NESTLEV,F$SEG
                                        .MCALL  M$INCR,M$SETS
      033730                            M$INCR  T$NESTLEV
             000002                     T$NESTLEV=T$NESTLEV+1
      033730                            M$SETS  T$NS,\T$NESTLEV,F$SEG
             000003                     T$NS2=F$SEG
             010000                     T$$SEG=S$LSYM
      033730                            M$PUSH  T$SEK,T$SEGLEV,T$$SEG
                                        .MCALL  M$INCR,M$SETS
      033730                            M$INCR  T$SEGLEV
             000000                     T$SEGLEV=T$SEGLEV+1
      033730                            M$SETS  T$SEK,\T$SEGLEV,T$$SEG
             010000                     T$SEK0=T$$SEG
      033730                            M$INCR  S$LSYM
             010001                     S$LSYM=S$LSYM+1
      033730                            M$SVC   C$BSEG
                                        .MCALL  M$GNINS,M$TSTLAB
      033730                            M$TSTLAB
                                        .MCALL  M$TLABEL,M$INCR
                                        .IIF LT T$TSTMAC, .MEXIT
                                        .RADIX  10
                                        M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                        .RADIX  8
                                        M$INCR  T$TSTSEQ
      033730                            M$GNINS <TRAP   C$BSEG>
                                        .IF LT SVCINS
                                        TRAP    C$BSEG
                                        .MEXIT
```

```
                                          .ENDC
                                          .IF EQ SVCINS
                                          .LIST
                                                TRAP    C$BSEG
                                                        .NLIST
                                          .MEXIT
                                          .ENDC
                                          .IF GT SVCINS
                                          .LIST
     033730  104404                                                                          TRAP    C$BSEG
                                                        .NLIST
                                          .ENDC
4825 033732  052777  000010  146340             BIS     #10,@CSRX            ;SELECT CHANNEL 2
4826 033740  012737  000002  0023?4             MOV     #2,CHAN              ;LOAD CHANNEL NUMBER
4827 033746  113777  002414  146322             MOVB    MTA1,@IDRHX          ;----LOAD TALKER ADDRESS OF CHANNEL 2 --
4828 033754  004737  011050                     JSR     PC,LOOP              ;WAIT A LITTLE
4829 033760  042777  000010  146312             BIC     #10,@CSRX            ;SELECT CHANNEL 1
4830 033766  012737  000001  002374             MOV     #1,CHAN              ;LOAD CHANNEL NUMBER
4831 033774  017737  146250  002502             MOV     @IIRX,BAD            ;GET IIR1 CONTENTS
4832 034002  022737  000400  002502             CMP     #400,BAD             ;IFC BIT IN IIR1 SHOULD BE SET
4833 034010  001410                             BEQ     30$                  ;BRANCH IF YES
4834 034012  012737  000400  002500             MOV     #400,GOOD            ;SET UP DATA FOR ERROR MESSAGES
4835 034020                                     ERRSOFT 1001,E501,ERR501     ;ERROR HANDLER
                                          .MCALL  M$ERRINS
     034020                               M$ERRINS      1001,E501,ERR501,C$ERSOFT
                                          .MCALL  M$GNINS,M$WORD,M$TSTLAB
     034020                               M$SVC   C$ERSOFT
                                          .MCALL  M$GNINS,M$TSTLAB
     034020                               M$TSTLAB
                                          .MCALL  M$TLABEL,M$INCR
                                          .IIF LT T$TSTMAC, .MEXIT
                                          .RADIX  10
                                          M$TLABEL      \T$TESTNUN,\T$TSTSEQ
                                          .RADIX  8
                                          M$INCR  T$TSTSEQ
     034020                               M$GNINS <TRAP   C$ERSOFT>
                                          .IF LT SVCINS
                                          TRAP    C$ERSOFT
                                          .MEXIT
                                          .ENDC
                                          .IF EQ SVCINS
                                          .LIST
                                                TRAP    C$ERSOFT
                                                        .NLIST
                                          .MEXIT
                                          .ENDC
                                          .IF GT SVCINS
                                          .LIST
     034020  104457                                                                          TRAP    C$ERSOFT
                                                        .NLIST
                                          .ENDC
             000012                       .RADIX  10
                                          .IF NB  1001
             001751                       T$ERRNUM=1001
                                          .IFF
                                          .ERROR  ;MISSING ERROR NR
                                          .ENDC
```

C14

```
034022                         M$WORD  \T$ERRNUM
                               .MCALL  M$GNINS
                               .IRP    N,<1001>
                               M$GNINS <.WORD  N>
                               .ENDM
034022                         M$GNINS <.WORD  1001>
                               .IF LT SVCINS
                               .WORD   1001
                               .MEXIT
                               .ENDC
                               .IF EQ SVCINS
                               .LIST
                                       .WORD   1001
                                               .NLIST
                               .MEXIT
                               .ENDC
                               .IF GT SVCINS
                               .LIST
034022  001751                                                          .WORD   1001
                                               .NLIST
                               .ENDC
        000010                 .RADIX  8
                               .IF NB E501
034024                         M$WORD  E501
                               .MCALL  M$GNINS
                               .IRP    N,<E501>
                               M$GNINS <.WORD  N>
                               .ENDM
034024                         M$GNINS <.WORD  E501>
                               .IF LT SVCINS
                               .WORD   E501
                               .MEXIT
                               .ENDC
                               .IF EQ SVCINS
                               .LIST
                                       .WORD   E501
                                               .NLIST
                               .MEXIT
                               .ENDC
                               .IF GT SVCINS
                               .LIST
034024  005376                                                          .WORD   E501
                                               .NLIST
                               .ENDC
                               .IFF
                               M$WORD  0
                               .ENDC
                               .IF NB ERR501
034026                         M$WORD  ERR501
                               .MCALL  M$GNINS
                               .IRP    N,<ERR501>
                               M$GNINS <.WORD  N>
                               .ENDM
034026                         M$GNINS <.WORD  ERR501>
                               .IF LT SVCINS
                               .WORD   ERR501
                               .MEXIT
```

D14


```
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                .WORD   ERR501
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
      034026  003672                                                                                  .WORD   ERR501
                                                        .NLIST
                                        .ENDC
                                        .IFF
                                        M$WORD  0
                                        .ENDC
 4836 034030                                    CKLOOP                          ;BRANCH TO BGNSEG WHEN ERRLOOP IS SET
                                        .MCALL  M$SVC
      034030                            M$SVC   C$CLP1
                                        .MCALL  M$GNINS,M$TSTLAB
      034030                            M$TSTLAB
                                        .MCALL  M$TLABEL,M$INCR
                                        .IIF LT T$TSTMAC, .MEXIT
                                        .RADIX  10
                                        M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                        .RADIX  8
                                        M$INCR  T$TSTSEQ
      034030                            M$GNINS <TRAP   C$CLP1>
                                        .IF LT SVCINS
                                        TRAP    C$CLP1
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                TRAP    C$CLP1
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
      034030  104406                                                                                  TRAP    C$CLP1
                                                        .NLIST
                                        .ENDC
 4837 034032  017737  146220  002502    30$:    MOV     @ISRX,BAD               ;GET ISR1 CONTENTS
 4838 034040  023737  002436  002502            CMP     CDAT2,BAD               ;ATN,ATN,NDAC TPAS,(ULPA) BIT SET
 4839 034046  001410                            BEQ     40$                     ;BRANCH IF YES
 4840 034050  013737  002436  002500            MOV     CDAT2,GOOD              ;SET UP DATA FOR ERROR MESSAGES
 4841 034056                                    ERRSOFT 1002,E502,ERR501        ;ERROR HANDLER
                                        .MCALL  M$ERRINS
      034056                            M$ERRINS        1002,E502,ERR501,C$ERSOFT
                                        .MCALL  M$GNINS,M$WORD,M$TSTLAB
      034056                            M$SVC   C$ERSOFT
                                        .MCALL  M$GNINS,M$TSTLAB
      034056                            M$TSTLAB
                                        .MCALL  M$TLABEL,M$INCR
                                        .IIF LT T$TSTMAC, .MEXIT
                                        .RADIX  10
                                        M$TLABEL        \T$TESTNUN,\T$TSTSEQ
```

```
                                 .RADIX  8
                                 M$INCR  T$TSTSEQ
    034056                       M$GNINS <TRAP   C$ERSOFT>
                                 .IF LT SVCINS
                                 TRAP    C$ERSOFT
                                 .MEXIT
                                 .ENDC
                                 .IF EQ SVCINS
                                 .LIST
                                         TRAP    C$ERSOFT
                                                 .NLIST
                                 .MEXIT
                                 .ENDC
                                 .IF GT SVCINS
                                 .LIST
    034056  104457                                                                   TRAP    C$ERSOFT
                                                 .NLIST
                                 .ENDC
            000012               .RADIX  10
                                 .IF NB  1002
            001752               T$ERRNUM=1002
                                 .IFF
                                 .ERROR  ;MISSING ERROR NR
                                 .ENDC
    034060                       M$WORD  \T$ERRNUM
                                 .MCALL  M$GNINS
                                 .IRP    N,<1002>
                                 M$GNINS <.WORD  N>
                                 .ENDM
    034060                       M$GNINS <.WORD  1002>
                                 .IF LT SVCINS
                                 .WORD   1002
                                 .MEXIT
                                 .ENDC
                                 .IF EQ SVCINS
                                 .LIST
                                         .WORD   1002
                                                 .NLIST
                                 .MEXIT
                                 .ENDC
                                 .IF GT SVCINS
                                 .LIST
    034060  001752                                                                   .WORD   1002
                                                 .NLIST
                                 .ENDC
            000010               .RADIX  8
                                 .IF NB E502
    034062                       M$WORD  E502
                                 .MCALL  M$GNINS
                                 .IRP    N,<E502>
                                 M$GNINS <.WORD  N>
                                 .ENDM
    034062                       M$GNINS <.WORD  E502>
                                 .IF LT SVCINS
                                 .WORD   E502
                                 .MEXIT
                                 .ENDC
```

```
                                .IF EQ SVCINS
                                .LIST
                                        .WORD   E502
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
      034062  005437                                                    .WORD   E502
                                                .NLIST
                                .ENDC
                                .IFF
                                M$WORD  0
                                .ENDC
                                .IF NB ERR501
      034064                    M$WORD  ERR501
                                .MCALL  M$GNINS
                                .IRP    N,<ERR501>
                                M$GNINS <.WORD  N>
                                .ENDM
      034064                    M$GNINS <.WORD  ERR501>
                                .IF LT SVCINS
                                .WORD   ERR501
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        .WORD   ERR501
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
      034064  003672                                                    .WORD   ERR501
                                                .NLIST
                                .ENDC
                                .IFF
                                M$WORD  0
                                .ENDC
 4842 034066                            CKLOOP                  ;BRANCH TO BGNSEG WHEN ERRLOOP IS SET
                                .MCALL  M$SVC
      034066                    M$SVC   C$CLP1
                                .MCALL  M$GNINS,M$TSTLAB
      034066                    M$TSTLAB
                                .MCALL  M$TLABEL,M$INCR
                                .IIF LT T$TSTMAC, .MEXIT
                                .RADIX  10
                                M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                .RADIX  8
                                M$INCR  T$TSTSEQ
      034066                    M$GNINS <TRAP   C$CLP1>
                                .IF LT SVCINS
                                TRAP    C$CLP1
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
```

G14

TEST 10: SECONDARY ADDRESSING TEST OF CHANNEL 1 (TALKER)

```
                                                TRAP    C$CLP1
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
      034066  104406                                                                            TRAP    C$CLP1
                                                        .NLIST
                                        .ENDC
 4843 034070  052777  000010  146202    40$:    BIS     #10,@CSRX               ;SELECT CHANNEL 2
 4844 034076  012737  000002  002374            MOV     #2,CHAN                 ;LOAD CHANNEL NUMBER
 4845 034104  013701  002414                    MOV     MTA1,R1                 ;GET MTA1
 4846 034110  062701  000040                    ADD     #40,R1                  ;CREATE MSA1
 4847 034114  010137  002420                    MOV     R1,MSA1                 ;STORE MSA1 TO LOCATION MSA1
 4848 034120  113777  002420  146150            MOVB    MSA1,@IDRHX             ;------LOAD MSA1 INTO DOR2----------
 4849 034126  004737  011050                    JSR     PC,LOOP                 ;WAIT A LITTLE
 4850 034132  017737  146112  002502            MOV     @IIRX,BAD               ;GET IIR2 CONTENTS
 4851 034140  022737  000000  002502            CMP     #0,BAD                  ;IIR2  SHOULD BE ZERO
 4852 034146  001407                            BEQ     41$                     ;BRANCH IF YES
 4853 034150  005037  002500                    CLR     GOOD                    ;SET UP DATA FOR ERROR MESSAGE
 4854 034154                                    ERRSOFT 1003,E501,ERR501        ;ERROR HANDLER
                                        .MCALL  M$ERRINS
      034154                            M$ERRINS        1003,E501,ERR501,C$ERSOFT
                                        .MCALL  M$GNINS,M$WORD,M$TSTLAB
      034154                            M$SVC   C$ERSOFT
                                        .MCALL  M$GNINS,M$TSTLAB
      034154                            M$TSTLAB
                                        .MCALL  M$TLABEL,M$INCR
                                        .IIF LT T$TSTMAC, .MEXIT
                                        .RADIX  10
                                        M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                        .RADIX  8
                                        M$INCR  T$TSTSEQ
      034154                            M$GNINS <TRAP   C$ERSOFT>
                                        .IF LT SVCINS
                                        TRAP    C$ERSOFT
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                TRAP    C$ERSOFT
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
      034154  104457                                                                            TRAP    C$ERSOFT
                                                        .NLIST
                                        .ENDC
              000012                    .RADIX  10
                                        .IF NB  1003
              001753                    T$ERRNUM=1003
                                        .IFF
                                        .ERROR  ;MISSING ERROR NR
                                        .ENDC
      034156                            M$WORD  \T$ERRNUM
                                        .MCALL  M$GNINS
```

```
                                .IRP     N,<1003>
                                M$GNINS <.WORD  N>
                                .ENDM
     034156                     M$GNINS <.WORD  1003>
                                .IF LT SVCINS
                                .WORD   1003
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        .WORD   1003
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
     034156  001753                                                              .WORD   1003
                                                .NLIST
                                .ENDC
             000010             .RADIX  8
                                .IF NB E501
     034160                     M$WORD  E501
                                .MCALL  M$GNINS
                                .IRP     N,<E501>
                                M$GNINS <.WORD  N>
                                .ENDM
     034160                     M$GNINS <.WORD  E501>
                                .IF LT SVCINS
                                .WORD   E501
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        .WORD   E501
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
     034160  005376                                                              .WORD   E501
                                                .NLIST
                                .ENDC
                                .IFF
                                M$WORD  0
                                .ENDC
                                .IF NB ERR501
     034162                     M$WORD  ERR501
                                .MCALL  M$GNINS
                                .IRP     N,<ERR501>
                                M$GNINS <.WORD  N>
                                .ENDM
     034162                     M$GNINS <.WORD  ERR501>
                                .IF LT SVCINS
                                .WORD   ERR501
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
```

```
                                        .LIST
                                              .WORD   ERR501
                                                      .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
      034162  003672                                                                         .WORD   ERR501
                                                      .NLIST
                                        .ENDC
                                        .IFF
                                        M$WORD  0
                                        .ENDC
 4855 034164                                  CKLOOP                          ;BRANCH BACK TO BGNSEG IF ERRLOOP IS SET
                                        .MCALL  M$SVC
      034164                            M$SVC   C$CLP1
                                        .MCALL  M$GNINS,M$TSTLAB
      034164                            M$TSTLAB
                                        .MCALL  M$TLABEL,M$INCR
                                        .IIF LT T$TSTMAC, .MEXIT
                                        .RADIX  10
                                        M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                        .RADIX  8
                                        M$INCR  T$TSTSEQ
      034164                            M$GNINS <TRAP   C$CLP1>
                                        .IF LT SVCINS
                                        TRAP    C$CLP1
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                              TRAP    C$CLP1
                                                      .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
      034164  104406                                                                         TRAP    C$CLP1
                                                      .NLIST
                                        .ENDC
 4856 034166  042777  000010  146104    41$:    BIC     #10,@CSRX               ;SELECT CHANNEL 1
 4857 034174  012737  000001  002374            MOV     #1,CHAN                 ;LOAD CHANNEL NUMBER
 4858 034202  017737  146042  002502            MOV     @IIRX,BAD               ;GET IIR1 CONTENTS
 4859 034210  022737  010100  002502            CMP     #10100,BAD              ;APT,INT1 BIT IN IIR1 SHOULD BE SET
 4860 034216  001410                            BEQ     42$                     ;BRANCH IF YES
 4861 034220  012737  010100  002500            MOV     #10100,GOOD             ;SET UP DATA FOR ERROR MESSAGE
 4862 034226                                    ERRSOFT 1004,E501,ERR501        ;ERROR HANDLER
                                        .MCALL  M$ERRINS
      034226                            M$ERRINS        1004,E501,ERR501,C$ERSOFT
                                        .MCALL  M$GNINS,M$WORD,M$TSTLAB
      034226                            M$SVC   C$ERSOFT
                                        .MCALL  M$GNINS,M$TSTLAB
      034226                            M$TSTLAB
                                        .MCALL  M$TLABEL,M$INCR
                                        .IIF LT T$TSTMAC, .MEXIT
                                        .RADIX  10
                                        M$TLABEL        \T$TESTNUN,\T$TSTSEQ
```

```
                                .RADIX  8
                                M$INCR  T$TSTSEQ
034226                          M$GNINS <TRAP   C$ERSOFT>
                                .IF LT SVCINS
                                TRAP    C$ERSOFT
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        TRAP    C$ERSOFT
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
034226  104457                                                          TRAP    C$ERSOFT
                                                .NLIST
                                .ENDC
        000012                  .RADIX  10
                                .IF NB  1004
        001754                  T$ERRNUM=1004
                                .IFF
                                .ERROR  ;MISSING ERROR-NR
                                .ENDC
034230                          M$WORD  \T$ERRNUM
                                .MCALL  M$GNINS
                                .IRP    N,<1004>
                                M$GNINS <.WORD  N>
                                .ENDM
034230                          M$GNINS <.WORD  1004>
                                .IF LT SVCINS
                                .WORD   1004
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        .WORD   1004
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
034230  001754                                                          .WORD   1004
                                                .NLIST
                                .ENDC
        000010                  .RADIX  8
                                .IF NB E501
034232                          M$WORD  E501
                                .MCALL  M$GNINS
                                .IRP    N,<E501>
                                M$GNINS <.WORD  N>
                                .ENDM
034232                          M$GNINS <.WORD  E501>
                                .IF LT SVCINS
                                .WORD   E501
                                .MEXIT
                                .ENDC
```

```
                              .IF EQ SVCINS
                              .LIST
                                      .WORD   E501
                                              .NLIST
                              .MEXIT
                              .ENDC
                              .IF GT SVCINS
                              .LIST
      034232  005376                                                                 .WORD   E501
                                              .NLIST
                              .ENDC
                              .IFF
                              M$WORD  0
                              .ENDC
                              .IF NB ERR501
      034234                  M$WORD  ERR501
                              .MCALL  M$GNINS
                              .IRP    N,<ERR501>
                              M$GNINS <.WORD  N>
                              .ENDM
      034234                  M$GNINS <.WORD  ERR501>
                              .IF LT SVCINS
                              .WORD   ERR501
                              .MEXIT
                              .ENDC
                              .IF EQ SVCINS
                              .LIST
                                      .WORD   ERR501
                                              .NLIST
                              .MEXIT
                              .ENDC
                              .IF GT SVCINS
                              .LIST
      034234  003672                                                                 .WORD   ERR501
                                              .NLIST
                              .ENDC
                              .IFF
                              M$WORD  0
                              .ENDC
 4863 034236                          CKLOOP                      ;BRANCH BACK TO BGNSEG IF ERRLOOP IS SET
                              .MCALL  M$SVC
      034236                  M$SVC   C$CLP1
                              .MCALL  M$GNINS,M$TSTLAB
      034236                  M$TSTLAB
                              .MCALL  M$TLABEL,M$INCR
                              .IIF LT T$TSTMAC, .MEXIT
                              .RADIX  10
                              M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                              .RADIX  8
                              M$INCR  T$TSTSEQ
      034236                  M$GNINS <TRAP   C$CLP1>
                              .IF LT SVCINS
                              TRAP    C$CLP1
                              .MEXIT
                              .ENDC
                              .IF EQ SVCINS
                              .LIST
```

```
                                                 TRAP    C$CLP1
                                                         .NLIST
                                         .MEXIT
                                         .ENDC
                                         .IF GT SVCINS
                                         .LIST
      034236  104406                                                                      TRAP    C$CLP1
                                                         .NLIST
                                         .ENDC
 4864 034240  017737  146012  002502    42$:     MOV     @ISRX,BAD               ;GET ISR1 CONTENTS
 4865 034246  023737  002452  002502             CMP     CDAT8,BAD               ;ATN,DAV,NDAC,NRFD,ATN,TPAS(ULPA) IS SET
 4866 034254  001410                             BEQ     43$                     ;BRANCH IF YES
 4867 034256  013737  002452  002500             MOV     CDAT8,GOOD              ;SET UP DATA FOR ERROR MESSAGE
 4868 034264                                     ERRSOFT 1005,E502,ERR501        ;ERROR HANDLER
                                         .MCALL  M$ERRINS
      034264                             M$ERRINS        1005,E502,ERR501,C$ERSOFT
                                         .MCALL  M$GNINS,M$WORD,M$TSTLAB
      034264                             M$SVC   C$ERSOFT
                                         .MCALL  M$GNINS,M$TSTLAB
      034264                             M$TSTLAB
                                         .MCALL  M$TLABEL,M$INCR
                                         .IIF LT T$TSTMAC, .MEXIT
                                         .RADIX  10
                                         M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                         .RADIX  8
                                         M$INCR  T$TSTSEQ
      034264                             M$GNINS <TRAP   C$ERSOFT>
                                         .IF LT SVCINS
                                         TRAP    C$ERSOFT
                                         .MEXIT
                                         .ENDC
                                         .IF EQ SVCINS
                                         .LIST
                                                 TRAP    C$ERSOFT
                                                         .NLIST
                                         .MEXIT
                                         .ENDC
                                         .IF GT SVCINS
                                         .LIST
      034264  104457                                                                      TRAP    C$ERSOFT
                                                         .NLIST
                                         .ENDC
              000012                     .RADIX  10
                                         .IF NB  1005
              001755                     T$ERRNUM=1005
                                         .IFF
                                         .ERROR  ;MISSING ERROR-NR
                                         .ENDC
      034266                             M$WORD  \T$ERRNUM
                                         .MCALL  M$GNINS
                                         .IRP    N,<1005>
                                         M$GNINS <.WORD  N>
                                         .ENDM
      034266                             M$GNINS <.WORD  1005>
                                         .IF LT SVCINS
                                         .WORD   1005
                                         .MEXIT
```

```
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        .WORD   1005
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
        034266  001755                                                                  .WORD   1005
                                                .NLIST
                                .ENDC
                000010          .RADIX  8
                                .IF NB E502
        034270                  M$WORD  E502
                                .MCALL  M$GNINS
                                .IRP    N,<E502>
                                M$GNINS <.WORD  N>
                                .ENDM
        034270                  M$GNINS <.WORD  E502>
                                .IF LT SVCINS
                                .WORD   E502
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        .WORD   E502
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
        034270  005437                                                                  .WORD   E502
                                                .NLIST
                                .ENDC
                                .IFF
                                M$WORD  0
                                .ENDC
                                .IF NB ERR501
        034272                  M$WORD  ERR501
                                .MCALL  M$GNINS
                                .IRP    N,<ERR501>
                                M$GNINS <.WORD  N>
                                .ENDM
        034272                  M$GNINS <.WORD  ERR501>
                                .IF LT SVCINS
                                .WORD   ERR501
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        .WORD   ERR501
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
```

```
     034272  003672                                                    .WORD   ERR501
                                                .NLIST
                                  .ENDC
                                  .IFF
                                  M$WORD  0
                                  .ENDC
4869 034274                               CKLOOP                       ;BRANCH BACK TO BGNSEG IF ERRLOOP IS SET
                                  .MCALL  M$SVC
     034274                       M$SVC   C$CLP1
                                  .MCALL  M$GNINS,M$TSTLAB
     034274                       M$TSTLAB
                                  .MCALL  M$TLABEL,M$INCR
                                  .IIF LT T$TSTMAC, .MEXIT
                                  .RADIX  10
                                  M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                  .RADIX  8
                                  M$INCR  T$TSTSEQ
     034274                       M$GNINS <TRAP   C$CLP1>
                                  .IF LT SVCINS
                                  TRAP    C$CLP1
                                  .MEXIT
                                  .ENDC
                                  .IF EQ SVCINS
                                  .LIST
                                          TRAP    C$CLP1
                                                  .NLIST
                                  .MEXIT
                                  .ENDC
                                  .IF GT SVCINS
                                  .LIST
     034274  104406                                                    TRAP    C$CLP1
                                                .NLIST
                                  .ENDC
4870 034276  017737 145762 002502 43$:    MOV     @ICRX,BAD            ;GET ICR1 CONTENTS
4871 034304  123737 002420 002502         CMPB    MSA1,BAD             ;MSA1 ADDRESS SHOULD BE SET
4872 034312  001410                       BEG     44$                  ;BRANCH IF YES
4873 034314  013737 002420 002500         MOV     MSA1,GOOD            ;SET UP DATA FOR ERROR MESSAGE
4874 034322                               ERRSOFT 1006,E901,ERR501     ;ERROR HANDLER
                                  .MCALL  M$ERRINS
     034322                       M$ERRINS        1006,E901,ERR501,C$ERSOFT
                                  .MCALL  M$GNINS,M$WORD,M$TSTLAB
     034322                       M$SVC   C$ERSOFT
                                  .MCALL  M$GNINS,M$TSTLAB
     034322                       M$TSTLAB
                                  .MCALL  M$TLABEL,M$INCR
                                  .IIF LT T$TSTMAC, .MEXIT
                                  .RADIX  10
                                  M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                  .RADIX  8
                                  M$INCR  T$TSTSEQ
     034322                       M$GNINS <TRAP   C$ERSOFT>
                                  .IF LT SVCINS
                                  TRAP    C$ERSOFT
                                  .MEXIT
                                  .ENDC
                                  .IF EQ SVCINS
                                  .LIST
```

```
                                TRAP    C$ERSOFT
                                        .NLIST
                        .MEXIT
                        .ENDC
                        .IF GT SVCINS
                        .LIST
034322  104457                                                          TRAP    C$ERSOFT
                                        .NLIST
                        .ENDC
        000012          .RADIX  10
                        .IF NB  1006
        001756          T$ERRNUM=1006
                        .IFF
                        .ERROR  ;MISSING ERROR-NR
                        .ENDC
034324                  M$WORD  \T$ERRNUM
                        .MCALL  M$GNINS
                        .IRP    N,<1006>
                        M$GNINS <.WORD  N>
                        .ENDM
034324                  M$GNINS <.WORD  1006>
                        .IF LT SVCINS
                        .WORD   1006
                        .MEXIT
                        .ENDC
                        .IF EQ SVCINS
                        .LIST
                                .WORD   1006
                                        .NLIST
                        .MEXIT
                        .ENDC
                        .IF GT SVCINS
                        .LIST
034324  001756                                                          .WORD   1006
                                        .NLIST
                        .ENDC
        000010          .RADIX  8
                        .IF NB E901
034326                  M$WORD  E901
                        .MCALL  M$GNINS
                        .IRP    N,<E901>
                        M$GNINS <.WORD  N>
                        .ENDM
034326                  M$GNINS <.WORD  E901>
                        .IF LT SVCINS
                        .WORD   E901
                        .MEXIT
                        .ENDC
                        .IF EQ SVCINS
                        .LIST
                                .WORD   E901
                                        .NLIST
                        .MEXIT
                        .ENDC
                        .IF GT SVCINS
                        .LIST
034326  005634                                                          .WORD   E901
```

```
                                        .NLIST
                        .ENDC
                        .IFF
                        M$WORD  0
                        .ENDC
                        .IF NB ERR501
     034330             M$WORD  ERR501
                        .MCALL  M$GNINS
                        .IRP    N,<ERR501>
                        M$GNINS <.WORD  N>
                        .ENDM
     034330             M$GNINS <.WORD  ERR501>
                        .IF LT SVCINS
                        .WORD   ERR501
                        .MEXIT
                        .ENDC
                        .IF EQ SVCINS
                        .LIST
                                .WORD   ERR501
                                        .NLIST
                        .MEXIT
                        .ENDC
                        .IF GT SVCINS
                        .LIST
     034330  003672                                                     .WORD   ERR501
                                        .NLIST
                        .ENDC
                        .IFF
                        M$WORD  0
                        .ENDC
4875 034332                     CKLOOP                          ;BRANCH BACK TO BGNSEG IF ERRLOOP IS SET
                        .MCALL  M$SVC
     034332             M$SVC   C$CLP1
                        .MCALL  M$GNINS,M$TSTLAB
     034332             M$TSTLAB
                        .MCALL  M$TLABEL,M$INCR
                        .IIF LT T$TSTMAC, .MEXIT
                        .RADIX  10
                        M$TLABEL        \T$TSTNUM,\T$TSTSEQ
                        .RADIX  8
                        M$INCR  T$TSTSEQ
     034332             M$GNINS <TRAP   C$CLP1>
                        .IF LT SVCINS
                        TRAP    C$CLP1
                        .MEXIT
                        .ENDC
                        .IF EQ SVCINS
                        .LIST
                                TRAP    C$CLP1
                                        .NLIST
                        .MEXIT
                        .ENDC
                        .IF GT SVCINS
                        .LIST
     034332  104406                                                     TRAP    C$CLP1
                                        .NLIST
                        .ENDC
```

```
034334  052777  000010  145736  44$:    BIS     #10,@CSRX               ;SELECT CHANNEL 2
034342  012737  000002  002374          MOV     #2,CHAN                 ;LOAD CHANNEL NUMBER
034350  017737  145702  002502          MOV     @ISRX,BAD               ;GET ISR2 CONTENTS
034356  022737  170040  002502          CMP     #170040,BAD             ;ATN,DAV,NDAC,ATN,NRFD SHOULD BE SET
034364  001410                          BEQ     45$                     ;BRANCH IF YES
034366  012737  170040  002500          MOV     #170040,GOOD            ;SET UP DATA FOR ERROR MESSAGE
034374                                  ERRSOFT 1007,E502,ERR501        ;ERROR HANDLER
                                .MCALL  M$ERRINS
034374                          M$ERRINS        1007,E502,ERR501,C$ERSOFT
                                .MCALL  M$GNINS,M$WORD,M$TSTLAB
034374                          M$SVC   C$ERSOFT
                                .MCALL  M$GNINS,M$TSTLAB
034374                          M$TSTLAB
                                .MCALL  M$TLABEL,M$INCR
                                .IIF LT T$TSTMAC, .MEXIT
                                .RADIX  10
                                M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                .RADIX  8
                                M$INCR  T$TSTSEQ
034374                          M$GNINS <TRAP   C$ERSOFT>
                                .IF LT SVCINS
                                TRAP    C$ERSOFT
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        TRAP    C$ERSOFT
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
034374  104457                                                                          TRAP    C$ERSOFT
                                                .NLIST
                                .ENDC
        000012                  .RADIX  10
                                .IF NB  1007
        001757                  T$ERRNUM=1007
                                .IFF
                                .ERROR  ;MISSING ERROR NR
                                .ENDC
034376                          M$WORD  \T$ERRNUM
                                .MCALL  M$GNINS
                                .IRP    N,<1007>
                                M$GNINS <.WORD  N>
                                .ENDM
034376                          M$GNINS <.WORD  1007>
                                .IF LT SVCINS
                                .WORD   1007
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        .WORD   1007
                                                .NLIST
                                .MEXIT
                                .ENDC
```

```
                                .IF GT SVCINS
                                .LIST
      034376  001757                                                                  .WORD   1007
                                          .NLIST
                                .ENDC
              000010            .RADIX  8
                                .IF NB E502
      034400                    M$WORD  E502
                                .MCALL  M$GNINS
                                .IRP    N,<E502>
                                M$GNINS <.WORD  N>
                                .ENDM
      034400                    M$GNINS <.WORD  E502>
                                .IF LT SVCINS
                                .WORD   E502
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                     .WORD    E502
                                          .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
      034400  005437                                                                  .WORD   E502
                                          .NLIST
                                .ENDC
                                .IFF
                                M$WORD  0
                                .ENDC
                                .IF NB ERR501
      034402                    M$WORD  ERR501
                                .MCALL  M$GNINS
                                .IRP    N,<ERR501>
                                M$GNINS <.WORD  N>
                                .ENDM
      034402                    M$GNINS <.WORD  ERR501>
                                .IF LT SVCINS
                                .WORD   ERR501
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                     .WORD    ERR501
                                          .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
      034402  003672                                                                  .WORD   ERR501
                                          .NLIST
                                .ENDC
                                .IFF
                                M$WORD  0
                                .ENDC
   4883 034404                       CKLOOP                     ;BRANCH BACK TO BGNSEG IF ERRLOOP IS SET
```

```
                                        .MCALL  M$SVC
     034404                             M$SVC   C$CLP1
                                        .MCALL  M$GNINS,M$TSTLAB
     034404                             M$TSTLAB
                                        .MCALL  M$TLABEL,M$INCR
                                        .IIF LT T$TSTMAC, .MEXIT
                                        .RADIX  10
                                        M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                        .RADIX  8
                                        M$INCR  T$TSTSEQ
     034404                             M$GNINS <TRAP   C$CLP1>
                                        .IF LT SVCINS
                                        TRAP    C$CLP1
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                TRAP    C$CLP1
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
     034404  104406                                                                     TRAP    C$CLP1
                                                        .NLIST
                                        .ENDC
4884 034406  042777  000010  145664     45$:    BIC     #10,@CSRX               ;SELECT CHANNEL 1
4885 034414  012737  000001  002374             MOV     #1,CHAN                 ;LOAD CHANNEL NUMBER
4886 034422  112777  000201  145640             MOVB    #201,@ICRHX             ;-----LOAD DACR INTO ACR1------------
4887 034430  017737  145622  002502             MOV     @ISRX,BAD               ;GET ISR1 CONTENTS
4888 034436  023737  002440  002502             CMP     CDAT3,BAD               ;ATN,NDAC,ATN,TADS,TPAS (ULPA) IS SET
4889 034444  001410                             BEQ     46$                     ;BRANCH IF YES
4890 034446  013737  002440  002500             MOV     CDAT3,GOOD              ;SET UP DATA FOR ERROR MESSAGE
4891 034454                                     ERRSOFT 1008,E502,ERR501        ;ERROR HANDLER
                                        .MCALL  M$ERRINS
     034454                             M$ERRINS        1008,E502,ERR501,C$ERSOFT
                                        .MCALL  M$GNINS,M$WORD,M$TSTLAB
     034454                             M$SVC   C$ERSOFT
                                        .MCALL  M$GNINS,M$TSTLAB
     034454                             M$TSTLAB
                                        .MCALL  M$TLABEL,M$INCR
                                        .IIF LT T$TSTMAC, .MEXIT
                                        .RADIX  10
                                        M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                        .RADIX  8
                                        M$INCR  T$TSTSEQ
     034454                             M$GNINS <TRAP   C$ERSOFT>
                                        .IF LT SVCINS
                                        TRAP    C$ERSOFT
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                TRAP    C$ERSOFT
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
```

```
                                .IF GT SVCINS
                                .LIST
   034454  104457                                                                  TRAP     C$ERSOFT
                                          .NLIST
                                .ENDC
           000012               .RADIX  10
                                .IF NB  1008
           001760               T$ERRNUM=1008
                                .IFF
                                .ERROR  ;MISSING ERROR-NR
                                .ENDC
   034456                       M$WORD  \T$ERRNUM
                                .MCALL  M$GNINS
                                .IRP    N,<1008>
                                M$GNINS <.WORD  N>
                                .ENDM
   034456                       M$GNINS <.WORD  1008>
                                .IF LT SVCINS
                                .WORD   1008
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        .WORD   1008
                                          .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
   034456  001760                                                                  .WORD    1008
                                          .NLIST
                                .ENDC
           000010               .RADIX  8
                                .IF NB E502
   034460                       M$WORD  E502
                                .MCALL  M$GNINS
                                .IRP    N,<E502>
                                M$GNINS <.WORD  N>
                                .ENDM
   034460                       M$GNINS <.WORD  E502>
                                .IF LT SVCINS
                                .WORD   E502
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        .WORD   E502
                                          .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
   034460  005437                                                                  .WORD    E502
                                          .NLIST
                                .ENDC
                                .IFF
                                M$WORD  0
```

H15


```
                                        .ENDC
                                        .IF NB ERR501
     034462                             M$WORD  ERR501
                                        .MCALL  M$GNINS
                                        .IRP    N,<ERR501>
                                        M$GNINS <.WORD  N>
                                        .ENDM
     034462                             M$GNINS <.WORD  ERR501>
                                        .IF LT SVCINS
                                        .WORD   ERR501
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                .WORD   ERR501
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
     034462  003672                                                                     .WORD   ERR501
                                                        .NLIST
                                        .ENDC
                                        .IFF
                                        M$WORD  0
                                        .ENDC
4892 034464                                     CKLOOP                  ;BRANCH BACK TO BGNSEG IF ERRLOOP IS SET
                                        .MCALL  M$SVC
     034464                             M$SVC   C$CLP1
                                        .MCALL  M$GNINS,M$TSTLAB
     034464                             M$TSTLAB
                                        .MCALL  M$TLABEL,M$INCR
                                        .IIF LT T$TSTMAC, .MEXIT
                                        .RADIX  10
                                        M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                        .RADIX  8
                                        M$INCR  T$TSTSEQ
     034464                             M$GNINS <TRAP   C$CLP1>
                                        .IF LT SVCINS
                                        TRAP    C$CLP1
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                TRAP    C$CLP1
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
     034464  104406                                                                     TRAP    C$CLP1
                                                        .NLIST
                                        .ENDC
4893 034466  052777  000010  145604  46$:       BIS     #10,@CSRX               ;SELECT CHANNEL 2
4894 034474  012737  000002  002374             MOV     #2,CHAN                 ;LOAD CHANNEL NUMBER
4895 034502  017737  145542  002502             MOV     @IIRX,BAD               ;GET IIR2 CONTENTS
4896 034510  022737  000020  002502             CMP     #20,BAD                 ;B0 BIT SHOULD BE SET
```

```
4897 034516  001410                          BEQ     50$                       ;BRANCH IF YES
4898 034520  012737  000020  002500          MOV     #20,GOOD                  ;SET UP DATA FOR ERROR MESSAGE
4899 034526                                  ERRSOFT 1009,E501,ERR501          ;ERROR HANDLER
                                     .MCALL  M$ERRINS
     034526                          M$ERRINS        1009,E501,ERR501,C$ERSOFT
                                     .MCALL  M$GNINS,M$WORD,M$TSTLAB
     034526                          M$SVC   C$ERSOFT
                                     .MCALL  M$GNINS,M$TSTLAB
     034526                          M$TSTLAB
                                     .MCALL  M$TLABEL,M$INCR
                                     .IIF LT T$TSTMAC, .MEXIT
                                     .RADIX  10
                                     M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                     .RADIX  8
                                     M$INCR  T$TSTSEQ
     034526                          M$GNINS <TRAP   C$ERSOFT>
                                     .IF LT SVCINS
                                     TRAP    C$ERSOFT
                                     .MEXIT
                                     .ENDC
                                     .IF EQ SVCINS
                                     .LIST
                                             TRAP    C$ERSOFT
                                                     .NLIST
                                     .MEXIT
                                     .ENDC
                                     .IF GT SVCINS
                                     .LIST
     034526  104457                                                                        TRAP    C$ERSOFT
                                                     .NLIST
                                     .ENDC
             000012                  .RADIX  10
                                     .IF NB  1009
             001761                  T$ERRNUM=1009
                                     .IFF
                                     .ERROR  ;MISSING ERROR NR
                                     .ENDC
     034530                          M$WORD  \T$ERRNUM
                                     .MCALL  M$GNINS
                                     .IRP    N,<1009>
                                     M$GNINS <.WORD  N>
                                     .ENDM
     034530                          M$GNINS <.WORD  1009>
                                     .IF LT SVCINS
                                     .WORD   1009
                                     .MEXIT
                                     .ENDC
                                     .IF EQ SVCINS
                                     .LIST
                                             .WORD   1009
                                                     .NLIST
                                     .MEXIT
                                     .ENDC
                                     .IF GT SVCINS
                                     .LIST
     034530  001761                                                                        .WORD   1009
                                                     .NLIST
```

J15

TEST 10: SECONDARY ADDRESSING TEST OF CHANNEL 1 (TALKER)

```
                                        .ENDC
              000010                    .RADIX  8
                                        .IF NB E501
       034532                           M$WORD  E501
                                        .MCALL  M$GNINS
                                        .IRP    N,<E501>
                                        M$GNINS <.WORD  N>
                                        .ENDM
       034532                           M$GNINS <.WORD  E501>
                                        .IF LT SVCINS
                                        .WORD   E501
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                .WORD   E501
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
       034532 005376                                                                 .WORD   E501
                                                        .NLIST
                                        .ENDC
                                        .IFF
                                        M$WORD  0
                                        .ENDC
                                        .IF NB ERR501
       034534                           M$WORD  ERR501
                                        .MCALL  M$GNINS
                                        .IRP    N,<ERR501>
                                        M$GNINS <.WORD  N>
                                        .ENDM
       034534                           M$GNINS <.WORD  ERR501>
                                        .IF LT SVCINS
                                        .WORD   ERR501
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                .WORD   ERR501
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
       034534 003672                                                                 .WORD   ERR501
                                                        .NLIST
                                        .ENDC
                                        .IFF
                                        M$WORD  0
                                        .ENDC
  4900 034536                                   CKLOOP                  ;BRANCH BACK TO BGNSEG IF ERRLOOP IS SET
                                        .MCALL  M$SVC
       034536                           M$SVC   C$CLP1
                                        .MCALL  M$GNINS,M$TSTLAB
       034536                           M$TSTLAB
```

K15


```
                                        .MCALL  M$TLABEL,M$INCR
                                        .IIF LT T$TSTMAC, .MEXIT
                                        .RADIX  10
                                        M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                        .RADIX  8
                                        M$INCR  T$TSTSEQ
      034536                            M$GNINS <TRAP   C$CLP1>
                                        .IF LT SVCINS
                                        TRAP    C$CLP1
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                TRAP    C$CLP1
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
      034536  104406                                                                            TRAP    C$CLP1
                                                        .NLIST
                                        .ENDC
 4901 034540  112777  000137  145530    50$:    MOVB    #137,@IDRHX             ;- LOAD UNT INTO DOR2-----------------
 4902 034546                                    ENDSEG
                                        .MCALL  M$POP,M$GNLS,M$SVC,M$ENDERR
      034546                            M$POP   T$NS,T$NESTLEV,T$TEMP
                                        .MCALL  M$GETS,M$DECR
                                        .IF LT  T$NESTLEV
                                        .ERROR  T$NESTLEV       ; MACRO T$NS UNDERFLOW
                                        .MEXIT
                                        .ENDC
      034546                            M$GETS  T$NS,\T$NESTLEV,T$TEMP
              000003                    T$TEMP=T$NS2
      034546                            M$DECR  T$NESTLEV
              000001                    T$NESTLEV=T$NESTLEV-1
                                        .IF EQ F$SEG T$TEMP
      034546                            M$POP   T$SEK,T$SEGLEV,T$$SEG
                                        .MCALL  M$GETS,M$DECR
                                        .IF LT  T$SEGLEV
                                        .ERROR  T$SEGLEV        ; MACRO T$SEK UNDERFLOW
                                        .MEXIT
                                        .ENDC
      034546                            M$GETS  T$SEK,\T$SEGLEV,T$$SEG
              010000                    T$$SEG=T$SEK0
      034546                            M$DECR  T$SEGLEV
              177777                    T$SEGLEV=T$SEGLEV-1
      034546                            M$GNLS  T$$SEG
                                        .MCALL  M$GEN
                                        .IF NB T$$SEG
      034546                            M$GEN   \T$$SEG,$,SVCTAG
                                        .IF LE  SVCTAG
                                        .IIF EQ SVCTAG,.LIST
                                        10000$:
                                        .IIF EQ SVCTAG,.NLIST
                                        .MEXIT
                                        .ENDC
                                        .LIST
```

```
      034546                                                       10000$:
                                        .NLIST
                                  .IFF
                                  M$GEN    \S$LSYM,$,SVCTAG
                                  .ENDC
      034546                      M$SVC    C$ESEG
                                  .MCALL   M$GNINS,M$TSTLAB
      034546                      M$TSTLAB
                                  .MCALL   M$TLABEL,M$INCR
                                  .IIF LT T$TSTMAC, .MEXIT
                                  .RADIX   10
                                  M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                  .RADIX   8
                                  M$INCR   T$TSTSEQ
      034546                      M$GNINS <TRAP    C$ESEG>
                                  .IF LT SVCINS
                                  TRAP     C$ESEG
                                  .MEXIT
                                  .ENDC
                                  .IF EQ SVCINS
                                  .LIST
                                        TRAP     C$ESEG
                                                 .NLIST
                                  .MEXIT
                                  .ENDC
                                  .IF GT SVCINS
                                  .LIST
      034546 104405                                                     TRAP     C$ESEG
                                                 .NLIST
                                  .ENDC
                                  .IF EQ T$SEGLEV+1
             000041               I$SEG=F$END
                                  .ENDC
                                  .IFF
                                  M$ENDERR        ENDSEG,T$TEMP
                                  .ENDC
 4903 034550                      COPA10: BGNSEG
                                  .MCALL   M$PUSH,M$INCR,M$SVC
             000040               I$SEG=F$BGN
      034550                      M$PUSH   T$NS,T$NESTLEV,F$SEG
                                  .MCALL   M$INCR,M$SETS
      034550                      M$INCR   T$NESTLEV
             000002               T$NESTLEV=T$NESTLEV+1
      034550                      M$SETS   T$NS,\T$NESTLEV,F$SEG
             000003               T$NS2=F$SEG
             010001               T$$SEG=S$LSYM
      034550                      M$PUSH   T$SEK,T$SEGLEV,T$$SEG
                                  .MCALL   M$INCR,M$SETS
      034550                      M$INCR   T$SEGLEV
             000000               T$SEGLEV=T$SEGLEV+1
      034550                      M$SETS   T$SEK,\T$SEGLEV,T$$SEG
             010001               T$SEK0=T$$SEG
      034550                      M$INCR   S$LSYM
             010002               S$LSYM=S$LSYM+1
      034550                      M$SVC    C$BSEG
                                  .MCALL   M$GNINS,M$TSTLAB
      034550                      M$TSTLAB
```

TEST 10: SECONDARY ADDRESSING TEST OF CHANNEL 1 (TALKER)

```
                                        .MCALL  M$TLABEL,M$INCR
                                        .IIF LT T$TSTMAC, .MEXIT
                                        .RADIX  10
                                        M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                        .RADIX  8
                                        M$INCR  T$TSTSEQ
034550                                  M$GNINS <TRAP   C$BSEG>
                                        .IF LT SVCINS
                                        TRAP    C$BSEG
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                TRAP    C$BSEG
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
034550  104404                                                                                  TRAP    C$BSEG
                                                        .NLIST
                                        .ENDC
034552  052777  000010  145520                  BIS     #10,@CSRX               ;SELECT CHANNEL 2
034560  012737  000002  002374                  MOV     #2,CHAN                 ;LOAD CHANNEL NUMBER
034566  113777  002414  145502                  MOVB    MTA1,@IDRHX             ;----LOAD TALKER ADDRESS OF CHANNEL 2---
034574  004737  011050                          JSR     PC,LOOP                 ;WAIT A LITTLE
034600  042777  000010  145472                  BIC     #10,@CSRX               ;SELECT CHANNEL 1
034606  012737  000001  002374                  MOV     #1,CHAN                 ;LOAD CHANNEL NUMBER
034614  017737  145430  002502                  MOV     @IIRX,BAD               ;GET IIR1 CONTENTS
034622  022737  000001  002502                  CMP     #1,BAD                  ;MAC BIT IN IIR1 SHOULD BE SET
034630  001410                                  BEQ     30$                     ;BRANCH IF YES
034632  012737  000001  002500                  MOV     #1,GOOD                 ;SET UP DATA FOR ERROR MESSAGES
034640                                          ERRSOFT 1010,E501,ERR501        ;ERROR HANDLER
                                        .MCALL  M$ERRINS
034640                                  M$ERRINS        1010,E501,ERR501,C$ERSOFT
                                        .MCALL  M$GNINS,M$WORD,M$TSTLAB
034640                                  M$SVC   C$ERSOFT
                                        .MCALL  M$GNINS,M$TSTLAB
034640                                  M$TSTLAB
                                        .MCALL  M$TLABEL,M$INCR
                                        .IIF LT T$TSTMAC, .MEXIT
                                        .RADIX  10
                                        M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                        .RADIX  8
                                        M$INCR  T$TSTSEQ
034640                                  M$GNINS <TRAP   C$ERSOFT>
                                        .IF LT SVCINS
                                        TRAP    C$ERSOFT
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                TRAP    C$ERSOFT
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
```

```
                        .LIST
034640  104457                                                          TRAP    C$ERSOFT
                                        .NLIST
                        .ENDC
        000012          .RADIX  10
                        .IF NB  1010
        001762          T$ERRNUM=1010
                        .IFF
                        .ERROR  ;MISSING ERROR-NR
                        .ENDC
034642                  M$WORD  \T$ERRNUM
                        .MCALL  M$GNINS
                        .IRP    N,<1010>
                        M$GNINS <.WORD  N>
                        .ENDM
034642                  M$GNINS <.WORD  1010>
                        .IF LT SVCINS
                        .WORD   1010
                        .MEXIT
                        .ENDC
                        .IF EQ SVCINS
                        .LIST
                                .WORD   1010
                                        .NLIST
                        .MEXIT
                        .ENDC
                        .IF GT SVCINS
                        .LIST
034642  001762                                                          .WORD   1010
                                        .NLIST
                        .ENDC
        000010          .RADIX  8
                        .IF NB E501
034644                  M$WORD  E501
                        .MCALL  M$GNINS
                        .IRP    N,<E501>
                        M$GNINS <.WORD  N>
                        .ENDM
034644                  M$GNINS <.WORD  E501>
                        .IF LT SVCINS
                        .WORD   E501
                        .MEXIT
                        .ENDC
                        .IF EQ SVCINS
                        .LIST
                                .WORD   E501
                                        .NLIST
                        .MEXIT
                        .ENDC
                        .IF GT SVCINS
                        .LIST
034644  005376                                                          .WORD   E501
                                        .NLIST
                        .ENDC
                        .IFF
                        M$WORD  0
                        .ENDC
                          :
```

```
                                        .IF NB ERR501
     034646                             M$WORD  ERR501
                                        .MCALL  M$GNINS
                                        .IRP    N,<ERR501>
                                        M$GNINS <.WORD  N>
                                        .ENDM
     034646                             M$GNINS <.WORD  ERR501>
                                        .IF LT SVCINS
                                        .WORD   ERR501
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                .WORD   ERR501
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
     034646  003672                                                                                     .WORD   ERR501
                                                        .NLIST
                                        .ENDC
                                        .IFF
                                        M$WORD  0
                                        .ENDC
4915 034650                                     CKLOOP                          ;BRANCH TO BGNSEG WHEN ERRLOOP IS SET
                                        .MCALL  M$SVC
     034650                             M$SVC   C$CLP1
                                        .MCALL  M$GNINS,M$TSTLAB
     034650                             M$TSTLAB
                                        .MCALL  M$TLABEL,M$INCR
                                        .IIF LT T$TSTMAC, .MEXIT
                                        .RADIX  10
                                        M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                        .RADIX  8
                                        M$INCR  T$TSTSEQ
     034650                             M$GNINS <TRAP   C$CLP1>
                                        .IF LT SVCINS
                                        TRAP    C$CLP1
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                TRAP    C$CLP1
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
     034650  104406                                                                                     TRAP    C$CLP1
                                                        .NLIST
                                        .ENDC
4916 034652  052777  000010  145420     30$:    BIS     #10,@CSRX               ;SELECT CHANNEL 2
4917 034660  012737  000002  002374             MOV     #2,CHAN                 ;LOAD CHANNEL NUMBER
4918 034666  013701  002414                     MOV     MTA1,R1                 ;GET MLA1
4919 034672  062701  000040                     ADD     #40,R1                  ;CREATE MSA1
4920 034676  010137  002420                     MOV     R1,MSA1                 ;STORE MSA1 TO LOCATION MSA1
```

```
4921 034702  113777  002420  145366          MOVB    MSA1,@IDRHX           ;-------LOAD MSA1 INTO DOR2----------
4922 034710  004737  011050                  JSR     PC,LOOP               ;WAIT A LITTLE
4923 034714  042777  000010  145356          BIC     #10,@CSRX             ;SELECT CHANNEL 1
4924 034722  012737  000001  002374          MOV     #1,CHAN               ;LOAD CHANNEL NUMBER
4925 034730  112777  000001  145332          MOVB    #1,@ICRHX             ;-----LOAD NOT DACR INTO ACR1--------
4926 034736  017737  145306  002502          MOV     @IIRX,BAD             ;READ IIR1 FOR CLEAR THE BITS
4927 034744  017737  145306  002502          MOV     @ISRX,BAD             ;GET ISR1 CONTENTS
4928 034752  023737  002436  002502          CMP     CDAT2,BAD             ;ATN,NDAC,ATN,TPAS (ULPA) IS SET
4929 034760  001410                          BEQ     46$                   ;BRANCH IF YES
4930 034762  013737  002436  002500          MOV     CDAT2,GOOD            ;SET UP DATA FOR ERROR MESSAGE
4931 034770                                  ERRSOFT 1011,E502,ERR501      ;ERROR HANDLER
                                        .MCALL  M$ERRINS
     034770                             M$ERRINS        1011,E502,ERR501,C$ERSOFT
                                        .MCALL  M$GNINS,M$WORD,M$TSTLAB
     034770                             M$SVC   C$ERSOFT
                                        .MCALL  M$GNINS,M$TSTLAB
     034770                             M$TSTLAB
                                        .MCALL  M$TLABEL,M$INCR
                                        .IIF LT T$TSTMAC, .MEXIT
                                        .RADIX  10
                                        M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                        .RADIX  8
                                        M$INCR  T$TSTSEQ
     034770                             M$GNINS <TRAP   C$ERSOFT>
                                        .IF LT SVCINS
                                        TRAP    C$ERSOFT
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                TRAP    C$ERSOFT
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
     034770  104457                                                                         TRAP    C$ERSOFT
                                                        .NLIST
                                        .ENDC
             000012                     .RADIX  10
                                        .IF NB  1011
             001763                     T$ERRNUM=1011
                                        .IFF
                                        .ERROR  ;MISSING ERROR-NR
                                        .ENDC
     034772                             M$WORD  \T$ERRNUM
                                        .MCALL  M$GNINS
                                        .IRP    N,<1011>
                                        M$GNINS <.WORD  N>
                                        .ENDM
     034772                             M$GNINS <.WORD  1011>
                                        .IF LT SVCINS
                                        .WORD   1011
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
```

```
                                  .WORD   1011
                                          .NLIST
                         .MEXIT
                         .ENDC
                         .IF GT SVCINS
                         .LIST
      034772  001763                                                          .WORD   1011
                                          .NLIST
                         .ENDC
              000010     .RADIX  8
                         .IF NB E502
      034774             M$WORD  E502
                         .MCALL  M$GNINS
                         .IRP    N,<E502>
                         M$GNINS <.WORD  N>
                         .ENDM
      034774             M$GNINS <.WORD  E502>
                         .IF LT SVCINS
                         .WORD   E502
                         .MEXIT
                         .ENDC
                         .IF EQ SVCINS
                         .LIST
                                  .WORD   E502
                                          .NLIST
                         .MEXIT
                         .ENDC
                         .IF GT SVCINS
                         .LIST
      034774  005437                                                          .WORD   E502
                                          .NLIST
                         .ENDC
                         .IFF
                         M$WORD  0
                         .ENDC
                         .IF NB ERR501
      034776             M$WORD  ERR501
                         .MCALL  M$GNINS
                         .IRP    N,<ERR501>
                         M$GNINS <.WORD  N>
                         .ENDM
      034776             M$GNINS <.WORD  ERR501>
                         .IF LT SVCINS
                         .WORD   ERR501
                         .MEXIT
                         .ENDC
                         .IF EQ SVCINS
                         .LIST
                                  .WORD   ERR501
                                          .NLIST
                         .MEXIT
                         .ENDC
                         .IF GT SVCINS
                         .LIST
      034776  003672                                                          .WORD   ERR501
                                          .NLIST
                         .ENDC
```

E16


```
                                        .IFF
                                        M$WORD  0
                                        .ENDC
 4932 035000                                    CKLOOP                          ;BRANCH BACK TO BGNSEG IF ERRLOOP IS SET
                                        .MCALL  M$SVC
      035000                            M$SVC   C$CLP1
                                        .MCALL  M$GNINS,M$TSTLAB
      035000                            M$TSTLAB
                                        .MCALL  M$TLABEL,M$INCR
                                        .IIF LT T$TSTMAC, .MEXIT
                                        .RADIX  10
                                        M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                        .RADIX  8
                                        M$INCR  T$TSTSEG
      035000                            M$GNINS <TRAP   C$CLP1>
                                        .IF LT SVCINS
                                        TRAP    C$CLP1
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                TRAP    C$CLP1
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
      035000  104406                                                                                   TRAP    C$CLP1
                                                        .NLIST
                                        .ENDC
 4933 035002  052777  000010  145270   46$:     BIS     #10,@CSRX               ;SELECT CHANNEL 2
 4934 035010  012737  000002  002374            MOV     #2,CHAN                 ;LOAD CHANNEL NUMBER
 4935 035016  017737  145226  002502            MOV     @IIRX,BAD               ;GET IIR2 CONTENTS
 4936 035024  022737  000020  002502            CMP     #20,BAD                 ;BO BIT SHOULD BE SET
 4937 035032  001410                            BEQ     50$                     ;BRANCH IF YES
 4938 035034  012737  000020  002500            MOV     #20,GOOD                ;SET UP DATA FOR ERROR MESSAGE
 4939 035042                                    ERRSOFT 1012,E501,ERR501        ;ERROR HANDLER
                                        .MCALL  M$ERRINS
      035042                            M$ERRINS        1012,E501,ERR501,C$ERSOFT
                                        .MCALL  M$GNINS,M$WORD,M$TSTLAB
      035042                            M$SVC   C$ERSOFT
                                        .MCALL  M$GNINS,M$TSTLAB
      035042                            M$TSTLAB
                                        .MCALL  M$TLABEL,M$INCR
                                        .IIF LT T$TSTMAC, .MEXIT
                                        .RADIX  10
                                        M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                        .RADIX  8
                                        M$INCR  T$TSTSEQ
      035042                            M$GNINS <TRAP   C$ERSOFT>
                                        .IF LT SVCINS
                                        TRAP    C$ERSOFT
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                TRAP    C$ERSOFT
```

```
                                        .NLIST
                            .MEXIT
                            .ENDC
                            .IF GT SVCINS
                            .LIST
035042  104457                                                          TRAP    C$ERSOFT
                                        .NLIST
                            .ENDC
        000012              .RADIX  10
                            .IF NB  1012
        001764              T$ERRNUM=1012
                            .IFF
                            .ERROR  ;MISSING ERROR NR
                            .ENDC
035044                      M$WORD  \T$ERRNUM
                            .MCALL  M$GNINS
                            .IRP    N,<1012>
                            M$GNINS <.WORD  N>
                            .ENDM
035044                      M$GNINS <.WORD  1012>
                            .IF LT SVCINS
                            .WORD   1012
                            .MEXIT
                            .ENDC
                            .IF EQ SVCINS
                            .LIST
                                    .WORD   1012
                                        .NLIST
                            .MEXIT
                            .ENDC
                            .IF GT SVCINS
                            .LIST
035044  001764                                                          .WORD   1012
                                        .NLIST
                            .ENDC
        000010              .RADIX  8
                            .IF NB E501
035046                      M$WORD  E501
                            .MCALL  M$GNINS
                            .IRP    N,<E501>
                            M$GNINS <.WORD  N>
                            .ENDM
035046                      M$GNINS <.WORD  E501>
                            .IF LT SVCINS
                            .WORD   E501
                            .MEXIT
                            .ENDC
                            .IF EQ SVCINS
                            .LIST
                                    .WORD   E501
                                        .NLIST
                            .MEXIT
                            .ENDC
                            .IF GT SVCINS
                            .LIST
035046  005376                                                          .WORD   E501
                                        .NLIST
```



```
                                        .ENDC
                                        .IFF
                                        M$WORD  0
                                        .ENDC
                                        .IF NB ERR501
      035050                            M$WORD  ERR501
                                        .MCALL  M$GNINS
                                        .IRP    N,<ERR501>
                                        M$GNINS <.WORD  N>
                                        .ENDM
      035050                            M$GNINS <.WORD  ERR501>
                                        .IF LT SVCINS
                                        .WORD   ERR501
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                .WORD   ERR501
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
      035050  003672                                                                    .WORD   ERR501
                                                        .NLIST
                                        .ENDC
                                        .IFF
                                        M$WORD  0
                                        .ENDC
 4940 035052                                    CKLOOP                      ;BRANCH BACK TO BGNSEG IF ERRLOOP IS SET
                                        .MCALL  M$SVC
      035052                            M$SVC   C$CLP1
                                        .MCALL  M$GNINS,M$TSTLAB
      035052                            M$TSTLAB
                                        .MCALL  M$TLABEL,M$INCR
                                        .IIF LT T$TSTMAC, .MEXIT
                                        .RADIX  10
                                        M$TLABEL        \T$TESTNUN \T$TSTSEQ
                                        .RADIX  8
                                        M$INCR  T$TSTSEQ
      035052                            M$GNINS <TRAP   C$CLP1>
                                        .IF LT SVCINS
                                        TRAP    C$CLP1
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                TRAP    C$CLP1
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
      035052  104406                                                                    TRAP    C$CLP1
                                                        .NLIST
                                        .ENDC
 4941 035054  112777  000137  145214    50$:    MOVB    #137,@IDRHX         ;--LOAD UNT INTO DOR2
```

H16


```
4942 035062                            ENDSEG
                               .MCALL  M$POP,M$GNLS,M$SVC,M$ENDERR
     035062                    M$POP   T$NS,T$NESTLEV,T$TEMP
                               .MCALL  M$GETS,M$DECR
                               .IF LT  T$NESTLEV
                               .ERROR  T$NESTLEV        ; MACRO T$NS UNDERFLOW
                               .MEXIT
                               .ENDC
     035062                    M$GETS  T$NS,\T$NESTLEV,T$TEMP
            000003             T$TEMP=T$NS2
     035062                    M$DECR  T$NESTLEV
            000001             T$NESTLEV=T$NESTLEV-1
                               .IF EQ F$SEG-T$TEMP
     035062                    M$POP   T$SEK,T$SEGLEV,T$$SEG
                               .MCALL  M$GETS,M$DECR
                               .IF LT  T$SEGLEV
                               .ERROR  T$SEGLEV         ; MACRO T$SEK UNDERFLOW
                               .MEXIT
                               .ENDC
     035062                    M$GETS  T$SEK,\T$SEGLEV,T$$SEG
            010001             T$$SEG=T$SEK0
     035062                    M$DECR  T$SEGLEV
            177777             T$SEGLEV=T$SEGLEV-1
     035062                    M$GNLS  T$$SEG
                               .MCALL  M$GEN
                               .IF NB T$$SEG
     035062                    M$GEN   \T$$SEG,$,SVCTAG
                               .IF LE  SVCTAG
                               .IIF EQ SVCTAG,.LIST
                               10001$:
                               .IIF EQ SVCTAG,.NLIST
                               .MEXIT
                               .ENDC
                               .LIST
     035062                                                                  10001$:
                                        .NLIST
                               .IFF
                               M$GEN   \S$LSYM,$,SVCTAG
                               .ENDC
     035062                    M$SVC   C$ESEG
                               .MCALL  M$GNINS,M$TSTLAB
     035062                    M$TSTLAB
                               .MCALL  M$TLABEL,M$INCR
                               .IIF LT T$TSTMAC, .MEXIT
                               .RADIX  10
                               M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                               .RADIX  8
                               M$INCR  T$TSTSEQ
     035062                    M$GNINS <TRAP   C$ESEG>
                               .IF LT SVCINS
                               TRAP    C$ESEG
                               .MEXIT
                               .ENDC
                               .IF EQ SVCINS
                               .LIST
                                       TRAP    C$ESEG
                                               .NLIST
```

```
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
     035062  104405                                                                          TRAP    C$ESEG
                                                     .NLIST
                                        .ENDC
                                        .IF EQ T$SEGLEV+1
             000041                     I$SEG=F$END
                                        .ENDC
                                        .IFF
                                        M$ENDERR        ENDSEG,T$TEMP
                                        .ENDC
     035064  005737  002234                     TST     QVP                     ;IS QUICK VERIFY PASS SELECTED
     035070  001054                             BNE     EXQV10                  ;IF YES EXIT TEST
     035072  005737  002322                     TST     ITRCNT                  ;IS THIS THE FIRST TIME THROUGH THE TEST
     035076  001007                             BNE     1$                      ;BRANCH IF NO
     035100  013737  002312  002406             MOV     DPA1,SDPA               ;SAVE ENTERED DPA1
     035106  005037  002312                     CLR     DPA1                    ;CLR DPA1
     035112  005237  002322                     INC     ITRCNT                  ;SET FLAG TO SEE FIRST TIME PASS
     035116  005237  002312         1$:         INC     DPA1                    ;GET NEW DPA1
     035122  023737  002312  002314             CMP     DPA1,DPA2               ;IS DPA1 = DPA2
     035130  001002                             BNE     2$                      ;BRANCH IF NO
     035132  005237  002312                     INC     DPA1                    ;INCREMENT DPA1
     035136  022737  000037  002312 2$:         CMP     #37,DPA1                ;ALL DONE
     035144  001423                             BEQ     3$                      ;BRANCH IF YES
     035146  052777  000010  145124             BIS     #10,@CSRX               ;SELECT CHANNEL 2
     035154  112777  000217  145106             MOVB    #217,@ICRHX             ;----LOAD SIC INTO ACR 2-------
     035162  004737  011062                     JSR     PC,WAIT                 ;WAIT A LITTLE
     035166  112777  000017  145074             MOVB    #17,@ICRHX              ;----LOAD NOT SIC INTO ACR 2---
     035174  042777  000010  145076             BIC     #10,@CSRX               ;SELECT CHANNEL 1
     035202  113777  002312  145044             MOVB    DPA1,@IIRHX             ;LOAD NEW DPA1 INTO ADR1
     035210  000137  033614                     JMP     A10                     ;REPEAT THE TEST WITH THE NEW DPA1
     035214  013737  002406  002312 3$:         MOV     SDPA,DPA1               ;RESTORE ENTERED DPA1
     035222                             EXQV10: EXIT TST
                                        .MCALL  M$SVC,M$EXIT,M$EXSEG,M$EXTJ,M$GETTOP,M$CHECK,M$WORD,XFER
             000041                     T$FLAG=F$END
     035222                             M$CHECK TST,T$TEMP,T$FLAG
                                        .IF IDN <TST>,<TST>
             010037                     T$TEMP=T$$TEST
             000040                     T$FLAG=I$TST
                                        .MEXIT
                                        .ENDC
                                        .IF IDN <SUB>,<TST>
                                        T$TEMP=T$$SUB
                                        T$FLAG=I$SUB
                                        .MEXIT
                                        .ENDC
                                        .IF IDN <SEG>,<TST>
                                        T$TEMP=T$$SEG
                                        T$FLAG=I$SEG
                                        .MEXIT
                                        .ENDC
                                        .IF IDN <INIT>,<TST>
                                        T$TEMP=T$$INIT
                                        T$FLAG=I$INIT
                                        .MEXIT
```

```
                                .ENDC
                                .IF IDN <CLN>,<TST>
                                T$TEMP=T$$CLEAN
                                T$FLAG=I$CLN
                                .MEXIT
                                .ENDC
                                .IF IDN <SRV>,<TST>
                                T$TEMP=T$$SRV
                                T$FLAG=I$SRV
                                .MEXIT
                                .ENDC
                                .IF IDN <MSG>,<TST>
                                T$TEMP=T$$MSG
                                T$FLAG=F$JMP
                                .MEXIT
                                .ENDC
                                .IF IDN <RPT>,<TST>
                                T$TEMP=T$$RPT
                                T$FLAG=F$JMP
                                .MEXIT
                                .ENDC
                                .IF IDN <DU>,<TST>
                                T$TEMP=T$$DU
                                T$FLAG=F$JMP
                                .MEXIT
                                .ENDC
                                .IF IDN <AU>,<TST>
                                T$TEMP=T$$AU
                                T$FLAG=F$JMP
                                .MEXIT
                                .ENDC
                                .IF EQ T$FLAG-F$JMP
                                M$WORD  J$JMP
                                M$EXTJ  \T$TEMP
                                .MEXIT
                                .ENDC
                                .IF EQ  T$FLAG-F$BGN
     035222                     M$SVC   C$EXIT
                                .MCALL  M$GNINS,M$TSTLAB
     035222                     M$TSTLAB
                                .MCALL  M$TLABEL,M$INCR
                                .IIF LT T$TSTMAC, .MEXIT
                                .RADIX  10
                                M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                .RADIX  8
                                M$INCR  T$TSTSEQ
     035222                     M$GNINS <TRAP   C$EXIT>
                                .IF LT SVCINS
                                TRAP    C$EXIT
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        TRAP    C$EXIT
                                                .NLIST
                                .MEXIT
                                .ENDC
```

```
                                        .IF GT SVCINS
                                        .LIST
       035222  104432                                                      TRAP    C$EXIT
                                                    .NLIST
                                        .ENDC
                                        .IF IDN <SEG>,<TST>
                                        M$GETTOP T$SEK,T$SEGLEV,T$TEMP
                                        M$EXSEG \T$TEMP
                                        .IFF
       035224                           M$EXIT  \T$TEMP
                                        .MCALL  M$GNINS
       035224                           M$GNINS <.WORD  L10037-.>
                                        .IF LT SVCINS
                                        .WORD   L10037-.
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                              .WORD   L10037-.
                                                    .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
       035224  000072                                                      .WORD   L10037-.
                                                    .NLIST
                                        .ENDC
                                        .ENDC
                                        .MEXIT
                                        .ENDC
                                        .IF IDN <HRD>,<TST>
                                        M$GETTOP        T$NS,T$NESTLEV,T$TEMP
                                        .IF EQ  F$HARD T$TEMP
                                        .IRP    N,<\T$$HARD>
                                        XFER    L'N
                                        .ENDM
                                        .MEXIT
                                        .ENDC
                                        .ENDC
                                        .IF IDN <SFT>,<TST>
                                        M$GETTOP        T$NS,T$NESTLEV,T$TEMP
                                        .IF EQ  F$SOFT T$TEMP
                                        .IRP    N,<\T$$SOFT>
                                        XFER    L'N
                                        .ENDM
                                        .MEXIT
                                        .ENDC
                                        .ENDC
                                        .ERROR  ;ILL. "EXIT TST" STMT.
  4965
  4966                                          .NLIST  BEX
  4967 035226     045     123     062   TSHD10: .ASCIZ  /*S2*ASECONDARY ADDRESSING TEST OF CHANNEL 1 (TALKER)*N/
  4968                                          .LIST   BEX
  4969                                          .EVEN
  4970 035316                                   ENDTST
                                        .MCALL  M$POP,M$GNTAG,M$SVC,M$ENDERR
                                        .IF EQ  F$BGN-I$TST
```

```
          000041          I$TST=F$END
                          .IFF
                          .ERROR  ;MISSING "BGNTST"
                          .MEXIT
                          .ENDC
035316                    M$POP   T$NS,T$NESTLEV,T$TEMP
                          .MCALL  M$GETS,M$DECR
                          .IF LT  T$NESTLEV
                          .ERROR  T$NESTLEV       ; MACRO T$NS UNDERFLOW
                          .MEXIT
                          .ENDC
035316                    M$GETS  T$NS,\T$NESTLEV,T$TEMP
        000001            T$TEMP=T$NS1
035316                    M$DECR  T$NESTLEV
        000000            T$NESTLEV=T$NESTLEV-1
                          .IF EQ F$TEST-T$TEMP
035316                    M$GNTAG L,T$$TEST
                          .MCALL  M$GEN
035316                    M$GEN   L,\T$$TEST,SVCTAG
                          .IF LE  SVCTAG
                          .IIF EQ SVCTAG,.LIST
                          L10037:
                          .IIF EQ SVCTAG,.NLIST
                          .MEXIT
                          .ENDC
                          .LIST
035316                                                              L10037:
                                  .NLIST
        010000            S$LSYM=T$LSYM
035316                    M$SVC   C$ETST
                          .MCALL  M$GNINS,M$TSTLAB
035316                    M$TSTLAB
                          .MCALL  M$TLABEL,M$INCR
                          .IIF LT T$TSTMAC, .MEXIT
                          .RADIX  10
                          M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                          .RADIX  8
                          M$INCR  T$TSTSEQ
035316                    M$GNINS <TRAP   C$ETST>
                          .IF LT SVCINS
                          TRAP    C$ETST
                          .MEXIT
                          .ENDC
                          .IF EQ SVCINS
                          .LIST
                                  TRAP    C$ETST
                                          .NLIST
                          .MEXIT
                          .ENDC
                          .IF GT SVCINS
                          .LIST
035316  104401                                                          TRAP    C$ETST
                                          .NLIST
                          .ENDC
        000041            I$TST=F$END
                          .IFF
                          M$ENDERR        ENDTST,T$TEMP
```

```
                                        .ENDC
```

```
                                  .SBTTL  TEST 11: SECONDARY ADDRESSING TEST OF CHANNEL 2 (LISTENER)
                                  ;*************************************************************************
                                  ;               IEX - TEST 11
                                  ;THIS TEST CHECKS THE EXTENDED LISTENER INTERFACE FUNCTION .
                                  ;
                                  ;PURPOSE OF THIS TEST IS TO CHECK THE SECONDARY ADDRESSING
                                  ;FEATURE OF CHANNEL 2 BY MEANS OF RECEIVING A VALID AS WELL AS
                                  ;AN INVALID MY SECONDARY ADDRESS (MSA2).
                                  ;*************************************************************************
035320                                    BGNTST
                                  .MCALL  M$INCR,M$GNTEST,M$PUSH,M$INCR
                                  .IF NE  F$END-I$SUB
                                  .ERROR  ;"BGNTST" IN SUB
                                  .MEXIT
                                  .ENDC
                                  .IF NE  F$END-I$SEG
                                  .ERROR  ;"BGNTST" IN SEG
                                  .MEXIT
                                  .ENDC
                                  .IF NE  F$END-I$TST
                                  .ERROR  ;"BGNTST" IN TST
                                  .MEXIT
                                  .IFF
        000040                    I$TST=F$BGN
                                  .ENDC
                                  .IF B
035320                            M$INCR  T$TESTNUM
        000013                    T$TESTNUM=T$TESTNUM+1
                                  .IFF
                                  T$TESTNUM=
                                  .ENDC
        000000                    T$SUBNUM=0
        000012                    .RADIX  10
035320                            M$GNTEST        \T$TESTNUM
                                  .MCALL  M$GEN
035320                            M$GEN   T,11:,SVCTST
                                  .IF LE  SVCTST
                                  .IIF EQ SVCTST,.LIST
                                  T11::
                                  .IIF EQ SVCTST,.NLIST
                                  .MEXIT
                                  .ENDC
                                  .LIST
035320                                                                        T11::
                                          .NLIST
        000010                    .RADIX  8
035320                            M$PUSH  T$NS,T$NESTLEV,F$TEST
                                  .MCALL  M$INCR,M$SETS
035320                            M$INCR  T$NESTLEV
        000001                    T$NESTLEV=T$NESTLEV+1
035320                            M$SETS  T$NS,\T$NESTLEV,F$TEST
        000001                    T$NS1=F$TEST
        010040                    T$$TEST=T$TAGNUM
035320                            M$INCR T$TAGNUM
        010041                    T$TAGNUM=T$TAGNUM+1
        000001                    T$TSTSEQ=1
035320  005737  002324                    TST     PNTF                    ;IS THE PNT FLAG SET
```

```
 4983 035324  001410                      BEQ     7$                       ;IF YES, PRINT THE TEST HEADER
 4984 035326                              PRINTF  ØTSHD11                  ;...
                                  .MCALL  M$PRINT
                                  .IF B   ØTSHD11
                                  .ERROR  ;MISSING FORMAT
                                  .MEXIT
                                  .ENDC
                                  .IF B   <>
      035326                      M$PRINT C$PNTF,ØTSHD11
                                  .MCALL  M$COUNT,M$PUT,M$GNINS,M$SVC
              000001              T$ARGCNT=1
      035326                      M$COUNT T$ARGCNT,<>,<>,<>,<>,<>,<>,<>,<>
                                  .IF NB <>
                                  M$COUNT T$ARGCNT,<>,<>,<>,<>,<>,<>,<>,<>
                                  .ENDC
                                  .IF NB <>
                                  T$ARGCNT=T$ARGCNT+1
                                  .ENDC
                                  .IRP    N,<\T$ARGCNT>
                                  M$PUT   ØN,ØTSHD11,<>,<>,<>,<>,<>,<>,<>,<>
                                  .ENDM
      035326                      M$PUT   Ø1,ØTSHD11,<>,<>,<>,<>,<>,<>,<>,<>
                                  .MCALL  M$PUT1
                                  .IF NB  <ØTSHD11>
      035326                      M$PUT   <ØTSHD11>,<>,<>,<>,<>,<>,<>,<>,<>
                                  .MCALL  M$PUT1
                                  .IF NB  <>
                                  M$PUT   <>,<>,<>,<>,<>,<>,<>,<>,<>
                                  .ENDC
                                  .IF NB  <ØTSHD11>
      035326                      M$PUT1  ØTSHD11
                                  .MCALL  M$GNINS
                                  .IF B
      035326                      M$GNINS <MOV    ØTSHD11,-(SP)>
                                  .IF LT SVCINS
                                  MOV     ØTSHD11,-(SP)
                                  .MEXIT
                                  .ENDC
                                  .IF EQ SVCINS
                                  .LIST
                                          MOV     ØTSHD11,-(SP)
                                                  .NLIST
                                  .MEXIT
                                  .ENDC
                                  .IF GT SVCINS
                                  .LIST
      035326  012746  036774                                                      MOV     ØTSHD11,-(SP)
                                                  .NLIST
                                  .ENDC
                                  .IFF
                                  .IF DIF B,<ØTSHD11>
                                  .ERROR  ;ILL. ARG. "ØTSHD11" ONLY "B" IS ALLOWED.
                                  .MEXIT
                                  .ENDC
                                  M$GNINS <CLR    -(SP)>
                                  M$GNINS <BISB   ,(SP)>
                                  .ENDC
```

D1


```
                                 .ENDC
                                 .ENDC
                                 .IF NB  <#1>
     035332                      M$PUT1  #1
                                 .MCALL  M$GNINS
                                 .IF B
     035332                      M$GNINS <MOV    #1,-(SP)>
                                 .IF LT SVCINS
                                 MOV     #1,-(SP)
                                 .MEXIT
                                 .ENDC
                                 .IF EQ SVCINS
                                 .LIST
                                         MOV     #1,-(SP)
                                                 .NLIST
                                 .MEXIT
                                 .ENDC
                                 .IF GT SVCINS
                                 .LIST
     035332  012746  000001                                                          MOV     #1,-(SP)
                                                 .NLIST
                                 .ENDC
                                 .IFF
                                 .IF DIF B,<#1>
                                 .ERROR  ;ILL. ARG. "#1" ONLY "B" IS ALLOWED.
                                 .MEXIT
                                 .ENDC
                                 M$GNINS <CLR    -(SP)>
                                 M$GNINS <BISB   ,(SP)>
                                 .ENDC
                                 .ENDC
     035336                      M$GNINS <MOV    SP,R0>
                                 .IF LT SVCINS
                                 MOV     SP,R0
                                 .MEXIT
                                 .ENDC
                                 .IF EQ SVCINS
                                 .LIST
                                         MOV     SP,R0
                                                 .NLIST
                                 .MEXIT
                                 .ENDC
                                 .IF GT SVCINS
                                 .LIST
     035336  010600                                                                  MOV     SP,R0
                                                 .NLIST
                                 .ENDC
     035340                      M$SVC   C$PNTF
                                 .MCALL  M$GNINS,M$TSTLAB
     035340                      M$TSTLAB
                                 .MCALL  M$TLABEL,M$INCR
                                 .IIF LT T$TSTMAC, .MEXIT
                                 .RADIX  10
                                 M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                 .RADIX  8
                                 M$INCR  T$TSTSEQ
     035340                      M$GNINS <TRAP   C$PNTF>
```

```
                                .IF LT SVCINS
                                TRAP    C$PNTF
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        TRAP    C$PNTF
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
     035340  104417                                                                 TRAP    C$PNTF
                                                .NLIST
                                .ENDC
                                .IRP    N,<\T$ARGCNT*2+2>
                                M$GNINS <ADD    #N,SP>
                                .ENDM
     035342                     M$GNINS <ADD    #4,SP>
                                .IF LT SVCINS
                                ADD     #4,SP
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        ADD     #4,SP
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
     035342  062706  000004                                                         ADD     #4,SP
                                                .NLIST
                                .ENDC
                                .MEXIT
                                .ENDC
                                .IF B   <>
                                M$PRINT C$PNTF,#TSHD11,<>
                                .MEXIT
                                .ENDC
                                .IF B   <>
                                M$PRINT C$PNTF,#TSHD11,<>,<>
                                .MEXIT
                                .ENDC
                                .IF B   <>
                                M$PRINT C$PNTF,#TSHD11,<>,<>,<>
                                .MEXIT
                                .ENDC
                                .IF B   <>
                                M$PRINT C$PNTF,#TSHD11,<>,<>,<>,<>
                                .MEXIT
                                .ENDC
                                .IF B   <>
                                M$PRINT C$PNTF,#TSHD11,<>,<>,<>,<>,<>
                                .MEXIT
                                .ENDC
                                .IF B   <>
```

```
                                                M$PRINT C$PNTF,#TSHD11,<>,<>,<>,<>,<>,<>
                                                .MEXIT
                                                .ENDC
                                                .IF B   <>
                                                M$PRINT C$PNTF,#TSHD11,<>,<>,<>,<>,<>,<>,<>
                                                .MEXIT
                                                .ENDC
                                                M$PRINT C$PNTF,#TSHD11,<>,<>,<>,<>,<>,<>,<>,<>
 035346  005037  002322                 7$:     CLR     ITRCNT                  ;CLEAR COUNTER
 035352  004737  010210                         JSR     PC,CULPA                ;CLEAR ULPA IN ISR 1 AND 2
 035356  004737  010524                         JSR     PC,BGIN1                ;SET UP PARAMETER
 035362  052777  000010  144710         A11:    BIS     #10,@CSRX               ;SELECT CHANNEL 2
 035370  112777  000223  144672                 MOVB    #223,@ICRHX             ;----LOAD DAI INTO ACR2----------
 035376  112777  000020  144656                 MOVB    #20,@ISRHX              ;----LOAD APT BIT INTO ISR2------
 035404  013701  002314                         MOV     DPA2,R1                 ;GET DPA2 ADDRESS
 035410  062701  000040                         ADD     #40,R1                  ;CREATE MY LISTENER ADDRESS (MLA)
 035414  010137  002412                         MOV     R1,MLA2                 ;STORE MLA
 035420  032737  000001  002314                 BIT     #1,DPA2                 ;IS DPA EVEN
 035426  001412                                 BEQ     3$                      ;BRANCH IF YES
 035430  052737  000001  002446                 BIS     #1,CDAT6                ;SET ULPA BIT IN COMPARE DATA FOR ISR
 035436  052737  000001  002442                 BIS     #1,CDAT4                ;...
 035444  052737  000001  002444                 BIS     #1,CDAT5                ;...
 035452  000411                                 BR      .+24                    ;BRANCH TO BGNSEG
 035454  042737  000001  002446         3$:     BIC     #1,CDAT6                ;CLEAR ULPA BIT IN COMPARE DATA FOR ISR
 035462  042737  000001  002442                 BIC     #1,CDAT4                ;...
 035470  042737  000001  002444                 BIC     #1,CDAT5                ;...
 035476                                         BGNSEG
                                                .MCALL  M$PUSH,M$INCR,M$SVC
         000040                                 I$SEG=F$BGN
 035476                                         M$PUSH  T$NS,T$NESTLEV,F$SEG
                                                .MCALL  M$INCR,M$SETS
 035476                                         M$INCR  T$NESTLEV
         000002                                 T$NESTLEV=T$NESTLEV+1
 035476                                         M$SETS  T$NS,\T$NESTLEV,F$SEG
         000003                                 T$NS2=F$SEG
         010000                                 T$$SEG=S$LSYM
 035476                                         M$PUSH  T$SEK,T$SEGLEV,T$$SEG
                                                .MCALL  M$INCR,M$SETS
 035476                                         M$INCR  T$SEGLEV
         000000                                 T$SEGLEV=T$SEGLEV+1
 035476                                         M$SETS  T$SEK,\T$SEGLEV,T$$SEG
         010000                                 T$SEK0=T$$SEG
 035476                                         M$INCR  S$LSYM
         010001                                 S$LSYM=S$LSYM+1
 035476                                         M$SVC   C$BSEG
                                                .MCALL  M$GNINS,M$TSTLAB
 035476                                         M$TSTLAB
                                                .MCALL  M$TLABEL,M$INCR
                                                .IIF LT T$TSTMAC, .MEXIT
                                                .RADIX  10
                                                M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                                .RADIX  8
                                                M$INCR  T$TSTSEQ
 035476                                         M$GNINS <TRAP   C$BSEG>
                                                .IF LT SVCINS
                                                TRAP    C$BSEG
                                                .MEXIT
```

```
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                TRAP    C$BSEG
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
      035476  104404                                                                    TRAP    C$BSEG
                                                        .NLIST
                                        .ENDC
 5004 035500  042777  000010  144572            BIC     #10,@CSRX               ;SELECT CHANNEL 1
 5005 035506  012737  000001  002374            MOV     #1,CHAN                 ;LOAD CHANNEL NUMBER
 5006 035514  113777  002412  144554            MOVB    MLA2,@IDRHX             ;----LOAD LISTENER ADDRESS OF CHANNEL 1--
 5007 035522  004737  011050                    JSR     PC,LOOP                 ;WAIT A LITTLE
 5008 035526  052777  000010  144544            BIS     #10,@CSRX               ;SELECT CHANNEL 2
 5009 035534  012737  000002  002374            MOV     #2,CHAN                 ;LOAD CHANNEL NUMBER
 5010 035542  017737  144502  002502            MOV     @IIRX,BAD               ;GET IIR2 CONTENTS
 5011 035550  022737  000400  002502            CMP     #400,BAD                ;IFC,BIT IN IIR2 SHOULD BE SET
 5012 035556  001410                            BEQ     30$                     ;BRANCH IF YES
 5013 035560  012737  000400  002500            MOV     #400,GOOD               ;SET UP DATA FOR ERROR MESSAGES
 5014 035566                                    ERRSOFT 1101,E501,ERR501        ;ERROR HANDLER
                                        .MCALL  M$ERRINS
      035566                            M$ERRINS        1101,E501,ERR501,C$ERSOFT
                                        .MCALL  M$GNINS,M$WORD,M$TSTLAB
      035566                            M$SVC   C$ERSOFT
                                        .MCALL  M$GNINS,M$TSTLAB
      035566                            M$TSTLAB
                                        .MCALL  M$TLABEL,M$INCR
                                        .IIF LT T$TSTMAC, .MEXIT
                                        .RADIX  10
                                        M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                        .RADIX  8
                                        M$INCR  T$TSTSEQ
      035566                            M$GNINS <TRAP   C$ERSOFT>
                                        .IF LT SVCINS
                                        TRAP    C$ERSOFT
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                TRAP    C$ERSOFT
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
      035566  104457                                                                    TRAP    C$ERSOFT
                                                        .NLIST
                                        .ENDC
              000012                    .RADIX  10
                                        .IF NB  1101
              002115                    T$ERRNUM=1101
                                        .IFF
                                        .ERROR  ;MISSING ERROR NR
                                        .ENDC
```

```
	035570                          M$WORD  \T$ERRNUM
	                                .MCALL  M$GNINS
	                                .IRP    N,<1101>
	                                M$GNINS <.WORD  N>
	                                .ENDM
	035570                          M$GNINS <.WORD  1101>
	                                .IF LT SVCINS
	                                .WORD   1101
	                                .MEXIT
	                                .ENDC
	                                .IF EQ SVCINS
	                                .LIST
	                                        .WORD   1101
	                                                .NLIST
	                                .MEXIT
	                                .ENDC
	                                .IF GT SVCINS
	                                .LIST
	035570  002115                                                          .WORD   1101
	                                                .NLIST
	                                .ENDC
	        000010                  .RADIX  8
	                                .IF NB E501
	035572                          M$WORD  E501
	                                .MCALL  M$GNINS
	                                .IRP    N,<E501>
	                                M$GNINS <.WORD  N>
	                                .ENDM
	035572                          M$GNINS <.WORD  E501>
	                                .IF LT SVCINS
	                                .WORD   E501
	                                .MEXIT
	                                .ENDC
	                                .IF EQ SVCINS
	                                .LIST
	                                        .WORD   E501
	                                                .NLIST
	                                .MEXIT
	                                .ENDC
	                                .IF GT SVCINS
	                                .LIST
	035572  005376                                                          .WOPD   E501
	                                                .NLIST
	                                .ENDC
	                                .IFF
	                                M$WORD  0
	                                .ENDC
	                                .IF NB ERR501
	035574                          M$WORD  ERR501
	                                .MCALL  M$GNINS
	                                .IRP    N,<ERR501>
	                                M$GNINS <.WORD  N>
	                                .ENDM
	035574                          M$GNINS <.WORD  ERR501>
	                                .IF LT SVCINS
	                                .WORD   ERR501
	                                .MEXIT
```

```
                                            .ENDC
                                            .IF EQ SVCINS
                                            .LIST
                                                    .WORD   ERR501
                                                            .NLIST
                                            .MEXIT
                                            .ENDC
                                            .IF GT SVCINS
                                            .LIST
      035574  003672                                                                                  .WORD   ERR501
                                                            .NLIST
                                            .ENDC
                                            .IFF
                                            M$WORD  0
                                            .ENDC
 5015 035576                                        CKLOOP                          ;BRANCH TO BGNSEG WHEN ERRLOOP IS SET
                                            .MCALL  M$SVC
      035576                                M$SVC   C$CLP1
                                            .MCALL  M$GNINS,M$TSTLAB
      035576                                M$TSTLAB
                                            .MCALL  M$TLABEL,M$INCR
                                            .IIF LT T$TSTMAC, .MEXIT
                                            .RADIX  10
                                            M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                            .RADIX  8
                                            M$INCR  T$TSTSEQ
      035576                                M$GNINS <TRAP   C$CLP1>
                                            .IF LT SVCINS
                                            TRAP    C$CLP1
                                            .MEXIT
                                            .ENDC
                                            .IF EQ SVCINS
                                            .LIST
                                                    TRAP    C$CLP1
                                                            .NLIST
                                            .MEXIT
                                            .ENDC
                                            .IF GT SVCINS
                                            .LIST
      035576  104406                                                                                  TRAP    C$CLP1
                                                            .NLIST
                                            .ENDC
 5016 035600  017737  144452  002502        30$:    MOV     @ISRX,BAD               ;GET ISR2 CONTENTS
 5017 035606  023737  002442  002502                CMP     CDAT4,BAD               ;ATN,ATN,NDAC LPAS,(ULPA) BIT SET
 5018 035614  001410                                BEQ     40$                     ;BRANCH IF YES
 5019 035616  013737  002442  002500                MOV     CDAT4,GOOD              ;SET UP DATA FOR ERROR MESSAGES
 5020 035624                                        ERRSOFT 1102,E502,ERR501        ;ERROR HANDLER
                                            .MCALL  M$ERRINS
      035624                                M$ERRINS        1102,E502,ERR501,C$ERSOFT
                                            .MCALL  M$GNINS,M$WORD,M$TSTLAB
      035624                                M$SVC   C$ERSOFT
                                            .MCALL  M$GNINS,M$TSTLAB
      035624                                M$TSTLAB
                                            .MCALL  M$TLABEL,M$INCR
                                            .IIF LT T$TSTMAC, .MEXIT
                                            .RADIX  10
                                            M$TLABEL        \T$TESTNUN,\T$TSTSEQ
```

```
                                        .RADIX  8
                                        M$INCR  T$TSTSEQ
       035624                           M$GNINS <TRAP   C$ERSOFT>
                                        .IF LT SVCINS
                                        TRAP    C$ERSOFT
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                TRAP    C$ERSOFT
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
       035624  104457                                                                  TRAP    C$ERSOFT
                                                        .NLIST
                                        .ENDC
               000012                   .RADIX  10
                                        .IF NB  1102
               002116                   T$ERRNUM=1102
                                        .IFF
                                        .ERROR  ;MISSING ERROR NR
                                        .ENDC
       035626                           M$WORD  \T$ERRNUM
                                        .MCALL  M$GNINS
                                        .IRP    N,<1102>
                                        M$GNINS <.WORD  N>
                                        .ENDM
       035626                           M$GNINS <.WORD  1102>
                                        .IF LT SVCINS
                                        .WORD   1102
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                .WORD   1102
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
       035626  002116                                                                  .WORD   1102
                                                        .NLIST
                                        .ENDC
               000010                   .RADIX  8
                                        .IF NB E502
       035630                           M$WORD  E502
                                        .MCALL  M$GNINS
                                        .IRP    N,<E502>
                                        M$GNINS <.WORD  N>
                                        .ENDM
       035630                           M$GNINS <.WORD  E502>
                                        .IF LT SVCINS
                                        .WORD   E502
                                        .MEXIT
                                        .ENDC
```

```
                          .IF EQ SVCINS
                          .LIST
                                  .WORD   E502
                                          .NLIST
                          .MEXIT
                          .ENDC
                          .IF GT SVCINS
                          .LIST
     035630  005437                                                            .WORD   E502
                                          .NLIST
                          .ENDC
                          .IFF
                          M$WORD  0
                          .ENDC
                          .IF NB ERR501
     035632               M$WORD  ERR501
                          .MCALL  M$GNINS
                          .IRP    N,<ERR501>
                          M$GNINS <.WORD  N>
                          .ENDM
     035632               M$GNINS <.WORD  ERR501>
                          .IF LT SVCINS
                          .WORD   ERR501
                          .MEXIT
                          .ENDC
                          .IF EQ SVCINS
                          .LIST
                                  .WORD   ERR501
                                          .NLIST
                          .MEXIT
                          .ENDC
                          .IF GT SVCINS
                          .LIST
     035632  003672                                                            .WORD   ERR501
                                          .NLIST
                          .ENDC
                          .IFF
                          M$WORD  0
                          .ENDC
5021 035634                       CKLOOP                      ;BRANCH TO BGNSEG WHEN ERRLOOP IS SET
                          .MCALL  M$SVC
     035634               M$SVC   C$CLP1
                          .MCALL  M$GNINS,M$TSTLAB
     035634               M$TSTLAB
                          .MCALL  M$TLABEL,M$INCR
                          .IIF LT T$TSTMAC, .MEXIT
                          .RADIX  10
                          M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                          .RADIX  8
                          M$INCR  T$TSTSEQ
     035634               M$GNINS <TRAP   C$CLP1>
                          .IF LT SVCINS
                          TRAP    C$CLP1
                          .MEXIT
                          .ENDC
                          .IF EQ SVCINS
                          .LIST
```

L1


```
                                                TRAP    C$CLP1
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
      035634  104406                                                                        TRAP    C$CLP1
                                                        .NLIST
                                        .ENDC
 5022 035636  042777  000010  144434   40$:     BIC     #10,@CSRX               ;SELECT CHANNEL 1
 5023 035644  012737  000001  002374            MOV     #1,CHAN                 ;LOAD CHANNEL NUMBER
 5024 035652  013701  002412                    MOV     MLA2,R1                 ;GET MLA2
 5025 035656  062701  000100                    ADD     #100,R1                 ;CREATE MSA2
 5026 035662  010137  002420                    MOV     R1,MSA1                 ;STORE MSA1 TO LOCATION MSA1
 5027 035666  113777  002420  144402            MOVB    MSA1,@IDRHX             ;------LOAD MSA1 INTO DOR1----------
 5028 035674  004737  011050                    JSR     PC,LOOP                 ;WAIT A LITTLE
 5029 035700  017737  144344  002502            MOV     @IIRX,BAD               ;GET IIR1 CONTENTS
 5030 035706  022737  000000  002502            CMP     #0,BAD                  ;IIR1  SHOULD BE ZERO
 5031 035714  001407                            BEQ     41$                     ;BRANCH IF YES
 5032 035716  005037  002500                    CLR     GOOD                    ;SET UP DATA FOR ERROR MESSAGE
 5033 035722                                    ERRSOFT 1103,E501,ERR501        ;ERROR HANDLER
                                        .MCALL  M$ERRINS
      035722                            M$ERRINS        1103,E501,ERR501,C$ERSOFT
                                        .MCALL  M$GNINS,M$WORD,M$TSTLAB
      035722                            M$SVC   C$ERSOFT
                                        .MCALL  M$GNINS,M$TSTLAB
      035722                            M$TSTLAB
                                        .MCALL  M$TLABEL,M$INCR
                                        .IIF LT T$TSTMAC, .MEXIT
                                        .RADIX  10
                                        M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                        .RADIX  8
                                        M$INCR  T$TSTSEQ
      035722                            M$GNINS <TRAP   C$ERSOFT>
                                        .IF LT SVCINS
                                        TRAP    C$ERSOFT
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                TRAP    C$ERSOFT
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
      035722  104457                                                                        TRAP    C$ERSOFT
                                                        .NLIST
                                        .ENDC
              000012                    .RADIX  10
                                        .IF NB  1103
              002117                    T$ERRNUM=1103
                                        .IFF
                                        .ERROR  ;MISSING ERROR NR
                                        .ENDC
      035724                            M$WORD  \T$ERRNUM
                                        .MCALL  M$GNINS
```

M1

```
                                        .IRP    N,<1103>
                                        M$GNINS <.WORD  N>
                                        .ENDM
        035724                          M$GNINS <.WORD  1103>
                                        .IF LT SVCINS
                                        .WORD   1103
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                .WORD   1103
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
        035724  002117                                                          .WORD   1103
                                                        .NLIST
                                        .ENDC
                000010                  .RADIX  8
                                        .IF NB E501
        035726                          M$WORD  E501
                                        .MCALL  M$GNINS
                                        .IRP    N,<E501>
                                        M$GNINS <.WORD  N>
                                        .ENDM
        035726                          M$GNINS <.WORD  E501>
                                        .IF LT SVCINS
                                        .WORD   E501
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                .WORD   E501
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
        035726  005376                                                          .WORD   E501
                                                        .NLIST
                                        .ENDC
                                        .IFF
                                        M$WORD  0
                                        .ENDC
                                        .IF NB ERR501
        035730                          M$WORD  ERR501
                                        .MCALL  M$GNINS
                                        .IRP    N,<ERR501>
                                        M$GNINS <.WORD  N>
                                        .ENDM
        035730                          M$GNINS <.WORD  ERR501>
                                        .IF LT SVCINS
                                        .WORD   ERR501
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
```

```
                                        .LIST
                                                .WORD   ERR501
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
      035730  003672                                                                    .WORD   ERR501
                                                        .NLIST
                                        .ENDC
                                        .IFF
                                        M$WORD  0
                                        .ENDC
 5034 035732                                    CKLOOP                  ;BRANCH BACK TO BGNSEG IF ERRLOOP IS SET
                                        .MCALL  M$SVC
      035732                            M$SVC   C$CLP1
                                        .MCALL  M$GNINS,M$TSTLAB
      035732                            M$TSTLAB
                                        .MCALL  M$TLABEL,M$INCR
                                        .IIF LT T$TSTMAC, .MEXIT
                                        .RADIX  10
                                        M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                        .RADIX  8
                                        M$INCR  T$TSTSEQ
      035732                            M$GNINS <TRAP   C$CLP1>
                                        .IF LT SVCINS
                                        TRAP    C$CLP1
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                TRAP    C$CLP1
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
      035732  104406                                                                    TRAP    C$CLP1
                                                        .NLIST
                                        .ENDC
 5035 035734  052777  000010  144336    41$:    BIS     #10,@CSRX       ;SELECT CHANNEL 2
 5036 035742  012737  000002  002374            MOV     #2,CHAN         ;LOAD CHANNEL NUMBER
 5037 035750  017737  144274  002502            MOV     @IIRX,BAD       ;GET IIR2 CONTENTS
 5038 035756  022737  010100  002502            CMP     #10100,BAD      ;APT,INT1 BIT IN IIR2 SHOULD BE SET
 5039 035764  001410                            BEQ     42$             ;BRANCH IF YES
 5040 035766  012737  010100  002500            MOV     #10100,GOOD     ;SET UP DATA FOR ERROR MESSAGE
 5041 035774                                    ERRSOFT 1104,E501,ERR501        ;ERROR HANDLER
                                        .MCALL  M$ERRINS
      035774                            M$ERRINS        1104,E501,ERR501,C$ERSOFT
                                        .MCALL  M$GNINS,M$WORD,M$TSTLAB
      035774                            M$SVC   C$ERSOFT
                                        .MCALL  M$GNINS,M$TSTLAB
      035774                            M$TSTLAB
                                        .MCALL  M$TLABEL,M$INCR
                                        .IIF LT T$TSTMAC, .MEXIT
                                        .RADIX  10
                                        M$TLABEL        \T$TESTNUN,\T$TSTSEQ
```

```
                                        .RADIX  8
                                        M$INCR  T$TSTSEQ
      035774                            M$GNINS <TRAP    C$ERSOFT>
                                        .IF LT SVCINS
                                        TRAP    C$ERSOFT
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                TRAP    C$ERSOFT
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
      035774  104457                                                                    TRAP    C$ERSOFT
                                                        .NLIST
                                        .ENDC
              000012                    .RADIX  10
                                        .IF NB  1104
              002120                    T$ERRNUM=1104
                                        .IFF
                                        .ERROR  ;MISSING ERROR-NR
                                        .ENDC
      035776                            M$WORD  \T$ERRNUM
                                        .MCALL  M$GNINS
                                        .IRP    N,<1104>
                                        M$GNINS <.WORD  N>
                                        .ENDM
      035776                            M$GNINS <.WORD  1104>
                                        .IF LT SVCINS
                                        .WORD   1104
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                .WORD   1104
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
      035776  002120                                                                    .WORD   1104
                                                        .NLIST
                                        .ENDC
              000010                    .RADIX  8
                                        .IF NB E501
      036000                            M$WORD  E501
                                        .MCALL  M$GNINS
                                        .IRP    N,<E501>
                                        M$GNINS <.WORD  N>
                                        .ENDM
      036000                            M$GNINS <.WORD  E501>
                                        .IF LT SVCINS
                                        .WORD   E501
                                        .MEXIT
                                        .ENDC
```

```
                                        .IF EQ SVCINS
                                        .LIST
                                                .WORD   E501
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
      036000  005376                                                                          .WORD   E501
                                                        .NLIST
                                        .ENDC
                                        .IFF
                                        M$WORD  0
                                        .ENDC
                                        .IF NB ERR501
      036002                            M$WORD  ERR501
                                        .MCALL  M$GNINS
                                        .IRP    N,<ERR501>
                                        M$GNINS <.WORD  N>
                                        .ENDM
      036002                            M$GNINS <.WORD  ERR501>
                                        .IF LT SVCINS
                                        .WORD   ERR501
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                .WORD   ERR501
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
      036002  003672                                                                          .WORD   ERR501
                                                        .NLIST
                                        .ENDC
                                        .IFF
                                        M$WORD  0
                                        .ENDC
 5042 036004                                    CKLOOP                          ;BRANCH BACK TO BGNSEG IF ERRLOOP IS SET
                                        .MCALL  M$SVC
      036004                            M$SVC   C$CLP1
                                        .MCALL  M$GNINS,M$TSTLAB
      036004                            M$TSTLAB
                                        .MCALL  M$TLABEL,M$INCR
                                        .IIF LT T$TSTMAC, .MEXIT
                                        .RADIX  10
                                        M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                        .RADIX  8
                                        M$INCR  T$TSTSEQ
      036004                            M$GNINS <TRAP   C$CLP1>
                                        .IF LT SVCINS
                                        TRAP    C$CLP1
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
```

D2


```
                                                TRAP    C$CLP1
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
      036004  104406                                                                                    TRAP    C$CLP1
                                                        .NLIST
                                        .ENDC
 5043 036006  017737  144244  002502    42$:    MOV     @ISRX,BAD               ;GET ISR2 CONTENTS
 5044 036014  023737  002446  002502            CMP     CDAT6,BAD               ;ATN,DAV,NDAC,NRFD,ATN,LPAS(ULPA) IS SET
 5045 036022  001410                            BEQ     43$                     ;BRANCH IF YES
 5046 036024  013737  002446  002500            MOV     CDAT6,GOOD              ;SET UP DATA FOR ERROR MESSAGE
 5047 036032                                    ERRSOFT 1105,E502,ERR501        ;ERROR HANDLER
                                        .MCALL  M$ERRINS
      036032                            M$ERRINS        1105,E502,ERR501,C$ERSOFT
                                        .MCALL  M$GNINS,M$WORD,M$TSTLAB
      036032                            M$SVC   C$ERSOFT
                                        .MCALL  M$GNINS,M$TSTLAB
      036032                            M$TSTLAB
                                        .MCALL  M$TLABEL,M$INCR
                                        .IIF LT T$TSTMAC, .MEXIT
                                        .RADIX  10
                                        M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                        .RADIX  8
                                        M$INCR  T$TSTSEQ
      036032                            M$GNINS <TRAP   C$ERSOFT>
                                        .IF LT SVCINS
                                        TRAP    C$ERSOFT
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                TRAP    C$ERSOFT
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
      036032  104457                                                                                    TRAP    C$ERSOFT
                                                        .NLIST
                                        .ENDC
              000012                    .RADIX  10
                                        .IF NB  1105
              002121                    T$ERRNUM=1105
                                        .IFF
                                        .ERROR  ;MISSING ERROR-NR
                                        .ENDC
      036034                            M$WORD  \T$ERRNUM
                                        .MCALL  M$GNINS
                                        .IRP    N,<1105>
                                        M$GNINS <.WORD  N>
                                        .ENDM
      036034                            M$GNINS <.WORD  1105>
                                        .IF LT SVCINS
                                        .WORD   1105
                                        .MEXIT
```

E2

 SEQ 0845

```
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        .WORD   1105
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
     036034  002121                                                             .WORD   1105
                                                .NLIST
                                .ENDC
             000010             .RADIX  8
                                .IF NB E502
     036036                     M$WORD  E502
                                .MCALL  M$GNINS
                                .IRP    N,<E502>
                                M$GNINS <.WORD  N>
                                .ENDM
     036036                     M$GNINS <.WORD  E502>
                                .IF LT SVCINS
                                .WORD   E502
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        .WORD   E502
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
     036036  005437                                                             .WORD   E502
                                                .NLIST
                                .ENDC
                                .IFF
                                M$WORD  0
                                .ENDC
                                .IF NB ERR501
     036040                     M$WORD  ERR501
                                .MCALL  M$GNINS
                                .IRP    N,<ERR501>
                                M$GNINS <.WORD  N>
                                .ENDM
     036040                     M$GNINS <.WORD  ERR501>
                                .IF LT SVCINS
                                .WORD   ERR501
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        .WORD   ERR501
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
```

```
      036040  003672                                                  .WORD   ERR501
                                                  .NLIST
                                   .ENDC
                                   .IFF
                                   M$WORD  0
                                   .ENDC
 5048 036042                                CKLOOP                    ;BRANCH BACK TO BGNSEG IF ERRLOOP IS SET
                                   .MCALL  M$SVC
      036042                       M$SVC   C$CLP1
                                   .MCALL  M$GNINS,M$TSTLAB
      036042                       M$TSTLAB
                                   .MCALL  M$TLABEL,M$INCR
                                   .IIF LT T$TSTMAC, .MEXIT
                                   .RADIX  10
                                   M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                   .RADIX  8
                                   M$INCR  T$TSTSEQ
      036042                       M$GNINS <TRAP   C$CLP1>
                                   .IF LT SVCINS
                                   TRAP    C$CLP1
                                   .MEXIT
                                   .ENDC
                                   .IF EQ SVCINS
                                   .LIST
                                            TRAP    C$CLP1
                                                    .NLIST
                                   .MEXIT
                                   .ENDC
                                   .IF GT SVCINS
                                   .LIST
      036042  104406                                                  TRAP    C$CLP1
                                                    .NLIST
                                   .ENDC
 5049 036044  017737  144214  002502  43$:   MOV     @ICRX,BAD        ;GET ICR2 CONTENTS
 5050 036052  123737  002420  002502         CMPB    MSA1,BAD         ;MSA1 ADDRESS SHOULD BE SET
 5051 036060  001410                         BEQ     44$              ;BRANCH IF YES
 5052 036062  013737  002420  002500         MOV     MSA1,GOOD        ;SET UP DATA FOR ERROR MESSAGE
 5053 036070                                 ERRSOFT 1106,E901,ERR501 ;ERROR HANDLER
                                   .MCALL  M$ERRINS
      036070                       M$ERRINS        1106,E901,ERR501,C$ERSOFT
                                   .MCALL  M$GNINS,M$WORD,M$TSTLAB
      036070                       M$SVC   C$ERSOFT
                                   .MCALL  M$GNINS,M$TSTLAB
      036070                       M$TSTLAB
                                   .MCALL  M$TLABEL,M$INCR
                                   .IIF LT T$TSTMAC, .MEXIT
                                   .RADIX  10
                                   M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                   .RADIX  8
                                   M$INCR  T$TSTSEQ
      036070                       M$GNINS <TRAP   C$ERSOFT>
                                   .IF LT SVCINS
                                   TRAP    C$ERSOFT
                                   .MEXIT
                                   .ENDC
                                   .IF EQ SVCINS
                                   .LIST
```

```
                                        TRAP    C$ERSOFT
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
036070  104457                                                          TRAP    C$ERSOFT
                                                .NLIST
                                .ENDC
        000012                  .RADIX  10
                                .IF NB  1106
        002122                  T$ERRNUM=1106
                                .IFF
                                .ERROR  ;MISSING ERROR NR
                                .ENDC
036072                          M$WORD  \T$ERRNUM
                                .MCALL  M$GNINS
                                .IRP    N,<1106>
                                M$GNINS <.WORD  N>
                                .ENDM
036072                          M$GNINS <.WORD  1106>
                                .IF LT SVCINS
                                .WORD   1106
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        .WORD   1106
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
036072  002122                                                          .WORD   1106
                                                .NLIST
                                .ENDC
        000010                  .RADIX  8
                                .IF NB E901
036074                          M$WORD  E901
                                .MCALL  M$GNINS
                                .IRP    N,<E901>
                                M$GNINS <.WORD  N>
                                .ENDM
036074                          M$GNINS <.WORD  E901>
                                .IF LT SVCINS
                                .WORD   E901
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        .WORD   E901
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
036074  005634                                                          .WORD   E901
```

H2


```
                                                .NLIST
                                .ENDC
                                .IFF
                                M$WORD  0
                                .ENDC
                                .IF NB ERR501
      036076                    M$WORD  ERR501
                                .MCALL  M$GNINS
                                .IRP    N,<ERR501>
                                M$GNINS <.WORD  N>
                                .ENDM
      036076                    M$GNINS <.WORD  ERR501>
                                .IF LT SVCINS
                                .WORD   ERR501
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        .WORD   ERR501
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
      036076  003672                                                    .WORD   ERR501
                                                .NLIST
                                .ENDC
                                .IFF
                                M$WORD  0
                                .ENDC
 5054 036100                            CKLOOP                  ;BRANCH BACK TO BGNSEG IF ERRLOOP IS SET
                                .MCALL  M$SVC
      036100                    M$SVC   C$CLP1
                                .MCALL  M$GNINS,M$TSTLAB
      036100                    M$TSTLAB
                                .MCALL  M$TLABEL,M$INCR
                                .IIF LT T$TSTMAC, .MEXIT
                                .RADIX  10
                                M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                .RADIX  8
                                M$INCR  T$TSTSEQ
      036100                    M$GNINS <TRAP   C$CLP1>
                                .IF LT SVCINS
                                TRAP    C$CLP1
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        TRAP    C$CLP1
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
      036100  104406                                                    TRAP    C$CLP1
                                                .NLIST
                                .ENDC
```

```
 5055 036102  042777  000010  144170  44$:    BIC     #10,@CSRX               ;SELECT CHANNEL 1
 5056 036110  012737  000001  002374          MOV     #1,CHAN                 ;LOAD CHANNEL NUMBER
 5057 036116  017737  144134  002502          MOV     @ISRX,BAD               ;GET ISR1 CONTENTS
 5058 036124  022737  170040  002502          CMP     #170040,BAD             ;ATN,DAV,NDAC,ATN,NRFD SHOULD BE SET
 5059 036132  001410                          BEQ     45$                     ;BRANCH IF YES
 5060 036134  012737  170040  002500          MOV     #170040,GOOD            ;SET UP DATA FOR ERROR MESSAGE
 5061 036142                                  ERRSOFT 1107,E502,ERR501        ;ERROR HANDLER
                                      .MCALL  M$ERRINS
      036142                          M$ERRINS        1107,E502,ERR501,C$ERSOFT
                                      .MCALL  M$GNINS,M$WORD,M$TSTLAB
      036142                          M$SVC   C$ERSOFT
                                      .MCALL  M$GNINS,M$TSTLAB
      036142                          M$TSTLAB
                                      .MCALL  M$TLABEL,M$INCR
                                      .IIF LT T$TSTMAC, .MEXIT
                                      .RADIX  10
                                      M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                      .RADIX  8
                                      M$INCR  T$TSTSEQ
      036142                          M$GNINS <TRAP   C$ERSOFT>
                                      .IF LT SVCINS
                                      TRAP    C$ERSOFT
                                      .MEXIT
                                      .ENDC
                                      .IF EQ SVCINS
                                      .LIST
                                              TRAP    C$ERSOFT
                                                      .NLIST
                                      .MEXIT
                                      .ENDC
                                      .IF GT SVCINS
                                      .LIST
      036142  104457                                                                          TRAP    C$ERSOFT
                                                      .NLIST
                                      .ENDC
              000012                  .RADIX  10
                                      .IF NB  1107
              002123                  T$ERRNUM=1107
                                      .IFF
                                      .ERROR  ;MISSING ERROR-NR
                                      .ENDC
      036144                          M$WORD  \T$ERRNUM
                                      .MCALL  M$GNINS
                                      .IRP    N,<1107>
                                      M$GNINS <.WORD  N>
                                      .ENDM
      036144                          M$GNINS <.WORD  1107>
                                      .IF LT SVCINS
                                      .WORD   1107
                                      .MEXIT
                                      .ENDC
                                      .IF EQ SVCINS
                                      .LIST
                                              .WORD   1107
                                                      .NLIST
                                      .MEXIT
                                      .ENDC
```

```
                                .IF GT SVCINS
                                .LIST
     036144  002123                                                          .WORD   1107
                                          .NLIST
                                .ENDC
             000010             .RADIX  8
                                .IF NB E502
     036146                     M$WORD  E502
                                .MCALL  M$GNINS
                                .IRP    N,<E502>
                                M$GNINS <.WORD  N>
                                .ENDM
     036146                     M$GNINS <.WORD  E502>
                                .IF LT SVCINS
                                .WORD   E502
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                     .WORD   E502
                                          .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
     036146  005437                                                          .WORD   E502
                                          .NLIST
                                .ENDC
                                .IFF
                                M$WORD  0
                                .ENDC
                                .IF NB ERR501
     036150                     M$WORD  ERR501
                                .MCALL  M$GNINS
                                .IRP    N,<ERR501>
                                M$GNINS <.WORD  N>
                                .ENDM
     036150                     M$GNINS <.WORD  ERR501>
                                .IF LT SVCINS
                                .WORD   ERR501
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                     .WORD   ERR501
                                          .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
     036150  003672                                                          .WORD   ERR501
                                          .NLIST
                                .ENDC
                                .IFF
                                M$WORD  0
                                .ENDC
5062 036152                          CKLOOP                  ;BRANCH BACK TO BGNSEG IF ERRLOOP IS SET
```

```
                                            .MCALL  M$SVC
       036152                               M$SVC   C$CLP1
                                            .MCALL  M$GNINS,M$TSTLAB
       036152                               M$TSTLAB
                                            .MCALL  M$TLABEL,M$INCR
                                            .IIF LT T$TSTMAC, .MEXIT
                                            .RADIX  10
                                            M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                            .RADIX  8
                                            M$INCR  T$TSTSEQ
       036152                               M$GNINS <TRAP    C$CLP1>
                                            .IF LT SVCINS
                                            TRAP    C$CLP1
                                            .MEXIT
                                            .ENDC
                                            .IF EQ SVCINS
                                            .LIST
                                                    TRAP    C$CLP1
                                                            .NLIST
                                            .MEXIT
                                            .ENDC
                                            .IF GT SVCINS
                                            .LIST
       036152  104406                                                                                  TRAP    C$CLP1
                                                            .NLIST
                                            .ENDC
  5063 036154  052777  000010  144116       45$:    BIS     #10,@CSRX               ;SELECT CHANNEL 2
  5064 036162  012737  000002  002374               MOV     #2,CHAN                 ;LOAD CHANNEL NUMBER
  5065 036170  112777  000201  144072               MOVB    #201,@ICRHX             ;-----LOAD DACR INTO ACR2------------
  5066 036176  017737  144054  002502               MOV     @ISRX,BAD               ;GET ISR2 CONTENTS
  5067 036204  023737  002444  002502               CMP     CDAT5,BAD               ;ATN,NDAC,ATN,LADS,LPAS (ULPA) IS SET
  5068 036212  001410                               BEQ     46$                     ;BRANCH IF YES
  5069 036214  013737  002444  002500               MOV     CDAT5,GOOD              ;SET UP DATA FOR ERROR MESSAGE
  5070 036222                                       ERRSOFT 1108,E502,ERR501        ;ERROR HANDLER
                                            .MCALL  M$ERRINS
       036222                               M$ERRINS        1108,E502,ERR501,C$ERSOFT
                                            .MCALL  M$GNINS,M$WORD,M$TSTLAB
       036222                               M$SVC   C$ERSOFT
                                            .MCALL  M$GNINS,M$TSTLAB
       036222                               M$TSTLAB
                                            .MCALL  M$TLABEL,M$INCR
                                            .IIF LT T$TSTMAC, .MEXIT
                                            .RADIX  10
                                            M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                            .RADIX  8
                                            M$INCR  T$TSTSEQ
       036222                               M$GNINS <TRAP    C$ERSOFT>
                                            .IF LT SVCINS
                                            TRAP    C$ERSOFT
                                            .MEXIT
                                            .ENDC
                                            .IF EQ SVCINS
                                            .LIST
                                                    TRAP    C$ERSOFT
                                                            .NLIST
                                            .MEXIT
                                            .ENDC
```

```
                                .IF GT SVCINS
                                .LIST
      036222  104457                                                            TRAP    C$ERSOFT
                                          .NLIST
                                .ENDC
              000012            .RADIX  10
                                .IF NB  1108
              002124            T$ERRNUM=1108
                                .IFF
                                .ERROR  ;MISSING ERROR-NR
                                .ENDC
      036224                    M$WORD  \T$ERRNUM
                                .MCALL  M$GNINS
                                .IRP    N,<1108>
                                M$GNINS <.WORD  N>
                                .ENDM
      036224                    M$GNINS <.WORD  1108>
                                .IF LT SVCINS
                                .WORD   1108
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                     .WORD   1108
                                          .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
      036224  002124                                                            .WORD   1108
                                          .NLIST
                                .ENDC
              000010            .RADIX  8
                                .IF NB E502
      036226                    M$WORD  E502
                                .MCALL  M$GNINS
                                .IRP    N,<E502>
                                M$GNINS <.WORD  N>
                                .ENDM
      036226                    M$GNINS <.WORD  E502>
                                .IF LT SVCINS
                                .WORD   E502
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                     .WORD   E502
                                          .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
      036226  005437                                                            .WORD   E502
                                          .NLIST
                                .ENDC
                                .IFF
                                M$WORD  0
```

```
                                        .ENDC
                                        .IF NB ERR501
      036230                            M$WORD  ERR501
                                        .MCALL  M$GNINS
                                        .IRP    N,<ERR501>
                                        M$GNINS <.WORD  N>
                                        .ENDM
      036230                            M$GNINS <.WORD  ERR501>
                                        .IF LT SVCINS
                                        .WORD   ERR501
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                .WORD   ERR501
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
      036230  003672                                                                    .WORD   ERR501
                                                        .NLIST
                                        .ENDC
                                        .IFF
                                        M$WORD  0
                                        .ENDC
 5071 036232                                    CKLOOP                  ;BRANCH BACK TO BGNSEG IF ERRLOOP IS SET
                                        .MCALL  M$SVC
      036232                            M$SVC   C$CLP1
                                        .MCALL  M$GNINS,M$TSTLAB
      036232                            M$TSTLAB
                                        .MCALL  M$TLABEL,M$INCR
                                        .IIF LT T$TSTMAC, .MEXIT
                                        .RADIX  10
                                        M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                        .RADIX  8
                                        M$INCR  T$TSTSEQ
      036232                            M$GNINS <TRAP   C$CLP1>
                                        .IF LT SVCINS
                                        TRAP    C$CLP1
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                TRAP    C$CLP1
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
      036232  104406                                                                    TRAP    C$CLP1
                                                        .NLIST
                                        .ENDC
 5072 036234  042777  000010  144036    46$:    BIC     #10,@CSRX       ;SELECT CHANNEL 1
 5073 036242  012737  000001  002374            MOV     #1,CHAN         ;LOAD CHANNEL NUMBER
 5074 036250  017737  143774  002502            MOV     @IIRX,BAD       ;GET IIR1 CONTENTS
 5075 036256  022737  000020  002502            CMP     #20,BAD         ;BO BIT SHOULD BE SET
```

```
036264  001410                          BEQ     50$                     ;BRANCH IF YES
036266  012737  000020  002500          MOV     #20,GOOD                ;SET UP DATA FOR ERROR MESSAGE
036274                                  ERRSOFT 1109,E501,ERR501        ;ERROR HANDLER
                                .MCALL  M$ERRINS
036274                          M$ERRINS        1109,E501,ERR501,C$ERSOFT
                                .MCALL  M$GNINS,M$WORD,M$TSTLAB
036274                          M$SVC   C$ERSOFT
                                .MCALL  M$GNINS,M$TSTLAB
036274                          M$TSTLAB
                                .MCALL  M$TLABEL,M$INCR
                                .IIF LT T$TSTMAC, .MEXIT
                                .RADIX  10
                                M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                .RADIX  8
                                M$INCR  T$TSTSEQ
036274                          M$GNINS <TRAP   C$ERSOFT>
                                .IF LT SVCINS
                                TRAP    C$ERSOFT
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        TRAP    C$ERSOFT
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
036274  104457                                                          TRAP    C$ERSOFT
                                                .NLIST
                                .ENDC
        000012                  .RADIX  10
                                .IF NB  1109
        002125                  T$ERRNUM=1109
                                .IFF
                                .ERROR  ;MISSING ERROR-NR
                                .ENDC
036276                          M$WORD  \T$ERRNUM
                                .MCALL  M$GNINS
                                .IRP    N,<1109>
                                M$GNINS <.WORD  N>
                                .ENDM
036276                          M$GNINS <.WORD  1109>
                                .IF LT SVCINS
                                .WORD   1109
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        .WORD   1109
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
036276  002125                                                          .WORD   1109
                                                .NLIST
```

```
                000010                  .ENDC
                                        .RADIX  8
        036300                          .IF NB E501
                                        M$WORD  E501
                                        .MCALL  M$GNINS
                                        .IRP    N,<E501>
                                        M$GNINS <.WORD  N>
                                        .ENDM
        036300                          M$GNINS <.WORD  E501>
                                        .IF LT SVCINS
                                        .WORD   E501
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                .WORD   E501
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
        036300  005376                                                                  .WORD   E501
                                                        .NLIST
                                        .ENDC
                                        .IFF
                                        M$WORD  0
                                        .ENDC
                                        .IF NB ERR501
        036302                          M$WORD  ERR501
                                        .MCALL  M$GNINS
                                        .IRP    N,<ERR501>
                                        M$GNINS <.WORD  N>
                                        .ENDM
        036302                          M$GNINS <.WORD  ERR501>
                                        .IF LT SVCINS
                                        .WORD   ERR501
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                .WORD   ERR501
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
        036302  003672                                                                  .WORD   ERR501
                                                        .NLIST
                                        .ENDC
                                        .IFF
                                        M$WORD  0
                                        .ENDC
   5079 036304                                  CKLOOP                  ;BRANCH BACK TO BGNSEG IF ERRLOOP IS SET
                                        .MCALL  M$SVC
        036304                          M$SVC   C$CLP1
                                        .MCALL  M$GNINS,M$TSTLAB
        036304                          M$TSTLAB
```

```
                                        .MCALL  M$TLABEL,M$INCR
                                        .IIF LT T$TSTMAC, .MEXIT
                                        .RADIX  10
                                        M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                        .RADIX  8
                                        M$INCR  T$TSTSEQ
      036304                            M$GNINS <TRAP   C$CLP1>
                                        .IF LT SVCINS
                                        TRAP    C$CLP1
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                TRAP    C$CLP1
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
      036304  104406                                                                  TRAP    C$CLP1
                                                        .NLIST
                                        .ENDC
 5080 036306  112777  000077  143762    50$:    MOVB    #77,@IDRHX              ;---LOAD UNL INTO DOR1-----------------
 5081 036314                                    ENDSEG
                                        .MCALL  M$POP,M$GNLS,M$SVC,M$ENDERR
      036314                            M$POP   T$NS,T$NESTLEV,T$TEMP
                                        .MCALL  M$GETS,M$DECR
                                        .IF LT  T$NESTLEV
                                        .ERROR  T$NESTLEV       ; MACRO T$NS UNDERFLOW
                                        .MEXIT
                                        .ENDC
      036314                            M$GETS  T$NS,\T$NESTLEV,T$TEMP
              000003                    T$TEMP=T$NS2
      036314                            M$DECR  T$NESTLEV
              000001                    T$NESTLEV=T$NESTLEV-1
                                        .IF EQ F$SEG-T$TEMP
      036314                            M$POP   T$SEK,T$SEGLEV,T$$SEG
                                        .MCALL  M$GETS,M$DECR
                                        .IF LT  T$SEGLEV
                                        .ERROR  T$SEGLEV        ; MACRO T$SEK UNDERFLOW
                                        .MEXIT
                                        .ENDC
      036314                            M$GETS  T$SEK,\T$SEGLEV,T$$SEG
              010000                    T$$SEG=T$SEK0
      036314                            M$DECR  T$SEGLEV
              177777                    T$SEGLEV=T$SEGLEV-1
      036314                            M$GNLS  T$$SEG
                                        .MCALL  M$GEN
                                        .IF NB T$$SEG
      036314                            M$GEN   \T$$SEG,$,SVCTAG
                                        .IF LE  SVCTAG
                                        .IIF EQ SVCTAG,.LIST
                                        10000$:
                                        .IIF EQ SVCTAG,.NLIST
                                        .MEXIT
                                        .ENDC
                                        .LIST
```

```
        036314                                                      10000$:
                                  .NLIST
                          .IFF
                          M$GEN   \S$LSYM,$,SVCTAG
                          .ENDC
        036314            M$SVC   C$ESEG
                          .MCALL  M$GNINS,M$TSTLAB
        036314            M$TSTLAB
                          .MCALL  M$TLABEL,M$INCR
                          .IIF LT T$TSTMAC, .MEXIT
                          .RADIX  10
                          M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                          .RADIX  8
                          M$INCR  T$TSTSEQ
        036314            M$GNINS <TRAP   C$ESEG>
                          .IF LT SVCINS
                          TRAP    C$ESEG
                          .MEXIT
                          .ENDC
                          .IF EQ SVCINS
                          .LIST
                                  TRAP    C$ESEG
                                          .NLIST
                          .MEXIT
                          .ENDC
                          .IF GT SVCINS
                          .LIST
        036314  104405                                                  TRAP    C$ESEG
                                          .NLIST
                          .ENDC
                          .IF EQ T$SEGLEV+1
                000041    I$SEG=F$END
                          .ENDC
                          .IFF
                          M$ENDERR        ENDSEG,T$TEMP
                          .ENDC
   5082 036316            COPA11: BGNSEG
                          .MCALL  M$PUSH,M$INCR,M$SVC
                000040    I$SEG=F$BGN
        036316            M$PUSH  T$NS,T$NESTLEV,F$SEG
                          .MCALL  M$INCR,M$SETS
        036316            M$INCR  T$NESTLEV
                000002    T$NESTLEV=T$NESTLEV+1
        036316            M$SETS  T$NS,\T$NESTLEV,F$SEG
                000003    T$NS2=F$SEG
                010001    T$$SEG=S$LSYM
        036316            M$PUSH  T$SEK,T$SEGLEV,T$$SEG
                          .MCALL  M$INCR,M$SETS
        036316            M$INCR  T$SEGLEV
                000000    T$SEGLEV=T$SEGLEV+1
        036316            M$SETS  T$SEK,\T$SEGLEV,T$$SEG
                010001    T$SEK0=T$$SEG
        036316            M$INCR  S$LSYM
                010002    S$LSYM=S$LSYM+1
        036316            M$SVC   C$BSEG
                          .MCALL  M$GNINS,M$TSTLAB
        036316            M$TSTLAB
```

TEST 11: SECONDARY ADDRESSING TEST OF CHANNEL 2 (LISTENER)

```
                                          .MCALL  M$TLABEL,M$INCR
                                          .IIF LT T$TSTMAC, .MEXIT
                                          .RADIX  10
                                          M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                          .RADIX  8
                                          M$INCR  T$TSTSEQ
     036316                               M$GNINS <TRAP   C$BSEG>
                                          .IF LT SVCINS
                                          TRAP    C$BSEG
                                          .MEXIT
                                          .ENDC
                                          .IF EQ SVCINS
                                          .LIST
                                                  TRAP    C$BSEG
                                                          .NLIST
                                          .MEXIT
                                          .ENDC
                                          .IF GT SVCINS
                                          .LIST
     036316  104404                                                                               TRAP    C$BSEG
                                                          .NLIST
                                          .ENDC
     036320  042777  000010  143752               BIC     #10,@CSRX               ;SELECT CHANNEL 1
     036326  012737  000001  002374               MOV     #1,CHAN                 ;LOAD CHANNEL NUMBER
     036334  113777  002412  143734               MOVB    MLA2,@IDRHX             ;----LOAD LISTENER ADDRESS OF CHANNEL 1-
     036342  004737  011050                       JSR     PC,LOOP                 ;WAIT A LITTLE
     036346  052777  000010  143724               BIS     #10,@CSRX               ;SELECT CHANNEL 2
     036354  012737  000002  002374               MOV     #2,CHAN                 ;LOAD CHANNEL NUMBER
     036362  017737  143662  002502               MOV     @IIRX,BAD               ;GET IIR2 CONTENS
     036370  022737  000001  002502               CMP     #1,BAD                  ;MAC BIT IN IIR2 SHOULD BE SET
     036376  001410                               BEQ     30$                     ;BRANCH IF YES
     036400  012737  000001  002500               MOV     #1,GOOD                 ;SET UP DATA FOR ERROR MESSAGES
     036406                                       ERRSOFT 1110,E501,ERR501        ;ERROR HANDLER
                                          .MCALL  M$ERRINS
     036406                               M$ERRINS        1110,E501,ERR501,C$ERSOFT
                                          .MCALL  M$GNINS,M$WORD,M$TSTLAB
     036406                               M$SVC   C$ERSOFT
                                          .MCALL  M$GNINS,M$TSTLAB
     036406                               M$TSTLAB
                                          .MCALL  M$TLABEL,M$INCR
                                          .IIF LT T$TSTMAC, .MEXIT
                                          .RADIX  10
                                          M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                          .RADIX  8
                                          M$INCR  T$TSTSEQ
     036406                               M$GNINS <TRAP   C$ERSOFT>
                                          .IF LT SVCINS
                                          TRAP    C$ERSOFT
                                          .MEXIT
                                          .ENDC
                                          .IF EQ SVCINS
                                          .LIST
                                                  TRAP    C$ERSOFT
                                                          .NLIST
                                          .MEXIT
                                          .ENDC
                                          .IF GT SVCINS
```

```
                                .LIST
        036406  104457                                                                  TRAP    C$ERSOFT
                                          .NLIST
                                .ENDC
                000012          .RADIX  10
                                .IF NB  1110
                002126          T$ERRNUM=1110
                                .IFF
                                .ERROR  ;MISSING ERROR-NR
                                .ENDC
        036410                  M$WORD  \T$ERRNUM
                                .MCALL  M$GNINS
                                .IRP    N,<1110>
                                M$GNINS <.WORD  N>
                                .ENDM
        036410                  M$GNINS <.WORD  1110>
                                .IF LT SVCINS
                                .WORD   1110
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        .WORD   1110
                                          .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
        036410  002126                                                                  .WORD   1110
                                          .NLIST
                                .ENDC
                000010          .RADIX  8
                                .IF NB E501
        036412                  M$WORD  E501
                                .MCALL  M$GNINS
                                .IRP    N,<E501>
                                M$GNINS <.WORD  N>
                                .ENDM
        036412                  M$GNINS <.WORD  E501>
                                .IF LT SVCINS
                                .WORD   E501
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        .WORD   E501
                                          .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
        036412  005376                                                                  .WORD   E501
                                          .NLIST
                                .ENDC
                                .IFF
                                M$WORD  0
                                .ENDC
```

```
                                        .IF NB ERR501
     036414                             M$WORD  ERR501
                                        .MCALL  M$GNINS
                                        .IRP    N,<ERR501>
                                        M$GNINS <.WORD  N>
                                        .ENDM
     036414                             M$GNINS <.WORD  ERR501>
                                        .IF LT SVCINS
                                        .WORD   ERR501
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                .WORD   ERR501
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
     036414  003672                                                                             .WORD   ERR501
                                                        .NLIST
                                        .ENDC
                                        .IFF
                                        M$WORD  0
                                        .ENDC
     036416                                     CKLOOP                  ;BRANCH TO BGNSEG WHEN ERRLOOP IS SET
                                        .MCALL  M$SVC
     036416                             M$SVC   C$CLP1
                                        .MCALL  M$GNINS,M$TSTLAB
     036416                             M$TSTLAB
                                        .MCALL  M$TLABFL,M$INCR
                                        .IIF LT T$TSTMAC, .MEXIT
                                        .RADIX  10
                                        M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                        .RADIX  8
                                        M$INCR  T$TSTSEQ
     036416                             M$GNINS <TRAP   C$CLP1>
                                        .IF LT SVCINS
                                        TRAP    C$CLP1
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                TRAP    C$CLP1
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
     036416  104406                                                                             TRAP    C$CLP1
                                                        .NLIST
                                        .ENDC
     036420  042777  000010  143652     30$:    BIC     #10,@CSRX       ;SELECT CHANNEL 1
     036426  012737  000001  002374             MOV     #1,CHAN         ;LOAD CHANNEL NUMBER
     036434  013701  002412                     MOV     MLA2,R1         ;GET MLA2
     036440  062701  000100                     ADD     #100,R1         ;CREATE MSA1
     036444  010137  002420                     MOV     R1,MSA1         ;STORE MSA1 TO LOCATION MSA1
```

```
5100 036450  113777  002420  143620          MOVB    MSA1,@IDRHX              ;------LOAD MSA1 INTO DOR1----------
5101 036456  004737  011050                  JSR     PC,LOOP                  ;WAIT A LITTLE
5102 036462  052777  000010  143610          BIS     #10,@CSRX                ;SELECT CHANNEL 2
5103 036470  012737  000002  002374          MOV     #2,CHAN                  ;LOAD CHANNEL NUMBER
5104 036476  112777  000001  143564          MOVB    #1,@ICRHX                ;-----LOAD NOT DACR INTO ACR2--------
5105 036504  017737  143540  002502          MOV     @IIRX,BAD                ;READ IIR2 FOR CLEAR THE BITS
5106 036512  017737  143540  002502          MOV     @ISRX,BAD                ;GET ISR2 CONTENTS
5107 036520  023737  002442  002502          CMP     CDAT4,BAD                ;ATN,NDAC,ATN,LPAS (ULPA) IS SET
5108 036526  001410                          BEQ     46$                      ;BRANCH IF YES
5109 036530  013737  002442  002500          MOV     CDAT4,GOOD               ;SET UP DATA FOR ERROR MESSAGE
5110 036536                                  ERRSOFT 1111,E502,ERR501         ;ERROR HANDLER
                                     .MCALL  M$ERRINS
     036536                          M$ERRINS        1111,E502,ERR501,C$ERSOFT
                                     .MCALL  M$GNINS,M$WORD,M$TSTLAB
     036536                          M$SVC   C$ERSOFT
                                     .MCALL  M$GNINS,M$TSTLAB
     036536                          M$TSTLAB
                                     .MCALL  M$TLABEL,M$INCR
                                     .IIF LT T$TSTMAC, .MEXIT
                                     .RADIX  10
                                     M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                     .RADIX  8
                                     M$INCR  T$TSTSEQ
     036536                          M$GNINS <TRAP   C$ERSOFT>
                                     .IF LT SVCINS
                                     TRAP    C$ERSOFT
                                     .MEXIT
                                     .ENDC
                                     .IF EQ SVCINS
                                     .LIST
                                             TRAP    C$ERSOFT
                                                     .NLIST
                                     .MEXIT
                                     .ENDC
                                     .IF GT SVCINS
                                     .LIST
     036536  104457                                                                              TRAP    C$ERSOFT
                                                     .NLIST
                                     .ENDC
             000012                  .RADIX  10
                                     .IF NB  1111
             002127                  T$ERRNUM=1111
                                     .IFF
                                     .ERROR  ;MISSING ERROR-NR
                                     .ENDC
     036540                          M$WORD  \T$ERRNUM
                                     .MCALL  M$GNINS
                                     .IRP    N,<1111>
                                     M$GNINS <.WORD  N>
                                     .ENDM
     036540                          M$GNINS <.WORD  1111>
                                     .IF LT SVCINS
                                     .WORD   1111
                                     .MEXIT
                                     .ENDC
                                     .IF EQ SVCINS
                                     .LIST
```

```
                                   .WORD   1111
                                           .NLIST
                              .MEXIT
                              .ENDC
                              .IF GT SVCINS
                              .LIST
     036540  002127                                                                 .WORD   1111
                                           .NLIST
                              .ENDC
             000010           .RADIX  8
                              .IF NB E502
     036542                   M$WORD  E502
                              .MCALL  M$GNINS
                              .IRP    N,<E502>
                              M$GNINS <.WORD  N>
                              .ENDM
     036542                   M$GNINS <.WORD  E502>
                              .IF LT SVCINS
                              .WORD   E502
                              .MEXIT
                              .ENDC
                              .IF EQ SVCINS
                              .LIST
                                   .WORD   E502
                                           .NLIST
                              .MEXIT
                              .ENDC
                              .IF GT SVCINS
                              .LIST
     036542  005437                                                                 .WORD   E502
                                           .NLIST
                              .ENDC
                              .IFF
                              M$WORD  0
                              .ENDC
                              .IF NB ERR501
     036544                   M$WORD  ERR501
                              .MCALL  M$GNINS
                              .IRP    N,<ERR501>
                              M$GNINS <.WORD  N>
                              .ENDM
     036544                   M$GNINS <.WORD  ERR501>
                              .IF LT SVCINS
                              .WORD   ERR501
                              .MEXIT
                              .ENDC
                              .IF EQ SVCINS
                              .LIST
                                   .WORD   ERR501
                                           .NLIST
                              .MEXIT
                              .ENDC
                              .IF GT SVCINS
                              .LIST
     036544  003672                                                                 .WORD   ERR501
                                           .NLIST
                              .ENDC
```

J3


```
                                        .IFF
                                        M$WORD  0
                                        .ENDC
 5111 036546                                    CKLOOP                          ;BRANCH BACK TO BGNSEG IF ERRLOOP IS SET
                                        .MCALL  M$SVC
      036546                            M$SVC   C$CLP1
                                        .MCALL  M$GNINS,M$TSTLAB
      036546                            M$TSTLAB
                                        .MCALL  M$TLABEL,M$INCR
                                        .IIF LT T$TSTMAC, .MEXIT
                                        .RADIX  10
                                        M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                        .RADIX  8
                                        M$INCR  T$TSTSEQ
      036546                            M$GNINS <TRAP   C$CLP1>
                                        .IF LT SVCINS
                                        TRAP    C$CLP1
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                TRAP    C$CLP1
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
      036546  104406                                                                                    TRAP    C$CLP1
                                                        .NLIST
                                        .ENDC
 5112 036550  042777  000010  143522    46$:    BIC     #10,@CSRX               ;SELECT CHANNEL 1
 5113 036556  012737  000001  002374            MOV     #1,CHAN                 ;LOAD CHANNEL NUMBER
 5114 036564  017737  143460  002502            MOV     @IIRX,BAD               ;GET IIR1 CONTENTS
 5115 036572  022737  000020  002502            CMP     #20,BAD                 ;BO BIT SHOULD BE SET
 5116 036600  001410                            BEQ     50$                     ;BRANCH IF YES
 5117 036602  012737  000020  002500            MOV     #20,GOOD                ;SET UP DATA FOR ERROR MESSAGE
 5118 036610                                    ERRSOFT 1112,E501,ERR501        ;ERROR HANDLER
                                        .MCALL  M$ERRINS
      036610                            M$ERRINS        1112,E501,ERR501,C$ERSOFT
                                        .MCALL  M$GNINS,M$WORD,M$TSTLAB
      036610                            M$SVC   C$ERSOFT
                                        .MCALL  M$GNINS,M$TSTLAB
      036610                            M$TSTLAB
                                        .MCALL  M$TLABEL,M$INCR
                                        .IIF LT T$TSTMAC, .MEXIT
                                        .RADIX  10
                                        M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                        .RADIX  8
                                        M$INCR  T$TSTSEQ
      036610                            M$GNINS <TRAP   C$ERSOFT>
                                        .IF LT SVCINS
                                        TRAP    C$ERSOFT
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                TRAP    C$ERSOFT
```

```
                                                  .NLIST
                                  .MEXIT
                                  .ENDC
                                  .IF GT SVCINS
                                  .LIST
     036610  104457                                                                    TRAP    C$ERSOFT
                                                  .NLIST
                                  .ENDC
             000012               .RADIX  10
                                  .IF NB  1112
             002130               T$ERRNUM=1112
                                  .IFF
                                  .ERROR  ;MISSING ERROR NR
                                  .ENDC
     036612                       M$WORD  \T$ERRNUM
                                  .MCALL  M$GNINS
                                  .IRP    N,<1112>
                                  M$GNINS <.WORD  N>
                                  .ENDM
     036612                       M$GNINS <.WORD  1112>
                                  .IF LT SVCINS
                                  .WORD   1112
                                  .MEXIT
                                  .ENDC
                                  .IF EQ SVCINS
                                  .LIST
                                          .WORD   1112
                                                  .NLIST
                                  .MEXIT
                                  .ENDC
                                  .IF GT SVCINS
                                  .LIST
     036612  002130                                                                    .WORD   1112
                                                  .NLIST
                                  .ENDC
             000010               .RADIX  8
                                  .IF NB E501
     036614                       M$WORD  E501
                                  .MCALL  M$GNINS
                                  .IRP    N,<E501>
                                  M$GNINS <.WORD  N>
                                  .ENDM
     036614                       M$GNINS <.WORD  E501>
                                  .IF LT SVCINS
                                  .WORD   E501
                                  .MEXIT
                                  .ENDC
                                  .IF EQ SVCINS
                                  .LIST
                                          .WORD   E501
                                                  .NLIST
                                  .MEXIT
                                  .ENDC
                                  .IF GT SVCINS
                                  .LIST
     036614  005376                                                                    .WORD   E501
                                                  .NLIST
```

 SEQ 0865

```
                                  .ENDC
                                  .IFF
                                  M$WORD  0
                                  .ENDC
                                  .IF NB ERR501
      036616                      M$WORD  ERR501
                                  .MCALL  M$GNINS
                                  .IRP    N,<ERR501>
                                  M$GNINS <.WORD  N>
                                  .ENDM
      036616                      M$GNINS <.WORD  ERR501>
                                  .IF LT SVCINS
                                  .WORD   ERR501
                                  .MEXIT
                                  .ENDC
                                  .IF EQ SVCINS
                                  .LIST
                                          .WORD   ERR501
                                                  .NLIST
                                  .MEXIT
                                  .ENDC
                                  .IF GT SVCINS
                                  .LIST
      036616  003672                                                    .WORD   ERR501
                                                  .NLIST
                                  .ENDC
                                  .IFF
                                  M$WORD  0
                                  .ENDC
 5119 036620                              CKLOOP                  ;BRANCH BACK TO BGNSEG IF ERRLOOP IS SET
                                  .MCALL  M$SVC
      036620                      M$SVC   C$CLP1
                                  .MCALL  M$GNINS,M$TSTLAB
      036620                      M$TSTLAB
                                  .MCALL  M$TLABEL,M$INCR
                                  .IIF LT T$TSTMAC, .MEXIT
                                  .RADIX  10
                                  M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                  .RADIX  8
                                  M$INCR  T$TSTSEQ
      036620                      M$GNINS <TRAP   C$CLP1>
                                  .IF LT SVCINS
                                  TRAP    C$CLP1
                                  .MEXIT
                                  .ENDC
                                  .IF EQ SVCINS
                                  .LIST
                                          TRAP    C$CLP1
                                                  .NLIST
                                  .MEXIT
                                  .ENDC
                                  .IF GT SVCINS
                                  .LIST
      036620  104406                                                    TRAP    C$CLP1
                                                  .NLIST
                                  .ENDC
 5120 036622  112777  000077  143446  50$:   MOVB    #77,@IDRHX    ;- -LOAD UNL INTO DOR1- ---- --- -- - --
```

```
 5121 036630                                ENDSEG
                                    .MCALL  M$POP,M$GNLS,M$SVC,M$ENDERR
      036630                        M$POP   T$NS,T$NESTLEV,T$TEMP
                                    .MCALL  M$GETS,M$DECR
                                    .IF LT  T$NESTLEV
                                    .ERROR  T$NESTLEV         ; MACRO T$NS UNDERFLOW
                                    .MEXIT
                                    .ENDC
      036630                        M$GETS  T$NS,\T$NESTLEV,T$TEMP
             000003                 T$TEMP=T$NS2
      036630                        M$DECR  T$NESTLEV
             000001                 T$NESTLEV=T$NESTLEV-1
                                    .IF EQ F$SEG-T$TEMP
      036630                        M$POP   T$SEK,T$SEGLEV,T$$SEG
                                    .MCALL  M$GETS,M$DECR
                                    .IF LT  T$SEGLEV
                                    .ERROR  T$SEGLEV          ; MACRO T$SEK UNDERFLOW
                                    .MEXIT
                                    .ENDC
      036630                        M$GETS  T$SEK,\T$SEGLEV,T$$SEG
             010001                 T$$SEG=T$SEK0
      036630                        M$DECR  T$SEGLEV
             177777                 T$SEGLEV=T$SEGLEV-1
      036630                        M$GNLS  T$$SEG
                                    .MCALL  M$GEN
                                    .IF NB T$$SEG
      036630                        M$GEN   \T$$SEG,$,SVCTAG
                                    .IF LE  SVCTAG
                                    .IIF EQ SVCTAG,.LIST
                                    10001$:
                                    .IIF EQ SVCTAG,.NLIST
                                    .MEXIT
                                    .ENDC
                                    .LIST
      036630                                                                        10001$:
                                            .NLIST
                                    .IFF
                                    M$GEN   \S$LSYM,$,SVCTAG
                                    .ENDC
      036630                        M$SVC   C$ESEG
                                    .MCALL  M$GNINS,M$TSTLAB
      036630                        M$TSTLAB
                                    .MCALL  M$TLABEL,M$INCR
                                    .IIF LT T$TSTMAC, .MEXIT
                                    .RADIX  10
                                    M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                    .RADIX  8
                                    M$INCR  T$TSTSEQ
      036630                        M$GNINS <TRAP   C$ESEG>
                                    .IF LT SVCINS
                                    TRAP    C$ESEG
                                    .MEXIT
                                    .ENDC
                                    .IF EQ SVCINS
                                    .LIST
                                            TRAP    C$ESEG
                                                    .NLIST
```

```
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
      036630 104405                                                                           TRAP    C$ESEG
                                                    .NLIST
                                        .ENDC
                                        .IF EQ T$SEGLEV+1
             000041                     I$SEG=F$END
                                        .ENDC
                                        .IFF
                                        M$ENDERR        ENDSEG,T$TEMP
                                        .ENDC
 5122 036632 005737  002234                     TST     QVP                     ;IS QUICK VERIFY PASS SELECTED
 5123 036636 001054                             BNE     EXQV11                  ;IF YES EXIT TEST
 5124 036640 005737  002322                     TST     ITRCNT                  ;IS THIS THE FIRST TIME THROUGH THE TEST
 5125 036644 001007                             BNE     1$                      ;BRANCH IF NO
 5126 036646 013737  002314  002406             MOV     DPA2,SDPA               ;SAVE ENTERED DPA2
 5127 036654 005037  002314                     CLR     DPA2                    ;CLEAR DPA2
 5128 036660 005237  002322                     INC     ITRCNT                  ;SET FLAG TO SEE FIRST TIME PASS
 5129 036664 005237  002314             1$:     INC     DPA2                    ;GET NEW DPA2
 5130 036670 023737  002314  002312             CMP     DPA2,DPA1               ;IS DPA1 = DPA2
 5131 036676 001002                             BNE     2$                      ;BRANCH IF NO
 5132 036700 005237  002314                     INC     DPA2                    ;INCREMENT DPA1
 5133 036704 022737  000037  002314     2$:     CMP     #37,DPA2                ;ALL DONE
 5134 036712 001423                             BEQ     3$                      ;BRANCH IF YES
 5135 036714 042777  000010  143356             BIC     #10,@CSRX               ;SELECT CHANNEL 1
 5136 036722 112777  000217  143340             MOVB    #217,@ICRHX             ;--- LOAD SIC INTO ACR 1
 5137 036730 004737  011062                     JSR     PC,WAIT                 ;WAIT A LITTLE
 5138 036734 112777  000017  143326             MOVB    #17,@ICRHX              ;----LOAD NOT SIC INTO ACR 1
 5139 036742 052777  000010  143330             BIS     #10,@CSRX               ;SELECT CHANNEL 2
 5140 036750 113777  002314  143276             MOVB    DPA2,@IIRHX             ;LOAD NEW DPA2 INTO ADR2
 5141 036756 000137  035362                     JMP     A11                     ;REPEAT THE TEST WITH THE NEW DPA1
 5142 036762 013737  002406  002314     3$:     MOV     SDPA,DPA2               ;RESTORE ENTERED DPA2
 5143 036770                             EXQV11: EXIT TST
                                        .MCALL  M$SVC,M$EXIT,M$EXSEG,M$EXTJ,M$GETTOP,M$CHECK,M$WORD,XFER
             000041                     T$FLAG=F$END
      036770                            M$CHECK TST,T$TEMP,T$FLAG
                                        .IF IDN <TST>,<TST>
             010040                     T$TEMP=T$$TEST
             000040                     T$FLAG=I$TST
                                        .MEXIT
                                        .ENDC
                                        .IF IDN <SUB>,<TST>
                                        T$TEMP=T$$SUB
                                        T$FLAG=I$SUB
                                        .MEXIT
                                        .ENDC
                                        .IF IDN <SEG>,<TST>
                                        T$TEMP=T$$SEG
                                        T$FLAG=I$SEG
                                        .MEXIT
                                        .ENDC
                                        .IF IDN <INIT>,<TST>
                                        T$TEMP-T$$INIT
                                        T$FLAG=I$INIT
                                        .MEXIT
```

```
                        .ENDC
                        .IF IDN <CLN>,<TST>
                        T$TEMP=T$$CLEAN
                        T$FLAG=I$CLN
                        .MEXIT
                        .ENDC
                        .IF IDN <SRV>,<TST>
                        T$TEMP=T$$SRV
                        T$FLAG=I$SRV
                        .MEXIT
                        .ENDC
                        .IF IDN <MSG>,<TST>
                        T$TEMP=T$$MSG
                        T$FLAG=F$JMP
                        .MEXIT
                        .ENDC
                        .IF IDN <RPT>,<TST>
                        T$TEMP=T$$RPT
                        T$FLAG=F$JMP
                        .MEXIT
                        .ENDC
                        .IF IDN <DU>,<TST>
                        T$TEMP=T$$DU
                        T$FLAG=F$JMP
                        .MEXIT
                        .ENDC
                        .IF IDN <AU>,<TST>
                        T$TEMP=T$$AU
                        T$FLAG=F$JMP
                        .MEXIT
                        .ENDC
                        .IF EQ T$FLAG-F$JMP
                        M$WORD  J$JMP
                        M$EXTJ  \T$TEMP
                        .MEXIT
                        .ENDC
                        .IF EQ  T$FLAG-F$BGN
036770                  M$SVC   C$EXIT
                        .MCALL  M$GNINS,M$TSTLAB
036770                  M$TSTLAB
                        .MCALL  M$TLABEL,M$INCR
                        .IIF LT T$TSTMAC, .MEXIT
                        .RADIX  10
                        M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                        .RADIX  8
                        M$INCR  T$TSTSEQ
036770                  M$GNINS <TRAP   C$EXIT>
                        .IF LT SVCINS
                        TRAP    C$EXIT
                        .MEXIT
                        .ENDC
                        .IF EQ SVCINS
                        .LIST
                                TRAP    C$EXIT
                                        .NLIST
                        .MEXIT
                        .ENDC
```

```
                                .IF GT SVCINS
                                .LIST
     036770  104432                                                                    TRAP     C$EXIT
                                               .NLIST
                                .ENDC
                                .IF IDN <SEG>,<TST>
                                M$GETTOP T$SEK,T$SEGLEV,T$TEMP
                                M$EXSEG \T$TEMP
                                .IFF
     036772                     M$EXIT  \T$TEMP
                                .MCALL  M$GNINS
     036772                     M$GNINS <.WORD  L10040-.>
                                .IF LT SVCINS
                                .WORD   L10040-.
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        .WORD   L10040-.
                                               .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
     036772  000074                                                                    .WORD    L10C40-.
                                               .NLIST
                                .ENDC
                                .ENDC
                                .MEXIT
                                .ENDC
                                .IF IDN <HRD>,<TST>
                                M$GETTOP        T$NS,T$NESTLEV,T$TEMP
                                .IF EQ  F$HARD-T$TEMP
                                .IRP    N,<\T$$HARD>
                                XFER    L'N
                                .ENDM
                                .MEXIT
                                .ENDC
                                .ENDC
                                .IF IDN <SFT>,<TST>
                                M$GETTOP        T$NS,T$NESTLEV,T$TEMP
                                .IF EQ  F$SOFT-T$TEMP
                                .IRP    N,<\T$$SOFT>
                                XFER    L'N
                                .ENDM
                                .MEXIT
                                .ENDC
                                .ENDC
                                .ERROR  ;ILL. "EXIT TST" STMT.

                                        .NLIST  BEX
     036774     045     123     062 TSHD11: .ASCIZ  /*S2*ASECONDARY ADDRESSING TEST OF CHANNEL 2 (LISTENER)*N/
                                        .LIST   BEX
                                        .EVEN
     037066                             ENDTST
                                .MCALL  M$POP,M$GNTAG,M$SVC,M$ENDERR
                                .IF EQ  F$BGN I$TST
```

```
                000041          I$TST=F$END
                                .IFF
                                .ERROR  ;MISSING "BGNTST"
                                .MEXIT
                                .ENDC
        037066                  M$POP   T$NS,T$NESTLEV,T$TEMP
                                .MCALL  M$GETS,M$DECR
                                .IF LT  T$NESTLEV
                                .ERROR  T$NESTLEV       ; MACRO T$NS UNDERFLOW
                                .MEXIT
                                .ENDC
        037066                  M$GETS  T$NS,\T$NESTLEV,T$TEMP
                000001          T$TEMP=T$NS1
        037066                  M$DECR  T$NESTLEV
                000000          T$NESTLEV=T$NESTLEV-1
                                .IF EQ F$TEST-T$TEMP
        037066                  M$GNTAG L,T$$TEST
                                .MCALL  M$GEN
        037066                  M$GEN   L,\T$$TEST,SVCTAG
                                .IF LE  SVCTAG
                                .IIF EQ SVCTAG,.LIST
                                L10040:
                                .IIF EQ SVCTAG,.NLIST
                                .MEXIT
                                .ENDC
                                .LIST
        037066                                                          L10040:
                                        .NLIST
                010000          S$LSYM=T$LSYM
        037066                  M$SVC   C$ETST
                                .MCALL  M$GNINS,M$TSTLAB
        037066                  M$TSTLAB
                                .MCALL  M$TLABEL,M$INCR
                                .IIF LT T$TSTMAC, .MEXIT
                                .RADIX  10
                                M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                .RADIX  8
                                M$INCR  T$TSTSEQ
        037066                  M$GNINS <TRAP   C$ETST>
                                .IF LT SVCINS
                                TRAP    C$ETST
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        TRAP    C$ETST
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
        037066  104401                                                      TRAP    C$ETST
                                                .NLIST
                                .ENDC
                000041          I$TST=F$END
                                .IFF
                                M$ENDERR        ENDTST,T$TEMP
```

```
.ENDC
```

```
                                   .SBTTL  TEST 12: SECONDARY ADDRESSING TEST OF CHANNEL 2 (TALKER)
                                   ;*********************************************************************
                                   ;                 IEX - TEST 12
                                   ;THIS TEST CHECKS THE EXTENDED TALKER INTERFACE FUNCTION .
                                   ;
                                   ;PURPOSE OF THIS TEST IS TO CHECK THE SECONDARY ADDRESSING
                                   ;FEATURE OF CHANNEL 2 BY MEANS OF RECEIVING A VALID AS WELL AS
                                   ;AN INVALID MY SECONDARY ADDRESS (MSA2).
                                   ;*********************************************************************
037070                                     BGNTST
                                   .MCALL  M$INCR,M$GNTEST,M$PUSH,M$INCR
                                   .IF NE  F$END-I$SUB
                                   .ERROR  ;"BGNTST" IN SUB
                                   .MEXIT
                                   .ENDC
                                   .IF NE  F$END-I$SEG
                                   .ERROR  ;"BGNTST" IN SEG
                                   .MEXIT
                                   .ENDC
                                   .IF NE  F$END-I$TST
                                   .ERROR  ;"BGNTST" IN TST
                                   .MEXIT
                                   .IFF
        000040                     I$TST=F$BGN
                                   .ENDC
                                   .IF B
037070                             M$INCR  T$TESTNUM
        000014                     T$TESTNUM=T$TESTNUM+1
                                   .IFF
                                   T$TESTNUM=
                                   .ENDC
        000000                     T$SUBNUM=0
        000012                     .RADIX  10
037070                             M$GNTEST        \T$TESTNUM
                                   .MCALL  M$GEN
037070                             M$GEN   T,12:,SVCTST
                                   .IF LE  SVCTST
                                   .IIF EQ SVCTST,.LIST
                                   T12::
                                   .IIF EQ SVCTST,.NLIST
                                   .MEXIT
                                   .ENDC
                                   .LIST
037070                                                                                   T12::
                                           .NLIST
        000010                     .RADIX  8
037070                             M$PUSH  T$NS,T$NESTLEV,F$TEST
                                   .MCALL  M$INCR,M$SETS
037070                             M$INCR  T$NESTLEV
        000001                     T$NESTLEV=T$NESTLEV+1
037070                             M$SETS  T$NS,\T$NESTLEV,F$TEST
        000001                     T$NS1=F$TEST
        010041                     T$$TEST=T$TAGNUM
037070                             M$INCR T$TAGNUM
        010042                     T$TAGNUM-T$TAGNUM+1
        000001                     T$TSTSEQ=1
037070  005737  002324                     TST     PNTF                    ;IS THE PNT FLAG SET
```

```
  5162 037074  001410                  BEQ     7$                      ;IF YES, PRINT THE TEST HEADER
  5163 037076                          PRINTF  #TSHD12                 ;...
                               .MCALL  M$PRINT
                               .IF B   #TSHD12
                               .ERROR  ;MISSING FORMAT
                               .MEXIT
                               .ENDC
                               .IF B   <>
       037076                  M$PRINT C$PNTF,#TSHD12
                               .MCALL  M$COUNT,M$PUT,M$GNINS,M$SVC
               000001          T$ARGCNT=1
       037076                  M$COUNT T$ARGCNT,<>,<>,<>,<>,<>,<>,<>,<>
                               .IF NB <>
                               M$COUNT T$ARGCNT,<>,<>,<>,<>,<>,<>,<>,<>
                               .ENDC
                               .IF NB <>
                               T$ARGCNT=T$ARGCNT+1
                               .ENDC
                               .IRP    N,<\T$ARGCNT>
                               M$PUT   #N,#TSHD12,<>,<>,<>,<>,<>,<>,<>,<>
                               .ENDM
       037076                  M$PUT   #1,#TSHD12,<>,<>,<>,<>,<>,<>,<>,<>
                               .MCALL  M$PUT1
                               .IF NB  <#TSHD12>
       037076                  M$PUT   <#TSHD12>,<>,<>,<>,<>,<>,<>,<>,<>
                               .MCALL  M$PUT1
                               .IF NB  <>
                               M$PUT   <>,<>,<>,<>,<>,<>,<>,<>,<>
                               .ENDC
                               .IF NB  <#TSHD12>
       037076                  M$PUT1  #TSHD12
                               .MCALL  M$GNINS
                               .IF B
       037076                  M$GNINS <MOV    #TSHD12,-(SP)>
                               .IF LT SVCINS
                               MOV     #TSHD12,-(SP)
                               .MEXIT
                               .ENDC
                               .IF EQ SVCINS
                               .LIST
                                       MOV     #TSHD12,-(SP)
                                               .NLIST
                               .MEXIT
                               .ENDC
                               .IF GT SVCINS
                               .LIST
       037076  012746  040654                                          MOV     #TSHD12,-(SP)
                                               .NLIST
                               .ENDC
                               .IFF
                               .IF DIF B,<#TSHD12>
                               .ERROR  ;ILL. ARG. "#TSHD12" ONLY "B' IS ALLOWED.
                               .MEXIT
                               .ENDC
                               M$GNINS <CLR    -(SP)>
                               M$GNINS <BISB   ,(SP)>
                               .ENDC
```

```
                                  .ENDC
                                  .ENDC
                                  .IF NB  <#1>
     037102                       M$PUT1  #1
                                  .MCALL  M$GNINS
                                  .IF B
     037102                       M$GNINS <MOV    #1,-(SP)>
                                  .IF LT SVCINS
                                  MOV     #1,-(SP)
                                  .MEXIT
                                  .ENDC
                                  .IF EQ SVCINS
                                  .LIST
                                          MOV     #1,-(SP)
                                                  .NLIST
                                  .MEXIT
                                  .ENDC
                                  .IF GT SVCINS
                                  .LIST
     037102  012746  000001                                                   MOV     #1,-(SP)
                                                  .NLIST
                                  .ENDC
                                  .IFF
                                  .IF DIF B,<#1>
                                  .ERROR  ;ILL. ARG. "#1" ONLY "B" IS ALLOWED.
                                  .MEXIT
                                  .ENDC
                                  M$GNINS <CLR    -(SP)>
                                  M$GNINS <BISB   ,(SP)>
                                  .ENDC
                                  .ENDC
     037106                       M$GNINS <MOV    SP,R0>
                                  .IF LT SVCINS
                                  MOV     SP,R0
                                  .MEXIT
                                  .ENDC
                                  .IF EQ SVCINS
                                  .LIST
                                          MOV     SP,R0
                                                  .NLIST
                                  .MEXIT
                                  .ENDC
                                  .IF GT SVCINS
                                  .LIST
     037106  010600                                                           MOV     SP,R0
                                                  .NLIST
                                  .ENDC
     037110                       M$SVC   C$PNTF
                                  .MCALL  M$GNINS,M$TSTLAB
     037110                       M$TSTLAB
                                  .MCALL  M$TLABEL,M$INCR
                                  .IIF LT T$TSTMAC, .MEXIT
                                  .RADIX  10
                                  M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                  .RADIX  8
                                  M$INCR  T$TSTSEQ
     037110                       M$GNINS <TRAP   C$PNTF>
```

I4


```
                                        .IF LT SVCINS
                                        TRAP    C$PNTF
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                TRAP    C$PNTF
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
        037110  104417                                                                          TRAP    C$PNTF
                                                        .NLIST
                                        .ENDC
                                        .IRP    N,<\T$ARGCNT*2+2>
                                        M$GNINS <ADD    #N,SP>
                                        .ENDM
        037112                          M$GNINS <ADD    #4,SP>
                                        .IF LT SVCINS
                                        ADD     #4,SP
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                ADD     #4,SP
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
        037112  062706  000004                                                                  ADD     #4,SP
                                                        .NLIST
                                        .ENDC
                                        .MEXIT
                                        .ENDC
                                        .IF B   <>
                                        M$PRINT C$PNTF,#TSHD12,<>
                                        .MEXIT
                                        .ENDC
                                        .IF B   <>
                                        M$PRINT C$PNTF,#TSHD12,<>,<>
                                        .MEXIT
                                        .ENDC
                                        .IF B   <>
                                        M$PRINT C$PNTF,#TSHD12,<>,<>,<>
                                        .MEXIT
                                        .ENDC
                                        .IF B   <>
                                        M$PRINT C$PNTF,#TSHD12,<>,<>,<>,<>
                                        .MEXIT
                                        .ENDC
                                        .IF B   <>
                                        M$PRINT C$PNTF,#TSHD12,<>,<>,<>,<>,<>
                                        .MEXIT
                                        .ENDC
                                        .IF B   <>
```

```
                                        M$PRINT C$PNTF,#TSHD12,<>,<>,<>,<>,<>,<>
                                        .MEXIT
                                        .ENDC
                                        .IF B   <>
                                        M$PRINT C$PNTF,#TSHD12,<>,<>,<>,<>,<>,<>,<>
                                        .MEXIT
                                        .ENDC
                                        M$PRINT C$PNTF,#TSHD12,<>,<>,<>,<>,<>,<>,<>,<>
5164 037116 005037 002322               7$:     CLR     ITRCNT                  ;CLEAR COUNTER
5165 037122 004737 010210                       JSR     PC,CULPA                ;CLEAR ULPA IN ISR 1 AND 2
5166 037126 004737 010524                       JSR     PC,BGIN1                ;SET UP PARAMETER
5167 037132 052777 000010 143140        A12:    BIS     #10,@CSRX               ;SELECT CHANNEL 2
5168 037140 112777 000223 143122                MOVB    #223,@ICRHX             ;-----LOAD DAI INTO ACR2--------
5169 037146 112777 000020 143106                MOVB    #20,@ISRHX              ;-----LOAD APT BIT INTO ISR2-----
5170 037154 013701 002314                       MOV     DPA2,R1                 ;GET DPA2 ADDRESS
5171 037160 062701 000100                       ADD     #100,R1                 ;CREATE MY TALKER ADDRESS (MTA)
5172 037164 010137 002416                       MOV     R1,MTA2                 ;STORE MTA
5173 037170 032737 000001 002314                BIT     #1,DPA2                 ;IS DPA EVEN
5174 037176 001412                              BEQ     3$                      ;BRANCH IF YES
5175 037200 052737 000001 002452                BIS     #1,CDAT8                ;SET ULPA BIT IN COMPARE DATA FOR ISR
5176 037206 052737 000001 002436                BIS     #1,CDAT2                ;...
5177 037214 052737 000001 002440                BIS     #1,CDAT3                ;...
5178 037222 000411                              BR      .+24                    ;BRANCH TO BGNSEG
5179 037224 042737 000001 002452        3$:     BIC     #1,CDAT8                ;CLEAR ULPA BIT IN COMPARE DATA FOR ISR
5180 037232 042737 000001 002436                BIC     #1,CDAT2                ;...
5181 037240 042737 000001 002440                BIC     #1,CDAT3                ;...
5182 037246                                     BGNSEG
                                        .MCALL  M$PUSH,M$INCR,M$SVC
            000040                      I$SEG=F$BGN
     037246                             M$PUSH  T$NS,T$NESTLEV,F$SEG
                                        .MCALL  M$INCR,M$SETS
     037246                             M$INCR  T$NESTLEV
            000002                      T$NESTLEV=T$NESTLEV+1
     037246                             M$SETS  T$NS,\T$NESTLEV,F$SEG
            000003                      T$NS2=F$SEG
            010000                      T$$SEG=S$LSYM
     037246                             M$PUSH  T$SEK,T$SEGLEV,T$$SEG
                                        .MCALL  M$INCR,M$SETS
     037246                             M$INCR  T$SEGLEV
            000000                      T$SEGLEV=T$SEGLEV+1
     037246                             M$SETS  T$SEK,\T$SEGLEV,T$$SEG
            010000                      T$SEK0=T$$SEG
     037246                             M$INCR  S$LSYM
            010001                      S$LSYM=S$LSYM+1
     037246                             M$SVC   C$BSEG
                                        .MCALL  M$GNINS,M$TSTLAB
     037246                             M$TSTLAB
                                        .MCALL  M$TLABEL,M$INCR
                                        .IIF LT T$TSTMAC, .MEXIT
                                        .RADIX  10
                                        M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                        .RADIX  8
                                        M$INCR  T$TSTSEQ
     037246                             M$GNINS <TRAP   C$BSEG>
                                        .IF LT SVCINS
                                        TRAP    C$BSEG
                                        .MEXIT
```

```
                                          .ENDC
                                          .IF EQ SVCINS
                                          .LIST
                                                  TRAP    C$BSEG
                                                          .NLIST
                                          .MEXIT
                                          .ENDC
                                          .IF GT SVCINS
                                          .LIST
      037246  104404                                                                      TRAP    C$BSEG
                                                          .NLIST
                                          .ENDC
      037250  042777  000010  143022              BIC     #10,@CSRX               ;SELECT CHANNEL 1
      037256  012737  000001  002374              MOV     #1,CHAN                 ;LOAD CHANNEL NUMBER
      037264  113777  002416  143004              MOVB    MTA2,@IDRHX             ;----LOAD TALKER ADDRESS OF CHANNEL 1---
      037272  004737  011050                      JSR     PC,LOOP                 ;WAIT A LITTLE
      037276  052777  000010  142774              BIS     #10,@CSRX               ;SELECT CHANNEL 2
      037304  012737  000002  002374              MOV     #2,CHAN                 ;LOAD CHANNEL NUMBER
      037312  017737  142732  002402              MOV     @IIRX,RSAVE             ;GET IIR2 CONTENTS
      037320  022737  000400  002402              CMP     #400,RSAVE              ;IFC,BIT IN IIR2 SHOULD BE SET
      037326  001413                              BEQ     30$                     ;BRANCH IF YES
      037330  012737  000400  002500              MOV     #400,GOOD               ;SET UP DATA FOR ERROR MESSAGES
      037336  013737  002402  002502              MOV     RSAVE,BAD               ;...
      037344                                      ERRSOFT 1201,E501,ERR501        ;ERROR HANDLER
                                          .MCALL  M$ERRINS
      037344                              M$ERRINS        1201,E501,ERR501,C$ERSOFT
                                          .MCALL  M$GNINS,M$WORD,M$TSTLAB
      037344                              M$SVC   C$ERSOFT
                                          .MCALL  M$GNINS,M$TSTLAB
      037344                              M$TSTLAB
                                          .MCALL  M$TLABEL,M$INCR
                                          .IIF LT T$TSTMAC, .MEXIT
                                          .RADIX  10
                                          M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                          .RADIX  8
                                          M$INCR  T$TSTSEQ
      037344                              M$GNINS <TRAP   C$ERSOFT>
                                          .IF LT SVCINS
                                          TRAP    C$ERSOFT
                                          .MEXIT
                                          .ENDC
                                          .IF EQ SVCINS
                                          .LIST
                                                  TRAP    C$ERSOFT
                                                          .NLIST
                                          .MEXIT
                                          .ENDC
                                          .IF GT SVCINS
                                          .LIST
      037344  104457                                                                      TRAP    C$ERSOFT
                                                          .NLIST
                                          .ENDC
              000012                      .RADIX  10
                                          .IF NB  1201
              002261                      T$ERRNUM=1201
                                          .IFF
                                          .ERROR  ;MISSING ERROR-NR
```

```
                                        .ENDC
037346                                  M$WORD  \T$ERRNUM
                                        .MCALL  M$GNINS
                                        .IRP    N,<1201>
                                        M$GNINS <.WORD  N>
                                        .ENDM
037346                                  M$GNINS <.WORD  1201>
                                        .IF LT SVCINS
                                        .WORD   1201
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                .WORD   1201
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
037346  002261                                                                      .WORD   1201
                                                        .NLIST
                                        .ENDC
        000010                          .RADIX  8
                                        .IF NB E501
037350                                  M$WORD  E501
                                        .MCALL  M$GNINS
                                        .IRP    N,<E501>
                                        M$GNINS <.WORD  N>
                                        .ENDM
037350                                  M$GNINS <.WORD  E501>
                                        .IF LT SVCINS
                                        .WORD   E501
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                .WORD   E501
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
037350  005376                                                                      .WORD   E501
                                                        .NLIST
                                        .ENDC
                                        .IFF
                                        M$WORD  0
                                        .ENDC
                                        .IF NB ERR501
037352                                  M$WORD  ERR501
                                        .MCALL  M$GNINS
                                        .IRP    N,<ERR501>
                                        M$GNINS <.WORD  N>
                                        .ENDM
037352                                  M$GNINS <.WORD  ERR501>
                                        .IF LT SVCINS
                                        .WORD   ERR501
```

```
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                .WORD   ERR501
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
      037352  003672                                                                    .WORD   ERR501
                                                        .NLIST
                                        .ENDC
                                        .IFF
                                        M$WORD  0
                                        .ENDC
 5195 037354                                    CKLOOP                  ;BRANCH TO BGNSEG WHEN ERRLOOP IS SET
                                        .MCALL  M$SVC
      037354                            M$SVC   C$CLP1
                                        .MCALL  M$GNINS,M$TSTLAB
      037354                            M$TSTLAB
                                        .MCALL  M$TLABEL,M$INCR
                                        .IIF LT T$TSTMAC, .MEXIT
                                        .RADIX  10
                                        M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                        .RADIX  8
                                        M$INCR  T$TSTSEQ
      037354                            M$GNINS <TRAP   C$CLP1>
                                        .IF LT SVCINS
                                        TRAP    C$CLP1
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                TRAP    C$CLP1
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
      037354  104406                                                                    TRAP    C$CLP1
                                                        .NLIST
                                        .ENDC
 5196 037356  017737  142674  002402    30$:    MOV     @ISRX,RSAVE     ;GET ISR2 CONTENTS
 5197 037364  023737  002436  002402            CMP     CDAT2,RSAVE     ;ATN,ATN,NDAC TPAS,(ULPA) BIT SET
 5198 037372  001413                            BEQ     40$             ;BRANCH IF YES
 5199 037374  013737  002436  002500            MOV     CDAT2,GOOD      ;SET UP DATA FOR ERROR MESSAGES
 5200 037402  013737  002402  002502            MOV     RSAVE,BAD       ;...
 5201 037410                                    ERRSOFT 1202,E502,ERR501        ;ERROR HANDLER
                                        .MCALL  M$ERRINS
      037410                            M$ERRINS        1202,E502,ERR501,C$ERSOFT
                                        .MCALL  M$GNINS,M$WORD,M$TSTLAB
      037410                            M$SVC   C$ERSOFT
                                        .MCALL  M$GNINS,M$TSTLAB
      037410                            M$TSTLAB
                                        .MCALL  M$TLABEL,M$INCR
                                        .IIF LT T$TSTMAC, .MEXIT
```

```
                                .RADIX  10
                                M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                .RADIX  8
                                M$INCR  T$TSTSEQ
037410                          M$GNINS <TRAP   C$ERSOFT>
                                .IF LT SVCINS
                                TRAP    C$ERSOFT
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        TRAP    C$ERSOFT
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
037410  104457                                                          TRAP    C$ERSOFT
                                                .NLIST
                                .ENDC
        000012                  .RADIX  10
                                .IF NB  1202
        002262                  T$ERRNUM=1202
                                .IFF
                                .ERROR  ;MISSING ERROR-NR
                                .ENDC
037412                          M$WORD  \T$ERRNUM
                                .MCALL  M$GNINS
                                .IRP    N,<1202>
                                M$GNINS <.WORD  N>
                                .ENDM
037412                          M$GNINS <.WORD  1202>
                                .IF LT SVCINS
                                .WORD   1202
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        .WORD   1202
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
037412  002262                                                          .WORD   1202
                                                .NLIST
                                .ENDC
        000010                  .RADIX  8
                                .IF NB E502
037414                          M$WORD  E502
                                .MCALL  M$GNINS
                                .IRP    N,<E502>
                                M$GNINS <.WORD  N>
                                .ENDM
037414                          M$GNINS <.WORD  E502>
                                .IF LT SVCINS
                                .WORD   E502
```

```
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                .WORD   E502
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
      037414  005437                                                                      .WORD   E502
                                                        .NLIST
                                        .ENDC
                                        .IFF
                                        M$WORD  0
                                        .ENDC
                                        .IF NB ERR501
      037416                            M$WORD  ERR501
                                        .MCALL  M$GNINS
                                        .IRP    N,<ERR501>
                                        M$GNINS <.WORD  N>
                                        .ENDM
      037416                            M$GNINS <.WORD  ERR501>
                                        .IF LT SVCINS
                                        .WORD   ERR501
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                .WORD   ERR501
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
      037416  003672                                                                      .WORD   ERR501
                                                        .NLIST
                                        .ENDC
                                        .IFF
                                        M$WORD  0
                                        .ENDC
 5202 037420                                    CKLOOP                          ;BRANCH TO BGNSEG WHEN ERRLOOP IS SET
                                        .MCALL  M$SVC
      037420                            M$SVC   C$CLP1
                                        .MCALL  M$GNINS,M$TSTLAB
      037420                            M$TSTLAB
                                        .MCALL  M$TLABEL,M$INCR
                                        .IIF LT T$TSTMAC, .MEXIT
                                        .RADIX  10
                                        M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                        .RADIX  8
                                        M$INCR  T$TSTSEQ
      037420                            M$GNINS <TRAP   C$CLP1>
                                        .IF LT SVCINS
                                        TRAP    C$CLP1
                                        .MEXIT
                                        .ENDC
```

C5

```
                                                  .IF EQ SVCINS
                                                  .LIST
                                                          TRAP    C$CLP1
                                                                  .NLIST
                                                  .MEXIT
                                                  .ENDC
                                                  .IF GT SVCINS
                                                  .LIST
      037420  104406                                                                                    TRAP    C$CLP1
                                                                  .NLIST
                                                  .ENDC
5203  037422  042777  000010  142650      40$:    BIC     #10,@CSRX               ;SELECT CHANNEL 1
5204  037430  012737  000001  002374              MOV     #1,CHAN                 ;LOAD CHANNEL NUMBER
5205  037436  013701  002416                      MOV     MTA2,R1                 ;GET MTA2
5206  037442  062701  000040                      ADD     #40,R1                  ;CREATE MSA1
5207  037446  010137  002420                      MOV     R1,MSA1                 ;STORE MSA1 TO LOCATION MSA1
5208  037452  113777  002420  142616              MOVB    MSA1,@IDRHX             ;------LOAD MSA1 INTO DOR1----------
5209  037460  004737  011050                      JSR     PC,LOOP                 ;WAIT A LITTLE
5210  037464  017737  142560  002402              MOV     @IIRX,RSAVE             ;GET IIR1 CONTENTS
5211  037472  022737  000000  002402              CMP     #0,RSAVE                ;IIR1  SHOULD BE ZERO
5212  037500  001412                              BEQ     41$                     ;BRANCH IF YES
5213  037502  005037  002500                      CLR     GOOD                    ;SET UP DATA FOR ERROR MESSAGE
5214  037506  013737  002402  002502              MOV     RSAVE,BAD               ;...
5215  037514                                      ERRSOFT 1203,E501,ERR501        ;ERROR HANDLER
                                                  .MCALL  M$ERRINS
      037514                                      M$ERRINS        1203,E501,ERR501,C$ERSOFT
                                                  .MCALL  M$GNINS,M$WORD,M$TSTLAB
      037514                                      M$SVC   C$ERSOFT
                                                  .MCALL  M$GNINS,M$TSTLAB
      037514                                      M$TSTLAB
                                                  .MCALL  M$TLABEL,M$INCR
                                                  .IIF LT T$TSTMAC, .MEXIT
                                                  .RADIX  10
                                                  M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                                  .RADIX  8
                                                  M$INCR  T$TSTSEQ
      037514                                      M$GNINS <TRAP   C$ERSOFT>
                                                  .IF LT SVCINS
                                                  TRAP    C$ERSOFT
                                                  .MEXIT
                                                  .ENDC
                                                  .IF EQ SVCINS
                                                  .LIST
                                                          TRAP    C$ERSOFT
                                                                  .NLIST
                                                  .MEXIT
                                                  .ENDC
                                                  .IF GT SVCINS
                                                  .LIST
      037514  104457                                                                                    TRAP    C$ERSOFT
                                                                  .NLIST
                                                  .ENDC
              000012                              .RADIX  10
                                                  .IF NB  1203
              002263                              T$ERRNUM=1203
                                                  .IFF
                                                  .ERROR  ;MISSING ERROR NR
```

```
                                        .ENDC
      037516                            M$WORD  \T$ERRNUM
                                        .MCALL  M$GNINS
                                        .IRP    N,<1203>
                                        M$GNINS <.WORD  N>
                                        .ENDM
      037516                            M$GNINS <.WORD  1203>
                                        .IF LT SVCINS
                                        .WORD   1203
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                .WORD   1203
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
      037516  002263                                                                      .WORD   1203
                                                        .NLIST
                                        .ENDC
              000010                    .RADIX  8
                                        .IF NB E501
      037520                            M$WORD  E501
                                        .MCALL  M$GNINS
                                        .IRP    N,<E501>
                                        M,GNINS <.WORD  N>
                                        .ENDM
      037520                            M$GNINS <.WORD  E501>
                                        .IF LT SVCINS
                                        .WORD   E501
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                .WORD   E501
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
      037520  005376                                                                      .WORD   E501
                                                        .NLIST
                                        .ENDC
                                        .IFF
                                        M$WORD  0
                                        .ENDC
                                        .IF NB ERR501
      037522                            M$WORD  ERR501
                                        .MCALL  M$GNINS
                                        .IRP    N,<ERR501>
                                        M$GNINS <.WORD  N>
                                        .ENDM
      037522                            M$GNINS <.WORD  ERR501>
                                        .IF LT SVCINS
                                        .WORD   ERR501
```

E5

```
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                              .WORD   ERR501
                                                    .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
      037522  003672                                                                      .WORD   ERR501
                                                    .NLIST
                                        .ENDC
                                        .IFF
                                        M$WORD  0
                                        .ENDC
 5216 037524                                  CKLOOP                 ;BRANCH BACK TO BGNSEG IF ERRLOOP IS SET
                                        .MCALL  M$SVC
      037524                            M$SVC   C$CLP1
                                        .MCALL  M$GNINS,M$TSTLAB
      037524                            M$TSTLAB
                                        .MCALL  M$TLABEL,M$INCR
                                        .IIF LT T$TS!MAC, .MEXIT
                                        .RADIX  10
                                        M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                        .RADIX  8
                                        M$INCR  T$TSTSEQ
      037524                            M$GNINS <TRAP   C$CLP1>
                                        .IF LT SVCINS
                                        TRAP    C$CLP1
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                              TRAP    C$CLP1
                                                    .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
      037524  104406                                                                      TRAP    C$CLP1
                                                    .NLIST
                                        .ENDC
 5217 037526  052777  000010  142544    41$:  BIS     #10,@CSRX      ;SELECT CHANNEL 2
 5218 037534  012737  000002  002374          MOV     #2,CHAN        ;LOAD CHANNEL NUMBER
 5219 037542  017737  142502  002402          MOV     @IIRX,RSAVE    ;GET IIR2 CONTENTS
 5220 037550  022737  010100  002402          CMP     #10100,RSAVE   ;APT,INT1 BIT IN IIR2 SHOULD BE SET
 5221 037556  001413                          BEQ     42$            ;BRANCH IF YES
 5222 037560  012737  010100  002500          MOV     #10100,GOOD    ;SET UP DATA FOR ERROR MESSAGE
 5223 037566  013737  002402  002502          MOV     RSAVE,BAD      ;...
 5224 037574                                  ERRSOFT 1204,E501,ERR501 ;ERROR HANDLER
                                        .MCALL  M$ERRINS
      037574                            M$ERRINS        1204,E501,ERR501,C$ERSOFT
                                        .MCALL  M$GNINS,M$WORD,M$TSTLAB
      037574                            M$SVC   C$ERSOFT
                                        .MCALL  M$GNINS,M$TSTLAB
      037574                            M$TSTLAB
```

```
                        .MCALL  M$TLABEL,M$INCR
                        .IIF LT T$TSTMAC, .MEXIT
                        .RADIX  10
                        M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                        .RADIX  8
                        M$INCR  T$TSTSEQ
037574                  M$GNINS <TRAP   C$ERSOFT>
                        .IF LT SVCINS
                        TRAP    C$ERSOFT
                        .MEXIT
                        .ENDC
                        .IF EQ SVCINS
                        .LIST
                                TRAP    C$ERSOFT
                                        .NLIST
                        .MEXIT
                        .ENDC
                        .IF GT SVCINS
                        .LIST
037574  104457                                                  TRAP    C$ERSOFT
                                        .NLIST
                        .ENDC
        000012          .RADIX  10
                        .IF NB  1204
        002264          T$ERRNUM=1204
                        .IFF
                        .ERROR  ;MISSING ERROR NR
                        .ENDC
037576                  M$WORD  \T$ERRNUM
                        .MCALL  M$GNINS
                        .IRP    N,<1204>
                        M$GNINS <.WORD  N>
                        .ENDM
037576                  M$GNINS <.WORD  1204>
                        .IF LT SVCINS
                        .WORD   1204
                        .MEXIT
                        .ENDC
                        .IF EQ SVCINS
                        .LIST
                                .WORD   1204
                                        .NLIST
                        .MEXIT
                        .ENDC
                        .IF GT SVCINS
                        .LIST
037576  002264                                                  .WORD   1204
                                        .NLIST
                        .ENDC
        000010          .RADIX  8
                        .IF NB E501
037600                  M$WORD  E501
                        .MCALL  M$GNINS
                        .IRP    N,<E501>
                        M$GNINS <.WORD  N>
                        .ENDM
037600                  M$GNINS <.WORD  E501>
```

```
                                .IF LT SVCINS
                                .WORD   E501
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        .WORD   E501
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
     037600  005376                                                                     .WORD   E501
                                                .NLIST
                                .ENDC
                                .IFF
                                M$WORD  0
                                .ENDC
                                .IF NB ERR501
     037602                     M$WORD  ERR501
                                .MCALL  M$GNINS
                                .IRP    N,<ERR501>
                                M$GNINS <.WORD  N>
                                .ENDM
     037602                     M$GNINS <.WORD  ERR501>
                                .IF LT SVCINS
                                .WORD   ERR501
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        .WORD   ERR501
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
     037602  003672                                                                     .WORD   ERR501
                                                .NLIST
                                .ENDC
                                .IFF
                                M$WORD  0
                                .ENDC
5225 037604                             CKLOOP                          ;BRANCH BACK TO BGNSEG IF ERRLOOP IS SET
                                .MCALL  M$SVC
     037604                     M$SVC   C$CLP1
                                .MCALL  M$GNINS,M$TSTLAB
     037604                     M$TSTLAB
                                .MCALL  M$TLABEL,M$INCR
                                .IIF LT T$TSTMAC, .MEXIT
                                .RADIX  10
                                M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                .RADIX  8
                                M$INCR  T$TSTSEQ
     037604                     M$GNINS <TRAP   C$CLP1>
                                .IF LT SVCINS
                                TRAP    C$CLP1
```

H5

H5

TEST 12: SECONDARY ADDRESSING TEST OF CHANNEL 2 (TALKER)

```
                                                 .MEXIT
                                                 .ENDC
                                                 .IF EQ SVCINS
                                                 .LIST
                                                          TRAP    C$CLP1
                                                                  .NLIST
                                                 .MEXIT
                                                 .ENDC
                                                 .IF GT SVCINS
                                                 .LIST
      037604  104406                                                                                  TRAP    C$CLP1
                                                                  .NLIST
                                                 .ENDC
 5226 037606  017737  142444  002402   42$:       MOV     @ISRX,RSAVE            ;GET ISR2 CONTENTS
 5227 037614  023737  002452  002402              CMP     CDAT8,RSAVE            ;ATN,DAV,NDAC,NRFD,ATN,TPAS(ULPA) IS SET
 5228 037622  001413                              BEQ     43$                    ;BRANCH IF YES
 5229 037624  013737  002452  002500              MOV     CDAT8,GOOD             ;SET UP DATA FOR ERROR MESSAGE
 5230 037632  013737  002402  002502              MOV     RSAVE,BAD              ;...
 5231 037640                                      ERRSOFT 1205,E502,ERR501       ;ERROR HANDLER
                                                 .MCALL  M$ERRINS
      037640                                     M$ERRINS         1205,E502,ERR501,C$ERSOFT
                                                 .MCALL  M$GNINS,M$WORD,M$TSTLAB
      037640                                     M$SVC   C$ERSOFT
                                                 .MCALL  M$GNINS,M$TSTLAB
      037640                                     M$TSTLAB
                                                 .MCALL  M$T_ABEL,M$INCR
                                                 .IIF LT T$TSTMAC, .MEXIT
                                                 .RADIX  10
                                                 M$TLABEL         \T$TESTNUN,\T$TSTSEQ
                                                 .RADIX  8
                                                 M$INCR  T$TSTSEQ
      037640                                     M$GNINS <TRAP    C$ERSOFT>
                                                 .IF LT SVCINS
                                                 TRAP    C$ERSOFT
                                                 .MEXIT
                                                 .ENDC
                                                 .IF EQ SVCINS
                                                 .LIST
                                                          TRAP    C$ERSOFT
                                                                  .NLIST
                                                 .MEXIT
                                                 .ENDC
                                                 .IF GT SVCINS
                                                 .LIST
      037640  104457                                                                                  TRAP    C$ERSOFT
                                                                  .NLIST
                                                 .ENDC
              000012                             .RADIX  10
                                                 .IF NB  1205
              002265                             T$ERRNUM=1205
                                                 .IFF
                                                 .ERROR  ;MISSING ERROR NR
                                                 .ENDC
      037642                                     M$WORD  \T$ERRNUM
                                                 .MCALL  M$GNINS
                                                 .IRP    N,<1205>
                                                 M$GNINS <.WORD  N>
```

I5

I5


```
                                .ENDM
037642                          M$GNINS <.WORD  1205>
                                .IF LT SVCINS
                                .WORD   1205
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        .WORD   1205
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
037642  002265                                                                          .WORD   1205
                                                .NLIST
                                .ENDC
        000010                  .RADIX  8
                                .IF NB E502
037644                          M$WORD  E502
                                .MCALL  M$GNINS
                                .IRP    N,<E502>
                                M$GNINS <.WORD  N>
                                .ENDM
037644                          M$GNINS <.WORD  E502>
                                .IF LT SVCINS
                                .WORD   E502
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        .WORD   E502
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
037644  005437                                                                          .WORD   E502
                                                .NLIST
                                .ENDC
                                .IFF
                                M$WORD  0
                                .ENDC
                                .IF NB ERR501
037646                          M$WORD  ERR501
                                .MCALL  M$GNINS
                                .IRP    N,<ERR501>
                                M$GNINS <.WORD  N>
                                .ENDM
037646                          M$GNINS <.WORD  ERR501>
                                .IF LT SVCINS
                                .WORD   ERR501
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        .WORD   ERR501
```

J5

```
                                                            .NLIST
                                              .MEXIT
                                              .ENDC
                                              .IF GT SVCINS
                                              .LIST
      037646  003672                                                                                           .WORD   ERR501
                                                            .NLIST
                                              .ENDC
                                              .IFF
                                              M$WORD  0
                                              .ENDC
 5232 037650                                         CKLOOP                         ;BRANCH BACK TO BGNSEG IF ERRLOOP IS SET
                                              .MCALL  M$SVC
      037650                                  M$SVC   C$CLP1
                                              .MCALL  M$GNINS,M$TSTLAB
      037650                                  M$TSTLAB
                                              .MCALL  M$TLABEL,M$INCR
                                              .IIF LT T$TSTMAC, .MEXIT
                                              .RADIX  10
                                              M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                              .RADIX  8
                                              M$INCR  T$TSTSEQ
      037650                                  M$GNINS <TRAP   C$CLP1>
                                              .IF LT SVCINS
                                              TRAP    C$CLP1
                                              .MEXIT
                                              .ENDC
                                              .IF EQ SVCINS
                                              .LIST
                                                     TRAP     C$CLP1
                                                            .NLIST
                                              .MEXIT
                                              .ENDC
                                              .IF GT SVCINS
                                              .LIST
      037650  104406                                                                                           TRAP    C$CLP1
                                                            .NLIST
                                              .ENDC
 5233 037652  017737  142406  002402  43$:           MOV     @ICRX,RSAVE            ;GET ICR2 CONTENTS
 5234 037660  123737  002420  002402                 CMPB    MSA1,RSAVE             ;MSA1 ADDRESS SHOULD BE SET
 5235 037666  001413                                 BEQ     44$                    ;BRANCH IF YES
 5236 037670  013737  002420  002500                 MOV     MSA1,GOOD              ;SET UP DATA FOR ERROR MESSAGE
 5237 037676  013737  002402  002502                 MOV     RSAVE,BAD              ;...
 5238 037704                                         ERRSOFT 1206,E901,ERR501       ;ERROR HANDLER
                                              .MCALL  M$ERRINS
      037704                                  M$ERRINS        1206,E901,ERR501,C$ERSOFT
                                              .MCALL  M$GNINS,M$WORD,M$TSTLAB
      037704                                  M$SVC   C$ERSOFT
                                              .MCALL  M$GNINS,M$TSTLAB
      037704                                  M$TSTLAB
                                              .MCALL  M$TLABEL,M$INCR
                                              .IIF LT T$TSTMAC, .MEXIT
                                              .RADIX  10
                                              M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                              .RADIX  8
                                              M$INCR  T$TSTSEQ
      037704                                  M$GNINS <TRAP   C$ERSOFT>
```

K5

```
                        .IF LT SVCINS
                        TRAP    C$ERSOFT
                        .MEXIT
                        .ENDC
                        .IF EQ SVCINS
                        .LIST
                                TRAP    C$ERSOFT
                                        .NLIST
                        .MEXIT
                        .ENDC
                        .IF GT SVCINS
                        .LIST
037704  104457                                                  TRAP    C$ERSOFT
                                        .NLIST
                        .ENDC
        000012          .RADIX  10
                        .IF NB  1206
        002266          T$ERRNUM=1206
                        .IFF
                        .ERROR  ;MISSING ERROR-NR
                        .ENDC
037706                  M$WORD  \T$ERRNUM
                        .MCALL  M$GNINS
                        .IRP    N,<1206>
                        M$GNINS <.WORD  N>
                        .ENDM
037706                  M$GNINS <.WORD  1206>
                        .IF LT SVCINS
                        .WORD   1206
                        .MEXIT
                        .ENDC
                        .IF EQ SVCINS
                        .LIST
                                .WORD   1206
                                        .NLIST
                        .MEXIT
                        .ENDC
                        .IF GT SVCINS
                        .LIST
037706  002266                                                  .WORD   1206
                                        .NLIST
                        .ENDC
        000010          .RADIX  8
                        .IF NB E901
037710                  M$WORD  E901
                        .MCALL  M$GNINS
                        .IRP    N,<E901>
                        M$GNINS <.WORD  N>
                        .ENDM
037710                  M$GNINS <.WORD  E901>
                        .IF LT SVCINS
                        .WORD   E901
                        .MEXIT
                        .ENDC
                        .IF EQ SVCINS
                        .LIST
                                .WORD   E901
```

```
                                              .NLIST
                              .MEXIT
                              .ENDC
                              .IF GT SVCINS
                              .LIST
      037710  005634                                                                .WORD   E901
                                              .NLIST
                              .ENDC
                              .IFF
                              M$WORD  0
                              .ENDC
                              .IF NB ERR501
      037712                  M$WORD  ERR501
                              .MCALL  M$GNINS
                              .IRP    N,<ERR501>
                              M$GNINS <.WORD  N>
                              .ENDM
      037712                  M$GNINS <.WORD  ERR501>
                              .IF LT SVCINS
                              .WORD   ERR501
                              .MEXIT
                              .ENDC
                              .IF EQ SVCINS
                              .LIST
                                      .WORD   ERR501
                                              .NLIST
                              .MEXIT
                              .ENDC
                              .IF GT SVCINS
                              .LIST
      037712  003672                                                                .WORD   ERR501
                                              .NLIST
                              .ENDC
                              .IFF
                              M$WORD  0
                              .ENDC
 5239 037714                          CKLOOP                        ;BRANCH BACK TO BGNSEG IF ERRLOOP IS SET
                              .MCALL  M$SVC
      037714                  M$SVC   C$CLP1
                              .MCALL  M$GNINS,M$TSTLAB
      037714                  M$TSTLAB
                              .MCALL  M$TLABEL,M$INCR
                              .IIF LT T$TSTMAC, .MEXIT
                              .RADIX  10
                              M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                              .RADIX  8
                              M$INCR  T$TSTSEQ
      037714                  M$GNINS <TRAP   C$CLP1>
                              .IF LT SVCINS
                              TRAP    C$CLP1
                              .MEXIT
                              .ENDC
                              .IF EQ SVCINS
                              .LIST
                                      TRAP    C$CLP1
                                              .NLIST
                              .MEXIT
```

```
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
     037714  104406                                                                          TRAP    C$CLP1
                                                     .NLIST
                                        .ENDC
     037716  042777  000010  142354    44$:   BIC     #10,@CSRX                  ;SELECT CHANNEL 1
     037724  012737  000001  002374           MOV     #1,CHAN                    ;LOAD CHANNEL NUMBER
     037732  017737  142320  002402           MOV     @ISRX,RSAVE                ;GET ISR1 CONTENTS
     037740  022737  170040  002402           CMP     #170040,RSAVE              ;ATN,DAV,NDAC,ATN,NRFD SHOULD BE SET
     037746  001413                           BEQ     45$                        ;BRANCH IF YES
     037750  012737  170040  002500           MOV     #170040,GOOD               ;SET UP DATA FOR ERROR MESSAGE
     037756  013737  002402  002502           MOV     RSAVE,BAD                  ;...
     037764                                   ERRSOFT 1207,E502,ERR501           ;ERROR HANDLER
                                        .MCALL  M$ERRINS
     037764                             M$ERRINS        1207,E502,ERR501,C$ERSOFT
                                        .MCALL  M$GNINS,M$WORD,M$TSTLAB
     037764                             M$SVC   C$ERSOFT
                                        .MCALL  M$GNINS,M$TSTLAB
     037764                             M$TSTLAB
                                        .MCALL  M$TLABEL,M$INCR
                                        .IIF LT T$TSTMAC, .MEXIT
                                        .RADIX  10
                                        M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                        .RADIX  8
                                        M$INCR  T$TSTSEQ
     037764                             M$GNINS <TRAP   C$ERSOFT>
                                        .IF LT SVCINS
                                        TRAP    C$ERSOFT
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                TRAP    C$ERSOFT
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
     037764  104457                                                                          TRAP    C$ERSOFT
                                                        .NLIST
                                        .ENDC
             000012                     .RADIX  10
                                        .IF NB  1207
             002267                     T$ERRNUM=1207
                                        .IFF
                                        .ERROR  ;MISSING ERROR-NR
                                        .ENDC
     037766                             M$WORD  \T$ERRNUM
                                        .MCALL  M$GNINS
                                        .IRP    N,<1207>
                                        M$GNINS <.WORD  N>
                                        .ENDM
     037766                             M$GNINS <.WORD  1207>
                                        .IF LT SVCINS
                                        .WORD   1207
                                        .MEXIT
```

78 8018 3675 6

N5

```
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                .WORD   1207
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
        037766  002267                                                                                  .WORD   1207
                                                        .NLIST
                                        .ENDC
                000010                  .RADIX  8
                                        .IF NB E502
        037770                          M$WORD  E502
                                        .MCALL  M$GNINS
                                        .IRP    N,<E502>
                                        M$GNINS <.WORD  N>
                                        .ENDM
        037770                          M$GNINS <.WORD  E502>
                                        .IF LT SVCINS
                                        .WORD   E502
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                .WORD   E502
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
        037770  005437                                                                                  .WORD   E502
                                                        .NLIST
                                        .ENDC
                                        .IFF
                                        M$WORD  0
                                        .ENDC
                                        .IF NB ERR501
        037772                          M$WORD  ERR501
                                        .MCALL  M$GNINS
                                        .IRP    N,<ERR501>
                                        M$GNINS <.WORD  N>
                                        .ENDM
        037772                          M$GNINS <.WORD  ERR501>
                                        .IF LT SVCINS
                                        .WORD   ERR501
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                .WORD   ERR501
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
```

3c


```
     037772  003672                                                                  .WORD   ERR501
                                                        .NLIST
                                          .ENDC
                                          .IFF
                                          M$WORD  0
                                          .ENDC
5248 037774                                        CKLOOP                            ;BRANCH BACK TO BGNSEG IF ERRLOOP IS SET
                                          .MCALL  M$SVC
     037774                               M$SVC   C$CLP1
                                          .MCALL  M$GNINS,M$TSTLAB
     037774                               M$TSTLAB
                                          .MCALL  M$TLABEL,M$INCR
                                          .IIF LT T$TSTMAC, .MEXIT
                                          .RADIX  10
                                          M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                          .RADIX  8
                                          M$INCR  T$TSTSEQ
     037774                               M$GNINS <TRAP   C$CLP1>
                                          .IF LT SVCINS
                                          TRAP    C$CLP1
                                          .MEXIT
                                          .ENDC
                                          .IF EQ SVCINS
                                          .LIST
                                                  TRAP    C$CLP1
                                                          .NLIST
                                          .MEXIT
                                          .ENDC
                                          .IF GT SVCINS
                                          .LIST
     037774  104406                                                                  TRAP    C$CLP1
                                                          .NLIST
                                          .ENDC
5249 037776  052777  000010  142274  45$:         BIS     #10,@CSRX           ;SELECT CHANNEL 2
5250 040004  012737  000002  002374               MOV     #2,CHAN             ;LOAD CHANNEL NUMBER
5251 040012  112777  000201  142250               MOVB    #201,@ICRHX         ;-----LOAD DACR INTO ACR2-----------
5252 040020  017737  142232  002402               MOV     @ISRX,RSAVE         ;GET ISR2 CONTENTS
5253 040026  023737  002440  002402               CMP     CDAT3,RSAVE         ;ATN,NDAC,ATN,TADS,TPAS (ULPA) IS SET
5254 040034  001413                               BEQ     46$                 ;BRANCH IF YES
5255 040036  013737  002440  002500               MOV     CDAT3,GOOD          ;SET UP DATA FOR ERROR MESSAGE
5256 040044  013737  002402  002502               MOV     RSAVE,BAD           ;...
5257 040052                                       ERRSOFT 1208,E502,ERR501    ;ERROR HANDLER
                                          .MCALL  M$ERRINS
     040052                               M$ERRINS        1208,E502,ERR501,C$ERSOFT
                                          .MCALL  M$GNINS,M$WORD,M$TSTLAB
     040052                               M$SVC   C$ERSOFT
                                          .MCALL  M$GNINS,M$TSTLAB
     040052                               M$TSTLAB
                                          .MCALL  M$TLABEL,M$INCR
                                          .IIF LT T$TSTMAC, .MEXIT
                                          .RADIX  10
                                          M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                          .RADIX  8
                                          M$INCR  T$TSTSEQ
     040052                               M$GNINS <TRAP   C$ERSOFT>
                                          .IF LT SVCINS
                                          TRAP    C$ERSOFT
```

C6

```
                        .MEXIT
                        .ENDC
                        .IF EQ SVCINS
                        .LIST
                                TRAP    C$ERSOFT
                                        .NLIST
                        .MEXIT
                        .ENDC
                        .IF GT SVCINS
                        .LIST
040052  104457                                                  TRAP    C$ERSOFT
                                        .NLIST
                        .ENDC
        000012          .RADIX  10
                        .IF NB  1208
        002270          T$ERRNUM=1208
                        .IFF
                        .ERROR  ;MISSING ERROR-NR
                        .ENDC
040054                  M$WORD  \T$ERRNUM
                        .MCALL  M$GNINS
                        .IRP    N,<1208>
                        M$GNINS <.WORD  N>
                        .ENDM
040054                  M$GNINS <.WORD  1208>
                        .IF LT SVCINS
                        .WORD   1208
                        .MEXIT
                        .ENDC
                        .IF EQ SVCINS
                        .LIST
                                .WORD   1208
                                        .NLIST
                        .MEXIT
                        .ENDC
                        .IF GT SVCINS
                        .LIST
040054  002270                                                  .WORD   1208
                                        .NLIST
                        .ENDC
        000010          .RADIX  8
                        .IF NB E502
040056                  M$WORD  E502
                        .MCALL  M$GNINS
                        .IRP    N,<E502>
                        M$GNINS <.WORD  N>
                        .ENDM
040056                  M$GNINS <.WORD  E502>
                        .IF LT SVCINS
                        .WORD   E502
                        .MEXIT
                        .ENDC
                        .IF EQ SVCINS
                        .LIST
                                .WORD   E502
                                        .NLIST
                        .MEXIT
```

```
                                .ENDC
                                .IF GT SVCINS
                                .LIST
      040056  005437                                                        .WORD   E502
                                          .NLIST
                                .ENDC
                                .IFF
                                M$WORD  0
                                .ENDC
                                .IF NB ERR501
      040060                    M$WORD  ERR501
                                .MCALL  M$GNINS
                                .IRP    N,<ERR501>
                                M$GNINS <.WORD  N>
                                .ENDM
      040060                    M$GNINS <.WORD  ERR501>
                                .IF LT SVCINS
                                .WORD   ERR501
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        .WORD   ERR501
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
      040060  003672                                                        .WORD   ERR501
                                          .NLIST
                                .ENDC
                                .IFF
                                M$WORD  0
                                .ENDC
 5258 040062                            CKLOOP                  ;BRANCH BACK TO BGNSEG IF ERRLOOP IS SET
                                .MCALL  M$SVC
      040062                    M$SVC   C$CLP1
                                .MCALL  M$GNINS,M$TSTLAB
      040062                    M$TSTLAB
                                .MCALL  M$TLABEL,M$INCR
                                .IIF LT T$TSTMAC, .MEXIT
                                .RADIX  10
                                M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                .RADIX  8
                                M$INCR  T$TSTSEQ
      040062                    M$GNINS <TRAP   C$CLP1>
                                .IF LT SVCINS
                                TRAP    C$CLP1
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        TRAP    C$CLP1
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
```

F6

```
                                          .LIST
040062  104406                                                                                   TRAP    C$CLP1
                                                        .NLIST
                                          .ENDC
040064  042777  000010  142206  46$:      BIC     #10,@CSRX              ;SELECT CHANNEL 1
040072  012737  000001  002374            MOV     #1,CHAN                ;LOAD CHANNEL NUMBER
040100  017737  142144  002402            MOV     @IIRX,RSAVE            ;GET IIR1 CONTENTS
040106  022737  000020  002402            CMP     #20,RSAVE              ;BO BIT SHOULD BE SET
040114  001413                            BEQ     50$                    ;BRANCH IF YES
040116  012737  000020  002500            MOV     #20,GOOD               ;SET UP DATA FOR ERROR MESSAGE
040124  013737  002402  002502            MOV     RSAVE,BAD              ;...
040132                                    ERRSOFT 1209,E501,ERR501       ;ERROR HANDLER
                                          .MCALL  M$ERRINS
040132                                    M$ERRINS        1209,E501,ERR501,C$ERSOFT
                                          .MCALL  M$GNINS,M$WORD,M$TSTLAB
040132                                    M$SVC   C$ERSOFT
                                          .MCALL  M$GNINS,M$TSTLAB
040132                                    M$TSTLAB
                                          .MCALL  M$TLABEL,M$INCR
                                          .IIF LT T$TSTMAC, .MEXIT
                                          .RADIX  10
                                          M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                          .RADIX  8
                                          M$INCR  T$TSTSEQ
040132                                    M$GNINS <TRAP   C$ERSOFT>
                                          .IF LT SVCINS
                                          TRAP    C$ERSOFT
                                          .MEXIT
                                          .ENDC
                                          .IF EQ SVCINS
                                          .LIST
                                                  TRAP    C$ERSOFT
                                                          .NLIST
                                          .MEXIT
                                          .ENDC
                                          .IF GT SVCINS
                                          .LIST
040132  104457                                                                                   TRAP    C$ERSOFT
                                                        .NLIST
                                          .ENDC
        000012                            .RADIX  10
                                          .IF NB  1209
        002271                            T$ERRNUM=1209
                                          .IFF
                                          .ERROR  ;MISSING ERROR-NR
                                          .ENDC
040134                                    M$WORD  \T$ERRNUM
                                          .MCALL  M$GNINS
                                          .IRP    N,<1209>
                                          M$GNINS <.WORD  N>
                                          .ENDM
040134                                    M$GNINS <.WORD  1209>
                                          .IF LT SVCINS
                                          .WORD   1209
                                          .MEXIT
                                          .ENDC
                                          .IF EQ SVCINS
```

F6

```
                                        .LIST
                                                .WORD   1209
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
      040134  002271                                                                          .WORD   1209
                                                        .NLIST
                                        .ENDC
              000010                    .RADIX  8
                                        .IF NB E501
      040136                            M$WORD  E501
                                        .MCALL  M$GNINS
                                        .IRP    N,<E501>
                                        M$GNINS <.WORD  N>
                                        .ENDM
      040136                            M$GNINS <.WORD  E501>
                                        .IF LT SVCINS
                                        .WORD   E501
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                .WORD   E501
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
      040136  005376                                                                          .WORD   E501
                                                        .NLIST
                                        .ENDC
                                        .IFF
                                        M$WORD  0
                                        .ENDC
                                        .IF NB ERR501
      040140                            M$WORD  ERR501
                                        .MCALL  M$GNINS
                                        .IRP    N,<ERR501>
                                        M$GNINS <.WORD  N>
                                        .ENDM
      040140                            M$GNINS <.WORD  ERR501>
                                        .IF LT SVCINS
                                        .WORD   ERR501
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                .WORD   ERR501
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
      040140  003672                                                                          .WORD   ERR501
                                                        .NLIST
```

G6

```
                                        .ENDC
                                        .IFF
                                        M$WORD  0
                                        .ENDC
 5267 040142                                    CKLOOP                          ;BRANCH BACK TO BGNSEG IF ERRLOOP IS SET
                                        .MCALL  M$SVC
      040142                            M$SVC   C$CLP1
                                        .MCALL  M$GNINS,M$TSTLAB
      040142                            M$TSTLAB
                                        .MCALL  M$TLABEL,M$INCR
                                        .IIF LT T$TSTMAC, .MEXIT
                                        .RADIX  10
                                        M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                        .RADIX  8
                                        M$INCR  T$TSTSEQ
      040142                            M$GNINS <TRAP   C$CLP1>
                                        .IF LT SVCINS
                                        TRAP    C$CLP1
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                TRAP    C$CLP1
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
      040142  104406                                                                  TRAP    C$CLP1
                                                        .NLIST
                                        .ENDC
 5268 040144  112777  000137  142124    50$:    MOVB    #137,@IDRHX             ;---LOAD UNT INTO DOR1------------------
 5269 040152                                    ENDSEG
                                        .MCALL  M$POP,M$GNLS,M$SVC,M$ENDERR
      040152                            M$POP   T$NS,T$NESTLEV,T$TEMP
                                        .MCALL  M$GETS,M$DECR
                                        .IF LT  T$NESTLEV
                                        .ERROR  T$NESTLEV       ; MACRO T$NS UNDERFLOW
                                        .MEXIT
                                        .ENDC
      040152                            M$GETS  T$NS,\T$NESTLEV,T$TEMP
              000003                    T$TEMP=T$NS2
      040152                            M$DECR  T$NESTLEV
              000001                    T$NESTLEV=T$NESTLEV-1
                                        .IF EQ F$SEG-T$TEMP
      040152                            M$POP   T$SEK,T$SEGLEV,T$$SEG
                                        .MCALL  M$GETS,M$DECR
                                        .IF LT  T$SEGLEV
                                        .ERROR  T$SEGLEV        ; MACRO T$SEK UNDERFLOW
                                        .MEXIT
                                        .ENDC
      040152                            M$GETS  T$SEK,\T$SEGLEV,T$$SEG
              010000                    T$$SEG=T$SEK0
      040152                            M$DECR  T$SEGLEV
              177777                    T$SEGLEV=T$SEGLEV-1
      040152                            M$GNLS  T$$SEG
                                        .MCALL  M$GEN
```

H6

```
                                .IF NB T$$SEG
     040152                     M$GEN   \T$$SEG,$,SVCTAG
                                .IF LE  SVCTAG
                                .IIF EQ SVCTAG,.LIST
                                10000$:
                                .IIF EQ SVCTAG,.NLIST
                                .MEXIT
                                .ENDC
                                .LIST
     040152                                                          10000$:
                                        .NLIST
                                .IFF
                                M$GEN   \S$LSYM,$,SVCTAG
                                .ENDC
     040152                     M$SVC   C$ESEG
                                .MCALL  M$GNINS,M$TSTLAB
     040152                     M$TSTLAB
                                .MCALL  M$TLABEL,M$INCR
                                .IIF LT T$TSTMAC, .MEXIT
                                .RADIX  10
                                M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                .RADIX  8
                                M$INCR  T$TSTSEQ
     040152                     M$GNINS <TRAP   C$ESEG>
                                .IF LT SVCINS
                                TRAP    C$ESEG
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        TRAP    C$ESEG
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
     040152 104405                                                        TRAP    C$ESEG
                                                .NLIST
                                .ENDC
                                .IF EQ T$SEGLEV+1
            000041              I$SEG=F$END
                                .ENDC
                                .IFF
                                M$ENDERR        ENDSEG,T$TEMP
                                .ENDC
5270 040154                     COPA12: BGNSEG
                                .MCALL  M$PUSH,M$INCR,M$SVC
            000040              I$SEG=F$BGN
     040154                     M$PUSH  T$NS,T$NESTLEV,F$SEG
                                .MCALL  M$INCR,M$SETS
     040154                     M$INCR  T$NESTLEV
            000002              T$NESTLEV=T$NESTLEV+1
     040154                     M$SETS  T$NS,\T$NESTLEV,F$SEG
            000003              T$NS2=F$SEG
            010001              T$$SEG=S$LSYM
     040154                     M$PUSH  T$SEK,T$SEGLEV,T$$SEG
                                .MCALL  M$INCR,M$SETS
```

78 0018 3073-6

T6

I6


```
        040154                              M$INCR  T$SEGLEV
                000000                      T$SEGLEV=T$SEGLEV+1
        040154                              M$SETS  T$SEK,\T$SEGLEV,T$$SEG
                010001                      T$SEK0=T$$SEG
        040154                              M$INCR  S$LSYM
                010002                      S$LSYM=S$LSYM+1
        040154                              M$SVC   C$BSEG
                                            .MCALL  M$GNINS,M$TSTLAB
        040154                              M$TSTLAB
                                            .MCALL  M$TLABEL,M$INCR
                                            .IIF LT T$TSTMAC, .MEXIT
                                            .RADIX  10
                                            M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                            .RADIX  8
                                            M$INCR  T$TSTSEQ
        040154                              M$GNINS <TRAP   C$BSEG>
                                            .IF LT SVCINS
                                            TRAP    C$BSEG
                                            .MEXIT
                                            .ENDC
                                            .IF EQ SVCINS
                                            .LIST
                                                    TRAP    C$BSEG
                                                            .NLIST
                                            .MEXIT
                                            .ENDC
                                            .IF GT SVCINS
                                            .LIST
        040154  104404                                                                                  TRAP    C$BSEG
                                                            .NLIST
                                            .ENDC
   5271 040156  042777  000010  142114              BIC     #10,@CSRX               ;SELECT CHANNEL 1
   5272 040164  012737  000001  002374              MOV     #1,CHAN                 ;LOAD CHANNEL NUMBER
   5273 040172  113777  002416  142076              MOVB    MTA2,@IDRHX             ;----LOAD TALKER ADDRESS OF CHANNEL 1---
   5274 040200  004737  011050                      JSR     PC,LOOP                 ;WAIT A LITTLE
   5275 040204  052777  000010  142066              BIS     #10,@CSRX               ;SELECT CHANNEL 2
   5276 040212  012737  000002  002374              MOV     #2,CHAN                 ;LOAD CHANNEL NUMBER
   5277 040220  017737  142024  002402              MOV     @IIRX,RSAVE             ;GET IIR2 CONTENTS
   5278 040226  022737  000001  002402              CMP     #1,RSAVE                ;MAC BIT IN IIR2 SHOULD BE SET
   5279 040234  001413                              BEQ     30$                     ;BRANCH IF YES
   5280 040236  012737  000001  002500              MOV     #1,GOOD                 ;SET UP DATA FOR ERROR MESSAGES
   5281 040244  013737  002402  002502              MOV     RSAVE,BAD               ;...
   5282 040252                                      ERRSOFT 1210,E501,ERR501        ;ERROR HANDLER
                                            .MCALL  M$ERRINS
        040252                              M$ERRINS        1210,E501,ERR501,C$ERSOFT
                                            .MCALL  M$GNINS,M$WORD,M$TSTLAB
        040252                              M$SVC   C$ERSOFT
                                            .MCALL  M$GNINS,M$TSTLAB
        040252                              M$TSTLAB
                                            .MCALL  M$TLABEL,M$INCR
                                            .IIF LT T$TSTMAC, .MEXIT
                                            .RADIX  10
                                            M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                            .RADIX  8
                                            M$INCR  T$TSTSEQ
        040252                              M$GNINS <TRAP   C$ERSOFT>
                                            .IF LT SVCINS
```

J6

```
                                TRAP    C$ERSOFT
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        TRAP    C$ERSOFT
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
      040252  104457                                                    TRAP    C$ERSOFT
                                                .NLIST
                                .ENDC
              000012            .RADIX  10
                                .IF NB  1210
              002272            T$ERRNUM=1210
                                .IFF
                                .ERROR  ;MISSING ERROR-NR
                                .ENDC
      040254                    M$WORD  \T$ERRNUM
                                .MCALL  M$GNINS
                                .IRP    N,<1210>
                                M$GNINS <.WORD  N>
                                .ENDM
      040254                    M$GNINS <.WORD  1210>
                                .IF LT SVCINS
                                .WORD   12 0
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        .WORD   1210
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
      040254  002272                                                    .WORD   1210
                                                .NLIST
                                .ENDC
              000010            .RADIX  8
                                .IF NB E501
      040256                    M$WORD  E501
                                .MCALL  M$GNINS
                                .IRP    N,<E501>
                                M$GNINS <.WORD  N>
                                .ENDM
      040256                    M$GNINS <.WORD  E501>
                                .IF LT SVCINS
                                .WORD   E501
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        .WORD   E501
                                                .NLIST
```

K6

```
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
     040256  005376                                                          .WORD   E501
                                          .NLIST
                                .ENDC
                                .IFF
                                M$WORD  0
                                .ENDC
                                .IF NB ERR501
     040260                     M$WORD  ERR501
                                .MCALL  M$GNINS
                                .IRP    N,<ERR501>
                                M$GNINS <.WORD  N>
                                .ENDM
     040260                     M$GNINS <.WORD  ERR501>
                                .IF LT SVCINS
                                .WORD   ERR501
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                     .WORD   ERR501
                                          .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
     040260  003672                                                          .WORD   ERR501
                                          .NLIST
                                .ENDC
                                .IFF
                                M$WORD  0
                                .ENDC
5283 040262                          CKLOOP                    ;BRANCH TO BGNSEG WHEN ERRLOOP IS SET
                                .MCALL  M$SVC
     040262                     M$SVC   C$CLP1
                                .MCALL  M$GNINS,M$TSTLAB
     040262                     M$TSTLAB
                                .MCALL  M$TLABEL,M$INCR
                                .IIF LT T$TSTMAC, .MEXIT
                                .RADIX  10
                                M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                .RADIX  8
                                M$INCR  T$TSTSEQ
     040262                     M$GNINS <TRAP   C$CLP1>
                                .IF LT SVCINS
                                TRAP    C$CLP1
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                     TRAP    C$CLP1
                                          .NLIST
                                .MEXIT
                                .ENDC
```

L6

```
                                        .IF GT SVCINS
                                        .LIST
 040262  104406                                                                          TRAP     C$CLP1
                                                    .NLIST
                                        .ENDC
 040264  042777  000010  142006   30$:    BIC     #10,@CSRX            ;SELECT CHANNEL 1
 040272  012737  000001  002374           MOV     #1,CHAN              ;LOAD CHANNEL NUMBER
 040300  013701  002416                   MOV     MTA2,R1              ;GET MTA2
 040304  062701  000040                   ADD     #40,R1               ;CREATE MSA1
 040310  010137  002420                   MOV     R1,MSA1              ;STORE MSA1 TO LOCATION MSA1
 040314  113777  002420  141754           MOVB    MSA1,@IDRHX          ;------LOAD MSA1 INTO DOR1----------
 040322  004737  011050                   JSR     PC,LOOP              ;WAIT A LITTLE
 040326  052777  000010  141744   45$:    BIS     #10,@CSRX            ;SELECT CHANNEL 2
 040334  012737  000002  002374           MOV     #2,CHAN              ;LOAD CHANNEL NUMBER
 040342  112777  000001  141720           MOVB    #1,@ICRHX            ;-----LOAD NOT DACR INTO ACR2--------
 040350  017737  141674  002502           MOV     @IIRX,BAD            ;READ IIR2 FOR CLEAR THE BITS
 040356  017737  141674  002402           MOV     @ISRX,RSAVE          ;GET ISR2 CONTENTS
 040364  023737  002436  002402           CMP     CDAT2,RSAVE          ;ATN,NDAC,ATN,TPAS (ULPA) IS SET
 040372  001413                           BEQ     46$                  ;BRANCH IF YES
 040374  013737  002436  002500           MOV     CDAT2,GOOD           ;SET UP DATA FOR ERROR MESSAGE
 040402  013737  002402  002502           MOV     RSAVE,BAD            ;...
 040410                                   ERRSOFT 1211,E502,ERR501     ;ERROR HANDLER
                                        .MCALL  M$ERRINS
 040410                                 M$ERRINS        1211,E502,ERR501,C$ERSOFT
                                        .MCALL  M$GNINS,M$WORD,M$TSTLAB
 040410                                 M$SVC   C$ERSOFT
                                        .MCALL  M$GNINS,M$TSTLAB
 040410                                 M$TSTLAB
                                        .MCALL  M$TLABEL,M$INCR
                                        .IIF LT T$TSTMAC, .MEXIT
                                        .RADIX  10
                                        M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                        .RADIX  8
                                        M$INCR  T$TSTSEQ
 040410                                 M$GNINS <TRAP   C$ERSOFT>
                                        .IF LT SVCINS
                                        TRAP    C$ERSOFT
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                TRAP    C$ERSOFT
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
 040410  104457                                                                          TRAP     C$ERSOFT
                                                    .NLIST
                                        .ENDC
         000012                         .RADIX  10
                                        .IF NB  1211
         002273                         T$ERRNUM=1211
                                        .IFF
                                        .ERROR  ;MISSING ERROR NR
                                        .ENDC
 040412                                 M$WORD  \T$ERRNUM
```

78 8018 3675-6

M6

```
                        .MCALL  M$GNINS
                        .IRP    N,<1211>
                        M$GNINS <.WORD  N>
                        .ENDM
040412                  M$GNINS <.WORD  1211>
                        .IF LT SVCINS
                        .WORD   1211
                        .MEXIT
                        .ENDC
                        .IF EQ SVCINS
                        .LIST
                                .WORD   1211
                                        .NLIST
                        .MEXIT
                        .ENDC
                        .IF GT SVCINS
                        .LIST
040412  002273                                                          .WORD   1211
                                        .NLIST
                        .ENDC
        000010          .RADIX  8
                        .IF NB E502
040414                  M$WORD  E502
                        .MCALL  M$GNINS
                        .IRP    N,<E502>
                        M$GNINS <.WORD  N>
                        .ENDM
040414                  M$GNINS <.WORD  E502>
                        .IF LT SVCINS
                        .WORD   E502
                        .MEXIT
                        .ENDC
                        .IF EQ SVCINS
                        .LIST
                                .WORD   E502
                                        .NLIST
                        .MEXIT
                        .ENDC
                        .IF GT SVCINS
                        .LIST
040414  005437                                                          .WORD   E502
                                        .NLIST
                        .ENDC
                        .IFF
                        M$WORD  0
                        .ENDC
                        .IF NB ERR501
040416                  M$WORD  ERR501
                        .MCALL  M$GNINS
                        .IRP    N,<ERR501>
                        M$GNINS <.WORD  N>
                        .ENDM
040416                  M$GNINS <.WORD  ERR501>
                        .IF LT SVCINS
                        .WORD   ERR501
                        .MEXIT
                        .ENDC
```

N6

```
                                        .IF EQ SVCINS
                                        .LIST
                                                .WORD   ERR501
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
      040416  003672                                                                    .WORD   ERR501
                                                        .NLIST
                                        .ENDC
                                        .IFF
                                        M$WORD  0
                                        .ENDC
 5301 040420                                    CKLOOP                          ;BRANCH BACK TO BGNSEG IF ERRLOOP IS SET
                                        .MCALL  M$SVC
      040420                            M$SVC   C$CLP1
                                        .MCALL  M$GNINS,M$TSTLAB
      040420                            M$TSTLAB
                                        .MCALL  M$TLABEL,M$INCR
                                        .IIF LT T$TSTMAC, .MEXIT
                                        .RADIX  10
                                        M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                        .RADIX  8
                                        M$INCR  T$TSTSEQ
      040420                            M$GNINS <TRAP   C$CLP1>
                                        .IF LT SVCINS
                                        TRAP    C$CLP1
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                TRAP    C$CLP1
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
      040420  104406                                                                    TRAP    C$CLP1
                                                        .NLIST
                                        .ENDC
 5302 040422  042777  000010  141650    46$:    BIC     #10,@CSRX               ;SELECT CHANNEL 1
 5303 040430  012737  000001  002374            MOV     #1,CHAN                 ;LOAD CHANNEL NUMBER
 5304 040436  017737  141606  002402            MOV     @IIRX,RSAVE             ;GET IIR1 CONTENTS
 5305 040444  022737  000020  002402            CMP     #20,RSAVE               ;BO BIT SHOULD BE SET
 5306 040452  001413                            BEQ     50$                     ;BRANCH IF YES
 5307 040454  012737  000020  002500            MOV     #20,GOOD                ;SET UP DATA FOR ERROR MESSAGE
 5308 040462  013737  002402  002502            MOV     RSAVE,BAD               ;...
 5309 040470                                    ERRSOFT 1212,E501,ERR501        ;ERROR HANDLER
                                        .MCALL  M$ERRINS
      040470                            M$ERRINS        1212,E501,ERR501,C$ERSOFT
                                        .MCALL  M$GNINS,M$WORD,M$TSTLAB
      040470                            M$SVC   C$ERSOFT
                                        .MCALL  M$GNINS,M$TSTLAB
      040470                            M$TSTLAB
                                        .MCALL  M$TLABEL,M$INCR
                                        .IIF LT T$TSTMAC, .MEXIT
```

B7


```
                                  .RADIX  10
                                  M$TLABEL        \T$TESTNUM,\T$TSTSEQ
                                  .RADIX  8
                                  M$INCR  T$TSTSEQ
     040470                       M$GNINS <TRAP   C$ERSOFT>
                                  .IF LT SVCINS
                                  TRAP    C$ERSOFT
                                  .MEXIT
                                  .ENDC
                                  .IF EQ SVCINS
                                  .LIST
                                          TRAP    C$ERSOFT
                                                  .NLIST
                                  .MEXIT
                                  .ENDC
                                  .IF GT SVCINS
                                  .LIST
     040470  104457                                                                   TRAP    C$ERSOFT
                                                  .NLIST
                                  .ENDC
             000012               .RADIX  10
                                  .IF NB  1212
             002274               T$ERRNUM=1212
                                  .IFF
                                  .ERROR  ;MISSING ERROR-NR
                                  .ENDC
     040472                       M$WORD  \T$ERRNUM
                                  .MCALL  M$GNINS
                                  .IRP    N,<1212>
                                  M$GNINS <.WORD  N>
                                  .ENDM
     040472                       M$GNINS <.WORD  1212>
                                  .IF LT SVCINS
                                  .WORD   1212
                                  .MEXIT
                                  .ENDC
                                  .IF EQ SVCINS
                                  .LIST
                                          .WORD   1212
                                                  .NLIST
                                  .MEXIT
                                  .ENDC
                                  .IF GT SVCINS
                                  .LIST
     040472  002274                                                                   .WORD   1212
                                                  .NLIST
                                  .ENDC
             000010               .RADIX  8
                                  .IF NB E501
     040474                       M$WORD  E501
                                  .MCALL  M$GNINS
                                  .IRP    N,<E501>
                                  M$GNINS <.WORD  N>
                                  .ENDM
     040474                       M$GNINS <.WORD  E501>
                                  .IF LT SVCINS
                                  .WORD   E501
```

C7

```
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        .WORD   E501
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
     040474  005376                                                     .WORD   E501
                                                .NLIST
                                .ENDC
                                .IFF
                                M$WORD  0
                                .ENDC
                                .IF NB ERR501
     040476                     M$WORD  ERR501
                                .MCALL  M$GNINS
                                .IRP    N,<ERR501>
                                M$GNINS <.WORD  N>
                                .ENDM
     040476                     M$GNINS <.WORD  ERR501>
                                .IF LT SVCINS
                                .WORD   ERR501
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        .WORD   ERR501
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
     040476  003672                                                     .WORD   ERR501
                                                .NLIST
                                .ENDC
                                .IFF
                                M$WORD  0
                                .ENDC
5310 040500                             CKLOOP                  ;BRANCH BACK TO BGNSEG IF ERRLOOP IS SET
                                .MCALL  M$SVC
     040500                     M$SVC   C$CLP1
                                .MCALL  M$GNINS,M$TSTLAB
     040500                     M$TSTLAB
                                .MCALL  M$TLABEL,M$INCR
                                .IIF LT T$TSTMAC, .MEXIT
                                .RADIX  10
                                M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                .RADIX  8
                                M$INCR  T$TSTSEQ
     040500                     M$GNINS <TRAP   C$CLP1>
                                .IF LT SVCINS
                                TRAP    C$CLP1
                                .MEXIT
                                .ENDC
```

```
                                        .IF EQ SVCINS
                                        .LIST
                                                TRAP    C$CLP1
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
      040500  104406                                                                         TRAP    C$CLP1
                                                        .NLIST
                                        .ENDC
 5311 040502  112777  000137  141566    50$:    MOVB    #137,@IDRHX             ;---LOAD UNT INTO DOR1----------------
 5312 040510                                    ENDSEG
                                        .MCALL  M$POP,M$GNLS,M$SVC,M$ENDERR
      040510                            M$POP   T$NS,T$NESTLEV,T$TEMP
                                        .MCALL  M$GETS,M$DECR
                                        .IF LT  T$NESTLEV
                                        .ERROR  T$NESTLEV       ; MACRO T$NS UNDERFLOW
                                        .MEXIT
                                        .ENDC
      040510                            M$GETS  T$NS,\T$NESTLEV,T$TEMP
              000003                    T$TEMP=T$NS2
      040510                            M$DECR  T$NESTLEV
              000001                    T$NESTLEV=T$NESTLEV-1
                                        .IF EQ F$SEG-T$TEMP
      040510                            M$POP   T$SEK,T$SEGLEV,T$$SEG
                                        .MCALL  M$GETS,M$DECR
                                        .IF LT  T$SEGLEV
                                        .ERROR  T$SEGLEV        ; MACRO T$SEK UNDERFLOW
                                        .MEXIT
                                        .ENDC
      040510                            M$GETS  T$SEK,\T$SEGLEV,T$$SEG
              010001                    T$$SEG=T$SEK0
      040510                            M$DECR  T$SEGLEV
              177777                    T$SEGLEV=T$SEGLEV-1
      040510                            M$GNLS  T$$SEG
                                        .MCALL  M$GEN
                                        .IF NB T$$SEG
      040510                            M$GEN   \T$$SEG,$,SVCTAG
                                        .IF LE  SVCTAG
                                        .IIF EQ SVCTAG,.LIST
                                        10001$:
                                        .IIF EQ SVCTAG,.NLIST
                                        .MEXIT
                                        .ENDC
                                        .LIST
      040510                                                                         10001$:
                                                .NLIST
                                        .IFF
                                        M$GEN   \S$LSYM,$,SVCTAG
                                        .ENDC
      040510                            M$SVC   C$ESEG
                                        .MCALL  M$GNINS,M$TSTLAB
      040510                            M$TSTLAB
                                        .MCALL  M$TLABEL,M$INCR
                                        .IIF LT T$TSTMAC, .MEXIT
                                        .RADIX  10
```

```
                                        M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                        .RADIX  8
                                        M$INCR  T$TSTSEQ
040510                                  M$GNINS <TRAP   C$ESEG>
                                        .IF LT SVCINS
                                        TRAP    C$ESEG
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                TRAP    C$ESEG
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .!IST
040510  104405                                                                          TRAP    C$ESEG
                                                        .NLIST
                                        .ENDC
                                        .IF EQ T$SEGLEV+1
        000041                          I$SEG=F$END
                                        .ENDC
                                        .IFF
                                        M$ENDERR        ENDSEG,T$TEMP
                                        .ENDC
040512  005737  002234                          TST     QVP                     ;IS QUICK VERIFY PASS SELECTED
040516  001054                                  BNE     EXQV12                  ;IF YES EXIT TEST
040520  005737  002322                          TST     ITRCNT                  ;IS THIS THE FIRST TIME THROUGH THE TEST
040524  001007                                  BNE     1$                      ;BRANCH IF NO
040526  013737  002314  002406                  MOV     DPA2,SDPA               ;SAVE ENTERED DPA2
040534  005037  002314                          CLR     DPA2                    ;CLR DPA2
040540  005237  002322                          INC     ITRCNT                  ;SET FLAG TO SEE FIRST TIME PASS
040544  005237  002314          1$:             INC     DPA2                    ;GET NEW DPA2
040550  023737  002314  002312                  CMP     DPA2,DPA1               ;IS DPA1 = DPA2
040556  001002                                  BNE     2$                      ;BRANCH IF NO
040560  005237  002314                          INC     DPA2                    ;INCREMENT DPA2
040564  022737  000037  002314  2$:             CMP     #37,DPA2                ;ALL DONE
040572  001423                                  BEQ     3$                      ;BRANCH IF YES
040574  042777  000010  141476                  BIC     #10,@CSRX               ;SELECT CHANNEL 1
040602  112777  000217  141460                  MOVB    #217,@ICRHX             ;----LOAD SIC INTO ACR 1------------
040610  004737  011062                          JSR     PC,WAIT                 ;WAIT A LITTLE
040614  112777  000017  141446                  MOVB    #17,@ICRHX              ;----LOAD NOT SIC INTO ACR 1- ------
040622  052777  000010  141450                  BIS     #10,@CSRX               ;SELECT CHANNEL 2
040630  113777  002314  141416                  MOVB    DPA2,@IIRHX             ;LOAD NEW DPA2 INTO ADR2
040636  000137  037132                          JMP     A12                     ;REPEAT THE TEST WITH THE NEW DPA1
040642  013737  002406  002314  3$:             MOV     SDPA,DPA2               ;RESTORE ENTERED DPA2
040650                                  EXQV12: EXIT TST
                                        .MCALL  M$SVC,M$EXIT,M$EXSEG,M$EXTJ,M$GETTOP,M$CHECK,M$WORD,XFER
        000041                          T$FLAG=F$END
040650                                  M$CHECK TST,T$TEMP,T$FLAG
                                        .IF IDN <TST>,<TST>
        010041                          T$TEMP=T$$TEST
        000040                          T$FLAG=I$TST
                                        .MEXIT
                                        .ENDC
                                        .IF IDN <SUB>,<TST>
                                        T$TEMP=T$$SUB
```

```
                        T$FLAG=I$SUB
                        .MEXIT
                        .ENDC
                        .IF IDN <SEG>,<TST>
                        T$TEMP=T$$SEG
                        T$FLAG=I$SEG
                        .MEXIT
                        .ENDC
                        .IF IDN <INIT>,<TST>
                        T$TEMP=T$$INIT
                        T$FLAG=I$INIT
                        .MEXIT
                        .ENDC
                        .IF IDN <CLN>,<TST>
                        T$TEMP=T$$CLEAN
                        T$FLAG=I$CLN
                        .MEXIT
                        .ENDC
                        .IF IDN <SRV>,<TST>
                        T$TEMP=T$$SRV
                        T$FLAG=I$SRV
                        .MEXIT
                        .ENDC
                        .IF IDN <MSG>,<TST>
                        T$TEMP=T$$MSG
                        T$FLAG=F$JMP
                        .MEXIT
                        .ENDC
                        .IF IDN <RPT>,<TST>
                        T$TEMP=T$$RPT
                        T$FLAG=F$JMP
                        .MEXIT
                        .ENDC
                        .IF IDN <DU>,<TST>
                        T$TEMP=T$$DU
                        T$FLAG=F$JMP
                        .MEXIT
                        .ENDC
                        .IF IDN <AU>,<TST>
                        T$TEMP=T$$AU
                        T$FLAG=F$JMP
                        .MEXIT
                        .ENDC
                        .IF EQ T$FLAG-F$JMP
                        M$WORD  J$JMP
                        M$EXTJ  \T$TEMP
                        .MEXIT
                        .ENDC
                        .IF EQ  T$FLAG-F$BGN
    040650              M$SVC   C$EXIT
                        .MCALL  M$GNINS,M$TSTLAB
    040650              M$TSTLAB
                        .MCALL  M$TLABEL,M$INCR
                        .IIF LT T$TSTMAC, .MEXIT
                        .RADIX  10
                        M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                        .RADIX  8
```

G7

```
                                M$INCR  T$TSTSEQ
     040650                     M$GNINS <TRAP   C$EXIT>
                                .IF LT SVCINS
                                TRAP    C$EXIT
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        TRAP    C$EXIT
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
     040650  104432                                                                     TRAP    C$EXIT
                                                .NLIST
                                .ENDC
                                .IF IDN <SEG>,<TST>
                                M$GETTOP T$SEK,T$SEGLEV,T$TEMP
                                M$EXSEG \T$TEMP
                                .IFF
     040652                     M$EXIT  \T$TEMP
                                .MCALL  M$GNINS
     040652                     M$GNINS <.WORD  L10041 .>
                                .IF LT SVCINS
                                .WORD   L10041-.
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        .WORD   L10041 .
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
     040652  000072                                                                     .WORD   L10041-.
                                                .NLIST
                                .ENDC
                                .ENDC
                                .MEXIT
                                .ENDC
                                .IF IDN <HRD>,<TST>
                                M$GETTOP        T$NS,T$NESTLEV,T$TEMP
                                .IF EQ  F$HARD T$TEMP
                                .IRP    N,<\T$$HARD>
                                XFER    L'N
                                .ENDM
                                .MEXIT
                                .ENDC
                                .ENDC
                                .IF IDN <SFT>,<TST>
                                M$GETTOP        T$NS,T$NESTLEV,T$TEMP
                                .IF EQ  F$SOFT T$TEMP
                                .IRP    N,<\T$$SOFT>
                                XFER    L'N
                                .ENDM
```

H7

```
                                        .MEXIT
                                        .ENDC
                                        .ENDC
                                        .ERROR  ;ILL. "EXIT TST" STMT.
5335
5336                                            .NLIST  BEX
5337 040654     045     123     062     TSHD12: .ASCIZ  /%S2%ASECONDARY ADDRESSING TEST OF CHANNEL 2 (TALKER)%N/
5338                                            .LIST   BEX
5339                                            .EVEN
5340 040744                                     ENDTST
                                        .MCALL  M$POP,M$GNTAG,M$SVC,M$ENDERR
                                        .IF EQ  F$BGN I$TST
             000041                     I$TST=F$END
                                        .IFF
                                        .ERROR  ;MISSING "BGNTST"
                                        .MEXIT
                                        .ENDC
     040744                             M$POP   T$NS,T$NESTLEV,T$TEMP
                                        .MCALL  M$GETS,M$DECR
                                        .IF LT  T$NESTLEV
                                        .ERROR  T$NESTLEV       ; MACRO T$NS UNDERFLOW
                                        .MEXIT
                                        .ENDC
     040744                             M$GETS  T$NS,\T$NESTLEV,T$TEMP
             000001                     T$TEMP=T$NS1
     040744                             M$DECR  T$NESTLEV
             000000                     T$NESTLEV=T$NESTLEV-1
                                        .IF EQ F$TEST-T$TEMP
     040744                             M$GNTAG L,T$$TEST
                                        .MCALL  M$GEN
     040744                             M$GEN   L,\T$$TEST,SVCTAG
                                        .IF LE  SVCTAG
                                        .IIF EQ SVCTAG,.LIST
                                        L10041:
                                        .IIF EQ SVCTAG,.NLIST
                                        .MEXIT
                                        .ENDC
                                        .LIST
     040744                                                                                     L10041:
                                                .NLIST
             010000                     S$LSYM=T$LSYM
     040744                             M$SVC   C$ETST
                                        .MCALL  M$GNINS,M$TSTLAB
     040744                             M$TSTLAB
                                        .MCALL  M$TLABEL,M$INCR
                                        .IIF LT T$TSTMAC, .MEXIT
                                        .RADIX  10
                                        M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                        .RADIX  8
                                        M$INCR  T$TSTSEQ
     040744                             M$GNINS <TRAP   C$ETST>
                                        .IF LT SVCINS
                                        TRAP    C$ETST
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
```

I7

I7


```
                                        TRAP    C$ETST
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
     040744  104401                                                         TRAP    C$ETST
                                                .NLIST
                                .ENDC
             000041             I$TST=F$END
                                .IFF
                                M$ENDERR        ENDTST,T$TEMP
                                .ENDC
```

J7

```
                                        .SBTTL  TEST 13: DEVICE CLEAR INTERFACE FUNCTION TEST
                                ;***********************************************************************
                                ;               IEX - TEST 13
                                ;PART 1 CHECKS THE DEVICE CLEAR INTERFACE FUNCTION OF CHANNEL 2 BY MEANS
                                ;       OF RECEIVING A UNIVERSAL COMMAND (DCL) AS WELL AS AN ADDRESS
                                ;       COMMAND (SDC).
                                ;
                                ;PART 2 CHECKS THE DEVICE CLEAR INTERFACE FUNCTION OF CHANNEL 1 BY MEANS
                                ;       OF RECEIVING A UNIVERSAL COMMAND (DCL) AS WELL AS AN ADDRESS
                                ;       COMMAND (SDC).
                                ;***********************************************************************
 040746                                 BGNTST
                                .MCALL  M$INCR,M$GNTEST,M$PUSH,M$INCR
                                .IF NE  F$END-I$SUB
                                .ERROR  ;"BGNTST" IN SUB
                                .MEXIT
                                .ENDC
                                .IF NE  F$END-I$SEG
                                .ERROR  ;"BGNTST" IN SEG
                                .MEXIT
                                .ENDC
                                .IF NE  F$END-I$TST
                                .ERROR  ;"BGNTST" IN TST
                                .MEXIT
                                .IFF
          000040                I$TST=F$BGN
                                .ENDC
                                .IF B
 040746                         M$INCR  T$TESTNUM
          000015                T$TESTNUM=T$TESTNUM+1
                                .IFF
                                T$TESTNUM=
                                .ENDC
          000000                T$SUBNUM=0
          000012                .RADIX  10
 040746                         M$GNTEST        \T$TESTNUM
                                .MCALL  M$GEN
 040746                         M$GEN   T,13:,SVCTST
                                .IF LE  SVCTST
                                .IIF EQ SVCTST,.LIST
                                T13::
                                .IIF EQ SVCTST,.NLIST
                                .MEXIT
                                .ENDC
                                .LIST
 040746                                                                                 T13::
                                        .NLIST
          000010                .RADIX  8
 040746                         M$PUSH  T$NS,T$NESTLEV,F$TEST
                                .MCALL  M$INCR,M$SETS
 040746                         M$INCR  T$NESTLEV
          000001                T$NESTLEV=T$NESTLEV+1
 040746                         M$SETS  T$NS,\T$NESTLEV,F$TEST
          000001                T$NS1=F$TEST
          010042                T$$TEST=T$TAGNUM
 040746                         M$INCR T$TAGNUM
          010043                T$TAGNUM=T$TAGNUM+1
```

TEST 13: DEVICE CLEAR INTERFACE FUNCTION TEST

```
             000001                     T$TSTSEQ=1
        040746  005737  002324                  TST     PNTF                            ;IS THE PNT FLAG SET
        040752  001410                          BEQ     7$                              ;IF YES, PRINT THE TEST HEADER
        040754                                  PRINTF  #TSHD13                         ;...
                                        .MCALL  M$PRINT
                                        .IF B   #TSHD13
                                        .ERROR  ;MISSING FORMAT
                                        .MEXIT
                                        .ENDC
                                        .IF B   <>
        040754                          M$PRINT C$PNTF,#TSHD13
                                        .MCALL  M$COUNT,M$PUT,M$GNINS,M$SVC
                000001                  T$ARGCNT=1
        040754                          M$COUNT T$ARGCNT,<>,<>,<>,<>,<>,<>,<>,<>
                                        .IF NB <>
                                        M$COUNT T$ARGCNT,<>,<>,<>,<>,<>,<>,<>,<>
                                        .ENDC
                                        .IF NB <>
                                        T$ARGCNT=T$ARGCNT+1
                                        .ENDC
                                        .IRP    N,<\T$ARGCNT>
                                        M$PUT   #N,#TSHD13,<>,<>,<>,<>,<>,<>,<>,<>
                                        .ENDM
        040754                          M$PUT   #1,#TSHD13,<>,<>,<>,<>,<>,<>,<>,<>
                                        .MCALL  M$PUT1
                                        .IF NB  <#TSHD13>
        040754                          M$PUT   <#TSHD13>,<>,<>,<>,<>,<>,<>,<>,<>
                                        .MCALL  M$PUT1
                                        .IF NB  <>
                                        M$PUT   <>,<>, >,<>,<>,<>,<>,<>,<>
                                        .ENDC
                                        .IF NB  <#TSHD13>
        040754                          M$PUT1  #TSHD13
                                        .MCALL  M$GNINS
                                        .IF B
        040754                          M$GNINS <MOV    #TSHD13,-(SP)>
                                        .IF LT SVCINS
                                        MOV     #TSHD13,-(SP)
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                MOV     #TSHD13, (SP)
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
        040754  012746  043042                                                                  MOV     #TSHD13, (SP)
                                                        .NLIST
                                        .ENDC
                                        .IFF
                                        .IF DIF B,<#TSHD13>
                                        .ERROR  ;ILL. ARG. "#TSHD13" ONLY "B" IS ALLOWED.
                                        .MEXIT
                                        .ENDC
                                        M$GNINS <CLR    -(SP)>
```

L7

```
                                        M$GNINS <BISB   ,(SP)>
                                        .ENDC
                                        .ENDC
                                        .ENDC
                                        .IF NB  <#1>
      040760                            M$PUT1  #1
                                        .MCALL  M$GNINS
                                        .IF B
      040760                            M$GNINS <MOV    #1, (SP)>
                                        .IF LT SVCINS
                                        MOV     #1,-(SP)
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                MOV     #1,-(SP)
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
      040760  012746  000001                                                            MOV     #1,-(SP)
                                                        .NLIST
                                        .ENDC
                                        .IFF
                                        .IF DIF B,<#1>
                                        .ERROR  ;ILL. ARG. "#1" ONLY "B" IS ALLOWED.
                                        .MEXIT
                                        .ENDC
                                        M$GNINS <CLR    -(SP)>
                                        M$GNINS <BISB   ,(SP)>
                                        .ENDC
                                        .ENDC
      040764                            M$GNINS <MOV    SP,R0>
                                        .IF LT SVCINS
                                        MOV     SP,R0
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                MOV     SP,R0
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
      040764  010600                                                                    MOV     SP,R0
                                                        .NLIST
                                        .ENDC
      040766                            M$SVC   C$PNTF
                                        .MCALL  M$GNINS,M$TSTLAB
      040766                            M$TSTLAB
                                        .MCALL  M$TLABEL,M$INCR
                                        .IIF LT T$TSTMAC, .MEXIT
                                        .RADIX  10
                                        M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                        .RADIX  8
```

M7

```
                                        M$INCR  T$TSTSEQ
        040766                          M$GNINS <TRAP   C$PNTF>
                                        .IF LT SVCINS
                                        TRAP    C$PNTF
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                TRAP    C$PNTF
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
        040766  104417                                                                  TRAP    C$PNTF
                                                        .NLIST
                                        .ENDC
                                        .IRP    N,<\T$ARGCNT*2+2>
                                        M$GNINS <ADD    #N,SP>
                                        .ENDM
        040770                          M$GNINS <ADD    #4,SP>
                                        .IF LT SVCINS
                                        ADD     #4,SP
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                ADD     #4,SP
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
        040770  062706  000004                                                          ADD     #4,SP
                                                        .NLIST
                                        .ENDC
                                        .MEXIT
                                        .ENDC
                                        .IF B   <>
                                        M$PRINT C$PNTF,#TSHD13,<>
                                        .MEXIT
                                        .ENDC
                                        .IF B   <>
                                        M$PRINT C$PNTF,#TSHD13,<>,<>
                                        .MEXIT
                                        .ENDC
                                        .IF B   <>
                                        M$PRINT C$PNTF,#TSHD13,<>,<>,<>
                                        .MEXIT
                                        .ENDC
                                        .IF B   <>
                                        M$PRINT C$PNTF,#TSHD13,<>,<>,<>,<>
                                        .MEXIT
                                        .ENDC
                                        .IF B   <>
                                        M$PRINT C$PNTF,#TSHD13,<>,<>,<>,<>,<>
                                        .MEXIT
```

78 8018 3875-6

N7

```
                                        .ENDC
                                        .IF B   <>
                                        M$PRINT C$PNTF,#TSHD13,<>,<>,<>,<>,<>,<>
                                        .MEXIT
                                        .ENDC
                                        .IF B   <>
                                        M$PRINT C$PNTF,#TSHD13,<>,<>,<>,<>,<>,<>,<>
                                        .MEXIT
                                        .ENDC
                                        M$PRINT C$PNTF,#TSHD13,<>,<>,<>,<>,<>,<>,<>,<>
040774  005037  002322                  7$:     CLR     ITRCNT                  ;CLEAR ITERATION COUNTER
041000  004737  010210                          JSR     PC,CULPA                ;CLEAR ULPA IN ISR 1 AND 2
041004  004737  010524                  ITAC13: JSR     PC,BGIN1                ;
041010  032737  000001  002314                  BIT     #1,DPA2                 ;IS DPA EVEN
041016  001404                                  BEQ     3$                      ;BRANCH IF YES
041020  052737  000001  002454                  BIS     #1,CDAT9                ;SET ULPA BIT IN COMPARE DATA FOR ISR
041026  000403                                  BR      .+10                    ;BRANCH TO BGNSEG
041030  042737  000001  002454          3$:     BIC     #1,CDAT9                ;CLEAR ULPA BIT IN COMPARE DATA FOR ISR
041036                                          BGNSEG
                                        .MCALL  M$PUSH,M$INCR,M$SVC
        000040                          I$SEG=F$BGN
041036                                  M$PUSH  T$NS,T$NESTLEV,F$SEG
                                        .MCALL  M$INCR,M$SETS
041036                                  M$INCR  T$NESTLEV
        000002                          T$NESTLEV=T$NESTLEV+1
041036                                  M$SETS  T$NS,\T$NESTLEV,F$SEG
        000003                          T$NS2=F$SEG
        010000                          T$$SEG=S$LSYM
041036                                  M$PUSH  T$SEK,T$SEGLEV,T$$SEG
                                        .MCALL  M$INCR,M$SETS
041036                                  M$INCR  T$SEGLEV
        000000                          T$SEGLEV=T$SEGLEV+1
041036                                  M$SETS  T$SEK,\T$SEGLEV,T$$SEG
        010000                          T$SEK0=T$$SEG
041036                                  M$INCR  S$LSYM
        010001                          S$LSYM=S$LSYM+1
041036                                  M$SVC   C$BSEG
                                        .MCALL  M$GNINS,M$TSTLAB
041036                                  M$TSTLAB
                                        .MCALL  M$TLABEL,M$INCR
                                        .IIF LT T$TSTMAC, .MEXIT
                                        .RADIX  10
                                        M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                        .RADIX  8
                                        M$INCR  T$TSTSEQ
041036                                  M$GNINS <TRAP   C$BSEG>
                                        .IF LT SVCINS
                                        TRAP    C$BSEG
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                TRAP    C$BSEG
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
```

```
                                           .LIST
 041036  104404                                                                           TRAP     C$BSEG
                                                         .NLIST
                                           .ENDC
 041040  052777  000010  141232                  BIS     #10,@CSRX               ;SELECT CHANNEL 2
 041046  112777  000223  141214                  MOVB    #223,@ICRHX             ;----LOAD DAI INTO ACR 2---------
 041054  112777  000010  141200                  MOVB    #10,@ISRHX              ;---LOAD DCAS BIT INTO ISR2 REGISTER
 041062  042777  000010  141210                  BIC     #10,@CSRX               ;SELECT CHANNEL 1
 041070  112777  000024  141200                  MOVB    #24,@IDRHX              ;----LOAD DCL INTO DOR 1------------
 041076  004737  011050                          JSR     PC,LOOP                 ;WAIT A LITTLE
 041102  052777  000010  141170                  BIS     #10,@CSRX               ;SELECT CHANNEL 2
 041110  012737  000002  002374                  MOV     #2,CHAN                 ;LOAD CHANNEL NUMBER
 041116  017737  141126  002402                  MOV     @IIRX,RSAVE             ;GET IIR2 CONTENTS
 041124  022737  004500  002402                  CMP     #4500,RSAVE             ;DCAS,INT1,IFC BIT SHOULD BE SET
 041132  001413                                  BEQ     10$                     ;BRANCH IF YES
 041134  012737  004500  002500                  MOV     #4500,GOOD              ;SET UP DATA FOR ERROR MESSAGE
 041142  013737  002402  002502                  MOV     RSAVE,BAD               ;...
 041150                                          ERRSOFT 1301,E501,ERR501        ;ERROR HANDLER
                                           .MCALL  M$ERRINS
 041150                                    M$ERRINS        1301,E501,ERR501,C$ERSOFT
                                           .MCALL  M$GNINS,M$WORD,M$TSTLAB
 041150                                    M$SVC   C$ERSOFT
                                           .MCALL  M$GNINS,M$TSTLAB
 041150                                    M$TSTLAB
                                           .MCALL  M$TLABEL,M$INCR
                                           .IIF LT T$TSTMAC, .MEXIT
                                           .RADIX  10
                                           M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                           .RADIX  8
                                           M$INCR  T$TSTSEQ
 041150                                    M$GNINS <TRAP   C$ERSOFT>
                                           .IF LT SVCINS
                                           TRAP    C$ERSOFT
                                           .MEXIT
                                           .ENDC
                                           .IF EQ SVCINS
                                           .LIST
                                                 TRAP    C$ERSOFT
                                                         .NLIST
                                           .MEXIT
                                           .ENDC
                                           .IF GT SVCINS
                                           .LIST
 041150  104457                                                                           TRAP     C$ERSOFT
                                                         .NLIST
                                           .ENDC
         000012                            .RADIX  10
                                           .IF NB  1301
         002425                            T$ERRNUM=1301
                                           .IFF
                                           .ERROR  ;MISSING ERROR-NR
                                           .ENDC
 041152                                    M$WORD  \T$ERRNUM
                                           .MCALL  M$GNINS
                                           .IRP    N,<1301>
                                           M$GNINS <.WORD  N>
                                           .ENDM
```

```
        041152                         M$GNINS <.WORD  1301>
                                       .IF LT SVCINS
                                       .WORD   1301
                                       .MEXIT
                                       .ENDC
                                       .IF EQ SVCINS
                                       .LIST
                                               .WORD   1301
                                                       .NLIST
                                       .MEXIT
                                       .ENDC
                                       .IF GT SVCINS
                                       .LIST
        041152  002425                                                                      .WORD   1301
                                                       .NLIST
                                       .ENDC
                000010                 .RADIX  8
                                       .IF NB E501
        041154                         M$WORD  E501
                                       .MCALL  M$GNINS
                                       .IRP    N,<E501>
                                       M$GNINS <.WORD  N>
                                       .ENDM
        041154                         M$GNINS <.WORD  E501>
                                       .IF LT SVCINS
                                       .WORD   E501
                                       .MEXIT
                                       .ENDC
                                       .IF EQ SVCINS
                                       .LIST
                                               .WORD   E501
                                                       .NLIST
                                       .MEXIT
                                       .ENDC
                                       .IF GT SVCINS
                                       .LIST
        041154  005376                                                                      .WORD   E501
                                                       .NLIST
                                       .ENDC
                                       .IFF
                                       M$WORD  0
                                       .ENDC
                                       .IF NB ERR501
        041156                         M$WORD  ERR501
                                       .MCALL  M$GNINS
                                       .IRP    N,<ERR501>
                                       M$GNINS <.WORD  N>
                                       .ENDM
        041156                         M$GNINS <.WORD  ERR501>
                                       .IF LT SVCINS
                                       .WORD   ERR501
                                       .MEXIT
                                       .ENDC
                                       .IF EQ SVCINS
                                       .LIST
                                               .WORD   ERR501
                                                       .NLIST
```

```
                                       .MEXIT
                                       .ENDC
                                       .IF GT SVCINS
                                       .LIST
      041156  003672                                                                              .WORD   ERR501
                                                   .NLIST
                                       .ENDC
                                       .IFF
                                       M$WORD  0
                                       .ENDC
  5380 041160                                  CKLOOP                        ;BRANCH TO BGNSEG IF ERRLOOP IS SET
                                       .MCALL  M$SVC
      041160                           M$SVC   C$CLP1
                                       .MCALL  M$GNINS,M$TSTLAB
      041160                           M$TSTLAB
                                       .MCALL  M$TLABEL,M$INCR
                                       .IIF LT T$TSTMAC, .MEXIT
                                       .RADIX  10
                                       M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                       .RADIX  8
                                       M$INCR  T$TSTSEQ
      041160                           M$GNINS <TRAP   C$CLP1>
                                       .IF LT SVCINS
                                       TRAP    C$CLP1
                                       .MEXIT
                                       .ENDC
                                       .IF EQ SVCINS
                                       .LIST
                                               TRAP    C$CLP1
                                                       .NLIST
                                       .MEXIT
                                       .ENDC
                                       .IF GT SVCINS
                                       .LIST
      041160  104406                                                                              TRAP    C$CLP1
                                                       .NLIST
                                       .ENDC
  5381 041162 017737  141076  002402   10$:    MOV     @ICRX,RSAVE           ;GET ICR2 CONTENTS
  5382 041170 122737  000024  002402           CMPB    #24,RSAVE             ;ICR2 CONTENTS SHOULD BE 24
  5383 041176 001413                           BEQ     20$                   ;BRANCH IF YES
  5384 041200 012737  000024  002500           MOV     #24,GOOD              ;SET UP DATA FOR ERROR MESSAGE
  5385 041206 013737  002402  002502           MOV     RSAVE,BAD             ;...
  5386 041214                                  ERRSOFT 1302,E901,ERR501      ;ERROR HANDLER
                                       .MCALL  M$ERRINS
      041214                           M$ERRINS        1302,E901,ERR501,C$ERSOFT
                                       .MCALL  M$GNINS,M$WORD,M$TSTLAB
      041214                           M$SVC   C$ERSOFT
                                       .MCALL  M$GNINS,M$TSTLAB
      041214                           M$TSTLAB
                                       .MCALL  M$TLABEL,M$INCR
                                       .IIF LT T$TSTMAC, .MEXIT
                                       .RADIX  10
                                       M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                       .RADIX  8
                                       M$INCR  T$TSTSEQ
      041214                           M$GNINS <TRAP   C$ERSOFT>
                                       .IF LT SVCINS
```

```
                                        TRAP    C$ERSOFT
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                TRAP    C$ERSOFT
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
        041214  104457                                                                          TRAP    C$ERSOFT
                                                        .NLIST
                                        .ENDC
                000012                  .RADIX  10
                                        .IF NB  1302
                002426                  T$ERRNUM=1302
                                        .IFF
                                        .ERROR  ;MISSING ERROR-NR
                                        .ENDC
        041216                          M$WORD  \T$ERRNUM
                                        .MCALL  M$GNINS
                                        .IRP    N,<1302>
                                        M$GNINS <.WORD  N>
                                        .ENDM
        041216                          M$GNINS <.WORD  1302>
                                        .IF LT SVCINS
                                        .WORD   1302
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                .WORD   1302
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
        041216  002426                                                                          .WORD   1302
                                                        .NLIST
                                        .ENDC
                000010                  .RADIX  8
                                        .IF NB E901
        041220                          M$WORD  E901
                                        .MCALL  M$GNINS
                                        .IRP    N,<E901>
                                        M$GNINS <.WORD  N>
                                        .ENDM
        041220                          M$GNINS <.WORD  E901>
                                        .IF LT SVCINS
                                        .WORD   E901
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                .WORD   E901
                                                        .NLIST
```

```
                               .MEXIT
                               .ENDC
                               .IF GT SVCINS
                               .LIST
     041220  005634                                                                 .WORD   E901
                                         .NLIST
                               .ENDC
                               .IFF
                               M$WORD  0
                               .ENDC
                               .IF NB ERR501
     041222                    M$WORD  ERR501
                               .MCALL  M$GNINS
                               .IRP    N,<ERR501>
                               M$GNINS <.WORD  N>
                               .ENDM
     041222                    M$GNINS <.WORD  ERR501>
                               .IF LT SVCINS
                               .WORD   ERR501
                               .MEXIT
                               .ENDC
                               .IF EQ SVCINS
                               .LIST
                                    .WORD   ERR501
                                         .NLIST
                               .MEXIT
                               .ENDC
                               .IF GT SVCINS
                               .LIST
     041222  003672                                                                 .WORD   ERR501
                                         .NLIST
                               .ENDC
                               .IFF
                               M$WORD  0
                               .ENDC
5387 041224                         CKLOOP                     ;BRANCH TO BGNSEG IF ERRLOOP IS SET
                               .MCALL  M$SVC
     041224                    M$SVC   C$CLP1
                               .MCALL  M$GNINS,M$TSTLAB
     041224                    M$TSTLAB
                               .MCALL  M$TLABEL,M$INCR
                               .IIF LT T$TSTMAC, .MEXIT
                               .RADIX  10
                               M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                               .RADIX  8
                               M$INCR  T$TSTSEQ
     041224                    M$GNINS <TRAP   C$CLP1>
                               .IF LT SVCINS
                               TRAP    C$CLP1
                               .MEXIT
                               .ENDC
                               .IF EQ SVCINS
                               .LIST
                                    TRAP    C$CLP1
                                         .NLIST
                               .MEXIT
                               .ENDC
```

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```
                                                .IF GT SVCINS
                                                .LIST
        041224  104406                                                                                  TRAP    C$CLP1
                                                                .NLIST
                                                .ENDC
        041226  112777  000001  141034  20$:    MOVB    #1,@ICRHX               ;----LOAD NOT DACR INTO ACR2----------
        041234  017737  141010  002402          MOV     @IIRX,RSAVE             ;GET IIR2 CONTENTS
        041242  005737  002402                  TST     RSAVE                   ;IIR2 CONTENTS SHOULD BE ZERO
        041246  001412                          BEQ     21$                     ;BRANCH IF YES
        041250  005037  002500                  CLR     GOOD                    ;SET UP DATA FOR ERROR MESSAGE
        041254  013737  002402  002502          MOV     RSAVE,BAD               ;...
        041262                                  ERRSOFT 1303,E501,ERR501        ;ERROR HANDLER
                                                .MCALL  M$ERRINS
        041262                                  M$ERRINS        1303,E501,ERR501,C$ERSOFT
                                                .MCALL  M$GNINS,M$WORD,M$TSTLAB
        041262                                  M$SVC   C$ERSOFT
                                                .MCALL  M$GNINS,M$TSTLAB
        041262                                  M$TSTLAB
                                                .MCALL  M$TLABEL,M$INCR
                                                .IIF LT T$TSTMAC, .MEXIT
                                                .RADIX  10
                                                M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                                .RADIX  8
                                                M$INCR  T$TSTSEQ
        041262                                  M$GNINS <TRAP   C$ERSOFT>
                                                .IF LT SVCINS
                                                TRAP    C$ERSOFT
                                                .MEXIT
                                                .ENDC
                                                .IF EQ SVCINS
                                                .LIST
                                                        TRAP    C$ERSOFT
                                                                .NLIST
                                                .MEXIT
                                                .ENDC
                                                .IF GT SVCINS
                                                .LIST
        041262  104457                                                                                  TRAP    C$ERSOFT
                                                                .NLIST
                                                .ENDC
                000012                          .RADIX  10
                                                .IF NB  1303
                002427                          T$ERRNUM=1303
                                                .IFF
                                                .ERROR  ;MISSING ERROR NR
                                                .ENDC
        041264                                  M$WORD  \T$ERRNUM
                                                .MCALL  M$GNINS
                                                .IRP    N,<1303>
                                                M$GNINS <.WORD  N>
                                                .ENDM
        041264                                  M$GNINS <.WORD  1303>
                                                .IF LT SVCINS
                                                .WORD   1303
                                                .MEXIT
                                                .ENDC
                                                .IF EQ SVCINS
```

```
                                .LIST
                                        .WORD   1303
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
        041264  002427                                                                  .WORD   1303
                                                .NLIST
                                .ENDC
                000010          .RADIX  8
                                .IF NB E501
        041266                  M$WORD  E501
                                .MCALL  M$GNINS
                                .IRP    N,<E501>
                                M$GNINS <.WORD  N>
                                .ENDM
        041266                  M$GNINS <.WORD  E501>
                                .IF LT SVCINS
                                .WORD   E501
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        .WORD   E501
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
        041266  005376                                                                  .WORD   E501
                                                .NLIST
                                .ENDC
                                .IFF
                                M$WORD  0
                                .ENDC
                                .IF NB ERR501
        041270                  M$WORD  ERR501
                                .MCALL  M$GNINS
                                .IRP    N,<ERR501>
                                M$GNINS <.WORD  N>
                                .ENDM
        041270                  M$GNINS <.WORD  ERR501>
                                .IF LT SVCINS
                                .WORD   ERR501
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        .WORD   ERR501
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
        041270  003672                                                                  .WORD   ERR501
                                                .NLIST
```

```
                                        .ENDC
                                        .IFF
                                        M$WORD  0
                                        .ENDC
  5395 041272                                   CKLOOP                          ;BRANCH TO BGNSEG IF ERRLOOP IS SET
                                        .MCALL  M$SVC
       041272                           M$SVC   C$CLP1
                                        .MCALL  M$GNINS,M$TSTLAB
       041272                           M$TSTLAB
                                        .MCALL  M$TLABEL,M$INCR
                                        .IIF LT T$TSTMAC, .MEXIT
                                        .RADIX  10
                                        M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                        .RADIX  8
                                        M$INCR  T$TSTSEQ
       041272                           M$GNINS <TRAP   C$CLP1>
                                        .IF LT SVCINS
                                        TRAP    C$CLP1
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                TRAP    C$CLP1
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
       041272  104406                                                                           TRAP    C$CLP1
                                                        .NLIST
                                        .ENDC
  5396 041274  013701  002314           21$:    MOV     DPA2,R1                 ;CREATE MLA2
  5397 041300  062701  000040                   ADD     #40,R1                  ;...
  5398 041304  010137  002412                   MOV     R1,MLA2                 ;STORE MLA2
  5399 041310  042777  000010  140762           BIC     #10,@CSRX               ;SELECT CHANNEL 1
  5400 041316  012737  000001  002374           MOV     #1,CHAN                 ;LOAD CHANNEL NUMBER
  5401 041324  113777  002412  140744           MOVB    MLA2,@IDRHX             ;----LOAD MLA2 INTO DOR 1--- ---------
  5402 041332  004737  011050                   JSR     PC,LOOP                 ;WAIT A LITTLE
  5403 041336  017737  140706  002402           MOV     @IIRX,RSAVE             ;GET IIR1 CONTENTS
  5404 041344  022737  000020  002402           CMP     #20,RSAVE               ;BO BIT SHOULD BE SET
  5405 041352  001413                           BEQ     22$                     ;BRANCH IF YES
  5406 041354  012737  000020  002500           MOV     #20,GOOD                ;SET UP DATA FOR ERROR MESSAGE
  5407 041362  013737  002402  002502           MOV     RSAVE,BAD               ;...
  5408 041370                                   ERRSOFT 1304,E501,ERR501        ;ERROR HANDLER
                                        .MCALL  M$ERRINS
       041370                           M$ERRINS        1304,E501,ERR501,C$ERSOFT
                                        .MCALL  M$GNINS,M$WORD,M$TSTLAB
       041370                           M$SVC   C$ERSOFT
                                        .MCALL  M$GNINS,M$TSTLAB
       041370                           M$TSTLAB
                                        .MCALL  M$TLABEL,M$INCR
                                        .IIF LT T$TSTMAC, .MEXIT
                                        .RADIX  10
                                        M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                        .RADIX  8
                                        M$INCR  T$TSTSEQ
       041370                           M$GNINS <TRAP   C$ERSOFT>
```

```
                                        .IF LT SVCINS
                                        TRAP    C$ERSOFT
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                TRAP    C$ERSOFT
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
      041370  104457                                                                    TRAP    C$ERSOFT
                                                        .NLIST
                                        .ENDC
              000012                    .RADIX  10
                                        .IF NB  1304
              002430                    T$ERRNUM=1304
                                        .IFF
                                        .ERROR  ;MISSING ERROR NR
                                        .ENDC
      041372                            M$WORD  \T$ERRNUM
                                        .MCALL  M$GNINS
                                        .IRP    N,<1304>
                                        M$GNINS <.WORD  N>
                                        .ENDM
      041372                            M$GNINS <.WORD  1304>
                                        .IF LT SVCINS
                                        .WORD   1304
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                .WORD   1304
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
      041372  002430                                                                    .WORD   1304
                                                        .NLIST
                                        .ENDC
              000010                    .RADIX  8
                                        .IF NB E501
      041374                            M$WORD  E501
                                        .MCALL  M$GNINS
                                        .IRP    N,<E501>
                                        M$GNINS <.WORD  N>
                                        .ENDM
      041374                            M$GNINS <.WORD  E501>
                                        .IF LT SVCINS
                                        .WORD   E501
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                .WORD   E501
```

```
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
      041374  005376                                                                          .WORD   E501
                                                        .NLIST
                                        .ENDC
                                        .IFF
                                        M$WORD  0
                                        .ENDC
                                        .IF NB ERR501
      041376                            M$WORD  ERR501
                                        .MCALL  M$GNINS
                                        .IRP    N,<ERR501>
                                        M$GNINS <.WORD  N>
                                        .ENDM
      041376                            M$GNINS <.WORD  ERR501>
                                        .IF LT SVCINS
                                        .WORD   ERR501
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                .WORD   ERR501
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
      041376  003672                                                                          .WORD   ERR501
                                                        .NLIST
                                        .ENDC
                                        .IFF
                                        M$WORD  0
                                        .ENDC
 5409 041400                                    CKLOOP                         ;BRANCH TO BGNSEG IF ERRLOOP IS SET
                                        .MCALL  M$SVC
      041400                            M$SVC   C$CLP1
                                        .MCALL  M$GNINS,M$TSTLAB
      041400                            M$TSTLAB
                                        .MCALL  M$TLABEL,M$INCR
                                        .IIF LT T$TSTMAC, .MEXIT
                                        .RADIX  10
                                        M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                        .RADIX  8
                                        M$INCR  T$TSTSEQ
      041400                            M$GNINS <TRAP   C$CLP1>
                                        .IF LT SVCINS
                                        TRAP    C$CLP1
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                TRAP    C$CLP1
                                                        .NLIST
                                        .MEXIT
```

L8

```
                                          .ENDC
                                          .IF GT SVCINS
                                          .LIST
 041400  104406                                                                                   TRAP    C$CLP1
                                                        .NLIST
                                          .ENDC
 041402  112777  000004  140666          22$:      MOVB    #4,@IDRHX                ;-----LOAD SDC INTO DOR 1-------------
 041410  004737  011050                            JSR     PC,LOOP                  ;WAIT A LITTLE
 041414  052777  000010  140656                    BIS     #10,@CSRX                ;SELECT CHANNEL 2
 041422  012737  000002  002374                    MOV     #2,CHAN                  ;LOAD CHANNEL NUMBER
 041430  017737  140614  002402                    MOV     @IIRX,RSAVE              ;GET IIR2 CONTENTS
 041436  022737  006101  002402                    CMP     #6101,RSAVE              ;DCAS,MA,MAC,INT1 BIT SHOULD BE SET
 041444  001413                                    BEQ     23$                      ;BRANCH IF YES
 041446  012737  006101  002500                    MOV     #6101,GOOD               ;SET UP DATA FOR ERROR MESSAGES
 041454  013737  002402  002502                    MOV     RSAVE,BAD                ;...
 041462                                            ERRSOFT 1305,E501,ERR501         ;ERROR HANDLER
                                          .MCALL  M$ERRINS
 041462                                   M$ERRINS        1305,E501,ERR501,C$ERSOFT
                                          .MCALL  M$GNINS,M$WORD,M$TSTLAB
 041462                                   M$SVC   C$ERSOFT
                                          .MCALL  M$GNINS,M$TSTLAB
 041462                                   M$TSTLAB
                                          .MCALL  M$TLABEL,M$INCR
                                          .IIF LT T$TSTMAC, .MEXIT
                                          .RADIX  10
                                          M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                          .RADIX  8
                                          M$INCR  T$TSTSEQ
 041462                                   M$GNINS <TRAP   C$ERSOFT>
                                          .IF LT SVCINS
                                          TRAP    C$ERSOFT
                                          .MEXIT
                                          .ENDC
                                          .IF EQ SVCINS
                                          .LIST
                                                  TRAP    C$ERSOFT
                                                          .NLIST
                                          .MEXIT
                                          .ENDC
                                          .IF GT SVCINS
                                          .LIST
 041462  104457                                                                                   TRAP    C$ERSOFT
                                                          .NLIST
                                          .ENDC
         000012                           .RADIX  10
                                          .IF NB  1305
         002431                           T$ERRNUM=1305
                                          .IFF
                                          .ERROR  ;MISSING ERROR NP
                                          .ENDC
 041464                                   M$WORD  \T$ERRNUM
                                          .MCALL  M$GNINS
                                          .IRP    N,<1305>
                                          M$GNINS <.WORD  N>
                                          .ENDM
 041464                                   M$GNINS <.WORD  1305>
                                          .IF LT SVCINS
```

```
                                .WORD   1305
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        .WORD   1305
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
     041464  002431                                                         .WORD   1305
                                                .NLIST
                                .ENDC
             000010             .RADIX  8
                                .IF NB E501
     041466                     M$WORD  E501
                                .MCALL  M$GNINS
                                .IRP    N,<E501>
                                M$GNINS <.WORD  N>
                                .ENDM
     041466                     M$GNINS <.WORD  E501>
                                .IF LT SVCINS
                                .WORD   E501
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        .WORD   E501
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
     041466  005376                                                         .WORD   E501
                                                .NLIST
                                .ENDC
                                .IFF
                                M$WORD  0
                                .ENDC
                                .IF NB ERR501
     041470                     M$WORD  ERR501
                                .MCALL  M$GNINS
                                .IRP    N,<ERR501>
                                M$GNINS <.WORD  N>
                                .ENDM
     041470                     M$GNINS <.WORD  ERR501>
                                .IF LT SVCINS
                                .WORD   ERR501
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        .WORD   ERR501
                                                .NLIST
                                .MEXIT
                                .ENDC
```

N8

```
                                        .IF GT SVCINS
                                        .LIST
      041470  003672                                                              .WORD   ERR501
                                                    .NLIST
                                        .ENDC
                                        .IFF
                                        M$WORD  0
                                        .ENDC
 5420 041472                                  CKLOOP                     ;BRANCH BACK TO BGNSEG IF ERRLOOP IS SET
                                        .MCALL  M$SVC
      041472                            M$SVC   C$CLP1
                                        .MCALL  M$GNINS,M$TSTLAB
      041472                            M$TSTLAB
                                        .MCALL  M$TLABEL,M$INCR
                                        .IIF LT T$TSTMAC, .MEXIT
                                        .RADIX  10
                                        M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                        .RADIX  8
                                        M$INCR  T$TSTSEQ
      041472                            M$GNINS <TRAP   C$CLP1>
                                        .IF LT SVCINS
                                        TRAP    C$CLP1
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                TRAP    C$CLP1
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
      041472  104406                                                              TRAP    C$CLP1
                                                        .NLIST
                                        .ENDC
 5421 041474  017737  140556  002402    23$:    MOV     @ISRX,RSAVE      ;GET ISR2 CONTENTS
 5422 041502  023737  002454  002402            CMP     CDAT9,RSAVE      ;ATN,DAV,NDAC,NRFD,ATN,LADS IS SET
 5423 041510  001413                            BEQ     24$              ;BRANCH IF YES
 5424 041512  013737  002454  002500            MOV     CDAT9,GOOD       ;SET UP DATA FOR ERROR MESSAGE
 5425 041520  013737  002402  002502            MOV     RSAVE,BAD        ;...
 5426 041526                                    ERRSOFT 1306,E502,ERR501 ;ERROR HANDLER
                                        .MCALL  M$ERRINS
      041526                            M$ERRINS        1306,E502,ERR501,C$ERSOFT
                                        .MCALL  M$GNINS,M$WORD,M$TSTLAB
      041526                            M$SVC   C$ERSOFT
                                        .MCALL  M(   INS,M$TSTLAB
      041526                            M$TSTLAB
                                        .MCALL  M$TLABEL,M$INCR
                                        .IIF LT T$TSTMAC, .MEXIT
                                        .RADIX  10
                                        M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                        .RADIX  8
                                        M$INCR  T$TSTSEQ
      041526                            M,GNINS <TRAP   C$ERSOFT>
                                        .IF LT SVCINS
                                        TRAP    C$ERSOFT
                                        .MEXIT
```

B9


```
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                TRAP    C$ERSOFT
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
       041526  104457                                                                   TRAP    C$ERSOFT
                                                        .NLIST
                                        .ENDC
               000012                   .RADIX  10
                                        .IF NB  1306
               002432                   T$ERRNUM=1306
                                        .IFF
                                        .ERROR  ;MISSING ERROR NR
                                        .ENDC
       041530                           M$WORD  \T$ERRNUM
                                        .MCALL  M$GNINS
                                        .IRP    N,<1306>
                                        M$GNINS <.WORD  N>
                                        .ENDM
       041530                           M$GNINS <.WORD  1306>
                                        .IF LT SVCINS
                                        .WORD   1306
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                .WORD   1306
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
       041530  002432                                                                   .WORD   1306
                                                        .NLIST
                                        .ENDC
               000010                   .RADIX  8
                                        .IF NB E502
       041532                           M$WORD  E502
                                        .MCALL  M$GNINS
                                        .IRP    N,<E502>
                                        M$GNINS <.WORD  N>
                                        .ENDM
       041532                           M$GNINS <.WORD  E502>
                                        .IF LT SVCINS
                                        .WORD   E502
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                .WORD   E502
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
```

C9

```
                                    .IF GT SVCINS
                                    .LIST
      041532  005437                                                                          .WORD   E502
                                                 .NLIST
                                    .ENDC
                                    .IFF
                                    M$WORD  0
                                    .ENDC
                                    .IF NB ERR501
      041534                        M$WORD  ERR501
                                    .MCALL  M$GNINS
                                    .IRP    N,<ERR501>
                                    M$GNINS <.WORD  N>
                                    .ENDM
      041534                        M$GNINS <.WORD  ERR501>
                                    .IF LT SVCINS
                                    .WORD   ERR501
                                    .MEXIT
                                    .ENDC
                                    .IF EQ SVCINS
                                    .LIST
                                            .WORD   ERR501
                                                    .NLIST
                                    .MEXIT
                                    .ENDC
                                    .IF GT SVCINS
                                    .LIST
      041534  003672                                                                          .WORD   ERR501
                                                 .NLIST
                                    .ENDC
                                    .IFF
                                    M$WORD  0
                                    .ENDC
 5427 041536                                CKLOOP                          ;BRANCH BACK TO BGNSEG IF ERRLOOP IS SET
                                    .MCALL  M$SVC
      041536                        M$SVC   C$CLP1
                                    .MCALL  M$GNINS,M$TSTLAB
      041536                        M$TSTLAB
                                    .MCALL  M$TLABEL,M$INCR
                                    .IIF LT T$TSTMAC, .MEXIT
                                    .RADIX  10
                                    M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                    .RADIX  8
                                    M$INCR  T$TSTSEQ
      041536                        M$GNINS <TRAP   C$CLP1>
                                    .IF LT SVCINS
                                    TRAP    C$CLP1
                                    .MEXIT
                                    .ENDC
                                    .IF EQ SVCINS
                                    .LIST
                                            TRAP    C$CLP1
                                                    .NLIST
                                    .MEXIT
                                    .ENDC
                                    .IF GT SVCINS
                                    .LIST
```

D9

```
        041536  104406                                                          TRAP    C$CLP1
                                                        .NLIST
                                        .ENDC
   5428 041540  017737  140520  002402  24$:    MOV     @ICRX,RSAVE             ;GET ICR2 CONTENTS
   5429 041546  122737  000004  002402          CMPB    #4,RSAVE                ;CONTENTS SHOULD BE 4
   5430 041554  001413                          BEQ     25$                     ;BRANCH IF YES
   5431 041556  012737  000004  002500          MOV     #4,GOOD                 ;SET UP DATA FOR ERROR MESSAGES
   5432 041564  013737  002402  002502          MOV     RSAVE,BAD               ;...
   5433 041572                                  ERRSOFT 1307,E901,ERR501        ;ERROR HANDLER
                                        .MCALL  M$ERRINS
        041572                          M$ERRINS        1307,E901,ERR501,C$ERSOFT
                                        .MCALL  M$GNINS,M$WORD,M$TSTLAB
        041572                          M$SVC   C$ERSOFT
                                        .MCALL  M$GNINS,M$TSTLAB
        041572                          M$TSTLAB
                                        .MCALL  M$TLABEL,M$INCR
                                        .IIF LT T$TSTMAC, .MEXIT
                                        .RADIX  10
                                        M$T'.ABEL       \T$TESTNUN,\T$TSTSEQ
                                        .RADIX  8
                                        M$INCR  T$TSTSEQ
        041572                          M$GNINS <TRAP   C$ERSOFT>
                                        .IF LT SVCINS
                                        TRAP    C$ERSOFT
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                TRAP    C$ERSOFT
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
        041572  104457                                                          TRAP    C$ERSOFT
                                                        .NLIST
                                        .ENDC
                000012                  .RADIX  10
                                        .IF NB  1307
                002433                  T$ERRNUM=1307
                                        .IFF
                                        .ERROR  ;MISSING ERROR-NR
                                        .ENDC
        041574                          M$WORD  \T$ERRNUM
                                        .MCALL  M$GNINS
                                        .IRP    N,<1307>
                                        M$GNINS <.WORD  N>
                                        .ENDM
        041574                          M$GNINS <.WORD  1307>
                                        .IF LT SVCINS
                                        .WORD   1307
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                .WORD   1307
                                                        .NLIST
```

```
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
      041574  002433                                                                          .WORD   1307
                                                    .NLIST
                                        .ENDC
              000010                    .RADIX  8
                                        .IF NB E901
      041576                            M$WORD  E901
                                        .MCALL  M$GNINS
                                        .IRP    N,<E901>
                                        M$GNINS <.WORD  N>
                                        .ENDM
      041576                            M$GNINS <.WORD  E901>
                                        .IF LT SVCINS
                                        .WORD   E901
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                              .WORD   E901
                                                    .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
      041576  005634                                                                          .WORD   E901
                                                    .NLIST
                                        .ENDC
                                        .IFF
                                        M$WORD  0
                                        .ENDC
                                        .IF NB ERR501
      041600                            M$WORD  ERR501
                                        .MCALL  M$GNINS
                                        .IRP    N,<ERR501>
                                        M$GNINS <.WORD  N>
                                        .ENDM
      041600                            M$GNINS <.WORD  ERR501>
                                        .IF LT SVCINS
                                        .WORD   ERR501
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                              .WORD   ERR501
                                                    .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
      041600  003672                                                                          .WORD   ERR501
                                                    .NLIST
                                        .ENDC
                                        .IFF
                                        M$WORD  0
```

F9

```
                                        .ENDC
 5434 041602                                    CKLOOP                          ;BRANCH BACK TO BGNSEG IF ERRLOOP IS SET
                                        .MCALL  M$SVC
      041602                            M$SVC   C$CLP1
                                        .MCALL  M$GNINS,M$TSTLAB
      041602                            M$TSTLAB
                                        .MCALL  M$TLABEL,M$INCR
                                        .IIF LT T$TSTMAC, .MEXIT
                                        .RADIX  10
                                        M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                        .RADIX  8
                                        M$INCR  T$TSTSEQ
      041602                            M$GNINS <TRAP   C$CLP1>
                                        .IF LT SVCINS
                                        TRAP    C$CLP1
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                TRAP    C$CLP1
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
      041602  104406                                                                    TRAP    C$CLP1
                                                        .NLIST
                                        .ENDC
 5435 041604  112777  000001  140456    25$:    MOVB    #1,@ICRHX       ;----LOAD NOT DACR INTO ACR2--    -------
 5436 041612  042777  000010  140460            BIC     #10,@CSRX       ;SELECT CHANNEL 1
 5437 041620  012737  000001  002374            MOV     #1,CHAN         ;LOAD CHANNEL NUMBER
 5438 041626  112777  000077  140442            MOVB    #77,@IDRHX      ;----LOAD UNL INTO DOR 1----------------
 5439 041634  004737  011050                    JSR     PC,LOOP         ;WAIT A LITTLE
 5440 041640  017737  140404  002402            MOV     @IIRX,RSAVE     ;GET IIR1 CONTENTS
 5441 041646  022737  000020  002402            CMP     #20,RSAVE       ;B0 BIT SHOULD BE SET
 5442 041654  001413                            BEQ     26$             ;BRANCH IF YES
 5443 041656  012737  000020  002500            MOV     #20,GOOD        ;SET UP DATA  FOR ERROR MESSAGE
 5444 041664  013737  002402  002502            MOV     RSAVE,BAD       ;...
 5445 041672                                    ERRSOFT 1308,E501,ERR501        ;ERROR HANDLER
                                        .MCALL  M$ERRINS
      041672                            M$ERRINS        1308,E501,ERR501,C$ERSOFT
                                        .MCALL  M$GNINS,M$WORD,M$TSTLAB
      041672                            M$SVC   C$ERSOFT
                                        .MCALL  M$GNINS,M$TSTLAB
      041672                            M$TSTLAB
                                        .MCALL  M$TLABEL,M$INCR
                                        .IIF LT T$TSTMAC, .MEXIT
                                        .RADIX  10
                                        M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                        .RADIX  8
                                        M$INCR  T$TSTSEQ
      041672                            M$GNINS <TRAP   C$ERSOFT>
                                        .IF LT SVCINS
                                        TRAP    C$ERSOFT
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
```

```
                          .LIST
                                  TRAP    C$ERSOFT
                                          .NLIST
                          .MEXIT
                          .ENDC
                          .IF GT SVCINS
                          .LIST
041672  104457                                                    TRAP    C$ERSOFT
                                          .NLIST
                          .ENDC
        000012            .RADIX  10
                          .IF NB  1308
        002434            T$ERRNUM=1308
                          .IFF
                          .ERROR  ;MISSING FRROR NR
                          .ENDC
041674                    M$WORD  \T$ERRNUM
                          .MCALL  M$GNINS
                          .IRP    N,<1308>
                          M$GNINS <.WORD  N>
                          .ENDM
041674                    M$GNINS <.WORD  1308>
                          .IF LT SVCINS
                          .WORD   1308
                          .MEXIT
                          .ENDC
                          .IF EQ SVCINS
                          .LIST
                                  .WORD   1308
                                          .NLIST
                          .MEXIT
                          .ENDC
                          .IF GT SVCINS
                          .LIST
041674  002434                                                    .WORD   1308
                                          .NLIST
                          .ENDC
        000010            .RADIX  8
                          .IF NB E501
041676                    M$WORD  E501
                          .MCALL  M$GNINS
                          .IRP    N,<E501>
                          M$GNINS <.WORD  N>
                          .ENDM
041676                    M$GNINS <.WORD  E501>
                          .IF LT SVCINS
                          .WORD   E501
                          .MEXIT
                          .ENDC
                          .IF EQ SVCINS
                          .LIST
                                  .WORD   E501
                                          .NLIST
                          .MEXIT
                          .ENDC
                          .IF GT SVCINS
                          .LIST
```

```
        041676  005376                                                          .WORD   E501
                                                .NLIST
                                .ENDC
                                .IFF
                                M$WORD  0
                                .ENDC
                                .IF NB ERR501
        041700                  M$WORD  ERR501
                                .MCALL  M$GNINS
                                .IRP    N,<ERR501>
                                M$GNINS <.WORD  N>
                                .ENDM
        041700                  M$GNINS <.WORD  ERR501>
                                .IF LT SVCINS
                                .WORD   ERR501
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        .WORD   ERR501
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
        041700  003672                                                          .WORD   ERR501
                                                .NLIST
                                .ENDC
                                .IFF
                                M$WORD  0
                                .ENDC
   5446 041702                          CKLOOP                  ;BRANCH BACK TO BGNSEG IS ERRLOOP IS SET
                                .MCALL  M$SVC
        041702                  M$SVC   C$CLP1
                                .MCALL  M$GNINS,M$TSTLAB
        041702                  M$TSTLAB
                                .MCALL  M$TLABEL,M$INCR
                                .IIF LT T$TSTMAC, .MEXIT
                                .RADIX  10
                                M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                .RADIX  8
                                M$INCR  T$TSTSEQ
        041702                  M$GNINS <TRAP   C$CLP1>
                                .IF LT SVCINS
                                TRAP    C$CLP1
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        TRAP    C$CLP1
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
        041702  104406                                                          TRAP    C$CLP1
                                                .NLIST
```

```
                                        .ENDC
5447 041704  052777  000010  140366  26$:    BIS     #10,@CSRX               ;SELECT CHANNEL 2
5448 041712  012737  000002  002374          MOV     #2,CHAN                 ;LOAD CHANNEL NUMBER
5449 041720  017737  140324  002402          MOV     @IIRX,RSAVE             ;GET IIR2 CONTENTS
5450 041726  022737  000001  002402          CMP     #1,RSAVE                ;MAC BIT SHOULD BE SET
5451 041734  001413                          BEQ     27$                     ;BRANCH IF YES
5452 041736  012737  000001  002500          MOV     #1,GOOD                 ;SET UP DATA FOR ERROR MESSAGE
5453 041744  013737  002402  002502          MOV     RSAVE,BAD               ;...
5454 041752                                  ERRSOFT 1309,E501,ERR501        ;ERROR HANDLER
                                        .MCALL  M$ERRINS
     041752                             M$ERRINS        1309,E501,ERR501,C$ERSOFT
                                        .MCALL  M$GNINS,M$WORD,M$TSTLAB
     041752                             M$SVC   C$ERSOFT
                                        .MCALL  M$GNINS,M$TSTLAB
     041752                             M$TSTLAB
                                        .MCALL  M$TLABEL,M$INCR
                                        .IIF LT T$TSTMAC, .MEXIT
                                        .RADIX  10
                                        M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                        .RADIX  8
                                        M$INCR  T$TSTSEQ
     041752                             M$GNINS <TRAP   C$ERSOFT>
                                        .IF LT SVCINS
                                        TRAP    C$ERSOFT
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                TRAP    C$ERSOFT
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
     041752  104457                                                                               TRAP    C$ERSOFT
                                                        .NLIST
                                        .ENDC
             000012                     .RADIX  10
                                        .IF NB  1309
             002435                     T$ERRNUM=1309
                                        .IFF
                                        .ERROR  ;MISSING ERROR-NR
                                        .ENDC
     041754                             M$WORD  \T$ERRNUM
                                        .MCALL  M$GNINS
                                        .IRP    N,<1309>
                                        M$GNINS <.WORD  N>
                                        .ENDM
     041754                             M$GNINS <.WORD  1309>
                                        .IF LT SVCINS
                                        .WORD   1309
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                .WORD   1309
                                                        .NLIST
```

J9

J9


```
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
041754  002435                                                                  .WORD   1309
                                          .NLIST
                                .ENDC
        000010                  .RADIX  8
                                .IF NB E501
041756                          M$WORD  E501
                                .MCALL  M$GNINS
                                .IRP    N,<E501>
                                M$GNINS <.WORD  N>
                                .ENDM
041756                          M$GNINS <.WORD  E501>
                                .IF LT SVCINS
                                .WORD   E501
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                     .WORD   E501
                                          .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
041756  005376                                                                  .WORD   E501
                                          .NLIST
                                .ENDC
                                .IFF
                                M$WORD  0
                                .ENDC
                                .IF NB ERR501
041760                          M$WORD  ERR501
                                .MCALL  M$GNINS
                                .IRP    N,<ERR501>
                                M$GNINS <.WORD  N>
                                .ENDM
041760                          M$GNINS <.WORD  ERR501>
                                .IF LT SVCINS
                                .WORD   ERR501
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                     .WORD   ERR501
                                          .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
041760  003672                                                                  .WORD   ERR501
                                          .NLIST
                                .ENDC
                                .IFF
                                M$WORD  0
```

K9

K9


```
                                .ENDC
 5455 041762                            CKLOOP                          ;BRANCH BACK TO BGNSEG IF ERRLOOP IS SET
                                .MCALL  M$SVC
      041762                    M$SVC   C$CLP1
                                .MCALL  M$GNINS,M$TSTLAB
      041762                    M$TSTLAB
                                .MCALL  M$TLABEL,M$INCR
                                .IIF LT T$TSTMAC, .MEXIT
                                .RADIX  10
                                M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                .RADIX  8
                                M$INCR  T$TSTSEQ
      041762                    M$GNINS <TRAP   C$CLP1>
                                .IF LT SVCINS
                                TRAP    C$CLP1
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        TRAP    C$CLP1
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
      041762  104406                                                                    TRAP    C$CLP1
                                                .NLIST
                                .ENDC
 5456 041764                    27$:    ENDSEG
                                .MCALL  M$POP,M$GNLS,M$SVC,M$ENDERR
      041764                    M$POP   T$NS,T$NESTLEV,T$TEMP
                                .MCALL  M$GETS,M$DECR
                                .IF LT  T$NESTLEV
                                .ERROR  T$NESTLEV       ; MACRO T$NS UNDERFLOW
                                .MEXIT
                                .ENDC
      041764                    M$GETS  T$NS,\T$NESTLEV,T$TEMP
              000003            T$TEMP=T$NS2
      041764                    M$DECR  T$NESTLEV
              000001            T$NESTLEV=T$NESTLEV-1
                                .IF EQ F$SEG-T$TEMP
      041764                    M$POP   T$SEK,T$SEGLEV,T$$SEG
                                .MCALL  M$GETS,M$DECR
                                .IF LT  T$SEGLEV
                                .ERROR  T$SEGLEV        ; MACRO T$SEK UNDERFLOW
                                .MEXIT
                                .ENDC
      041764                    M$GETS  T$SEK,\T$SEGLEV,T$$SEG
              010000            T$$SEG=T$SEK0
      041764                    M$DECR  T$SEGLEV
              177777            T$SEGLEV=T$SEGLEV-1
      041764                    M$GNLS  T$$SEG
                                .MCALL  M$GEN
                                .IF NB T$$SEG
      041764                    M$GEN   \T$$SEG,$,SVCTAG
                                .IF LE  SVCTAG
                                .IIF EQ SVCTAG,.LIST
```

L9

```
                                        10000$:
                                        .IIF EQ SVCTAG,.NLIST
                                        .MEXIT
                                        .ENDC
                                        .LIST
     041764                                                                     10000$:
                                              .NLIST
                                        .IFF
                                        M$GEN   \S$LSYM,$,SVCTAG
                                        .ENDC
     041764                             M$SVC   C$ESEG
                                        .MCALL  M$GNINS,M$TSTLAB
     041764                             M$TSTLAB
                                        .MCALL  M$TLABEL,M$INCR
                                        .IIF LT T$TSTMAC, .MEXIT
                                        .RADIX  10
                                        M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                        .RADIX  8
                                        M$INCR  T$TSTSEQ
     041764                             M$GNINS <TRAP   C$ESEG>
                                        .IF LT SVCINS
                                        TRAP    C$ESEG
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                TRAP    C$ESEG
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
     041764  104405                                                                   TRAP    C$ESEG
                                                        .NLIST
                                        .ENDC
                                        .IF EQ T$SEGLEV+1
             000041                     I$SEG=F$END
                                        .ENDC
                                        .IFF
                                        M$ENDERR        ENDSEG,T$TEMP
                                        .ENDC
                                        ;+++ --- ------ ----  - ------------ ---------- ------  ------  ---  -  --
                                        ;PART 2 CHECKS THE DEVICE CLEAR INTERFACE FUNCTION OF CHANNEL 2
                                        ;++++-- --- -------------- --- --------             -------------- ------- ---- --  -
     041766  004737  010210                     JSR     PC,CULPA                ;CLEAR ULPA BIT IN ISR 1 AND 2
     041772  004737  010700                     JSR     PC,BGIN2                ;SET UP PARAMETER
     041776  032737  000001  002312             BIT     #1,DPA1                 ;IS DPA EVEN
     042004  001404                             BEQ     4$                      ;BRANCH IF YES
     042006  052737  000001  002454             BIS     #1,CDAT9                ;SET ULPA BIT IN COMPARE DATA FOR ISR
     042014  000403                             BR      .+10                    ;
     042016  042737  000001  002454     4$:     BIC     #1,CDAT9                ;CLEAR ULPA BIT IN COMPARE DATA FOR ISR
     042024                             PSEU1:  BGNSEG
                                        .MCALL  M$PUSH,M$INCR,M$SVC
             000040                     I$SEG=F$BGN
     042024                             M$PUSH  T$NS,T$NESTLEV,F$SEG
                                        .MCALL  M$INCR,M$SETS
     042024                             M$INCR  T$NESTLEV
```

```
                000002                          T$NESTLEV=T$NESTLEV+1
         042024                                 M$SETS  T$NS,\T$NESTLEV,F$SEG
                000003                          T$NS2=F$SEG
                010001                          T$$SEG=S$LSYM
         042024                                 M$PUSH  T$SEK,T$SEGLEV,T$$SEG
                                                .MCALL  M$INCR,M$SETS
         042024                                 M$INCR  T$SEGLEV
                000000                          T$SEGLEV=T$SEGLEV+1
         042024                                 M$SETS  T$SEK,\T$SEGLEV,T$$SEG
                010001                          T$SEKO=T$$SEG
         042024                                 M$INCR  S$LSYM
                010002                          S$LSYM=S$LSYM+1
         042024                                 M$SVC   C$BSEG
                                                .MCALL  M$GNINS,M$TSTLAB
         042024                                 M$TSTLAB
                                                .MCALL  M$TLABEL,M$INCR
                                                .IIF LT T$TSTMAC, .MEXIT
                                                .RADIX  10
                                                M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                                .RADIX  8
                                                M$INCR  T$TSTSEQ
         042024                                 M$GNINS <TRAP   C$BSEG>
                                                .IF LT SVCINS
                                                TRAP    C$BSEG
                                                .MEXIT
                                                .ENDC
                                                .IF EQ SVCINS
                                                .LIST
                                                        TRAP    C$BSEG
                                                                .NLIST
                                                .MEXIT
                                                .ENDC
                                                .IF GT SVCINS
                                                .LIST
         042024 104404                                                                          TRAP    C$BSEG
                                                                .NLIST
                                                .ENDC
    5468 042026 052777 000010 140244                    BIS     #10,@CSRX               ;SELECT CHANNEL 2
    5469 042034 112777 000217 140226                    MOVB    #217,@ICRHX             ;LOAD SIC INTO ACR 2
    5470 042042 004737 011062                           JSR     PC,WAIT                 ;WAIT A LITTLE
    5471 042046 112777 000017 140214                    MOVB    #17,@ICRHX              ;LOAD NOT SIC IN ACR 2
    5472 042054 042777 000010 140216                    BIC     #10,@CSRX               ;SELECT CHANNEL 1
    5473 042062 112777 000223 140200                    MOVB    #223,@ICRHX             ;----LOAD DAI INTO ACR 1-------- -
    5474 042070 112777 000010 140164                    MOVB    #10,@ISRHX              ;---LOAD DCAS BIT INTO ISR1 REGISTER
    5475 042076 052777 000010 140174                    BIS     #10,@CSRX               ;SELECT CHANNEL 2
    5476 042104 112777 000024 140164                    MOVB    #24,@IDRHX              ;----LOAD DCL INTO DOR 2------- ----
    5477 042112 004737 011050                           JSR     PC,LOOP                 ;WAIT A LITTLE
    5478 042116 042777 000010 140154                    BIC     #10,@CSRX               ;SELECT CHANNEL 1
    5479 042124 012737 000001 002374                    MOV     #1,CHAN                 ;LOAD CHANNEL NUMBER
    5480 042132 017737 140112 002402                    MOV     @IIRX,RSAVE             ;GET IIR1 CONTENTS
    5481 042140 022737 004500 002402                    CMP     #4500,RSAVE             ;DCAS,IFC,INT1 BIT SHOULD BE SET
    5482 042146 001413                                  BEQ     10$                     ;BRANCH IF YES
    5483 042150 012737 004500 002500                    MOV     #4500,GOOD              ;SET UP DATA FOR ERROR MESSAGE
    5484 042156 013737 002402 002502                    MOV     RSAVE,BAD               ;...
    5485 042164                                         ERRSOFT 1310,E501,ERR501        ;ERROR HANDLER
                                                .MCALL  M$ERRINS
         042164                                 M$ERRINS        1310,E501,ERR501,C$ERSOFT
```

```
                                .MCALL  M$GNINS,M$WORD,M$TSTLAB
  042164                        M$SVC   C$ERSOFT
                                .MCALL  M$GNINS,M$TSTLAB
  042164                        M$TSTLAB
                                .MCALL  M$TLABEL,M$INCR
                                .IIF LT T$TSTMAC, .MEXIT
                                .RADIX  10
                                M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                .RADIX  8
                                M$INCR  T$TSTSEQ
  042164                        M$GNINS <TRAP   C$ERSOFT>
                                .IF LT SVCINS
                                TRAP    C$ERSOFT
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        TRAP    C$ERSOFT
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
  042164  104457                                                        TRAP    C$ERSOFT
                                                .NLIST
                                .ENDC
          000012                .RADIX  10
                                .IF NB  1310
          002436                T$ERRNUM=1310
                                .IFF
                                .ERROR  ;MISSING ERROR NR
                                .ENDC
  042166                        M$WORD  \T$ERRNUM
                                .MCALL  M$GNINS
                                .IRP    N,<1310>
                                M$GNINS <.WORD  N>
                                .ENDM
  042166                        M$GNINS <.WORD  1310>
                                .IF LT SVCINS
                                .WORD   1310
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        .WORD   1310
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
  042166  002436                                                        .WORD   1310
                                                .NLIST
                                .ENDC
          000010                .RADIX  8
                                .IF NB E501
  042170                        M$WORD  E501
                                .MCALL  M$GNINS
```

```
                              .IRP     N,<E501>
                              M$GNINS <.WORD  N>
                              .ENDM
      042170                  M$GNINS <.WORD  E501>
                              .IF LT SVCINS
                              .WORD    E501
                              .MEXIT
                              .ENDC
                              .IF EQ SVCINS
                              .LIST
                                      .WORD   E501
                                              .NLIST
                              .MEXIT
                              .ENDC
                              .IF GT SVCINS
                              .LIST
      042170  005376                                                              .WORD   E501
                                              .NLIST
                              .ENDC
                              .IFF
                              M$WORD  0
                              .ENDC
                              .IF NB ERR501
      042172                  M$WORD  ERR501
                              .MCALL  M$GNINS
                              .IRP     N,<ERR501>
                              M$GNINS <.WORD  N>
                              .ENDM
      042172                  M$GNINS <.WORD  ERR501>
                              .IF LT SVCINS
                              .WORD    ERR501
                              .MEXIT
                              .ENDC
                              .IF EQ SVCINS
                              .LIST
                                      .WORD   ERR501
                                              .NLIST
                              .MEXIT
                              .ENDC
                              .IF GT SVCINS
                              .LIST
      042172  003672                                                              .WORD   ERR501
                                              .NLIST
                              .ENDC
                              .IFF
                              M$WORD  0
                              .ENDC
 5486 042174                          C<LOOP                    ;BRANCH TO BGNSEG IF ERLOOP IS SET
                              .MCALL  M$SVC
      042174                  M$SVC   C$CLP1
                              .MCALL  M$GNINS,M$TSTLAB
      042174                  M$TSTLAB
                              .MCALL  M$TLABEL,M$INCR
                              .IIF LT T$TSTMAC, .MEXIT
                              .RADIX  10
                              M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                              .RADIX  8
```



```
                                                  M$INCR  T$TSTSEQ
      042174                                      M$GNINS <TRAP   C$CLP1>
                                                  .IF LT SVCINS
                                                  TRAP    C$CLP1
                                                  .MEXIT
                                                  .ENDC
                                                  .IF EQ SVCINS
                                                  .LIST
                                                          TRAP    C$CLP1
                                                                  .NLIST
                                                  .MEXIT
                                                  .ENDC
                                                  .IF GT SVCINS
                                                  .LIST
      042174  104406                                                                                     TRAP    C$CLP1
                                                                  .NLIST
                                                  .ENDC
 5487 042176  017737  140062  002402              10$:    MOV     @ICRX,RSAVE             ;GET ICR1 CONTENTS
 5488 042204  122737  000024  002402                      CMPB    #24,RSAVE               ;ICR1 CONTENTS SHOULD BE 24
 5489 042212  001413                                      BEQ     20$                     ;BRANCH IF YES
 5490 042214  012737  000024  002500                      MOV     #24,GOOD                ;SET UP DATA FOR ERROR MESSAGE
 5491 042222  013737  002402  002502                      MOV     RSAVE,BAD               ;...
 5492 042230                                              ERRSOFT 1312,E901,ERR501        ;ERROR HANDLER
                                                  .MCALL  M$ERRINS
      042230                                      M$ERRINS        1312,E901,ERR501,C$ERSOFT
                                                  .MCALL  M$GNINS,M$WORD,M$TSTLAB
      042230                                      M$SVC   C$ERSOFT
                                                  .MCALL  M$GNINS,M$TSTLAB
      042230                                      M$TSTLAB
                                                  .MCALL  M$TLABEL,M$INCR
                                                  .IIF LT T$TSTMAC, .MEXIT
                                                  .RADIX  10
                                                  M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                                  .RADIX  8
                                                  M$INCR  T$TSTSEQ
      042230                                      M$GNINS <TRAP   C$ERSOFT>
                                                  .IF LT SVCINS
                                                  TRAP    C$ERSOFT
                                                  .MEXIT
                                                  .ENDC
                                                  .IF EQ SVCINS
                                                  .LIST
                                                          TRAP    C$ERSOFT
                                                                  .NLIST
                                                  .MEXIT
                                                  .ENDC
                                                  .IF GT SVCINS
                                                  .LIST
      042230  104457                                                                                     TRAP    C$ERSOFT
                                                                  .NLIST
                                                  .ENDC
              000012                              .RADIX  10
                                                  .IF NB  1312
              002440                              T$ERRNUM=1312
                                                  .IFF
                                                  .ERROR  ;MISSING ERROR NR
                                                  .ENDC
```

```
042232                  M$WORD  \T$ERRNUM
                        .MCALL  M$GNINS
                        .IRP    N,<1312>
                        M$GNINS <.WORD  N>
                        .ENDM
042232                  M$GNINS <.WORD  1312>
                        .IF LT SVCINS
                        .WORD   1312
                        .MEXIT
                        .ENDC
                        .IF EQ SVCINS
                        .LIST
                                .WORD   1312
                                        .NLIST
                        .MEXIT
                        .ENDC
                        .IF GT SVCINS
                        .LIST
042232  002440                                                  .WORD   1312
                                        .NLIST
                        .ENDC
        000010          .RADIX  8
                        .IF NB E901
042234                  M$WORD  E901
                        .MCALL  M$GNINS
                        .IRP    N,<E901>
                        M$GNINS <.WORD  N>
                        .ENDM
042234                  M$GNINS <.WORD  E901>
                        .IF LT SVCINS
                        .WORD   E901
                        .MEXIT
                        .ENDC
                        .IF EQ SVCINS
                        .LIST
                                .WORD   E901
                                        .NLIST
                        .MEXIT
                        .ENDC
                        .IF GT SVCINS
                        .LIST
042234  005634                                                  .WORD   E901
                                        .NLIST
                        .ENDC
                        .IFF
                        M$WORD  0
                        .ENDC
                        .IF NB ERR501
042236                  M$WORD  ERR501
                        .MCALL  M$GNINS
                        .IRP    N,<ERR501>
                        M$GNINS <.WORD  N>
                        .ENDM
042236                  M$GNINS <.WORD  ERR501>
                        .IF LT SVCINS
                        .WORD   ERR501
                        .MEXIT
```

```
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                .WORD   ERR501
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
      042236  003672                                                                            .WORD   ERR501
                                                        .NLIST
                                        .ENDC
                                        .IFF
                                        M$WORD  0
                                        .ENDC
 5493 042240                                    CKLOOP                          ;BRANCH TO BGNSEG IF ERRLOOP IS SET
                                        .MCALL  M$SVC
      042240                            M$SVC   C$CLP1
                                        .MCALL  M$GNINS,M$TSTLAB
      042240                            M$TSTLAB
                                        .MCALL  M$TLABEL,M$INCR
                                        .IIF LT T$TSTMAC, .MEXIT
                                        .RADIX  10
                                        M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                        .RADIX  8
                                        M$INCR  T$TSTSEQ
      042240                            M$GNINS <TRAP   C$CLP1>
                                        .IF LT SVCINS
                                        TRAP    C$CLP1
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                TRAP    C$CLP1
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
      042240  104406                                                                            TRAP    C$CLP1
                                                        .NLIST
                                        .ENDC
 5494 042242  112777  000001  140020    20$:    MOVB    #1,@ICRHX               ;----LOAD NOT DACR INTO ACR1-------- -
 5495 042250  017737  137774  002402            MOV     @IIRX,RSAVE             ;GET IIR1 CONTENTS
 5496 042256  005737  002402                    TST     RSAVE                   ;IIR1 CONTENTS SHOULD BE ZERO
 5497 042262  001412                            BEQ     21$                     ;BRANCH IF YES
 5498 042264  005037  002500                    CLR     GOOD                    ;SET UP DATA FOR ERROR MESSAGE
 5499 042270  013737  002402  002502            MOV     RSAVE,BAD               ;...
 5500 042276                                    ERRSOFT 1313,E501,ERR501        ;ERROR HANDLER
                                        .MCALL  M$ERRINS
      042276                            M$ERRINS        1313,E501,ERR501,C$ERSOFT
                                        .MCALL  M$GNINS,M$WORD,M$TSTLAB
      042276                            M$SVC   C$ERSOFT
                                        .MCALL  M$GNINS,M$TSTLAB
      042276                            M$TSTLAB
                                        .MCALL  M$TLABEL,M$INCR
                                        .IIF LT T$TSTMAC, .MEXIT
```

```
                        .RADIX  10
                        M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                        .RADIX  8
                        M$INCR  T$TSTSEQ
042276                  M$GNINS <TRAP   C$ERSOFT>
                        .IF LT SVCINS
                        TRAP    C$ERSOFT
                        .MEXIT
                        .ENDC
                        .IF EQ SVCINS
                        .LIST
                                TRAP    C$ERSOFT
                                        .NLIST
                        .MEXIT
                        .ENDC
                        .IF GT SVCINS
                        .LIST
042276  104457                                                  TRAP    C$ERSOFT
                                        .NLIST
                        .ENDC
        000012          .RADIX  10
                        .IF NB  1313
        002441          T$ERRNUM=1313
                        .IFF
                        .ERROR  ;MISSING ERROR-NR
                        .ENDC
042300                  M$WORD  \T$ERRNUM
                        .MCALL  M$GNINS
                        .IRP    N,<1313>
                        M$GNINS <.WORD  N>
                        .ENDM
042300                  M$GNINS <.WORD  1313>
                        .IF LT SVCINS
                        .WORD   1313
                        .MEXIT
                        .ENDC
                        .IF EQ SVCINS
                        .LIST
                                .WORD   1313
                                        .NLIST
                        .MEXIT
                        .ENDC
                        .IF GT SVCINS
                        .LIST
042300  002441                                                  .WORD   1313
                                        .NLIST
                        .ENDC
        000010          .RADIX  8
                        .IF NB E501
042302                  M$WORD  E501
                        .MCALL  M$GNINS
                        .IRP    N,<E501>
                        M$GNINS <.WORD  N>
                        .ENDM
042302                  M$GNINS <.WORD  E501>
                        .IF LT SVCINS
                        .WORD   E501
```

G10

```
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        .WORD   E501
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
      042302  005376                                                              .WORD   E501
                                                .NLIST
                                .ENDC
                                .IFF
                                M$WORD  0
                                .ENDC
                                .IF NB ERR501
      042304                    M$WORD  ERR501
                                .MCALL  M$GNINS
                                .IRP    N,<ERR501>
                                M$GNINS <.WORD  N>
                                .ENDM
      042304                    M$GNINS <.WORD  ERR501>
                                .IF LT SVCINS
                                .WORD   ERR501
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        .WORD   ERR501
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
      042304  003672                                                              .WORD   ERR501
                                                .NLIST
                                .ENDC
                                .IFF
                                M$WORD  0
                                .ENDC
 5501 042306                            CKLOOP                  ;BRANCH TO BGNSEG IF ERRLOOP IS SET
                                .MCALL  M$SVC
      042306                    M$SVC   C$CLP1
                                .MCALL  M$GNINS,M$TSTLAB
      042306                    M$TSTLAB
                                .MCALL  M$TLABEL,M$INCR
                                .IIF LT T$TSTMAC, .MEXIT
                                .RADIX  10
                                M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                .RADIX  8
                                M$INCR  T$TSTSEQ
      042306                    M$GNINS <TRAP   C$CLP1>
                                .IF LT SVCINS
                                TRAP    C$CLP1
                                .MEXIT
                                .ENDC
```

```
                                          .IF EQ SVCINS
                                          .LIST
                                                  TRAP    C$CLP1
                                                          .NLIST
                                          .MEXIT
                                          .ENDC
                                          .IF GT SVCINS
                                          .LIST
      042306  104406                                                                   TRAP    C$CLP1
                                                          .NLIST
                                          .ENDC
5502  042310  013701  002312              21$:    MOV     DPA1,R1              ;CREATE MLA1
5503  042314  062701  000040                      ADD     #40,R1               ;...
5504  042320  010137  002410                      MOV     R1,MLA1              ;STORE MLA1
5505  042324  052777  000010  137746              BIS     #10,@CSRX            ;SELECT CHANNEL 2
5506  042332  012737  000002  002374              MOV     #2,CHAN              ;LOAD CHANNEL NUMBER
5507  042340  113777  002410  137730              MOVB    MLA1,@IDRHX          ;----LOAD MLA1 INTO DOR 2-------------
5508  042346  004737  011050                      JSR     PC,LOOP              ;WAIT A LITTLE
5509  042352  017737  137672  002402              MOV     @IIRX,RSAVE          ;GET IIR2 CONTENTS
5510  042360  022737  000020  002402              CMP     #20,RSAVE            ;BO BIT SHOULD BE SET
5511  042366  001413                              BEQ     22$                  ;BRANCH IF YES
5512  042370  012737  000020  002500              MOV     #20,GOOD             ;SET UP DATA FOR ERROR MESSAGE
5513  042376  013737  002402  002502              MOV     RSAVE,BAD            ;...
5514  042404                                      ERRSOFT 1314,E501,ERR501     ;ERROR HANDLER
                                          .MCALL  M$ERRINS
      042404                              M$ERRINS        1314,E501,ERR501,C$ERSOFT
                                          .MCALL  M$GNINS,M$WORD,M$TSTLAB
      042404                              M$SVC   C$ERSOFT
                                          .MCALL  M$GNINS,M$TSTLAB
      042404                              M$TSTLAB
                                          .MCALL  M$TLABEL,M$INCR
                                          .IIF LT T$TSTMAC, .MEXIT
                                          .RADIX  10
                                          M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                          .RADIX  8
                                          M$INCR  T$TSTSEQ
      042404                              M$GNINS <TRAP   C$ERSOFT>
                                          .IF LT SVCINS
                                          TRAP    C$ERSOFT
                                          .MEXIT
                                          .ENDC
                                          .IF EQ SVCINS
                                          .LIST
                                                  TRAP    C$ERSOFT
                                                          .NLIST
                                          .MEXIT
                                          .ENDC
                                          .IF GT SVCINS
                                          .LIST
      042404  104457                                                                   TRAP    C$ERSOFT
                                                          .NLIST
                                          .ENDC
              000012                      .RADIX  10
                                          .IF NB  1314
              002442                      T$ERRNUM=1314
                                          .IFF
                                          .ERROR  ;MISSING ERROR NR
```

```
                              .ENDC
042406                        M$WORD  \T$ERRNUM
                              .MCALL  M$GNINS
                              .IRP    N,<1314>
                              M$GNINS <.WORD  N>
                              .ENDM
042406                        M$GNINS <.WORD  1314>
                              .IF LT SVCINS
                              .WORD   1314
                              .MEXIT
                              .ENDC
                              .IF EQ SVCINS
                              .LIST
                                      .WORD   1314
                                              .NLIST
                              .MEXIT
                              .ENDC
                              .IF GT SVCINS
                              .LIST
042406  002442                                                          .WORD   1314
                                              .NLIST
                              .ENDC
        000010                .RADIX  8
                              .IF NB E501
042410                        M$WORD  E501
                              .MCALL  M$GNINS
                              .IRP    N,<E501>
                              M$GNINS <.WORD  N>
                              .ENDM
042410                        M$GNINS <.WORD  E501>
                              .IF LT SVCINS
                              .WORD   E501
                              .MEXIT
                              .ENDC
                              .IF EQ SVCINS
                              .LIST
                                      .WORD   E501
                                              .NLIST
                              .MEXIT
                              .ENDC
                              .IF GT SVCINS
                              .LIST
042410  005376                                                          .WORD   E501
                                              .NLIST
                              .ENDC
                              .IFF
                              M$WORD  0
                              .ENDC
                              .IF NB ERR501
042412                        M$WORD  ERR501
                              .MCALL  M$GNINS
                              .IRP    N,<ERR501>
                              M$GNINS <.WORD  N>
                              .ENDM
042412                        M$GNINS <.WORD  ERR501>
                              .IF LT SVCINS
                              .WORD   ERR501
```

```
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                              .WORD    ERR501
                                                       .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
      042412  003672                                                                          .WORD    ERR501
                                                       .NLIST
                                        .ENDC
                                        .IFF
                                        M$WORD  0
                                        .ENDC
 5515 042414                                  CKLOOP                        ;BRANCH TO BGNSEG IF ERRLOOP IS SET
                                        .MCALL  M$SVC
      042414                            M$SVC   C$CLP1
                                        .MCALL  M$GNINS,M$TSTLAB
      042414                            M$TSTLAB
                                        .MCALL  M$TLABEL,M$INCR
                                        .IIF LT T$TSTMAC, .MEXIT
                                        .RADIX  10
                                        M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                        .RADIX  8
                                        M$INCR  T$TSTSEQ
      042414                            M$GNINS <TRAP    C$CLP1>
                                        .IF LT SVCINS
                                        TRAP    C$CLP1
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                              TRAP     C$CLP1
                                                       .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
      042414  104406                                                                          TRAP     C$CLP1
                                                       .NLIST
                                        .ENDC
 5516 042416  112777  000004  137652    22$:  MOVB     #4,@IDRHX            ;-----LOAD SDC INTO DOR 2------ --- --
 5517 042424  004737  011050                  JSR      PC,LOOP              ;WAIT A LITTLE
 5518 042430  042777  000010  137642          BIC      #10,@CSRX            ;SELECT CHANNEL 1
 5519 042436  012737  000001  002374          MOV      #1,CHAN              ;LOAD CHANNEL NUMBER
 5520 042444  017737  137600  002402          MOV      @IIRX,RSAVE          ;GET IIR1 CONTENTS
 5521 042452  022737  006101  002402          CMP      #6101,RSAVE          ;DCAS,INT1,MA,MAC BIT SHOULD BE SET
 5522 042460  001413                          BEQ      23$                  ;BRANCH IF YES
 5523 042462  012737  006101  002500          MOV      #6101,GOOD           ;SET UP DATA FOR ERROR MESSAGES
 5524 042470  013737  002402  002502          MOV      RSAVE,BAD            ;...
 5525 042476                                  ERRSOFT  1315,E501,ERR501     ;ERROR HANDLER
                                        .MCALL  M$ERRINS
      042476                            M$ERRINS        1315,E501,ERR501,C$ERSOFT
                                        .MCALL  M$GNINS,M$WORD,M$TSTLAB
      042476                            M$SVC   C$ERSOFT
```

K10


```
                                        .MCALL  M$GNINS,M$TSTLAB
      042476                            M$TSTLAB
                                        .MCALL  M$TLABEL,M$INCR
                                        .IIF LT T$TSTMAC, .MEXIT
                                        .RADIX  10
                                        M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                        .RADIX  8
                                        M$INCR  T$TSTSEQ
      042476                            M$GNINS <TRAP   C$ERSOFT>
                                        .IF LT SVCINS
                                        TRAP    C$ERSOFT
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                TRAP    C$ERSOFT
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
      042476  104457                                                                    TRAP    C$ERSOFT
                                                        .NLIST
                                        .ENDC
              000012                    .RADIX  10
                                        .IF NB  1315
              002443                    T$ERRNUM=1315
                                        .IFF
                                        .ERROR  ;MISSING ERROR-NR
                                        .ENDC
      042500                            M$WORD  \T$ERRNUM
                                        .MCALL  M$GNINS
                                        .IRP    N,<1315>
                                        M$GNINS <.WORD  N>
                                        .ENDM
      042500                            M$GNINS <.WORD  1315>
                                        .IF LT SVCINS
                                        .WORD   1315
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                .WORD   1315
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
      042500  002443                                                                    .WORD   1315
                                                        .NLIST
                                        .ENDC
              000010                    .RADIX  8
                                        .IF NB E501
      042502                            M$WORD  E501
                                        .MCALL  M$GNINS
                                        .IRP    N,<E501>
                                        M$GNINS <.WORD  N>
```

L10

```
                                        .ENDM
      042502                            M$GNINS <.WORD  E501>
                                        .IF LT SVCINS
                                        .WORD   E501
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                .WORD   E501
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
      042502  005376                                                                    .WORD   E501
                                                        .NLIST
                                        .ENDC
                                        .IFF
                                        M$WORD  0
                                        .ENDC
                                        .IF NB ERR501
      042504                            M$WORD  ERR501
                                        .MCALL  M$GNINS
                                        .IRP    N,<ERR501>
                                        M$GNINS <.WORD  N>
                                        .ENDM
      042504                            M$GNINS <.WORD  ERR501>
                                        .IF LT SVCINS
                                        .WORD   ERR501
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                .WORD   ERR501
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
      042504  003672                                                                    .WORD   ERR501
                                                        .NLIST
                                        .ENDC
                                        .IFF
                                        M$WORD  0
                                        .ENDC
 5526 042506                                    CKLOOP                  ;BRANCH BACK TO BGNSEG IF ERRLOOP IS SET
                                        .MCALL  M$SVC
      042506                            M$SVC   C$CLP1
                                        .MCALL  M$GNINS,M$TSTLAB
      042506                            M$TSTLAB
                                        .MCALL  M$TLABEL,M$INCR
                                        .IIF LT T$TSTMAC, .MEXIT
                                        .RADIX  10
                                        M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                        .RADIX  8
                                        M$INCR  T$TSTSEQ
      042506                            M$GNINS <TRAP   C$CLP1>
```

M10

```
                                                .IF LT SVCINS
                                                TRAP    C$CLP1
                                                .MEXIT
                                                .ENDC
                                                .IF EQ SVCINS
                                                .LIST
                                                        TRAP    C$CLP1
                                                                .NLIST
                                                .MEXIT
                                                .ENDC
                                                .IF GT SVCINS
                                                .LIST
     042506  104406                                                                                     TRAP    C$CLP1
                                                                .NLIST
                                                .ENDC
5527 042510  017737  137542  002402             23$:    MOV     @ISRX,RSAVE             ;GET ISR1 CONTENTS
5528 042516  023737  002454  002402                     CMP     CDAT9,RSAVE             ;ATN,DAV,NDAC,NRFD,ATN,LADS IS SET
5529 042524  001413                                     BEQ     24$                     ;BRANCH IF YES
5530 042526  013737  002454  002500                     MOV     CDAT9,GOOD              ;SET UP DATA FOR ERROR MESSAGE
5531 042534  013737  002402  002502                     MOV     RSAVE,BAD               ;...
5532 042542                                             ERRSOFT 1316,E502,ERR501        ;ERROR HANDLER
                                                .MCALL  M$ERRINS
     042542                                     M$ERRINS        1316,E502,ERR501,C$ERSOFT
                                                .MCALL  M$GNINS,M$WORD,M$TSTLAB
     042542                                     M$SVC   C$ERSOFT
                                                .MCALL  M$GNINS,M$TSTLAB
     042542                                     M$TSTLAB
                                                .MCALL  M$TLABEL,M$INCR
                                                .IIF LT T$TSTMAC, .MEXIT
                                                .RADIX  10
                                                M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                                .RADIX  8
                                                M$INCR  T$TSTSEQ
     042542                                     M$GNINS <TRAP   C$ERSOFT>
                                                .IF LT SVCINS
                                                TRAP    C$ERSOFT
                                                .MEXIT
                                                .ENDC
                                                .IF EQ SVCINS
                                                .LIST
                                                        TRAP    C$ERSOFT
                                                                .NLIST
                                                .MEXIT
                                                .ENDC
                                                .IF GT SVCINS
                                                .LIST
     042542  104457                                                                                     TRAP    C$ERSOFT
                                                                .NLIST
                                                .ENDC
             000012                             .RADIX  10
                                                .IF NB  1316
             002444                             T$ERRNUM=1316
                                                .IFF
                                                .ERROR  ;MISSING ERROR-NR
                                                .ENDC
     042544                                     M$WORD  \T$ERRNUM
                                                .MCALL  M$GNINS
```

N10


```
                                        .IRP     N,<1316>
                                        M$GNINS <.WORD  N>
                                        .ENDM
      042544                            M$GNINS <.WORD  1316>
                                        .IF LT SVCINS
                                        .WORD   1316
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                .WORD   1316
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
      042544  002444                                                                                .WORD   1316
                                                        .NLIST
                                        .ENDC
              000010                    .RADIX  8
                                        .IF NB E502
      042546                            M$WORD  E502
                                        .MCALL  M$GNINS
                                        .IRP     N,<E502>
                                        M$GNINS <.WORD  N>
                                        .ENDM
      042546                            M$GNINS <.WORD  E502>
                                        .IF LT SVCINS
                                        .WORD   E502
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                .WORD   E502
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
      042546  005437                                                                                .WORD   E502
                                                        .NLIST
                                        .ENDC
                                        .IFF
                                        M$WORD  0
                                        .ENDC
                                        .IF NB ERR501
      042550                            M$WORD  ERR501
                                        .MCALL  M$GNINS
                                        .IRP     N,<ERR501>
                                        M$GNINS <.WORD  N>
                                        .ENDM
      042550                            M$GNINS <.WORD  ERR501>
                                        .IF LT SVCINS
                                        .WORD   ERR501
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
```

```
                                        .LIST
                                                .WORD   ERR501
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
      042550  003672                                                                    .WORD   ERR501
                                                        .NLIST
                                        .ENDC
                                        .IFF
                                        M$WORD  0
                                        .ENDC
 5533 042552                                    CKLOOP                          ;BRANCH BACK TO BGNSEG IF ERRLOOP IS SET
                                        .MCALL  M$SVC
      042552                            M$SVC   C$CLP1
                                        .MCALL  M$GNINS,M$TSTLAB
      042552                            M$TSTLAB
                                        .MCALL  M$TLABEL,M$INCR
                                        .IIF LT T$TSTMAC, .MEXIT
                                        .RADIX  10
                                        M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                        .RADIX  8
                                        M$INCR  T$TSTSEQ
      042552                            M$GNINS <TRAP   C$CLP1>
                                        .IF LT SVCINS
                                        TRAP    C$CLP1
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                TRAP    C$CLP1
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
      042552  104406                                                                    TRAP    C$CLP1
                                                        .NLIST
                                        .ENDC
 5534 042554  017737  137504  002402    24$:    MOV     @ICRX,RSAVE             ;GET ICR1 CONTENTS
 5535 042562  122737  000004  002402            CMPB    #4,RSAVE                ;CONTENTS SHOULD BE 4
 5536 042570  001413                            BEQ     25$                     ;BRANCH IF YES
 5537 042572  012737  000004  002500            MOV     #4,GOOD                 ;SET UP DATA FOR ERROR MESSAGES
 5538 042600  013737  002402  002502            MOV     RSAVE,BAD               ;...
 5539 042606                                    ERRSOFT 1317,E901,ERR501        ;ERROR HANDLER
                                        .MCALL  M$ERRINS
      042606                            M$ERRINS        1317,E901,ERR501,C$ERSOFT
                                        .MCALL  M$GNINS,M$WORD,M$TSTLAB
      042606                            M$SVC   C$ERSOFT
                                        .MCALL  M$GNINS,M$TSTLAB
      042606                            M$TSTLAB
                                        .MCALL  M$TLABEL,M$INCR
                                        .IIF LT T$TSTMAC, .MEXIT
                                        .RADIX  10
                                        M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                        .RADIX  8
```

C11


```
                                M$INCR  T$TSTSEQ
042606                          M$GNINS <TRAP   C$ERSOFT>
                                .IF LT SVCINS
                                TRAP    C$ERSOFT
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        TRAP    C$ERSOFT
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
042606  104457                                                          TRAP    C$ERSOFT
                                                .NLIST
                                .ENDC
        000012                  .RADIX  10
                                .IF NB  1317
        002445                  T$ERRNUM=1317
                                .IFF
                                .ERROR  ;MISSING ERROR-NR
                                .ENDC
042610                          M$WORD  \T$ERRNUM
                                .MCALL  M$GNINS
                                .IRP    N,<1317>
                                M$GNINS <.WORD  N>
                                .ENDM
042610                          M$GNINS <.WORD  1317>
                                .IF LT SVCINS
                                .WORD   1317
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        .WORD   1317
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
042610  002445                                                          .WORD   1317
                                                .NLIST
                                .ENDC
        000010                  .RADIX  8
                                .IF NB E901
042612                          M$WORD  E901
                                .MCALL  M$GNINS
                                .IRP    N,<E901>
                                M$GNINS <.WORD  N>
                                .ENDM
042612                          M$GNINS <.WORD  E901>
                                .IF LT SVCINS
                                .WORD   E901
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
```

D11


```
                                      .LIST
                                              .WORD   E901
                                                      .NLIST
                                      .MEXIT
                                      .ENDC
                                      .IF GT SVCINS
                                      .LIST
      042612  005634                                                                            .WORD   E901
                                                      .NLIST
                                      .ENDC
                                      .IFF
                                      M$WORD  0
                                      .ENDC
                                      .IF NB ERR501
      042614                          M$WORD  ERR501
                                      .MCALL  M$GNINS
                                      .IRP    N,<ERR501>
                                      M$GNINS <.WORD  N>
                                      .ENDM
      042614                          M$GNINS <.WORD  ERR501>
                                      .IF LT SVCINS
                                      .WORD   ERR501
                                      .MEXIT
                                      .ENDC
                                      .IF EQ SVCINS
                                      .LIST
                                              .WORD   ERR501
                                                      .NLIST
                                      .MEXIT
                                      .ENDC
                                      .IF GT SVCINS
                                      .LIST
      042614  003672                                                                            .WORD   ERR501
                                                      .NLIST
                                      .ENDC
                                      .IFF
                                      M$WORD  0
                                      .ENDC
 5540 042616                                  CKLOOP                    ;BRANCH BACK TO BGNSEG IF ERRLOOP IS SET
                                      .MCALL  M$SVC
      042616                          M$SVC   C$CLP1
                                      .MCALL  M$GNINS,M$TSTLAB
      042616                          M$TSTLAB
                                      .MCALL  M$TLABEL,M$INCR
                                      .IIF LT T$TSTMAC, .MEXIT
                                      .RADIX  10
                                      M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                      .RADIX  8
                                      M$INCR  T$TSTSEQ
      042616                          M$GNINS <TRAP   C$CLP1>
                                      .IF LT SVCINS
                                      TRAP    C$CLP1
                                      .MEXIT
                                      .ENDC
                                      .IF EQ SVCINS
                                      .LIST
                                              TRAP    C$CLP1
```

E11

```
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
      042616  104406                                                                                  TRAP    C$CLP1
                                                        .NLIST
                                        .ENDC
      042620  112777  000001  137442    25$:    MOVB    #1,@ICRHX                ;----LOAD NOT DACR INTO ACR1------------
      042626  052777  000010  137444            BIS     #10,@CSRX                ;SELECT CHANNEL 2
      042634  012737  000002  002374            MOV     #2,CHAN                  ;LOAD CHANNEL NUMBER
      042642  112777  000077  137426            MOVB    #77,@IDRHX               ;----LOAD UNL INTO DOR 2-----------------
      042650  004737  011050                    JSR     PC,LOOP                  ;WAIT A LITTLE
      042654  017737  137370  002502            MOV     @IIRX,BAD                ;GET IIR2 CONTENTS
      042662  022737  000020  002502            CMP     #20,BAD                  ;BO BIT SHOULD BE SET
      042670  001410                            BEQ     26$                      ;BRANCH IF YES
      042672  012737  000020  002500            MOV     #20,GOOD                 ;SET UP DATA FOR ERROR MESSAGE
      042700                                    ERRSOFT 1318,E501,EPR501         ;ERROR HANDLER
                                        .MCALL  M$ERRINS
      042700                            M$ERRINS        1318,E501,ERR501,C$ERSOFT
                                        .MCALL  M$GNINS,M$WORD,M$TSTLAB
      042700                            M$SVC   C$ERSOFT
                                        .MCALL  M$GNINS,M$TSTLAB
      042700                            M$TSTLAB
                                        .MCALL  M$TLABEL,M$INCR
                                        .IIF LT T$TSTMAC, .MEXIT
                                        .RADIX  10
                                        M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                        .RADIX  8
                                        M$INCR  T$TSTSEQ
      042700                            M$GNINS <TRAP   C$ERSOFT>
                                        .IF LT SVCINS
                                        TRAP    C$ERSOFT
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                TRAP    C$ERSOFT
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
      042700  104457                                                                                  TRAP    C$ERSOFT
                                                        .NLIST
                                        .ENDC
              000012                    .RADIX  10
                                        .IF NB  1318
              002446                    T$ERRNUM=1318
                                        .IFF
                                        .ERROR  ;MISSING ERROR NR
                                        .ENDC
      042702                            M$WORD  \T$ERRNUM
                                        .MCALL  M$GNINS
                                        .IRP    N,<1318>
                                        M$GNINS <.WORD  N>
                                        .ENDM
```

```
        042702                        M$GNINS <.WORD  1318>
                                      .IF LT SVCINS
                                      .WORD   1318
                                      .MEXIT
                                      .ENDC
                                      .IF EQ SVCINS
                                      .LIST
                                              .WORD   1318
                                                      .NLIST
                                      .MEXIT
                                      .ENDC
                                      .IF GT SVCINS
                                      .LIST
        042702  002446                                                                    .WORD   1318
                                                      .NLIST
                                      .ENDC
                000010                .RADIX  8
                                      .IF NB E501
        042704                        M$WORD  E501
                                      .MCALL  M$GNINS
                                      .IRP    N,<E501>
                                      M$GNINS <.WORD  N>
                                      .ENDM
        042704                        M$GNINS <.WORD  E501>
                                      .IF LT SVCINS
                                      .WORD   E501
                                      .MEXIT
                                      .ENDC
                                      .IF EQ SVCINS
                                      .LIST
                                              .WORD   E501
                                                      .NLIST
                                      .MEXIT
                                      .ENDC
                                      .IF GT SVCINS
                                      .LIST
        042704  005376                                                                    .WORD   E501
                                                      .NLIST
                                      .ENDC
                                      .IFF
                                      M$WORD  0
                                      .ENDC
                                      .IF NB ERR501
        042706                        M$WORD  ERR501
                                      .MCALL  M$GNINS
                                      .IRP    N,<ERR501>
                                      M$GNINS <.WORD  N>
                                      .ENDM
        042706                        M$GNINS <.WORD  ERR501>
                                      .IF LT SVCINS
                                      .WORD   ERR501
                                      .MEXIT
                                      .ENDC
                                      .IF EQ SVCINS
                                      .LIST
                                              .WORD   ERR501
                                                      .NLIST
```

```
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
      042706  003672                                                                                  .WORD   ERR501
                                                     .NLIST
                                        .ENDC
                                        .IFF
                                        M$WORD  0
                                        .ENDC
 5551 042710                                  CKLOOP                            ;BRANCH BACK TO BGNSEG IF ERRLOOP IS SET
                                        .MCALL  M$SVC
      042710                            M$SVC   C$CLP1
                                        .MCALL  M$GNINS,M$TSTLAB
      042710                            M$TSTLAB
                                        .MCALL  M$TLABEL,M$INCR
                                        .IIF LT T$TSTMAC, .MEXIT
                                        .RADIX  10
                                        M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                        .RADIX  8
                                        M$INCR  T$TSTSEQ
      042710                            M$GNINS <TRAP   C$CLP1>
                                        .IF LT SVCINS
                                        TRAP    C$CLP1
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                              TRAP      C$CLP1
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
      042710  104406                                                                                  TRAP    C$CLP1
                                                        .NLIST
                                        .ENDC
 5552 042712  042777  000010  137360    26$:  BIC       #10,@CSRX               ;SELECT CHANNEL 1
 5553 042720  012737  000001  002374          MOV       #1,CHAN                 ;LOAD CHANNEL NUMBER
 5554 042726  017737  137316  002502          MOV       @IIRX,BAD               ;GET IIR1 CONTENTS
 5555 042734  022737  000001  002502          CMP       #1,BAD                  ;MAC BIT SHOULD BE SET
 5556 042742  001410                          BEQ       27$                     ;BRANCH IF YES
 5557 042744  012737  000001  002500          MOV       #1,GOOD                 ;SET UP DATA FOR ERROR MESSAGE
 5558 042752                                  ERRSOFT 1319,E501,ERR501          ;ERROR HANDLER
                                        .MCALL  M$ERRINS
      042752                            M$ERRINS        1319,E501,ERR501,C$ERSOFT
                                        .MCALL  M$GNINS,M$WORD,M$TSTLAB
      042752                            M$SVC   C$ERSOFT
                                        .MCALL  M$GNINS,M$TSTLAB
      042752                            M$TSTLAB
                                        .MCALL  M$TLABEL,M$INCR
                                        .IIF LT T$TSTMAC, .MEXIT
                                        .RADIX  10
                                        M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                        .RADIX  8
                                        M$INCR  T$TSTSEQ
      042752                            M$GNINS <TRAP   C$ERSOFT>
```

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```
                        .IF LT SVCINS
                        TRAP    C$ERSOFT
                        .MEXIT
                        .ENDC
                        .IF EQ SVCINS
                        .LIST
                                TRAP    C$ERSOFT
                                        .NLIST
                        .MEXIT
                        .ENDC
                        .IF GT SVCINS
                        .LIST
042752  104457                                                          TRAP    C$ERSOFT
                                        .NLIST
                        .ENDC
        000012          .RADIX  10
                        .IF NB  1319
        002447          T$ERRNUM=1319
                        .IFF
                        .ERROR  ;MISSING ERROR-NR
                        .ENDC
042754                  M$WORD  \T$ERRNUM
                        .MCALL  M$GNINS
                        .IRP    N,<1319>
                        M$GNINS <.WORD  N>
                        .ENDM
042754                  M$GNINS <.WORD  1319>
                        .IF LT SVCINS
                        .WORD   1319
                        .MEXIT
                        .ENDC
                        .IF EQ SVCINS
                        .LIST
                                .WORD   1319
                                        .NLIST
                        .MEXIT
                        .ENDC
                        .IF GT SVCINS
                        .LIST
042754  002447                                                          .WORD   1319
                                        .NLIST
                        .ENDC
        000010          .RADIX  8
                        .IF NB E501
042756                  M$WORD  E501
                        .MCALL  M$GNINS
                        .IRP    N,<E501>
                        M$GNINS <.WORD  N>
                        .ENDM
042756                  M$GNINS <.WORD  E501>
                        .IF LT SVCINS
                        .WORD   E501
                        .MEXIT
                        .ENDC
                        .IF EQ SVCINS
                        .LIST
                                .WORD   E501
```

```
                                                    .NLIST
                               .MEXIT
                               .ENDC
                               .IF GT SVCINS
                               .LIST
     042756  005376                                                                     .WORD   E501
                                                    .NLIST
                               .ENDC
                               .IFF
                               M$WORD  0
                               .ENDC
                               .IF NB ERR501
     042760                    M$WORD  ERR501
                               .MCALL  M$GNINS
                               .IRP    N,<ERR501>
                               M$GNINS <.WORD  N>
                               .ENDM
     042760                    M$GNINS <.WORD  ERR501>
                               .IF LT SVCINS
                               .WORD   ERR501
                               .MEXIT
                               .ENDC
                               .IF EQ SVCINS
                               .LIST
                                       .WORD   ERR501
                                                    .NLIST
                               .MEXIT
                               .ENDC
                               .IF GT SVCINS
                               .LIST
     042760  003672                                                                     .WORD   ERR501
                                                    .NLIST
                               .ENDC
                               .IFF
                               M$WORD  0
                               .ENDC
5559 042762                            CKLOOP                         ;BRANCH BACK TO BGNSEG IF ERRLOOP IS SET
                               .MCALL  M$SVC
     042762                    M$SVC   C$CLP1
                               .MCALL  M$GNINS,M$TSTLAB
     042762                    M$TSTLAB
                               .MCALL  M$TLABEL,M$INCR
                               .IIF LT T$TSTMAC, .MEXIT
                               .RADIX  10
                               M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                               .RADIX  8
                               M$INCR  T$TSTSEQ
     042762                    M$GNINS <TRAP   C$CLP1>
                               .IF LT SVCINS
                               TRAP    C$CLP1
                               .MEXIT
                               .ENDC
                               .IF EQ SVCINS
                               .LIST
                                       TRAP    C$CLP1
                                                    .NLIST
                               .MEXIT
```

```
                                  .ENDC
                                  .IF GT SVCINS
                                  .LIST
      042762  104406                                                          TRAP    C$CLP1
                                            .NLIST
                                  .ENDC
 5560 042764                      27$:     ENDSEG
                                  .MCALL  M$POP,M$GNLS,M$SVC,M$ENDERR
      042764                      M$POP   T$NS,T$NESTLEV,T$TEMP
                                  .MCALL  M$GETS,M$DECR
                                  .IF LT  T$NESTLEV
                                  .ERROR  T$NESTLEV       ; MACRO T$NS UNDERFLOW
                                  .MEXIT
                                  .ENDC
      042764                      M$GETS  T$NS,\T$NESTLEV,T$TEMP
              000003              T$TEMP=T$NS2
      042764                      M$DECR  T$NESTLEV
              000001              T$NESTLEV=T$NESTLEV-1
                                  .IF EQ F$SEG-T$TEMP
      042764                      M$POP   T$SEK,T$SEGLEV,T$$SEG
                                  .MCALL  M$GETS,M$DECR
                                  .IF LT  T$SEGLEV
                                  .ERROR  T$SEGLEV        ; MACRO T$SEK UNDERFLOW
                                  .MEXIT
                                  .ENDC
      042764                      M$GETS  T$SEK,\T$SEGLEV,T$$SEG
              010001              T$$SEG=T$SEKO
      042764                      M$DECR  T$SEGLEV
              177777              T$SEGLEV=T$SEGLEV-1
      042764                      M$GNLS  T$$SEG
                                  .MCALL  M$GEN
                                  .IF NB T$$SEG
      042764                      M$GEN   \T$$SEG,$,SVCTAG
                                  .IF LE  SVCTAG
                                  .IIF EQ SVCTAG,.LIST
                                  10001$:
                                  .IIF EQ SVCTAG,.NLIST
                                  .MEXIT
                                  .ENDC
                                  .LIST
      042764                                                          10001$:
                                          .NLIST
                                  .IFF
                                  M$GEN   \S$LSYM,$,SVCTAG
                                  .ENDC
      042764                      M$SVC   C$ESEG
                                  .MCALL  M$GNINS,M$TSTLAB
      042764                      M$TSTLAB
                                  .MCALL  M$TLABEL,M$INCR
                                  .IIF LT T$TSTMAC, .MEXIT
                                  .RADIX  10
                                  M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                  .RADIX  8
                                  M$INCR  T$TSTSEQ
      042764                      M$GNINS <TRAP   C$ESEG>
                                  .IF LT SVCINS
                                  TRAP    C$ESEG
```

```
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                              TRAP    C$ESEG
                                                      .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
      042764  104405                                                                   TRAP    C$ESEG
                                                      .NLIST
                                        .ENDC
                                        .IF EQ T$SEGLEV+1
              000041                    I$SEG=F$END
                                        .ENDC
                                        .IFF
                                        M$ENDERR      ENDSEG,T$TEMP
                                        .ENDC
5561  042766  052777  000010  137304          BIS     #10,@CSRX               ;SELECT CHANNEL 1
5562  042774  112777  000200  137266          MOVB    #200,@ICRHX             ;LOAD SWRST INTO ACR2
5563  043002  112777  000000  137260          MOVB    #0,@ICRHX               ;LOAD NOT SWRST INTO ACR2
5564  043010  005737  002234                  TST     QVP                     ;IS QUICK VERIFY PASS SELECTED
5565  043014  001010                          BNE     EXQV13                  ;IF YES EXIT TEST
5566  043016  005237  002322                  INC     ITRCNT                  ;ITERATION COUNTER + 1
5567  043022  023737  002322  002320          CMP     ITRCNT,ITRDEF           ;DEFAULT ITERATION EXECUTED
5568  043030  001402                          BEQ     EXQV13                  ;IF YES EXIT TEST
5569  043032  000137  041004                  JMP     ITAC13                  ;IF NO TEST ITERATION
5570  043036                            EXQV13: EXIT    TST                   ;
                                        .MCALL  M$SVC,M$EXIT,M$EXSEG,M$EXTJ,M$GETTOP,M$CHECK,M$WORD,XFER
              000041                    T$FLAG=F$END
      043036                            M$CHECK TST,T$TEMP,T$FLAG
                                        .IF IDN <TST>,<TST>
              010042                    T$TEMP=T$$TEST
              000040                    T$FLAG=I$TST
                                        .MEXIT
                                        .ENDC
                                        .IF IDN <SUB>,<TST>
                                        T$TEMP=T$$SUB
                                        T$FLAG=I$SUB
                                        .MEXIT
                                        .ENDC
                                        .IF IDN <SEG>,<TST>
                                        T$TEMP=T$$SEG
                                        T$FLAG=I$SEG
                                        .MEXIT
                                        .ENDC
                                        .IF IDN <INIT>,<TST>
                                        T$TEMP=T$$INIT
                                        T$FLAG=I$INIT
                                        .MEXIT
                                        .ENDC
                                        .IF IDN <CLN>,<TST>
                                        T$TEMP=T$$CLEAN
                                        T$FLAG=I$CLN
                                        .MEXIT
                                        .ENDC
```

```
                        .IF IDN <SRV>,<TST>
                        T$TEMP=T$$SRV
                        T$FLAG=I$SRV
                        .MEXIT
                        .ENDC
                        .IF IDN <MSG>,<TST>
                        T$TEMP=T$$MSG
                        T$FLAG=F$JMP
                        .MEXIT
                        .ENDC
                        .IF IDN <RPT>,<TST>
                        T$TEMP=T$$RPT
                        T$FLAG=F$JMP
                        .MEXIT
                        .ENDC
                        .IF IDN <DU>,<TST>
                        T$TEMP=T$$DU
                        T$FLAG=F$JMP
                        .MEXIT
                        .ENDC
                        .IF IDN <AU>,<TST>
                        T$TEMP=T$$AU
                        T$FLAG=F$JMP
                        .MEXIT
                        .ENDC
                        .IF EQ T$FLAG-F$JMP
                        M$WORD  J$JMP
                        M$EXTJ  \T$TEMP
                        .MEXIT
                        .ENDC
                        .IF EQ  T$FLAG-F$BGN
043036                  M$SVC   C$EXIT
                        .MCALL  M$GNINS,M$TSTLAB
043036                  M$TSTLAB
                        .MCALL  M$TLABEL,M$INCR
                        .IIF LT T$TSTMAC, .MEXIT
                        .RADIX  10
                        M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                        .RADIX  8
                        M$INCR  T$TSTSEQ
043036                  M$GNINS <TRAP   C$EXIT>
                        .IF LT SVCINS
                        TRAP    C$EXIT
                        .MEXIT
                        .ENDC
                        .IF EQ SVCINS
                        .LIST
                                TRAP    C$EXIT
                                        .NLIST
                        .MEXIT
                        .ENDC
                        .IF GT SVCINS
                        .LIST
043036  104432                                                  TRAP    C$EXIT
                                        .NLIST
                        .ENDC
                        .IF IDN <SEG>,<TST>
```

```
                                        M$GETTOP T$SEK,T$SEGLEV,T$TEMP
                                        M$EXSEG \T$TEMP
                                        .IFF
     043040                             M$EXIT  \T$TEMP
                                        .MCALL  M$GNINS
     043040                             M$GNINS <.WORD  L10042-.>
                                        .IF LT SVCINS
                                        .WORD   L10042-.
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                .WORD   L10042-.
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
     043040  000056                                                                          .WORD   L10042-.
                                                        .NLIST
                                        .ENDC
                                        .ENDC
                                        .MEXIT
                                        .ENDC
                                        .IF IDN <HRD>,<TST>
                                        M$GETTOP        T$NS,T$NESTLEV,T$TEMP
                                        .IF EQ  F$HARD-T$TEMP
                                        .IRP    N,<\T$$HARD>
                                        XFER    L'N
                                        .ENDM
                                        .MEXIT
                                        .ENDC
                                        .ENDC
                                        .IF IDN <SFT>,<TST>
                                        M$GETTOP        T$NS,T$NESTLEV,T$TEMP
                                        .IF EQ  F$SOFT-T$TEMP
                                        .IRP    N,<\T$$SOFT>
                                        XFER    L'N
                                        .ENDM
                                        .MEXIT
                                        .ENDC
                                        .ENDC
                                        .ERROR  ;ILL. "EXIT TST" STMT.

                                                .NLIST  BEX
     043042     045     123     062     TSHD13: .ASCIZ  /%S2%ADEVICE CLEAR INTERFACE FUNCTION TEST%N/
                                                .LIST   BEX
                                                .EVEN
     043116                                     ENDTST
                                        .MCALL  M$POP,M$GNTAG,M$SVC,M$ENDERR
                                        .IF EQ  F$BGN-I$TST
             000041                     I$TST=F$END
                                        .IFF
                                        .ERROR  ;MISSING "BGNTST"
                                        .MEXIT
                                        .ENDC
     043116                             M$POP   T$NS,T$NESTLEV,T$TEMP
```

```
                                .MCALL  M$GETS,M$DECR
                                .IF LT  T$NESTLEV
                                .ERROR  T$NESTLEV       ; MACRO T$NS UNDERFLOW
                                .MEXIT
                                .ENDC
     043116                     M$GETS  T$NS,\T$NESTLEV,T$TEMP
            000001              T$TEMP=T$NS1
     043116                     M$DECR  T$NESTLEV
            000000              T$NESTLEV=T$NESTLEV-1
                                .IF EQ F$TEST-T$TEMP
     043116                     M$GNTAG L,T$$TEST
                                .MCALL  M$GEN
     043116                     M$GEN   L,\T$$TEST,SVCTAG
                                .IF LE  SVCTAG
                                .IIF EQ SVCTAG,.LIST
                                L10042:
                                .IIF EQ SVCTAG,.NLIST
                                .MEXIT
                                .ENDC
                                .LIST
     043116                                                                L10042:
                                          .NLIST
            010000              S$LSYM=T$LSYM
     043116                     M$SVC   C$ETST
                                .MCALL  M$GNINS,M$TSTLAB
     043116                     M$TSTLAB
                                .MCALL  M$TLABEL,M$INCR
                                .IIF LT T$TSTMAC, .MEXIT
                                .RADIX  10
                                M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                .RADIX  8
                                M$INCR  T$TSTSEQ
     043116                     M$GNINS <TRAP   C$ETST>
                                .IF LT SVCINS
                                TRAP    C$ETST
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        TRAP    C$ETST
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
     043116 104401                                                             TRAP    C$ETST
                                                .NLIST
                                .ENDC
            000041              I$TST=F$END
                                .IFF
                                M$ENDERR        ENDTST,T$TEMP
                                .ENDC
```

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```
                              .SBTTL  TEST 14: DEVICE TRIGGER INTERFACE FUNCTION TEST
                              ;*************************************************************************
                              ;                 IEX - TEST 14
                              ;PART 1 CHECKS THE TRIGGER INTERFACE FUNCTION OF CHANNEL 2 BY MEANS OF
                              ;       RECEIVING THE ADDRESS COMMAND GET AS WELL AS THE AUXILIARY COMMAND
                              ;       NOT FGET.
                              ;PART 2 CHECKS THE TRIGGER INTERFACE FUNCTION OF CHANNEL 1 BY MEANS OF
                              ;       RECEIVING THE ADDRESS COMMAND GET AS WELL AS THE AUXILIARY COMMAND
                              ;       NOT FGET.
                              ;*************************************************************************
043120                                BGNTST
                              .MCALL  M$INCR,M$GNTEST,M$PUSH,M$INCR
                              .IF NE  F$END-I$SUB
                              .ERROR  ;'BGNTST" IN SUB
                              .MEXIT
                              .ENDC
                              .IF NE  F$END-I$SEG
                              .ERROR  ;"BGNTST" IN SEG
                              .MEXIT
                              .ENDC
                              .IF NE  F$END-I$TST
                              .ERROR  ;"BGNTST" IN TST
                              .MEXIT
                              .IFF
         000040               I$TST=F$BGN
                              .ENDC
                              .IF B
043120                        M$INCR  T$TESTNUM
         000016               T$TESTNUM=T$TESTNUM+1
                              .IFF
                              T$TESTNUM=
                              .ENDC
         000000               T$SUBNUM=0
         000012               .RADIX  10
043120                        M$GNTEST        \T$TESTNUM
                              .MCALL  M$GEN
043120                        M$GEN   T,14:,SVCTST
                              .IF LE  SVCTST
                              .IIF EQ SVCTST,.LIST
                              T14::
                              .IIF EQ SVCTST,.NLIST
                              .MEXIT
                              .ENDC
                              .LIST
043120                                                                       T14::
                                      .NLIST
         000010               .RADIX  8
043120                        M$PUSH  T$NS,T$NESTLEV,F$TEST
                              .MCALL  M$INCR,M$SETS
043120                        M$INCR  T$NESTLEV
         000001               T$NESTLEV=T$NESTLEV+1
043120                        M$SETS  T$NS,\T$NESTLEV,F$TEST
         000001               T$NS1=F$TEST
         010043               T$$TEST=T$TAGNUM
043120                        M$INCR T$TAGNUM
         010044               T$TAGNUM=T$TAGNUM+1
         000001               T$TSTSEQ=1
```

```
 5589 043120  005737  002324          TST     PNTF              ;IS THE PNT FLAG SET
 5590 043124  001410                  BEQ     7$                ;IF YES, PRINT THE TEST HEADER
 5591 043126                          PRINTF  #TSHD14           ;...
                                .MCALL  M$PRINT
                                .IF B   #TSHD14
                                .ERROR  ;MISSING FORMAT
                                .MEXIT
                                .ENDC
                                .IF B   <>
      043126                    M$PRINT C$PNTF,#TSHD14
                                .MCALL  M$COUNT,M$PUT,M$GNINS,M$SVC
              000001            T$ARGCNT=1
      043126                    M$COUNT T$ARGCNT,<>,<>,<>,<>,<>,<>,<>,<>
                                .IF NB <>
                                M$COUNT T$ARGCNT,<>,<>,<>,<>,<>,<>,<>,<>
                                .ENDC
                                .IF NB <>
                                T$ARGCNT=T$ARGCNT+1
                                .ENDC
                                .IRP    N,<\T$ARGCNT>
                                M$PUT   #N,#TSHD14,<>,<>,<>,<>,<>,<>,<>,<>
                                .ENDM
      043126                    M$PUT   #1,#TSHD14,<>,<>,<>,<>,<>,<>,<>,<>
                                .MCALL  M$PUT1
                                .IF NB  <#TSHD14>
      043126                    M$PUT   <#TSHD14>,<>,<>,<>,<>,<>,<>,<>,<>
                                .MCALL  M$PUT1
                                .IF NB  <>
                                M$PUT   <>,<>,<>,<>,<>,<>,<>,<>,<>
                                .ENDC
                                .IF NB  <#TSHD14>
      043126                    M$PUT1  #TSHD14
                                .MCALL  M$GNINS
                                .IF B
      043126                    M$GNINS <MOV    #TSHD14,-(SP)>
                                .IF LT SVCINS
                                MOV     #TSHD14,-(SP)
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        MOV     #TSHD14,-(SP)
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
      043126  012746  043744                                            MOV     #TSHD14,-(SP)
                                                .NLIST
                                .ENDC
                                .IFF
                                .IF DIF B,<#TSHD14>
                                .ERROR  ;ILL. ARG. "#TSHD14" ONLY "B" IS ALLOWED.
                                .MEXIT
                                .ENDC
                                M$GNINS <CLR    -(SP)>
                                M$GNINS <BISB   ,(SP)>
```

```
                                .ENDC
                                .ENDC
                                .ENDC
                                .IF NB  <Ø1>
     043132                     M$PUT1  Ø1
                                .MCALL  M$GNINS
                                .IF B
     043132                     M$GNINS <MOV    Ø1,-(SP)>
                                .IF LT SVCINS
                                MOV     Ø1,-(SP)
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        MOV     Ø1,-(SP)
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
     043132  012746  000001                                             MOV     Ø1,-(SP)
                                                .NLIST
                                .ENDC
                                .IFF
                                .IF DIF B,<Ø1>
                                .ERROR  ;ILL. ARG. "Ø1" ONLY "B" IS ALLOWED.
                                .MEXIT
                                .ENDC
                                M$GNINS <CLR    -(SP)>
                                M$GNINS <BISB   ,(SP)>
                                .ENDC
                                .ENDC
     043136                     M$GNINS <MOV    SP,R0>
                                .IF LT SVCINS
                                MOV     SP,R0
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        MOV     SP,R0
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
     043136  010600                                                     MOV     SP,R0
                                                .NLIST
                                .ENDC
     043140                     M$SVC   C$PNTF
                                .MCALL  M$GNINS,M$TSTLAB
     043140                     M$TSTLAB
                                .MCALL  M$TLABEL,M$INCR
                                .IIF LT T$TSTMAC, .MEXIT
                                .RADIX  10
                                M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                .RADIX  8
                                M$INCR  T$TSTSEQ
```

```
        043140                          M$GNINS <TRAP   C$PNTF>
                                        .IF LT SVCINS
                                        TRAP    C$PNTF
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                TRAP    C$PNTF
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
        043140  104417                                                          TRAP    C$PNTF
                                                        .NLIST
                                        .ENDC
                                        .IRP    N,<\T$ARGCNT*2+2>
                                        M$GNINS <ADD    #N,SP>
                                        .ENDM
        043142                          M$GNINS <ADD    #4,SP>
                                        .IF LT SVCINS
                                        ADD     #4,SP
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                ADD     #4,SP
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
        043142  062706  000004                                                  ADD     #4,SP
                                                        .NLIST
                                        .ENDC
                                        .MEXIT
                                        .ENDC
                                        .IF B   <>
                                        M$PRINT C$PNTF,#TSHD14,<>
                                        .MEXIT
                                        .ENDC
                                        .IF B   <>
                                        M$PRINT C$PNTF,#TSHD14,<>,<>
                                        .MEXIT
                                        .ENDC
                                        .IF B   <>
                                        M$PRINT C$PNTF,#TSHD14,<>,<>,<>
                                        .MEXIT
                                        .ENDC
                                        .IF B   <>
                                        M$PRINT C$PNTF,#TSHD14,<>,<>,<>,<>
                                        .MEXIT
                                        .ENDC
                                        .IF B   <>
                                        M$PRINT C$PNTF,#TSHD14,<>,<>,<>,<>,<>
                                        .MEXIT
                                        .ENDC
```

```
                                        .IF B    <>
                                        M$PRINT C$PNTF,#TSHD14,<>,<>,<>,<>,<>,<>
                                        .MEXIT
                                        .ENDC
                                        .IF B    <>
                                        M$PRINT C$PNTF,#TSHD14,<>,<>,<>,<>,<>,<>,<>
                                        .MEXIT
                                        .ENDC
                                        M$PRINT C$PNTF,#TSHD14,<>,<>,<>,<>,<>,<>,<>,<>
 5592 043146  005037  002322            7$:     CLR     ITRCNT                  ;CLEAR ITERATION COUNTER
 5593 043152  004737  010524            ITAC14: JSR     PC,BGIN1                ;SET UP PARAMETER
 5594 043156                                    BGNSEG
                                        .MCALL  M$PUSH,M$INCR,M$SVC
              000040                    I$SEG=F$BGN
      043156                            M$PUSH  T$NS,T$NESTLEV,F$SEG
                                        .MCALL  M$INCR,M$SETS
      043156                            M$INCR  T$NESTLEV
              000002                    T$NESTLEV=T$NESTLEV+1
      043156                            M$SETS  T$NS,\T$NESTLEV,F$SEG
              000003                    T$NS2=F$SEG
              010000                    T$$SEG=S$LSYM
      043156                            M$PUSH  T$SEK,T$SEGLEV,T$$SEG
                                        .MCALL  M$INCR,M$SETS
      043156                            M$INCR  T$SEGLEV
              000000                    T$SEGLEV=T$SEGLEV+1
      043156                            M$SETS  T$SEK,\T$SEGLEV,T$$SEG
              010000                    T$SEK0=T$$SEG
      043156                            M$INCR  S$LSYM
              010001                    S$LSYM=S$LSYM+1
      043156                            M$SVC   C$BSEG
                                        .MCALL  M$GNINS,M$TSTLAB
      043156                            M$TSTLAB
                                        .MCALL  M$TLABEL,M$INCR
                                        .IIF LT T$TSTMAC, .MEXIT
                                        .RADIX  10
                                        M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                        .RADIX  8
                                        M$INCR  T$TSTSEQ
      043156                            M$GNINS <TRAP   C$BSEG>
                                        .IF LT SVCINS
                                        TRAP    C$BSEG
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                TRAP    C$BSEG
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
      043156  104404                                                                    TRAP    C$BSEG
                                                        .NLIST
                                        .ENDC
 5595 043160  052777  000010  137112            BIS     #10,@CSRX               ;SELECT CHANNEL 2
 5596 043166  112777  000223  137074            MOVB    #223,@ICRHX             ;----LOAD DAI INTO ACR 2-- ----  -  -
 5597 043174  112777  000200  137060            MOVB    #200,@ISRHX             ;----LOAD GET BIT INTO ISR2 ----  - --
```

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```
043202  042777  000010  137070          BIC     #10,@CSRX               ;SELECT CHANNEL 1
043210  013701  002314                  MOV     DPA2,R1                 ;CREATE MLA2
043214  062701  000040                  ADD     #40,R1                  ;...
043220  010137  002412                  MOV     R1,MLA2                 ;STORE MLA2
043224  113777  002412  137044          MOVB    MLA2,@IDRHX             ;-----LOAD MLA2 INTO DOR 1-      ----
043232  004737  011050                  JSR     PC,LOOP                 ;WAIT A LITTLE
043236  112777  000010  137032          MOVB    #10,@IDRHX              ;-----LOAD GET INTO DOR 1----------- -
043244  004737  011050                  JSR     PC,LOOP                 ;WAIT A LITTLE
043250  052777  000010  137022          BIS     #10,@CSRX               ;SELECT CHANNEL 2
043256  012737  000002  002374          MOV     #2,CHAN                 ;LOAD CHANNEL NUMBER
043264  017737  136760  002402          MOV     @IIRX,RSAVE             ;GET IIR 2 CONTENTS
043272  022737  102501  002402          CMP     #102501,RSAVE           ;GET,MA,INT1,IFC,MAC BIT SHOULD BE SET
043300  001413                          BEQ     10$                     ;BRANCH IF YES
043302  012737  102501  002500          MOV     #102501,GOOD            ;SET UP DATA FOR ERROR MESSAGE
043310  013737  002402  002502          MOV     RSAVE,BAD               ;...
043316                                  ERRSOFT 1401,E501,ERR501        ;ERROR HANDLER
                                .MCALL  M$ERRINS
        043316                  M$ERRINS        1401,E501,ERR501,C$ERSOFT
                                .MCALL  M$GNINS,M$WORD,M$TSTLAB
        043316                  M$SVC   C$ERSOFT
                                .MCALL  M$GNINS,M$TSTLAB
        043316                  M$TSTLAB
                                .MCALL  M$TLABEL,M$INCR
                                .IIF LT T$TSTMAC, .MEXIT
                                .RADIX  10
                                M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                .RADIX  8
                                M$INCR  T$TSTSEQ
        043316                  M$GNINS <TRAP   C$ERSOFT>
                                .IF LT SVCINS
                                TRAP    C$ERSOFT
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        TRAP    C$ERSOFT
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
        043316  104457                                                          TRAP    C$ERSOFT
                                                .NLIST
                                .ENDC
                000012          .RADIX  10
                                .IF NB  1401
                002571          T$ERRNUM=1401
                                .IFF
                                .ERROR  ;MISSING ERROR-NR
                                .ENDC
        043320                  M$WORD  \T$ERRNUM
                                .MCALL  M$GNINS
                                .IRP    N,<1401>
                                M$GNIN_ <.WORD  N>
                                .ENDM
        043320                  M$GNINS <.WORD  1401>
                                .IF LT SVCINS
```

```
                                .WORD   1401
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        .WORD   1401
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
      043320  002571                                                                      .WORD   1401
                                                .NLIST
                                .ENDC
              000010            .RADIX  8
                                .IF NB E501
      043322                    M$WORD  E501
                                .MCALL  M$GNINS
                                .IRP    N,<E501>
                                M$GNINS <.WORD  N>
                                .ENDM
      043322                    M$GNINS <.WORD  E501>
                                .IF LT SVCINS
                                .WORD   E501
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        .WORD   E501
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
      043322  005376                                                                      .WORD   E501
                                                .NLIST
                                .ENDC
                                .IFF
                                M$WORD  0
                                .ENDC
                                .IF NB ERR501
      043324                    M$WORD  ERR501
                                .MCALL  M$GNINS
                                .IRP    N,<ERR501>
                                M$GNINS <.WORD  N>
                                .ENDM
      043324                    M$GNINS <.WORD  ERR501>
                                .IF LT SVCINS
                                .WORD   ERR501
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        .WORD   ERR501
                                                .NLIST
                                .MEXIT
                                .ENDC
```

```
                                          .IF GT SVCINS
                                          .LIST
     043324  003672                                                                                      .WORD   ERR501
                                                       .NLIST
                                          .ENDC
                                          .IFF
                                          M$WORD  0
                                          .ENDC
5614 043326                                     CKLOOP                         ;BRANCH BACK TO BGNSEG IF ERRLOOP IS SET
                                          .MCALL  M$SVC
     043326                               M$SVC   C$CLP1
                                          .MCALL  M$GNINS,M$TSTLAB
     043326                               M$TSTLAB
                                          .MCALL  M$TLABEL,M$INCR
                                          .IIF LT T$TSTMAC, .MEXIT
                                          .RADIX  10
                                          M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                          .RADIX  8
                                          M$INCR  T$TSTSEQ
     043326                               M$GNINS <TRAP   C$CLP1>
                                          .IF LT SVCINS
                                          TRAP    C$CLP1
                                          .MEXIT
                                          .ENDC
                                          .IF EQ SVCINS
                                          .LIST
                                                  TRAP    C$CLP1
                                                          .NLIST
                                          .MEXIT
                                          .ENDC
                                          .IF GT SVCINS
                                          .LIST
     043326  104406                                                                                      TRAP    C$CLP1
                                                          .NLIST
                                          .ENDC
5615 043330  017737  136730  002402      10$:    MOV     @ICRX,RSAVE         ;GET ICR2 CONTENTS
5616 043336  122737  000010  002402              CMPB    #10,RSAVE           ;ICR2 CONTENTS SHOULD BE 10
5617 043344  001413                              BEQ     20$                 ;BRANCH IF YES
5618 043346  012737  000010  002500              MOV     #10,GOOD            ;SET UP DATA FOR ERROR MESSAGE
5619 043354  013737  002402  002502              MOV     RSAVE,BAD           ;...
5620 043362                                      ERRSOFT 1402,E901,ERR501    ;ERROR HANDLER
                                          .MCALL  M$ERRINS
     043362                               M$ERRINS        1402,E901,ERR501,C$ERSOFT
                                          .MCALL  M$GNINS,M$WORD,M$TSTLAB
     043362                               M$SVC   C$ERSOFT
                                          .MCALL  M$GNINS,M$TSTLAB
     043362                               M$TSTLAB
                                          .MCALL  M$TLABEL,M$INCR
                                          .IIF LT T$TSTMAC, .MEXIT
                                          .RADIX  10
                                          M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                          .RADIX  8
                                          M$INCR  T$TSTSEQ
     043362                               M$GNINS <TRAP   C$ERSOFT>
                                          .IF LT SVCINS
                                          TRAP    C$ERSOFT
                                          .MEXIT
```

```
                        .ENDC
                        .IF EQ SVCINS
                        .LIST
                                TRAP    C$ERSOFT
                                        .NLIST
                        .MEXIT
                        .ENDC
                        .IF GT SVCINS
                        .LIST
043362  104457                                                          TRAP    C$ERSOFT
                                        .NLIST
                        .ENDC
        000012          .RADIX  10
                        .IF NB  1402
        002572          T$ERRNUM=1402
                        .IFF
                        .ERROR  ;MISSING ERROR-NR
                        .ENDC
043364                  M$WORD  \T$ERRNUM
                        .MCALL  M$GNINS
                        .IRP    N,<1402>
                        M$GNINS <.WORD  N>
                        .ENDM
043364                  M$GNINS <.WORD  1402>
                        .IF LT SVCINS
                        .WORD   1402
                        .MEXIT
                        .ENDC
                        .IF EQ SVCINS
                        .LIST
                                .WORD   1402
                                        .NLIST
                        .MEXIT
                        .ENDC
                        .IF GT SVCINS
                        .LIST
043364  002572                                                          .WORD   1402
                                        .NLIST
                        .ENDC
        000010          .RADIX  8
                        .IF NB E901
043366                  M$WORD  E901
                        .MCALL  M$GNINS
                        .IRP    N,<E901>
                        M$GNINS <.WORD  N>
                        .ENDM
043366                  M$GNINS <.WORD  E901>
                        .IF LT SVCINS
                        .WORD   E901
                        .MEXIT
                        .ENDC
                        .IF EQ SVCINS
                        .LIST
                                .WORD   E901
                                        .NLIST
                        .MEXIT
                        .ENDC
```

```
                                        .IF GT SVCINS
                                        .LIST
      043366  005634                                                          .WORD   E901
                                                      .NLIST
                                        .ENDC
                                        .IFF
                                        M$WORD  0
                                        .ENDC
                                        .IF NB ERR501
      043370                            M$WORD  ERR501
                                        .MCALL  M$GNINS
                                        .IRP    N,<ERR501>
                                        M$GNINS <.WORD  N>
                                        .ENDM
      043370                            M$GNINS <.WORD  ERR501>
                                        .IF LT SVCINS
                                        .WORD   ERR501
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                .WORD   ERR501
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
      043370  003672                                                          .WORD   ERR501
                                                      .NLIST
                                        .ENDC
                                        .IFF
                                        M$WORD  0
                                        .ENDC
 5621 043372                                    CKLOOP                  ;BRANCH BACK TO BGNSEG IF ERRLOOP IS SET
                                        .MCALL  M$SVC
      043372                            M$SVC   C$CLP1
                                        .MCALL  M$GNINS,M$TSTLAB
      043372                            M$TSTLAB
                                        .MCALL  M$TLABEL,M$INCR
                                        .IIF LT T$TSTMAC, .MEXIT
                                        .RADIX  10
                                        M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                        .RADIX  8
                                        M$INCR  T$TSTSEQ
      043372                            M$GNINS <TRAP   C$CLP1>
                                        .IF LT SVCINS
                                        TRAP    C$CLP1
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                TRAP    C$CLP1
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
```

```
        043372  104406                                                                       TRAP    C$CLP1
                                                               .NLIST
                                                .ENDC
   5622 043374  112777  000006  136666  20$:    MOVB    #6,@ICRHX               ;-----LOAD NOT FGET INTO ACR 2--------
   5623 043402  112777  000001  136660          MOVB    #1,@ICRHX               ;-----LOAD NOT DACR INTO ACR2---------
   5624 043410  042777  000010  136662          BIC     #10,@CSRX               ;SELECT CHANNEL 1
   5625 043416  112777  000077  136652          MOVB    #77,@IDRHX              ;-----LOAD UNL INTO DOR 1-------------
   5626 043424  004737  011050                  JSR     PC,LOOP                 ;WAIT A LITTLE
   5627 043430                                  ENDSEG
                                        .MCALL  M$POP,M$GNLS,M$SVC,M$ENDERR
        043430                          M$POP   T$NS,T$NESTLEV,T$TEMP
                                        .MCALL  M$GETS,M$DECR
                                        .IF LT  T$NESTLEV
                                        .ERROR  T$NESTLEV       ; MACRO T$NS UNDERFLOW
                                        .MEXIT
                                        .ENDC
        043430                          M$GETS  T$NS,\T$NESTLEV,T$TEMP
                000003                  T$TEMP=T$NS2
        043430                          M$DECR  T$NESTLEV
                000001                  T$NESTLEV=T$NESTLEV-1
                                        .IF EQ F$SEG-T$TEMP
        043430                          M$POP   T$SEK,T$SEGLEV,T$$SEG
                                        .MCALL  M$GETS,M$DECR
                                        .IF LT  T$SEGLEV
                                        .ERROR  T$SEGLEV        ; MACRO T$SEK UNDERFLOW
                                        .MEXIT
                                        .ENDC
        043430                          M$GETS  T$SEK,\T$SEGLEV,T$$SEG
                010000                  T$$SEG=T$SEK0
        043430                          M$DECR  T$SEGLEV
                177777                  T$SEGLEV=T$SEGLEV-1
        043430                          M$GNLS  T$$SEG
                                        .MCALL  M$GEN
                                        .IF NB T$$SEG
        043430                          M$GEN   \T$$SEG,$,SVCTAG
                                        .IF LE  SVCTAG
                                        .IIF EQ SVCTAG,.LIST
                                        10000$:
                                        .IIF EQ SVCTAG,.NLIST
                                        .MEXIT
                                        .ENDC
                                        .LIST
        043430                                                                           10000$:
                                                .NLIST
                                        .IFF
                                        M$GEN   \S$LSYM,$,SVCTAG
                                        .ENDC
        043430                          M$SVC   C$ESEG
                                        .MCALL  M$GNINS,M$TSTLAB
        043430                          M$TSTLAB
                                        .MCALL  M$TLABEL,M$INCR
                                        .IIF LT T$TSTMAC, .MEXIT
                                        .RADIX  10
                                        M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                        .RADIX  8
                                        M$INCR  T$TSTSEQ
        043430                          M$GNINS <TRAP   C$ESEG>
```


M12

```
                                        .IF LT SVCINS
                                        TRAP    C$ESEG
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                TRAP    C$ESEG
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
   043430  104405                                                                       TRAP    C$ESEG
                                                        .NLIST
                                        .ENDC
                                        .IF EQ T$SEGLEV+1
           000041                       I$SEG=F$END
                                        .ENDC
                                        .IFF
                                        M$ENDERR        ENDSEG,T$TEMP
                                        .ENDC
                                        ;+++------------------------------------------------------------------- ---
                                        ;PART 2 OF THE TEST
                                        ;THIS PART CHECKS THE DEVICE TRIGGER INTERFACE FUNTION OF CHANNEL 2
                                        ;+++-------------------------------------------------------------------
   043432  004737  010700                       JSR     PC,BGIN2                ;SET UP PARAMETER
   043436                                       BGNSEG
                                        .MCALL  M$PUSH,M$INCR,M$SVC
           000040                       I$SEG=F$BGN
   043436                               M$PUSH  T$NS,T$NESTLEV,F$SEG
                                        .MCALL  M$INCR,M$SETS
   043436                               M$INCR  T$NESTLEV
           000002                       T$NESTLEV=T$NESTLEV+1
   043436                               M$SETS  T$NS,\T$NESTLEV,F$SEG
           000003                       T$NS2=F$SEG
           010001                       T$$SEG=S$LSYM
   043436                               M$PUSH  T$SEK,T$SEGLEV,T$$SEG
                                        .MCALL  M$INCR,M$SETS
   043436                               M$INCR  T$SEGLEV
           000000                       T$SEGLEV=T$SEGLEV+1
   043436                               M$SETS  T$SEK,\T$SEGLEV,T$$SEG
           010001                       T$SEK0=T$$SEG
   043436                               M$INCR  S$LSYM
           010002                       S$LSYM=S$LSYM+1
   043436                               M$SVC   C$BSEG
                                        .MCALL  M$GNINS,M$TSTLAB
   043436                               M$TSTLAB
                                        .MCALL  M$TLABEL,M$INCR
                                        .IIF LT T$TSTMAC, .MEXIT
                                        .RADIX  10
                                        M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                        .RADIX  8
                                        M$INCR  T$TSTSEQ
   043436                               M$GNINS <TRAP   C$BSEG>
                                        .IF LT SVCINS
                                        TRAP    C$BSEG
                                        .MEXIT
```

```
                                                .ENDC
                                                .IF EQ SVCINS
                                                .LIST
                                                        TRAP    C$BSEG
                                                                .NLIST
                                                .MEXIT
                                                .ENDC
                                                .IF GT SVCINS
                                                .LIST
     043436  104404                                                                                     TRAP    C$BSEG
                                                                .NLIST
                                                .ENDC
     043440  042777  000010  136632                     BIC     #10,@CSRX               ;SELECT CHANNEL 1
     043446  112777  000223  136614                     MOVB    #223,@ICRHX             ;----LOAD DAI INTO ACR 1-------------
     043454  112777  000200  136600                     MOVB    #200,@ISRHX             ;----LOAD GET BIT INTO ISR1-----------
     043462  052777  000010  136610                     BIS     #10,@CSRX               ;SELECT CHANNEL 2
     043470  013701  002312                             MOV     DPA1,R1                 ;CREATE MLA1
     043474  062701  000040                             ADD     #40,R1                  ;...
     043500  010137  002410                             MOV     R1,MLA1                 ;STORE MLA1
     043504  113777  002410  136564                     MOVB    MLA1,@IDRHX             ;----LOAD MLA1 INTO DOR 2--------- ---
     043512  004737  011050                             JSR     PC,LOOP                 ;WAIT A LITTLE
     043516  112777  000010  136552                     MOVB    #10,@IDRHX              ;----LOAD GET INTO DOR 2-------------
     043524  004737  011050                             JSR     PC,LOOP                 ;WAIT A LITTLE
     043530  042777  000010  136542                     BIC     #10,@CSRX               ;SELECT CHANNEL 1
     043536  012737  000001  002374                     MOV     #1,CHAN                 ;LOAD CHANNEL NUMBER
     043544  017737  136500  002402                     MOV     @IIRX,RSAVE             ;GET IIR 1 CONTENTS
     043552  022737  102501  002402                     CMP     #102501,RSAVE           ;GET,MA,INT1,IFC,MAC BIT SHUOLD BE SET
     043560  001413                                     BEQ     30$                     ;BRANCH IF YES
     043562  012737  102501  002500                     MOV     #102501,GOOD            ;SET UP DATA FOR ERROR MESSAGE
     043570  013737  002402  002502                     MOV     RSAVE,BAD               ;...
     043576                                             ERRSOFT 1403,E501,ERR501        ;ERROR HANDLER
                                                .MCALL  M$ERRINS
     043576                                     M$ERRINS        1403,E501,ERR501,C$ERSOFT
                                                .MCALL  M$GNINS,M$WORD,M$TSTLAB
     043576                                     M$SVC   C$ERSOFT
                                                .MCALL  M$GNINS,M$TSTLAB
     043576                                     M$TSTLAB
                                                .MCALL  M$TLABEL,M$INCR
                                                .IIF LT T$TSTMAC, .MEXIT
                                                .RADIX  10
                                                M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                                .RADIX  8
                                                M$INCR  T$TSTSEQ
     043576                                     M$GNINS <TRAP   C$ERSOFT>
                                                .IF LT SVCINS
                                                TRAP    C$ERSOFT
                                                .MEXIT
                                                .ENDC
                                                .IF EQ SVCINS
                                                .LIST
                                                        TRAP    C$ERSOFT
                                                                .NLIST
                                                .MEXIT
                                                .ENDC
                                                .IF GT SVCINS
                                                .LIST
     043576  104457                                                                                     TRAP    C$ERSOFT
```

```
                                                .NLIST
                                    .ENDC
          000012                    .RADIX  10
                                    .IF NB  1403
          002573                    T$ERRNUM=1403
                                    .IFF
                                    .ERROR  ;MISSING ERROR-NR
                                    .ENDC
  043600                            M$WORD  \T$ERRNUM
                                    .MCALL  M$GNINS
                                    .IRP    N,<1403>
                                    M$GNINS <.WORD  N>
                                    .ENDM
  043600                            M$GNINS <.WORD  1403>
                                    .IF LT SVCINS
                                    .WORD   1403
                                    .MEXIT
                                    .ENDC
                                    .IF EQ SVCINS
                                    .LIST
                                          .WORD   1403
                                                .NLIST
                                    .MEXIT
                                    .ENDC
                                    .IF GT SVCINS
                                    .LIST
  043600  002573                                                              .WORD   1403
                                                .NLIST
                                    .ENDC
          000010                    .RADIX  8
                                    .IF NB E501
  043602                            M$WORD  E501
                                    .MCALL  M$GNINS
                                    .IRP    N,<E501>
                                    M$GNINS <.WORD  N>
                                    .ENDM
  043602                            M$GNINS <.WORD  E501>
                                    .IF LT SVCINS
                                    .WORD   E501
                                    .MEXIT
                                    .ENDC
                                    .IF EQ SVCINS
                                    .LIST
                                          .WORD   E501
                                                .NLIST
                                    .MEXIT
                                    .ENDC
                                    .IF GT SVCINS
                                    .LIST
  043602  005376                                                              .WORD   E501
                                                .NLIST
                                    .ENDC
                                    .IFF
                                    M$WORD  0
                                    .ENDC
                                    .IF NB ERR501
  043604                            M$WORD  ERR501
```

C13


```
                                                .MCALL  M$GNINS
                                                .IRP    N,<ERR501>
                                                M$GNINS <.WORD  N>
                                                .ENDM
      043604                                    M$GNINS <.WORD  ERR501>
                                                .IF LT SVCINS
                                                .WORD   ERR501
                                                .MEXIT
                                                .ENDC
                                                .IF EQ SVCINS
                                                .LIST
                                                        .WORD   ERR501
                                                                .NLIST
                                                .MEXIT
                                                .ENDC
                                                .IF GT SVCINS
                                                .LIST
      043604  003672                                                                            .WORD   ERR501
                                                                .NLIST
                                                .ENDC
                                                .IFF
                                                M$WORD  0
                                                .ENDC
 5653 043606                                            CKLOOP                  ;BRANCH BACK TO BGNSEG IF ERRLOOP IS SET
                                                .MCALL  M$SVC
      043606                                    M$SVC   C$CLP1
                                                .MCALL  M$GNINS,M$TSTLAB
      043606                                    M$TSTLAB
                                                .MCALL  M$TLABEL,M$INCR
                                                .IIF LT T$TSTMAC, .MEXIT
                                                .RADIX  10
                                                M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                                .RADIX  8
                                                M$INCR  T$TSTSEQ
      043606                                    M$GNINS <TRAP   C$CLP1>
                                                .IF LT SVCINS
                                                TRAP    C$CLP1
                                                .MEXIT
                                                .ENDC
                                                .IF EQ SVCINS
                                                .LIST
                                                        TRAP    C$CLP1
                                                                .NLIST
                                                .MEXIT
                                                .ENDC
                                                .IF GT SVCINS
                                                .LIST
      043606  104406                                                                            TRAP    C$CLP1
                                                                .NLIST
                                                .ENDC
 5654 043610  017737  136450  002402    30$:    MOV     @ICRX,RSAVE             ;GET ICR1 CONTENTS
 5655 043616  122737  000010  002402            CMPB    #10,RSAVE               ;ICR1 CONTENTS SHOULD BE 10
 5656 043624  001413                            BEQ     40$                     ;BRANCH IF YES
 5657 043626  012737  000010  002500            MOV     #10,GOOD                ;SET UP DATA FOR ERROR MESSAGE
 5658 043634  013737  002402  002502            MOV     RSAVE,BAD               ;...
 5659 043642                                    ERRSOFT 1404,E901,ERR501        ;ERROR HANDLER
                                                .MCALL  M$ERRINS
```

```
        043642                          M$ERRINS        1404,E901,ERR501,C$ERSOFT
                                        .MCALL  M$GNINS,M$WORD,M$TSTLAB
        043642                          M$SVC   C$ERSOFT
                                        .MCALL  M$GNINS,M$TSTLAB
        043642                          M$TSTLAB
                                        .MCALL  M$TLABEL,M$INCR
                                        .IIF LT T$TSTMAC, .MEXIT
                                        .RADIX  10
                                        M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                        .RADIX  8
                                        M$INCR  T$TSTSEQ
        043642                          M$GNINS <TRAP   C$ERSOFT>
                                        .IF LT SVCINS
                                        TRAP    C$ERSOFT
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                TRAP    C$ERSOFT
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
        043642  104457                                                                  TRAP    C$ERSOFT
                                                        .NLIST
                                        .ENDC
                000012                  .RADIX  10
                                        .IF NB  1404
                002574                  T$ERRNUM=1404
                                        .IFF
                                        .ERROR  ;MISSING ERROR-NR
                                        .ENDC
        043644                          M$WORD  \T$ERRNUM
                                        .MCALL  M$GNINS
                                        .IRP    N,<1404>
                                        M$GNINS <.WORD  N>
                                        .ENDM
        043644                          M$GNINS <.WORD  1404>
                                        .IF LT SVCINS
                                        .WORD   1404
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                .WORD   1404
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
        043644  002574                                                                  .WORD   1404
                                                        .NLIST
                                        .ENDC
                000010                  .RADIX  8
                                        .IF NB E901
        043646                          M$WORD  E901
```

```
                                .MCALL  M$GNINS
                                .IRP    N,<E901>
                                M$GNINS <.WORD  N>
                                .ENDM
      043646                    M$GNINS <.WORD  E901>
                                .IF LT SVCINS
                                .WORD   E901
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        .WORD   E901
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
      043646  005634                                                    .WORD   E901
                                                .NLIST
                                .ENDC
                                .IFF
                                M$WORD  0
                                .ENDC
                                .IF NB ERR501
      043650                    M$WORD  ERR501
                                .MCALL  M$GNINS
                                .IRP    N,<ERR501>
                                M$GNINS <.WORD  N>
                                .ENDM
      043650                    M$GNINS <.WORD  ERR501>
                                .IF LT SVCINS
                                .WORD   ERR501
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        .WORD   ERR501
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
      043650  003672                                                    .WORD   ERR501
                                                .NLIST
                                .ENDC
                                .IFF
                                M$WORD  0
                                .ENDC
 5660 043652                            CKLOOP                  ;BRANCH BACK TO BGNSEG IF ERRLOOP IS SET
                                .MCALL  M$SVC
      043652                    M$SVC   C$CLP1
                                .MCALL  M$GNINS,M$TSTLAB
      043652                    M$TSTLAB
                                .MCALL  M$TLABEL,M$INCR
                                .IIF LT T$TSTMAC, .MEXIT
                                .RADIX  10
                                M$TLABEL        \T$TESTNUN,\T$TSTSEQ
```

```
                                          .RADIX  8
                                          M$INCR  T$TSTSEQ
     043652                               M$GNINS <TRAP   C$CLP1>
                                          .IF LT SVCINS
                                          TRAP    C$CLP1
                                          .MEXIT
                                          .ENDC
                                          .IF EQ SVCINS
                                          .LIST
                                                  TRAP    C$CLP1
                                                          .NLIST
                                          .MEXIT
                                          .ENDC
                                          .IF GT SVCINS
                                          .LIST
     043652  104406                                                                          TRAP    C$CLP1
                                                          .NLIST
                                          .ENDC
     043654  112777  000006  136406       40$:    MOVB    #6,@ICRHX            ;-----LOAD NOT FGET INTO ACR 1 ------------
     043662  112777  000001  136400               MOVB    #1,@ICRHX            ;-----LOAD NOT DACR INTO ACR 1-- ------
     043670  052777  000010  136402               BIS     #10,@CSRX            ;SELECT CHANNEL 2
     043676  112777  000077  136372               MOVB    #77,@IDRHX           ;-----LOAD UNL INTO DOR 2-------------
     043704  004737  011050                       JSR     PC,LOOP              ;WAIT A LITTLE
     043710                                       ENDSEG
                                          .MCALL  M$POP,M$GNLS,M$SVC,M$ENDERR
     043710                               M$POP   T$NS,T$NESTLEV,T$TEMP
                                          .MCALL  M$GETS,M$DECR
                                          .IF LT  T$NESTLEV
                                          .ERROR  T$NESTLEV        ; MACRO T$NS UNDERFLOW
                                          .MEXIT
                                          .ENDC
     043710                               M$GETS  T$NS,\T$NESTLEV,T$TEMP
             000003                       T$TEMP=T$NS2
     043710                               M$DECR  T$NESTLEV
             000001                       T$NESTLEV=T$NESTLEV-1
                                          .IF EQ F$SEG-T$TEMP
     043710                               M$POP   T$SEK,T$SEGLEV,T$$SEG
                                          .MCALL  M$GETS,M$DECR
                                          .IF LT  T$SEGLEV
                                          .ERROR  T$SEGLEV         ; MACRO T$SEK UNDERFLOW
                                          .MEXIT
                                          .ENDC
     043710                               M$GETS  T$SEK,\T$SEGLEV,T$$SEG
             010001                       T$$SEG=T$SEK0
     043710                               M$DECR  T$SEGLEV
             177777                       T$SEGLEV=T$SEGLEV-1
     043710                               M$GNLS  T$$SEG
                                          .MCALL  M$GEN
                                          .IF NB T$$SEG
     043710                               M$GEN   \T$$SEG,$,SVCTAG
                                          .IF LE  SVCTAG
                                          .IIF EQ SVCTAG,.LIST
                                          10001$:
                                          .IIF EQ SVCTAG,.NLIST
                                          .MEXIT
                                          .ENDC
                                          .LIST
```

G13


```
     043710                                                                          10001$:
                                                   .NLIST
                                           .IFF
                                           M$GEN    \S$LSYM,$,SVCTAG
                                           .ENDC
     043710                                M$SVC    C$ESEG
                                           .MCALL   M$GNINS,M$TSTLAB
     043710                                M$TSTLAB
                                           .MCALL   M$TLABEL,M$INCR
                                           .IIF LT T$TSTMAC, .MEXIT
                                           .RADIX   10
                                           M$TLABEL         \T$TESTNUN,\T$TSTSEQ
                                           .RADIX   8
                                           M$INCR   T$TSTSEQ
     043710                                M$GNINS <TRAP    C$ESEG>
                                           .IF LT SVCINS
                                           TRAP     C$ESEG
                                           .MEXIT
                                           .ENDC
                                           .IF EQ SVCINS
                                           .LIST
                                                   TRAP     C$ESEG
                                                            .NLIST
                                           .MEXIT
                                           .ENDC
                                           .IF GT SVCINS
                                           .LIST
     043710  104405                                                                        TRAP     C$ESEG
                                                            .NLIST
                                           .ENDC
                                           .IF EQ T$SEGLEV+1
             000041                        I$SEG=F$END
                                           .ENDC
                                           .IFF
                                           M$ENDERR         ENDSEG,T$TEMP
                                           .ENDC
5667 043712  005737  002234                        TST      QVP                   ;IS QUICK VERIFY PASS SELECTED
5668 043716  001010                                BNE      EXQV14                ;IF YES EXIT TEST
5669 043720  005237  002322                        INC      ITRCNT                ;ITERATION COUNTER +1
5670 043724  023737  002322  002320                CMP      ITRCNT,ITRDEF         ;DEFAULT ITERATION EXECUTED
5671 043732  001402                                BEQ      EXQV14                ;IF YES EXIT TEST
5672 043734  000137  043152                        JMP      ITAC14                ;IF NO TEST ITERATION
5673 043740                                EXQV14: EXIT     TST                   ;
                                           .MCALL  M$SVC,M$EXIT,M$EXSEG,M$EXTJ,M$GETTOP,M$CHECK,M$WORD,XFER
             000041                        T$FLAG=F$END
     043740                                M$CHECK TST,T$TEMP,T$FLAG
                                           .IF IDN <TST>,<TST>
             010043                        T$TEMP=T$$TEST
             000040                        T$FLAG=I$TST
                                           .MEXIT
                                           .ENDC
                                           .IF IDN <SUB>,<TST>
                                           T$TEMP=T$$SUB
                                           T$FLAG=I$SUB
                                           .MEXIT
                                           .ENDC
                                           .IF IDN <SEG>,<TST>
```

```
                        T$TEMP=T$$SEG
                        T$FLAG=I$SEG
                        .MEXIT
                        .ENDC
                        .IF IDN <INIT>,<TST>
                        T$TEMP=T$$INIT
                        T$FLAG=I$INIT
                        .MEXIT
                        .ENDC
                        .IF IDN <CLN>,<TST>
                        T$TEMP=T$$CLEAN
                        T$FLAG=I$CLN
                        .MEXIT
                        .ENDC
                        .IF IDN <SRV>,<TST>
                        T$TEMP=T$$SRV
                        T$FLAG=I$SRV
                        .MEXIT
                        .ENDC
                        .IF IDN <MSG>,<TST>
                        T$TEMP=T$$MSG
                        T$FLAG=F$JMP
                        .MEXIT
                        .ENDC
                        .IF IDN <RPT>,<TST>
                        T$TEMP=T$$RPT
                        T$FLAG=F$JMP
                        .MEXIT
                        .ENDC
                        .IF IDN <DU>,<TST>
                        T$TEMP=T$$DU
                        T$FLAG=F$JMP
                        .MEXIT
                        .ENDC
                        .IF IDN <AU>,<TST>
                        T$TEMP=T$$AU
                        T$FLAG=F$JMP
                        .MEXIT
                        .ENDC
                        .IF EQ T$FLAG-F$JMP
                        M$WORD  J$JMP
                        M$EXTJ  \T$TEMP
                        .MEXIT
                        .ENDC
                        .IF EQ  T$FLAG-F$BGN
043740                  M$SVC   C$EXIT
                        .MCALL  M$GNINS,M$TSTLAB
043740                  M$TSTLAB
                        .MCALL  M$TLABEL,M$INCR
                        .IIF LT T$TSTMAC, .MEXIT
                        .RADIX  10
                        M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                        .RADIX  8
                        M$INCR  T$TSTSEQ
043740                  M$GNINS <TRAP   C$EXIT>
                        .IF LT SVCINS
                        TRAP    C$EXIT
```

```
                        .MEXIT
                        .ENDC
                        .IF EQ SVCINS
                        .LIST
                                TRAP    C$EXIT
                                        .NLIST
                        .MEXIT
                        .ENDC
                        .IF GT SVCINS
                        .LIST
    043740  104432                                                      TRAP    C$EXIT
                                        .NLIST
                        .ENDC
                        .IF IDN <SEG>,<TST>
                        M$GETTOP T$SEK,T$SEGLEV,T$TEMP
                        M$EXSEG \T$TEMP
                        .IFF
    043742              M$EXIT  \T$TEMP
                        .MCALL  M$GNINS
    043742              M$GNINS <.WORD  L10043-.>
                        .IF LT SVCINS
                        .WORD   L10043-.
                        .MEXIT
                        .ENDC
                        .IF EQ SVCINS
                        .LIST
                                .WORD   L10043-.
                                        .NLIST
                        .MEXIT
                        .ENDC
                        .IF GT SVCINS
                        .LIST
    043742  000060                                                      .WORD   L10043-.
                                        .NLIST
                        .ENDC
                        .ENDC
                        .MEXIT
                        .ENDC
                        .IF IDN <HRD>,<TST>
                        M$GETTOP        T$NS,T$NESTLEV,T$TEMP
                        .IF EQ  F$HARD-T$TEMP
                        .IRP    N,<\T$$HARD>
                        XFER    L'N
                        .ENDM
                        .MEXIT
                        .ENDC
                        .ENDC
                        .IF IDN <SFT>,<TST>
                        M$GETTOP        T$NS,T$NESTLEV,T$TEMP
                        .IF EQ  F$SOFT T$TEMP
                        .IRP    N,<\T$$SOFT>
                        XFER    L'N
                        .ENDM
                        .MEXIT
                        .ENDC
                        .ENDC
                        .ERROR  ;ILL. "EXIT TST" STMT.
```

```
5674
5675                                                    .NLIST  BEX
5676 043744     045      123      062   TSHD14: .ASCIZ  /*S2*ADEVICE TRIGGER INTERFACE FUNCTION TEST*N/
5677                                                    .LIST   BEX
5678                                                    .EVEN
5679 044022                                             ENDTST
                                        .MCALL  M$POP,M$GNTAG,M$SVC,M$ENDERR
                                        .IF EQ  F$BGN-I$TST
               000041                   I$TST=F$END
                                        .IFF
                                        .ERROR  ;MISSING "BGNTST"
                                        .MEXIT
                                        .ENDC
     044022                             M$POP   T$NS,T$NESTLEV,T$TEMP
                                        .MCALL  M$GETS,M$DECR
                                        .IF LT  T$NESTLEV
                                        .ERROR  T$NESTLEV       ; MACRO T$NS UNDERFLOW
                                        .MEXIT
                                        .ENDC
     044022                             M$GETS  T$NS,\T$NESTLEV,T$TEMP
               000001                   T$TEMP=T$NS1
     044022                             M$DECR  T$NESTLEV
               000000                   T$NESTLEV=T$NESTLEV-1
                                        .IF EQ F$TEST-T$TEMP
     044022                             M$GNTAG L,T$$TEST
                                        .MCALL  M$GEN
     044022                             M$GEN   L,\T$$TEST,SVCTAG
                                        .IF LE  SVCTAG
                                        .IIF EQ SVCTAG,.LIST
                                        L10043:
                                        .IIF EQ SVCTAG,.NL¯ST
                                        .MEXIT
                                        .ENDC
                                        .LIST
     044022                                                                         L10043:
                                                .NLIST
               010000                   S$LSYM=T$LSYM
     044022                             M$SVC   C$ETST
                                        .MCALL  M$GNINS,M$TSTLAB
     044022                             M$TSTLAB
                                        .MCALL  M$TLABEL,M$INCR
                                        .IIF LT T$TSTMAC, .MEXIT
                                        .RADIX  10
                                        M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                        .RADIX  8
                                        M$INCR  T$TSTSEQ
     044022                             M$GNINS <TRAP   C$ETST>
                                        .IF LT SVCINS
                                        TRAP    C$ETST
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                TRAP    C$ETST
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
```

```
                                .IF GT SVCINS
                                .LIST
      044022  104401                                            TRAP    C$ETST
                                          .NLIST
                                .ENDC
              000041            I$TST=F$END
                                .IFF
                                M$ENDERR      ENDTST,T$TEMP
                                .ENDC
```

```
                                  .SBTTL  TEST 15: INCOMPLETE SOURCE HANDSHAKE TEST
                                  ;**************************************************************************
                                  ;                 IEX - TEST 15
                                  ;PART 1 CHECKS THE INCOMPLETE SOURCE HANDSHAKE OF CHANNEL 1. SOURCE HANDSHAKE
                                  ;       DOES NOT OCCUR DURING THE DATA TRANSFER, BECAUSE CHANNEL 2 IS NOT
                                  ;       SELECTED AS LISTENER.
                                  ;PART 2 CHECKS THE INCOMPLETE SOURCE HANDSHAKE OF CHANNEL 2. SOURCE HANDSHAKE
                                  ;       DOES NOT OCCUR DURING THE DATA TRANSFER, BECAUSE CHANNEL 1 IS NOT
                                  ;       SELECTED AS LISTENER.
                                  ;**************************************************************************
 044024                                   BGNTST
                                  .MCALL  M$INCR,M$GNTEST,M$PUSH,M$INCR
                                  .IF NE  F$END-I$SUB
                                  .ERROR  ;"BGNTST" IN SUB
                                  .MEXIT
                                  .ENDC
                                  .IF NE  F$END-I$SEG
                                  .ERROR  ;"BGNTST" IN SEG
                                  .MEXIT
                                  .ENDC
                                  .IF NE  F$END-I$TST
                                  .ERROR  ;"BGNTST" IN TST
                                  .MEXIT
                                  .IFF
                 000040           I$TST=F$BGN
                                  .ENDC
                                  .IF B
 044024                           M$INCR  T$TESTNUM
                 000017           T$TESTNUM=T$TESTNUM+1
                                  .IFF
                                  T$TESTNUM=
                                  .ENDC
                 000000           T$SUBNUM=0
                 000012           .RADIX  10
 044024                           M$GNTEST        \T$TESTNUM
                                  .MCALL  M$GEN
 044024                           M$GEN   T,15:,SVCTST
                                  .IF LE  SVCTST
                                  .IIF EQ SVCTST,.LIST
                                  T15::
                                  .IIF EQ SVCTST,.NLIST
                                  .MEXIT
                                  .ENDC
                                  .LIST
 044024                                                                          T15::
                                          .NLIST
                 000010           .RADIX  8
 044024                           M$PUSH  T$NS,T$NESTLEV,F$TEST
                                  .MCALL  M$INCR,M$SETS
 044024                           M$INCR  T$NESTLEV
                 000001           T$NESTLEV=T$NESTLEV+1
 044024                           M$SETS  T$NS,\T$NESTLEV,F$TEST
                 000001           T$NS1=F$TEST
                 010044           T$$TEST=T$TAGNUM
 044024                           M$INCR T$TAGNUM
                 010045           T$TAGNUM=T$TAGNUM+1
                 000001           T$TSTSEQ=1
```

```
     5692 044024  005737  002324              TST     PNTF                       ;IS THE PNT FLAG SET
     5693 044030  001410                      BEQ     7$                         ;IF YES, PRINT THE TEST HEADER
     5694 044032                              PRINTF  #TSHD15                    ;...
                                        .MCALL  M$PRINT
                                        .IF B   #TSHD15
                                        .ERROR  ;MISSING FORMAT
                                        .MEXIT
                                        .ENDC
                                        .IF B   <>
          044032                        M$PRINT C$PNTF,#TSHD15
                                        .MCALL  M$COUNT,M$PUT,M$GNINS,M$SVC
                  000001                T$ARGCNT=1
          044032                        M$COUNT T$ARGCNT,<>,<>,<>,<>,<>,<>,<>,<>
                                        .IF NB <>
                                        M$COUNT T$ARGCNT,<>,<>,<>,<>,<>,<>,<>,<>
                                        .ENDC
                                        .IF NB <>
                                        T$ARGCNT=T$ARGCNT+1
                                        .ENDC
                                        .IRP    N,<\T$ARGCNT>
                                        M$PUT   #N,#TSHD15,<>,<>,<>,<>,<>,<>,<>,<>
                                        .ENDM
          044032                        M$PUT   #1,#TSHD15,<>,<>,<>,<>,<>,<>,<>,<>
                                        .MCALL  M$PUT1
                                        .IF NB  <#TSHD15>
          044032                        M$PUT   <#TSHD15>,<>,<>,<>,<>,<>,<>,<>,<>
                                        .MCALL  M$PUT1
                                        .IF NB  <>
                                        M$PUT   <>,<>,<>,<>,<>,<>,<>,<>,<>
                                        .ENDC
                                        .IF NB  <#TSHD15>
          044032                        M$PUT1  #TSHD15
                                        .MCALL  M$GNINS
                                        .IF B
          044032                        M$GNINS <MOV    #TSHD15,-(SP)>
                                        .IF LT SVCINS
                                        MOV     #TSHD15,-(SP)
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                MOV     #TSHD15, (SP)
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
          044032  012746  044726                                                          MOV     #TSHD15, (SP)
                                                        .NLIST
                                        .ENDC
                                        .IFF
                                        .IF DIF B,<#TSHD15>
                                        .ERROR  ;ILL. ARG. "#TSHD15" ONLY "B" IS ALLOWED.
                                        .MEXIT
                                        .ENDC
                                        M$GNINS <CLR    -(SP)>
                                        M$GNINS <BISB   ,(SP)>
```

```
                                .ENDC
                                .ENDC
                                .ENDC
                                .IF NB  <#1>
    044036                      M$PUT1  #1
                                .MCALL  M$GNINS
                                .IF B
    044036                      M$GNINS <MOV    #1,-(SP)>
                                .IF LT SVCINS
                                MOV     #1,-(SP)
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        MOV     #1,-(SP)
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
    044036  012746  000001                                                      MOV     #1,-(SP)
                                                .NLIST
                                .ENDC
                                .IFF
                                .IF DIF B,<#1>
                                .ERROR  ;ILL. ARG. "#1" ONLY "B" IS ALLOWED.
                                .MEXIT
                                .ENDC
                                M$GNINS <CLR    -(SP)>
                                M$GNINS <BISB   ,(SP)>
                                .ENDC
                                .ENDC
    044042                      M$GNINS <MOV    SP,R0>
                                .IF LT SVCINS
                                MOV     SP,R0
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        MOV     SP,R0
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
    044042  010600                                                              MOV     SP,R0
                                                .NLIST
                                .ENDC
    044044                      M$SVC   C$PNTF
                                .MCALL  M$GNINS,M$TSTLAB
    044044                      M$TSTLAB
                                .MCALL  M$TLABEL,M$INCR
                                .IIF LT T$TSTMAC, .MEXIT
                                .RADIX  10
                                M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                .RADIX  8
                                M$INCR  T$TSTSEQ
```

```
        044044                              M$GNINS <TRAP   C$PNTF>
                                            .IF LT SVCINS
                                            TRAP    C$PNTF
                                            .MEXIT
                                            .ENDC
                                            .IF EQ SVCINS
                                            .LIST
                                                    TRAP    C$PNTF
                                                            .NLIST
                                            .MEXIT
                                            .ENDC
                                            .IF GT SVCINS
                                            .LIST
        044044  104417                                                                  TRAP    C$PNTF
                                                            .NLIST
                                            .ENDC
                                            .IRP    N,<\T$ARGCNT*2+2>
                                            M$GNINS <ADD    #N,SP>
                                            .ENDM
        044046                              M$GNINS <ADD    #4,SP>
                                            .IF LT SVCINS
                                            ADD     #4,SP
                                            .MEXIT
                                            .ENDC
                                            .IF EQ SVCINS
                                            .LIST
                                                    ADD     #4,SP
                                                            .NLIST
                                            .MEXIT
                                            .ENDC
                                            .IF GT SVCINS
                                            .LIST
        044046  062706  000004                                                          ADD     #4,SP
                                                            .NLIST
                                            .ENDC
                                            .MEXIT
                                            .ENDC
                                            .IF B   <>
                                            M$PRINT C$PNTF,#TSHD15,<>
                                            .MEXIT
                                            .ENDC
                                            .IF B   <>
                                            M$PRINT C$PNTF,#TSHD15,<>,<>
                                            .MEXIT
                                            .ENDC
                                            .IF B   <>
                                            M$PRINT C$PNTF,#TSHD15,<>,<>,<>
                                            .MEXIT
                                            .ENDC
                                            .IF B   <>
                                            M$PRINT C$PNTF,#TSHD15,<>,<>,<>,<>
                                            .MEXIT
                                            .ENDC
                                            .IF B   <>
                                            M$PRINT C$PNTF,#TSHD15,<>,<>,<>,<>,<>
                                            .MEXIT
                                            .ENDC
```

```
                                        .IF B   <>
                                        M$PRINT C$PNTF,#TSHD15,<>,<>,<>,<>,<>,<>
                                        .MEXIT
                                        .ENDC
                                        .IF B   <>
                                        M$PRINT C$PNTF,#TSHD15,<>,<>,<>,<>,<>,<>,<>
                                        .MEXIT
                                        .ENDC
                                        M$PRINT C$PNTF,#TSHD15,<>,<>,<>,<>,<>,<>,<>,<>
5695 044052 005037 002322               7$:     CLR     ITRCNT                  ;CLEAR ITERATION COUNTER
5696 044056 004737 010210               ITAC15: JSR     PC,CULPA                ;CLEAR ULPA BIT IN ISR 1 AND 2
5697 044062 004737 010524                       JSR     PC,BGIN1                ;SET UP PARAMETER
5698 044066                                     BGNSEG
                                        .MCALL  M$PUSH,M$INCR,M$SVC
            000040                      I$SEG=F$BGN
     044066                             M$PUSH  T$NS,T$NESTLEV,F$SEG
                                        .MCALL  M$INCR,M$SETS
     044066                             M$INCR  T$NESTLEV
            000002                      T$NESTLEV=T$NESTLEV+1
     044066                             M$SETS  T$NS,\T$NESTLEV,F$SEG
            000003                      T$NS2=F$SEG
            010000                      T$$SEG=S$LSYM
     044066                             M$PUSH  T$SEK,T$SEGLEV,T$$SEG
                                        .MCALL  M$INCR,M$SETS
     044066                             M$INCR  T$SEGLEV
            000000                      T$SEGLEV=T$SEGLEV+1
     044066                             M$SETS  T$SEK,\T$SEGLEV,T$$SEG
            010000                      T$SEK0=T$$SEG
     044066                             M$INCR  S$LSYM
            010001                      S$LSYM=S$LSYM+1
     044066                             M$SVC   C$BSEG
                                        .MCALL  M$GNINS,M$TSTLAB
     044066                             M$TSTLAB
                                        .MCALL  M$TLABEL,M$INCR
                                        .IIF LT T$TSTMAC, .MEXIT
                                        .RADIX  10
                                        M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                        .RADIX  8
                                        M$INCR  T$TSTSEQ
     044066                             M$GNINS <TRAP   C$BSEG>
                                        .IF LT SVCINS
                                        TRAP    C$BSEG
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                TRAP    C$BSEG
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
     044066 104404                                                              TRAP    C$BSEG
                                                        .NLIST
                                        .ENDC
5699 044070 042777 000010 136202                BIC     #10,@CSRX               ;SELECT CHANNEL 1
5700 044076 012737 000001 002374                MOV     #1,CHAN                 ;LOAD CHANNEL NUMBER
```

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TEST 15: INCOMPLETE SOURCE HANDSHAKE TEST

```
044104  112777  000212  136156          MOVB    #212,@ICRHX             ;----LOAD TON INTO ACR 1---------- ---
044112  012703  000002                  MOV     #2,R3                   ;GET A NONE EXISTENTS MLA
044116  020337  002314          11$:    CMP     R3,DPA2                 ;...
044122  001410                          BEQ     10$                     ;...
044124  020337  002312                  CMP     R3,DPA1                 ;...
044130  001405                          BEQ     10$                     ;...
044132  062703  000040                  ADD     #40,R3                  ;CREATE MLA
044136  010337  002412                  MOV     R3,MLA2                 ;
044142  000402                          BR      20$                     ;
044144  005203                  10$:    INC     R3                      ;
044146  000763                          BR      11$                     ;
044150  113777  002412  136120  20$:    MOVB    MLA2,@IDRHX             ;-----LOAD MLA2 INTO DOR1-------------
044156  004737  011050                  JSR     PC,LOOP                 ;WAIT A LITTLE
044162  112777  000013  136100          MOVB    #13,@ICRHX              ;-----LOAD GTS INTO ACR 1------------
044170  112777  000125  136100          MOVB    #125,@IDRHX             ;----LOAD DATA PATTERN INTO DOR 1-----
044176  004737  011050                  JSR     PC,LOOP                 ;WAIT A LITTLE
044202  017737  136042  002402          MOV     @IIRX,RSAVE             ;GET IIR1 CONTENTS
044210  022737  040000  002402          CMP     #40000,RSAVE            ;ERR BIT IN IIR REGISTER SHOULD BE SET
044216  001413                          BEQ     30$                     ;BRANCH IF YES
044220  012737  040000  002500          MOV     #40000,GOOD             ;SET UP DATA FOR ERROR MESSAGE
044226  013737  002402  002502          MOV     RSAVE,BAD               ;...
044234                                  ERRSOFT 1501,E501,ERR501        ;ERROR HANDLER
                                .MCALL  M$ERRINS
044234                          M$ERRINS        1501,E501,ERR501,C$ERSOFT
                                .MCALL  M$GNINS,M$WORD,M$TSTLAB
044234                          M$SVC   C$ERSOFT
                                .MCALL  M$GNINS,M$TSTLAB
044234                          M$TSTLAB
                                .MCALL  M$TLABEL,M$INCR
                                .IIF LT T$TSTMAC, .MEXIT
                                .RADIX  10
                                M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                .RADIX  8
                                M$INCR  T$TSTSEQ
044234                          M$GNINS <TRAP   C$ERSOFT>
                                .IF LT SVCINS
                                TRAP    C$ERSOFT
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        TRAP    C$ERSOFT
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
044234  104457                                                                  TRAP    C$ERSOFT
                                                .NLIST
                                .ENDC
        000012                  .RADIX  10
                                .IF NB  1501
        002735                  T$ERRNUM=1501
                                .IFF
                                .ERROR  ;MISSING ERROR NR
                                .ENDC
044236                          M$WORD  \T$ERRNUM
```

```
                                .MCALL  M$GNINS
                                .IRP    N,<1501>
                                M$GNINS <.WORD  N>
                                .ENDM
      044236                    M$GNINS <.WORD  1501>
                                .IF LT SVCINS
                                .WORD   1501
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        .WORD   1501
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
      044236  002735                                                            .WORD   1501
                                                .NLIST
                                .ENDC
              000010            .RADIX  8
                                .IF NB E501
      044240                    M$WORD  E501
                                .MCALL  M$GNINS
                                .IRP    N,<E501>
                                M$GNINS <.WORD  N>
                                .ENDM
      044240                    M$GNINS <.WORD  E501>
                                .IF LT SVCINS
                                .WORD   E501
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        .WORD   E501
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
      044240  005376                                                            .WORD   E501
                                                .NLIST
                                .ENDC
                                .IFF
                                M$WORD  0
                                .ENDC
                                .IF NB ERR501
      044242                    M$WORD  ERR501
                                .MCALL  M$GNINS
                                .IRP    N,<ERR501>
                                M$GNINS <.WORD  N>
                                .ENDM
      044242                    M$GNINS <.WORD  ERR501>
                                .IF LT SVCINS
                                .WORD   ERR501
                                .MEXIT
                                .ENDC
```

```
                                        .IF EQ SVCINS
                                        .LIST
                                                .WORD   ERR501
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
      044242  003672                                                                    .WORD   ERR501
                                                        .NLIST
                                        .ENDC
                                        .IFF
                                        M$WORD  0
                                        .ENDC
 5723 044244                                    CKLOOP                          ;BRANCH BACK TO BGNSEG IF ERRLOOP IS SET
                                        .MCALL  M$SVC
      044244                            M$SVC   C$CLP1
                                        .MCALL  M$GNINS,M$TSTLAB
      044244                            M$TSTLAB
                                        .MCALL  M$TLABEL,M$INCR
                                        .IIF LT T$TSTMAC, .MEXIT
                                        .RADIX  10
                                        M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                        .RADIX  8
                                        M$INCR  T$TSTSEQ
      044244                            M$GNINS <TRAP   C$CLP1>
                                        .IF LT SVCINS
                                        TRAP    C$CLP1
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                TRAP    C$CLP1
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
      044244  104406                                                                    TRAP    C$CLP1
                                                        .NLIST
                                        .ENDC
 5724 044246  017737  136004  002402    30$:    MOV     @ISRX,RSAVE             ;GET ISR1 CONTENTS
 5725 044254  022737  000002  002402            CMP     #2,RSAVE                ;TADS BIT SHOULD BE SET
 5726 044262  001413                            BEQ     40$                     ;BRANCH IF YES
 5727 044264  012737  000002  002500            MOV     #2,GOOD                 ;SET UP DATA FOR ERROR MESSAGE
 5728 044272  013737  002402  002502            MOV     RSAVE,BAD               ;...
 5729 044300                                    ERRSOFT 1502,E502,ERR501        ;ERROR HANDLER
                                        .MCALL  M$ERRINS
      044300                            M$ERRINS        1502,E502,ERR501,C$ERSOFT
                                        .MCALL  M$GNINS,M$WORD,M$TSTLAB
      044300                            M$SVC   C$ERSOFT
                                        .MCALL  M$GNINS,M$TSTLAB
      044300                            M$TSTLAB
                                        .MCALL  M$TLABEL,M$INCR
                                        .IIF LT T$TSTMAC, .MEXIT
                                        .RADIX  10
                                        M$TLABEL        \T$TESTNUN,\T$TSTSEQ
```

```
                        .RADIX  8
                        M$INCR  T$TSTSEQ
044300                  M$GNINS <TRAP   C$ERSOFT>
                        .IF LT SVCINS
                        TRAP    C$ERSOFT
                        .MEXIT
                        .ENDC
                        .IF EQ SVCINS
                        .LIST
                                TRAP    C$ERSOFT
                                        .NLIST
                        .MEXIT
                        .ENDC
                        .IF GT SVCINS
                        .LIST
044300  104457                                                      TRAP    C$ERSOFT
                                        .NLIST
                        .ENDC
        000012          .RADIX  10
                        .IF NB  1502
        002736          T$ERRNUM=1502
                        .IFF
                        .ERROR  ;MISSING ERROR-NR
                        .ENDC
044302                  M$WORD  \T$ERRNUM
                        .MCALL  M$GNINS
                        .IRP    N,<1502>
                        M$GNINS <.WORD  N>
                        .ENDM
044302                  M$GNINS <.WORD  1502>
                        .IF LT SVCINS
                        .WORD   1502
                        .MEXIT
                        .ENDC
                        .IF EQ SVCINS
                        .LIST
                                .WORD   1502
                                        .NLIST
                        .MEXIT
                        .ENDC
                        .IF GT SVCINS
                        .LIST
044302  002736                                                      .WORD   1502
                                        .NLIST
                        .ENDC
        000010          .RADIX  8
                        .IF NB E502
044304                  M$WORD  E502
                        .MCALL  M$GNINS
                        .IRP    N,<E502>
                        M$GNINS <.WORD  N>
                        .ENDM
044304                  M$GNINS <.WORD  E502>
                        .IF LT SVCINS
                        .WORD   E502
                        .MEXIT
                        .ENDC
```

```
                        .IF EQ SVCINS
                        .LIST
                                .WORD   E502
                                        .NLIST
                        .MEXIT
                        .ENDC
                        .IF GT SVCINS
                        .LIST
     044304  005437                                                     .WORD   E502
                                        .NLIST
                        .ENDC
                        .IFF
                        M$WORD  0
                        .ENDC
                        .IF NB ERR501
     044306             M$WORD  ERR501
                        .MCALL  M$GNINS
                        .IRP    N,<ERR501>
                        M$GNINS <.WORD  N>
                        .ENDM
     044306             M$GNINS <.WORD  ERR501>
                        .IF LT SVCINS
                        .WORD   ERR501
                        .MEXIT
                        .ENDC
                        .IF EQ SVCINS
                        .LIST
                                .WORD   ERR501
                                        .NLIST
                        .MEXIT
                        .ENDC
                        .IF GT SVCINS
                        .LIST
     044306  003672                                                     .WORD   ERR501
                                        .NLIST
                        .ENDC
                        .IFF
                        M$WORD  0
                        .ENDC
5730 044310                     CKLOOP                  ;BRANCH BACK TO BGNSEG IF ERRLOOP IS SET
                        .MCALL  M$SVC
     044310             M$SVC   C$CLP1
                        .MCALL  M$GNINS,M$TSTLAB
     044310             M$TSTLAB
                        .MCALL  M$TLABEL,M$INCR
                        .IIF LT T$TSTMAC, .MEXIT
                        .RADIX  10
                        M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                        .RADIX  8
                        M$INCR  T$TSTSEQ
     044310             M$GNINS <TRAP   C$CLP1>
                        .IF LT SVCINS
                        TRAP    C$CLP1
                        .MEXIT
                        .ENDC
                        .IF EQ SVCINS
                        .LIST
```

```
                                                        TRAP    C$CLP1
                                                                .NLIST
                                                .MEXIT
                                                .ENDC
                                                .IF GT SVCINS
                                                .LIST
        044310  104406                                                                          TRAP    C$CLP1
                                                                .NLIST
                                                .ENDC
  5731  044312  052777  000010  135760  40$:    BIS     #10,@CSRX               ;SELECT CHANNEL 2
  5732  044320  012737  000002  002374          MOV     #2,CHAN                 ;LOAD CHANNEL NUMBER
  5733  044326  017737  135724  002402          MOV     @ISRX,RSAVE             ;GET ISR2 CONTENTS
  5734  044334  005737  002402                  TST     RSAVE                   ;ISR REGISTER SHOULD BE ZERO
  5735  044340  001412                          BEQ     50$                     ;BRANCH IF YES
  5736  044342  005037  002500                  CLR     GOOD                    ;SET UP DATA FOR ERROR MESSAGE
  5737  044346  013737  002402  002502          MOV     RSAVE,BAD               ;...
  5738  044354                                  ERRSOFT 1503,E502,ERR501        ;ERROR HANDLER
                                                .MCALL  M$ERRINS
        044354                                  M$ERRINS        1503,E502,ERR501,C$ERSOFT
                                                .MCALL  M$GNINS,M$WORD,M$TSTLAB
        044354                                  M$SVC   C$ERSOFT
                                                .MCALL  M$GNINS,M$TSTLAB
        044354                                  M$TSTLAB
                                                .MCALL  M$TLABEL,M$INCR
                                                .IIF LT T$TSTMAC, .MEXIT
                                                .RADIX  10
                                                M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                                .RADIX  8
                                                M$INCR  T$TSTSEQ
        044354                                  M$GNINS <TRAP   C$ERSOFT>
                                                .IF LT SVCINS
                                                TRAP    C$ERSOFT
                                                .MEXIT
                                                .ENDC
                                                .IF EQ SVCINS
                                                .LIST
                                                        TRAP    C$ERSOFT
                                                                .NLIST
                                                .MEXIT
                                                .ENDC
                                                .IF GT SVCINS
                                                .LIST
        044354  104457                                                                          TRAP    C$ERSOFT
                                                                .NLIST
                                                .ENDC
                000012                          .RADIX  10
                                                .IF NB  1503
                002737                          T$ERRNUM=1503
                                                .IFF
                                                .ERROR  ;MISSING ERROR NR
                                                .ENDC
        0447                                    M$WORD  \T$ERRNUM
                                                .MCALL  M$GNINS
                                                .IRP    N,<1503>
                                                M$GNINS <.WORD  N>
                                                .ENDM
        044356                                  M$GNINS <.WORD  1503>
```

```
                                .IF LT SVCINS
                                .WORD   1503
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        .WORD   1503
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
     044356  002737                                                          .WORD   1503
                                                .NLIST
                                .ENDC
             000010             .RADIX  8
                                .IF NB E502
     044360                     M$WORD  E502
                                .MCALL  M$GNINS
                                .IRP    N,<E502>
                                M$GNINS <.WORD  N>
                                .ENDM
     044360                     M$GNINS <.WORD  E502>
                                .IF LT SVCINS
                                .WORD   E502
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        .WORD   E502
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
     044360  005437                                                          .WORD   E502
                                                .NLIST
                                .ENDC
                                .IFF
                                M$WORD  0
                                .ENDC
                                .IF NB ERR501
     044362                     M$WORD  ERR501
                                .MCALL  M$GNINS
                                .IRP    N,<ERR501>
                                M$GNINS <.WORD  N>
                                .ENDM
     044362                     M$GNINS <.WORD  ERR501>
                                .IF LT SVCINS
                                .WORD   ERR501
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        .WORD   ERR501
                                                .NLIST
                                .MEXIT
```

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```
                                .ENDC
                                .IF GT SVCINS
                                .LIST
      044362  003672                                                        .WORD   ERR501
                                          .NLIST
                                .ENDC
                                .IFF
                                M$WORD  0
                                .ENDC
 5739 044364                            CKLOOP                  ;BRANCH BACK TO BGNSEG IF ERRLOOP IS SET
                                .MCALL  M$SVC
      044364                    M$SVC   C$CLP1
                                .MCALL  M$GNINS,M$TSTLAB
      044364                    M$TSTLAB
                                .MCALL  M$TLABEL,M$INCR
                                .IIF LT T$TSTMAC, .MEXIT
                                .RADIX  10
                                M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                .RADIX  8
                                M$INCR  T$TSTSEQ
      044364                    M$GNINS <TRAP   C$CLP1>
                                .IF LT SVCINS
                                TRAP    C$CLP1
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        TRAP    C$CLP1
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
      044364  104406                                                        TRAP    C$CLP1
                                          .NLIST
                                .ENDC
 5740 044366                    50$:    ENDSEG
                                .MCALL  M$POP,M$GNLS,M$SVC,M$ENDERR
      044366                    M$POP   T$NS,T$NESTLEV,T$TEMP
                                .MCALL  M$GETS,M$DECR
                                .IF LT  T$NESTLEV
                                .ERROR  T$NESTLEV       ; MACRO T$NS UNDERFLOW
                                .MEXIT
                                .ENDC
      044366                    M$GETS  T$NS,\T$NESTLEV,T$TEMP
              000003            T$TEMP=T$NS2
      044366                    M$DECR  T$NESTLEV
              000001            T$NESTLEV=T$NESTLEV-1
                                .IF EQ F$SEG-T$TEMP
      044366                    M$POP   T$SEK,T$SEGLEV,T$$SEG
                                .MCALL  M$GETS,M$DECR
                                .IF LT  T$SEGLEV
                                .ERROR  T$SEGLEV        ; MACRO T$SEK UNDERFLOW
                                .MEXIT
                                .ENDC
      044366                    M$GETS  T$SEK,\T$SEGLEV,T$$SEG
              010000            T$$SEG=T$SEK0
```

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```
     044366                              M$DECR  T$SEGLEV
             177777                      T$SEGLEV=T$SEGLEV-1
     044366                              M$GNLS  T$$SEG
                                         .MCALL  M$GEN
                                         .IF NB T$$SEG
     044366                              M$GEN   \T$$SEG,$,SVCTAG
                                         .IF LE  SVCTAG
                                         .IIF EQ SVCTAG,.LIST
                                         10000$:
                                         .IIF EQ SVCTAG,.NLIST
                                         .MEXIT
                                         .ENDC
                                         .LIST
     044366                                                                          10000$:
                                                 .NLIST
                                         .IFF
                                         M$GEN   \S$LSYM,$,SVCTAG
                                         .ENDC
     044366                              M$SVC   C$ESEG
                                         .MCALL  M$GNINS,M$TSTLAB
     044366                              M$TSTLAB
                                         .MCALL  M$TLABEL,M$INCR
                                         .IIF LT T$TSTMAC, .MEXIT
                                         .RADIX  10
                                         M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                         .RADIX  8
                                         M$INCR  T$TSTSEQ
     044366                              M$GNINS <TRAP   C$ESEG>
                                         .IF LT SVCINS
                                         TRAP    C$ESEG
                                         .MEXIT
                                         .ENDC
                                         .IF EQ SVCINS
                                         .LIST
                                                 TRAP    C$ESEG
                                                         .NLIST
                                         .MEXIT
                                         .ENDC
                                         .IF GT SVCINS
                                         .LIST
     044366  104405                                                                        TRAP    C$ESEG
                                                         .NLIST
                                         .ENDC
                                         .IF EQ T$SEGLEV+1
             000041                      I$SEG=F$END
                                         .ENDC
                                         .IFF
                                         M$ENDERR        ENDSEG,T$TEMP
                                         .ENDC
                                         ;+++---- - ----  ----------   --     ------ ------------------------- -------
                                         ;PART 2 OF THE TEST
                                         ;THIS PART CHECKS THE INCOMPLETE SOURCE HANDSHAKE OF CHANNEL 2
                                         ;+++---------- - ---- -------- ---------- ---------------------------------
     044370  004737  010210                      JSR     PC,CULPA                ;CLEAR ULPA BIT IN ISR 1 AND 2
     044374  004737  010700                      JSR     PC,BGIN2                ;SET UP PARAMETER
     044400                              PSEU5:  BGNSEG
                                         .MCALL  M$PUSH,M$INCR,M$SVC
```

```
              000040                                I$SEG=F$BGN
       044400                                       M$PUSH  T$NS,T$NESTLEV,F$SEG
                                                    .MCALL  M$INCR,M$SETS
       044400                                       M$INCR  T$NESTLEV
              000002                                T$NESTLEV=T$NESTLEV+1
       044400                                       M$SETS  T$NS,\T$NESTLEV,F$SEG
              000003                                T$NS2=F$SEG
              010001                                T$$SEG=S$LSYM
       044400                                       M$PUSH  T$SEK,T$SEGLEV,T$$SEG
                                                    .MCALL  M$INCR,M$SETS
       044400                                       M$INCR  T$SEGLEV
              000000                                T$SEGLEV=T$SEGLEV+1
       044400                                       M$SETS  T$SEK,\T$SEGLEV,T$$SEG
              010001                                T$SEK0=T$$SEG
       044400                                       M$INCR  S$LSYM
              010002                                S$LSYM=S$LSYM+1
       044400                                       M$SVC   C$BSEG
                                                    .MCALL  M$GNINS,M$TSTLAB
       044400                                       M$TSTLAB
                                                    .MCALL  M$TLABEL,M$INCR
                                                    .IIF LT T$TSTMAC, .MEXIT
                                                    .RADIX  10
                                                    M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                                    .RADIX  8
                                                    M$INCR  T$TSTSEQ
       044400                                       M$GNINS <TRAP   C$BSEG>
                                                    .IF LT SVCINS
                                                    TRAP    C$BSEG
                                                    .MEXIT
                                                    .ENDC
                                                    .IF EQ SVCINS
                                                    .LIST
                                                            TRAP    C$BSEG
                                                                    .NLIST
                                                    .MEXIT
                                                    .ENDC
                                                    .IF GT SVCINS
                                                    .LIST
       044400 104404                                                                  TRAP    C$BSEG
                                                                    .NLIST
                                                    .ENDC
  5748 044402 052777 000010 135670                          BIS     #10,@CSRX         ;SELECT CHANNEL 2
  5749 044410 112777 000212 135652                          MOVB    #212,@ICRHX       ;----LOAD TON INTO ACR 2--------------
  5750 044416 012703 000002                                 MOV     #2,R3             ;GET A NONE EXISTENTS MLA
  5751 044422 020337 002314                 11$:            CMP     R3,DPA2           ;...
  5752 044426 001410                                        BEQ     10$               ;...
  5753 044430 020337 002312                                 CMP     R3,DPA1           ;...
  5754 044434 001405                                        BEQ     10$               ;...
  5755 044436 062703 000040                                 ADD     #40,R3            ;CREATE MLA
  5756 044442 010337 002410                                 MOV     R3,MLA1           ;
  5757 044446 000402                                        BR      20$               ;
  5758 044450 005203                        10$:            INC     R3                ;
  5759 044452 000763                                        BR      11$               ;
  5760 044454 113777 002410 135614         20$:            MOVB    MLA1,@IDRHX       ;-----LOAD MLA1 INTO DOR2------- ---- -- -
  5761 044462 004737 011050                                 JSR     PC,LOOP           ;WAIT A LITTLE
  5762 044466 112777 000013 135574                          MOVB    #13,@ICRHX        ;---- LOAD GTS INTO ACR 2---- -- -- - -
  5763 044474 112777 000125 135574                          MOVB    #125,@IDRHX       ;----LOAD DATA PATTERN INTO DOR 2-----
```

TEST 15: INCOMPLETE SOURCE HANDSHAKE TEST

```
5764 044502  004737  011050                      JSR     PC,LOOP                  ;WAIT A LITTLE
5765 044506  017737  135536  002402              MOV     @IIRX,RSAVE              ;GET IIR2 CONTENTS
5766 044514  022737  040000  002402              CMP     #40000,RSAVE             ;ERR BIT IN IIR REGISTER SHOULD BE SET
5767 044522  001413                              BEQ     30$                      ;BRANCH IF YES
5768 044524  012737  040000  002500              MOV     #40000,GOOD              ;SET UP DATA FOR ERROR MESSAGE
5769 044532  013737  002402  002502              MOV     RSAVE,BAD                ;...
5770 044540                                      ERRSOFT 1504,E501,ERR501         ;ERROR HANDLER
                                         .MCALL  M$ERRINS
     044540                              M$ERRINS        1504,E501,ERR501,C$ERSOFT
                                         .MCALL  M$GNINS,M$WORD,M$TSTLAB
     044540                              M$SVC   C$ERSOFT
                                         .MCALL  M$GNINS,M$TSTLAB
     044540                              M$TSTLAB
                                         .MCALL  M$TLABEL,M$INCR
                                         .IIF LT T$TSTMAC, .MEXIT
                                         .RADIX  10
                                         M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                         .RADIX  8
                                         M$INCR  T$TSTSEQ
     044540                              M$GNINS <TRAP   C$ERSOFT>
                                         .IF LT SVCINS
                                         TRAP    C$ERSOFT
                                         .MEXIT
                                         .ENDC
                                         .IF EQ SVCINS
                                         .LIST
                                                 TRAP    C$ERSOFT
                                                         .NLIST
                                         .MEXIT
                                         .ENDC
                                         .IF GT SVCINS
                                         .LIST
     044540  104457                                                                            TRAP    C$ERSOFT
                                                         .NLIST
                                         .ENDC
             000012                      .RADIX  10
                                         .IF NB  1504
             002740                      T$ERRNUM=1504
                                         .IFF
                                         .ERROR  ;MISSING ERROR NR
                                         .ENDC
     044542                              M$WORD  \T$ERRNUM
                                         .MCALL  M$GNINS
                                         .IRP    N,<1504>
                                         M$GNINS <.WORD  N>
                                         .ENDM
     044542                              M$GNINS <.WORD  1504>
                                         .IF LT SVCINS
                                         .WORD   1504
                                         .MEXIT
                                         .ENDC
                                         .IF EQ SVCINS
                                         .LIST
                                                 .WORD   1504
                                                         .NLIST
                                         .MEXIT
                                         .ENDC
```

```
                                    .IF GT SVCINS
                                    .LIST
      044542  002740                                                                              .WORD   1504
                                                .NLIST
                                    .ENDC
              000010                .RADIX  8
                                    .IF NB E501
      044544                        M$WORD  E501
                                    .MCALL  M$GNINS
                                    .IRP    N,<E501>
                                    M$GNINS <.WORD  N>
                                    .ENDM
      044544                        M$GNINS <.WORD  E501>
                                    .IF LT SVCINS
                                    .WORD   E501
                                    .MEXIT
                                    .ENDC
                                    .IF EQ SVCINS
                                    .LIST
                                         .WORD   E501
                                                .NLIST
                                    .MEXIT
                                    .ENDC
                                    .IF GT SVCINS
                                    .LIST
      044544  005376                                                                              .WORD   E501
                                                .NLIST
                                    .ENDC
                                    .IFF
                                    M$WORD  0
                                    .ENDC
                                    .IF NB ERR501
      044546                        M$WORD  ERR501
                                    .MCALL  M$GNINS
                                    .IRP    N,<ERR501>
                                    M$GNINS <.WORD  N>
                                    .ENDM
      044546                        M$GNINS <.WORD  ERR501>
                                    .IF LT SVCINS
                                    .WORD   ERR501
                                    .MEXIT
                                    .ENDC
                                    .IF EQ SVCINS
                                    .LIST
                                         .WORD   ERR501
                                                .NLIST
                                    .MEXIT
                                    .ENDC
                                    .IF GT SVCINS
                                    .LIST
      044546  003672                                                                              .WORD   ERR501
                                                .NLIST
                                    .ENDC
                                    .IFF
                                    M$WORD  0
                                    .ENDC
 5771 044550                             CKLOOP                          ;BRANCH BACK TO BGNSEG IF ERRLOOP IS SET
```

```
                                        .MCALL  M$SVC
      044550                            M$SVC   C$CLP1
                                        .MCALL  M$GNINS,M$TSTLAB
      044550                            M$TSTLAB
                                        .MCALL  M$TLABEL,M$INCR
                                        .IIF LT T$TSTMAC, .MEXIT
                                        .RADIX  10
                                        M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                        .RADIX  8
                                        M$INCR  T$TSTSEQ
      044550                            M$GNINS <TRAP   C$CLP1>
                                        .IF LT SVCINS
                                        TRAP    C$CLP1
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                TRAP    C$CLP1
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
      044550  104406                                                                    TRAP    C$CLP1
                                                        .NLIST
                                        .ENDC
 5772 044552  017737  135500  002402    30$:    MOV     @ISRX,RSAVE             ;GET ISR2 CONTENTS
 5773 044560  022737  000002  002402            CMP     #2,RSAVE                ;TADS BIT SHOULD BE SET
 5774 044566  001413                            BEQ     40$                     ;BRANCH IF YES
 5775 044570  012737  000002  002500            MOV     #2,GOOD                 ;SET UP DATA FOR ERROR MESSAGE
 5776 044576  013737  002402  002502            MOV     RSAVE,BAD               ;...
 5777 044604                                    ERRSOFT 1505,E502,ERR501        ;ERROR HANDLER
                                        .MCALL  M$ERRINS
      044604                            M$ERRINS        1505,E502,ERR501,C$ERSOFT
                                        .MCALL  M$GNINS,M$WORD,M$TSTLAB
      044604                            M$SVC   C$ERSOFT
                                        .MCALL  M$GNINS,M$TSTLAB
      044604                            M$TSTLAB
                                        .MCALL  M$TLABEL,M$INCR
                                        .IIF LT T$TSTMAC, .MEXIT
                                        .RADIX  10
                                        M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                        .RADIX  8
                                        M$INCR  T$TSTSEQ
      044604                            M$GNINS <TRAP   C$ERSOFT>
                                        .IF LT SVCINS
                                        TRAP    C$ERSOFT
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                TRAP    C$ERSOFT
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
```

```
044604 104457                                                      TRAP    C$ERSOFT
                                          .NLIST
                         .ENDC
       000012            .RADIX  10
                         .IF NB  1505
       002741            T$ERRNUM=1505
                         .IFF
                         .ERROR  ;MISSING ERROR-NR
                         .ENDC
044606                   M$WORD  \T$ERRNUM
                         .MCALL  M$GNINS
                         .IRP    N,<1505>
                         M$GNINS <.WORD  N>
                         .ENDM
044606                   M$GNINS <.WORD  1505>
                         .IF LT SVCINS
                         .WORD   1505
                         .MEXIT
                         .ENDC
                         .IF EQ SVCINS
                         .LIST
                                 .WORD   1505
                                          .NLIST
                         .MEXIT
                         .ENDC
                         .IF GT SVCINS
                         .LIST
044606 002741                                                      .WORD   1505
                                          .NLIST
                         .ENDC
       000010            .RADIX  8
                         .IF NB E502
044610                   M$WORD  E502
                         .MCALL  M$GNINS
                         .IRP    N,<E502>
                         M$GNINS <.WORD  N>
                         .ENDM
044610                   M$GNINS <.WORD  E502>
                         .IF LT SVCINS
                         .WORD   E502
                         .MEXIT
                         .ENDC
                         .IF EQ SVCINS
                         .LIST
                                 .WORD   E502
                                          .NLIST
                         .MEXIT
                         .ENDC
                         .IF GT SVCINS
                         .LIST
044610 005437                                                      .WORD   E502
                                          .NLIST
                         .ENDC
                         .IFF
                         M$WORD  0
                         .ENDC
                         .IF NB ERR501
```

E15

TEST 15: INCOMPLETE SOURCE HANDSHAKE TEST

```
      044612                                    M$WORD  ERR501
                                                .MCALL  M$GNINS
                                                .IRP    N,<ERR501>
                                                M$GNINS <.WORD  N>
                                                .ENDM
      044612                                    M$GNINS <.WORD  ERR501>
                                                .IF LT SVCINS
                                                .WORD   ERR501
                                                .MEXIT
                                                .ENDC
                                                .IF EQ SVCINS
                                                .LIST
                                                        .WORD   ERR501
                                                                .NLIST
                                                .MEXIT
                                                .ENDC
                                                .IF GT SVCINS
                                                .LIST
      044612  003672                                                                    .WORD   ERR501
                                                                .NLIST
                                                .ENDC
                                                .IFF
                                                M$WORD  0
                                                .ENDC
5778  044614                                            CKLOOP                  ;BRANCH BACK TO BGNSEG IF ERRLOOP IS SET
                                                .MCALL  M$SVC
      044614                                    M$SVC   C$CLP1
                                                .MCALL  M$GNINS,M$TSTLAB
      044614                                    M$TSTLAB
                                                .MCALL  M$TLABEL,M$INCR
                                                .IIF LT T$TSTMAC, .MEXIT
                                                .RADIX  10
                                                M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                                .RADIX  8
                                                M$INCR  T$TSTSEQ
      044614                                    M$GNINS <TRAP   C$CLP1>
                                                .IF LT SVCINS
                                                TRAP    C$CLP1
                                                .MEXIT
                                                .ENDC
                                                .IF EQ SVCINS
                                                .LIST
                                                        TRAP    C$CLP1
                                                                .NLIST
                                                .MEXIT
                                                .ENDC
                                                .IF GT SVCINS
                                                .LIST
      044614  104406                                                                    TRAP    C$CLP1
                                                                .NLIST
                                                .ENDC
5779  044616  042777  000010  135454    40$:    BIC     #10,@CSRX               ;SELECT CHANNEL 1
5780  044624  012737  000001  002374            MOV     #1,CHAN                 ;LOAD CHANNEL NUMBER
5781  044632  017737  135420  002402            MOV     @ISRX,RSAVE             ;GET ISR1 CONTENTS
5782  044640  005737  002402                    TST     RSAVE                   ;ISR REGISTER SHOULD BE ZERO
5783  044644  001412                            BEQ     50$                     ;BRANCH IF YES
5784  044646  005037  002500                    CLR     GOOD                    ;SET UP DATA FOR ERROR MESSAGE
```

```
   5785 044652  013737  002402  002502          MOV     RSAVE,BAD               ;...
   5786 044660                                  ERRSOFT 1506,E502,ERR501        ;ERROR HANDLER
                                        .MCALL  M$ERRINS
        044660                          M$ERRINS        1506,E502,ERR501,C$ERSOFT
                                        .MCALL  M$GNINS,M$WORD,M$TSTLAB
        044660                          M$SVC   C$ERSOFT
                                        .MCALL  M$GNINS,M$TSTLAB
        044660                          M$TSTLAB
                                        .MCALL  M$TLABEL,M$INCR
                                        .IIF LT T$TSTMAC, .MEXIT
                                        .RADIX  10
                                        M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                        .RADIX  8
                                        M$INCR  T$TSTSEQ
        044660                          M$GNINS <TRAP   C$ERSOFT>
                                        .IF LT SVCINS
                                        TRAP    C$ERSOFT
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                TRAP    C$ERSOFT
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
        044660  104457                                                                          TRAP    C$ERSOFT
                                                        .NLIST
                                        .ENDC
                000012                  .RADIX  10
                                        .IF NB  1506
                002742                  T$ERRNUM=1506
                                        .IFF
                                        .ERROR  ;MISSING ERROR NR
                                        .ENDC
        044662                          M$WORD  \T$ERRNUM
                                        .MCALL  M$GNINS
                                        .IRP    N,<1506>
                                        M$GNINS <.WORD  N>
                                        .ENDM
        044662                          M$GNINS <.WORD  1506>
                                        .IF LT SVCINS
                                        .WORD   1506
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                .WORD   1506
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
        044662  002742                                                                          .WORD   1506
                                                        .NLIST
                                        .ENDC
```

```
               000010          .RADIX  8
                               .IF NB E502
        044664                 M$WORD  E502
                               .MCALL  M$GNINS
                               .IRP    N,<E502>
                               M$GNINS <.WORD  N>
                               .ENDM
        044664                 M$GNINS <.WORD  E502>
                               .IF LT SVCINS
                               .WORD   E502
                               .MEXIT
                               .ENDC
                               .IF EQ SVCINS
                               .LIST
                                       .WORD   E502
                                               .NLIST
                               .MEXIT
                               .ENDC
                               .IF GT SVCINS
                               .LIST
        044664 005437                                                  .WORD   E502
                                               .NLIST
                               .ENDC
                               .IFF
                               M$WORD  0
                               .ENDC
                               .IF NB ERR501
        044666                 M$WORD  ERR501
                               .MCALL  M$GNINS
                               .IRP    N,<ERR501>
                               M$GNINS <.WORD  N>
                               .ENDM
        044666                 M$GNINS <.WORD  ERR501>
                               .IF LT SVCINS
                               .WORD   ERR501
                               .MEXIT
                               .ENDC
                               .IF EQ SVCINS
                               .LIST
                                       .WORD   ERR501
                                               .NLIST
                               .MEXIT
                               .ENDC
                               .IF GT SVCINS
                               .LIST
        044666 003672                                                  .WORD   ERR501
                                               .NLIST
                               .ENDC
                               .IFF
                               M$WORD  0
                               .ENDC
   5787 044670                         CKLOOP                  ;BRANCH BACK TO BGNSEG IF ERRLOOP IS SET
                               .MCALL  M$SVC
        044670                 M$SVC   C$CLP1
                               .MCALL  M$GNINS,M$TSTLAB
        044670                 M$TSTLAB
                               .MCALL  M$TLABEL,M$INCR
```

H15

TEST 15: INCOMPLETE SOURCE HANDSHAKE TEST

```
                                        .IIF LT T$TSTMAC, .MEXIT
                                        .RADIX  10
                                        M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                        .RADIX  8
                                        M$INCR  T$TSTSEQ
      044670                            M$GNINS <TRAP   C$CLP1>
                                        .IF LT SVCINS
                                        TRAP    C$CLP1
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                TRAP    C$CLP1
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
      044670  104406                                                                    TRAP    C$CLP1
                                                        .NLIST
                                        .ENDC
 5788 044672                            50$:    ENDSEG
                                        .MCALL  M$POP,M$GNLS,M$SVC,M$ENDERR
      044672                            M$POP   T$NS,T$NESTLEV,T$TEMP
                                        .MCALL  M$GETS,M$DECR
                                        .IF LT  T$NESTLEV
                                        .ERROR  T$NESTLEV       ; MACRO T$NS UNDERFLOW
                                        .MEXIT
                                        .ENDC
      044672                            M$GETS  T$NS,\T$NESTLEV,T$TEMP
              000003                    T$TEMP=T$NS2
      044672                            M$DECR  T$NESTLEV
              000001                    T$NESTLEV=T$NESTLEV-1
                                        .IF EQ F$SEG-T$TEMP
      044672                            M$POP   T$SEK,T$SEGLEV,T$$SEG
                                        .MCALL  M$GETS,M$DECR
                                        .IF LT  T$SEGLEV
                                        .ERROR  T$SEGLEV        ; MACRO T$SEK UNDERFLOW
                                        .MEXIT
                                        .ENDC
      044672                            M$GETS  T$SEK,\T$SEGLEV,T$$SEG
              010001                    T$$SEG=T$SEK0
      044672                            M$DECR  T$SEGLEV
              177777                    T$SEGLEV=T$SEGLEV 1
      044672                            M$GNLS  T$$SEG
                                        .MCALL  M$GEN
                                        .IF NB T$$SEG
      044672                            M$GEN   \T$$SEG,$,SVCTAG
                                        .IF LE  SVCTAG
                                        .IIF EQ SVCTAG,.LIST
                                        10001$:
                                        .IIF EQ SVCTAG,.NLIST
                                        .MEXIT
                                        .ENDC
                                        .LIST
      044672                                                                    10001$:
                                                .NLIST
```

I15


```
                                            .IFF
                                            M$GEN   \S$LSYM,$,SVCTAG
                                            .ENDC
      044672                                M$SVC   C$ESEG
                                            .MCALL  M$GNINS,M$TSTLAB
      044672                                M$TSTLAB
                                            .MCALL  M$TLABEL,M$INCR
                                            .IIF LT T$TSTMAC, .MEXIT
                                            .RADIX  10
                                            M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                            .RADIX  8
                                            M$INCR  T$TSTSEQ
      044672                                M$GNINS <TRAP   C$ESEG>
                                            .IF LT SVCINS
                                            TRAP    C$ESEG
                                            .MEXIT
                                            .ENDC
                                            .IF EQ SVCINS
                                            .LIST
                                                    TRAP    C$ESEG
                                                            .NLIST
                                            .MEXIT
                                            .ENDC
                                            .IF GT SVCINS
                                            .LIST
      044672  104405                                                                    TRAP    C$ESEG
                                                            .NLIST
                                            .ENDC
                                            .IF EQ T$SEGLEV+1
              000041                        I$SEG-F$END
                                            .ENDC
                                            .IFF
                                            M$ENDERR        ENDSEG,T$TEMP
                                            .ENDC
 5789 044674  005737  002234                        TST     QVP                     ;IS QUICK VERIFY PASS SELECTED
 5790 044700  001010                                BNE     EXQV15                  ;IF YES EXIT TEST
 5791 044702  005237  002322                        INC     ITRCNT                  ;ITERATION COUNTER +1
 5792 044706  023737  002322  002320                CMP     ITRCNT,ITRDEF           ;DEFAULT ITERATION EXECUTED
 5793 044714  001402                                BEQ     EXQV15                  ;IF YES EXIT TEST
 5794 044716  000137  044056                        JMP     ITAC15                  ;IF NO TEST ITERATION
 5795 044722                                EXQV15: EXIT    TST                     ;
                                            .MCALL  M$SVC,M$EXIT,M$EXSEG,M$EXTJ,M$GETTOP,M$CHECK,M$WORD,XFER
              000041                        T$FLAG=F$END
      044722                                M$CHECK TST,T$TEMP,T$FLAG
                                            .IF IDN <TST>,<TST>
              010044                        T$TEMP=T$$TEST
              000040                        T$FLAG=I$TST
                                            .MEXIT
                                            .ENDC
                                            .IF IDN <SUB>,<TST>
                                            T$TEMP=T$$SUB
                                            T$FLAG=I$SUB
                                            .MEXIT
                                            .ENDC
                                            .IF IDN <SEG>,<TST>
                                            T$TEMP=T$$SEG
                                            T$FLAG=I$SEG
```

```
                        .MEXIT
                        .ENDC
                        .IF IDN <INIT>,<TST>
                        T$TEMP=T$$INIT
                        T$FLAG=I$INIT
                        .MEXIT
                        .ENDC
                        .IF IDN <CLN>,<TST>
                        T$TEMP=T$$CLEAN
                        T$FLAG=I$CLN
                        .MEXIT
                        .ENDC
                        .IF IDN <SRV>,<TST>
                        T$TEMP=T$$SRV
                        T$FLAG=I$SRV
                        .MEXIT
                        .ENDC
                        .IF IDN <MSG>,<TST>
                        T$TEMP=T$$MSG
                        T$FLAG=F$JMP
                        .MEXIT
                        .ENDC
                        .IF IDN <RPT>,<TST>
                        T$TEMP=T$$RPT
                        T$FLAG=F$JMP
                        .MEXIT
                        .ENDC
                        .IF IDN <DU>,<TST>
                        T$TEMP=T$$DU
                        T$FLAG=F$JMP
                        .MEXIT
                        .ENDC
                        .IF IDN <AU>,<TST>
                        T$TEMP=T$$AU
                        T$FLAG=F$JMP
                        .MEXIT
                        .ENDC
                        .IF EQ T$FLAG-F$JMP
                        M$WORD  J$JMP
                        M$EXTJ  \T$TEMP
                        .MEXIT
                        .ENDC
                        .IF EQ  T$FLAG-F$BGN
    044722              M$SVC   C$EXIT
                        .MCALL  M$GNINS,M$TSTLAB
    044722              M$TSTLAB
                        .MCALL  M$TLABEL,M$INCR
                        .IIF LT T$TSTMAC, .MEXIT
                        .RADIX  10
                        M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                        .RADIX  8
                        M$INCR  T$TSTSEQ
    044722              M$GNINS <TRAP   C$EXIT>
                        .IF LT SVCINS
                        TRAP    C$EXIT
                        .MEXIT
                        .ENDC
```

K15


```
                                  .IF EQ SVCINS
                                  .LIST
                                          TRAP    C$EXIT
                                                  .NLIST
                                  .MEXIT
                                  .ENDC
                                  .IF GT SVCINS
                                  .LIST
     044722  104432                                                               TRAP    C$EXIT
                                                  .NLIST
                                  .ENDC
                                  .IF IDN <SEG>,<TST>
                                  M$GETTOP T$SEK,T$SEGLEV,T$TEMP
                                  M$EXSEG \T$TEMP
                                  .IFF
     044724                       M$EXIT  \T$TEMP
                                  .MCALL  M$GNINS
     044724                       M$GNINS <.WORD  L10044-.>
                                  .IF LT SVCINS
                                  .WORD   L10044-.
                                  .MEXIT
                                  .ENDC
                                  .IF EQ SVCINS
                                  .LIST
                                          .WORD   L10044-.
                                                  .NLIST
                                  .MEXIT
                                  .ENDC
                                  .IF GT SVCINS
                                  .LIST
     044724  000052                                                               .WORD   L10044-.
                                                  .NLIST
                                  .ENDC
                                  .ENDC
                                  .MEXIT
                                  .ENDC
                                  .IF IDN <HRD>,<TST>
                                  M$GETTOP        T$NS,T$NESTLEV,T$TEMP
                                  .IF EQ  F$HARD-T$TEMP
                                  .IRP    N,<\T$$HARD>
                                  XFER    L'N
                                  .ENDM
                                  .MEXIT
                                  .ENDC
                                  .ENDC
                                  .IF IDN <SFT>,<TST>
                                  M$GETTOP        T$NS,T$NESTLEV,T$TEMP
                                  .IF EQ  F$SOFT-T$TEMP
                                  .IRP    N,<\T$$SOFT>
                                  XFER    L'N
                                  .ENDM
                                  .MEXIT
                                  .ENDC
                                  .ENDC
                                  .ERROR  ;ILL. "EXIT TST" STMT.
  5796
  5797                                    .NLIST  BEX
```

L15


```
     044726     045     123     062  TSHD15: .ASCIZ  /*S2*AINCOMPLETE SOURCE HANDSHAKE TEST*N/
                                             .LIST   BEX
                                             .EVEN
     044776                                  ENDTST
                                     .MCALL  M$POP,M$GNTAG,M$SVC,M$ENDERR
                                     .IF EQ  F$BGN-I$TST
                000041               I$TST=F$END
                                     .IFF
                                     .ERROR  ;MISSING "BGNTST'
                                     .MEXIT
                                     .ENDC
     044776                          M$POP   T$NS,T$NESTLEV,T$TEMP
                                     .MCALL  M$GETS,M$DECR
                                     .IF LT  T$NESTLEV
                                     .ERROR  T$NESTLEV        ; MACRO T$NS UNDERFLOW
                                     .MEXIT
                                     .ENDC
     044776                          M$GETS  T$NS,\T$NESTLEV,T$TEMP
                000001               T$TEMP=T$NS1
     044776                          M$DECR  T$NESTLEV
                000000               T$NESTLEV=T$NESTLEV-1
                                     .IF EQ F$TEST-T$TEMP
     044776                          M$GNTAG L,T$$TEST
                                     .MCALL  M$GEN
     044776                          M$GEN   L,\T$$TEST,SVCTAG
                                     .IF LE  SVCTAG
                                     .IIF EQ SVCTAG,.LIST
                                     L10044:
                                     .IIF EQ SVCTAG,.NLIST
                                     .MEXIT
                                     .ENDC
                                     .LIST
     044776                                                                      L10044:
                                             .NLIST
                010000               S$LSYM=T$LSYM
     044776                          M$SVC   C$ETST
                                     .MCALL  M$GNINS,M$TSTLAB
     044776                          M$TSTLAB
                                     .MCALL  M$TLABEL,M$INCR
                                     .IIF LT T$TSTMAC, .MEXIT
                                     .RADIX  10
                                     M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                     .RADIX  8
                                     M$INCR  T$TSTSEQ
     044776                          M$GNINS <TRAP   C$ETST>
                                     .IF LT SVCINS
                                     TRAP    C$ETST
                                     .MEXIT
                                     .ENDC
                                     .IF EQ SVCINS
                                     .LIST
                                             TRAP    C$ETST
                                                     .NLIST
                                     .MEXIT
                                     .ENDC
                                     .IF GT SVCINS
                                     .LIST
```

```
        044776  104401                                              TRAP    C$ETST
                                                .NLIST
                                .ENDC
                000041          I$TST=F$END
                                .IFF
                                M$ENDERR        ENDTST,T$TEMP
                                .ENDC
```

```
                                  .SBTTL  TEST 16: CHANGING OF THE CONTROLLER CONFIGURATION
                                  ;*****************************************************************************
                                  ;                IEX - TEST 16
                                  ;PART 1 CHECKS THE CHANGING OF THE CONTROLLER CONFIGURATION FROM 1 TO 2
                                  ;       BY MEANS OF THE AUXILIARY COMMANDS RQC AND RLC.
                                  ;PART 2 CHECKS THE CHANGING OF THE CONTROLLER CONFIGURATION FROM 2 TO 1
                                  ;       BY MEANS OF THE AUXILIARY COMMANDS RQC AND RLC.
                                  ;*****************************************************************************
045000                                    BGNTST
                                  .MCALL  M$INCR,M$GNTEST,M$PUSH,M$INCR
                                  .IF NE  F$END-I$SUB
                                  .ERROR  ;"BGNTST" IN SUB
                                  .MEXIT
                                  .ENDC
                                  .IF NE  F$END-I$SEG
                                  .ERROR  ;"BGNTST" IN SEG
                                  .MEXIT
                                  .ENDC
                                  .IF NE  F$END-I$TST
                                  .ERROR  ;"BGNTST" IN TST
                                  .MEXIT
                                  .IFF
          000040                  I$TST=F$BGN
                                  .ENDC
                                  .IF B
045000                            M$INCR  T$TESTNUM
          000020                  T$TESTNUM=T$TESTNUM+1
                                  .IFF
                                  T$TESTNUM=
                                  .ENDC
          000000                  T$SUBNUM=0
          000012                  .RADIX  10
045000                            M$GNTEST        \T$TESTNUM
                                  .MCALL  M$GEN
045000                            M$GEN   T,16:,SVCTST
                                  .IF LE  SVCTST
                                  .IIF EQ SVCTST,.LIST
                                  T16::
                                  .IIF EQ SVCTST,.NLIST
                                  :MEXIT
                                  .ENDC
                                  .LIST
045000                                                                                  T16::
                                          .NLIST
          000010                  .RADIX  8
045000                            M$PUSH  T$NS,T$NESTLEV,F$TEST
                                  .MCALL  M$INCR,M$SETS
045000                            M$INCR  T$NESTLEV
          000001                  T$NESTLEV=T$NESTLEV+1
045000                            M$SETS  T$NS,\T$NESTLEV,F$TEST
          000001                  T$NS1=F$TEST
          010045                  T$$TEST=T$TAGNUM
045000                            M$INCR T$TAGNUM
          010046                  T$TAGNUM=T$TAGNUM+1
          000001                  T$TSTSEQ=1
045000    005737   002324                 TST     PNTF                      ;IS THE PNT FLAG SET
045004    001410                          BEQ     7$                        ;IF YES, PRINT THE TEST HEADER
```

TEST 16: CHANGING OF THE CONTROLLER CONFIGURATION

```
  5814 045006                                    PRINTF  #TSHD16            ;...
                                         .MCALL  M$PRINT
                                         .IF B   #TSHD16
                                         .ERROR  ;MISSING FORMAT
                                         .MEXIT
                                         .ENDC
                                         .IF B   <>
       045006                            M$PRINT C$PNTF,#TSHD16
                                         .MCALL  M$COUNT,M$PUT,M$GNINS,M$SVC
              000001                     T$ARGCNT=1
       045006                            M$COUNT T$ARGCNT,<>,<>,<>,<>,<>,<>,<>,<>
                                         .IF NB <>
                                         M$COUNT T$ARGCNT,<>,<>,<>,<>,<>,<>,<>,<>
                                         .ENDC
                                         .IF NB <>
                                         T$ARGCNT=T$ARGCNT+1
                                         .ENDC
                                         .IRP    N,<\T$ARGCNT>
                                         M$PUT   #N,#TSHD16,<>,<>,<>,<>,<>,<>,<>,<>
                                         .ENDM
       045006                            M$PUT   #1,#TSHD16,<>,<>,<>,<>,<>,<>,<>,<>
                                         .MCALL  M$PUT1
                                         .IF NB  <#TSHD16>
       045006                            M$PUT   <#TSHD16>,<>,<>,<>,<>,<>,<>,<>,<>
                                         .MCALL  M$PUT1
                                         .IF NB  <>
                                         M$PUT   <>,<>,<>,<>,<>,<>,<>,<>,<>
                                         .ENDC
                                         .IF NB  <#TSHD16>
       045006                            M$PUT1  #TSHD16
                                         .MCALL  M$GNINS
                                         .IF B
       045006                            M$GNINS <MOV     #TSHD16,-(SP)>
                                         .IF LT SVCINS
                                         MOV     #TSHD16,-(SP)
                                         .MEXIT
                                         .ENDC
                                         .IF EQ SVCINS
                                         .LIST
                                                 MOV     #TSHD16,-(SP)
                                                         .NLIST
                                         .MEXIT
                                         .ENDC
                                         .IF GT SVCINS
                                         .LIST
       045006  012746  046264                                                    MOV     #TSHD16,-(SP)
                                                         .NLIST
                                         .ENDC
                                         .IFF
                                         .IF DIF B,<#TSHD16>
                                         .ERROR  ;ILL. ARG. "#TSHD16" ONLY "B" IS ALLOWED.
                                         .MEXIT
                                         .ENDC
                                         M$GNINS <CLR     -(SP)>
                                         M$GNINS <BISB    ,(SP)>
                                         .ENDC
                                         .ENDC
```

```
                                .ENDC
                                .IF NB  <Ø1>
045012                          M$PUT1  Ø1
                                .MCALL  M$GNINS
                                .IF B
045012                          M$GNINS <MOV    Ø1,-(SP)>
                                .IF LT SVCINS
                                MOV     Ø1,-(SP)
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        MOV     Ø1,-(SP)
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
045012  012746  000001                                                  MOV     Ø1,-(SP)
                                                .NLIST
                                .ENDC
                                .IFF
                                .IF DIF B,<Ø1>
                                .ERROR  ;ILL. ARG. "Ø1" ONLY "B" IS ALLOWED.
                                .MEXIT
                                .ENDC
                                M$GNINS <CLR    -(SP)>
                                M$GNINS <BISB   ,(SP)>
                                .ENDC
                                .ENDC
045016                          M$GNINS <MOV    SP,R0>
                                .IF LT SVCINS
                                MOV     SP,R0
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        MOV     SP,R0
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
045016  010600                                                          MOV     SP,R0
                                                .NLIST
                                .ENDC
045020                          M$SVC   C$PNTF
                                .MCALL  M$GNINS,M$TSTLAB
045020                          M$TSTLAB
                                .MCALL  M$TLABEL,M$INCR
                                .IIF LT T$TSTMAC, .MEXIT
                                .RADIX  10
                                M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                .RADIX  8
                                M$INCR  T$TSTSEQ
045020                          M$GNINS <TRAP   C$PNTF>
                                .IF LT SVCINS
```

```
                                        TRAP    C$PNTF
                                        .MEXIT
                                        .E'DC
                                        .IF EQ SVCINS
                                        .LIST
                                                TRAP    C$PNTF
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
      045020  104417                                                                    TRAP    C$PNTF
                                                        .NLIST
                                        .ENDC
                                        .IRP    N,<\T$ARGCNT*2+2>
                                        M$GNINS <ADD    #N,SP>
                                        .ENDM
      045022                            M$GNINS <ADD    #4,SP>
                                        .IF LT SVCINS
                                        ADD     #4,SP
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                ADD     #4,SP
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
      045022  062706  000004                                                            ADD     #4,SP
                                                        .NLIST
                                        .ENDC
                                        .MEXIT
                                        .ENDC
                                        .IF B   <>
                                        M$PRINT C$PNTF,#TSHD16,<>
                                        .MEXIT
                                        .ENDC
                                        .IF B   <>
                                        M$PRINT C$PNTF,#TSHD16,<>,<>
                                        .MEXIT
                                        .ENDC
                                        .IF B   <>
                                        M$PRINT C$PNTF,#TSHD16,<>,<>,<>
                                        .MEXIT
                                        .ENDC
                                        .IF B   <>
                                        M$PRINT C$PNTF,#TSHD16,<>,<>,<>,<>
                                        .MEXIT
                                        .ENDC
                                        .IF B   <>
                                        M$PRINT C$PNTF,#TSHD16,<>,<>,<>,<>,<>
                                        .MFXIT
                                        .ENDC
                                        .IF B   <>
                                        M$PRINT C$PNTF,#TSHD16,<>,<>,<>,<>,<>,<>
```

E16

TEST 16: CHANGING OF THE CONTROLLER CONFIGURATION

```
                                        .MEXIT
                                        .ENDC
                                        .IF B   <>
                                        M$PRINT C$PNTF,#TSHD16,<>,<>,<>,<>,<>,<>,<>
                                        .MEXIT
                                        .ENDC
                                        M$PRINT C$PNTF,#TSHD16,<>,<>,<>,<>,<>,<>,<>,<>
 5815 045026  005037  002322            7$:     CLR     ITRCNT                  ;CLEAR ITERATION COUNTER
 5816 045032                            ITAC16: BGNSEG
                                        .MCALL  M$PUSH,M$INCR,M$SVC
              000040                    I$SEG=F$BGN
      045032                            M$PUSH  T$NS,T$NESTLEV,F$SEG
                                        .MCALL  M$INCR,M$SETS
      045032                            M$INCR  T$NESTLEV
              000002                    T$NESTLEV=T$NESTLEV+1
      045032                            M$SETS  T$NS,\T$NESTLEV,F$SEG
              000003                    T$NS2=F$SEG
              010000                    T$$SEG=S$LSYM
      045032                            M$PUSH  T$SEK,T$SEGLEV,T$$SEG
                                        .MCALL  M$INCR,M$SETS
      045032                            M$INCR  T$SEGLEV
              000000                    T$SEGLEV=T$SEGLEV+1
      045032                            M$SETS  T$SEK,\T$SEGLEV,T$$SEG
              010000                    T$SEK0=T$$SEG
      045032                            M$INCR  S$LSYM
              010001                    S$LSYM=S$LSYM+1
      045032                            M$SVC   C$BSEG
                                        .MCALL  M$GNINS,M$TSTLAB
      045032                            M$TSTLAB
                                        .MCALL  M$TLABEL,M$INCR
                                        .IIF LT T$TSTMAC, .MEXIT
                                        .RADIX  10
                                        M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                        .RADIX  8
                                        M$INCR  T$TSTSEQ
      045032                            M$GNINS <TRAP   C$BSEG>
                                        .IF LT SVCINS
                                        TRAP    C$BSEG
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                TRAP    C$BSEG
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
      045032  104404                                                                    TRAP    C$BSEG
                                                        .NLIST
                                        .ENDC
 5817 045034  004737  010210                    JSR     PC,CULPA                ;CLEAR ULPA BIT IN ISR 1 AND 2
 5818 045040  004737  010524                    JSR     PC,BGIN1                ;SET UP PARAMETER
 5819 045044  032737  000001  002314            BIT     #1,DPA2                 ;IS DPA EVEN
 5820 045052  001404                            BEQ     3$                      ;BRANCH IF YES
 5821 045054  052737  000001  002456            BIS     #1,CDAT10               ;SET ULPA BIT IN COMPARE DATA FOR ISR
 5822 045062  000403                            BR      .+10                    ;BRANCH OVER NEXT INSTRUCTION
```

F16

TEST 16: CHANGING OF THE CONTROLLER CONFIGURATION

```
 045064 042737  000001  002456  3$:     BIC     #1,CDAT10               ;CLEAR ULPA BIT IN COMPARE DATA FOR ISR
 045072 052777  000010  135200          BIS     #10,@CSRX               ;SELECT CHANNEL 2
 045100 112777  000223  135162          MOVB    #223,@ICRHX             ;-----LOAD DAI INTO ACR 2--------- ---
 045106 112777  000040  135146          MOVB    #40,@ISRHX              ;-----SET UCG BIT IN ISR 2--- - ------
 045114 042777  000010  135156          BIC     #10,@CSRX               ;SELECT CHANNEL 1
 045122 013701  002314                  MOV     DPA2,R1                 ;CREATE MTA2
 045126 062701  000100                  ADD     #100,R1                 ;...
 045132 010137  002416                  MOV     R1,MTA2                 ;STORE MTA2
 045136 113777  002416  135132          MOVB    MTA2,@IDRHX             ;-----LOAD MTA2 INTO DOR 1------------
 045144 004737  011050                  JSR     PC,LOOP                 ;WAIT A LITTLE
 045150 112777  000011  135120          MOVB    #11,@IDRHX              ;-----LOAD TCT INTO DOR 1-------------
 045156 004737  011050                  JSR     PC,LOOP                 ;WAIT A LITTLE
 045162 052777  000010  135110          BIS     #10,@CSRX               ;SELECT CHANNEL 2
 045170 012737  000002  002374          MOV     #2,CHAN                 ;LOAD CHANNEL NUMBER
 045176 017737  135046  002402          MOV     @IIRX,RSAVE             ;GET IIR2 CONTENTS
 045204 022737  022501  002402          CMP     #22501,RSAVE            ;UCG,MA,IFC,INT1,MAC BIT SHOULD BE SET
 045212 001413                          BEQ     10$                     ;BRANCH IF YES
 045214 013737  002402  002502          MOV     RSAVE,BAD               ;SET UP DATA FOR ERROR MESSAGE
 045222 012737  022501  002500          MOV     #22501,GOOD             ;...
 045230                                 ERRSOFT 1601,E501,ERR501        ;ERROR HANDLER
                                .MCALL  M$ERRINS
 045230                         M$ERRINS        1601,E501,ERR501,C$ERSOFT
                                .MCALL  M$GNINS,M$WORD,M$TSTLAB
 045230                         M$SVC   C$ERSOFT
                                .MCALL  M$GNINS,M$TSTLAB
 045230                         M$TSTLAB
                                .MCALL  M$TLABEL,M$INCR
                                .IIF LT T$TSTMAC, .MEXIT
                                .RADIX  10
                                M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                .RADIX  8
                                M$INCR  T$TSTSEQ
 045230                         M$GNINS <TRAP   C$ERSOFT>
                                .IF LT SVCINS
                                TRAP    C$ERSOFT
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        TRAP    C$ERSOFT
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
 045230 104457                                                                          TRAP    C$ERSOFT
                                                .NLIST
                                .ENDC
        000012                  .RADIX  10
                                .IF NB  1601
        003101                  T$ERRNUM=1601
                                .IFF
                                .ERROR  ;MISSING ERROR NR
                                .ENDC
 045232                         M$WORD  \T$ERRNUM
                                .MCALL  M$GNINS
                                .IRP    N,<1601>
```

G16


```
                                M$GNINS <.WORD  N>
                                .ENDM
     045232                     M$GNINS <.WORD  1601>
                                .IF LT SVCINS
                                .WORD   1601
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        .WORD   1601
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
     045232  003101                                                     .WORD   1601
                                                .NLIST
                                .ENDC
             000010             .RADIX  8
                                .IF NB E501
     045234                     M$WORD  E501
                                .MCALL  M$GNINS
                                .IRP    N,<E501>
                                M$GNINS <.WORD  N>
                                .ENDM
     045234                     M$GNINS <.WORD  E501>
                                .IF LT SVCINS
                                .WORD   E501
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        .WORD   E501
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
     045234  005376                                                     .WORD   E501
                                                .NLIST
                                .ENDC
                                .IFF
                                M$WORD  0
                                .ENDC
                                .IF NB ERR501
     045236                     M$WORD  ERR501
                                .MCALL  M$GNINS
                                .IRP    N,<ERR501>
                                M$GNINS <.WORD  N>
                                .ENDM
     045236                     M$GNINS <.WORD  ERR501>
                                .IF LT SVCINS
                                .WORD   ERR501
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
```

```
                                        .WORD   ERR501
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
      045236  003672                                                                    .WORD   ERR501
                                                .NLIST
                                .ENDC
                                .IFF
                                M$WORD  0
                                .ENDC
 5843 045240                            CKLOOP                          ;BRANCH BACK TO BGNSEG IF ERRLOOP IS SET
                                .MCALL  M$SVC
      045240                    M$SVC   C$CLP1
                                .MCALL  M$GNINS,M$TSTLAB
      045240                    M$TSTLAB
                                .MCALL  M$TLABEL,M$INCR
                                 IIF LT T$TSTMAC, .MEXIT
                                .RADIX  10
                                M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                .RADIX  8
                                M$INCR  T$TSTSEQ
      045240                    M$GNINS <TRAP   C$CLP1>
                                .IF LT SVCINS
                                TRAP    C$CLP1
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        TRAP    C$CLP1
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
      045240  104406                                                                    TRAP    C$CLP1
                                                .NLIST
                                .ENDC
 5844 045242  017737  135010  002502  10$:      MOV     @ISRX,BAD               ;GET ISR2 CONTENTS
 5845 045250  023737  002456  002502            CMP     CDAT10,BAD              ;ATN,NDAC,DAV,NRFD,ATN,TADS,(ULPA)IS SET
 5846 045256  001410                            BEQ     20$                     ;BRANCH IF YES
 5847 045260  013737  002456  002500            MOV     CDAT10,GOOD             ;SET UP DATA FOR ERROR MESSAGE
 5848 045266                                    ERRSOFT 1602,E502,ERR501        ;ERROR HANDLER
                                .MCALL  M$ERRINS
      045266                    M$ERRINS        1602,E502,ERR501,C$ERSOFT
                                .MCALL  M$GNINS,M$WORD,M$TSTLAB
      045266                    M$SVC   C$ERSOFT
                                .MCALL  M$GNINS,M$TSTLAB
      045266                    M$TSTLAB
                                .MCALL  M$TLABEL,M$INCR
                                .IIF LT T$TSTMAC, .MEXIT
                                .RADIX  10
                                M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                .RADIX  8
                                M$INCR  T$TSTSEQ
      045266                    M$GNINS <TRAP   C$ERSOFT>
```

```
                        .IF LT SVCINS
                        TRAP    C$ERSOFT
                        .MEXIT
                        .ENDC
                        .IF EQ SVCINS
                        .LIST
                                TRAP    C$ERSOFT
                                        .NLIST
                        .MEXIT
                        .ENDC
                        .IF GT SVCINS
                        .LIST
045266  104457                                                          TRAP    C$ERSOFT
                                        .NLIST
                        .ENDC
        000012          .RADIX  10
                        .IF NB  1602
        003102          T$ERRNUM=1602
                        .IFF
                        .ERROR  ;MISSING ERROR-NR
                        .ENDC
045270                  M$WORD  \T$ERRNUM
                        .MCALL  M$GNINS
                        .IRP    N,<1602>
                        M$GNINS <.WORD  N>
                        .ENDM
045270                  M$GNINS <.WORD  1602>
                        .IF LT SVCINS
                        .WORD   1602
                        .MEXIT
                        .ENDC
                        .IF EQ SVCINS
                        .LIST
                                .WORD   1602
                                        .NLIST
                        .MEXIT
                        .ENDC
                        .IF GT SVCINS
                        .LIST
045270  003102                                                          .WORD   1602
                                        .NLIST
                        .ENDC
        000010          .RADIX  8
                        .IF NB E502
045272                  M$WORD  E502
                        .MCALL  M$GNINS
                        .IRP    N,<E502>
                        M$GNINS <.WORD  N>
                        .ENDM
045272                  M$GNINS <.WORD  E502>
                        .IF LT SVCINS
                        .WORD   E502
                        .MEXIT
                        .ENDC
                        .IF EQ SVCINS
                        .LIST
                                .WORD   E502
```

J16


```
                                        .NLIST
                        .MEXIT
                        .ENDC
                        .IF GT SVCINS
                        .LIST
     045272  005437                                                     .WORD   E502
                                        .NLIST
                        .ENDC
                        .IFF
                        M$WORD  0
                        .ENDC
                        .IF NB ERR501
     045274             M$WORD  ERR501
                        .MCALL  M$GNINS
                        .IRP    N,<ERR501>
                        M$GNINS <.WORD  N>
                        .ENDM
     045274             M$GNINS <.WORD  ERR501>
                        .IF LT SVCINS
                        .WORD   ERR501
                        .MEXIT
                        .ENDC
                        .IF EQ SVCINS
                        .LIST
                                .WORD   ERR501
                                        .NLIST
                        .MEXIT
                        .ENDC
                        .IF GT SVCINS
                        .LIST
     045274  003672                                                     .WORD   ERR501
                                        .NLIST
                        .ENDC
                        .IFF
                        M$WORD  0
                        .ENDC
5849 045276                     CKLOOP                  ;BRANCH BACK TO BGNSEG IF ERRLOOP IS SET
                        .MCALL  M$SVC
     045276             M$SVC   C$CLP1
                        .MCALL  M$GNINS,M$TSTLAB
     045276             M$TSTLAB
                        .MCALL  M$TLABEL,M$INCR
                        .IIF LT T$TSTMAC, .MEXIT
                        .RADIX  10
                        M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                        .RADIX  8
                        M$INCR  T$TSTSEQ
     045276             M$GNINS <TRAP   C$CLP1>
                        .IF LT SVCINS
                        TRAP    C$CLP1
                        .MEXIT
                        .ENDC
                        .IF EQ SVCINS
                        .LIST
                                TRAP    C$CLP1
                                        .NLIST
                        .MEXIT
```

```
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
     045276  104406                                                                           TRAP    C$CLP1
                                                            .NLIST
                                        .ENDC
5850 045300  017737  134760  002502  20$:     MOV     @ICRX,BAD              ;GET ICR2 CONTENTS
5851 045306  122737  000011  002502           CMPB    #11,BAD                ;ICR CONTENTS SHOULD BE 11
5852 045314  001407                           BEQ     30$                    ;BRANCH IF YES
5853 045316  012737  000011  002500           MOV     #11,GOOD               ;SET UP DATA FOR ERROR MESSAGE
5854 045324                                   ERRSOFT 1603,E901,ERR501       ;ERROR HANDLER
                                        .MCALL  M$ERRINS
     045324                             M$ERRINS        1603,E901,ERR501,C$ERSOFT
                                        .MCALL  M$GNINS,M$WORD,M$TSTLAB
     045324                             M$SVC   C$ERSOFT
                                        .MCALL  M$GNINS,M$TSTLAB
     045324                             M$TSTLAB
                                        .MCALL  M$TLABEL,M$INCR
                                        .IIF LT T$TSTMAC, .MEXIT
                                        .RADIX  10
                                        M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                        .RADIX  8
                                        M$INCR  T$TSTSEQ
     045324                             M$GNINS <TRAP   C$ERSOFT>
                                        .IF LT SVCINS
                                        TRAP    C$ERSOFT
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                TRAP    C$ERSOFT
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
     045324  104457                                                                           TRAP    C$ERSOFT
                                                            .NLIST
                                        .ENDC
             000012                     .RADIX  10
                                        .IF NB  1603
             003103                     T$ERRNUM=1603
                                        .IFF
                                        .ERROR  ;MISSING ERROR-NR
                                        .ENDC
     045326                             M$WORD  \T$ERRNUM
                                        .MCALL  M$GNINS
                                        .IRP    N,<1603>
                                        M$GNINS <.WORD  N>
                                        .ENDM
     045326                             M$GNINS <.WORD  1603>
                                        .IF LT SVCINS
                                        .WORD   1603
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
```

```
                                        .WORD   1603
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
      045326  003103                                                            .WORD   1603
                                                .NLIST
                                .ENDC
              000010            .RADIX  8
                                .IF NB E901
      045330                    M$WORD  E901
                                .MCALL  M$GNINS
                                .IRP    N,<E901>
                                M$GNINS <.WORD  N>
                                .ENDM
      045330                    M$GNINS <.WORD  E901>
                                .IF LT SVCINS
                                .WORD   E901
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        .WORD   E901
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
      045330  005634                                                            .WORD   E901
                                                .NLIST
                                .ENDC
                                .IFF
                                M$WORD  0
                                .ENDC
                                .IF NB ERR501
      045332                    M$WORD  ERR501
                                .MCALL  M$GNINS
                                .IRP    N,<ERR501>
                                M$GNINS <.WORD  N>
                                .ENDM
      045332                    M$GNINS <.WORD  ERR501>
                                .IF LT SVCINS
                                .WORD   ERR501
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        .WORD   ERR501
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
      045332  003672                                                            .WORD   ERR501
                                                .NLIST
                                .ENDC
```

```
                                          .IFF
                                          M$WORD  0
                                          .ENDC
   5855 045334  112777  000021  134726    30$:    MOVB    #21,@ICRHX              ;----LOAD RGC INTO ACR 2----------------
   5856 045342  112777  000001  134720            MOVB    #1,@ICRHX               ;----LOAD NOT DACR INTO ACR 2------ ----
   5857 045350  042777  000010  134722            BIC     #10,@CSRX               ;SELECT CHANNEL 1
   5858 045356  112777  000022  134704            MOVB    #22,@ICRHX              ;----LOAD RLC INTO ACR 1--  --------------
   5859 045364  052777  000010  134706            BIS     #10,@CSRX               ;SELECT CHANNEL 2
   5860 045372  012737  000002  002374            MOV     #2,CHAN                 ;LOAD CHANNEL NUMBER
   5861 045400  017737  134644  002502            MOV     @IIRX,BAD               ;GET IIR2 CONTENTS
   5862 045406  022737  000020  002502            CMP     #20,BAD                 ;BO BIT SHOULD BE SET
   5863 045414  001410                            BEQ     33$                     ;BRANCH IF YES
   5864 045416  012737  000020  002500            MOV     #20,GOOD                ;SET UP DATA FOR ERROR MESSAGE
   5865 045424                                    ERRSOFT 1604,E501,ERR501        ;ERROR HANDLER
                                          .MCALL  M$ERRINS
        045424                            M$ERRINS        1604,E501,ERR501,C$ERSOFT
                                          .MCALL  M$GNINS,M$WORD,M$TSTLAB
        045424                            M$SVC   C$ERSOFT
                                          .MCALL  M$GNINS,M$TSTLAB
        045424                            M$TSTLAB
                                          .MCALL  M$TLABEL,M$INCR
                                          .IIF LT T$TSTMAC, .MEXIT
                                          .RADIX  10
                                          M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                          .RADIX  8
                                          M$INCR  T$TSTSEQ
        045424                            M$GNINS <TRAP   C$ERSOFT>
                                          .IF LT SVCINS
                                          TRAP    C$ERSOFT
                                          .MEXIT
                                          .ENDC
                                          .IF EQ SVCINS
                                          .LIST
                                                  TRAP    C$ERSOFT
                                                          .NLIST
                                          .MEXIT
                                          .ENDC
                                          .IF GT SVCINS
                                          .LIST
        045424  104457                                                                                    TRAP    C$ERSOFT
                                                          .NLIST
                                          .ENDC
                000012                    .RADIX  10
                                          .IF NB  1604
                003104                    T$ERRNUM=1604
                                          .IFF
                                          .ERROR  ;MISSING ERROR NR
                                          .ENDC
        045426                            M$WORD  \T$ERRNUM
                                          .MCALL  M$GNINS
                                          .IRP    N,<1604>
                                          M$GNINS <.WORD  N>
                                          .ENDM
        045426                            M$GNINS <.WORD  1604>
                                          .IF LT SVCINS
                                          .WORD   1604
                                          .MEXIT
```

```
                        .ENDC
                        .IF EQ SVCINS
                        .LIST
                                .WORD   1604
                                        .NLIST
                        .MEXIT
                        .ENDC
                        .IF GT SVCINS
                        .LIST
045426  003104                                                          .WORD   1604
                                        .NLIST
                        .ENDC
        000010          .RADIX  8
                        .IF NB E501
045430                  M$WORD  E501
                        .MCALL  M$GNINS
                        .IRP    N,<E501>
                        M$GNINS <.WORD  N>
                        .ENDM
045430                  M$GNINS <.WORD  E501>
                        .IF LT SVCINS
                        .WORD   E501
                        .MEXIT
                        .ENDC
                        .IF EQ SVCINS
                        .LIST
                                .WORD   E501
                                        .NLIST
                        .MEXIT
                        .ENDC
                        .IF GT SVCINS
                        .LIST
045430  005376                                                          .WORD   E501
                                        .NLIST
                        .ENDC
                        .IFF
                        M$WORD  0
                        .ENDC
                        .IF NB ERR501
045432                  M$WORD  ERR501
                        .MCALL  M$GNINS
                        .IRP    N,<ERR501>
                        M$GNINS <.WORD  N>
                        .ENDM
045432                  M$GNINS <.WORD  ERR501>
                        .IF LT SVCINS
                        .WORD   ERR501
                        .MEXIT
                        .ENDC
                        .IF EQ SVCINS
                        .LIST
                                .WORD   ERR501
                                        .NLIST
                        .MEXIT
                        .ENDC
                        .IF GT SVCINS
                        .LIST
```

C1


```
      045432  003672                                                                           .WORD   ERR501
                                                              .NLIST
                                                   .ENDC
                                                   .IFF
                                                   M$WORD  0
                                                   .ENDC
 5866 045434                                               CKLOOP                    ;BRANCH BACK TO BGNSEG IF ERRLOOP IS SET
                                                   .MCALL  M$SVC
      045434                                       M$SVC   C$CLP1
                                                   .MCALL  M$GNINS,M$TSTLAB
      045434                                       M$TSTLAB
                                                   .MCALL  M$TLABEL,M$INCR
                                                   .IIF LT T$TSTMAC, .MEXIT
                                                   .RADIX  10
                                                   M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                                   .RADIX  8
                                                   M$INCR  T$TSTSEQ
      045434                                       M$GNINS <TRAP    C$CLP1>
                                                   .IF LT SVCINS
                                                   TRAP    C$CLP1
                                                   .MEXIT
                                                   .ENDC
                                                   .IF EQ SVCINS
                                                   .LIST
                                                           TRAP    C$CLP1
                                                                   .NLIST
                                                   .MEXIT
                                                   .ENDC
                                                   .IF GT SVCINS
                                                   .LIST
      045434  104406                                                                           TRAP    C$CLP1
                                                                   .NLIST
                                                   .ENDC
 5867 045436  042777  000010  134634               33$:    BIC     #10,@CSRX        ;SELECT CHANNEL 1
 5868 045444  012737  000001  002374                       MOV     #1,CHAN          ;LOAD CHANNEL NUMBER
 5869 045452  017737  134572  002502                       MOV     @IIRX,BAD        ;GET IIR1 CONTENTS
 5870 045460  022737  000020  002502                       CMP     #20,BAD          ;B0 BIT SHOULD BE SET
 5871 045466  001410                                       BEQ     40$              ;BRANCH IF YES
 5872 045470  012737  000020  002500                       MOV     #20,GOOD         ;SET UP DATA FOR ERROR MESSAGE
 5873 045476                                               ERRSOFT 1605,E501,ERR501 ;ERROR HANDLER
                                                   .MCALL  M$ERRINS
      045476                                       M$ERRINS        1605,E501,ERR501,C$ERSOFT
                                                   .MCALL  M$GNINS,M$WORD,M$TSTLAB
      045476                                       M$SVC   C$ERSOFT
                                                   .MCALL  M$GNINS,M$TSTLAB
      045476                                       M$TSTLAB
                                                   .MCALL  M$TLABEL,M$INCR
                                                   .IIF LT T$TSTMAC, .MEXIT
                                                   .RADIX  10
                                                   M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                                   .RADIX  8
                                                   M$INCR  T$TSTSEQ
      045476                                       M$GNINS <TRAP    C$ERSOFT>
                                                   .IF LT SVCINS
                                                   TRAP    C$ERSOFT
                                                   .MEXIT
                                                   .ENDC
```

D1


```
                                  .IF EQ SVCINS
                                  .LIST
                                          TRAP    C$ERSOFT
                                                  .NLIST
                                  .MEXIT
                                  .ENDC
                                  .IF GT SVCINS
                                  .LIST
     045476  104457                                                                  TRAP    C$ERSOFT
                                                  .NLIST
                                  .ENDC
             000012               .RADIX  10
                                  .IF NB  1605
             003105               T$ERRNUM=1605
                                  .IFF
                                  .ERROR  ;MISSING ERROR-NR
                                  .ENDC
     045500                       M$WORD  \T$ERRNUM
                                  .MCALL  M$GNINS
                                  .IRP    N,<1605>
                                  M$GNINS <.WORD  N>
                                  .ENDM
     045500                       M$GNINS <.WORD  1605>
                                  .IF LT SVCINS
                                  .WORD   1605
                                  .MEXIT
                                  .ENDC
                                  .IF EQ SVCINS
                                  .LIST
                                          .WORD   1605
                                                  .NLIST
                                  .MEXIT
                                  .ENDC
                                  .IF GT SVCINS
                                  .LIST
     045500  003105                                                                  .WORD   1605
                                                  .NLIST
                                  .ENDC
             000010               .RADIX  8
                                  .IF NB E501
     045502                       M$WORD  E501
                                  .MCALL  M$GNINS
                                  .IRP    N,<E501>
                                  M$GNINS <.WORD  N>
                                  .ENDM
     045502                       M$GNINS <.WORD  E501>
                                  .IF LT SVCINS
                                  .WORD   E501
                                  .MEXIT
                                  .ENDC
                                  .IF EQ SVCINS
                                  .LIST
                                          .WORD   E501
                                                  .NLIST
                                  .MEXIT
                                  .ENDC
                                  .IF GT SVCINS
```

```
                                .LIST
     045502  005376                                                          .WORD   E501
                                          .NLIST
                                .ENDC
                                .IFF
                                M$WORD  0
                                .ENDC
                                .IF NB ERR501
     045504                     M$WORD  ERR501
                                .MCALL  M$GNINS
                                .IRP    N,<ERR501>
                                M$GNINS <.WORD  N>
                                .ENDM
     045504                     M$GNINS <.WORD  ERR501>
                                .IF LT SVCINS
                                .WORD   ERR501
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        .WORD   ERR501
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
     045504  003672                                                          .WORD   ERR501
                                          .NLIST
                                .ENDC
                                .IFF
                                M$WORD  0
                                .ENDC
5874 045506                             CKLOOP                  ;BRANCH BACK TO BGNSEG IF ERRLOOP IS SET
                                .MCALL  M$SVC
     045506                     M$SVC   C$CLP1
                                .MCALL  M$GNINS,M$TSTLAB
     045506                     M$TSTLAB
                                .MCALL  M$TLABEL,M$INCR
                                .IIF LT T$TSTMAC, .MEXIT
                                .RADIX  10
                                M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                .RADIX  8
                                M$INCR  T$TSTSEQ
     045506                     M$GNINS <TRAP   C$CLP1>
                                .IF LT SVCINS
                                TRAP    C$CLP1
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        TRAP    C$CLP1
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
     045506  104406                                                          TRAP    C$CLP1
```

```
                                                            .NLIST
                                              .ENDC
 5875 045510  052777  000010  134562  40$:    BIS     #10,@CSRX               ;SELECT CHANNEL 2
 5876 045516  112777  000137  134552          MOVB    #137,@IDRHX             ;-----LOAD UNT INTO DOR 2---
 5877 045524  004737  011050                  JSR     PC,LOOP                 ;WAIT A LITTLE
 5878 045530                                  ENDSEG
                                              .MCALL  M$POP,M$GNLS,M$SVC,M$ENDERR
      045530                                  M$POP   T$NS,T$NESTLEV,T$TEMP
                                              .MCALL  M$GETS,M$DECR
                                              .IF LT  T$NESTLEV
                                              .ERROR  T$NESTLEV        ; MACRO T$NS UNDERFLOW
                                              .MEXIT
                                              .ENDC
      045530                                  M$GETS  T$NS,\T$NESTLEV,T$TEMP
              000003                          T$TEMP=T$NS2
      045530                                  M$DECR  T$NESTLEV
              000001                          T$NESTLEV=T$NESTLEV-1
                                              .IF EQ F$SEG-T$TEMP
      045530                                  M$POP   T$SEK,T$SEGLEV,T$$SEG
                                              .MCALL  M$GETS,M$DECR
                                              .IF LT  T$SEGLEV
                                              .ERROR  T$SEGLEV         ; MACRO T$SEK UNDERFLOW
                                              .MEXIT
                                              .ENDC
      045530                                  M$GETS  T$SEK,\T$SEGLEV,T$$SEG
              010000                          T$$SEG=T$SEK0
      045530                                  M$DECR  T$SEGLEV
              177777                          T$SEGLEV=T$SEGLEV-1
      045530                                  M$GNLS  T$$SEG
                                              .MCALL  M$GEN
                                              .IF NB T$$SEG
      045530                                  M$GEN   \T$$SEG,$,SVCTAG
                                              .IF LE  SVCTAG
                                              .IIF EQ SVCTAG,.LIST
                                              10000$:
                                              .IIF EQ SVCTAG,.NLIST
                                              .MEXIT
                                              .ENDC
                                              .LIST
      045530                                                                                  10000$:
                                                      .NLIST
                                              .IFF
                                              M$GEN   \S$LSYM,$,SVCTAG
                                              .ENDC
      045530                                  M$SVC   C$ESEG
                                              .MCALL  M$GNINS,M$TSTLAB
      045530                                  M$TSTLAB
                                              .MCALL  M$TLABEL,M$INCR
                                              .IIF LT T$TSTMAC, .MEXIT
                                              .RADIX  10
                                              M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                              .RADIX  8
                                              M$INCR  T$TSTSEQ
      045530                                  M$GNINS <TRAP   C$ESEG>
                                              .IF LT SVCINS
                                              TRAP    C$ESEG
                                              .MEXIT
```

```
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        TRAP    C$ESEG
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
045530  104405                                                                  TRAP    C$ESEG
                                                .NLIST
                                .ENDC
                                .IF EQ T$SEGLEV+1
        000041                  I$SEG=F$END
                                .ENDC
                                .IFF
                                M$ENDERR        ENDSEG,T$TEMP
                                .ENDC
                                ;+++--------------------------------------------------------------------
                                ;PART 2 CHECKS THE CHANGING OF THE CONTROLLER CONFIGURATION FROM 2 TO 1
                                ;+++--------------------------------------------------------------------
045532                          PSEU16: BGNSEG
                                .MCALL  M$PUSH,M$INCR,M$SVC
        000040                  I$SEG=F$BGN
045532                          M$PUSH  T$NS,T$NESTLEV,F$SEG
                                .MCALL  M$INCR,M$SETS
045532                          M$INCR  T$NESTLEV
        000002                  T$NESTLEV=T$NESTLEV+1
045532                          M$SETS  T$NS,\T$NESTLEV,F$SEG
        000003                  T$NS2=F$SEG
        010001                  T$$SEG=S$LSYM
045532                          M$PUSH  T$SEK,T$SEGLEV,T$$SEG
                                .MCALL  M$INCR,M$SETS
045532                          M$INCR  T$SEGLEV
        000000                  T$SEGLEV=T$SEGLEV+1
045532                          M$SETS  T$SEK,\T$SEGLEV,T$$SEG
        010001                  T$SEK0=T$$SEG
045532                          M$INCR  S$LSYM
        010002                  S$LSYM=S$LSYM+1
045532                          M$SVC   C$BSEG
                                .MCALL  M$GNINS,M$TSTLAB
045532                          M$TSTLAB
                                .MCALL  M$TLABEL,M$INCR
                                .IIF LT T$TSTMAC, .MEXIT
                                .RADIX  10
                                M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                .RADIX  8
                                M$INCR  T$TSTSEQ
045532                          M$GNINS <TRAP   C$BSEG>
                                .IF LT SVCINS
                                TRAP    C$BSEG
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        TRAP    C$BSEG
                                                .NLIST
```

H1


```
                                         .MEXIT
                                         .ENDC
                                         .IF GT SVCINS
                                         .LIST
      045532  104404                                                                          TRAP     C$BSEG
                                                            .NLIST
                                         .ENDC
      045534  004737  010210                   JSR     PC,CULPA                  ;CLEAR ULPA BIT IN ISR 1 AND 2
      045540  004737  010700                   JSR     PC,BGIN2                  ;SET UP PARAMETER
      045544  032737  000001  002312           BIT     #1,DPA1                   ;IS DPA EVEN
      045552  001404                           BEQ     3$                        ;BRANCH IF YES
      045554  052737  000001  002456           BIS     #1,CDAT10                 ;SET ULPA BIT IN COMPARE DATA FOR ISR
      045562  000403                           BR      .+10                      ;BRANCH OVER NEXT INSTRUCTION
      045564  042737  000001  002456   3$:     BIC     #1,CDAT10                 ;CLEAR ULPA BIT IN COMPARE DATA FOR ISR
      045572  042777  000010  134500           BIC     #10,@CSRX                 ;SELECT CHANNEL 1
      045600  112777  000223  134462           MOVB    #223,@ICRHX               ;-----LOAD DAI INTO ACR 1------------
      045606  112777  000040  134446           MOVB    #40,@ISRHX                ;-----SET UCG BIT IN ISR 1-----------
      045614  013701  002312                   MOV     DPA1,R1                   ;CREATE MTA1
      045620  062701  000100                   ADD     #100,R1                   ;...
      045624  010137  002414                   MOV     R1,MTA1                   ;STORE MTA1
      045630  052777  000010  134442           BIS     #10,@CSRX                 ;SELECT CHANNEL 2
      045636  113777  002414  134432           MOVB    MTA1,@IDRHX               ;-----LOAD MTA1 INTO DOR 2-----------
      045644  004737  011050                   JSR     PC,LOOP                   ;WAIT A LITTLE
      045650  112777  000011  134420           MOVB    #11,@IDRHX                ;-----LOAD TCT INTO DOR 2------------
      045656  004737  011050                   JSR     PC,LOOP                   ;WAIT A LITTLE
      045662  042777  000010  134410           BIC     #10,@CSRX                 ;SELECT CHANNEL 1
      045670  012737  000001  002374           MOV     #1,CHAN                   ;LOAD CHANNEL NUMBER
      045676  017737  134346  002402           MOV     @IIRX,RSAVE               ;GET IIR1 CONTENTS
      045704  022737  022501  002402           CMP     #22501,RSAVE              ;UCG,MA,IFC,INT1,MAC BIT SHOULD BE SET
      045712  001413                           BEQ     10$                       ;BRANCH IF YES
      045714  013737  002402  002502           MOV     RSAVE,BAD                 ;SET UP DATA FOR ERROR MESSAGE
      045722  012737  022501  002500           MOV     #22501,GOOD               ;...
      045730                                   ERRSOFT 1606,E501,ERR501          ;ERROR HANDLER
                                         .MCALL  M$ERRINS
      045730                             M$ERRINS        1606,E501,ERR501,C$ERSOFT
                                         .MCALL  M$GNINS,M$WORD,M$TSTLAB
      045730                             M$SVC   C$ERSOFT
                                         .MCALL  M$GNINS,M$TSTLAB
      045730                             M$TSTLAB
                                         .MCALL  M$TLABEL,M$INCR
                                         .IIF LT T$TSTMAC, .MEXIT
                                         .RADIX  10
                                         M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                         .RADIX  8
                                         M$INCR  T$TSTSEQ
      045730                             M$GNINS <TRAP   C$ERSOFT>
                                         .IF LT SVCINS
                                         TRAP    C$ERSOFT
                                         .MEXIT
                                         .ENDC
                                         .IF EQ SVCINS
                                         .LIST
                                                 TRAP    C$ERSOFT
                                                         .NLIST
                                         .MEXIT
                                         .ENDC
                                         .IF GT SVCINS
```

```
                                .LIST
        045730  104457                                                              TRAP    C$ERSOFT
                                          .NLIST
                                .ENDC
                000012          .RADIX  10
                                .IF NB  1606
                003106          T$ERRNUM=1606
                                .IFF
                                .ERROR  ;MISSING ERROR-NR
                                .ENDC
        045732                  M$WORD  \T$ERRNUM
                                .MCALL  M$GNINS
                                .IRP    N,<1606>
                                M$GNINS <.WORD  N>
                                .ENDM
        045732                  M$GNINS <.WORD  1606>
                                .IF LT SVCINS
                                .WORD   1606
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                     .WORD   1606
                                          .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
        045732  003106                                                              .WORD   1606
                                          .NLIST
                                .ENDC
                000010          .RADIX  8
                                .IF NB E501
        045734                  M$WORD  E501
                                .MCALL  M$GNINS
                                .IRP    N,<E501>
                                M$GNINS <.WORD  N>
                                .ENDM
        045734                  M$GNINS <.WORD  E501>
                                .IF LT SVCINS
                                .WORD   E501
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                     .WORD   E501
                                          .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
        045734  005376                                                              .WORD   E501
                                          .NLIST
                                .ENDC
                                .IFF
                                M$WORD  0
                                .ENDC
```

```
                                        .IF NB ERR501
      045736                            M$WORD  ERR501
                                        .MCALL  M$GNINS
                                        .IRP    N,<ERR501>
                                        M$GNINS <.WORD  N>
                                        .ENDM
      045736                            M$GNINS <.WORD  ERR501>
                                        .IF LT SVCINS
                                        .WORD   ERR501
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                .WORD   ERR501
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
      045736  003672                                                                                  .WORD   ERR501
                                                        .NLIST
                                        .ENDC
                                        .IFF
                                        M$WORD  0
                                        .ENDC
 5909 045740                                    CKLOOP                          ;BRANCH BACK TO BGNSEG IF ERRLOOP IS SET
                                        .MCALL  M$SVC
      045740                            M$SVC   C$CLP1
                                        .MCALL  M$GNINS,M$TSTLAB
      045740                            M$TSTLAB
                                        .MCALL  M$TLABEL,M$INCR
                                        .IIF LT T$TSTMAC, .MEXIT
                                        .RADIX  10
                                        M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                        .RADIX  8
                                        M$INCR  T$TSTSEQ
      045740                            M$GNINS <TRAP   C$CLP1>
                                        .IF LT SVCINS
                                        TRAP    C$CLP1
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                TRAP    C$CLP1
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
      045740  104406                                                                                  TRAP    C$CLP1
                                                        .NLIST
                                        .ENDC
 5910 045742  017737  134310  002502    10$:    MOV     @ISRX,BAD               ;GET ISR1 CONTENTS
 5911 045750  023737  002456  002502            CMP     CDAT10,BAD              ;ATN,NDAC,DAV,NRFD,ATN,TADS,(ULPA)IS SET
 5912 045756  001410                            BEQ     20$                     ;BRANCH IF YES
 5913 045760  013737  002456  002500            MOV     CDAT10,GOOD             ;SET UP DATA FOR ERROR MESSAGE
 5914 045766                                    ERRSOFT 1607,E502,ERR501        ;ERROR HANDLER
```

```
                                .MCALL  M$ERRINS
     045766                     M$ERRINS        1607,E502,ERR501,C$ERSOFT
                                .MCALL  M$GNINS,M$WORD,M$TSTLAB
     045766                     M$SVC   C$ERSOFT
                                .MCALL  M$GNINS,M$TSTLAB
     045766                     M$TSTLAB
                                .MCALL  M$TLABEL,M$INCR
                                .IIF LT T$TSTMAC, .MEXIT
                                .RADIX  10
                                M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                .RADIX  8
                                M$INCR  T$TSTSEQ
     045766                     M$GNINS <TRAP   C$ERSOFT>
                                .IF LT SVCINS
                                TRAP    C$ERSOFT
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        TRAP    C$ERSOFT
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
     045766  104457                                                         TRAP    C$ERSOFT
                                                .NLIST
                                .ENDC
             000012             .RADIX  10
                                .IF NB  1607
             003107             T$ERRNUM=1607
                                .IFF
                                .ERROR  ;MISSING ERROR NR
                                .ENDC
     045770                     M$WORD  \T$ERRNUM
                                .MCALL  M$GNINS
                                .IRP    N,<1607>
                                M$GNINS <.WORD  N>
                                .ENDM
     045770                     M$GNINS <.WORD  1607>
                                .IF LT SVCINS
                                .WORD   1607
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        .WORD   1607
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
     045770  003107                                                         .WORD   1607
                                                .NLIST
                                .ENDC
             000010             .RADIX  8
                                .IF NB E502
```

L1


```
        045772                  M$WORD  E502
                                .MCALL  M$GNINS
                                .IRP    N,<E502>
                                M$GNINS <.WORD  N>
                                .ENDM
        045772                  M$GNINS <.WORD  E502>
                                .IF LT SVCINS
                                .WORD   E502
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        .WORD   E502
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
        045772  005437                                                          .WORD   E502
                                                .NLIST
                                .ENDC
                                .IFF
                                M$WORD  0
                                .ENDC
                                .IF NB ERR501
        045774                  M$WORD  ERR501
                                .MCALL  M$GNINS
                                .IRP    N,<ERR501>
                                M$GNINS <.WORD  N>
                                .ENDM
        045774                  M$GNINS <.WORD  ERR501>
                                .IF LT SVCINS
                                .WORD   ERR501
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        .WORD   ERR501
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
        045774  003672                                                          .WORD   ERR501
                                                .NLIST
                                .ENDC
                                .IFF
                                M$WORD  0
                                .ENDC
   5915 045776                          CKLOOP                  ;BRANCH BACK TO BGNSEG IF ERRLOOP IS SET
                                .MCALL  M$SVC
        045776                  M$SVC   C$CLP1
                                .MCALL  M$GNINS,M$TSTLAB
        045776                  M$TSTLAB
                                .MCALL  M$TLABEL,M$INCR
                                .IIF LT T$TSTMAC, .MEXIT
                                .RADIX  10
```

```
                                                M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                                .RADIX  8
                                                M$INCR  T$TSTSEQ
      045776                                    M$GNINS <TRAP   C$CLP1>
                                                .IF LT SVCINS
                                                TRAP    C$CLP1
                                                .MEXIT
                                                .ENDC
                                                .IF EQ SVCINS
                                                .LIST
                                                        TRAP    C$CLP1
                                                                .NLIST
                                                .MEXIT
                                                .ENDC
                                                .IF GT SVCINS
                                                .LIST
      045776  104406                                                                                    TRAP    C$CLP1
                                                                .NLIST
                                                .ENDC
 5916 046000  017737  134260  002502   20$:     MOV     @ICRX,BAD               ;GET ICR1 CONTENTS
 5917 046006  122737  000011  002502            CMPB    #11,BAD                 ;ICR CONTENTS SHOULD BE 11
 5918 046014  001407                            BEQ     30$                     ;BRANCH IF YES
 5919 046016  012737  000011  002500            MOV     #11,GOOD                ;SET UP DATA FOR ERROR MESSAGE
 5920 046024                                    ERRSOFT 1608,E901,ERR501        ;ERROR HANDLER
                                                .MCALL  M$ERRINS
      046024                                    M$ERRINS        1608,E901,ERR501,C$ERSOFT
                                                .MCALL  M$GNINS,M$WORD,M$TSTLAB
      046024                                    M$SVC   C$ERSOFT
                                                .MCALL  M$GNINS,M$TSTLAB
      046024                                    M$TSTLAB
                                                .MCALL  M$TLABEL,M$INCR
                                                .IIF LT T$TSTMAC, .MEXIT
                                                .RADIX  10
                                                M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                                .RADIX  8
                                                M$INCR  T$TSTSEQ
      046024                                    M$GNINS <TRAP   C$ERSOFT>
                                                .IF LT SVCINS
                                                TRAP    C$ERSOFT
                                                .MEXIT
                                                .ENDC
                                                .IF EQ SVCINS
                                                .LIST
                                                        TRAP    C$ERSOFT
                                                                .NLIST
                                                .MEXIT
                                                .ENDC
                                                .IF GT SVCINS
                                                .LIST
      046024  104457                                                                                    TRAP    C$ERSOFT
                                                                .NLIST
                                                .ENDC
              000012                            .RADIX  10
                                                .IF NB  1608
              003110                            T$ERRNUM=1608
                                                .IFF
                                                .ERROR  ;MISSING ERROR NR
```

```
                                        .ENDC
      046026                            M$WORD  \T$ERRNUM
                                        .MCALL  M$GNINS
                                        .IRP    N,<1608>
                                        M$GNINS <.WORD  N>
                                        .ENDM
      046026                            M$GNINS <.WORD  1608>
                                        .IF LT SVCINS
                                        .WORD   1608
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                .WORD   1608
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
      046026  003110                                                                  .WORD   1608
                                                        .NLIST
                                        .ENDC
              000010                    .RADIX  8
                                        .IF NB E901
      046030                            M$WORD  E901
                                        .MCALL  M$GNINS
                                        .IRP    N,<E901>
                                        M$GNINS <.WORD  N>
                                        .ENDM
      046030                            M$GNINS <.WORD  E901>
                                        .IF LT SVCINS
                                        .WORD   E901
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                .WORD   E901
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
      046030  005634                                                                  .WORD   E901
                                                        .NLIST
                                        .ENDC
                                        .IFF
                                        M$WORD  0
                                        .ENDC
                                        .IF NB ERR501
      046032                            M$WORD  ERR501
                                        .MCALL  M$GNINS
                                        .IRP    N,<ERR501>
                                        M$GNINS <.WORD  N>
                                        .ENDM
      046032                            M$GNINS <.WORD  ERR501>
                                        .IF LT SVCINS
                                        .WORD   ERR501
```

```
                              .ENDC
                              .IF EQ SVCINS
                              .LIST
                                       .WORD    ERRS01
                                       .NLIST
                              .MEXIT
                              .ENDC
                              .IF GT SVCINS
                              .LIST
   046032  003672                                                                      .WORD   ERR501
                                       .NLIST
                              .ENDC
                              .IFF
                              M$WORD  0
                              .ENDC
   046034  112777  000021  134226  30$:   MOVB    #21,@ICRHX         ;----LOAD RGC INTO ACR 1-----------------
   046042  112777  000001  134220          MOVB    #1,@ICRHX          ;----LOAD NOT DACR INTO ACR 1-----------
   046050  052777  000010  134222          BIS     #10,@CSRX          ;SELECT CHANNEL 2
   046056  112777  000022  134204          MOVB    #22,@ICRHX         ;----LOAD RLC INTO ACR 2------------------
   046064  042777  000010  134206          BIC     #10,@CSRX          ;SELECT CHANNEL 1
   046072  012737  000001  002374          MOV     #1,CHAN            ;LOAD CHANNEL NUMBER
   046100  017737  134144  002502          MOV     @IIRX,BAD          ;GET IIR1 CONTENTS
   046106  022737  000020  002502          CMP     #20,BAD            ;B0 BIT SHOULD BE SET
   046114  001410                          BEQ     33$                ;BRANCH IF YES
   046116  012737  000020  002500          MOV     #20,GOOD           ;SET UP DATA FOR ERROR MESSAGE
   046124                                  ERRSOFT 1609,E501,ERR501   ;ERROR HANDLER
                              .MCALL  M$ERRINS
   046124                     M$ERRINS         1609,E501,ERR501,C$ERSOFT
                              .MCALL  M$GNINS,M$WORD,M$TSTLAB
   046124                     M$SVC   C$ERSOFT
                              .MCALL  M$GNINS,M$TSTLAB
   046124                     M$TSTLAB
                              .MCALL  M$TLABEL,M$INCR
                              .IIF LT T$TSTMAC, .MEXIT
                              .RADIX  10
                              M$TLABEL         \T$TESTNUN,\T$TSTSEQ
                              .RADIX  8
                              M$INCR  T$TSTSEQ
   046124                     M$GNINS <TRAP    C$ERSOFT>
                              .IF LT SVCINS
                              TRAP    C$ERSOFT
                              .MEXIT
                              .ENDC
                              .IF EQ SVCINS
                              .LIST
                                      TRAP     C$ERSOFT
                                               .NLIST
                              .MEXIT
                              .ENDC
                              .IF GT SVCINS
                              .LIST
   046124  104457                                                                      TRAP    C$ERSOFT
                                       .NLIST
                              .ENDC
           000012             .RADIX  10
                              .IF NB  1609
```

```
        003111          T$ERRNUM=1609
                        .IFF
                        .ERROR  ;MISSING ERROR-NR
                        .ENDC
046126                  M$WORD  \T$ERRNUM
                        .MCALL  M$GNINS
                        .IRP    N,<1609>
                        M$GNINS <.WORD  N>
                        .ENDM
046126                  M$GNINS <.WORD  1609>
                        .IF LT SVCINS
                        .WORD   1609
                        .MEXIT
                        .ENDC
                        .IF EQ SVCINS
                        .LIST
                                .WORD   1609
                                        .NLIST
                        .MEXIT
                        .ENDC
                        .IF GT SVCINS
                        .LIST
046126  003111                                                  .WORD   1609
                                        .NLIST
                        .ENDC
        000010          .RADIX  8
                        .IF NB E501
046130                  M$WORD  E501
                        .MCALL  M$GNINS
                        .IRP    N,<E501>
                        M$GNINS <.WORD  N>
                        .ENDM
046130                  M$GNINS <.WORD  E501>
                        .IF LT SVCINS
                        .WORD   E501
                        .MEXIT
                        .ENDC
                        .IF EQ SVCINS
                        .LIST
                                .WORD   E501
                                        .NLIST
                        .MEXIT
                        .ENDC
                        .IF GT SVCINS
                        .LIST
046130  005376                                                  .WORD   E501
                                        .NLIST
                        .ENDC
                        .IFF
                        M$WORD  0
                        .ENDC
                        .IF NB ERR501
046132                  M$WORD  ERR501
                        .MCALL  M$GNINS
                        .IRP    N,<ERR501>
                        M$GNINS <.WORD  N>
                        .ENDM
```

```
      046132                            M$GNINS <.WORD  ERR501>
                                        .IF LT SVCINS
                                        .WORD   ERR501
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                .WORD   ERR501
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
      046132  003672                                                                    . ?RD   ERR501
                                                        .NLIST
                                        .ENDC
                                        .IFF
                                        M$WORD  0
                                        .ENDC
 5932 046134                                    CKLOOP                  ;BRANCH BACK TO BGNSEG IF ERRLOOP IS SET
                                        .MCALL  M$SVC
      046134                            M$SVC   C$CLP1
                                        .MCALL  M$GNINS,M$TSTLAB
      046134                            M$TSTLAB
                                        .MCALL  M$TLABEL,M$INCR
                                        .IIF LT T$TSTMAC, .MEXIT
                                        .RADIX  10
                                        M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                        .RADIX  8
                                        M$INCR  T$TSTSEQ
      046134                            M$GNINS <TRAP   C$CLP1>
                                        .IF LT SVCINS
                                        TRAP    C$CLP1
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                TRAP    C$CLP1
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
      046134  104406                                                                    TRAP    C$CLP1
                                                        .NLIST
                                        .ENDC
 5933 046136  052777  000010  134134    33$:    BIS     #10,@CSRX               ;SELECT CHANNEL 2
 5934 046144  012737  000002  002374            MOV     #2,CHAN                 ;LOAD CHANNEL NUMBER
 5935 046152  017737  134072  002502            MOV     @IIRX,BAD               ;GET IIR2 CONTENTS
 5936 046160  022737  000020  002502            CMP     #20,BAD                 ;B0 BIT SHOULD BE SET
 5937 046166  001410                            BEQ     40$                     ;BRANCH IF YES
 5938 046170  012737  000020  002500            MOV     #20,GOOD                ;SET UP DATA FOR ERROR MESSAGE
 5939 046176                                    ERRSOFT 16010,E501,ERR501       ;ERROR HANDLER
                                        .MCALL  M$ERRINS
      046176                            M$ERRINS        16010,E501,ERR501,C$ERSOFT
                                        .MCALL  M$GNINS,M$WORD,M$TSTLAB
      046176                            M$SVC   C$ERSOFT
```

```
                                        .MCALL  M$GNINS,M$TSTLAB
      046176                            M$TSTLAB
                                        .MCALL  M$TLABEL,M$INCR
                                        .IIF LT T$TSTMAC, .MEXIT
                                        .RADIX  10
                                        M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                        .RADIX  8
                                        M$INCR  T$TSTSEQ
      046176                            M$GNINS <TRAP   C$ERSOFT>
                                        .IF LT SVCINS
                                        TRAP    C$ERSOFT
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                TRAP    C$ERSOFT
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
      046176  104457                                                                            TRAP    C$ERSOFT
                                                        .NLIST
                                        .ENDC
              000012                    .RADIX  10
                                        .IF NB  16010
              037212                    T$ERRNUM=16010
                                        .IFF
                                        .ERROR  ;MISSING ERROR NR
                                        .ENDC
      046200                            M$WORD  \T$ERRNUM
                                        .MCALL  M$GNINS
                                        .IRP    N,<16010>
                                        M$GNINS <.WORD  N>
                                        .ENDM
      046200                            M$GNINS <.WORD  16010>
                                        .IF LT SVCINS
                                        .WORD   16010
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                .WORD   16010
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
      046200  037212                                                                            .WORD   16010
                                                        .NLIST
                                        .ENDC
              000010                    .RADIX  8
                                        .IF NB E501
      046202                            M$WORD  E501
                                        .MCALL  M$GNINS
                                        .IRP    N,<E501>
                                        M$GNINS <.WORD  N>
```

```
                                        .ENDM
      046202                            M$GNINS <.WORD  E501>
                                        .IF LT SVCINS
                                        .WORD   E501
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                .WORD   E501
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
      046202  005376                                                                    .WORD   E501
                                                        .NLIST
                                        .ENDC
                                        .IFF
                                        M$WORD  0
                                        .ENDC
                                        .IF NB ERR501
      046204                            M$WORD  ERR501
                                        .MCALL  M$GNINS
                                        .IRP    N,<ERR501>
                                        M$GNINS <.WORD  N>
                                        .ENDM
      046204                            M$GNINS <.WORD  ERR501>
                                        .IF LT SVCINS
                                        .WORD   ERR501
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                .WORD   ERR501
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
      046204  003672                                                                    .WORD   ERR501
                                                        .NLIST
                                        .ENDC
                                        .IFF
                                        M$WORD  0
                                        .ENDC
 5940 046206                                    CKLOOP                  ;BRANCH BACK TO BGNSEG IF ERRLOOP IS SET
                                        .MCALL  M$SVC
      046206                            M$SVC   C$CLP1
                                        .MCALL  M$GNINS,M$TSTLAB
      046206                            M$TSTLAB
                                        .MCALL  M$TLABEL,M$INCR
                                        .IIF LT T$TSTMAC, .MEXIT
                                        .RADIX  10
                                        M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                        .RADIX  8
                                        M$INCR  T$TSTSEQ
      046206                            M$GNINS <TRAP   C$CLP1>
```

G2


```
                                        .IF LT SVCINS
                                        TRAP    C$CLP1
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                TRAP    C$CLP1
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
      046206  104406                                                                                  TRAP    C$CLP1
                                                        .NLIST
                                        .ENDC
 5941 046210  042777  000010  134062    40$:    BIC     #10,@CSRX               ;SELECT CHANNEL 1
 5942 046216  112777  000137  134052            MOVB    #137,@IDRHX             ;-----LOAD UNT INTO DOR 1--------------
 5943 046224  004737  011050                    JSR     PC,LOOP                 ;WAIT A LITTLE
 5944 046230                                   ENDSEG
                                        .MCALL  M$POP,M$GNLS,M$SVC,M$ENDERR
      046230                            M$POP   T$NS,T$NESTLEV,T$TEMP
                                        .MCALL  M$GETS,M$DECR
                                        .IF LT  T$NESTLEV
                                        .ERROR  T$NESTLEV       ; MACRO T$NS UNDERFLOW
                                        .MEXIT
                                        .ENDC
      046230                            M$GETS  T$NS,\T$NESTLEV,T$TEMP
              000003                    T$TEMP=T$NS2
      046230                            M$DECR  T$NESTLEV
              000001                    T$NESTLEV=T$NESTLEV-1
                                        .IF EQ F$SEG-T$TEMP
      046230                            M$POP   T$SEK,T$SEGLEV,T$$SEG
                                        .MCALL  M$GETS,M$DECR
                                        .IF LT  T$SEGLEV
                                        .ERROR  T$SEGLEV        ; MACRO T$SEK UNDERFLOW
                                        .MEXIT
                                        .ENDC
      046230                            M$GETS  T$SEK,\T$SEGLEV,T$$SEG
              010001                    T$$SEG=T$SEK0
      046230                            M$DECR  T$SEGLEV
              177777                    T$SEGLEV=T$SEGLEV-1
      046230                            M$GNLS  T$$SEG
                                        .MCALL  M$GEN
                                        .IF NB T$$SEG
      046230                            M$GEN   \T$$SEG,$,SVCTAG
                                        .IF LE  SVCTAG
                                        .IIF EQ SVCTAG,.LIST
                                        10001$:
                                        .IIF EQ SVCTAG,.NLIST
                                        .MEXIT
                                        .ENDC
                                        .LIST
      046230                                                                          10001$:
                                                .NLIST
                                        .IFF
                                        M$GEN   \S$LSYM,$,SVCTAG
                                        .ENDC
```

```
        046230                                  M$SVC   C$ESEG
                                                .MCALL  M$GNINS,M$TSTLAB
        046230                                  M$TSTLAB
                                                .MCALL  M$TLABEL,M$INCR
                                                .IIF LT T$TSTMAC, .MEXIT
                                                .RADIX  10
                                                M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                                .RADIX  8
                                                M$INCR  T$TSTSEQ
        046230                                  M$GNINS <TRAP   C$ESEG>
                                                .IF LT SVCINS
                                                TRAP    C$ESEG
                                                .MEXIT
                                                .ENDC
                                                .IF EQ SVCINS
                                                .LIST
                                                        TRAP    C$ESEG
                                                                .NLIST
                                                .MEXIT
                                                .ENDC
                                                .IF GT SVCINS
                                                .LIST
        046230  104405                                                                                  TRAP    C$ESEG
                                                                .NLIST
                                                .ENDC
                                                .IF EQ T$SEGLEV+1
                000041                          I$SEG=F$END
                                                .ENDC
                                                .IFF
                                                M$ENDERR        ENDSEG,T$TEMP
                                                .ENDC
5945    046232  005737  002234                          TST     QVP                     ;IS QUICK VERIFY PASS SELECTED
5946    046236  001010                                  BNE     EXQV16                  ;IF YES EXIT TEST
5947    046240  005237  002322                          INC     ITRCNT                  ;ITERATION COUNTER +1
5948    046244  023737  002322  002320                  CMP     ITRCNT,ITRDEF           ;DEFAULT ITERATION EXECUTED
5949    046252  001402                                  BEQ     EXQV16                  ;IF YES EXIT TEST
5950    046254  000137  045032                          JMP     ITAC16                  ;IF NO TEST ITERATION
5951    046260                                  EXQV16: EXIT    TST                     ;
                                                .MCALL  M$SVC,M$EXIT,M$EXSEG,M$EXTJ,M$GETTOP,M$CHECK,M$WORD,XFER
                000041                          T$FLAG=F$END
        046260                                  M$CHECK TST,T$TEMP,T$FLAG
                                                .IF IDN <TST>,<TST>
                010045                          T$TEMP=T$$TEST
                000040                          T$FLAG=I$TST
                                                .MEXIT
                                                .ENDC
                                                .IF IDN <SUB>,<TST>
                                                T$TEMP=T$$SUB
                                                T$FLAG=I$SUB
                                                .MEXIT
                                                .ENDC
                                                .IF IDN <SEG>,<TST>
                                                T$TEMP=T$$SEG
                                                T$FLAG=I$SEG
                                                .MEXIT
                                                .ENDC
                                                .IF IDN <INIT>,<TST>
```

```
                                        T$TEMP=T$$INIT
                                        T$FLAG=I$INIT
                                        .MEXIT
                                        .ENDC
                                        .IF IDN <CLN>,<TST>
                                        T$TEMP=T$$CLEAN
                                        T$FLAG=I$CLN
                                        .MEXIT
                                        .ENDC
                                        .IF IDN <SRV>,<TST>
                                        T$TEMP=T$$SRV
                                        T$FLAG=I$SRV
                                        .MEXIT
                                        .ENDC
                                        .IF IDN <MSG>,<TST>
                                        T$TEMP=T$$MSG
                                        T$FLAG=F$JMP
                                        .MEXIT
                                        .ENDC
                                        .IF IDN <RPT>,<TST>
                                        T$TEMP=T$$RPT
                                        T$FLAG=F$JMP
                                        .MEXIT
                                        .ENDC
                                        .IF IDN <DU>,<TST>
                                        T$TEMP=T$$DU
                                        T$FLAG=F$JMP
                                        .MEXIT
                                        .ENDC
                                        .IF IDN <AU>,<TST>
                                        T$TEMP=T$$AU
                                        T$FLAG=F$JMP
                                        .MEXIT
                                        .ENDC
                                        .IF EQ T$FLAG-F$JMP
                                        M$WORD  J$JMP
                                        M$EXTJ  \T$TEMP
                                        .MEXIT
                                        .ENDC
                                        .IF EQ  T$FLAG-F$BGN
      046260                            M$SVC   C$EXIT
                                        .MCALL  M$GNINS,M$TSTLAB
      046260                            M$TSTLAB
                                        .MCALL  M$TLABEL,M$INCR
                                        .IIF LT T$TSTMAC, .MEXIT
                                        .RADIX  10
                                        M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                        .RADIX  8
                                        M$INCR  T$TSTSEQ
      046260                            M$GNINS <TRAP   C$EXIT>
                                        .IF LT SVCINS
                                        TRAP    C$EXIT
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                TRAP    C$EXIT
```

```
                                                        .NLIST
                                          .MEXIT
                                          .ENDC
                                          .IF GT SVCINS
                                          .LIST
      046260  104432                                                                  TRAP    C$EXIT
                                                        .NLIST
                                          .ENDC
                                          .IF IDN <SEG>,<TST>
                                          M$GETTOP T$SEK,T$SEGLEV,T$TEMP
                                          M$EXSEG \T$TEMP
                                          .IFF
      046262                              M$EXIT  \T$TEMP
                                          .MCALL  M$GNINS
      046262                              M$GNINS <.WORD  L10045-.>
                                          .IF LT SVCINS
                                          .WORD   L10045-.
                                          .MEXIT
                                          .ENDC
                                          .IF EQ SVCINS
                                          .LIST
                                                  .WORD   L10045-.
                                                        .NLIST
                                          .MEXIT
                                          .ENDC
                                          .IF GT SVCINS
                                          .LIST
      046262  000062                                                                  .WORD   L10045-.
                                                        .NLIST
                                          .ENDC
                                          .ENDC
                                          .MEXIT
                                          .ENDC
                                          .IF IDN <HRD>,<TST>
                                          M$GETTOP        T$NS,T$NESTLEV,T$TEMP
                                          .IF EQ  F$HARD-T$TEMP
                                          .IRP    N,<\T$$HARD>
                                          XFER    L'N
                                          .ENDM
                                          .MEXIT
                                          .ENDC
                                          .ENDC
                                          .IF IDN <SFT>,<TST>
                                          M$GETTOP        T$NS,T$NESTLEV,T$TEMP
                                          .IF EQ  F$SOFT-T$TEMP
                                          .IRP    N,<\T$$SOFT>
                                          XFER    L'N
                                          .ENDM
                                          .MEXIT
                                          .ENDC
                                          .ENDC
                                          .ERROR  ;ILL. "EXIT TST" STMT.
  5952
  5953                                            .NLIST  BEX
  5954 046264     045     123     062     TSHD16: .ASCIZ  /%S2%ACHANGING OF THE CONTROLLER CONFIGURATION%N/
  5955                                            .LIST   BEX
  5956                                            .EVEN
```

```
 5957 046344                           ENDTST
                               .MCALL  M$POP,M$GNTAG,M$SVC,M$ENDERR
                               .IF EQ  F$BGN-I$TST
              000041           I$TST=F$END
                               .IFF
                               .ERROR  ;MISSING "BGNTST"
                               .MEXIT
                               .ENDC
      046344                   M$POP   T$NS,T$NESTLEV,T$TEMP
                               .MCALL  M$GETS,M$DECR
                               .IF LT  T$NESTLEV
                               .ERROR  T$NESTLEV        ; MACRO T$NS UNDERFLOW
                               .MEXIT
                               .ENDC
      046344                   M$GETS  T$NS,\T$NESTLEV,T$TEMP
              000001           T$TEMP=T$NS1
      046344                   M$DECR  T$NESTLEV
              000000           T$NESTLEV=T$NESTLEV-1
                               .IF EQ F$TEST-T$TEMP
      046344                   M$GNTAG L,T$$TEST
                               .MCALL  M$GEN
      046344                   M$GEN   L,\T$$TEST,SVCTAG
                               .IF LE  SVCTAG
                               .IIF EQ SVCTAG,.LIST
                               L10045:
                               .IIF EQ SVCTAG,.NLIST
                               .MEXIT
                               .ENDC
                               .LIST
      046344                                                          L10045:
                                        .NLIST
              010000           S$LSYM=T$LSYM
      046344                   M$SVC   C$ETST
                               .MCALL  M$GNINS,M$TSTLAB
      046344                   M$TSTLAB
                               .MCALL  M$TLABEL,M$INCR
                               .IIF LT T$TSTMAC,  MEXIT
                               .RADIX  10
                               M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                               .RADIX  8
                               M$INCR  T$TSTSEQ
      046344                   M$GNINS <TRAP   C$ETST>
                               .IF LT SVCINS
                               TRAP    C$ETST
                               .MEXIT
                               .ENDC
                               .IF EQ SVCINS
                               .LIST
                                       TRAP    C$ETST
                                               .NLIST
                               .MEXIT
                               .ENDC
                               .IF GT SVCINS
                               .LIST
      046344  104401                                                      TRAP    C$ETST
                                               .NLIST
                               .ENDC
```

L2


```
        000041                  I$TST=F$END
                                .IFF
                                M$ENDERR        ENDTST,T$TEMP
                                .ENDC
```

M2


```
                                .SBTTL  TEST 17: REMOTE/LOCAL INTERFACE FUNCTION TEST
                                ;*******************************************************************
                                ;               IEX - TEST 17
                                ;PART 1 CHECKS THE REMOTE/LOCAL FUNCTION OF CHANNEL 2 USING THE FOLLOWING
                                ;       COMMANDS GTL, LLO, NOT RTL.
                                ;PART 2 CHECKS THE REMOTE/LOCAL FUNCTION OF CHANNEL 1 USING THE FOLLOWING
                                ;       COMMANDS GTL, LLO, NOT RTL.
                                ;*******************************************************************
 046346                                 BGNTST
                                .MCALL  M$INCR,M$GNTEST,M$PUSH,M$INCR
                                .IF NE  F$END-I$SUB
                                .ERROR  ;"BGNTST" IN SUB
                                .MEXIT
                                .ENDC
                                .IF NE  F$END-I$SEG
                                .ERROR  ;"BGNTST" IN SEG
                                .MEXIT
                                .ENDC
                                .IF NE  F$END-I$TST
                                .ERROR  ;"BGNTST" IN TST
                                .MEXIT
                                .IFF
         000040                 I$TST=F$BGN
                                .ENDC
                                .IF B
 046346                         M$INCR  T$TESTNUM
         000021                 T$TESTNUM=T$TESTNUM+1
                                .IFF
                                T$TESTNUM=
                                .ENDC
         000000                 T$SUBNUM=0
         000012                 .RADIX  10
 046346                         M$GNTEST        \T$TESTNUM
                                .MCALL  M$GEN
 046346                         M$GEN   T,17:,SVCTST
                                .IF LE  SVCTST
                                .IIF EQ SVCTST,.LIST
                                T17::
                                .IIF EQ SVCTST,.NLIST
                                .MEXIT
                                .ENDC
                                .LIST
 046346                                                                         T17::
                                        .NLIST
         000010                 .RADIX  8
 046346                         M$PUSH  T$NS,T$NESTLEV,F$TEST
                                .MCALL  M$INCR,M$SETS
 046346                         M$INCR  T$NESTLEV
         000001                 T$NESTLEV=T$NESTLEV+1
 046346                         M$SETS  T$NS,\T$NESTLEV,F$TEST
         000001                 T$NS1=F$TEST
         010046                 T$$TEST=T$TAGNUM
 046346                         M$INCR T$TAGNUM
         010047                 T$TAGNUM=T$TAGNUM+1
         000001                 T$TSTSEQ=1
 046346  005737  002324                 TST     PNTF                    ;IS THE PNT FLAG SET
 046352  001410                         BEQ     7$                      ;IF YES, PRINT THE TEST HEADER
```

N2


```
5970 046354                          PRINTF  #TSHD17                ;...
                                .MCALL  M$PRINT
                                .IF B   #TSHD17
                                .ERROR  ;MISSING FORMAT
                                .MEXIT
                                .ENDC
                                .IF B   <>
     046354                     M$PRINT C$PNTF,#TSHD17
                                .MCALL  M$COUNT,M$PUT,M$GNINS,M$SVC
             000001             T$ARGCNT=1
     046354                     M$COUNT T$ARGCNT,<>,<>,<>,<>,<>,<>,<>,<>
                                .IF NB <>
                                M$COUNT T$ARGCNT,<>,<>,<>,<>,<>,<>,<>,<>
                                .ENDC
                                .IF NB <>
                                T$ARGCNT=T$ARGCNT+1
                                .ENDC
                                .IRP    N,<\T$ARGCNT>
                                M$PUT   #N,#TSHD17,<>,<>,<>,<>,<>,<>,<>,<>
                                .ENDM
     046354                     M$PUT   #1,#TSHD17,<>,<>,<>,<>,<>,<>,<>,<>
                                .MCALL  M$PUT1
                                .IF NB  <#TSHD17>
     046354                     M$PUT   <#TSHD17>,<>,<>,<>,<>,<>,<>,<>,<>
                                .MCALL  M$PUT1
                                .IF NB  <>
                                M$PUT   <>,<>,<>,<>,<>,<>,<>,<>,<>
                                .ENDC
                                .IF NB  <#TSHD17>
     046354                     M$PUT1  #TSHD17
                                .MCALL  M$GNINS
                                .IF B
     046354                     M$GNINS <MOV    #TSHD17,-(SP)>
                                .IF LT SVCINS
                                MOV     #TSHD17,-(SP)
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        MOV     #TSHD17,-(SP)
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
     046354 012746 050646                                                    MOV     #TSHD17,-(SP)
                                                .NLIST
                                .ENDC
                                .IFF
                                .IF DIF B,<#TSHD17>
                                .ERROR  ;ILL. ARG. "#TSHD17" ONLY "B" IS ALLOWED.
                                .MEXIT
                                .ENDC
                                M$GNINS <CLR    -(SP)>
                                M$GNINS <BISB   ,(SP)>
                                .ENDC
                                .ENDC
```

```
                               .ENDC
                               .IF NB  <ø1>
046360                         M$PUT1  ø1
                               .MCALL  M$GNINS
                               .IF B
046360                         M$GNINS <MOV    ø1,-(SP)>
                               .IF LT SVCINS
                               MOV     ø1,-(SP)
                               .MEXIT
                               .ENDC
                               .IF EQ SVCINS
                               .LIST
                                       MOV     ø1,-(SP)
                                               .NLIST
                               .MEXIT
                               .ENDC
                               .IF GT SVCINS
                               .LIST
046360  012746  000001                                                  MOV     ø1,-(SP)
                                               .NLIST
                               .ENDC
                               .IFF
                               .IF DIF B,<ø1>
                               .ERROR  ;ILL. ARG. "ø1" ONLY "B" IS ALLOWED.
                               .MEXIT
                               .ENDC
                               M$GNINS <CLR    -(SP)>
                               M$GNINS <BISB   ,(SP)>
                               .ENDC
                               .ENDC
046364                         M$GNINS <MOV    SP,R0>
                               .IF LT SVCINS
                               MOV     SP,R0
                               .MEXIT
                               .ENDC
                               .IF EQ SVCINS
                               .LIST
                                       MOV     SP,R0
                                               .NLIST
                               .MEXIT
                               .ENDC
                               .IF GT SVCINS
                               .LIST
046364  010600                                                          MOV     SP,R0
                                               .NLIST
                               .ENDC
046366                         M$SVC   C$PNTF
                               .MCALL  M$GNINS,M$TSTLAB
046366                         M$TSTLAB
                               .MCALL  M$TLABEL,M$INCR
                               .IIF LT T$TSTMAC, .MEXIT
                               .RADIX  10
                               M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                               .RADIX  8
                               M$INCR  T$TSTSEQ
046366                         M$GNINS <TRAP   C$PNTF>
                               .IF LT SVCINS
```

```
                                        TRAP    C$PNTF
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                TRAP    C$PNTF
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
        046366  104417                                                                  TRAP    C$PNTF
                                                        .NLIST
                                        .ENDC
                                        .IRP    N,<\T$ARGCNT*2+2>
                                        M$GNINS <ADD    #N,SP>
                                        .ENDM
        046370                          M$GNINS <ADD    #4,SP>
                                        .IF LT SVCINS
                                        ADD     #4,SP
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                ADD     #4,SP
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
        046370  062706  000004                                                          ADD     #4,SP
                                                        .NLIST
                                        .ENDC
                                        .MEXIT
                                        .ENDC
                                        .IF B   <>
                                        M$PRINT C$PNTF,#TSHD17,<>
                                        .MEXIT
                                        .ENDC
                                        .IF B   <>
                                        M$PRINT C$PNTF,#TSHD17,<>,<>
                                        .MEXIT
                                        .ENDC
                                        .IF B   <>
                                        M$PRINT C$PNTF,#TSHD17,<>,<>,<>
                                        .MEXIT
                                        .ENDC
                                        .IF B   <>
                                        M$PRINT C$PNTF,#TSHD17,<>,<>,<>,<>
                                        .MEXIT
                                        .ENDC
                                        .IF B   <>
                                        M$PRINT C$PNTF,#TSHD17,<>,<>,<>,<>,<>
                                        .MEXIT
                                        .ENDC
                                        .IF B   <>
                                        M$PRINT C$PNTF,#TSHD17,<>,<>,<>,<>,<>,<>
```

```
                                        .MEXIT
                                        .ENDC
                                        .IF B    <>
                                        M$PRINT C$PNTF,#TSHD17,<>,<>,<>,<>,<>,<>,<>
                                        .MEXIT
                                        .ENDC
                                        M$PRINT C$PNTF,#TSHD17,<>,<>,<>,<>,<>,<>,<>,<>
5971 046374  005037  002322             7$:     CLR     ITRCNT                  ;CLEAR ITERATION COUNTER
5972 046400                             ITAC17: BGNSEG
                                        .MCALL  M$PUSH,M$INCR,M$SVC
             000040                     I$SEG=F$BGN
     046400                             M$PUSH  T$NS,T$NESTLEV,F$SEG
                                        .MCALL  M$INCR,M$SETS
     046400                             M$INCR  T$NESTLEV
             000002                     T$NESTLEV=T$NESTLEV+1
     046400                             M$SETS  T$NS,\T$NESTLEV,F$SEG
             000003                     T$NS2=F$SEG
             010000                     T$$SEG=S$LSYM
     046400                             M$PUSH  T$SEK,T$SEGLEV,T$$SEG
                                        .MCALL  M$INCR,M$SETS
     046400                             M$INCR  T$SEGLEV
             000000                     T$SEGLEV=T$SEGLEV+1
     046400                             M$SETS  T$SEK,\T$SEGLEV,T$$SEG
             010000                     T$SEK0=T$$SEG
     046400                             M$INCR  S$LSYM
             010001                     S$LSYM=S$LSYM+1
     046400                             M$SVC   C$BSEG
                                        .MCALL  M$GNINS,M$TSTLAB
     046400                             M$TSTLAB
                                        .MCALL  M$TLABEL,M$INCR
                                        .IIF LT T$TSTMAC, .MEXIT
                                        .RADIX  10
                                        M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                        .RADIX  8
                                        M$INCR  T$TSTSEQ
     046400                             M$GNINS <TRAP   C$BSEG>
                                        .IF LT SVCINS
                                        TRAP    C$BSEG
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                TRAP    C$BSEG
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
     046400  104404                                                                     TRAP    C$BSEG
                                                        .NLIST
                                        .ENDC
5973 046402  004737  010210                     JSR     PC,CULPA                ;CLEAR ULPA BIT IN ISR 1 AND 2
5974 046406  004737  010524                     JSR     PC,BGIN1                ;SET UP PARAMETER
5975 046412  112777  000220  133650             MOVB    #220,@ICRHX             ;-----LOAD SRE INTO ACR 1- --- -  -
5976 046420  004737  011062                     JSR     PC,WAIT                 ;WAIT 100 US
5977 046424  013701  002314                     MOV     DPA2,R1                 ;CREATE MLA2
5978 046430  062701  000040                     ADD     #40,R1                  ;...
```

```
5979 046434  010137  002412                  MOV     R1,MLA2                 ;STORE MLA2
5980 046440  032737  000001  002314          BIT     #1,DPA2                 ;IS DPA EVEN
5981 046446  001415                          BEQ     3$                      ;BRANCH IF YES
5982 046450  052737  000001  002460          BIS     #1,CDAT11               ;SET ULPA BIT IN COMPARE DATA FOR ISR
5983 046456  052737  000001  002462          BIS     #1,CDAT12               ;...
5984 046464  052737  000001  002464          BIS     #1,CDAT13               ;...
5985 046472  052737  000001  002466          BIS     #1,CDAT14               ;...
5986 046500  000414                          BR      .+32                    ;
5987 046502  042737  000001  002460  3$:     BIC     #1,CDAT11               ;CLEAR ULPA BIT IN COMPARE DATA FOR ISR
5988 046510  042737  000001  002462          BIC     #1,CDAT12               ;...
5989 046516  042737  000001  002464          BIC     #1,CDAT13               ;...
5990 046524  042737  000001  002466          BIC     #1,CDAT14               ;...
5991 046532  113777  002412  133536          MOVB    MLA2,@IDRHX             ;-----LOAD MLA2 INTO DOR 1------------
5992 046540  004737  011050                  JSR     PC,LOOP                 ;WAIT A LITTLE
5993 046544  052777  000010  133526          BIS     #10,@CSRX               ;SELECT CHANNEL 2
5994 046552  012737  000002  002374          MOV     #2,CHAN                 ;LOAD CHANNEL NUMBER
5995 046560  017737  133464  002502          MOV     @IIRX,BAD               ;GET IIR2 CONTENTS
5996 046566  022737  002403  002502          CMP     #2403,BAD               ;MA,IFC,RLC,MAC BIT SHOULD BE SET
5997 046574  001410                          BEQ     10$                     ;BRANCH IF YES
5998 046576  012737  002403  002500          MOV     #2403,GOOD              ;SET UP DATA FOR ERROR MESSAGE
5999 046604                                  ERRSOFT 1701,E501,ERR501        ;ERROR HANDLER
                                     .MCALL  M$ERRINS
     046604                          M$ERRINS        1701,E501,ERR501,C$ERSOFT
                                     .MCALL  M$GNINS,M$WORD,M$TSTLAB
     046604                          M$SVC   C$ERSOFT
                                     .MCALL  M$GNINS,M$TSTLAB
     046604                          M$TSTLAB
                                     .MCALL  M$TLABEL,M$INCR
                                     .IIF LT T$TSTMAC, .MEXIT
                                     .RADIX  10
                                     M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                     .RADIX  8
                                     M$INCR  T$TSTSEQ
     046604                          M$GNINS <TRAP   C$ERSOFT>
                                     .IF LT SVCINS
                                     TRAP    C$ERSOFT
                                     .MEXIT
                                     .ENDC
                                     .IF EQ SVCINS
                                     .LIST
                                             TRAP    C$ERSOFT
                                                     .NLIST
                                     .MEXIT
                                     .ENDC
                                     .IF GT SVCINS
                                     .LIST
     046604  104457                                                                  TRAP    C$ERSOFT
                                                     .NLIST
                                     .ENDC
             000012                  .RADIX  10
                                     .IF NB  1701
             003245                  T$ERRNUM=1701
                                     .IFF
                                     .ERROR  ;MISSING ERROR NR
                                     .ENDC
     046606                          M$WORD  \T$ERRNUM
                                     .MCALL  M$GNINS
```

```
                        .IRP     N,<1701>
                        M$GNINS <.WORD  N>
                        .ENDM
046606                  M$GNINS <.WORD  1701>
                        .IF LT SVCINS
                        .WORD   1701
                        .MEXIT
                        .ENDC
                        .IF EQ SVCINS
                        .LIST
                                .WORD   1701
                                        .NLIST
                        .MEXIT
                        .ENDC
                        .IF GT SVCINS
                        .LIST
046606  003245                                                  .WORD   1701
                                        .NLIST
                        .ENDC
        000010          .RADIX  8
                        .IF NB E501
046610                  M$WORD  E501
                        .MCALL  M$GNINS
                        .IRP     N,<E501>
                        M$GNINS <.WORD  N>
                        .ENDM
046610                  M$GNINS <.WORD  E501>
                        .IF LT SVCINS
                        .WORD   E501
                        .MEXIT
                        .ENDC
                        .IF EQ SVCINS
                        .LIST
                                .WORD   E501
                                        .NLIST
                        .MEXIT
                        .ENDC
                        .IF GT SVCINS
                        .LIST
046610  005376                                                  .WORD   E501
                                        .NLIST
                        .ENDC
                        .IFF
                        M$WORD  0
                        .ENDC
                        .IF NB ERR501
046612                  M$WORD  ERR501
                        .MCALL  M$GNINS
                        .IRP     N,<ERR501>
                        M$GNINS <.WORD  N>
                        .ENDM
046612                  M$GNINS <.WORD  ERR501>
                        .IF LT SVCINS
                        .WORD   ERR501
                        .MEXIT
                        .ENDC
                        .IF EQ SVCINS
```

```
                                        .LIST
                                                .WORD   ERR501
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
      046612  003672                                                                            .WORD   ERR501
                                                        .NLIST
                                        .ENDC
                                        .IFF
                                        M$WORD  0
                                        .ENDC
 6000 046614                                    CKLOOP                  ;BRANCH BACK TO BGNSEG IF ERRLOOP IS SET
                                        .MCALL  M$SVC
      046614                            M$SVC   C$CLP1
                                        .MCALL  M$GNINS,M$TSTLAB
      046614                            M$TSTLAB
                                        .MCALL  M$TLABEL,M$INCR
                                        .IIF LT T$TSTMAC, .MEXIT
                                        .RADIX  10
                                        M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                        .RADIX  8
                                        M$INCR  T$TSTSEQ
      046614                            M$GNINS <TRAP   C$CLP1>
                                        .IF LT SVCINS
                                        TRAP    C$CLP1
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                TRAP    C$CLP1
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
      046614  104406                                                                            TRAP    C$CLP1
                                                        .NLIST
                                        .ENDC
 6001 046616  017737  133434  002502    10$:    MOV     @ISRX,BAD               ;GET ISR2 CONTENTS
 6002 046624  023737  002460  002502            CMP     CDAT11,BAD              ;ATN,NDAC,REM,ATN,LAPS,LADS,(ULPA)IS SET
 6003 046632  001410                            BEQ     20$                     ;BRANCH IF YES
 6004 046634  013737  002460  002500            MOV     CDAT11,GOOD             ;SET UP DATA FOR ERROR MESSAGE
 6005 046642                                    ERRSOFT 1702,E502,ERR501        ;ERROR HANDLER
                                        .MCALL  M$ERRINS
      046642                            M$ERRINS        1702,E502,ERR501,C$ERSOFT
                                        .MCALL  M$GNINS,M$WORD,M$TSTLAB
      046642                            M$SVC   C$ERSOFT
                                        .MCALL  M$GNINS,M$TSTLAB
      046642                            M$TSTLAB
                                        .MCALL  M$TLABEL,M$INCR
                                        .IIF LT T$TSTMAC, .MEXIT
                                        .RADIX  10
                                        M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                        .RADIX  8
                                        M$INCR  T$TSTSEQ
```

```
 046642                        M$GNINS <TRAP   C$ERSOFT>
                               .IF LT SVCINS
                               TRAP    C$ERSOFT
                               .MEXIT
                               .ENDC
                               .IF EQ SVCINS
                               .LIST
                                       TRAP    C$ERSOFT
                                               .NLIST
                               .MEXIT
                               .ENDC
                               .IF GT SVCINS
                               .LIST
 046642  104457                                                    TRAP    C$ERSOFT
                                               .NLIST
                               .ENDC
         000012                .RADIX  10
                               .IF NB  1702
         003246                T$ERRNUM=1702
                               .IFF
                               .ERROR  ;MISSING ERROR-NR
                               .ENDC
 046644                        M$WORD  \T$ERRNUM
                               .MCALL  M$GNINS
                               .IRP    N,<1702>
                               M$GNINS <.WORD  N>
                               .ENDM
 046644                        M$GNINS <.WORD  1702>
                               .IF LT SVCINS
                               .WORD   1702
                               .MEXIT
                               .ENDC
                               .IF EQ SVCINS
                               .LIST
                                       .WORD   1702
                                               .NLIST
                               .MEXIT
                               .ENDC
                               .IF GT SVCINS
                               .LIST
 046644  003246                                                    .WORD   1702
                                               .NLIST
                               .ENDC
         000010                .RADIX  8
                               .IF NB E502
 046646                        M$WORD  E502
                               .MCALL  M$GNINS
                               .IRP    N,<E502>
                               M$GNINS <.WORD  N>
                               .ENDM
 046646                        M$GNINS <.WORD  E502>
                               .IF LT SVCINS
                               .WORD   E502
                               .MEXIT
                               .ENDC
                               .IF EQ SVCINS
                               .LIST
```

```
                                .WORD   E502
                                        .NLIST
                        .MEXIT
                        .ENDC
                        .IF GT SVCINS
                        .LIST
    046646  005437                                                              .WORD   E502
                                        .NLIST
                        .ENDC
                        .IFF
                        M$WORD  0
                        .ENDC
                        .IF NB ERR501
    046650              M$WORD  ERR501
                        .MCALL  M$GNINS
                        .IRP    N,<ERR501>
                        M$GNINS <.WORD  N>
                        .ENDM
    046650              M$GNINS <.WORD  ERR501>
                        .IF LT SVCINS
                        .WORD   ERR501
                        .MEXIT
                        .ENDC
                        .IF EQ SVCINS
                        .LIST
                                .WORD   ERR501
                                        .NLIST
                        .MEXIT
                        .ENDC
                        .IF GT SVCINS
                        .LIST
    046650  003672                                                              .WORD   ERR501
                                        .NLIST
                        .ENDC
                        .IFF
                        M$WORD  0
                        .ENDC
6006 046652                     CKLOOP                          ;BRANCH BACK TO BGNSEG IF ERRLOOP IS SET
                        .MCALL  M$SVC
    046652              M$SVC   C$CLP1
                        .MCALL  M$GNINS,M$TSTLAB
    046652              M$TSTLAB
                        .MCALL  M$TLABEL,M$INCR
                        .IIF LT T$TSTMAC, .MEXIT
                        .RADIX  10
                        M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                        .RADIX  8
                        M$INCR  T$TSTSEQ
    046652              M$GNINS <TRAP   C$CLP1>
                        .IF LT SVCINS
                        TRAP    C$CLP1
                        .MEXIT
                        .ENDC
                        .IF EQ SVCINS
                        .LIST
                                TRAP    C$CLP1
                                        .NLIST
```

```
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
     046652  104406                                                                    TRAP    C$CLP1
                                                     .NLIST
                                        .ENDC
6007 046654  042777  000010  133416  20$:     BIC     #10,@CSRX        ;SELECT CHANNEL 1
6008 046662  112777  000001  133406           MOVB    #1,@IDRHX        ;------LOAD GTL INTO DOR 1-------------
6009 046670  004737  011050                   JSR     PC,LOOP          ;WAIT A LITTLE
6010 046674  112777  000077  133374           MOVB    #77,@IDRHX       ;------LOAD UNL INTO DOR 1-------------
6011 046702  004737  011050                   JSR     PC,LOOP          ;WAIT A LITTLE
6012 046706  052777  000010  133364           BIS     #10,@CSRX        ;SELECT CHANNEL 2
6013 046714  012737  000002  002374           MOV     #2,CHAN          ;LOAD CHANNEL NUMBER
6014 046722  017737  133322  002502           MOV     @IIRX,BAD        ;GET IIR2 CONTENTS
6015 046730  022737  000003  002502           CMP     #3,BAD           ;RLC,MAC BIT SHOULD BE SET
6016 046736  001410                           BEQ     30$              ;BRANCH IF YES
6017 046740  012737          000003  002500   MOV     #3,GOOD          ;SET UP DATA FOR ERROR MESSAGE
6018 046746                                  ERRSOFT 1703,E501,ERR501 ;ERROR HANDLER
                                        .MCALL  M$ERRINS
     046746                             M$ERRINS        1703,E501,ERR501,C$ERSOFT
                                        .MCALL  M$GNINS,M$WORD,M$TSTLAB
     046746                             M$SVC   C$ERSOFT
                                        .MCALL  M$GNINS,M$TSTLAB
     046746                             M$TSTLAB
                                        .MCALL  M$TLABEL,M$INCR
                                        .IIF LT T$TSTMAC, .MEXIT
                                        .RADIX  10
                                        M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                        .RADIX  8
                                        M$INCR  T$TSTSEQ
     046746                             M$GNINS <TRAP   C$ERSOFT>
                                        .IF LT SVCINS
                                        TRAP    C$ERSOFT
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                TRAP    C$ERSOFT
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
     046746  104457                                                                    TRAP    C$ERSOFT
                                                     .NLIST
                                        .ENDC
             000012                     .RADIX  10
                                        .IF NB  1703
             003247                     T$ERRNUM=1703
                                        .IFF
                                        .ERROR  ;MISSING ERROR NR
                                        .ENDC
     046750                             M$WORD  \T$ERRNUM
                                        .MCALL  M$GNINS
                                        .IRP    N,<1703>
                                        M$GNINS <.WORD  N>
```

```
                                .ENDM
046750                          M$GNINS <.WORD  1703>
                                .IF LT SVCINS
                                .WORD   1703
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        .WORD   1703
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
046750  003247                                                                  .WORD   1703
                                                .NLIST
                                .ENDC
        000010                  .RADIX  8
                                .IF NB E501
046752                          M$WORD  E501
                                .MCALL  M$GNINS
                                .IRP    N,<E501>
                                M$GNINS <.WORD  N>
                                .ENDM
046752                          M$GNINS <.WORD  E501>
                                .IF LT SVCINS
                                .WORD   E501
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        .WORD   E501
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
046752  005376                                                                  .WORD   E501
                                                .NLIST
                                .ENDC
                                .IFF
                                M$WORD  0
                                .ENDC
                                .IF NB ERR501
046754                          M$WORD  ERR501
                                .MCALL  M$GNINS
                                .IRP    N,<ERR501>
                                M$GNINS <.WORD  N>
                                .ENDM
046754                          M$GNINS <.WORD  ERR501>
                                .IF LT SVCINS
                                .WORD   ERR501
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        .WORD   ERR501
```

```
                                                .NLIST
                                    .MEXIT
                                    .ENDC
                                    .IF GT SVCINS
                                    .LIST
      046754  003672                                                                          .WORD   ERR501
                                                .NLIST
                                    .ENDC
                                    .IFF
                                    M$WORD  0
                                    .ENDC
 6019 046756                                CKLOOP                          ;BRANCH TO BGNSEG IF ERRLOOP IS SET
                                    .MCALL  M$SVC
      046756                        M$SVC   C$CLP1
                                    .MCALL  M$GNINS,M$TSTLAB
      046756                        M$TSTLAB
                                    .MCALL  M$TLABEL,M$INCR
                                    .IIF LT T$TSTMAC, .MEXIT
                                    .RADIX  10
                                    M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                    .RADIX  8
                                    M$INCR  T$TSTSEQ
      046756                        M$GNINS <TRAP   C$CLP1>
                                    .IF LT SVCINS
                                    TRAP    C$CLP1
                                    .MEXIT
                                    .ENDC
                                    .IF EQ SVCINS
                                    .LIST
                                            TRAP    C$CLP1
                                                    .NLIST
                                    .MEXIT
                                    .ENDC
                                    .IF GT SVCINS
                                    .LIST
      046756  104406                                                                          TRAP    C$CLP1
                                                    .NLIST
                                    .ENDC
 6020 046760  042777  000010  133312  30$:    BIC     #10,@CSRX             ;SELECT CHANNEL 1
 6021 046766  013701  002314                  MOV     DPA2,R1               ;CREATE MLA2
 6022 046772  062701  000040                  ADD     #40,R1                ;...
 6023 046776  010137  002412                  MOV     R1,MLA2               ;STORE MLA2
 6024 047002  113777  002412  133266          MOVB    MLA2,@IDRHX           ;----LOAD MLA2 INTO DOR 1--------------
 6025 047010  004737  011050                  JSR     PC,LOOP               ;WAIT A LITTLE
 6026 047014  052777  000010  133256          BIS     #10,@CSRX             ;SELECT CHANNEL 2
 6027 047022  012737  000002  002374          MOV     #2,CHAN               ;LOAD CHANNEL NUMBER
 6028 047030  112777  000007  133232          MOVB    #7,@ICRHX             ;----LOAD NOT RTL INTO DOR 2------------
 6029 047036  017737  133206  002502          MOV     @IIRX,BAD             ;GET IIR2 CONTENTS
 6030 047044  022737  002003  002502          CMP     #2003,BAD             ;MA,RLC,MAC BIT SHOULD BE SET
 6031 047052  001410                          BEQ     33$                   ;BRANCH IF YES
 6032 047054  012737  002003  002500          MOV     #2003,GOOD            ;SET UP DATA FOR ERROR MESSAGE
 6033 047062                                  ERRSOFT 1704,E501,ERR501      ;ERROR HANDLER
                                    .MCALL  M$ERRINS
      047062                        M$ERRINS        1704,E501,ERR501,C$ERSOFT
                                    .MCALL  M$GNINS,M$WORD,M$TSTLAB
      047062                        M$SVC   C$ERSOFT
                                    .MCALL  M$GNINS,M$TSTLAB
```

```
        047062                          M$TSTLAB
                                        .MCALL  M$TLABEL,M$INCR
                                        .IIF LT T$TSTMAC, .MEXIT
                                        .RADIX  10
                                        M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                        .RADIX  8
                                        M$INCR  T$TSTSEQ
        047062                          M$GNINS <TRAP   C$ERSOFT>
                                        .IF LT SVCINS
                                        TRAP    C$ERSOFT
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                TRAP    C$ERSOFT
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
        047062  104457                                                                  TRAP    C$ERSOFT
                                                        .NLIST
                                        .ENDC
                000012                  .RADIX  10
                                        .IF NB  1704
                003250                  T$ERRNUM=1704
                                        .IFF
                                        .ERROR  ;MISSING ERROR-NR
                                        .ENDC
        047064                          M$WORD  \T$ERRNUM
                                        .MCALL  M$GNINS
                                        .IRP    N,<1704>
                                        M$GNINS <.WORD  N>
                                        .ENDM
        047064                          M$GNINS <.WORD  1704>
                                        .IF LT SVCINS
                                        .WORD   1704
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                .WORD   1704
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
        047064  003250                                                                  .WORD   1704
                                                        .NLIST
                                        .ENDC
                000010                  .RADIX  8
                                        .IF NB E501
        047066                          M$WORD  E501
                                        .MCALL  M$GNINS
                                        .IRP    N,<E501>
                                        M$GNINS <.WORD  N>
                                        .ENDM
```

N3


```
047066                          M$GNINS <.WORD  E501>
                                .IF LT SVCINS
                                .WORD   E501
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        .WORD   E501
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
047066  005376                                                                          .WORD   E501
                                                .NLIST
                                .ENDC
                                .IFF
                                M$WORD  0
                                .ENDC
                                .IF NB ERR501
047070                          M$WORD  ERR501
                                .MCALL  M$GNINS
                                .IRP    N,<ERR501>
                                M$GNINS <.WORD  N>
                                .ENDM
047070                          M$GNINS <.WORD  ERR501>
                                .IF LT SVCINS
                                .WORD   ERR501
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        .WORD   ERR501
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
047070  003672                                                                          .WORD   ERR501
                                                .NLIST
                                .ENDC
                                .IFF
                                M$WORD  0
                                .ENDC
047072                                  CKLOOP                          ;BRANCH BACK TO BGNSEG IF ERRLOOP IS SET
                                .MCALL  M$SVC
047072                          M$SVC   C$CLP1
                                .MCALL  M$GNINS,M$TSTLAB
047072                          M$TSTLAB
                                .MCALL  M$TLABEL,M$INCR
                                .IIF LT T$TSTMAC, .MEXIT
                                .RADIX  10
                                M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                .RADIX  8
                                M$INCR  T$TSTSEQ
047072                          M$GNINS <TRAP   C$CLP1>
                                .IF LT SVCINS
```

```
                                        TRAP    C$CLP1
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                TRAP    C$CLP1
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
      047072  104406                                                                                TRAP    C$CLP1
                                                        .NLIST
                                        .ENDC
      047074  017737  133156  002502    33$:    MOV     @ISRX,BAD               ;GET ISR2 CONTENTS
      047102  023737  002462  002502            CMP     CDAT12,BAD              ;ATN,NDAC,REN,ATN,LPAS,LADS(ULPA)IS SET
      047110  001410                            BEQ     40$                     ;BRANCH IF YES
      047112  013737  002462  002500            MOV     CDAT12,GOOD             ;SET UP DATA FOR ERROR MESSAGE
      047120                                    ERRSOFT 1705,E502,ERR501        ;ERROR HANDLER
                                        .MCALL  M$ERRINS
      047120                            M$ERRINS        1705,E502,ERR501,C$ERSOFT
                                        .MCALL  M$GNINS,M$WORD,M$TSTLAB
      047120                            M$SVC   C$ERSOFT
                                        .MCALL  M$GNINS,M$TSTLAB
      047120                            M$TSTLAB
                                        .MCALL  M$TLABEL,M$INCR
                                        .IIF LT T$TSTMAC, .MEXIT
                                        .RADIX  10
                                        M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                        .RADIX  8
                                        M$INCR  T$TSTSEQ
      047120                            M$GNINS <TRAP   C$ERSOFT>
                                        .IF LT SVCINS
                                        TRAP    C$ERSOFT
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                TRAP    C$ERSOFT
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
      047120  104457                                                                                TRAP    C$ERSOFT
                                                        .NLIST
                                        .ENDC
              000012                    .RADIX  10
                                        .IF NB  1705
              003251                    T$ERRNUM=1705
                                        .IFF
                                        .ERROR  ;MISSING ERROR-NR
                                        .ENDC
      047122                            M$WORD  \T$ERRNUM
                                        .MCALL  M$GNINS
                                        .IRP    N,<1705>
                                        M$GNINS <.WORD  N>
```

C4


```
                                    .ENDM
        047122                      M$GNINS <.WORD  1705>
                                    .IF LT SVCINS
                                    .WORD   1705
                                    .MEXIT
                                    .ENDC
                                    .IF EQ SVCINS
                                    .LIST
                                            .WORD   1705
                                                    .NLIST
                                    .MEXIT
                                    .ENDC
                                    .IF GT SVCINS
                                    .LIST
        047122  003251                                                          .WORD   1705
                                                    .NLIST
                                    .ENDC
                000010              .RADIX  8
                                    .IF NB E502
        047124                      M$WORD  E502
                                    .MCALL  M$GNINS
                                    .IRP    N,<E502>
                                    M$GNINS <.WORD  N>
                                    .ENDM
        047124                      M$GNINS <.WORD  E502>
                                    .IF LT SVCINS
                                    .WORD   E502
                                    .MEXIT
                                    .ENDC
                                    .IF EQ SVCINS
                                    .LIST
                                            .WORD   E502
                                                    .NLIST
                                    .MEXIT
                                    .ENDC
                                    .IF GT SVCINS
                                    .LIST
        047124  005437                                                          .WORD   E502
                                                    .NLIST
                                    .ENDC
                                    .IFF
                                    M$WORD  0
                                    .ENDC
                                    .IF NB ERR501
        047126                      M$WORD  ERR501
                                    .MCALL  M$GNINS
                                    .IRP    N,<ERR501>
                                    M$GNINS <.WORD  N>
                                    .ENDM
        047126                      M$GNINS <.WORD  ERR501>
                                    .IF LT SVCINS
                                    .WORD   ERR501
                                    .MEXIT
                                    .ENDC
                                    .IF EQ SVCINS
                                    .LIST
                                            .WORD   ERR501
```

D4


```
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
      047126  003672                                                                    .WORD   ERR501
                                                        .NLIST
                                        .ENDC
                                        .IFF
                                        M$WORD  0
                                        .ENDC
 6040 047130                                  CKLOOP                    ;BRANCH BACK TO BGNSEG IF ERRLOOP IS SET
                                        .MCALL  M$SVC
      047130                            M$SVC   C$CLP1
                                        .MCALL  M$GNINS,M$TSTLAB
      047130                            M$TSTLAB
                                        .MCALL  M$TLABEL,M$INCR
                                        .IIF LT T$TSTMAC, .MEXIT
                                        .RADIX  10
                                        M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                        .RADIX  8
                                        M$INCR  T$TSTSEQ
      047130                            M$GNINS <TRAP   C$CLP1>
                                        .IF LT SVCINS
                                        TRAP    C$CLP1
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                TRAP    C$CLP1
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
      047130  104406                                                                    TRAP    C$CLP1
                                                        .NLIST
                                        .ENDC
 6041 047132  042777  000010  133140    40$:    BIC     #10,@CSRX       ;SELECT CHANNEL 1
 6042 047140  113777  002412  133130            MOVB    MLA2,@IDRHX     ;-----LOAD MLA2 INTO DOR 1-------------
 6043 047146  004737  011050                    JSR     PC,LOOP         ;WAIT A LITTLE
 6044 047152  052777  000010  133120            BIS     #10,@CSRX       ;SELECT CHANNEL 2
 6045 047160  017737  133064  002502            MOV     @IIRX,BAD       ;GET IIR2 CONTENTS
 6046 047166  022737  002002  002502            CMP     #2002,BAD       ;MA,RLC BIT SHOULD BE SET
 6047 047174  001410                            BEQ     43$             ;BRANCH IF YES
 6048 047176  012737  002002  002500            MOV     #2002,GOOD      ;SET UP DATA FOR ERROR MESSAGE
 6049 047204                                    ERRSOFT 1706,E501,ERR501 ;ERROR HANDLER
                                        .MCALL  M$ERRINS
      047204                            M$ERRINS        1706,E501,ERR501,C$ERSOFT
                                        .MCALL  M$GNINS,M$WORD,M$TSTLAB
      047204                            M$SVC   C$ERSOFT
                                        .MCALL  M$GNINS,M$TSTLAB
      047204                            M$TSTLAB
                                        .MCALL  M$TLABEL,M$INCR
                                        .IIF LT T$TSTMAC, .MEXIT
                                        .RADIX  10
                                        M$TLABEL        \T$TESTNUN,\T$TSTSEQ
```

E4


```
                                .RADIX  8
                                M$INCR  T$TSTSEQ
      047204                    M$GNINS <TRAP   C$ERSOFT>
                                .IF LT SVCINS
                                TRAP    C$ERSOFT
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        TRAP    C$ERSOFT
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
      047204  104457                                                    TRAP    C$ERSOFT
                                                .NLIST
                                .ENDC
              000012            .RADIX  10
                                .IF NB  1706
              003252            T$ERRNUM=1706
                                .IFF
                                .ERROR  ;MISSING ERROR-NR
                                .ENDC
      047206                    M$WORD  \T$ERRNUM
                                .MCALL  M$GNINS
                                .IRP    N,<1706>
                                M$GNINS <.WORD  N>
                                .ENDM
      047206                    M$GNINS <.WORD  1706>
                                .IF LT SVCINS
                                .WORD   1706
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        .WORD   1706
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
      047206  003252                                                    .WORD   1706
                                                .NLIST
                                .ENDC
              000010            .RADIX  8
                                .IF NB E501
      047210                    M$WORD  E501
                                .MCALL  M$GNINS
                                .IRP    N,<E501>
                                M$GNINS <.WORD  N>
                                .ENDM
      047210                    M$GNINS <.WORD  E501>
                                .IF LT SVCINS
                                .WORD   E501
                                .MEXIT
                                .ENDC
```

F4


```
                                        .IF EQ SVCINS
                                        .LIST
                                                .WORD   E501
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
       047210  005376                                                                          .WORD   E501
                                                        .NLIST
                                        .ENDC
                                        .IFF
                                        M$WORD  0
                                        .ENDC
                                        .IF NB ERR501
       047212                           M$WORD  ERR501
                                        .MCALL  M$GNINS
                                        .IRP    N,<ERR501>
                                        M$GNINS <.WORD  N>
                                        .ENDM
       047212                           M$GNINS <.WORD  ERR501>
                                        .IF LT SVCINS
                                        .WORD   ERR501
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                .WORD   ERR501
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
       047212  003672                                                                          .WORD   ERR501
                                                        .NLIST
                                        .ENDC
                                        .IFF
                                        M$WORD  0
                                        .ENDC
  6050 047214                                   CKLOOP                  ;BRANCH BACK TO BGNSEG IF ERRLOOP IS SET
                                        .MCALL  M$SVC
       047214                           M$SVC   C$CLP1
                                        .MCALL  M$GNINS,M$TSTLAB
       047214                           M$TSTLAB
                                        .MCALL  M$TLABEL,M$INCR
                                        .IIF LT T$TSTMAC, .MEXIT
                                        .RADIX  10
                                        M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                        .RADIX  8
                                        M$INCR  T$TSTSEQ
       047214                           M$GNINS <TRAP   C$CLP1>
                                        .IF LT SVCINS
                                        TRAP    C$CLP1
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
```

```
                                                   TRAP    C$CLP1
                                                           .NLIST
                                          .MEXIT
                                          .ENDC
                                          .IF GT SVCINS
                                          .LIST
     047214  104406                                                                                  TRAP    C$CLP1
                                                           .NLIST
                                          .ENDC
     047216  017737  133034  002502      43$:      MOV     @ISRX,BAD                  ;GET ISR2 CONTENTS
     047224  023737  002460  002502                CMP     CDAT11,BAD                 ;ATN,NDAC,REN,REM,ATN,LPAS,LADS(ULPA)SET
     047232  001410                                BEQ     50$                        ;BRANCH IF YES
     047234  013737  002460  002500                MOV     CDAT11,GOOD                ;SET UP DATA FOR ERROR MESSAGE
     047242                                        ERRSOFT 1707,E502,ERR501           ;ERROR HANDLER
                                          .MCALL   M$ERRINS
     047242                               M$ERRINS         1707,E502,ERR501,C$ERSOFT
                                          .MCALL   M$GNINS,M$WORD,M$TSTLAB
     047242                               M$SVC    C$ERSOFT
                                          .MCALL   M$GNINS,M$TSTLAB
     047242                               M$TSTLAB
                                          .MCALL   M$TLABEL,M$INCR
                                          .IIF LT T$TSTMAC, .MEXIT
                                          .RADIX   10
                                          M$TLABEL         \T$TESTNUN,\T$TSTSEQ
                                          .RADIX   8
                                          M$INCR   T$TSTSEQ
     047242                               M$GNINS <TRAP    C$ERSOFT>
                                          .IF LT SVCINS
                                          TRAP     C$ERSOFT
                                          .MEXIT
                                          .ENDC
                                          .IF EQ SVCINS
                                          .LIST
                                                   TRAP    C$ERSOFT
                                                           .NLIST
                                          .MEXIT
                                          .ENDC
                                          .IF GT SVCINS
                                          .LIST
     047242  104457                                                                                  TRAP    C$ERSOFT
                                                           .NLIST
                                          .ENDC
             000012                       .RADIX  10
                                          .IF NB  1707
             003253                       T$ERRNUM=1707
                                          .IFF
                                          .ERROR  ;MISSING ERROR NR
                                          .ENDC
     047244                               M$WORD   \T$ERRNUM
                                          .MCALL   M$GNINS
                                          .IRP     N,<1707>
                                          M$GNINS <.WORD   N>
                                          .ENDM
     047244                               M$GNINS <.WORD  1707>
                                          .IF LT SVCINS
                                          .WORD    1707
                                          .MEXIT
```

```
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        .WORD   1707
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
     047244  003253                                                                   .WORD   1707
                                                .NLIST
                                .ENDC
             000010             .RADIX  8
                                .IF NB E502
     047246                     M$WORD  E502
                                .MCALL  M$GNINS
                                .IRP    N,<E502>
                                M$GNINS <.WORD  N>
                                .ENDM
     047246                     M$GNINS <.WORD  E502>
                                .IF LT SVCINS
                                .WORD   E502
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        .WORD   E502
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
     047246  005437                                                                   .WORD   E502
                                                .NLIST
                                .ENDC
                                .IFF
                                M$WORD  0
                                .ENDC
                                .IF NB ERR501
     047250                     M$WORD  ERR501
                                .MCALL  M$GNINS
                                .IRP    N,<ERR501>
                                M$GNINS <.WORD  N>
                                .ENDM
     047250                     M$GNINS <.WORD  ERR501>
                                .IF LT SVCINS
                                .WORD   ERR501
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        .WORD   ERR501
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
```

```
      047250  003672                                                        .WORD   ERR501
                                                    .NLIST
                                  .ENDC
                                  .IFF
                                  M$WORD  0
                                  .ENDC
 6056 047252                              CKLOOP                        ;BRANCH TO BGNSEG IF ERRLOOP IS SET
                                  .MCALL  M$SVC
      047252                      M$SVC   C$CLP1
                                  .MCALL  M$GNINS,M$TSTLAB
      047252                      M$TSTLAB
                                  .MCALL  M$TLABEL,M$INCR
                                  .IIF LT T$TSTMAC, .MEXIT
                                  .RADIX  10
                                  M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                  .RADIX  8
                                  M$INCR  T$TSTSEQ
      047252                      M$GNINS <TRAP   C$CLP1>
                                  .IF LT SVCINS
                                  TRAP    C$CLP1
                                  .MEXIT
                                  .ENDC
                                  .IF EQ SVCINS
                                  .LIST
                                          TRAP    C$CLP1
                                                  .NLIST
                                  .MEXIT
                                  .ENDC
                                  .IF GT SVCINS
                                  .LIST
      047252  104406                                                        TRAP    C$CLP1
                                                  .NLIST
                                  .ENDC
 6057 047254  042777  000010  133016  50$:    BIC     #10,@CSRX         ;SELECT CHANNEL 1
 6058 047262  112777  000021  133006          MOVB    #21,@IDRHX        ;-----LOAD LLO INTO DOR 1--------------
 6059 047270  004737  011050                  JSR     PC,LOOP           ;WAIT A LITTLE
 6060 047274  052777  000010  132776          BIS     #10,@CSRX         ;SELECT CHANNEL 2
 6061 047302  017737  132742  002502          MOV     @IIRX,BAD         ;GET IIR2 CONTENTS
 6062 047310  005737  002502                  TST     BAD               ;CONTENTS SHOULD BE ZERO
 6063 047314  001407                          BEQ     53$               ;BRANCH IF YES
 6064 047316  005037  002500                  CLR     GOOD              ;SET UP DATA FOR ERROR MESSAGE
 6065 047322                                  ERRSOFT 1708,E501,ERR501  ;ERROR HANDLER
                                  .MCALL  M$ERRINS
      047322                      M$ERRINS        1708,E501,ERR501,C$ERSOFT
                                  .MCALL  M$GNINS,M$WORD,M$TSTLAB
      047322                      M$SVC   C$ERSOFT
                                  .MCALL  M$GNINS,M$TSTLAB
      047322                      M$TSTLAB
                                  .MCALL  M$TLABEL,M$INCR
                                  .IIF LT T$TSTMAC, .MEXIT
                                  .RADIX  10
                                  M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                  .RADIX  8
                                  M$INCR  T$TSTSEQ
      047322                      M$GNINS <TRAP   C$ERSOFT>
                                  .IF LT SVCINS
                                  TRAP    C$ERSOFT
```

J4


```
                          .MEXIT
                          .ENDC
                          .IF EQ SVCINS
                          .LIST
                                  TRAP    C$ERSOFT
                                          .NLIST
                          .MEXIT
                          .ENDC
                          .IF GT SVCINS
                          .LIST
     047322  104457                                                                TRAP    C$ERSOFT
                                          .NLIST
                          .ENDC
             000012       .RADIX  10
                          .IF NB  1708
             003254       T$ERRNUM=1708
                          .IFF
                          .ERROR  ;MISSING ERROR-NR
                          .ENDC
     047324               M$WORD  \T$ERRNUM
                          .MCALL  M$GNINS
                          .IRP    N,<1708>
                          M$GNINS <.WORD  N>
                          .ENDM
     047324               M$GNINS <.WORD  1708>
                          .IF LT SVCINS
                          .WORD   1708
                          .MEXIT
                          .ENDC
                          .IF EQ SVCINS
                          .LIST
                                  .WORD   1708
                                          .NLIST
                          .MEXIT
                          .ENDC
                          .IF GT SVCINS
                          .LIST
     047324  003254                                                                .WORD   1708
                                          .NLIST
                          .ENDC
             000010       .RADIX  8
                          .IF NB E501
     047326               M$WORD  E501
                          .MCALL  M$GNINS
                          .IRP    N,<E501>
                          M$GNINS <.WORD  N>
                          .ENDM
     047326               M$GNINS <.WORD  E501>
                          .IF LT SVCINS
                          .WORD   E501
                          .MEXIT
                          .ENDC
                          .IF EQ SVCINS
                          .LIST
                                  .WORD   E501
                                          .NLIST
                          .MEXIT
```

```
                                .ENDC
                                .IF GT SVCINS
                                .LIST
      047326  005376                                                                    .WORD   E501
                                          .NLIST
                                .ENDC
                                .IFF
                                M$WORD  0
                                .ENDC
                                .IF NB ERR501
      047330                    M$WORD  ERR501
                                .MCALL  M$GNINS
                                .IRP    N,<ERR501>
                                M$GNINS <.WORD  N>
                                .ENDM
      047330                    M$GNINS <.WORD  ERR501>
                                .IF LT SVCINS
                                .WORD   ERR501
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                     .WORD   ERR501
                                          .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
      047330  003672                                                                    .WORD   ERR501
                                          .NLIST
                                .ENDC
                                .IFF
                                M$WORD  0
                                .ENDC
 6066 047332                         CKLOOP                    ;BRANCH BACK TO BGNSEG IF ERRLOOP IS SET
                                .MCALL  M$SVC
      047332                    M$SVC   C$CLP1
                                .MCALL  M$GNINS,M$TSTLAB
      047332                    M$TSTLAB
                                .MCALL  M$TLABEL,M$INCR
                                .IIF LT T$TSTMAC, .MEXIT
                                .RADIX  10
                                M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                .RADIX  8
                                M$INCR  T$TSTSEQ
      047332                    M$GNINS <TRAP   C$CLP1>
                                .IF LT SVCINS
                                TRAP    C$CLP1
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                     TRAP    C$CLP1
                                          .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
```

```
                                        .LIST
     047332  104406                                                                          TRAP    C$CLP1
                                                      .NLIST
                                        .ENDC
6067 047334  017737  132716  002502     53$:    MOV     @ISRX,BAD               ;GET ISR2 CONTENTS
6068 047342  023737  002464  002502             CMP     CDAT13,BAD              ;ATN,NDAC,REN,REM,LLO,ATN,LADS(ULPA) SET
6069 047350  001410                             BEQ     60$                     ;BRANCH IF YES
6070 047352  013737  002464  002500             MOV     CDAT13,GOOD             ;SET UP DATA FOR ERROR MESSAGE
6071 047360                                     ERRSOFT 1709,E502,ERR501        ;ERROR HANDLER
                                        .MCALL  M$ERRINS
     047360                             M$ERRINS        1709,E502,ERR501,C$ERSOFT
                                        .MCALL  M$GNINS,M$WORD,M$TSTLAB
     047360                             M$SVC   C$ERSOFT
                                        .MCALL  M$GNINS,M$TSTLAB
     047360                             M$TSTLAB
                                        .MCALL  M$TLABEL,M$INCR
                                        .IIF LT T$TSTMAC, .MEXIT
                                        .RADIX  10
                                        M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                        .RADIX  8
                                        M$INCR  T$TSTSEQ
     047360                             M$GNINS <TRAP   C$ERSOFT>
                                        .IF LT SVCINS
                                        TRAP    C$ERSOFT
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                TRAP    C$ERSOFT
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
     047360  104457                                                                          TRAP    C$ERSOFT
                                                        .NLIST
                                        .ENDC
             000012                     .RADIX  10
                                        .IF NB  1709
             003255                     T$ERRNUM=1709
                                        .IFF
                                        .ERROR  ;MISSING ERROR NR
                                        .ENDC
     047362                             M$WORD  \T$ERRNUM
                                        .MCALL  M$GNINS
                                        .IRP    N,<1709>
                                        M$GNINS <.WORD  N>
                                        .ENDM
     047362                             M$GNINS <.WORD  1709>
                                        .IF LT SVCINS
                                        .WORD   1709
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                .WORD   1709
                                                        .NLIST
```

```
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
        047362  003255                                                          .WORD   1709
                                          .NLIST
                                .ENDC
                000010          .RADIX  8
                                .IF NB E502
        047364                  M$WORD  E502
                                .MCALL  M$GNINS
                                .IRP    N,<E502>
                                M$GNINS <.WORD  N>
                                .ENDM
        047364                  M$GNINS <.WORD  E502>
                                .IF LT SVCINS
                                .WORD   E502
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        .WORD   E502
                                          .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
        047364  005437                                                          .WORD   E502
                                          .NLIST
                                .ENDC
                                .IFF
                                M$WORD  0
                                .ENDC
                                .IF NB ERR501
        047366                  M$WORD  ERR501
                                .MCALL  M$GNINS
                                .IRP    N,<ERR501>
                                M$GNINS <.WORD  N>
                                .ENDM
        047366                  M$GNINS <.WORD  ERR501>
                                .IF LT SVCINS
                                .WORD   ERR501
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        .WORD   ERR501
                                          .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
        047366  003672                                                          .WORD   ERR501
                                          .NLIST
                                .ENDC
                                .IFF
                                M$WORD  0
```

```
                                        .ENDC
  6072 047370                                   CKLOOP                                ;BRANCH BACK TO BGNSEG IF ERRLOOP IS SET
                                        .MCALL  M$SVC
       047370                           M$SVC   C$CLP1
                                        .MCALL  M$GNINS,M$TSTLAB
       047370                           M$TSTLAB
                                        .MCALL  M$TLABEL,M$INCR
                                        .IIF LT T$TSTMAC, .MEXIT
                                        .RADIX  10
                                        M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                        .RADIX  8
                                        M$INCR  T$TSTSEQ
       047370                           M$GNINS <TRAP   C$CLP1>
                                        .IF LT SVCINS
                                        TRAP    C$CLP1
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                TRAP    C$CLP1
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
       047370  104406                                                                              TRAP    C$CLP1
                                                        .NLIST
                                        .ENDC
  6073 047372  042777  000010  132700   60$:    BIC     #10,@CSRX                     ;SELECT CHANNEL 1
  6074 047400  112777  000001  132670           MOVB    #1,@IDRHX                     ;----LOAD GTL INTO DOR 1-------------
  6075 047406  004737  011050                   JSR     PC,LOOP                       ;WAIT A LITTLE
  6076 047412  112777  000077  132656           MOVB    #77,@IDRHX                    ;----LOAD UNL INTO DOR 1--------------
  6077 047420  004737  011050                   JSR     PC,LOOP                       ;WAIT A LITTLE
  6078 047424  052777  000010  132646           BIS     #10,@CSRX                     ;SELECT CHANNEL 2
  6079 047432  017737  132620  002502           MOV     @ISRX,BAD                     ;GET ISR2 CONTENTS
  6080 047440  023737  002466  002502           CMP     CDAT14,BAD                    ;ATN,NDAC,REN,LLO,ATN,(ULPA) IS SET
  6081 047446  001410                           BEQ     63$                           ;BRANCH IF YES
  6082 047450  013737  002466  002500           MOV     CDAT14,GOOD                   ;SET UP DATA FOR ERROR MESSAGE
  6083 047456                                   ERRSOFT 1710,E502,ERR501              ;ERROR HANDLER
                                        .MCALL  M$ERRINS
       047456                           M$ERRINS        1710,E502,ERR501,C$ERSOFT
                                        .MCALL  M$GNINS,M$WORD,M$TSTLAB
       047456                           M$SVC   C$ERSOFT
                                        .MCALL  M$GNINS,M$TSTLAB
       047456                           M$TSTLAB
                                        .MCALL  M$TLABEL,M$INCR
                                        .IIF LT T$TSTMAC, .MEXIT
                                        .RADIX  10
                                        M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                        .RADIX  8
                                        M$INCR  T$TSTSEQ
       047456                           M$GNINS <TRAP   C$ERSOFT>
                                        .IF LT SVCINS
                                        TRAP    C$ERSOFT
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
```

```
                                        TRAP    C$ERSOF
                                                .NLIST
                              .MEXIT
                              .ENDC
                              .IF GT SVCINS
                              .LIST
047456  104457                                                          TRAP    C$ERSOFT
                                                .NLIST
                              .ENDC
        000012                .RADIX  10
                              .IF NB  1710
        003256                T$ERRNUM=1710
                              .IFF
                              .ERROR  ;MISSING ERROR NR
                              .ENDC
047460                        M$WORD  \T$ERRNUM
                              .MCALL  M$GNINS
                              .IRP    N,<1710>
                              M$GNINS <.WORD  N>
                              .ENDM
047460                        M$GNINS <.WORD  1710>
                              .IF LT SVCINS
                              .WORD   1710
                              .MEXIT
                              .ENDC
                              .IF EQ SVCINS
                              .LIST
                                      .WORD   1710
                                              .NLIST
                              .MEXIT
                              .ENDC
                              .IF GT SVCINS
                              .LIST
047460  003256                                                          .WORD   1710
                                              .NLIST
                              .ENDC
        000010                .RADIX  8
                              .IF NB E502
047462                        M$WORD  E502
                              .MCALL  M$GNINS
                              .IRP    N,<E502>
                              M$GNINS <.WORD  N>
                              .ENDM
047462                        M$GNINS <.WORD  E502>
                              .IF LT SVCINS
                              .WORD   E502
                              .MEXIT
                              .ENDC
                              .IF EQ SVCINS
                              .LIST
                                      .WORD   E502
                                              .NLIST
                              .MEXIT
                              .ENDC
                              .IF GT SVCINS
                              .LIST
```

```
      047462  005437                                                          .WORD   E502
                                             .NLIST
                                   .ENDC
                                   .IFF
                                   M$WORD  0
                                   .ENDC
                                   .IF NB ERR501
      047464                       M$WORD  ERR501
                                   .MCALL  M$GNINS
                                   .IRP    N,<ERR501>
                                   M$GNINS <.WORD  N>
                                   .ENDM
      047464                       M$GNINS <.WORD  ERR501>
                                   .IF LT SVCINS
                                   .WORD   ERR501
                                   .MEXIT
                                   .ENDC
                                   .IF EQ SVCINS
                                   .LIST
                                        .WORD   ERR501
                                             .NLIST
                                   .MEXIT
                                   .ENDC
                                   .IF GT SVCINS
                                   .LIST
      047464  003672                                                          .WORD   ERR501
                                             .NLIST
                                   .ENDC
                                   .IFF
                                   M$WORD  0
                                   .ENDC
 6084 047466                            CKLOOP                  ;BRANCH BACK TO BGNSEG IF ERRLOOP IS SET
                                   .MCALL  M$SVC
      047466                       M$SVC   C$CLP1
                                   .MCALL  M$GNINS,M$TSTLAB
      047466                       M$TSTLAB
                                   .MCALL  M$TLABEL,M$INCR
                                   .IIF LT T$TSTMAC, .MEXIT
                                   .RADIX  10
                                   M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                   .RADIX  8
                                   M$INCR  T$TSTSEQ
      047466                       M$GNINS <TRAP   C$CLP1>
                                   .IF LT SVCINS
                                   TRAP    C$CLP1
                                   .MEXIT
                                   .ENDC
                                   .IF EQ SVCINS
                                   .LIST
                                        TRAP    C$CLP1
                                             .NLIST
                                   .MEXIT
                                   .ENDC
                                   .IF GT SVCINS
                                   .LIST
      047466  104406                                                          TRAP    C$CLP1
                                             .NLIST
```

```
                                          .ENDC
  6085 047470  042777  000010  132602  63$:     BIC     #10,@CSRX                       ;SELECT CHANNEL 1
  6086 047476  112777  000020  132546           MOVB    #20,@IIRLX                      ;----LOAD NOT SRE INTO ACR 1----------
  6087 047504                                   ENDSEG
                                          .MCALL  M$POP,M$GNLS,M$SVC,M$ENDERR
       047504                             M$POP   T$NS,T$NESTLEV,T$TEMP
                                          .MCALL  M$GETS,M$DECR
                                          .IF LT  T$NESTLEV
                                          .ERROR  T$NESTLEV       ; MACRO T$NS UNDERFLOW
                                          .MEXIT
                                          .ENDC
       047504                             M$GETS  T$NS,\T$NESTLEV,T$TEMP
               000003                     T$TEMP=T$NS2
       047504                             M$DECR  T$NESTLEV
               000001                     T$NESTLEV=T$NESTLEV-1
                                          .IF EQ F$SEG-T$TEMP
       047504                             M$POP   T$SEK,T$SEGLEV,T$$SEG
                                          .MCALL  M$GETS,M$DECR
                                          .IF LT  T$SEGLEV
                                          .ERROR  T$SEGLEV        ; MACRO T$SEK UNDERFLOW
                                          .MEXIT
                                          .ENDC
       047504                             M$GETS  T$SEK,\T$SEGLEV,T$$SEG
               010000                     T$$SEG=T$SEK0
       047504                             M$DECR  T$SEGLEV
               177777                     T$SEGLEV=T$SEGLEV-1
       047504                             M$GNLS  T$$SEG
                                          .MCALL  M$GEN
                                          .IF NB T$$SEG
       047504                             M$GEN   \T$$SEG,$,SVCTAG
                                          .IF LE  SVCTAG
                                          .IIF EQ SVCTAG,.LIST
                                          10000$:
                                          .IIF EQ SVCTAG,.NLIST
                                          .MEXIT
                                          .ENDC
                                          .LIST
       047504                                                                               10000$:
                                                  .NLIST
                                          .IFF
                                          M$GEN   \$$LSYM,$,SVCTAG
                                          .ENDC
       047504                             M$SVC   C$ESEG
                                          .MCALL  M$GNINS,M$TSTLAB
       047504                             M$TSTLAB
                                          .MCALL  M$TLABEL,M$INCR
                                          .IIF LT T$TSTMAC, .MEXIT
                                          .RADIX  10
                                          M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                          .RADIX  8
                                          M$INCR  T$TSTSEQ
       047504                             M$GNINS <TRAP   C$ESEG>
                                          .IF LT SVCINS
                                          TRAP    C$ESEG
                                          .MEXIT
                                          .ENDC
                                          .IF EQ SVCINS
```

```
                                        .LIST
                                                TRAP    C$ESEG
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
      047504  104405                                                                    TRAP    C$ESEG
                                                        .NLIST
                                        .ENDC
                                        .IF EQ T$SEGLEV+1
              000041                    I$SEG=F$END
                                        .ENDC
                                        .IFF
                                        M$ENDERR        ENDSEG,T$TEMP
                                        .ENDC
6088                                    ;+++-----------------------------------------------------------------------
6089                                    ;PART 2 CHECKS REMOTE/LOCAL INTERFACE FUNCTION OF CHANNEL 1
6090                                    ;+++----------------------------------------------------------------------
6091  047506                            PSEU17: BGNSEG
                                        .MCALL  M$PUSH,M$INCR,M$SVC
              000040                    I$SEG=F$BGN
      047506                            M$PUSH  T$NS,T$NESTLEV,F$SEG
                                        .MCALL  M$INCR,M$SETS
      047506                            M$INCR  T$NESTLEV
              000002                    T$NESTLEV=T$NESTLEV+1
      047506                            M$SETS  T$NS,\T$NESTLEV,F$SEG
              000003                    T$NS2=F$SEG
              010001                    T$$SEG=S$LSYM
      047506                            M$PUSH  T$SEK,T$SEGLEV,T$$SEG
                                        .MCALL  M$INCR,M$SETS
      047506                            M$INCR  T$SEGLEV
              000000                    T$SEGLEV=T$SEGLEV+1
      047506                            M$SETS  T$SEK,\T$SEGLEV,T$$SEG
              010001                    T$SEK0=T$$SEG
      047506                            M$INCR  S$LSYM
              010002                    S$LSYM=S$LSYM+1
      047506                            M$SVC   C$BSEG
                                        .MCALL  M$GNINS,M$TSTLAB
      047506                            M$TSTLAB
                                        .MCALL  M$TLABEL,M$INCR
                                        .IIF LT T$TSTMAC, .MEXIT
                                        .RADIX  10
                                        M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                        .RADIX  8
                                        M$INCR  T$TSTSEQ
      047506                            M$GNINS <TRAP   C$BSEG>
                                        .IF LT SVCINS
                                        TRAP    C$BSEG
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                TRAP    C$BSEG
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
```

```
                                   .IF GT SVCINS
                                   .LIST
 047506  104404                                                                    TRAP     C$BSEG
                                                      .NLIST
                                   .ENDC
 047510  004737  010210                    JSR      PC,CULPA                ;CLEAR ULPA BIT IN ISR 1 AND 2
 047514  004737  010700                    JSR      PC,BGIN2                ;SET UP PARAMETER
 047520  112777  000220  132542            MOVB     #220,@ICRHX             ;-----LOAD SRE INTO ACR 2------------
 047526  004737  011062                    JSR      PC,WAIT                 ;WAIT 100 US
 047532  032737  000001  002312            BIT      #1,DPA1                 ;IS DPA EVEN
 047540  001415                            BEQ      3$                      ;BRANCH IF YES
 047542  052737  000001  002460            BIS      #1,CDAT11               ;SET ULPA BIT IN COMPARE DATA FOR ISR
 047550  052737  000001  002462            BIS      #1,CDAT12               ;...
 047556  052737  000001  002464            BIS      #1,CDAT13               ;...
 047564  052737  000001  002466            BIS      #1,CDAT14               ;...
 047572  000414                            BR       .+32                    ;
 047574  042737  000001  002460    3$:     BIC      #1,CDAT11               ;CLEAR ULPA BIT IN COMPARE DATA FOR ISR
 047602  042737  000001  002462            BIC      #1,CDAT12               ;...
 047610  042737  000001  002464            BIC      #1,CDAT13               ;...
 047616  042737  000001  002466            BIC      #1,CDAT14               ;...
 047624  013701  002312                    MOV      DPA1,R1                 ;CREATE MLA1
 047630  062701  000040                    ADD      #40,R1                  ;...
 047634  010137  002410                    MOV      R1,MLA1                 ;STORE MLA1
 047640  113777  002410  132430            MOVB     MLA1,@IDRHX             ;-----LOAD MLA1 INTO DOR 2-----------
 047646  004737  011050                    JSR      PC,LOOP                 ;WAIT A LITTLE
 047652  042777  000010  132420            BIC      #10,@CSRX               ;SELECT CHANNEL 1
 047660  012737  000001  002374            MOV      #1,CHAN                 ;LOAD CHANNEL NUMBER
 047666  017737  132356  002502            MOV      @IIRX,BAD               ;GET IIR1 CONTENTS
 047674  022737  002403  002502            CMP      #2403,BAD               ;MA,IFC,RLC,MAC BIT SHOULD BE SET
 047702  001410                            BEQ      10$                     ;BRANCH IF YES
 047704  012737  002403  002500            MOV      #2403,GOOD              ;SET UP DATA FOR ERROR MESSAGE
 047712                                    ERRSOFT  1711,E5C1,ERR501        ;ERROR HANDLER
                                   .MCALL  M$ERRINS
 047712                            M$ERRINS         1711,E501,ERR501,C$ERSOFT
                                   .MCALL  M$GNINS,M$WORD,M$TSTLAB
 047712                            M$SVC    C$ERSOFT
                                   .MCALL  M$GNINS,M$TSTLAB
 047712                            M$TSTLAB
                                   .MCALL  M$TLABEL,M$INCR
                                   .IIF LT T$TSTMAC, .MEXIT
                                   .RADIX  10
                                   M$TLABEL         \T$TESTNUN,\T$TSTSEQ
                                   .RADIX  8
                                   M$INCR  T$TSTSEQ
 047712                            M$GNINS <TRAP    C$ERSOFT>
                                   .IF LT SVCINS
                                   TRAP     C$ERSOFT
                                   .MEXIT
                                   .ENDC
                                   .IF EQ SVCINS
                                   .LIST
                                           TRAP     C$ERSOFT
                                                    .NLIST
                                   .MEXIT
                                   .ENDC
                                   .IF GT SVCINS
                                   .LIST
```

G5

```
047712  104457                                                                  TRAP    C$ERSOFT
                                                .NLIST
                                    .ENDC
        000012                      .RADIX  10
                                    .IF NB  1711
        003257                      T$ERRNUM=1711
                                    .IFF
                                    .ERROR  ;MISSING ERROR-NR
                                    .ENDC
047714                              M$WORD  \T$ERRNUM
                                    .MCALL  M$GNINS
                                    .IRP    N,<1711>
                                    M$GNINS <.WORD  N>
                                    .ENDM
047714                              M$GNINS <.WORD  1711>
                                    .IF LT SVCINS
                                    .WORD   1711
                                    .MEXIT
                                    .ENDC
                                    .IF EQ SVCINS
                                    .LIST
                                            .WORD   1711
                                                .NLIST
                                    .MEXIT
                                    .ENDC
                                    .IF GT SVCINS
                                    .LIST
047714  003257                                                                  .WORD   1711
                                                .NLIST
                                    .ENDC
        000010                      .RADIX  8
                                    .IF NB E501
047716                              M$WORD  E501
                                    .MCALL  M$GNINS
                                    .IRP    N,<E501>
                                    M$GNINS <.WORD  N>
                                    .ENDM
047716                              M$GNINS <.WORD  E501>
                                    .IF LT SVCINS
                                    .WORD   E501
                                    .MEXIT
                                    .ENDC
                                    .IF EQ SVCINS
                                    .LIST
                                            .WORD   E501
                                                .NLIST
                                    .MEXIT
                                    .ENDC
                                    .IF GT SVCINS
                                    .LIST
047716  005376                                                                  .WORD   E501
                                                .NLIST
                                    .ENDC
                                    .IFF
                                    M$WORD  0
                                    .ENDC
                                    .IF NB ERR501
```

```
      047720                        M$WORD  ERR501
                                    .MCALL  M$GNINS
                                    .IRP    N,<ERR501>
                                    M$GNINS <.WORD  N>
                                    .ENDM
      047720                        M$GNINS <.WORD  ERR501>
                                    .IF LT SVCINS
                                    .WORD   ERR501
                                    .MEXIT
                                    .ENDC
                                    .IF EQ SVCINS
                                    .LIST
                                            .WORD   ERR501
                                                    .NLIST
                                    .MEXIT
                                    .ENDC
                                    .IF GT SVCINS
                                    .LIST
      047720  003672                                                                        .WORD   ERR501
                                                    .NLIST
                                    .ENDC
                                    .IFF
                                    M$WORD  0
                                    .ENDC
 6119 047722                                CKLOOP                          ;BRANCH BACK TO BGNSEG IF ERRLOOP IS SET
                                    .MCALL  M$SVC
      047722                        M$SVC   C$CLP1
                                    .MCALL  M$GNINS,M$TSTLAB
      047722                        M$TSTLAB
                                    .MCALL  M$TLABEL,M$INCR
                                    .IIF LT T$TSTMAC, .MEXIT
                                    .RADIX  10
                                    M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                    .RADIX  8
                                    M$INCR  T$TSTSEQ
      047722                        M$GNINS <TRAP   C$CLP1>
                                    .IF LT SVCINS
                                    TRAP    C$CLP1
                                    .MEXIT
                                    .ENDC
                                    .IF EQ SVCINS
                                    .LIST
                                            TRAP    C$CLP1
                                                    .NLIST
                                    .MEXIT
                                    .ENDC
                                    .IF GT SVCINS
                                     LIST
      047722  104406                                                                        TRAP    C$CLP1
                                                    .NLIST
                                    .ENDC
 6120 047724  017737  132326  002502  10$:  MOV     @ISRX,BAD               ;GET ISR1 CONTENTS
 6121 047732  023737  002460  002502        CMP     CDAT11,BAD              ;ATN,NDAC,REM,ATN,LAPS,LADS,(ULPA)IS SET
 6122 047740  001410                        BEQ     20$                     ;BRANCH IF YES
 6123 047742  013737  002460  002500        MOV     CDAT11,GOOD             ;SET UP DATA FOR ERROR MESSAGE
 6124 047750                                ERRSOFT 1712,E502,ERR501        ;ERROR HANDLER
                                    .MCALL  M$ERRINS
```

I5


```
        047750                          M$ERRINS        1712,E502,ERR501,C$ERSOFT
                                        .MCALL  M$GNINS,M$WORD,M$TSTLAB
        047750                          M$SVC   C$ERSOFT
                                        .MCALL  M$GNINS,M$TSTLAB
        047750                          M$TSTLAB
                                        .MCALL  M$TLABEL,M$INCR
                                        .IIF LT T$TSTMAC, .MEXIT
                                         RADIX  10
                                        M  LABEL        \T$TESTNUN,\T$TSTSEQ
                                        .R DIX  8
                                        M$INCR  T$TSTSEQ
        047750                          M$GNINS <TRAP   C$ERSOFT>
                                        .IF LT SVCINS
                                        TRAP    C$ERSOFT
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                TRAP    C$ERSOFT
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
        047750  104457                                                          TRAP    C$ERSOFT
                                                        .NLIST
                                        .ENDC
                000012                  .RADIX  10
                                        .IF NB  1712
                003260                  T$ERRNUM=1712
                                        .IFF
                                        .ERROR  ;MISSING ERROR-NR
                                        .ENDC
        047752                          M$WORD  \T$ERRNUM
                                        .MCALL  M$GNINS
                                        .IRP    N,<1712>
                                        M$GNINS <.WORD  N>
                                        .ENDM
        047752                          M$GNINS <.WORD  1712>
                                        .IF LT SVCINS
                                        .WORD   1712
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                .WORD   1712
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
        047752  003260                                                          .WORD   1712
                                                        .NLIST
                                        .ENDC
                000010                  .RADIX  8
                                        .IF NB E502
        047754                          M$WORD  E502
```

J5

```
                                   .MCALL  M$GNINS
                                   .IRP    N,<E502>
                                   M$GNINS <.WORD  N>
                                   .ENDM
      047754                       M$GNINS <.WORD  E502>
                                   .IF LT SVCINS
                                   .WORD   E502
                                   .MEXIT
                                   .ENDC
                                   .IF EQ SVCINS
                                   .LIST
                                           .WORD   E502
                                                   .NLIST
                                   .MEXIT
                                   .ENDC
                                   .IF GT SVCINS
                                   .LIST
      047754  005437                                                                   .WORD   E502
                                                   .NLIST
                                   .ENDC
                                   .IFF
                                   M$WORD  0
                                   .ENDC
                                   .IF NB ERR501
      047756                       M$WORD  ERR501
                                   .MCALL  M$GNINS
                                   .IRP    N,<ERR501>
                                   M$GNINS <.WORD  N>
                                   .ENDM
      047756                       M$GNINS <.WORD  ERR501>
                                   .IF LT SVCINS
                                   .WORD   ERR501
                                   .MEXIT
                                   .ENDC
                                   .IF EQ SVCINS
                                   .LIST
                                           .WORD   ERR501
                                                   .NLIST
                                   .MEXIT
                                   .ENDC
                                   .IF GT SVCINS
                                   .LIST
      047756  003672                                                                   .WORD   ERR501
                                                   .NLIST
                                   .ENDC
                                   .IFF
                                   M$WORD  0
                                   .ENDC
 6125 047760                               CKLOOP                 ;BRANCH BACK TO BGNSEG IF ERRLOOP IS SET
                                   .MCALL  M$SVC
      047760                       M$SVC   C$CLP1
                                   .MCALL  M$GNINS,M$TSTLAB
      047760                       M$TSTLAB
                                   .MCALL  M$TLABEL,M$INCR
                                   .IIF LT T$TSTMAC, .MEXIT
                                   .RADIX  10
                                   M$TLABEL        \T$TESTNUN,\T$TSTSEQ
```


K5

K5


```
                                                .RADIX  8
                                                M$INCR  T$TSTSEQ
        047760                                  M$GNINS <TRAP    C$CLP1>
                                                .IF LT SVCINS
                                                TRAP    C$CLP1
                                                .MEXIT
                                                .ENDC
                                                .IF EQ SVCINS
                                                .LIST
                                                        TRAP    C$CLP1
                                                                .NLIST
                                                .MEXIT
                                                .ENDC
                                                .IF GT SVCINS
                                                .LIST
        047760  104406                                                                  TRAP    C$CLP1
                                                                .NLIST
                                                .ENDC
   6126 047762  052777  000010  132310  20$:    BIS     #10,@CSRX               ;SELECT CHANNEL 2
   6127 047770  112777  000001  132300          MOVB    #1,@IDRHX               ;------LOAD GTL INTO DOR 2-------------
   6128 047776  004737  011050                  JSR     PC,LOOP                 ;WAIT A LITTLE
   6129 050002  112777  000077  132266          MOVB    #77,@IDRHX              ;------LOAD UNL INTO DOR 2-------------
   6130 050010  004737  011050                  JSR     PC,LOOP                 ;WAIT A LITTLE
   6131 050014  042777  000010  132256          BIC     #10,@CSRX               ;SELECT CHANNEL 1
   6132 050022  012737  000001  002374          MOV     #1,CHAN                 ;LOAD CHANNEL NUMBER
   6133 050030  017737  132214  002502          MOV     @IIRX,BAD               ;GET IIR1 CONTENTS
   6134 050036  022737  000003  002502          CMP     #3,BAD                  ;RLC,MAC BIT SHOULD BE SET
   6135 050044  001410                          BEQ     30$                     ;BRANCH IF YES
   6136 050046  012737  000003  002500          MOV     #3,GOOD                 ;SET UP DATA FOR ERROR MESSAGE
   6137 050054                                  ERRSOFT 1713,E501,ERR501        ;ERROR HANDLER
                                                .MCALL  M$ERRINS
        050054                                  M$ERRINS        1713,E501,ERR501,C$ERSOFT
                                                .MCALL  M$GNINS,M$WORD,M$TSTLAB
        050054                                  M$SVC   C$ERSOFT
                                                .MCALL  M$GNINS,M$TSTLAB
        050054                                  M$TSTLAB
                                                .MCALL  M$TLABEL,M$INCR
                                                .IIF LT T$TSTMAC, .MEXIT
                                                .RADIX  10
                                                M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                                .RADIX  8
                                                M$INCR  T$TSTSEQ
        050054                                  M$GNINS <TRAP    C$ERSOFT>
                                                .IF LT SVCINS
                                                TRAP    C$ERSOFT
                                                .MEXIT
                                                .ENDC
                                                .IF EQ SVCINS
                                                .LIST
                                                        TRAP    C$ERSOFT
                                                                .NLIST
                                                .MEXIT
                                                .ENDC
                                                .IF GT SVCINS
                                                .LIST
        050054  104457                                                                  TRAP    C$ERSOFT
                                                                .NLIST
```

L5

L5


```
                                        .ENDC
                000012                  .RADIX  10
                                        .IF NB  1713
                003261                  T$ERRNUM=1713
                                        .IFF
                                        .ERROR  ;MISSING ERROR NR
                                        .ENDC
        050056                          M$WORD  \T$ERRNUM
                                        .MCALL  M$GNINS
                                        .IRP    N,<1713>
                                        M$GNINS <.WORD  N>
                                        .ENDM
        050056                          M$GNINS <.WORD  1713>
                                        .IF LT SVCINS
                                        .WORD   1713
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                .WORD   1713
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
        050056  003261                                                                  .WORD   1713
                                                        .NLIST
                                        .ENDC
                000010                  .RADIX  8
                                        .IF NB E501
        050060                          M$WORD  E501
                                        .MCALL  M$GNINS
                                        .IRP    N,<E501>
                                        M$GNINS <.WORD  N>
                                        .ENDM
        050060                          M$GNINS <.WORD  E501>
                                        .IF LT SVCINS
                                        .WORD   E501
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                .WORD   E501
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
        050060  005376                                                                  .WORD   E501
                                                        .NLIST
                                        .ENDC
                                        .IFF
                                        M$WORD  0
                                        .ENDC
                                        .IF NB ERR501
        050062                          M$WORD  ERR501
                                        .MCALL  M$GNINS
```

78 8018 3675-4

M5

```
                                        .IRP    N,<ERR501>
                                        M$GNINS <.WORD  N>
                                        .ENDM
      050062                            M$GNINS <.WORD  ERR501>
                                        .IF LT SVCINS
                                        .WORD   ERR501
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                .WORD   ERR501
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
      050062  003672                                                                    .WORD   ERR501
                                                        .NLIST
                                        .ENDC
                                        .IFF
                                        M$WORD  0
                                        .ENDC
 6138 050064                                    CKLOOP                  ;BRANCH TO BGNSEG IF ERRLOOP IS SET
                                        .MCALL  M$SVC
      050064                            M$SVC   C$CLP1
                                        .MCALL  M$GNINS,M$TSTLAB
      050064                            M$TSTLAB
                                        .MCALL  M$TLABEL,M$INCR
                                        .IIF LT T$TSTMAC, .MEXIT
                                        .RADIX  10
                                        M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                        .RADIX  8
                                        M$INCR  T$TSTSEQ
      050064                            M$GNINS <TRAP   C$CLP1>
                                        .IF LT SVCINS
                                        TRAP    C$CLP1
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                TRAP    C$CLP1
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
      050064  104406                                                                    TRAP    C$CLP1
                                                        .NLIST
                                        .ENDC
 6139 050066  052777  000010  132204    30$:    BIS     #10,@CSRX       ;SELECT CHANNEL 2
 6140 050074  013701  002312                    MOV     DPA1,R1         ;CREATE MLA1
 6141 050100  062701  000040                    ADD     #40,R1          ;...
 6142 050104  010137  002410                    MOV     R1,MLA1         ;STORE MLA1
 6143 050110  113777  002410  132160            MOVB    MLA1,@IDRHX     ;----LOAD MLA1 INTO DOR 2--- ------ ----
 6144 050116  004737  011050                    JSR     PC,LOOP         ;WAIT A LITTLE
 6145 050122  042777  000010  132150            BIC     #10,@CSRX       ;SELECT CHANNEL 1
 6146 050130  012737  000001  002374            MOV     #1,CHAN         ;LOAD CHANNEL NUMBER
```

N5

TEST 17: REMOTE/LOCAL INTERFACE FUNCTION TEST

```
6147 050136  112777  000007  132124          MOVB    #7,@ICRHX              ;----LOAD NOT RTL INTO DOR 1------------
6148 050144  017737  132100  002502          MOV     @IIRX,BAD              ;GET IIR1 CONTENTS
6149 050152  022737  002003  002502          CMP     #2003,BAD              ;MA,RLC,MAC BIT SHOULD BE SET
6150 050160  001410                          BEQ     33$                    ;BRANCH IF YES
6151 050162  012737  002003  002500          MOV     #2003,GOOD             ;SET UP DATA FOR ERROR MESSAGE
6152 050170                                  ERRSOFT 1744,E501,ERR501       ;ERROR HANDLER
                                     .MCALL  M$ERRINS
     050170                          M$ERRINS        1744,E501,ERR501,C$ERSOFT
                                     .MCALL  M$GNINS,M$WORD,M$TSTLAB
     050170                          M$SVC   C$ERSOFT
                                     .MCALL  M$GNINS,M$TSTLAB
     050170                          M$TSTLAB
                                     .MCALL  M$TLABEL,M$INCR
                                     .IIF LT T$TSTMAC, .MEXIT
                                     .RADIX  10
                                     M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                     .RADIX  8
                                     M$INCR  T$TSTSEQ
     050170                          M$GNINS <TRAP   C$ERSOFT>
                                     .IF LT SVCINS
                                     TRAP    C$ERSOFT
                                     .MEXIT
                                     .ENDC
                                     .IF EQ SVCINS
                                     .LIST
                                             TRAP    C$ERSOFT
                                                     .NLIST
                                     .MEXIT
                                     .ENDC
                                     .IF GT SVCINS
                                     .LIST
     050170  104457                                                                          TRAP    C$ERSOFT
                                                     .NLIST
                                     .ENDC
             000012                  .RADIX  10
                                     .IF NB  1744
             003320                  T$ERRNUM=1744
                                     .IFF
                                     .ERROR  ;MISSING ERROR NR
                                     .ENDC
     050172                          M$WORD  \T$ERRNUM
                                     .MCALL  M$GNINS
                                     .IRP    N,<1744>
                                     M$GNINS <.WORD  N>
                                     .ENDM
     050172                          M$GNINS <.WORD  1744>
                                     .IF LT SVCINS
                                     .WORD   1744
                                     .MEXIT
                                     .ENDC
                                     .IF EQ SVCINS
                                     .LIST
                                             .WORD   1744
                                                     .NLIST
                                     .MEXIT
                                     .ENDC
                                     .IF GT SVCINS
```

```
                                    .LIST
       050172  005320                                                                  .WORD   1744
                                                .NLIST
                                    .ENDC
               000010               .RADIX  8
                                    .IF NB E501
       050174                       M$WORD  E501
                                    .MCALL  M$GNINS
                                    .IRP    N,<E501>
                                    M$GNINS <.WORD  N>
                                    .ENDM
       050174                       M$GNINS <.WORD  E501>
                                    .IF LT SVCINS
                                    .WORD   E501
                                    .MEXIT
                                    .ENDC
                                    .IF EQ SVCINS
                                    .LIST
                                            .WORD   E501
                                                .NLIST
                                    .MEXIT
                                    .ENDC
                                    .IF GT SVCINS
                                    .LIST
       050174  005376                                                                  .WORD   E501
                                                .NLIST
                                    .ENDC
                                    .IFF
                                    M$WORD  0
                                    .ENDC
                                    .IF NB ERR501
       050176                       M$WORD  ERR501
                                    .MCALL  M$GNINS
                                    .IRP    N,<ERR501>
                                    M$GNINS <.WORD  N>
                                    .ENDM
       050176                       M$GNINS <.WORD  ERR501>
                                    .IF LT SVCINS
                                    .WORD   ERR501
                                    .MEXIT
                                    .ENDC
                                    .IF EQ SVCINS
                                    .LIST
                                            .WORD   ERR501
                                                .NLIST
                                    .MEXIT
                                    .ENDC
                                    .IF GT SVCINS
                                    .LIST
       050176  003672                                                                  .WORD   ERR501
                                                .NLIST
                                    .ENDC
                                    .IFF
                                    M$WORD  0
                                    .ENDC
  6153 050200                               CKLOOP                  ;BRANCH BACK TO BGNSEG IF ERRLOOP IS SET
                                    .MCALL  M$SVC
```

C6


```
     050200                                  M$SVC   C$CLP1
                                             .MCALL  M$GNINS,M$TSTLAB
     050200                                  M$TSTLAB
                                             .MCALL  M$TLABEL,M$INCR
                                             .IIF LT T$TSTMAC, .MEXIT
                                             .RADIX  10
                                             M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                             .RADIX  8
                                             M$INCR  T$TSTSEQ
     050200                                  M$GNINS <TRAP   C$CLP1>
                                             .IF LT SVCINS
                                             TRAP    C$CLP1
                                             .MEXIT
                                             .ENDC
                                             .IF EQ SVCINS
                                             .LIST
                                                     TRAP    C$CLP1
                                                             .NLIST
                                             .MEXIT
                                             .ENDC
                                             .IF GT SVCINS
                                             .LIST
     050200  104406                                                                                  TRAP    C$CLP1
                                                             .NLIST
                                             .ENDC
6154 050202  017737  132050  002502  33$:    MOV     @ISRX,BAD               ;GET ISR1 CONTENTS
6155 050210  023737  002462  002502          CMP     CDAT12,BAD              ;ATN,NDAC,REN,ATN,LPAS,LADS(ULPA)IS SET
6156 050216  001410                          BEQ     40$                     ;BRANCH IF YES
6157 050220  013737  002462  002500          MOV     CDAT12,GOOD             ;SET UP DATA FOR ERROR MESSAGE
6158 050226                                  ERRSOFT 1715,E502,ERR501        ;ERROR HANDLER
                                             .MCALL  M$ERRINS
     050226                                  M$ERRINS        1715,E502,ERR501,C$ERSOFT
                                             .MCALL  M$GNINS,M$WORD,M$TSTLAB
     050226                                  M$SVC   C$ERSOFT
                                             .MCALL  M$GNINS,M$TSTLAB
     050226                                  M$TSTLAB
                                             .MCALL  M$TLABEL,M$INCR
                                             .IIF LT T$TSTMAC, .MEXIT
                                             .RADIX  10
                                             M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                             .RADIX  8
                                             M$INCR  T$TSTSEQ
     050226                                  M$GNINS <TRAP   C$ERSOFT>
                                             .IF LT SVCINS
                                             TRAP    C$ERSOFT
                                             .MEXIT
                                             .ENDC
                                             .IF EQ SVCINS
                                             .LIST
                                                     TRAP    C$ERSOFT
                                                             .NLIST
                                             .MEXIT
                                             .ENDC
                                             .IF GT SVCINS
                                             .LIST
     050226  104457                                                                                  TRAP    C$ERSOFT
                                                             .NLIST
```

D6

```
                                        .ENDC
              000012                    .RADIX  10
                                        .IF NB  1715
              003263                    T$ERRNUM=1715
                                        .IFF
                                        .ERROR  ;MISSING ERROR NR
                                        .ENDC
        050230                          M$WORD  \T$ERRNUM
                                        .MCALL  M$GNINS
                                        .IRP    N,<1715>
                                        M$GNINS <.WORD  N>
                                        .ENDM
        050230                          M$GNINS <.WORD  1715>
                                        .IF LT SVCINS
                                        .WORD   1715
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                .WORD   1715
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
        050230  003263                                                                  .WORD   1715
                                                        .NLIST
                                        .ENDC
              000010                    .RADIX  8
                                        .IF NB E502
        050232                          M$WORD  E502
                                        .MCALL  M$GNINS
                                        .IRP    N,<E502>
                                        M$GNINS <.WORD  N>
                                        .ENDM
        050232                          M$GNINS <.WORD  E502>
                                        .IF LT SVCINS
                                        .WORD   E502
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                .WORD   E502
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
        050232  005437                                                                  .WORD   E502
                                                        .NLIST
                                        .ENDC
                                        .IFF
                                        M$WORD  0
                                        .ENDC
                                        .IF NB ERR501
        050234                          M$WORD  ERR501
                                        .MCALL  M$GNINS
```

```
                                                .IRP    N,<ERR501>
                                                M$GNINS <.WORD  N>
                                                .ENDM
     050234                                     M$GNINS <.WORD  ERR501>
                                                .IF LT SVCINS
                                                .WORD   ERR501
                                                .MEXIT
                                                .ENDC
                                                .IF EQ SVCINS
                                                .LIST
                                                        .WORD   ERR501
                                                                .NLIST
                                                .MEXIT
                                                .ENDC
                                                .IF GT SVCINS
                                                .LIST
     050234  003672                                                                        .WORD   ERR501
                                                                .NLIST
                                                .ENDC
                                                .IFF
                                                M$WORD  0
                                                .ENDC
6159 050236                                             CKLOOP                     ;BRANCH BACK TO BGNSEG IF ERRLOOP IS SET
                                                .MCALL  M$SVC
     050236                                     M$SVC   C$CLP1
                                                .MCALL  M$GNINS,M$TSTLAB
     050236                                     M$TSTLAB
                                                .MCALL  M$TLABEL,M$INCR
                                                .IIF LT T$TSTMAC, .MEXIT
                                                .RADIX  10
                                                M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                                .RADIX  8
                                                M$INCR  T$TSTSEQ
     050236                                     M$GNINS <TRAP   C$CLP1>
                                                .IF LT SVCINS
                                                TRAP    C$CLP1
                                                .MEXIT
                                                .ENDC
                                                .IF EQ SVCINS
                                                .LIST
                                                        TRAP    C$CLP1
                                                                .NLIST
                                                .MEXIT
                                                .ENDC
                                                .IF GT SVCINS
                                                .LIST
     050236  104406                                                                        TRAP    C$CLP1
                                                                .NLIST
                                                .ENDC
6160 050240  052777  000010  132032             40$:    BIS     #10,@CSRX          ;SELECT CHANNEL 2
6161 050246  113777  002410  132022                     MOVB    MLA1,@IDRHX        ;-----LOAD MLA1 INTO DOR 2 --  ----- ---
6162 050254  004737  011050                             JSR     PC,LOOP            ;WAIT A LITTLE
6163 050260  042777  000010  132012                     BIC     #10,@CSRX          ;SELECT CHANNEL 1
6164 050266  017737  131756  002502                     MOV     @IIRX,BAD          ;GET IIR1 CONTENTS
6165 050274  022737  002002  002502                     CMP     #2002,BAD          ;MA,RLC, BIT SHOULD BE SET
6166 050302  001410                                     BEQ     43$                ;BRANCH IF YES
6167 050304  012737  002002  002500                     MOV     #2002,GOOD         ;SET UP DATA FOR ERROR MESSAGE
```

F6

F6


```
  6168 050312                                ERRSOFT 1716,E501,ERR501        ;ERROR HANDLER
                                     .MCALL  M$ERRINS
       050312                        M$ERRINS        1716,E501,ERR501,C$ERSOFT
                                     .MCALL  M$GNINS,M$WORD,M$TSTLAB
       050312                        M$SVC   C$ERSOFT
                                     .MCALL  M$GNINS,M$TSTLAB
       050312                        M$TSTLAB
                                     .MCALL  M$TLABEL,M$INCR
                                     .IIF LT T$TSTMAC, .MEXIT
                                     .RADIX  10
                                     M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                     .RADIX  8
                                     M$INCR  T$TSTSEQ
       050312                        M$GNINS <TRAP   C$ERSOFT>
                                     .IF LT SVCINS
                                     TRAP    C$ERSOFT
                                     .MEXIT
                                     .ENDC
                                     .IF EQ SVCINS
                                     .LIST
                                             TRAP    C$ERSOFT
                                                     .NLIST
                                     .MEXIT
                                     .ENDC
                                     .IF GT SVCINS
                                     .LIST
       050312  104457                                                          TRAP    C$ERSOFT
                                                     .NLIST
                                     .ENDC
               000012                .RADIX  10
                                     .IF NB  1716
               003264                T$ERRNUM=1716
                                     .IFF
                                     .ERROR  ;MISSING ERROR NR
                                     .ENDC
       050314                        M$WORD  \T$ERRNUM
                                     .MCALL  M$GNINS
                                     .IRP    N,<1716>
                                     M$GNINS <.WORD  N>
                                     .ENDM
       050314                        M$GNINS <.WORD  1716>
                                     .IF LT SVCINS
                                     .WORD   1716
                                     .MEXIT
                                     .ENDC
                                     .IF EQ SVCINS
                                     .LIST
                                             .WORD   1716
                                                     .NLIST
                                     .MEXIT
                                     .ENDC
                                     .IF GT SVCINS
                                     .LIST
       050314  003264                                                          .WORD   1716
                                                     .NLIST
                                     .ENDC
               000010                .RADIX  8
```

G6

```
                                .IF NB E501
     050316                     M$WORD  E501
                                .MCALL  M$GNINS
                                .IRP    N,<E501>
                                M$GNINS <.WORD  N>
                                .ENDM
     050316                     M$GNINS <.WORD  E501>
                                .IF LT SVCINS
                                .WORD   E501
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .L..T
                                        .WORD   E501
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
     050316  005376                                                                 .WORD   E501
                                                .NLIST
                                .ENDC
                                .IFF
                                M$WORD  0
                                .ENDC
                                .IF NB ERR501
     050320                     M$WORD  ERR501
                                .MCALL  M$GNINS
                                .IRP    N,<ERR501>
                                M$GNINS <.WORD  N>
                                .ENDM
     050320                     M$GNINS <.WORD  ERR501>
                                .IF LT SVCINS
                                .WORD   ERR501
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        .WORD   ERR501
                                                .NLIST
                                . EXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
     050320  003672                                                                 .WORD   ERR501
                                                .NLIST
                                .ENDC
                                .IFF
                                M$WORD  0
                                .ENDC
6169 050322                             CKLOOP                  ;BRANCH BACK TO BGNSEG IF ERRLOOP IS SET
                                .MCALL  M$SVC
     050322                     M$SVC   C$CLP1
                                .MCALL  M$GNINS,M$TSTLAB
     050322                     M$TSTLAB
                                .MCALL  M$TLABEL,M$INCR
                                .IIF LT T$TSTMAC, .MEXIT
```

```
                                        .RADIX  10
                                        M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                        .RADIX  8
                                        M$INCR  T$TSTSEQ
      050322                            M$GNINS <TRAP   C$CLP1>
                                        .IF LT SVCINS
                                        TRAP    C$CLP1
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                TRAP    C$CLP1
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
      050322  104406                                                                    TRAP    C$CLP1
                                                        .NLIST
                                        .ENDC
 6170 050324  017737  131726  002502  43$:      MOV     @ISRX,BAD               ;GET ISR1 CONTENTS
 6171 050332  023737  002460  002502            CMP     CDAT11,BAD              ;ATN,NDAC,REN,REM,ATN,LPAS,LADS(ULPA)SET
 6172 050340  001410                            BEQ     50$                     ;BRANCH IF YES
 6173 050342  013737  002460  002500            MOV     CDAT11,GOOD             ;SET UP DATA FOR ERROR MESSAGE
 6174 050350                                    ERRSOFT 1717,E502,ERR501        ;ERROR HANDLER
                                        .MCALL  M$ERRINS
      050350                            M$ERRINS        1717,E502,ERR501,C$ERSOFT
                                        .MCALL  M$GNINS,M$WORD,M$TSTLAB
      050350                            M$SVC   C$ERSOFT
                                        .MCALL  M$GNINS,M$TSTLAB
      050350                            M$TSTLAB
                                        .MCALL  M$TLABEL,M$INCR
                                        .IIF LT T$TSTMAC, .MEXIT
                                        .RADIX  10
                                        M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                        .RADIX  8
                                        M$INCR  T$TSTSEQ
      050350                            M$GNINS <TRAP   C$ERSOFT>
                                        .IF LT SVCINS
                                        TRAP    C$ERSOFT
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                TRAP    C$ERSOFT
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
      050350  104457                                                                    TRAP    C$ERSOFT
                                                        .NLIST
                                        .ENDC
              000012                    .RADIX  10
                                        .IF NB  1717
              003265                    T$ERRNUM=1717
                                        .IFF
```

```
                                  .ERROR  ;MISSING ERROR NR
                                  .ENDC
     050352                       M$WORD  \T$ERRNUM
                                  .MCALL  M$GNINS
                                  .IRP    N,<1717>
                                  M$GNINS <.WORD  N>
                                  .ENDM
     050352                       M$GNINS <.WORD  1717>
                                  .IF LT SVCINS
                                  .WORD   1717
                                  .MEXIT
                                  .ENDC
                                  .IF EQ SVCINS
                                  .LIST
                                          .WORD   1717
                                                  .NLIST
                                  .MEXIT
                                  .ENDC
                                  .IF GT SVCINS
                                  .LIST
     050352  003265                                                           .WORD   1717
                                                  .NLIST
                                  .ENDC
             000010               .RADIX  8
                                  .IF NB E502
     050354                       M$WORD  E502
                                  .MCALL  M$GNINS
                                  .IRP    N,<E502>
                                  M$GNINS <.WORD  N>
                                  .ENDM
     050354                       M$GNINS <.WORD  E502>
                                  .IF LT SVCINS
                                  .WORD   E502
                                  .MEXIT
                                  .ENDC
                                  .IF EQ SVCINS
                                  .LIST
                                          .WORD   E502
                                                  .NLIST
                                  .MEXIT
                                  .ENDC
                                  .IF GT SVCINS
                                  .LIST
     050354  005437                                                           .WORD   E502
                                                  .NLIST
                                  .ENDC
                                  .IFF
                                  M$WORD  0
                                  .ENDC
                                  .IF NB ERR501
     050356                       M$WORD  ERR501
                                  .MCALL  M$GNINS
                                  .IRP    N,<ERR501>
                                  M$GNINS <.WORD  N>
                                  .ENDM
     050356                       M$GNINS <.WORD  ERR501>
                                  .IF LT SVCINS
```

J6


```
                                                .WORD   ERR501
                                                .MEXIT
                                                .ENDC
                                                .IF EQ SVCINS
                                                .LIST
                                                        .WORD   ERR501
                                                                .NLIST
                                                .MEXIT
                                                .ENDC
                                                .IF GT SVCINS
                                                .LIST
        050356  003672                                                                                  .WORD   ERR501
                                                                .NLIST
                                                .ENDC
                                                .IFF
                                                M$WORD  0
                                                .ENDC
   6175 050360                                          CKLOOP                          ;BRANCH TO BGNSEG IF ERRLOOP IS SET
                                                .MCALL  M$SVC
        050360                                  M$SVC   C$CLP1
                                                .MCALL  M$GNINS,M$TSTLAB
        050360                                  M$TSTLAB
                                                .MCALL  M$TLABEL,M$INCR
                                                .IIF LT T$TSTMAC, .MEXIT
                                                .RADIX  10
                                                M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                                .RADIX  8
                                                M$INCR  T$TSTSEQ
        050360                                  M$GNINS <TRAP   C$CLP1>
                                                .IF LT SVCINS
                                                TRAP    C$CLP1
                                                .MEXIT
                                                .ENDC
                                                .IF EQ SVCINS
                                                .LIST
                                                        TRAP    C$CLP1
                                                                .NLIST
                                                .MEXIT
                                                .ENDC
                                                .IF GT SVCINS
                                                .LIST
        050360  104406                                                                                  TRAP    C$CLP1
                                                                .NLIST
                                                .ENDC
   6176 050362  052777  000010  131710  50$:            BIS     #10,@CSRX               ;SELECT CHANNEL 2
   6177 050370  112777  000021  131700                  MOVB    #21,@IDRHX              ;-----LOAD LLO INTO DOR 2---------------
   6178 050376  004737  011050                          JSR     PC,LOOP                 ;WAIT A LITTLE
   6179 050402  042777  000010  131670                  BIC     #10,@CSRX               ;SELECT CHANNEL 1
   6180 050410  017737  131634  002502                  MOV     @IIRX,BAD               ;GET IIR1 CONTENTS
   6181 050416  005737  002502                          TST     BAD                     ;CONTENTS SHOULD BE ZERO
   6182 050422  001407                                  BEQ     53$                     ;BRANCH IF YES
   6183 050424  005037  002500                          CLR     GOOD                    ;SET UP DATA FOR ERROR MESSAGE
   6184 050430                                          ERRSOFT 1718,E501,ERR501        ;ERROR HANDLER
                                                .MCALL  M$ERRINS
        050430                                  M$ERRINS        1718,E501,ERR501,C$ERSOFT
                                                .MCALL  M$GNINS,M$WORD,M$TSTLAB
        050430                                  M$SVC   C$ERSOFT
```

78 8018 3675-6

K6

K6


```
                                   .MCALL  M$GNINS,M$TSTLAB
     050430                        M$TSTLAB
                                   .MCALL  M$TLABEL,M$INCR
                                   .IIF LT T$TSTMAC, .MEXIT
                                   .RADIX  10
                                   M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                   .RADIX  8
                                   M$INCR  T$TSTSEQ
     050430                        M$GNINS <TRAP   C$ERSOFT>
                                   .IF LT SVCINS
                                   TRAP    C$ERSOFT
                                   .MEXIT
                                   .ENDC
                                   .IF EQ SVCINS
                                   .LIST
                                           TRAP    C$ERSOFT
                                                   .NLIST
                                   .MEXIT
                                   .ENDC
                                   .IF GT SVCINS
                                   .LIST
     050430  104457                                                                    TRAP    C$ERSOFT
                                                   .NLIST
                                   .ENDC
             000012                .RADIX  10
                                   .IF NB  1718
             003266                T$ERRNUM=1718
                                   .IFF
                                   .ERROR  ;MISSING ERROR-NR
                                   .ENDC
     050432                        M$WORD  \T$ERRNUM
                                   .MCALL  M$GNINS
                                   .IRP    N,<1718>
                                   M$GNINS <.WORD  N>
                                   .ENDM
     050432                        M$GNINS <.WORD  1718>
                                   .IF LT SVCINS
                                   .WORD   1718
                                   .MEXIT
                                   .ENDC
                                   .IF EQ SVCINS
                                   .LIST
                                           .WORD   1718
                                                   .NLIST
                                   .MEXIT
                                   .ENDC
                                   .IF GT SVCINS
                                   .LIST
     050432  003266                                                                    .WORD   1718
                                                   .NLIST
                                   .ENDC
             000010                .RADIX  8
                                   .IF NB E501
     050434                        M$WORD  E501
                                   .MCALL  M$GNINS
                                   .IRP    N,<E501>
                                   M$GNINS <.WORD  N>
```

L6

```
                                        .ENDM
      050434                            M$GNINS <.WORD  E501>
                                        .IF LT SVCINS
                                        .WORD   E501
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                .WORD   E501
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
      050434  005376                                                                          .WORD   E501
                                                        .NLIST
                                        .ENDC
                                        .IFF
                                        M$WORD  0
                                        .ENDC
                                        .IF NB ERR501
      050436                            M$WORD  ERR501
                                        .MCALL  M$GNINS
                                        .IRP    N,<ERR501>
                                        M$GNINS <.WORD  N>
                                        .ENDM
      050436                            M$GNINS <.WORD  ERR501>
                                        .IF LT SVCINS
                                        .WORD   ERR501
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                .WORD   ERR501
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
      050436  003672                                                                          .WORD   ERR501
                                                        .NLIST
                                        .ENDC
                                        .IFF
                                        M$WORD  0
                                        .ENDC
 6185 050440                                    CKLOOP                  ;BRANCH BACK TO BGNSEG IF ERRLOOP IS SET
                                        .MCALL  M$SVC
      050440                            M$SVC   C$CLP1
                                        .MCALL  M$GNINS,M$TSTLAB
      050440                            M$TSTLAB
                                        .MCALL  M$TLABEL,M$INCR
                                        .IIF LT T$TSTMAC, .MEXIT
                                        .RADIX  10
                                        M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                        .RADIX  8
                                        M$INCR  T$TSTSEQ
      050440                            M$GNINS <TRAP   C$CLP1>
```

M6

```
                                         .IF LT SVCINS
                                         TRAP    C$CLP1
                                         .MEXIT
                                         .ENDC
                                         .IF EQ SVCINS
                                         .LIST
                                                 TRAP    C$CLP1
                                                         .NLIST
                                         .MEXIT
                                         .ENDC
                                         .IF GT SVCINS
                                         .LIST
      050440  104406                                                                             TRAP    C$CLP1
                                                         .NLIST
                                         .ENDC
 6186 050442  017737  131610  002502     53$:    MOV     @ISRX,BAD               ;GET ISR1 CONTENTS
 6187 050450  023737  002464  002502             CMP     CDAT13,BAD              ;ATN,NDAC,REN,REM,LLO,ATN,LADS(ULPA) SET
 6188 050456  001410                             BEQ     60$                     ;BRANCH IF YES
 6189 050460  013737  002464  002500             MOV     CDAT13,GOOD             ;SET UP DATA FOR ERROR MESSAGE
 6190 050466                                     ERRSOFT 1719,E502,ERR501        ;ERROR HANDLER
                                         .MCALL  M$ERRINS
      050466                             M$ERRINS        1719,E502,ERR501,C$ERSOFT
                                         .MCALL  M$GNINS,M$WORD,M$TSTLAB
      050466                             M$SVC   C$ERSOFT
                                         .MCALL  M$GNINS,M$TSTLAB
      050466                             M$TSTLAB
                                         .MCALL  M$TLABEL,M$INCR
                                         .IIF LT T$TSTMAC, .MEXIT
                                         .RADIX  10
                                         M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                         .RADIX  8
                                         M$INCR  T$TSTSEQ
      050466                             M$GNINS <TRAP   C$ERSOFT>
                                         .IF LT SVCINS
                                         TRAP    C$ERSOFT
                                         .MEXIT
                                         .ENDC
                                         .IF EQ SVCINS
                                         .LIST
                                                 TRAP    C$ERSOFT
                                                         .NLIST
                                         .MEXIT
                                         .ENDC
                                         .IF GT SVCINS
                                         .LIST
      050466  104457                                                                             TRAP    C$ERSOFT
                                                         .NLIST
                                         .ENDC
              000012                     .RADIX  10
                                         .IF NB  1719
              003267                     T$ERRNUM=1719
                                         .IFF
                                         .ERROR  ;MISSING ERROR NR
                                         .ENDC
      050470                             M$WORD  \T$ERRNUM
                                         .MCALL  M$GNINS
                                         .IRP    N,<1719>
```

N6

```
                                        M$GNINS <.WORD  N>
                                        .ENDM
      050470                            M$GNINS <.WORD  1719>
                                        .IF LT SVCINS
                                        .WORD   1719
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                .WORD   1719
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
      050470  003267                                                                    .WORD   1719
                                                        .NLIST
                                        .ENDC
              000010                    .RADIX  8
                                        .IF NB E502
      050472                            M$WORD  E502
                                        .MCALL  M$GNINS
                                        .IRP    N,<E502>
                                        M$GNINS <.WORD  N>
                                        .ENDM
      050472                            M$GNINS <.WORD  E502>
                                        .IF LT SVCINS
                                        .WORD   E502
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                .WORD   E502
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
      050472  005437                                                                    .WORD   E502
                                                        .NLIST
                                        .ENDC
                                        .IFF
                                        M$WORD  0
                                        .ENDC
                                        .IF NB ERR501
      050474                            M$WORD  ERR501
                                        .MCALL  M$GNINS
                                        .IRP    N,<ERR501>
                                        M$GNINS <.WORD  N>
                                        .ENDM
      050474                            M$GNINS <.WORD  ERR501>
                                        .IF LT SVCINS
                                        .WORD   ERR501
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
```

```
                                                        .WORD   ERR501
                                                                .NLIST
                                                .MEXIT
                                                .ENDC
                                                .IF GT SVCINS
                                                .LIST
     050474  003672                                                                                             .WORD   ERR501
                                                                .NLIST
                                                .ENDC
                                                .IFF
                                                M$WORD  0
                                                .ENDC
6191 050476                                             CKLOOP                          ;BRANCH BACK TO BGNSEG IF ERRLOOP IS SET
                                                .MCALL  M$SVC
     050476                                     M$SVC   C$CLP1
                                                .MCALL  M$GNINS,M$TSTLAB
     050476                                     M$TSTLAB
                                                .MCALL  M$TLABEL,M$INCR
                                                .IIF LT T$TSTMAC, .MEXIT
                                                .RADIX  10
                                                M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                                .RADIX  8
                                                M$INCR  T TSTSEQ
     050476                                     M$GNINS <TRAP   C$CLP1>
                                                .IF LT SVCINS
                                                TRAP    C$CLP1
                                                .MEXIT
                                                .ENDC
                                                .IF EQ SVCINS
                                                .LIST
                                                        TRAP    C$CLP1
                                                                .NLIST
                                                .MEXIT
                                                .ENDC
                                                .IF GT SVCINS
                                                .LIST
     050476  104406                                                                                             TRAP    C$CLP1
                                                                .NLIST
                                                .ENDC
6192 050500  052777  000010  131572     60$:    BIS     #10,@CSRX               ;SELECT CHANNEL 2
6193 050506  112777  000001  131562             MOVB    #1,@IDRHX               ; - -LOAD GTL INTO DOR 2---------------
6194 050514  004737  011050                     JSR     PC,LOOP                 ;WAIT A LITTLE
6195 050520  112777  000077  131550             MOVB    #77,@IDRHX              ;----LOAD UNL INTO DOR 2----------- ---
6196 050526  004737  011050                     JSR     PC,LOOP                 ;WAIT A LITTLE
6197 050532  042777  000010  131540             BIC     #10,@CSRX               ;SELECT CHANNEL 1
6198 050540  017737  131512  002502             MOV     @ISRX,BAD               ;GET ISR1 CONTENTS
6199 050546  023737  002466  002502             CMP     CDAT14,BAD              ;ATN,NDAC,REN,LLO,ATN,(ULPA) IS SET
6200 050554  001410                             BEQ     63$                     ;BRANCH IF YES
6201 050556  013737  002466  002500             MOV     CDAT14,GOOD             ;SET UP DATA FOR ERROR MESSAGE
6202 050564                                     ERRSOFT 1720,E502,ERR501        ;ERROR HANDLER
                                                .MCALL  M$ERRINS
     050564                                     M$ERRINS        1720,E502,ERR501,C$ERSOFT
                                                .MCALL  M$GNINS,M$WORD,M$TSTLAB
     050564                                     M$SVC   C$ERSOFT
                                                .MCALL  M$GNINS,M$TSTLAB
     050564                                     M$TSTLAB
                                                .MCALL  M$TLABEL,M$INCR
```

C7

```
                                .IIF LT T$TSTMAC, .MEXIT
                                .RADIX  10
                                M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                .RADIX  8
                                M$INCR  T$TSTSEQ
     050564                     M$GNINS <TRAP   C$ERSOFT>
                                .IF LT SVCINS
                                TRAP    C$ERSOFT
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        TRAP    C$ERSOFT
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
     050564  104457                                                             TRAP    C$ERSOFT
                                                .NLIST
                                .ENDC
             000012             .RADIX  10
                                .IF NB  1720
             003270             T$ERRNUM=1720
                                .IFF
                                .ERROR  ;MISSING ERROR-NR
                                .ENDC
     050566                     M$WORD  \T$ERRNUM
                                .MCALL  M$GNINS
                                .IRP    N,<1720>
                                M$GNINS <.WORD  N>
                                .ENDM
     050566                     M$GNINS <.WORD  1720>
                                .IF LT SVCINS
                                .WORD   1720
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        .WORD   1720
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
     050566  003270                                                             .WORD   1720
                                                .NLIST
                                .ENDC
             000010             .RADIX  8
                                .IF NB E502
     050570                     M$WORD  E502
                                .MCALL  M$GNINS
                                .IRP    N,<E502>
                                M$GNINS <.WORD  N>
                                .ENDM
     050570                     M$GNINS <.WORD  E502>
                                .IF LT SVCINS
```

```
                                .WORD   E502
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        .WORD   E502
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
     050570  005437                                                                      .WORD   E502
                                                .NLIST
                                .ENDC
                                .IFF
                                M$WORD  0
                                .ENDC
                                .IF NB ERR501
     050572                     M$WORD  ERR501
                                .MCALL  M$GNINS
                                .IRP    N,<ERR501>
                                M$GNINS <.WORD  N>
                                .ENDM
     050572                     M$GNINS <.WORD  ERR501>
                                .IF LT SVCINS
                                .WORD   ERR501
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        .WORD   ERR501
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
     050572  003672                                                                      .WORD   ERR501
                                                .NLIST
                                .ENDC
                                .IFF
                                M$WORD  0
                                .ENDC
  6203 050574                           CKLOOP                          ;BRANCH BACK TO BGNSEG IF ERRLOOP IS SET
                                .MCALL  M$SVC
     050574                     M$SVC   C$CLP1
                                .MCALL  M$GNINS,M$TSTLAB
     050574                     M$TSTLAB
                                .MCALL  M$TLABEL,M$INCR
                                .IIF LT T$TSTMAC, .MEXIT
                                .RADIX  10
                                M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                .RADIX  8
                                M$INCR  T$TSTSEQ
     050574                     M$GNINS <TRAP   C$CLP1>
                                .IF LT SVCINS
                                TRAP    C$CLP1
                                .MEXIT
```

```
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                TRAP    C$CLP1
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
     050574  104406                                                                                     TRAP    C$CLP1
                                                        .NLIST
                                        .ENDC
6204 050576  052777  000010  131474     63$:    BIS     #10,@CSRX               ;SELECT CHANNEL 2
6205 050604  112777  000020  131440             MOVB    #20,@IIRLX              ;----LOAD NOT SRE INTO ACR 2-----------
6206 050612                                     ENDSEG
                                        .MCALL  M$POP,M$GNLS,M$SVC,M$ENDERR
     050612                             M$POP   T$NS,T$NESTLEV,T$TEMP
                                        .MCALL  M$GETS,M$DECR
                                        .IF LT  T$NESTLEV
                                        .ERROR  T$NESTLEV       ; MACRO T$NS UNDERFLOW
                                        .MEXIT
                                        .ENDC
     050612                             M$GETS  T$NS,\T$NESTLEV,T$TEMP
             000003                     T$TEMP=T$NS2
     050612                             M$DECR  T$NESTLEV
             000001                     T$NESTLEV=T$NESTLEV-1
                                        .IF EQ F$SEG-T$TEMP
     050612                             M$POP   T$SEK,T$SEGLEV,T$$SEG
                                        .MCALL  M$GETS,M$DECR
                                        .IF LT  T$SEGLEV
                                        .ERROR  T$SEGLEV        ; MACRO T$SEK UNDERFLOW
                                        .MEXIT
                                        .ENDC
     050612                             M$GETS  T$SEK,\T$SEGLEV,T$$SEG
             010001                     T$$SEG=T$SEK0
     050612                             M$DECR  T$SEGLEV
             177777                     T$SEGLEV=T$SEGLEV-1
     050612                             M$GNLS  T$$SEG
                                        .MCALL  M$GEN
                                        .IF NB T$$SEG
     050612                             M$GEN   \T$$SEG,$,SVCTAG
                                        .IF LE  SVCTAG
                                        .IIF EQ SVCTAG,.LIST
                                        10001$:
                                        .IIF EQ SVCTAG,.NLIST
                                        .MEXIT
                                        .ENDC
                                        .LIST
     050612                                                                                     10001$:
                                                .NLIST
                                        .IFF
                                        M$GEN   \S$LSYM,$,SVCTAG
                                        .ENDC
     050612                             M$SVC   C$ESEG
                                        .MCALL  M$GNINS,M$TSTLAB
     050612                             M$TSTLAB
                                        .MCALL  M$TLABEL,M$INCR
```

```
                                        .IIF LT T$TSTMAC, .MEXIT
                                        .RADIX  10
                                        M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                        .RADIX  8
                                        M$INCR  T$TSTSEQ
      050612                            M$GNINS <TRAP   C$ESEG>
                                        .IF LT SVCINS
                                        TRAP    C$ESEG
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                TRAP    C$ESEG
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
      050612  104405                                                                    TRAP    C$ESEG
                                                        .NLIST
                                        .ENDC
                                        .IF EQ T$SEGLEV+1
              000041                    I$SEG=F$END
                                        .ENDC
                                        .IFF
                                        M$ENDERR        ENDSEG,T$TEMP
                                        .ENDC
 6207 050614  005737  002234                    TST     QVP                     ;IS QUICK VERIFY PASS SELECTED
 6208 050620  001010                            BNE     EXQV17                  ;IF YES EXIT TEST
 6209 050622  005237  002322                    INC     ITRCNT                  ;ITERATION COUNTER +1
 6210 050626  023737  002322  002320            CMP     ITRCNT,ITRDEF           ;DEFAULT ITERATION EXECUTED
 6211 050634  001402                            BEQ     EXQV17                  ;IF YES EXIT TEST
 6212 050636  000137  046400                    JMP     ITAC17                  ;IF NO TEST ITERATION
 6213 050642                            EXQV17: EXIT    TST                     ;
                                        .MCALL  M$SVC,M$EXIT,M$EXSEG,M$EXTJ,M$GETTOP,M$CHECK,M$WORD,XFER
              000041                    T$FLAG=F$END
      050642                            M$CHECK TST,T$TEMP,T$FLAG
                                        .IF IDN <TST>,<TST>
              010046                    T$TEMP=T$$TEST
              000040                    T$FLAG=I$TST
                                        .MEXIT
                                        .ENDC
                                        .IF IDN <SUB>,<TST>
                                        T$TEMP=T$$SUB
                                        T$FLAG=I$SUB
                                        .MEXIT
                                        .ENDC
                                        .IF IDN <SEG>,<TST>
                                        T$TEMP=T$$SEG
                                        T$FLAG=I$SEG
                                        .MEXIT
                                        .ENDC
                                        .IF IDN <INIT>,<TST>
                                        T$TEMP-T$$INIT
                                        T$FLAG-I$INIT
                                        .MEXIT
                                        .ENDC
```

G7

```
                                .IF IDN <CLN>,<TST>
                                T$TEMP=T$$CLEAN
                                T$FLAG=I$CLN
                                .MEXIT
                                .ENDC
                                .IF IDN <SRV>,<TST>
                                T$TEMP=T$$SRV
                                T$FLAG=I$SRV
                                .MEXIT
                                .ENDC
                                .IF IDN <MSG>,<TST>
                                T$TEMP=T$$MSG
                                T$FLAG=F$JMP
                                .MEXIT
                                .ENDC
                                .IF IDN <RPT>,<TST>
                                T$TEMP=T$$RPT
                                T$FLAG=F$JMP
                                .MEXIT
                                .ENDC
                                .IF IDN <DU>,<TST>
                                T$TEMP=T$$DU
                                T$FLAG=F$JMP
                                .MEXIT
                                .ENDC
                                .IF IDN <AU>,<TST>
                                T$TEMP=T$$AU
                                T$FLAG=F$JMP
                                .MEXIT
                                .ENDC
                                .IF EQ T$FLAG F$JMP
                                M$WORD  J$ IMP
                                M$EXTJ  \ $TEMP
                                .MEXIT
                                .ENDC
                                .IF EQ  T$FLAG F$BGN
      050642                    M$SVC   C$EXIT
                                .MCALL  M$GNINS,M$TSTLAB
      050642                    M$TSTLAB
                                .MCALL  M$TLABEL,M$INCR
                                .IIF LT T$TSTMAC, .MEXIT
                                .RADIX  10
                                M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                .RADIX  8
                                M$INCR  T$TSTSEQ
      050642                    M$GNINS <TRAP   C$EXIT>
                                .IF LT SVCINS
                                TRAP    C$EXIT
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        TRAP    C$EXIT
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
```

```
                          .LIST
     050642  104432                                                        TRAP    C$EXIT
                                      .NLIST
                          .ENDC
                          .IF IDN <SEG>,<TST>
                          M$GETTOP T$SEK,T$SEGLEV,T$TEMP
                          M$EXSEG \T$TEMP
                          .IFF
     050644               M$EXIT  \T$TEMP
                          .MCALL  M$GNINS
     050644               M$GNINS <.WORD  L1004ι .>
                          .IF LT SVCINS
                          .WORD   L10046-.
                          .MEXIT
                          .ENDC
                          .IF EQ SVCINS
                          .LIST
                                  .WORD   L10046-.
                                      .NLIST
                          .MEXIT
                          .ENDC
                          .IF GT SVCıNS
                          .LIST
     050644  000056                                                        .WORD   L10046-.
                                      .NLIST
                          .ENDC
                          .ENDC
                          .MEXIT
                          .ENDC
                          .IF IDN <HRD>,<TST>
                          M$GETTOP        T$NS,T$NESTLEV,T$TEıP
                          .IF EQ  F$HARD-T$TEMP
                          .IRP    N,<\T$$HARD>
                          XFER    L'N
                          .ENDM
                          .MEXIT
                          .ENDC
                          .ENDC
                          .IF IDN <SFT>,<TST>
                          M$GETTOP        T$NS,T$NESTLEV,T$TEMP
                          .IF EQ  F$SOFT-T$TEMP
                          .IRP    N,<\T$$SOFT>
                          XFER    L'N
                          .ENDM
                          .MEXIT
                          .ENDC
                          .ENDC
                          .ERROR  ;ILL. "EXIT TST" STMT.
6214
6215                              .NLIST  BEX
6216 050646   045   123   062 TSHD17: .ASCIZ  /%S2%AREMOTE LOCAL INTERFACE FUNCTION TEST%N/
6217                              .LIST   BEX
6218                              .EVEN
6219 050722                       ENDTST
                          .MCALL  M$POP,M$GNTAG,M$SVC,M$ENDERR
                          .IF EQ  F$BGN I$TST
             000041       I$TST=F$END
```

I7

I7


```
                                .IFF
                                .ERROR  ;MISSING "BGNTST"
                                .MEXIT
                                .ENDC
050722                          M$POP   T$NS,T$NESTLEV,T$TEMP
                                .MCALL  M$GETS,M$DECR
                                .IF LT  T$NESTLEV
                                .ERROR  T$NESTLEV        ; MACRO T$NS UNDERFLOW
                                .MEXIT
                                .ENDC
050722                          M$GETS  T$NS,\T$NESTLEV,T$TEMP
        000001                  T$TEMP=T$NS1
050722                          M$DECR  T$NESTLEV
        000000                  T$NESTLEV=T$NESTLEV-1
                                .IF EQ F$TEST-T$TEMP
050722                          M$GNTAG L,T$$TEST
                                .MCALL  M$GEN
050722                          M$GEN   L,\T$$TEST,SVCTAG
                                .IF LE  SVCTAG
                                .IIF EQ SVCTAG,.LIST
                                L10046:
                                .IIF EQ SVCTAG,.NLIST
                                .MEXIT
                                .ENDC
                                .LIST
050722                                                                  L10046:
                                        .NLIST
        010000                  S$LSYM=F$LSYM
050722                          M$SVC   C$ETST
                                .MCALL  M$GNINS,M$TSTLAB
050722                          M$TSTLAB
                                .MCALL  M$TLABEL,M$INCR
                                .IIF LT T$TSTMAC, .MEXIT
                                .RADIX  10
                                M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                .RADIX  8
                                M$INCR  T$TSTSEQ
050722                          M$GNINS <TRAP   C$ETST>
                                .IF LT SVCINS
                                TRAP    C$ETST
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        TRAP    C$ETST
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
050722  104401                                                               TRAP    C$ETST
                                                .NLIST
                                .ENDC
        000041                  I$TST=F$END
                                .IFF
                                M$ENDERR        ENDTST,T$TEMP
                                .ENDC
```

J7

```
                              .SBTTL  TEST 18: SERVICE REQUEST INTERFACE FUNCTION TEST OF CHANNEL 1
                              ;*************************************************************************
                              ;                 IEX - TEST 18
                              ;THIS TEST CHECKS THE SERIAL POLL REGISTER OF CHANNEL 1.
                              ;PART 1 SETS AND CLEARS THE RSV BIT IN SPR REGISTER OF CHANNEL 1
                              ;        AND CHECKS THE SRQ BIT IN ISR2.
                              ;
                              ;PART 2 CHECKS THE SERIAL POLL SEQUENCE OF CHANNEL 1.
                              ;
                              ;IF QUICK VERIFY PASS IS NOT SELECTED, THE SERIAL POLL SEQUENCE IS CARRIED
                              ;OUT WITH DIFFERENT DATA.
                              ;*************************************************************************
050724                                BGNTST
                              .MCALL  M$INCR,M$GNTEST,M$PUSH,M$INCR
                              .IF NE  F$END-I$SUB
                              .ERROR  ;"BGNTST" IN SUB
                              .MEXIT
                              .ENDC
                              .IF NE  F$END-I$SEG
                              .ERROR  ;"BGNTST" IN SEG
                              .MEXIT
                              .ENDC
                              .IF NE  F$END-I$TST
                              .ERROR  ;"BGNTST" IN TST
                              .MEXIT
                              .IFF
          000040              I$TST=F$BGN
                              .ENDC
                              .IF B
050724                        M$INCR  T$TESTNUM
          000022              T$TESTNUM=T$TESTNUM+1
                              .IFF
                              T$TESTNUM=
                              .ENDC
          000000              T$SUBNUM=0
          000012              .RADIX  10
050724                        M$GNTEST        \T$TESTNUM
                              .MCALL  M$GEN
050724                        M$GEN   T,18:,SVCTST
                              .IF LE  SVCTST
                              .IIF EQ SVCTST,.LIST
                              T18::
                              .IIF EQ SVCTST,.NLIST
                              .MEXIT
                              .ENDC
                              .LIST
050724                                                                        T18::
                                      .NLIST
          000010              .RADIX  8
050724                        M$PUSH  T$NS,T$NESTLEV,F$TEST
                              .MCALL  M$INCR,M$SETS
050724                        M$INCR  T$NESTLEV
          000001              T$NESTLEV=T$NESTLEV+1
050724                        M$SETS  T$NS,\T$NESTLEV,F$TEST
          000001              T$NS1=F$TEST
          010047              T$$TEST=T$TAGNUM
050724                        M$INCR T$TAGNUM
```

```
              010050                   T$TAGNUM=T$TAGNUM+1
              000001                   T$TSTSEQ=1
 6234 050724  005737  002324                   TST     PNTF                    ;IS THE PNT FLAG SET
 6235 050730  001410                           BEQ     7$                      ;IF YES, PRINT THE TEST HEADER
 6236 050732                                   PRINTF  #TSHD18                 ;...
                                       .MCALL  M$PRINT
                                       .IF B   #TSHD18
                                       .ERROR  ;MISSING FORMAT
                                       .MEXIT
                                       .ENDC
                                       .IF B   <>
      050732                           M$PRINT C$PNTF,#TSHD18
                                       .MCALL  M$COUNT,M$PUT,M$GNINS,M$SVC
              000001                   T$ARGCNT=1
      050732                           M$COUNT T$ARGCNT,<>,<>,<>,<>,<>,<>,<>,<>
                                       .IF NB <>
                                       M$COUNT T$ARGCNT,<>,<>,<>,<>,<>,<>,<>,<>
                                       .ENDC
                                       .IF NB <>
                                       T$ARGCNT=T$ARGCNT+1
                                       .ENDC
                                       .IRP    N,<\T$ARGCNT>
                                       M$PUT   #N,#TSHD18,<>,<>,<>,<>,<>,<>,<>,<>
                                       .ENDM
      050732                           M$PUT   #1,#TSHD18,<>,<>,<>,<>,<>,<>,<>,<>
                                       .MCALL  M$PUT1
                                       .IF NB  <#TSHD18>
      050732                           M$PUT   <#TSHD18>,<>,<>,<>,<>,<>,<>,<>,<>
                                       .MCALL  M$PUT1
                                       .IF NB  <>
                                       M$PUT   <>,<>,<>,<>,<>,<>,<>,<>,<>
                                       .ENDC
                                       .IF NB  <#TSHD18>
      050732                           M$PUT1  #TSHD18
                                       .MCALL  M$GNINS
                                       .IF B
      050732                           M$GNINS <MOV    #TSHD18,-(SP)>
                                       .IF LT SVCINS
                                       MOV     #TSHD18, (SP)
                                       .MEXIT
                                       .ENDC
                                       .IF EQ SVCINS
                                       .LIST
                                               MOV     #TSHD18,-(SP)
                                                       .NLIST
                                       .MEXIT
                                       .ENDC
                                       .IF GT SVCINS
                                       .LIST
      050732  012746  051736                                                                   MOV     #TSHD18,-(SP)
                                                       .NLIST
                                       .ENDC
                                       .IFF
                                       .IF DIF B,<#TSHD18>
                                       .ERROR  ;ILL. ARG. "#TSHD18" ONLY "B" IS ALLOWED.
                                       .MEXIT
                                       .ENDC
```

```
                                M$GNINS <CLR    -(SP)>
                                M$GNINS <BISB   ,(SP)>
                                .ENDC
                                .ENDC
                                .ENDC
                                .IF NB  <#1>
     050736                     M$PUT1  #1
                                .MCALL  M$GNINS
                                .IF B
     050736                     M$GNINS <MOV    #1,-(SP)>
                                .IF LT SVCINS
                                MOV     #1,-(SP)
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        MOV     #1,-(SP)
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
     050736  012746  000001                                             MOV     #1,-(SP)
                                                .NLIST
                                .ENDC
                                .IFF
                                .IF DIF B,<#1>
                                .ERROR  ;ILL. ARG. "#1" ONLY "B" IS ALLOWED.
                                .MEXIT
                                .ENDC
                                M$GNINS <CLR    -(SP)>
                                M$GNINS <BISB   ,(SP)>
                                .ENDC
                                .ENDC
     050742                     M$GNINS <MOV    SP,R0>
                                .IF LT SVCINS
                                MOV     SP,R0
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        MOV     SP,R0
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
     050742  010600                                                     MOV     SP,R0
                                                .NLIST
                                .ENDC
     050744                     M$SVC   C$PNTF
                                .MCALL  M$GNINS,M$TSTLAB
     050744                     M$TSTLAB
                                .MCALL  M$TLABEL,M$INCR
                                .IIF LT T$TSTMAC, .MEXIT
                                .RADIX  10
                                M$TLABEL        \T$TESTNUN,\T$TSTSEQ
```

M7

```
                                        .RADIX  8
                                        M$INCR  T$TSTSEQ
050744                                  M$GNINS <TRAP    C$PNTF>
                                        .IF LT SVCINS
                                        TRAP    C$PNTF
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                TRAP    C$PNTF
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
050744  104417                                                                  TRAP    C$PNTF
                                                        .NLIST
                                        .ENDC
                                        .IRP    N,<\T$ARGCNT*2+2>
                                        M$GNINS <ADD    #N,SP>
                                        .ENDM
050746                                  M$GNINS <ADD    #4,SP>
                                        .IF LT SVCINS
                                        ADD     #4,SP
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                ADD     #4,SP
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
050746  062706  000004                                                          ADD     #4,SP
                                                        .NLIST
                                        .ENDC
                                        .MEXIT
                                        .ENDC
                                        .IF B   <>
                                        M$PRINT C$PNTF,#TSHD18,<>
                                        .MEXIT
                                        .ENDC
                                        .IF B   <>
                                        M$PRINT C$PNTF,#TSHD18,<>,<>
                                        .MEXIT
                                        .ENDC
                                        .IF B   <>
                                        M$PRINT C$PNTF,#TSHD18,<>,<>,<>
                                        .MEXIT
                                        .ENDC
                                        .IF B   <>
                                        M$PRINT C$PNTF,#TSHD18,<>,<>,<>,<>
                                        .MEXIT
                                        .ENDC
                                        .IF B   <>
                                        M$PRINT C$PNTF,#TSHD18,<>,<>,<>,<>,<>
```

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N7

N7


```
                                        .MEXIT
                                        .ENDC
                                        .IF B   <>
                                        M$PRINT C$PNTF,#TSHD18,<>,<>,<>,<>,<>,<>
                                        .MEXIT
                                        .ENDC
                                        .IF B   <>
                                        M$PRINT C$PNTF,#TSHD18,<>,<>,<>,<>,<>,<>,<>
                                        .MEXIT
                                        .ENDC
                                        M$PRINT C$PNTF,#TSHD18,<>,<>,<>,<>,<>,<>,<>,<>
6237 050752  012737  000101  002402     7$:     MOV     #101,RSAVE              ;DATA STORE FOR SERIAL POLL SEQUENCE
6238 050760                             ITAC18: BGNSEG
                                        .MCALL  M$PUSH,M$INCR,M$SVC
             000040                     I$SEG=F$BGN
     050760                             M$PUSH  T$NS,T$NESTLEV,F$SEG
                                        .MCALL  M$INCR,M$SETS
     050760                             M$INCR  T$NESTLEV
             000002                     T$NESTLEV=T$NESTLEV+1
     050760                             M$SETS  T$NS,\T$NESTLEV,F$SEG
             000003                     T$NS2=F$SEG
             010000                     T$$SEG=S$LSYM
     050760                             M$PUSH  T$SEK,T$SEGLEV,T$$SEG
                                        .MCALL  M$INCR,M$SETS
     050760                             M$INCR  T$SEGLEV
             000000                     T$SEGLEV=T$SEGLEV+1
     050760                             M$SETS  T$SEK,\T$SEGLEV,T$$SEG
             010000                     T$SEK0=T$$SEG
     050760                             M$INCR  S$LSYM
             010001                     S$LSYM=S$LSYM+1
     050760                             M$SVC   C$BSEG
                                        .MCALL  M$GNINS,M$TSTLAB
     050760                             M$TSTLAB
                                        .MCALL  M$TLABEL,M$INCR
                                        .IIF LT T$TSTMAC, .MEXIT
                                        .RADIX  10
                                        M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                        .RADIX  8
                                        M$INCR  T$TSTSEQ
     050760                             M$GNINS <TRAP   C$BSEG>
                                        .IF LT SVCINS
                                        TRAP    C$BSEG
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                TRAP    C$BSEG
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
     050760  104404                                                                             TRAP    C$BSEG
                                                        .NLIST
                                        .ENDC
6239 050762  004737  010210                     JSR     PC,CULPA                ;CLEAR ULPA BIT IN ISR 1 AND 2
6240 050766  004737  010700                     JSR     PC,BGIN2                ;SET UP PARAMETER
```

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B8


```
   6241 050772  032737  000001  002312          BIT     #1,DPA1                 ;IS DPA EVEN
   6242 051000  001404                          BEQ     3$                      ;BRANCH IF YES
   6243 051002  052737  000001  002470          BIS     #1,CDAT15               ;SET ULPA BIT IN COMPARE DATA FOR ISR
   6244 051010  000403                          BR      .+10                    ;
   6245 051012  042737  000001  002470  3$:     BIC     #1,CDAT15               ;CLEAR ULPA BIT IN COMPARE DATA FOR ISR
   6246 051020  042777  000010  131252          BIC     #10,@CSRX               ;SELECT CHANNEL 1
   6247 051026  112777  000100  131232          MOVB    #100,@ICRLX             ;-----SET RSV BIT IN SPR 1-------------
   6248 051034  052777  000010  131236          BIS     #10,@CSRX               ;SELECT CHANNEL 2
   6249 051042  012737  000002  002374          MOV     #2,CHAN                 ;LOAD CHANNEL NUMBER
   6250 051050  017737  131174  002502          MOV     @IIRX,BAD               ;GET IIR2 CONTENTS
   6251 051056  022737  001020  002502          CMP     #1020,BAD               ;SRQ,BO BIT SHOULD BE SET
   6252 051064  001410                          BEQ     10$                     ;BRANCH IF YES
   6253 051066  012737  001020  002500          MOV     #1020,GOOD              ;SET UP DATA FOR ERROR MESSAGE
   6254 051074                                  ERRSOFT 1801,E501,ERR501        ;ERROR HANDLER
                                        .MCALL  M$ERRINS
        051074                          M$ERRINS        1801,E501,ERR501,C$ERSOFT
                                        .MCALL  M$GNINS,M$WORD,M$TSTLAB
        051074                          M$SVC   C$ERSOFT
                                        .MCALL  M$GNINS,M$TSTLAB
        051074                          M$TSTLAB
                                        .MCALL  M$TLABEL,M$INCR
                                        .IIF LT T$TSTMAC, .MEXIT
                                        .RADIX  10
                                        M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                        .RADIX  8
                                        M$INCR  T$TSTSEQ
        051074                          M$GNINS <TRAP   C$ERSOFT>
                                        .IF LT SVCINS
                                        TRAP    C$ERSOFT
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                TRAP    C$ERSOFT
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
        051074  104457                                                                          TRAP    C$ERSOFT
                                                        .NLIST
                                        .ENDC
                C00012                  .RADIX  10
                                        .IF NB  1801
                003411                  T$ERRNUM=1801
                                        .IFF
                                        .ERROR  ;MISSING ERROR NR
                                        .ENDC
        051076                          M$WORD  \T$ERRNUM
                                        .MCALL  M$GNINS
                                        .IRP    N,<1801>
                                        M$GNINS <.WORD  N>
                                        .ENDM
        051076                          M$GNINS <.WORD  1801>
                                        .IF LT SVCINS
                                        .WORD   1801
                                        .MEXIT
```

C8

```
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        .WORD   1801
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
        051076  003411                                                  .WORD   1801
                                                .NLIST
                                .ENDC
                000010          .RADIX  8
                                .IF NB E501
        051100                  M$WORD  E501
                                .MCALL  M$GNINS
                                .IRP    N,<E501>
                                M$GNINS <.WORD  N>
                                .ENDM
        051100                  M$GNINS <.WORD  E501>
                                .IF LT SVCINS
                                .WORD   E501
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        .WORD   E501
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
        051100  005376                                                  .WORD   E501
                                                .NLIST
                                .ENDC
                                .IFF
                                M$WORD  0
                                .ENDC
                                .IF NB ERR501
        051102                  M$WORD  ERR501
                                .MCALL  M$GNINS
                                .IRP    N,<ERR501>
                                M$GNINS <.WORD  N>
                                .ENDM
        051102                  M$GNINS <.WORD  ERR501>
                                .IF LT SVCINS
                                .WORD   ERR501
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        .WORD   ERR501
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
```

```
      051102  003672                                                                    .WORD   ERR501
                                                        .NLIST
                                           .ENDC
                                           .IFF
                                           M$WORD  0
                                           .ENDC
 6255 051104                                       CKLOOP                       ;BRANCH BACK TO BGNSEG IF ERRLOOP IS SET
                                           .MCALL  M$SVC
      051104                               M$SVC   C$CLP1
                                           .MCALL  M$GNINS,M$TSTLAB
      051104                               M$TSTLAB
                                           .MCALL  M$TLABEL,M$INCR
                                           .IIF LT T$TSTMAC, .MEXIT
                                           .RADIX  10
                                           M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                           .RADIX  8
                                           M$INCR  T$TSTSEQ
      051104                               M$GNINS <TRAP   C$CLP1>
                                           .IF LT SVCINS
                                           TRAP    C$CLP1
                                           .MEXIT
                                           .ENDC
                                           .IF EQ SVCINS
                                           .LIST
                                                   TRAP    C$CLP1
                                                           .NLIST
                                           .MEXIT
                                           .ENDC
                                           .IF GT SVCINS
                                           .LIST
      051104  104406                                                                    TRAP    C$CLP1
                                                           .NLIST
                                           .ENDC
 6256 051106  017737  131144  002502  10$:  MOV     @ISRX,BAD               ;GET ISR2 CONTENTS
 6257 051114  032737  002000  002502        BIT     #2000,BAD               ;IS SRQ BIT SET ALSO ATN,NDAC,ATN(ULPA)
 6258 051122  001010                        BNE     13$                     ;BRANCH IF YES
 6259 051124  012737  122040  002500        MOV     #122040,GOOD            ;SET UP DATA FOR ERROR MESSAGE
 6260 051132                                ERRSOFT 1802,E502,ERR501        ;ERROR HANDLER
                                           .MCALL  M$ERRINS
      051132                               M$ERRINS        1802,E502,ERR501,C$ERSOFT
                                           .MCALL  M$GNINS,M$WORD,M$TSTLAB
      051132                               M$SVC   C$ERSOFT
                                           .MCALL  M$GNINS,M$TSTLAB
      051132                               M$TSTLAB
                                           .MCALL  M$TLABEL,M$INCR
                                           .IIF LT T$TSTMAC, .MEXIT
                                           .RADIX  10
                                           M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                           .RADIX  8
                                           M$INCR  T$TSTSEQ
      051132                               M$GNINS <TRAP   C$ERSOFT>
                                           .IF LT SVCINS
                                           TRAP    C$ERSOFT
                                           .MEXIT
                                           .ENDC
                                           .IF EQ SVCINS
                                           .LIST
```


E8

```
                                  TRAP    C$ERSOFT
                                          .NLIST
                              .MEXIT
                              .ENDC
                              .IF GT SVCINS
                              .LIST
        051132  104457                                                        TRAP    C$ERSOFT
                                          .NLIST
                              .ENDC
                000012        .RADIX  10
                              .IF NB  1802
                003412        T$ERRNUM=1802
                              .IFF
                              .ERROR  ;MISSING ERROR-NR
                              .ENDC
        051134                M$WORD  \T$ERRNUM
                              .MCALL  M$GNINS
                              .IRP    N,<1802>
                              M$GNINS <.WORD  N>
                              .ENDM
        051134                M$GNINS <.WORD  1802>
                              .IF LT SVCINS
                              .WORD   1802
                              .MEXIT
                              .ENDC
                              .IF EQ SVCINS
                              .LIST
                                  .WORD   1802
                                          .NLIST
                              .MEXIT
                              .ENDC
                              .IF GT SVCINS
                              .LIST
        051134  003412                                                        .WORD   1802
                                          .NLIST
                              .ENDC
                000010        .RADIX  8
                              .IF NB E502
        051136                M$WORD  E502
                              .MCALL  M$GNINS
                              .IRP    N,<E502>
                              M$GNINS <.WORD  N>
                              .ENDM
        051136                M$GNINS <.WORD  E502>
                              .IF LT SVCINS
                              .WORD   E502
                              .MEXIT
                              .ENDC
                              .IF EQ SVCINS
                              .LIST
                                  .WORD   E502
                                          .NLIST
                              .MEXIT
                              .ENDC
                              .IF GT SVCINS
                              .LIST
        051136  005437                                                        .WORD   E502
```

```
                                                    .NLIST
                                .ENDC
                                .IFF
                                M$WORD  (
                                .ENDC
                                .IF NB ERR501
      051140                    M$WORD  ERR501
                                .MCALL  M$GNINS
                                .IRP    N,<ERR501>
                                M$GNINS <.WORD  N>
                                .ENDM
      051140                    M$GNINS <.WORD  ERR501>
                                .IF LT SVCINS
                                .WORD   ERR501
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        .WORD   ERR501
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
      051140  003672                                                          .WORD   ERR501
                                                .NLIST
                                .ENDC
                                .IFF
                                M$WORD  0
                                .ENDC
 6261 051142                            CKLOOP                  ;BRANCH BACK TO BGNSEG IF ERRLOOP IS SET
                                .MCALL  M$SVC
      051142                    M$SVC   C$CLP1
                                .MCALL  M$GNINS,M$TSTLAB
      051142                    M$TSTLAB
                                .MCALL  M$TLABEL,M$INCR
                                .IIF LT T$TSTMAC, .MEXIT
                                .RADIX  10
                                M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                .RADIX  8
                                M$INCR  T$TSTSEQ
      051142                    M$GNINS <TRAP   C$CLP1>
                                .IF LT SVCINS
                                TRAP    C$CLP1
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        TRAP    C$CLP1
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
      051142  104406                                                          TRAP    C$CLP1
                                                .NLIST
                                .ENDC
```

G8

```
   6262 051144  042777  000010  131126  13$:    BIC     #10,@CSRX               ;SELECT CHANNEL 1
   6263 051152  112777  000000  131106          MOVB    #0,@ICRLX               ;-----CLEAR SPR 1 REGISTER----------------
   6264 051160  052777  000010  131112          BIS     #10,@CSRX               ;SELECT CHANNEL 2
   6265 051166  017737  131064  002502          MOV     @ISRX,BAD               ;GET ISR2 CONTENTS
   6266 051174  032737  002000  002502          BIT     #2000,BAD               ;SRQ BIT SHOULD BE CLEARED
   6267 051202  001410                          BEQ     20$                     ;BRANCH IF YES
   6268 051204  012737  120040  002500          MOV     #120040,GOOD            ;SET UP DATA FOR COMPARE
   6269 051212                                  ERRSOFT 1803,E502,ERR501        ;ERROR HANDLER
                                        .MCALL  M$ERRINS
        051212                          M$ERRINS        1803,E502,ERR501,C$ERSOFT
                                        .MCALL  M$GNINS,M$WORD,M$TSTLAB
        051212                          M$SVC   C$ERSOFT
                                        .MCALL  M$GNINS,M$TSTLAB
        051212                          M$TSTLAB
                                        .MCALL  M$TLABEL,M$INCR
                                        .IIF LT T$TSTMAC, .MEXIT
                                        .RADIX  10
                                        M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                        .RADIX  8
                                        M$INCR  T$TSTSEQ
        051212                          M$GNINS <TRAP   C$ERSOFT>
                                        .IF LT SVCINS
                                        TRAP    C$ERSOFT
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                TRAP    C$ERSOFT
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
        051212  104457                                                                          TRAP    C$ERSOFT
                                                        .NLIST
                                        .ENDC
                000012                  .RADIX  10
                                        .IF NB  1803
                003413                  T$ERRNUM=1803
                                        .IFF
                                        .ERROR  ;MISSING ERROR-NR
                                        .ENDC
        051214                          M$WORD  \T$ERRNUM
                                        .MCALL  M$GNINS
                                        .IRP    N,<1803>
                                        M$GNINS <.WORD  N>
                                        .ENDM
        051214                          M$GNINS <.WORD  1803>
                                        .IF LT SVCINS
                                        .WORD   1803
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                .WORD   1803
                                                        .NLIST
                                        .MEXIT
```

```
                          .ENDC
                          .IF GT SVCINS
                          .LIST
   051214  003413                                                         .WORD   1803
                                   .NLIST
                          .ENDC
           000010         .RADIX  8
                          .IF NB E502
   051216                 M$WORD  E502
                          .MCALL  M$GNINS
                          .IRP    N,<E502>
                          M$GNINS <.WORD  N>
                          .ENDM
   051216                 M$GNINS <.WORD  E502>
                          .IF LT SVCINS
                          .WORD   E502
                          .MEXIT
                          .ENDC
                          .IF EQ SVCINS
                          .LIST
                               .WORD   E502
                                   .NLIST
                          .MEXIT
                          .ENDC
                          .IF GT SVCINS
                          .LIST
   051216  005437                                                         .WORD   E502
                                   .NLIST
                          .ENDC
                          .IFF
                          M$WORD  0
                          .ENDC
                          .IF NB ERR501
   051220                 M$WORD  ERR501
                          .MCALL  M$GNINS
                          .IRP    N,<ERR501>
                          M$GNINS <.WORD  N>
                          .ENDM
   051220                 M$GNINS <.WORD  ERR501>
                          .IF LT SVCINS
                          .WORD   ERR501
                          .MEXIT
                          .ENDC
                          .IF EQ SVCINS
                          .LIST
                               .WORD   ERR501
                                   .NLIST
                          .MEXIT
                          .ENDC
                          .IF GT SVCINS
                          .LIST
   051220  003672                                                         .WORD   ERR501
                                   .NLIST
                          .ENDC
                          .IFF
                          M$WORD  0
                          .ENDC
```

I8

```
  6270 051222                          CKLOOP                        ;BRANCH BACK TO BGNSEG IF ERRLOOP IS SET
                               .MCALL  M$SVC
       051222                  M$SVC   C$CLP1
                               .MCALL  M$GNINS,M$TSTLAB
       051222                  M$TSTLAB
                               .MCALL  M$TLABEL,M$INCR
                               .IIF LT T$TSTMAC, .MEXIT
                               .RADIX  10
                               M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                               .RADIX  8
                               M$INCR  T$TSTSEQ
       051222                  M$GNINS <TRAP    C$CLP1>
                               .IF LT SVCINS
                               TRAP    C$CLP1
                               .MEXIT
                               .ENDC
                               .IF EQ SVCINS
                               .LIST
                                       TRAP    C$CLP1
                                               .NLIST
                               .MEXIT
                               .ENDC
                               .IF GT SVCINS
                               .LIST
       051222  104406                                                                  TRAP    C$CLP1
                                               .NLIST
                               .ENDC
  6271 051224                  20$:    ENDSEG
                               .MCALL  M$POP,M$GNLS,M$SVC,M$ENDERR
       051224                  M$POP   T$NS,T$NESTLEV,T$TEMP
                               .MCALL  M$GETS,M$DECR
                               .IF LT  T$NESTLEV
                               .ERROR  T$NESTLEV       ; MACRO T$NS UNDERFLOW
                               .MEXIT
                               .ENDC
       051224                  M$GETS  T$NS,\T$NESTLEV,T$TEMP
               000003          T$TEMP=T$NS2
       051224                  M$DECR  T$NESTLEV
               000001          T$NESTLEV=T$NESTLEV-1
                               .IF EQ F$SEG-T$TEMP
       051224                  M$POP   T$SEK,T$SEGLEV,T$$SEG
                               .MCALL  M$GETS,M$DECR
                               .IF LT  T$SEGLEV
                               .ERROR  T$SEGLEV        ; MACRO T$SEK UNDERFLOW
                               .MEXIT
                               .ENDC
       051224                  M$GETS  T$SEK,\T$SEGLEV,T$$SEG
               010000          T$$SEG=T$SEK0
       051224                  M$DECR  T$SEGLEV
               177777          T$SEGLEV=T$SEGLEV-1
       051224                  M$GNLS  T$$SEG
                               .MCALL  M$GEN
                               .IF NB T$$SEG
       051224                  M$GEN   \T$$SEG.$,SVCTAG
                               .IF LE  SVCTAG
                               .IIF EQ SVCTAG,.LIST
                               10000$:
```

```
                                .IIF EQ SVCTAG,.NLIST
                                .MEXIT
                                .ENDC
                                .LIST
     051224                                                              10000$:
                                        .NLIST
                                .IFF
                                M$GEN   \S$LSYM,$,SVCTAG
                                .ENDC
     051224                     M$SVC   C$ESEG
                                .MCALL  M$GNINS,M$TSTLAB
     051224                     M$TSTLAB
                                .MCALL  M$TLABEL,M$INCR
                                .IIF LT T$TSTMAC, .MEXIT
                                .RADIX  10
                                M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                .RADIX  8
                                M$INCR  T$TSTSEQ
     051224                     M$GNINS <TRAP   C$ESEG>
                                .IF LT SVCINS
                                TRAP    C$ESEG
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        TRAP    C$ESEG
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
     051224  104405                                                           TRAP    C$ESEG
                                                .NLIST
                                .ENDC
                                .IF EQ T$SEGLEV+1
             000041             I$SEG=F$END
                                .ENDC
                                .IFF
                                M$ENDERR        ENDSEG,T$TEMP
                                .ENDC
                                ;+++---  -----  ------  ----- -   - --------- ------------------- ---------
                                ;PART 2 CHECKS THE SERIAL POLL SEQUENCE OF CHANNEL 1
                                ;+++ --      ----  - ---- - ---- -     --------- -------- ------------------ -
     051226                             BGNSEG
                                .MCALL  M$PUSH,M$INCR,M$SVC
             000040             I$SEG=F$BGN
     051226                     M$PUSH  T$NS,T$NESTLEV,F$SEG
                                .MCALL  M$INCR,M$SETS
     051226                     M$INCR  T$NESTLEV
             000002             T$NESTLEV=T$NESTLEV+1
     051226                     M$SETS  T$NS,\T$NESTLEV,F$SEG
             000003             T$NS2=F$SEG
             010001             T$$SFG=S$LSYM
     051226                     M$PUSH  T$SEK,T$SEGLEV,T$$SEG
                                .MCALL  M$INCR,M$SETS
     051226                     M$INCR  T$SEGLEV
             000000             T$SEGLEV=T$SEGLEV+1
```

K8

```
     051226                                M$SETS  T$SEK,\T$SEGLEV,T$$SEG
            010001                         T$SEK0=T$$SEG
     051226                                M$INCR  S$LSYM
            010002                         S$LSYM=S$LSYM+1
     051226                                M$SVC   C$BSEG
                                           .MCALL  M$GNINS,M$TSTLAB
     051226                                M$TSTLAB
                                           .MCALL  M$TLABEL,M$INCR
                                           .IIF LT T$TSTMAC, .MEXIT
                                           .RADIX  10
                                           M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                           .RADIX  8
                                           M$INCR  T$TSTSEQ
     051226                                M$GNINS <TRAP   C$BSEG>
                                           .IF LT SVCINS
                                           TRAP    C$BSEG
                                           .MEXIT
                                           .ENDC
                                           .IF EQ SVCINS
                                           .LIST
                                                   TRAP    C$BSEG
                                                           .NLIST
                                           .MEXIT
                                           .ENDC
                                           .IF GT SVCINS
                                           .LIST
     051226 104404                                                                         TRAP    C$BSEG
                                                           .NLIST
                                           .ENDC
6276 051230 042777 000010 131042                   BIC     #10,@CSRX           ;SELECT CHANNEL 1
6277 051236 113777 002402 131022                   MOVB    RSAVE,@ICRLX        ;----LOAD DATA INTO SPR 1 ------------
6278 051244 052777 000010 131026                   BIS     #10,@CSRX           ;SELECT CHANNEL 2
6279 051252 112777 000077 131016                   MOVB    #77,@IDRHX          ;-- -LOAD UNL INTO DOR 2-------------
6280 051260 004737 011050                          JSR     PC,LOOP             ;WAIT A LITTLE
6281 051264 112777 000211 130776                   MOVB    #211,@ICRHX         ;-----LOAD LON INTO ACR 2------- ----
6282 051272 112777 000030 130776                   MOVB    #30,@IDRHX          ;-----LOAD SPE INTO DOR 2-- - -------
6283 051300 004737 011050                          JSR     PC,LOOP             ;WAIT A LITTLE
6284 051304 013701 002312                          MOV     DPA1,R1             ;CREATE MTA1
6285 051310 062701 000100                          ADD     #100,R1             ;...
6286 051314 010137 002414                          MOV     R1,MTA1             ;STORE MTA1
6287 051320 113777 002414 130750                   MOVB    MTA1,@IDRHX         ;----LOAD MTA1 INTO DOR 2 ----- ------
6288 051326 004737 011050                          JSR     PC,LOOP             ;WAIT A LITTLE
6289 051332 112777 000013 130730                   MOVB    #13,@ICRHX          ;  --LOAD GTS INTO ACR 2- ------------
6290 051340 042777 000010 130732                   BIC     #10,@CSRX           ;SELECT CHANNEL 1
6291 051346 012737 000001 002374                   MOV     #1,CHAN             ;LOAD CHANNEL NUMBER
6292 051354 017737 130670 002502                   MOV     @IIRX,BAD           ;GET IIR1 CONTENTS
6293 051362 022737 000405 002502                   CMP     #405,BAD            ;IFC,SPAS,MAC SHOULD BE SET
6294 051370 001410                                 BEQ     30$                 ;BRANCH IF YES
6295 051372 012737 000405 002500                   MOV     #405,GOOD           ;SET UP DATA FOR ERROR MESSAGE
6296 051400                                        ERRSOFT 1804,E501,ERR501    ;ERROR HANDLER
                                           .MCALL  M$ERRINS
     051400                                M$ERRINS        1804,E501,ERR501,C$ERSOFT
                                           .MCALL  M$GNINS,M$WORD,M$TSTLAB
     051400                                M$SVC   C$ERSOFT
                                           .MCALL  M$GNINS,M$TSTLAB
     051400                                M$TSTLAB
                                           .MCALL  M$TLABEL,M$INCR
```

```
                                .IIF LT T$TSTMAC, .MEXIT
                                .RADIX  10
                                M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                .RADIX  8
                                M$INCR  T$TSTSEQ
 051400                         M$GNINS <TRAP   C$ERSOFT>
                                .IF LT SVCINS
                                TRAP    C$ERSOFT
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        TRAP    C$ERSOFT
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
 051400 104457                                                          TRAP    C$ERSOFT
                                                .NLIST
                                .ENDC
        000012                  .RADIX  10
                                .IF NB  1804
        003414                  T$ERRNUM=1804
                                .IFF
                                .ERROR  ;MISSING ERROR-NR
                                .ENDC
 051402                         M$WORD  \T$ERRNUM
                                .MCALL  M$GNINS
                                .IRP    N,<1804>
                                M$GNINS <.WORD  N>
                                .ENDM
 051402                         M$GNINS <.WORD  1804>
                                .IF LT SVCINS
                                .WORD   1804
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        .WORD   1804
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
 051402 003414                                                          .WORD   1804
                                                .NLIST
                                .ENDC
        000010                  .RADIX  8
                                .IF NB E501
 051404                         M$WORD  E501
                                .MCALL  M$GNINS
                                .IRP    N,<E501>
                                M$GNINS <.WORD  N>
                                .ENDM
 051404                         M$GNINS <.WORD  E501>
                                .IF LT SVCINS
```

M8

```
                                .WORD   E501
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        .WORD   E501
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
        051404  005376                                                          .WORD   E501
                                                .NLIST
                                .ENDC
                                .IFF
                                M$WORD  0
                                .ENDC
                                .IF NB ERR501
        051406                  M$WORD  ERR501
                                .MCALL  M$GNINS
                                .IRP    N,<ERR501>
                                M$GNINS <.WORD  N>
                                .ENDM
        051406                  M$GNINS <.WORD  ERR501>
                                .IF LT SVCINS
                                .WORD   ERR501
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        .WORD   ERR501
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
        051406  003672                                                          .WORD   ERR501
                                                .NLIST
                                .ENDC
                                .IFF
                                M$WORD  0
                                .ENDC
   6297 051410                          CKLOOP                  ;BRANCH BACK TO BGNSEG IF ERRLOOP IS SET
                                .MCALL  M$SVC
        051410                  M$SVC   C$CLP1
                                .MCALL  M$GNINS,M$TSTLAB
        051410                  M$TSTLAB
                                .MCALL  M$TLABEL,M$INCR
                                .IIF LT T$TSTMAC, .MEXIT
                                .RADIX  10
                                M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                .RADIX  8
                                M$INCR  T$TSTSEQ
        051410                  M$GNINS <TRAP   C$CLP1>
                                .IF LT SVCINS
                                TRAP    C$CLP1
                                .MEXIT
```

```
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                TRAP    C$CLP1
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
     051410  104406                                                                             TRAP    C$CLP1
                                                        .NLIST
                                        .ENDC
     051412  017737  130640  002502     30$:    MOV     @ISRX,BAD                       ;GET ISR1 CONTENTS
     051420  023737  002470  002502             CMP     CDAT15,BAD                      ;NDAC,NRFD,TADS,(ULPA) SHOULD BE SET
     051426  001410                             BEQ     33$                             ;BRANCH IF YES
     051430  013737  002470  002500             MOV     CDAT15,GOOD                     ;SET UP DATA FOR ERROR MESSAGE
     051436                                     ERRSOFT 1805,E502,ERR501                ;ERROR HANDLER
                                        .MCALL  M$ERRINS
     051436                             M$ERRINS        1805,E502,ERR501,C$ERSOFT
                                        .MCALL  M$GNINS,M$WORD,M$TSTLAB
     051436                             M$SVC   C$ERSOFT
                                        .MCALL  M$GNINS,M$TSTLAB
     051436                             M$TSTLAB
                                        .MCALL  M$TLABEL,M$INCR
                                        .IIF LT T$TSTMAC, .MEXIT
                                        .RADIX  10
                                        M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                        .RADIX  8
                                        M$INCR  T$TSTSEQ
     051436                             M$GNINS <TRAP   C$ERSOFT>
                                        .IF LT SVCINS
                                        TRAP    C$ERSOFT
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                TRAP    C$ERSOFT
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
     051436  104457                                                                             TRAP    C$ERSOFT
                                                        .NLIST
                                        .ENDC
             000012                     .RADIX  10
                                        .IF NB  1805
             003415                     T$ERRNUM=1805
                                        .IFF
                                        .ERROR  ;MISSING ERROR NR
                                        .ENDC
     051440                             M$WORD  \T$ERRNUM
                                        .MCALL  M$GNINS
                                        .IRP    N,<1805>
                                        M$GNINS <.WORD  N>
                                        .ENDM
     051440                             M$GNINS <.WORD  1805>
```

```
                                        .IF LT SVCINS
                                        .WORD   1805
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                .WORD   1805
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
        051440  003415                                                                  .WORD   1805
                                                        .NLIST
                                        .ENDC
                000010                  .RADIX  8
                                        .IF NB E502
        051442                          M$WORD  E502
                                        .MCALL  M$GNINS
                                        .IRP    N,<E502>
                                        M$GNINS <.WORD  N>
                                        .ENDM
        051442                          M$GNINS <.WORD  E502>
                                        .IF LT SVCINS
                                        .WORD   E502
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                .WORD   E502
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
        051442  005437                                                                  .WORD   E502
                                                        .NLIST
                                        .ENDC
                                        .IFF
                                        M$WORD  0
                                        .ENDC
                                        .IF NB ERR501
        051444                          M$WORD  ERR501
                                        .MCALL  M$GNINS
                                        .IRP    N,<ERR501>
                                        M$GNINS <.WORD  N>
                                        .ENDM
        051444                          M$GNINS <.WORD  ERR501>
                                        .IF LT SVCINS
                                        .WORD   ERR501
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                .WORD   ERR501
                                                        .NLIST
                                        .MEXIT
```

```
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
      051444  003672                                                                               .WORD   ERR501
                                                      .NLIST
                                        .ENDC
                                        .IFF
                                        M$WORD  0
                                        .ENDC
 6303 051446                                  CKLOOP                        ;BRANCH BACK TO BGNSEG IF ERRLOOP IS SET
                                        .MCALL  M$SVC
      051446                            M$SVC   C$CLP1
                                        .MCALL  M$GNINS,M$TSTLAB
      051446                            M$TSTLAB
                                        .MCALL  M$TLABEL,M$INCR
                                        .IIF LT T$TSTMAC, .MEXIT
                                        .RADIX  10
                                        M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                        .RADIX  8
                                        M$INCR  T$TSTSEQ
      051446                            M$GNINS <TRAP   C$CLP1>
                                        .IF LT SVCINS
                                        TRAP    C$CLP1
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                              TRAP    C$CLP1
                                                      .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
      051446  104406                                                                               TRAP    C$CLP1
                                                      .NLIST
                                        .ENDC
 6304 051450  052777  000010  130622    33$:    BIS     #10,@CSRX              ;SELECT CHANNEL 2
 6305 051456  012737  000002  002374            MOV     #2,CHAN                ;LOAD CHANNEL NUMBER
 6306 051464  017737  130560  002502            MOV     @IIRX,BAD              ;GET IIR2 CONTENTS
 6307 051472  022737  001060  002502            CMP     #1060,BAD              ;SRQ,BI,BO BIT SHOULD BE SET
 6308 051500  001410                            BEQ     40$                    ;BRANCH IF YES
 6309 051502  012737  001060  002500            MOV     #1060,GOOD             ;SET UP DATA FOR ERROR MESSAGE
 6310 051510                                  ERRSOFT 1806,E501,ERR501       ;ERROR HANDLER
                                        .MCALL  M$ERRINS
      051510                            M$ERRINS        1806,E501,ERR501,C$ERSOFT
                                        .MCALL  M$GNINS,M$WORD,M$TSTLAB
      051510                            M$SVC   C$ERSOFT
                                        .MCALL  M$GNINS,M$TSTLAB
      051510                            M$TSTLAB
                                        .MCALL  M$TLABEL,M$INCR
                                        .IIF LT T$TSTMAC, .MEXIT
                                        .RADIX  10
                                        M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                        .RADIX  8
                                        M$INCR  T$TSTSEQ
      051510                            M$GNINS <TRAP   C$ERSOFT>
                                        .IF LT SVCINS
```

```
                                        TRAP    C$ERSOFT
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                TRAP    C$ERSOFT
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
        051510  104457                                                                  TRAP    C$ERSOFT
                                                        .NLIST
                                        .ENDC
                000012                  .RADIX  10
                                        .IF NB  1806
                003416                  T$ERRNUM=1806
                                        .IFF
                                        .ERROR  ;MISSING ERROR-NR
                                        .ENDC
        051512                          M$WORD  \T$ERRNUM
                                        .MCALL  M$GNINS
                                        .IRP    N,<1806>
                                        M$GNINS <.WORD  N>
                                        .ENDM
        051512                          M$GNINS <.WORD  1806>
                                        .IF LT SVCINS
                                        .WORD   1806
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                .WORD   1806
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
        051512  003416                                                                  .WORD   1806
                                                        .NLIST
                                        .ENDC
                000010                  .RADIX  8
                                        .IF NB E501
        051514                          M$WORD  E501
                                        .MCALL  M$GNINS
                                        .IRP    N,<E501>
                                        M$GNINS <.WORD  N>
                                        .ENDM
        051514                          M$GNINS <.WORD  E501>
                                        .IF LT SVCINS
                                        .WORD   E501
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                .WORD   E501
                                                        .NLIST
```

```
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
      051514  005376                                                                    .WORD   E501
                                          .NLIST
                                .ENDC
                                .IFF
                                M$WORD  0
                                .ENDC
                                .IF NB ERR501
      051516                    M$WORD  ERP501
                                .MCALL  M$GNINS
                                .IRP    N,<ERR501>
                                M$GNINS <.WORD  N>
                                .ENDM
      051516                    M$GNINS <.WORD  ERR501>
                                .IF LT SVCINS
                                .WORD   ERR501
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                     .WORD   ERR501
                                          .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
      051516  003672                                                                    .WORD   ERR501
                                          .NLIST
                                .ENDC
                                .IFF
                                M$WORD  0
                                .ENDC
 6311 051520                         CKLOOP                     ;BRANCH BACK TO BGNSEG IF ERRLOOP IS SET
                                .MCALL  M$SVC
      051520                    M$SVC   C$CLP1
                                .MCALL  M$GNINS,M$TSTLAB
      051520                    M$TSTLAB
                                .MCALL  M$TLABEL,M$INCR
                                .IIF LT T$TSTMAC, .MEXIT
                                .RADIX  10
                                M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                .RADIX  8
                                M$INCR  T$TSTSEQ
      051520                    M$GNINS <TRAP   C$CLP1>
                                .IF LT SVCINS
                                TRAP    C$CLP1
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                     TRAP    C$CLP1
                                          .NLIST
                                .MEXIT
                                .ENDC
```

```
                                      .IF GT SVCINS
                                      .LIST
 051520  104406                                                                               TRAP    C$CLP1
                                                          .NLIST
                                      .ENDC
 051522  112777  000015  130540       40$:    MOVB     #15,@ICRHX          ;----LOAD TCS INTO ACR 2--------------
 051530  017737  130536  002502               MOV      @IDRX,BAD           ;READ DATA FROM DIR2 REGISTER
 051536  105037  002502                       CLRB     BAD                 ;CLEAR LOW BYTE OF BAD CONTENTS
 051542  000337  002502                       SWAB     BAD                 ;SWAB BAD
 051546  023737  002402  002502               CMP      RSAVE,BAD           ;COMPARE TRANSMITTED WITH RECEIVED DATA
 051554  001410                               BEQ      43$                 ;BRANCH IF EQUAL
 051556  013737  002402  002500               MOV      RSAVE,GOOD          ;SET UP DATA FOR ERROR MESSAGE
 051564                                       ERRSOFT  1807,E801,ERR501    ;ERROR HANDLER
                                      .MCALL  M$ERRINS
 051564                               M$ERRINS         1807,E801,ERR501,C$ERSOFT
                                      .MCALL  M$GNINS,M$WORD,M$TSTLAB
 051564                               M$SVC   C$ERSOFT
                                      .MCALL  M$GNINS,M$TSTLAB
 051564                               M$TSTLAB
                                      .MCALL  M$TLABEL,M$INCR
                                      .IIF LT T$TSTMAC, .MEXIT
                                      .RADIX  10
                                      M$TLABEL         \T$TESTNUN,\T$TSTSEQ
                                      .RADIX  8
                                      M$INCR  T$TSTSEQ
 051564                               M$GNINS <TRAP    C$ERSOFT>
                                      .IF LT SVCINS
                                      TRAP    C$ERSOFT
                                      .MEXIT
                                      .ENDC
                                      .IF EQ SVCINS
                                      .LIST
                                              TRAP     C$ERSOFT
                                                       .NLIST
                                      .MEXIT
                                      .ENDC
                                      .IF GT SVCINS
                                      .LIST
 051564  104457                                                                               TRAP    C$ERSOFT
                                                       .NLIST
                                      .ENDC
         000012                       .RADIX  10
                                      .IF NB  1807
         003417                       T$ERRNUM=1807
                                      .IFF
                                      .ERROR  ;MISSING ERROR-NR
                                      .ENDC
 051566                               M$WORD  \T$ERRNUM
                                      .MCALL  M$GNINS
                                      .IRP    N,<1807>
                                      M$GNINS <.WORD  N>
                                      .ENDM
 051566                               M$GNINS <.WORD  1807>
                                      .IF LT SVCINS
                                      .WORD   1807
                                      .MEXIT
                                      .ENDC
```

G9


```
                        .IF EQ SVCINS
                        .LIST
                                .WORD   1807
                                        .NLIST
                        .MEXIT
                        .ENDC
                        .IF GT SVCINS
                        .LIST
051566  003417                                                  .WORD   1807
                                        .NLIST
                        .ENDC
        000010          .RADIX  8
                        .IF NB E801
051570                  M$WORD  E801
                        .MCALL  M$GNINS
                        .IRP    N,<E801>
                        M$GNINS <.WORD  N>
                        .ENDM
051570                  M$GNINS <.WORD  E801>
                        .IF LT SVCINS
                        .WORD   E801
                        .MEXIT
                        .ENDC
                        .IF EQ SVCINS
                        .LIST
                                .WORD   E801
                                        .NLIST
                        .MEXIT
                        .ENDC
                        .IF GT SVCINS
                        .LIST
051570  005500                                                  .WORD   E801
                                        .NLIST
                        .ENDC
                        .IFF
                        M$WORD  0
                        .ENDC
                        .IF NB ERR501
051572                  M$WORD  ERR501
                        .MCALL  M$GNINS
                        .IRP    N,<ERR501>
                        M$GNINS <.WORD  N>
                        .ENDM
051572                  M$GNINS <.WORD  ERR501>
                        .IF LT SVCINS
                        .WORD   ERR501
                        .MEXIT
                        .ENDC
                        .IF EQ SVCINS
                        .LIST
                                .WORD   ERR501
                                        .NLIST
                        .MEXIT
                        .ENDC
                        .IF GT SVCINS
                        .LIST
051572  003672                                                  .WORD   ERR501
```

H9

```
                                                          .NLIST
                                    .ENDC
                                    .IFF
                                    M$WORD  0
                                    .ENDC
 6320 051574                                CKLOOP                          ;BRANCH BACK TO BGNSEG IF ERRLOOP IS SET
                                    .MCALL  M$SVC
      051574                        M$SVC   C$CLP1
                                    .MCALL  M$GNINS,M$TSTLAB
      051574                        M$TSTLAB
                                    .MCALL  M$TLABEL,M$INCR
                                    .IIF LT T$TSTMAC, .MEXIT
                                    .RADIX  10
                                    M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                    .RADIX  8
                                    M$INCR  T$TSTSEQ
      051574                        M$GNINS <TRAP   C$CLP1>
                                    .IF LT SVCINS
                                    TRAP    C$CLP1
                                    .MEXIT
                                    .ENDC
                                    .IF EQ SVCINS
                                    .LIST
                                            TRAP    C$CLP1
                                                    .NLIST
                                    .MEXIT
                                    .ENDC
                                    .IF GT SVCINS
                                    .LIST
      051574  104406                                                                          TRAP    C$CLP1
                                                    .NLIST
                                    .ENDC
 6321 051576  017737  130446  002502  43$:   MOV     @IIRX,BAD              ;GET IIR2 CONTENTS
 6322 051604  022737  000020  002502         CMP     #20,BAD                ;B0 BIT SHOULD BE SET
 6323 051612  001410                         BEQ     50$                    ;BRANCH IF YES
 6324 051614  012737  000020  002500         MOV     #20,GOOD               ;SET UP DATA FOR ERROR MESSAGE
 6325 051622                                 ERRSOFT 1808,E501,ERR501       ;ERROR HANDLER
                                    .MCALL  M$ERRINS
      051622                        M$ERRINS        1808,E501,ERR501,C$ERSOFT
                                    .MCALL  M$GNINS,M$WORD,M$TSTLAB
      051622                        M$SVC   C$ERSOFT
                                    .MCALL  M$GNINS,M$TSTLAB
      051622                        M$TSTLAB
                                    .MCALL  M$TLABEL,M$INCR
                                    .IIF LT T$TSTMAC, .MEXIT
                                    .RADIX  10
                                    M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                    .RADIX  8
                                    M$INCR  T$TSTSEQ
      051622                        M$GNINS <TRAP   C$ERSOFT>
                                    .IF LT SVCINS
                                    TRAP    C$ERSOFT
                                    .MEXIT
                                    .ENDC
                                    .IF EQ SVCINS
                                    .LIST
                                            TRAP    C$ERSOFT
```

I9


```
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
051622  104457                                                          TRAP    C$ERSOFT
                                                .NLIST
                                .ENDC
        000012                  .RADIX  10
                                .IF NB  1808
        003420                  T$ERRNUM=1808
                                .IFF
                                .ERROR  ;MISSING ERROR NR
                                .ENDC
051624                          M$WORD  \T$ERRNUM
                                .MCALL  M$GNINS
                                .IRP    N,<1808>
                                M$GNINS <.WORD  N>
                                .ENDM
051624                          M$GNINS <.WORD  1808>
                                .IF LT SVCINS
                                .WORD   '808
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        .WORD   1808
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
051624  003420                                                          .WORD   1808
                                                .NLIST
                                .ENDC
        000010                  .RADIX  8
                                .IF NB E501
051626                          M$WORD  E501
                                .MCALL  M$GNINS
                                .IRP    N,<E501>
                                M$GNINS <.WORD  N>
                                .ENDM
051626                          M$GNINS <.WORD  E501>
                                .IF LT SVCINS
                                .WORD   E501
                                .ME` T
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        .WORD   E501
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
051626  005376                                                          .WORD   E501
                                                .NLIST
```

J9

```
                                        .ENDC
                                        .IFF
                                        M$WORD  0
                                        .ENDC
                                        .IF NB ERR501
       051630                           M$WORD  ERR501
                                        .MCALL  M$GNINS
                                        .IRP    N,<ERR501>
                                        M$GNINS <.WORD  N>
                                        .ENDM
       051630                           M$GNINS <.WORD  ERR501>
                                        .IF LT SVCINS
                                        .WORD   ERR501
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                .WORD   ERR501
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
       051630  003672                                                                       .WORD   ERR501
                                                        .NLIST
                                        .ENDC
                                        .IFF
                                        M$WORD  0
                                        .ENDC
  6326 051632                                   CKLOOP                          ;BRANCH BACK TO BGNSEG IF ERRLOOP IS SET
                                        .MCALL  M$SVC
       051632                           M$SVC   C$CLP1
                                        .MCALL  M$GNINS,M$TSTLAB
       051632                           M$TSTLAB
                                        .MCALL  M$TLABEL,M$INCR
                                        .IIF LT T$TSTMAC, .MEXIT
                                        .RADIX  10
                                        M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                        .RADIX  8
                                        M$INCR  T$TSTSEQ
       051632                           M$GNINS <TRAP   C$CLP1>
                                        .IF LT SVCINS
                                        TRAP    C$CLP1
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                TRAP    C$CLP1
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
       051632  104406                                                                       TRAP    C$CLP1
                                                        .NLIST
                                        .ENDC
  6327 051634  112777  000011  130426   50$:    MOVB    #11,@ICRHX              ;----LOAD NOT LON INTO ACR 2-   --
```

K9


```
 6328 051642  112777  000031  130426          MOVB    #31,@IDRHX          ;----LOAD SPD INTO DOR 2-------------
 6329 051650  004737  011050                  JSR     PC,LOOP             ;WAIT A LITTLE
 6330 051654  112777  000137  130414          MOVB    #137,@IDRHX         ;----LOAD UNT INTO DOR 2-----------
 6331 051662  004737  011050                  JSR     PC,LOOP             ;WAIT A LITTLE
 6332 051666  042777  000010  130404          BIC     #10,@CSRX           ;SELECT CHANNEL 1
 6333 051674  112777  000000  130364          MOVB    #0,@ICRLX           ;----CLEAR SPR 1 REGISTER------------
 6334 051702                                  ENDSEG
                                      .MCALL  M$POP,M$GNLS,M$SVC,M$ENDERR
      051702                          M$POP   T$NS,T$NESTLEV,T$TEMP
                                      .MCALL  M$GETS,M$DECR
                                      .IF LT  T$NESTLEV
                                      .ERROR  T$NESTLEV        ; MACRO T$NS UNDERFLOW
                                      .MEXIT
                                      .ENDC
      051702                          M$GETS  T$NS,\T$NESTLEV,T$TEMP
              000003                  T$TEMP=T$NS2
      051702                          M$DECR  T$NESTLEV
              000001                  T$NESTLEV=T$NESTLEV-1
                                      .IF EQ F$SEG-T$TEMP
      051702                          M$POP   T$SEK,T$SEGLEV,T$$SEG
                                      .MCALL  M$GETS,M$DECR
                                      .IF LT  T$SEGLEV
                                      .ERROR  T$SEGLEV         ; MACRO T$SEK UNDERFLOW
                                      .MEXIT
                                      .ENDC
      051702                          M$GETS  T$SEK,\T$SEGLEV,T$$SEG
              010001                  T$$SEG=T$SEK0
      051702                          M$DECR  T$SEGLEV
              177777                  T$SEGLEV=T$SEGLEV-1
      051702                          M$GNLS  T$$SEG
                                      .MCALL  M$GEN
                                      .IF NB T$$SEG
      051702                          M$GEN   \T$$SEG,$,SVCTAG
                                      .IF LE  SVCTAG
                                      .IIF EQ SVCTAG,.LIST
                                      10001$:
                                      .IIF EQ SVCTAG,.NLIST
                                      .MEXIT
                                      .ENDC
                                      .LIST
      051702                                                                          10001$:
                                              .NLIST
                                      .IFF
                                      M$GEN   \S$LSYM,$,SVCTAG
                                      .ENDC
      051702                          M$SVC   C$ESEG
                                      .MCALL  M$GNINS,M$TSTLAB
      051702                          M$TSTLAB
                                      .MCALL  M$TLABEL,M$INCR
                                      .IIF LT T$TSTMAC, .MEXIT
                                      .RADIX  10
                                      M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                      .RADIX  8
                                      M$INCR  T$TSTSEQ
      051702                          M$GNINS <TRAP   C$ESEG>
                                      .IF LT SVCINS
                                      TRAP    C$ESEG
```

L9

```
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                TRAP    C$ESEG
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
     051702  104405                                                                     TRAP    C$ESEG
                                                        .NLIST
                                        .ENDC
                                        .IF EQ T$SEGLEV+1
             000041                     I$SEG=F$END
                                        .ENDC
                                        .IFF
                                        M$ENDERR        ENDSEG,T$TEMP
                                        .ENDC
6335 051704  005737  002234                     TST     QVP                     ;IS QUICK VERIFY PASS SELECTED
6336 051710  001010                             BNE     EXQV18                  ;IF YES EXIT TEST
6337 051712  005237  002402                     INC     RSAVE                   ;CREATE NEW DATA PATTERN
6338 051716  022737  000176  002402             CMP     #176,RSAVE              ;ALL DATA PATTERN DONE
6339 051724  001402                             BEQ     EXQV18                  ;IF YES EXIT TEST
6340 051726  000137  050760                     JMP     ITAC18                  ;IF NO TEST ITERATION
6341 051732                             EXQV18: EXIT    TST                     ;EXIT TEST
                                        .MCALL  M$SVC,M$EXIT,M$EXSEG,M$EXTJ,M$GETTOP,M$CHECK,M$WORD,XFER
             000041                     T$FLAG=F$END
     051732                             M$CHECK TST,T$TEMP,T$FLAG
                                        .IF IDN <TST>,<TST>
             010047                     T$TEMP=T$$TEST
             000040                     T$FLAG=I$TST
                                        .MEXIT
                                        .ENDC
                                        .IF IDN <SUB>,<TST>
                                        T$TEMP=T$$SUB
                                        T$FLAG=I$SUB
                                        .MEXIT
                                        .ENDC
                                        .IF IDN <SEG>,<TST>
                                        T$TEMP=T$$SEG
                                        T$FLAG=I$SEG
                                        .MEXIT
                                        .ENDC
                                        .IF IDN <INIT>,<TST>
                                        T$TEMP=T$$INIT
                                        T$FLAG=I$INIT
                                        .MEXIT
                                        .ENDC
                                        .IF IDN <CLN>,<TST>
                                        T$TEMP=T$$CLEAN
                                        T$FLAG=I$CLN
                                        .MEXIT
                                        .ENDC
                                        .IF IDN <SRV>,<TST>
                                        T$TEMP=T$$SRV
                                        T$FLAG=I$SRV
```

M9

```
                                        .MEXIT
                                        .ENDC
                                        .IF IDN <MSG>,<TST>
                                        T$TEMP=T$$MSG
                                        T$FLAG=F$JMP
                                        .MEXIT
                                        .ENDC
                                        .IF IDN <RPT>,<TST>
                                        T$TEMP=T$$RPT
                                        T$FLAG=F$JMP
                                        .MEXIT
                                        .ENDC
                                        .IF IDN <DU>,<TST>
                                        T$TEMP=T$$DU
                                        T$FLAG=F$JMP
                                        .MEXIT
                                        .ENDC
                                        .IF IDN <AU>,<TST>
                                        T$TEMP=T$$AU
                                        T$FLAG=F$JMP
                                        .MEXIT
                                        .ENDC
                                        .IF EQ T$FLAG-F$JMP
                                        M$WORD  J$JMP
                                        M$EXTJ  \T$TEMP
                                        .MEXIT
                                        .ENDC
                                        .IF EQ  T$FLAG-F$BGN
  051732                                M$SVC   C$EXIT
                                        .MCALL  M$GNINS,M$TSTLAB
  051732                                M$TSTLAB
                                        .MCALL  M$TLABEL,M$INCR
                                        .IIF LT T$TSTMAC, .MEXIT
                                        .RADIX  10
                                        M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                        .RADIX  8
                                        M$INCR  T$TSTSEQ
  051732                                M$GNINS <TRAP   C$EXIT>
                                        .IF LT SVCINS
                                        TRAP    C$EXIT
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                TRAP    C$EXIT
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
  051732  104432                                                                TRAP    C$EXIT
                                                        .NLIST
                                        .ENDC
                                        .IF IDN <SEG>,<TST>
                                        M$GETTOP T$SE<,T$SEGLEV,T$TEMP
                                        M$EXSEG \T$TEMP
                                        .IFF
```

```
 051734                          M$EXIT  \T$TEMP
                                 .MCALL  M$GNINS
 051734                          M$GNINS <.WORD  L10047-.>
                                 .IF LT SVCINS
                                 .WORD   L10047-.
                                 .MEXIT
                                 .ENDC
                                 .IF EQ SVCINS
                                 .LIST
                                         .WORD   L10047-.
                                                 .NLIST
                                 .MEXIT
                                 .ENDC
                                 .IF GT SVCINS
                                 .LIST
 051734  000076                                                           .WORD   L10047-.
                                                 .NLIST
                                 .ENDC
                                 .ENDC
                                 .MEXIT
                                 .ENDC
                                 .IF IDN <HRD>,<TST>
                                 M$GETTOP        T$NS,T$NESTLEV,T$TEMP
                                 .IF EQ  F$HARD-T$TEMP
                                 .IRP    N,<\T$$HARD>
                                 XFER    L'N
                                 .ENDM
                                 .MEXIT
                                 .ENDC
                                 .ENDC
                                 .IF IDN <SFT>,<TST>
                                 M$GETTOP        T$NS,T$NESTLEV,T$TEMP
                                 .IF EQ  F$SOFT-T$TEMP
                                 .IRP    N,<\T$$SOFT>
                                 XFER    L'N
                                 .ENDM
                                 .MEXIT
                                 .ENDC
                                 .ENDC
                                 .ERROR  ;ILL. "EXIT TST" STMT.

                                         .NLIST  BEX
 051736     045     123     062  TSHD18: .ASCIZ  /%S2%ASERVICE REQUEST INTERFACE FUNCTION TEST OF CHANNEL 1%N/
                                         .LIST   BEX
                                         .EVEN
 052032                                  ENDTST
                                 .MCALL  M$POP,M$GNTAG,M$SVC,M$ENDERR
                                 .IF EQ  F$BGN-I$TST
         000041                  I$TST=F$END
                                 .IFF
                                 .ERROR  ;MISSING "BGNTST"
                                 .MEXIT
                                 .ENDC
 052032                          M$POP   T$NS,T$NESTLEV,T$TEMP
                                 .MCALL  M$GETS,M$DECR
                                 .IF LT  T$NESTLEV
                                 .ERROR  T$NESTLEV       ; MACRO T$NS UNDERFLOW
```

B10


```
                                        .MEXIT
                                        .ENDC
        052032                          M$GETS  T$NS,\T$NESTLEV,T$TEMP
               000001                   T$TEMP=T$NS1
        052032                          M$DECR  T$NESTLEV
               000000                   T$NESTLEV=T$NESTLEV-1
                                        .IF EQ F$TEST-T$TEMP
        052032                          M$GNTAG L,T$$TEST
                                        .MCALL  M$GEN
        052032                          M$GEN   L,\T$$TEST,SVCTAG
                                        .IF LE  SVCTAG
                                        .IIF EQ SVCTAG,.LIST
                                        L10047:
                                        .IIF EQ SVCTAG,.NLIST
                                        .MEXIT
                                        .ENDC
                                        .LIST
        052032                                                                  L10047:
                                                .NLIST
               010000                   S$LSYM=T$LSYM
        052032                          M$SVC   C$ETST
                                        .MCALL  M$GNINS,M$TSTLAB
        052032                          M$TSTLAB
                                        .MCALL  M$TLABEL,M$INCR
                                        .IIF LT T$TSTMAC, .MEXIT
                                        .RADIX  10
                                        M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                        .RADIX  8
                                        M$INCR  T$TSTSEQ
        052032                          M$GNINS <TRAP   C$ETST>
                                        .IF LT SVCINS
                                        TRAP    C$ETST
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                TRAP    C$ETST
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
        052032 104401                                                                   TRAP    C$ETST
                                                        .NLIST
                                        .ENDC
               000041                   I$TST=F$END
                                        .IFF
                                        M$ENDERR        ENDTST,T$TEMP
                                        .ENDC
```

C10

```
                                .SBTTL  TEST 19: SERVICE REQUEST INTERFACE FUNTION TEST OF CHANNEL 2
                                ;*************************************************************************
                                ;                IEX - TEST 19
                                ;THIS TEST CHECKS THE SERIAL POLL REGISTER OF CHANNEL 2.
                                ;PART 1 SETS AND CLEARS THE RSV BIT IN SPR REGISTER OF CHANNEL 2 AND
                                ;       CHECKS THE SRQ BIT IN ISR1.
                                ;
                                ;PART 2 CHECKS THE SERIAL POLL SEQUENCE OF CHANNEL 2.
                                ;
                                ;IF QUICK VERIFY PASS IS NOT SELECTED, THE SERIAL POLL SEQUENCE IS CARRIED
                                ;OUT WITH DIFFERENT DATA.
                                ;*************************************************************************
052034                                  BGNTST
                                .MCALL  M$INCR,M$GNTEST,M$PUSH,M$INCR
                                .IF NE  F$END-I$SUB
                                .ERROR  ;"BGNTST" IN SUB
                                .MEXIT
                                .ENDC
                                .IF NE  F$END-I$SEG
                                .ERROR  ;"BGNTST" IN SEG
                                .MEXIT
                                .ENDC
                                .IF NE  F$END-I$TST
                                .ERROR  ;"BGNTST" IN TST
                                .MEXIT
                                .IFF
              000040            I$TST=F$BGN
                                .ENDC
                                .IF B
052034                          M$INCR  T$TESTNUM
              000023            T$TESTNUM=T$TESTNUM+1
                                .IFF
                                T$TESTNUM=
                                .ENDC
              000000            T$SUBNUM=0
              000012            .RADIX  10
052034                          M$GNTEST        \T$TESTNUM
                                .MCALL  M$GEN
052034                          M$GEN   T,19:,SVCTST
                                .IF LE  SVCTST
                                .IIF EQ SVCTST,.LIST
                                T19::
                                .IIF EQ SVCTST,.NLIST
                                .MEXIT
                                .ENDC
                                .LIST
052034                                                                  T19::
                                        .NLIST
              000010            .RADIX  8
052034                          M$PUSH  T$NS,T$NESTLEV,F$TEST
                                .MCALL  M$INCR,M$SETS
052034                          M$INCR  T$NESTLEV
              000001            T$NESTLEV=T$NESTLEV+1
052034                          M$SETS  T$NS,\T$NESTLEV,F$TEST
              000001            T$NS1=F$TEST
              010050            T$$TEST-T$TAGNUM
052034                          M$INCR T$TAGNUM
```

```
                010051                  T$TAGNUM=T$TAGNUM+1
                000001                  T$TSTSEQ=1
 6362 052034    005737  002324                  TST     PNTF                    ;IS THE PNT FLAG SET
 6363 052040    001410                          BEQ     7$                      ;IF YES, PRINT THE TEST HEADER
 6364 052042                                    PRINTF  #TSHD19                 ;...
                                        .MCALL  M$PRINT
                                        .IF B   #TSHD19
                                        .ERROR  ;MISSING FORMAT
                                        .MEXIT
                                        .ENDC
                                        .IF B   <>
      052042                            M$PRINT C$PNTF,#TSHD19
                                        .MCALL  M$COUNT,M$PUT,M$GNINS,M$SVC
                000001                  T$ARGCNT=1
      052042                            M$COUNT T$ARGCNT,<>,<>,<>,<>,<>,<>,<>,<>
                                        .IF NB <>
                                        M$COUNT T$ARGCNT,<>,<>,<>,<>,<>,<>,<>,<>
                                        .ENDC
                                        .IF NB <>
                                        T$ARGCNT=T$ARGCNT+1
                                        .ENDC
                                        .IRP    N,<\T$ARGCNT>
                                        M$PUT   #N,#TSHD19,<>,<>,<>,<>,<>,<>,<>,<>
                                        .ENDM
      052042                            M$PUT   #1,#TSHD19,<>,<>,<>,<>,<>,<>,<>,<>
                                        .MCALL  M$PUT1
                                        .IF NB  <#TSHD19>
      052042                            M$PUT   <#TSHD19>,<>,<>,<>,<>,<>,<>,<>,<>
                                        .MCALL  M$PUT1
                                        .IF NB  <>
                                        M$PUT   <>,<>,<>,<>,<>,<>,<>,<>,<>
                                        .ENDC
                                        .IF NB  <#TSHD19>
      052042                            M$PUT1  #TSHD19
                                        .MCALL  M$GNINS
                                        .IF B
      052042                            M$GNINS <MOV    #TSHD19,-(SP)>
                                        .IF LT SVCINS
                                        MOV     #TSHD19,-(SP)
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                MOV     #TSHD19,-(SP)
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
      052042    012746  053046                                                                  MOV     #TSHD19,-(SP)
                                                        .NLIST
                                        .ENDC
                                        .IFF
                                        .IF DIF B,<#TSHD19>
                                        .ERROR  ;ILL. ARG. "#TSHD19" ONLY "B" IS ALLOWED.
                                        .MEXIT
                                        .ENDC
```

```
                                M$GNINS <CLR    -(SP)>
                                M$GNINS <BISB   ,(SP)>
                                .ENDC
                                .ENDC
                                .ENDC
                                .IF NB  <Ø1>
052046                          M$PUT1  Ø1
                                .MCALL  M$GNINS
                                .IF B
052046                          M$GNINS <MOV    Ø1,-(SP)>
                                .IF LT SVCINS
                                MOV     Ø1,-(SP)
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        MOV     Ø1,-(SP)
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
052046  012746  000001                                                  MOV     Ø1,-(SP)
                                                .NLIST
                                .ENDC
                                .IFF
                                .IF DIF B,<Ø1>
                                .ERROR  ;ILL. ARG. "Ø1" ONLY "B" IS ALLOWED.
                                .MEXIT
                                .ENDC
                                M$GNINS <CLR    -(SP)>
                                M$GNINS <BISB   ,(SP)>
                                .ENDC
                                .ENDC
052052                          M$GNINS <MOV    SP,R0>
                                .IF LT SVCINS
                                MOV     SP,R0
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        MOV     SP,R0
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
052052  010600                                                          MOV     SP,R0
                                                .NLIST
                                .ENDC
052054                          M$SVC   C$PNTF
                                .MCALL  M$GNINS,M$TSTLAB
052054                          M$TSTLAB
                                .MCALL  M$TLABEL,M$INCR
                                .IIF LT T$TSTMAC, .MEXIT
                                .RADIX  10
                                M$TLABEL        \T$TESTNUN,\T$TSTSEQ
```

```
                                  .RADIX  8
                                  M$INCR  T$TSTSEQ
      052054                      M$GNINS <TRAP   C$PNTF>
                                  .IF LT SVCINS
                                  TRAP    C$PNTF
                                  .MEXIT
                                  .ENDC
                                  .IF EQ SVCINS
                                  .LIST
                                          TRAP    C$PNTF
                                                  .NLIST
                                  .MEXIT
                                  .ENDC
                                  .IF GT SVCINS
                                  .LIST
      052054  104417                                                              TRAP    C$PNTF
                                                  .NLIST
                                  .ENDC
                                  .IRP    N,<\T$ARGCNT*2+2>
                                  M$GNINS <ADD    #N,SP>
                                  .ENDM
      052056                      M$GNINS <ADD    #4,SP>
                                  .IF LT SVCINS
                                  ADD     #4,SP
                                  .MEXIT
                                  .ENDC
                                  .IF EQ SVCINS
                                  .LIST
                                          ADD     #4,SP
                                                  .NLIST
                                  .MEXIT
                                  .ENDC
                                  .IF GT SVCINS
                                  .LIST
      052056  062706  000004                                                      ADD     #4,SP
                                                  .NLIST
                                  .ENDC
                                  .MEXIT
                                  .ENDC
                                  .IF B   <>
                                  M$PRINT C$PNTF,#TSHD19,<>
                                  .MEXIT
                                  .ENDC
                                  .IF B   <>
                                  M$PRINT C$PNTF,#TSHD19,<>,<>
                                  .MEXIT
                                  .ENDC
                                  .IF B   <>
                                  M$PRINT C$PNTF,#TSHD19,<>,<>,<>
                                  .MEXIT
                                  .ENDC
                                  .IF B   <>
                                  M$PRINT C$PNTF,#TSHD19,<>,<>,<>,<>
                                  .MEXIT
                                  .ENDC
                                  .IF B   <>
                                  M$PRINT C$PNTF,#TSHD19,<>,<>,<>,<>,<>
```

G10


```
                                              .MEXIT
                                              .ENDC
                                              .IF B    <>
                                              M$PRINT C$PNTF,#TSHD19,<>,<>,<>,<>,<>,<>
                                              .MEXIT
                                              .ENDC
                                              .IF B    <>
                                              M$PRINT C$PNTF,#TSHD19,<>,<>,<>,<>,<>,<>,<>
                                              .MEXIT
                                              .ENDC
                                              M$PRINT C$PNTF,#TSHD19,<>,<>,<>,<>,<>,<>,<>,<>
6365 052062  012737  000101  002402  7$:      MOV     #101,RSAVE                ;DATA STORE FOR SERIAL POLL SEQUENCE
6366 052070                          ITAC19: BGNSEG
                                              .MCALL  M$PUSH,M$INCR,M$SVC
             000040                           I$SEG=F$BGN
     052070                                   M$PUSH  T$NS,T$NESTLEV,F$SEG
                                              .MCALL  M$INCR,M$SETS
     052070                                   M$INCR  T$NESTLEV
             000002                           T$NESTLEV=T$NESTLEV+1
     052070                                   M$SETS  T$NS,\T$NESTLEV,F$SEG
             000003                           T$NS2=F$SEG
             010000                           T$$SEG=S$LSYM
     052070                                   M$PUSH  T$SEK,T$SEGLEV,T$$SEG
                                              .MCALL  M$INCR,M$SETS
     052070                                   M$INCR  T$SEGLEV
             000000                           T$SEGLEV=T$SEGLEV+1
     052070                                   M$SETS  T$SEK,\T$SEGLEV,T$$SEG
             010000                           T$SEK0=T$$SEG
     052070                                   M$INCR  S$LSYM
             010001                           S$LSYM=S$LSYM+1
     052070                                   M$SVC   C$BSEG
                                              .MCALL  M$GNINS,M$TSTLAB
     052070                                   M$TSTLAB
                                              .MCALL  M$TLABEL,M$INCR
                                              .IIF LT T$TSTMAC, .MEXIT
                                              .RADIX  10
                                              M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                              .RADIX  8
                                              M$INCR  T$TSTSEQ
     052070                                   M$GNINS <TRAP   C$BSEG>
                                              .IF LT SVCINS
                                              TRAP    C$BSEG
                                              .MEXIT
                                              .ENDC
                                              .IF EQ SVCINS
                                              .LIST
                                                      TRAP    C$BSEG
                                                              .NLIST
                                              .MEXIT
                                              .ENDC
                                              .IF GT SVCINS
                                              .LIST
     052070  104404                                                                          TRAP    C$BSEG
                                                              .NLIST
                                              .ENDC
6367 052072  004737  010210                           JSR     PC,CULPA                  ;CLEAR ULPA BIT IN ISR 1 AND 2
6368 052076  004737  010524                           JSR     PC,BGIN1                  ;SET UP PARAMETER
```

H10

```
6369 052102 032737 000001 002314         BIT     #1,DPA2                  ;IS DPA EVEN
6370 052110 001404                       BEQ     3$                       ;BRANCH IF YES
6371 052112 052737 000001 002470         BIS     #1,CDAT15                ;SET ULPA BIT IN COMPARE DATA FOR ISR
6372 052120 000403                       BR      .+10                     ;
6373 052122 042737 000001 002470 3$:     BIC     #1,CDAT15                ;CLEAR ULPA BIT IN COMPARE DATA FOR ISR
6374 052130 052777 000010 130142         BIS     #10,@CSRX                ;SELECT CHANNEL 2
6375 052136 112777 000100 130122         MOVB    #100,@ICRLX              ;-----SET RSV BIT IN SPR 2-------------
6376 052144 042777 000010 130126         BIC     #10,@CSRX                ;SELECT CHANNEL 1
6377 052152 012737 000001 002374         MOV     #1,CHAN                  ;LOAD CHANNEL NUMBER
6378 052160 017737 130064 002502         MOV     @IIRX,BAD                ;GET IIR1 CONTENTS
6379 052166 022737 001020 002502         CMP     #1020,BAD                ;SRQ,BO BIT SHOULD BE SET
6380 052174 001410                       BEQ     10$                      ;BRANCH IF YES
6381 052176 012737 001020 002500         MOV     #1020,GOOD               ;SET UP DATA FOR ERROR MESSAGE
6382 052204                              ERRSOFT 1901,E501,ERR501         ;ERROR HANDLER
                                 .MCALL  M$ERRINS
     052204                      M$ERRINS        1901,E501,ERR501,C$ERSOFT
                                 .MCALL  M$GNINS,M$WORD,M$TSTLAB
     052204                      M$SVC   C$ERSOFT
                                 .MCALL  M$GNINS,M$TSTLAB
     052204                      M$TSTLAB
                                 .MCALL  M$TLABEL,M$INCR
                                 .IIF LT T$TSTMAC, .MEXIT
                                 .RADIX  10
                                 M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                 .RADIX  8
                                 M$INCR  T$TSTSEQ
     052204                      M$GNINS <TRAP   C$ERSOFT>
                                 .IF LT SVCINS
                                 TRAP    C$ERSOFT
                                 .MEXIT
                                 .ENDC
                                 .IF EQ SVCINS
                                 .LIST
                                         TRAP    C$ERSOFT
                                                 .NLIST
                                 .MEXIT
                                 .ENDC
                                 .IF GT SVCINS
                                 .LIST
     052204 104457                                                                   TRAP    C$ERSOFT
                                                 .NLIST
                                 .ENDC
            000012               .RADIX  10
                                 .IF NB  1901
            003555               T$ERRNUM=1901
                                 .IFF
                                 .ERROR  ;MISSING ERROR NR
                                 .ENDC
     052206                      M$WORD  \T$ERRNUM
                                 .MCALL  M$GNINS
                                 .IRP    N,<1901>
                                 M$GNINS <.WORD  N>
                                 .ENDM
     052206                      M$GNINS <.WORD  1901>
                                 .IF LT SVCINS
                                 .WORD   1901
                                 .MEXIT
```

```
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                .WORD   1901
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
        052206  003555                                                          .WORD   1901
                                                        .NLIST
                                        .ENDC
                000010                  .RADIX  8
                                        .IF NB E501
        052210                          M$WORD  E501
                                        .MCALL  M$GNINS
                                        .IRP    N,<E501>
                                        M$GNINS <.WORD  N>
                                        .ENDM
        052210                          M$GNINS <.WORD  E501>
                                        .IF LT SVCINS
                                        .WORD   E501
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                .WORD   E501
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
        052210  005376                                                          .WORD   E501
                                                        .NLIST
                                        .ENDC
                                        .IFF
                                        M$WORD  0
                                        .ENDC
                                        .IF NB ERR501
        052212                          M$WORD  ERR501
                                        .MCALL  M$GNINS
                                        .IRP    N,<ERR501>
                                        M$GNINS <.WORD  N>
                                        .ENDM
        052212                          M$GNINS <.WORD  ERR501>
                                        .IF LT SVCINS
                                        .WORD   ERR501
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                .WORD   ERR501
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
```

J10

```
       052212  003672                                                  .WORD   ERR501
                                          .NLIST
                          .ENDC
                          .IFF
                          M$WORD  0
                          .ENDC
  6383 052214                     CKLOOP                 ;BRANCH BACK TO BGNSEG IF ERRLOOP IS SET
                          .MCALL  M$SVC
       052214             M$SVC   C$CLP1
                          .MCALL  M$GNINS,M$TSTLAB
       052214             M$TSTLAB
                          .MCALL  M$TLABEL,M$INCR
                          .IIF LT T$TSTMAC, .MEXIT
                          .RADIX  10
                          M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                          .RADIX  8
                          M$INCR  T$TSTSEQ
       052214             M$GNINS <TRAP   C$CLP1>
                          .IF LT SVCINS
                          TRAP    C$CLP1
                          .MEXIT
                          .ENDC
                          .IF EQ SVCINS
                          .LIST
                                  TRAP    C$CLP1
                                          .NLIST
                          .MEXIT
                          .ENDC
                          .IF GT SVCINS
                          .LIST
       052214  104406                                                  TRAP    C$CLP1
                                          .NLIST
                          .ENDC
  6384 052216  017737  130034  002502  10$:  MOV   @ISRX,BAD         ;GET ISR1 CONTENTS
  6385 052224  032737  002000  002502        BIT   #2000,BAD         ;IS SRQ BIT SET ALSO ATN,NDAC,ATN(ULPA)
  6386 052232  001010                        BNE   13$               ;BRANCH IF YES
  6387 052234  012737  122040  002500        MOV   #122040,GOOD      ;SET UP DATA FOR ERROR MESSAGE
  6388 052242                                ERRSOFT 1902,E502,ERR501  ;ERROR HANDLER
                          .MCALL  M$ERRINS
       052242             M$ERRINS        1902,E502,ERR501,C$ERSOFT
                          .MCALL  M$GNINS,M$WORD,M$TSTLAB
       052242             M$SVC   C$ERSOFT
                          .MCALL  M$GNINS,M$TSTLAB
       052242             M$TSTLAB
                          .MCALL  M$TLABEL,M$INCR
                          .IIF LT T$TSTMAC, .MEXIT
                          .RADIX  10
                          M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                          .RADIX  8
                          M$INCR  T$TSTSEQ
       052242             M$GNINS <TRAP   C$ERSOFT>
                          .IF LT SVCINS
                          TRAP    C$ERSOFT
                          .MEXIT
                          .ENDC
                          .IF EQ SVCINS
                          .LIST
```

```
                                        TRAP    C$ERSOFT
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
052242  104457                                                          TRAP    C$ERSOFT
                                                .NLIST
                                .ENDC
        000012                  .RADIX  10
                                .IF NB  1902
        003556                  T$ERRNUM=1902
                                .IFF
                                .ERROR  ;MISSING ERROR-NR
                                .ENDC
052244                          M$WORD  \T$ERRNUM
                                .MCALL  M$GNINS
                                .IRP    N,<1902>
                                M$GNINS <.WORD  N>
                                .ENDM
052244                          M$GNINS <.WORD  1902>
                                .IF LT SVCINS
                                .WORD   1902
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        .WORD   1902
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
052244  003556                                                          .WORD   1902
                                                .NLIST
                                .ENDC
        000010                  .RADIX  8
                                .IF NB E502
052246                          M$WORD  E502
                                .MCALL  M$GNINS
                                .IRP    N,<E502>
                                M$GNINS <.WORD  N>
                                .ENDM
052246                          M$GNINS <.WORD  E502>
                                .IF LT SVCINS
                                .WORD   E502
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        .WORD   E502
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
052246  005437                                                          .WORD   E502
```

```
                                        .NLIST
                             .ENDC
                             .IFF
                             M$WORD  0
                             .ENDC
                             .IF NB ERR501
     052250                  M$WORD  ERR501
                             .MCALL  M$GNINS
                             .IRP    N,<ERR501>
                             M$GNINS <.WORD  N>
                             .ENDM
     052250                  M$GNINS <.WORD  ERR501>
                             .IF LT SVCINS
                             .WORD   ERR501
                             .MEXIT
                             .ENDC
                             .IF EQ SVCINS
                             .LIST
                                     .WORD   ERR501
                                        .NLIST
                             .MEXIT
                             .ENDC
                             .IF GT SVCINS
                             .LIST
     052250  003672                                                          .WORD   ERR501
                                        .NLIST
                             .ENDC
                             .IFF
                             M$WORD  0
                             .ENDC
6389 052252                          CKLOOP                      ;BRANCH BACK TO BGNSEG IF ERRLOOP IS SET
                             .MCALL  M$SVC
     052252                  M$SVC   C$CLP1
                             .MCALL  M$GNINS,M$TSTLAB
     052252                  M$TSTLAB
                             .MCALL  M$TLABEL,M$INCR
                             .IIF LT T$TSTMAC, .MEXIT
                             .RADIX  10
                             M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                             .RADIX  8
                             M$INCR  T$TSTSEQ
     052252                  M$GNINS <TRAP   C$CLP1>
                             .IF LT SVCINS
                             TRAP    C$CLP1
                             .MEXIT
                             .ENDC
                             .IF EQ SVCINS
                             .LIST
                                     TRAP    C$CLP1
                                        .NLIST
                             .MEXIT
                             .ENDC
                             .IF GT SVCINS
                             .LIST
     052252  104406                                                          TRAP    C$CLP1
                                        .NLIST
                             .ENDC
```

TEST 19: SERVICE REQUEST INTERFACE FUNTION TEST OF CHANNEL 2

```
052254  052777  000010  130016  13$:    BIS     #10,@CSRX               ;SELECT CHANNEL 2
052262  112777  000000  127776          MOVB    #0,@ICRLX               ;-----CLEAR SPR 2 REGISTER----------------
052270  042777  000010  130002          BIC     #10,@CSRX               ;SELECT CHANNEL 1
052276  017737  127754  002502          MOV     @ISRX,BAD               ;GET ISR1 CONTENTS
052304  032737  002000  002502          BIT     #2000,BAD               ;SRQ BIT SHOULD BE CLEARED
052312  001410                          BEQ     20$                     ;BRANCH IF YES
052314  012737  120040  002500          MOV     #120040,GOOD            ;S^T UP DATA FOR COMPARE
052322                                  ERRSOFT 1903,E502,ERR501        ;E ROR HANDLER
                                .MCALL  M$ERRINS
052322                          M$ERRINS        1903,E502,ERR501,C$ERSOFT
                                .MCALL  M$GNINS,M$WORD,M$TSTLAB
052322                          M$SVC   C$ERSOFT
                                .MCALL  M$GNINS,M$TSTLAB
052322                          M$TSTLAB
                                .MCALL  M$TLABEL,M$INCR
                                .IIF LT T$TSTMAC, .MEXIT
                                .RADIX  10
                                M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                .RADIX  8
                                M$INCR  T$TSTSEQ
052322                          M$GNINS <TRAP   C$ERSOFT>
                                .IF LT SVCINS
                                TRAP    C$ERSOFT
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        TRAP    C$ERSOFT
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
052322  104457                                                                          TRAP    C$ERSOFT
                                                .NLIST
                                .ENDC
        000012                  .RADIX  10
                                .IF NB  1903
        003557                  T$ERRNUM=1903
                                .IFF
                                .ERROR  ;MISSING ERROR NR
                                .ENDC
052324                          M$WORD  \T$ERRNUM
                                .MCALL  M$GNINS
                                .IRP    N,<1903>
                                M$GNINS <.WORD  N>
                                .ENDM
052324                          M$GNINS <.WORD  1903>
                                .IF LT SVCINS
                                .WORD   1903
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        .WORD   1903
                                                .NLIST
                                .MEXIT
```

```
                        .ENDC
                        .IF GT SVCINS
                        .LIST
052324  003557                                                  .WORD   1903
                                .NLIST
                        .ENDC
        000010          .RADIX  8
                        .IF NB E502
052326                  M$WORD  E502
                        .MCALL  M$GNINS
                        .IRP    N,<E502>
                        M$GNINS <.WORD  N>
                        .ENDM
052326                  M$GNINS <.WORD  E502>
                        .IF LT SVCINS
                        .WORD   E502
                        .MEXIT
                        .ENDC
                        .IF EQ SVCINS
                        .LIST
                            .WORD   E502
                                .NLIST
                        .MEXIT
                        .ENDC
                        .IF GT SVCINS
                        .LIST
052326  005437                                                  .WORD   E502
                                .NLIST
                        .ENDC
                        .IFF
                        M$WORD  0
                        .ENDC
                        .IF NB ERR501
052330                  M$WORD  ERR501
                        .MCALL  M$GNINS
                        .IRP    N,<ERR501>
                        M$GNINS <.WORD  N>
                        .ENDM
052330                  M$GNINS <.WORD  ERR501>
                        .IF LT SVCINS
                        .WORD   ERR501
                        .MEXIT
                        .ENDC
                        .IF EQ SVCINS
                        .LIST
                            .WORD   ERR501
                                .NLIST
                        .MEXIT
                        .ENDC
                        .IF G¯ SVCINS
                        .LIST
052330  003672                                                  .WORD   ERR501
                                .NLIST
                        .ENDC
                        .IFF
                        M$WORD  0
                        .ENDC
```

```
 6398 052332                       CKLOOP                                  ;BRANCH BACK TO BGNSEG IF ERRLOOP IS SET
                            .MCALL  M$SVC
      052332                M$SVC   C$CLP1
                            .MCALL  M$GNINS,M$TSTLAB
      052332                M$TSTLAB
                            .MCALL  M$TLABEL,M$INCR
                            .IIF LT T$TSTMAC, .MEXIT
                            .RADIX  10
                            M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                            .RADIX  8
                            M$INCR  T$TSTSEQ
      052332                M$GNINS <TRAP   C$CLP1>
                            .IF LT SVCINS
                            TRAP    C$CLP1
                            .MEXIT
                            .ENDC
                            .IF EQ SVCINS
                            .LIST
                                    TRAP    C$CLP1
                                            .NLIST
                            .MEXIT
                            .ENDC
                            .IF GT SVCINS
                            .LIST
      052332  104406                                                                    TRAP    C$CLP1
                                            .NLIST
                            .ENDC
 6399 052334                20$:    ENDSEG
                            .MCALL  M$POP,M$GNLS,M$SVC,M$ENDERR
      052334                M$POP   T$NS,T$NESTLEV,T$TEMP
                            .MCALL  M$GETS,M$DECR
                            .IF LT  T$NESTLEV
                            .ERROR  T$NESTLEV       ; MACRO T$NS UNDERFLOW
                            .MEXIT
                            .ENDC
      052334                M$GETS  T$NS,\T$NESTLEV,T$TEMP
              000003        T$TEMP=T$NS2
      052334                M$DECR  T$NESTLEV
              000001        T$NESTLEV=T$NESTLEV-1
                            .IF EQ F$SEG-T$TEMP
      052334                M$POP   T$SEK,T$SEGLEV,T$$SEG
                            .MCALL  M$GETS,M$DECR
                            .IF LT  T$SEGLEV
                            .ERROR  T$SEGLEV        ; MACRO T$SEK UNDERFLOW
                            .MEXIT
                            .ENDC
      052334                M$GETS  T$SEK,\T$SEGLEV,T$$SEG
              010000        T$$SEG=T$SEK0
      052334                M$DECR  T$SEGLEV
              177777        T$SEGLEV=T$SEGLEV-1
      052334                M$GNLS  T$$SEG
                            .MCALL  M$GEN
                            .IF NB T$$SEG
      052334                M$GEN   \T$$SEG,$,SVCTAG
                            .IF LE  SVCTAG
                            .IIF EQ SVCTAG,.LIST
                            10000$:
```

```
                                  .IIF EQ SVCTAG,.NLIST
                                  .MEXIT
                                  .ENDC
                                  .LIST
     052334                                                                          10000$:
                                               .NLIST
                                  .IFF
                                  M$GEN    \S$LSYM,$,SVCTAG
                                  .ENDC
     052334                       M$SVC    C$ESEG
                                  .MCALL   M$GNINS,M$TSTLAB
     052334                       M$TSTLAB
                                  .MCALL   M$TLABEL,M$INCR
                                  .IIF LT T$TSTMAC, .MEXIT
                                  .RADIX  10
                                  M$TLABEL          \T$TESTNUN,\T$TSTSEQ
                                  .RADIX  8
                                  M$INCR   T$TSTSEQ
     052334                       M$GNINS <TRAP    C$ESEG>
                                  .IF LT SVCINS
                                  TRAP     C$ESEG
                                  .MEXIT
                                  .ENDC
                                  .IF EQ SVCINS
                                  .LIST
                                           TRAP     C$ESEG
                                                    .NLIST
                                  .MEXIT
                                  .ENDC
                                  .IF GT SVCINS
                                  .LIST
     052334  104405                                                                        TRAP     C$ESEG
                                                    .NLIST
                                  .ENDC
                                  .IF EQ T$SEGLEV+1
             000041               I$SEG=F$END
                                  .ENDC
                                  .IFF
                                  M$ENDERR          ENDSEG,T$TEMP
                                  .ENDC
6400                              ;+++ ----   -------  - --  --------  -  ---------------------------------
6401                              ;PART 2 CHECKS THE SERIAL POLL SEQUENCE OF CHANNEL 2
6402                              ;+++-  ---- -   -----   ---- -   - ------  - --------------------------------
6403 052336                                BGNSEG
                                  .MCALL   M$PUSH,M$INCR,M$SVC
             000040               I$SEG=F$BGN
     052336                       M$PUSH   T$NS,T$NESTLEV,F$SEG
                                  .MCALL   M$INCR,M$SETS
     052336                       M$INCR   T$NESTLEV
             000002               T$NESTLEV=T$NESTLEV+1
     052336                       M$SETS   T$NS,\T$NESTLEV,F$SEG
             000003               T$NS2=F$SEG
             010001               T$$SEG=S$LSYM
     052336                       M$PUSH   T$SEK,T$SEGLEV,T$$SEG
                                  .MCALL   M$INCR,M$SETS
     052336                       M$INCR   T$SEGLEV
             000000               T$SEGLEV=T$SEGLEV+1
```

```
     052336                                  M$SETS  T$SEK,\T$SEGLEV,T$$SEG
             010001                          T$SEKO=T$$SEG
     052336                                  M$INCR  S$LSYM
             010002                          S$LSYM=S$LSYM+1
     052336                                  M$SVC   C$BSEG
                                             .MCALL  M$GNINS,M$TSTLAB
     052336                                  M$TSTLAB
                                             .MCALL  M$TLABEL,M$INCR
                                             .IIF LT T$TSTMAC, .MEXIT
                                             .RADIX  10
                                             M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                             .RADIX  8
                                             M$INCR  T$TSTSEQ
     052336                                  M$GNINS <TRAP   C$BSEG>
                                             .IF LT SVCINS
                                             TRAP    C$BSEG
                                             .MEXIT
                                             .ENDC
                                             .IF EQ SVCINS
                                             .LIST
                                                     TRAP    C$BSEG
                                                             .NLIST
                                             .MEXIT
                                             .ENDC
                                             .IF GT SVCINS
                                             .LIST
     052336  104404                                                                                  TRAP    C$BSEG
                                                             .NLIST
                                             .ENDC
6404 052340  052777  000010  127732                  BIS     #10,@CSRX               ;SELECT CHANNEL 2
6405 052346  113777  002402  127712                  MOVB    RSAVE,@ICRLX            ;----LOAD DATA INTO SPR 2-    ------  -
6406 052354  042777  000010  127716                  BIC     #10,@CSRX               ;SELECT CHANNEL 1
6407 052362  112777  000077  127706                  MOVB    #77,@IDRHX              ; - -LOAD UNL INTO DOR 1----   -------
6408 052370  004737  011050                          JSR     PC,LOOP                 ;WAIT A LITTLE
6409 052374  112777  000211  127666                  MOVB    #211,@ICRHX             ;-----LOAD LON INTO ACR 1-- -  ---  -
6410 052402  112777  000030  127666                  MOVB    #30,@IDRHX              ;-----LOAD SPE INTO DOR 1--- ---- ----
6411 052410  004737  011050                          JSR     PC,LOOP                 ;WAIT A LITTLE
6412 052414  013701  002314                          MOV     DPA2,R1                 ;CREATE MTA2
6413 052420  062701  000100                          ADD     #100,R1                 ;...
6414 052424  010137  002416                          MOV     R1,MTA2                 ;STORE MTA2
6415 052430  113777  002416  127640                  MOVB    MTA2,@IDRHX             ; ---LOAD MTA1 INTO DOR 1-------  ----
6416 052436  004737  011050                          JSR     PC,LOOP                 ;WAIT A LITTLE
6417 052442  112777  000013  127620                  MOVB    #13,@ICRHX              ;----LOAD GTS INTO ACR 1-- --- -     --
6418 052450  052777  000010  127622                  BIS     #10,@CSRX               ;SELECT CHANNEL 2
6419 052456  012737  000002  002374                  MOV     #2,CHAN                 ;LOAD CHANNEL NUMBER
6420 052464  017737  127560  002502                  MOV     @IIRX,BAD               ;GET IIR2 CONTENTS
6421 052472  022737  000405  002502                  CMP     #405,BAD                ;IFC,SPAS,MAC SHOULD BE SET
6422 052500  001410                                  BEQ     30$                     ;BRANCH IF YES
6423 052502  012737  000405  002500                  MOV     #405,GOOD               ;SET UP DATA FOR ERROR MESSAGE
6424 052510                                          ERRSOFT 1904,E501,ERR501        ;ERROR HANDLER
                                             .MCALL  M$ERRINS
     052510                                  M$ERRINS        1904,E501,ERR501,C$ERSOFT
                                             .MCALL  M$GNINS,M$WORD,M$TSTLAB
     052510                                  M$SVC   C$ERSOFT
                                             .MCALL  M$GNINS,M$TSTLAB
     052510                                  M$TSTLAB
                                             .MCALL  M$TLABEL,M$INCR
```

E11

```
                                .IIF LT T$TSTMAC, .MEXIT
                                .RADIX  10
                                M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                .RADIX  8
                                M$INCR  T$TSTSEQ
052510                          M$GNINS <TRAP   C$ERSOFT>
                                .IF LT SVCINS
                                TRAP    C$ERSOFT
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        TRAP    C$ERSOFT
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
052510  104457                                                          TRAP    C$ERSOFT
                                                .NLIST
                                .ENDC
        000012                  .RADIX  10
                                .IF NB  1904
        003560                  T$ERRNUM=1904
                                .IFF
                                .ERROR  ;MISSING ERROR-NR
                                .ENDC
052512                          M$WORD  \T$ERRNUM
                                .MCALL  M$GNINS
                                .IRP    N,<1904>
                                M$GNINS <.WORD  N>
                                .ENDM
052512                          M$GNINS <.WORD  1904>
                                .IF LT SVCINS
                                .WORD   1904
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        .WORD   1904
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
052512  003560                                                          .WORD   1904
                                                .NLIST
                                .ENDC
        000010                  .RADIX  8
                                .IF NB E501
052514                          M$WORD  E501
                                .MCALL  M$GNINS
                                .IRP    N,<E501>
                                M$GNINS <.WORD  N>
                                .ENDM
052514                          M$GNINS <.WORD  E501>
                                .IF LT SVCINS
```


F11

```
                                        .WORD   E501
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                .WORD   E501
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
      052514  005376                                                                          .WORD   E501
                                                        .NLIST
                                        .ENDC
                                        .IFF
                                        M$WORD  0
                                        .ENDC
                                        .IF NB ERR501
      052516                            M$WORD  ERR501
                                        .MCALL  M$GNINS
                                        .IRP    N,<ERR501>
                                        M$GNINS <.WORD  N>
                                        .ENDM
      052516                            M$GNINS <.WORD  ERR501>
                                        .IF LT SVCINS
                                        .WORD   ERR501
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                .WORD   ERR501
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
      052516  003672                                                                          .WORD   ERR501
                                                        .NLIST
                                        .ENDC
                                        .IFF
                                        M$WORD  0
                                        .ENDC
 6425 052520                                    CKLOOP                          ;BRANCH BACK TO BGNSEG IF ERRLOOP IS SET
                                        .MCALL  M$SVC
      052520                            M$SVC   C$CLP1
                                        .MCALL  M$GNINS,M$TSTLAB
      052520                            M$TSTLAB
                                        .MCALL  M$TLABEL,M$INCR
                                        .IIF LT T$TSTMAC, .MEXIT
                                        .RADIX  10
                                        M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                        .RADIX  8
                                        M$INCR  T$TSTSEQ
      052520                            M$GNINS <TRAP   C$CLP1>
                                        .IF LT SVCINS
                                        TRAP    C$CLP1
                                        .MEXIT
```

```
                                                .ENDC
                                                .IF EQ SVCINS
                                                .LIST
                                                        TRAP    C$CLP1
                                                                .NLIST
                                                .MEXIT
                                                .ENDC
                                                .IF GT SVCINS
                                                .LIST
     052520  104406                                                                                     TRAP    C$CLP1
                                                                .NLIST
                                                .ENDC
     052522  017737  127530  002502   30$:      MOV     @ISRX,BAD               ;GET ISR2 CONTENTS
     052530  023737  002470  002502             CMP     CDAT15,BAD              ;NDAC,NRFD,TADS,(ULPA) SHOULD BE SET
     052536  001410                             BEQ     33$                     ;BRANCH IF YES
     052540  013737  002470  002500             MOV     CDAT15,GOOD             ;SET UP DATA FOR ERROR MESSAGE
     052546                                     ERRSOFT 1905,E502,ERR501        ;ERROR HANDLER
                                                .MCALL  M$ERRINS
     052546                                     M$ERRINS        1905,E502,ERR501,C$ERSOFT
                                                .MCALL  M$GNINS,M$WORD,M$TSTLAB
     052546                                     M$SVC   C$ERSOFT
                                                .MCALL  M$GNINS,M$TSTLAB
     052546                                     M$TSTLAB
                                                .MCALL  M$TLABEL,M$INCR
                                                .IIF LT T$TSTMAC, .MEXIT
                                                .RADIX  10
                                                M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                                .RADIX  8
                                                M$INCR  T$TSTSEQ
     052546                                     M$GNINS <TRAP   C$ERSOFT>
                                                .IF LT SVCINS
                                                TRAP    C$ERSOFT
                                                .MEXIT
                                                .ENDC
                                                .IF EQ SVCINS
                                                .LIST
                                                        TRAP    C$ERSOFT
                                                                .NLIST
                                                .MEXIT
                                                .ENDC
                                                .IF GT SVCINS
                                                .LIST
     052546  104457                                                                                     TRAP    C$ERSOFT
                                                                .NLIST
                                                .ENDC
             000012                             .RADIX  10
                                                .IF NB  1905
             003561                             T$ERRNUM=1905
                                                .IFF
                                                .ERROR  ;MISSING ERROR NR
                                                .ENDC
     052550                                     M$WORD  \T$ERRNUM
                                                .MCALL  M$GNINS
                                                .IRP    N,<1905>
                                                M$GNINS <.WORD  N>
                                                .ENDM
     052550                                     M$GNINS <.WORD  1905>
```

H11

```
                                .IF LT SVCINS
                                .WORD   1905
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        .WORD   1905
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
      052550  003561                                                          .WORD   1905
                                                .NLIST
                                .ENDC
              000010            .RADIX  8
                                .IF NB E502
      052552                    M$WORD  E502
                                .MCALL  M$GNINS
                                .IRP    N,<E502>
                                M$GNINS <.WORD  N>
                                .ENDM
      052552                    M$GNINS <.WORD  E502>
                                .IF LT SVCINS
                                .WORD   E502
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        .WORD   E502
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
      052552  005437                                                          .WORD   E502
                                                .NLIST
                                .ENDC
                                .IFF
                                M$WORD  0
                                .ENDC
                                .IF NB ERR501
      052554                    M$WORD  ERR501
                                .MCALL  M$GNINS
                                .IRP    N,<ERR501>
                                M$GNINS <.WORD  N>
                                .ENDM
      052554                    M$GNINS <.WORD  ERR501>
                                .IF LT SVCINS
                                .WORD   ERR501
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        .WORD   ERR501
                                                .NLIST
                                .MEXIT
```

```
                                    .ENDC
                                    .IF GT SVCINS
                                    .LIST
     052554  003672                                                                     .WORD   ERR501
                                                .NLIST
                                    .ENDC
                                    .IFF
                                    M$WORD  0
                                    .ENDC
6431 052556                               CKLOOP                      ;BRANCH BACK TO BGNSEG IF ERRLOOP IS SET
                                    .MCALL  M$SVC
     052556                         M$SVC   C$CLP1
                                    .MCALL  M$GNINS,M$TSTLAB
     052556                         M$TSTLAB
                                    .MCALL  M$TLABEL,M$INCR
                                    .IIF LT T$TSTMAC, .MEXIT
                                    .RADIX  10
                                    M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                    .RADIX  8
                                    M$INCR  T$TSTSEQ
     052556                         M$GNINS <TRAP   C$CLP1>
                                    .IF LT SVCINS
                                    TRAP    C$CLP1
                                    .MEXIT
                                    .ENDC
                                    .IF EQ SVCINS
                                    .LIST
                                          TRAP    C$CLP1
                                                .NLIST
                                    .MEXIT
                                    .ENDC
                                    .IF GT SVCINS
                                    .LIST
     052556  104406                                                                     TRAP    C$CLP1
                                                .NLIST
                                    .ENDC
6432 052560  042777  000010  127512 33$:      BIC     #10,@CSRX           ;SELECT CHANNEL 1
6433 052566  012737  000001  002374           MOV     #1,CHAN             ;LOAD CHANNEL NUMBER
6434 052574  017737  127450  002502           MOV     @IIRX,BAD           ;GET IIR1 CONTENTS
6435 052602  022737  001060  002502           CMP     #1060,BAD           ;SRQ,BI,BO BIT SHOULD BE SET
6436 052610  001410                           BEQ     40$                 ;BRANCH IF YES
6437 052612  012737  001060  002500           MOV     #1060,GOOD          ;SET UP DATA FOR ERROR MESSAGE
6438 052620                                   ERRSOFT 1906,E501,ERR501    ;ERROR HANDLER
                                    .MCALL  M$ERRINS
     052620                         M$ERRINS        1906,E501,ERR501,C$ERSOFT
                                    .MCALL  M$GNINS,M$WORD,M$TSTLAB
     052620                         M$SVC   C$ERSOFT
                                    .MCALL  M$GNINS,M$TSTLAB
     052620                         M$TSTLAB
                                    .MCALL  M$TLABEL,M$INCR
                                    .IIF LT T$TSTMAC, .MEXIT
                                    .RADIX  10
                                    M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                    .RADIX  8
                                    M$INCR  T$TSTSEQ
     052620                         M$GNINS <TRAP   C$ERSOFT>
                                    .IF LT SVCINS
```

```
                                        TRAP    C$ERSOFT
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                TRAP    C$ERSOFT
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
        052620  104457                                                                  TRAP    C$ERSOFT
                                                        .NLIST
                                        .ENDC
                000012                  .RADIX  10
                                        .IF NB  1906
                003562                  T$ERRNUM=1906
                                        .IFF
                                        .ERROR  ;MISSING ERROR-NR
                                        .ENDC
        052622                          M$WORD  \T$ERRNUM
                                        .MCALL  M$GNINS
                                        .IRP    N,<1906>
                                        M$GNINS <.WORD  N>
                                        .ENDM
        052622                          M$GNINS <.WORD  1906>
                                        .IF LT SVCINS
                                        .WORD   1906
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                .WORD   1906
                                                        .NLIST
                                        .MFXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
        052622  003562                                                                  .WORD   1906
                                                        .NLIST
                                        .ENDC
                000010                  .RADIX  8
                                        .IF NB E501
        052624                          M$WORD  E501
                                        .MCALL  M$GNINS
                                        .IRP    N,<E501>
                                        M$GNINS <.WORD  N>
                                        .ENDM
        052624                          M$GNINS <.WORD  E501>
                                        .IF LT SVCINS
                                        .WORD   E501
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                .WORD   E501
                                                        .NLIST
```

```
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
      052624  005376                                                                  .WORD   E501
                                                  .NLIST
                                .ENDC
                                .IFF
                                M$WORD  0
                                .ENDC
                                .IF NB ERR501
      052626                    M$WORD  ERR501
                                .MCALL  M$GNINS
                                .IRP    N,<ERR501>
                                M$GNINS <.WORD  N>
                                .ENDM
      052626                    M$GNINS <.WORD  ERR501>
                                .IF LT SVCINS
                                .WORD   ERR501
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        .WORD   ERR501
                                                  .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
      052626  003672                                                                  .WORD   ERR501
                                                  .NLIST
                                .ENDC
                                .IFF
                                M$WORD  0
                                .ENDC
 6439 052630                            CKLOOP                  ;BRANCH BACK TO BGNSEG IF ERRLOOP IS SET
                                .MCALL  M$SVC
      052630                    M$SVC   C$CLP1
                                .MCALL  M$GNINS,M$TSTLAB
      052630                    M$TSTLAB
                                .MCALL  M$TLABEL,M$INCR
                                .IIF LT T$TSTMAC, .MEXIT
                                .RADIX  10
                                M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                .RADIX  8
                                M$INCR  T$TSTSEQ
      052630                    M$GNINS <TRAP   C$CLP1>
                                .IF LT SVCINS
                                TRAP    C$CLP1
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        TRAP    C$CLP1
                                                  .NLIST
                                .MEXIT
                                .ENDC
```

```
                                        .IF GT SVCINS
                                        .LIST
     052630  104406                                                                                TRAP    C$CLP1
                                                      .NLIST
                                        .ENDC
6440 052632  112777  000015  127430  40$:      MOVB     #15,@ICRHX          ;----LOAD TCS INTO ACR 1-----------------
6441 052640  017737  127426  002502            MOV      @IDRX,BAD           ;READ DATA FROM DIR1 REGISTER
6442 052646  105037  002502                    CLRB     BAD                 ;CLEAR LOW BYTE OF BAD CONTENTS
6443 052652  000337  002502                    SWAB     BAD                 ;SWAB BAD
6444 052656  023737  002402  002502            CMP      RSAVE,BAD           ;COMPARE TRANSMITTED WITH RECEIVED DATA
6445 052664  001410                            BEQ      43$                 ;BRANCH IF EQUAL
6446 052666  013737  002402  002500            MOV      RSAVE,GOOD          ;SET UP DATA FOR ERROR MESSAGE
6447 052674                                    ERRSOFT  1907,E802,ERR501    ;ERROR HANDLER
                                        .MCALL  M$ERRINS
     052674                             M$ERRINS        1907,E802,ERR501,C$ERSOFT
                                        .MCALL  M$GNINS,M$WORD,M$TSTLAB
     052674                             M$SVC   C$ERSOFT
                                        .MCALL  M$GNINS,M$TSTLAB
     052674                             M$TSTLAB
                                        .MCALL  M$TLABEL,M$INCR
                                        .IIF LT T$TSTMAC, .MEXIT
                                        .RADIX  10
                                        M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                        .RADIX  8
                                        M$INCR  T$TSTSEQ
     052674                             M$GNINS <TRAP   C$ERSOFT>
                                        .IF LT SVCINS
                                        TRAP    C$ERSOFT
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                TRAP    C$ERSOFT
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
     052674  104457                                                                                TRAP    C$ERSOFT
                                                      .NLIST
                                        .ENDC
             000012                     .RADIX  10
                                        .IF NB  1907
             003563                     T$ERRNUM=1907
                                        .IFF
                                        .ERROR  ;MISSING ERROR-NR
                                        .ENDC
     052676                             M$WORD  \T$ERRNUM
                                        .MCALL  M$GNINS
                                        .IRP    N,<1907>
                                        M$GNINS <.WORD  N>
                                        .ENDM
     052676                             M$GNINS <.WORD  190 >
                                        .IF LT SVCINS
                                        .WORD   1907
                                        .MEXIT
                                        .ENDC
```

```
                                .IF EQ SVCINS
                                .LIST
                                        .WORD   1907
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
052676  003563                                                          .WORD   1907
                                                .NLIST
                                .ENDC
        000010                  .RADIX  8
                                .IF NB E802
052700                          M$WORD  E802
                                .MCALL  M$GNINS
                                .IRP    N,<E802>
                                M$GNINS <.WORD  N>
                                .ENDM
052700                          M$GNINS <.WORD  E802>
                                .IF LT SVCINS
                                .WORD   E802
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        .WORD   E802
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
052700  005556                                                          .WORD   E802
                                                .NLIST
                                .ENDC
                                .IFF
                                M$WORD  0
                                .ENDC
                                .IF NB ERR501
052702                          M$WORD  ERR501
                                .MCALL  M$GNINS
                                .IRP    N,<ERR501>
                                M$GNINS <.WORD  N>
                                .ENDM
052702                          M$GNINS <.WORD  ERR501>
                                .IF LT SVCINS
                                .WORD   ERR501
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        .WORD   ERR501
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
052702  003672                                                          .WORD   ERR501
```

```
                                                        .NLIST
                                        .ENDC
                                        .IFF
                                        M$WORD  0
                                        .ENDC
  6448 052704                                   CKLOOP                          ;BRANCH BACK TO BGNSEG IF ERRLOOP IS SET
                                        .MCALL  M$SVC
       052704                           M$SVC   C$CLP1
                                        .MCALL  M$GNINS,M$TSTLAB
       052704                           M$TSTLAB
                                        .MCALL  M$TLABEL,M$INCR
                                        .IIF LT T$TSTMAC, .MEXIT
                                        .RADIX  10
                                        M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                        .RADIX  8
                                        M$INCR  T$TSTSEQ
       052704                           M$GNINS <TRAP   C$CLP1>
                                        .IF LT SVCINS
                                        TRAP    C$CLP1
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                TRAP    C$CLP1
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
       052704  104406                                                                          TRAP    C$CLP1
                                                        .NLIST
                                        .ENDC
  6449 052706  017737  127336  002502   43$:    MOV     @IIRX,BAD               ;GET IIR1 CONTENTS
  6450 052714  022737  000020  002502           CMP     #20,BAD                 ;B0 BIT SHOULD BE SET
  6451 052722  001410                           BEQ     50$                     ;BRANCH IF YES
  6452 052724  012737  000020  002500           MOV     #20,GOOD                ;SET UP DATA FOR ERROR MESSAGE
  6453 052732                                   ERRSOFT 1908,E501,ERR501        ;ERROR HANDLER
                                        .MCALL  M$ERRINS
       052732                           M$ERRINS        1908,E501,ERR501,C$ERSOFT
                                        .MCALL  M$GNINS,M$WORD,M$TSTLAB
       052732                           M$SVC   C$ERSOFT
                                        .MCALL  M$GNINS,M$TSTLAB
       052732                           M$TSTLAB
                                        .MCALL  M$TLABEL,M$INCR
                                        .IIF LT T$TSTMAC, .MEXIT
                                        .RADIX  10
                                        M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                        .RADIX  8
                                        M$INCR  T$TSTSEQ
       052732                           M$GNINS <TRAP   C$ERSOFT>
                                        .IF LT SVCINS
                                        TRAP    C$ERSOFT
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                TRAP    C$ERSOFT
```

```
                                        .NLIST
                          .MEXIT
                          .ENDC
                          .IF GT SVCINS
                          .LIST
052732  104457                                                          TRAP    C$ERSOFT
                                        .NLIST
                          .ENDC
        000012            .RADIX  10
                          .IF NB  1908
        003564            T$ERRNUM=1908
                          .IFF
                          .ERROR  ;MISSING ERROR-NR
                          .ENDC
052734                    M$WORD  \T$ERRNUM
                          .MCALL  M$GNINS
                          .IRP    N,<1908>
                          M$GNINS <.WORD  N>
                          .ENDM
052734                    M$GNINS <.WORD  1908>
                          .IF LT SVCINS
                          .WORD   1908
                          .MEXIT
                          .ENDC
                          .IF EQ SVCINS
                          .LIST
                                  .WORD   1908
                                        .NLIST
                          .MEXIT
                          .ENDC
                          .IF GT SVCINS
                          .LIST
052734  003564                                                          .WORD   1908
                                        .NLIST
                          .ENDC
        000010            .RADIX  8
                          .IF NB E501
052736                    M$WORD  E501
                          .MCALL  M$GNINS
                          .IRP    N,<E501>
                          M$GNINS <.WORD  N>
                          .ENDM
052736                    M$GNINS <.WORD  E501>
                          .IF LT SVCINS
                          .WORD   E501
                          .MEXIT
                          .ENDC
                          .IF EQ SVCINS
                          .LIST
                                  .WORD   E501
                                        .NLIST
                          .MEXIT
                          .ENDC
                          .IF GT SVCINS
                          .LIST
052736  005376                                                          .WORD   E501
                                        .NLIST
```

C12

```
                                        .ENDC
                                        .IFF
                                        M$WORD  0
                                        .ENDC
                                        .IF NB ERR501
      052740                            M$WORD  ERR501
                                        .MCALL  M$GNINS
                                        .IRP    N,<ERR501>
                                        M$GNINS <.WORD  N>
                                        .ENDM
      052740                            M$GNINS <.WORD  ERR501>
                                        .IF LT SVCINS
                                        .WORD   ERR501
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                .WORD   ERR501
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
      052740  003672                                                                    .WORD   ERR501
                                                        .NLIST
                                        .ENDC
                                        .IFF
                                        M$WORD  0
                                        .ENDC
 6454 052742                                    CKLOOP                  ;BRANCH BACK TO BGNSEG IF ERRLOOP IS SET
                                        .MCALL  M$SVC
      052742                            M$SVC   C$CLP1
                                        .MCALL  M$GNINS,M$TSTLAB
      052742                            M$TSTLAB
                                        .MCALL  M$TLABEL,M$INCR
                                        .IIF LT T$TSTMAC, .MEXIT
                                        .RADIX  10
                                        M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                        .RADIX  8
                                        M$INCR  T$TSTSEQ
      052742                            M$GNINS <TRAP   C$CLP1>
                                        .IF LT SVCINS
                                        TRAP    C$CLP1
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                TRAP    C$CLP1
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
      052742  104406                                                                    TRAP    C$CLP1
                                                        .NLIST
                                        .ENDC
 6455 052744  112777  000011  127316    50$:    MOVB    #11,@ICRHX      ;-- -LOAD NOT LON INTO ACR 1-- - --- -
```

```
   6456 052752  112777  000031  127316          MOVB    #31,@IDRHX              ;----LOAD SPD INTO DOR 1-------------
   6457 052760  004737  011050                  JSR     PC,LOOP                 ;WAIT A LITTLE
   6458 052764  112777  000137  127304          MOVB    #137,@IDRHX             ;----LOAD UNT INTO DOR 1-------------
   6459 052772  004737  011050                  JSR     PC,LOOP                 ;WAIT A LITTLE
   6460 052776  052777  000010  127274          BIS     #10,@CSRX               ;SELECT CHANNEL 2
   6461 053004  112777  000000  127254          MOVB    #0,@ICRLX               ;----CLEAR SPR 2 REGISTER------------
   6462 053012                                  ENDSEG
                                        .MCALL  M$POP,M$GNLS,M$SVC,M$ENDERR
        053012                          M$POP   T$NS,T$NESTLEV,T$TEMP
                                        .MCALL  M$GETS,M$DECR
                                        .IF LT  T$NESTLEV
                                        .ERROR  T$NESTLEV       ; MACRO T$NS UNDERFLOW
                                        .MEXIT
                                        .ENDC
        053012                          M$GETS  T$NS,\T$NESTLEV,T$TEMP
                000003                  T$TEMP=T$NS2
        053012                          M$DECR  T$NESTLEV
                000001                  T$NESTLEV=T$NESTLEV-1
                                        .IF EQ F$SEG-T$TEMP
        053012                          M$POP   T$SEK,T$SEGLEV,T$$SEG
                                        .MCALL  M$GETS,M$DECR
                                        .IF LT  T$SEGLEV
                                        .ERROR  T$SEGLEV        ; MACRO T$SEK UNDERFLOW
                                        .MEXIT
                                        .ENDC
        053012                          M$GETS  T$SEK,\T$SEGLEV,T$$SEG
                010001                  T$$SEG=T$SEK0
        053012                          M$DECR  T$SEGLEV
                177777                  T$SEGLEV=T$SEGLEV-1
        053012                          M$GNLS  T$$SEG
                                        .MCALL  M$GEN
                                        .IF NB T$$SEG
        053012                          M$GEN   \T$$SEG,$,SVCTAG
                                        .IF LE  SVCTAG
                                        .IIF EQ SVCTAG,.LIST
                                        10001$:
                                        .IIF EQ SVCTAG,.NLIST
                                        .MEXIT
                                        .ENDC
                                        .LIST
        053012                                                                        10001$:
                                                .NLIST
                                        .IFF
                                        M$GEN   \S$LSYM,$,SVCTAG
                                        .ENDC
        053012                          M$SVC   C$ESEG
                                        .MCALL  M$GNINS,M$TSTLAB
        053012                          M$TSTLAB
                                        .MCALL  M$TLABEL,M$INCR
                                        .IIF LT T$TSTMAC, .MEXIT
                                        .RADIX  10
                                        M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                        .RADIX  8
                                        M$INCR  T$TSTSEQ
        053012                          M$GNINS <TRAP   C$ESEG>
                                        .IF LT SVCINS
                                        TRAP    C$ESEG
```

```
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                               TRAP     C$ESEG
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
     053012  104405                                                                  TRAP     C$ESEG
                                                        .NLIST
                                        .ENDC
                                        .IF EQ T$SEGLEV+1
             000041                     I$SEG=F$END
                                        .ENDC
                                        .IFF
                                        M$ENDERR        ENDSEG,T$TEMP
                                        .ENDC
6463 053014  005737  002234                    TST      QVP                   ;IS QUICK VERIFY PASS SELECTED
6464 053020  001010                            BNE      EXQV19                ;IF YES EXIT TEST
6465 053022  005237  002402                    INC      RSAVE                 ;CREATE NEW DATA PATTERN
6466 053026  022737  000176  002402            CMP      #176,RSAVE            ;ALL DATA PATTERN DONE
6467 053034  001402                            BEQ      EXQV19                ;IF YES EXIT TEST
6468 053036  000137  052070                    JMP      ITAC19                ;IF NO TEST ITERATION
6469 053042                             EXQV19: EXIT    TST                   ;EXIT TEST
                                        .MCALL  M$SVC,M$EXIT,M$EXSEG,M$EXTJ,M$GETTOP,M$CHECK,M$WORD,XFER
             000041                     T$FLAG=F$END
     053042                             M$CHECK TST,T$TEMP,T$FLAG
                                        .IF IDN <TST>,<TST>
             010050                     T$TEMP=T$$TEST
             000040                     T$FLAG=I$TST
                                        .MEXIT
                                        .ENDC
                                        .IF IDN <SUB>,<TST>
                                        T$TEMP=T$$SUB
                                        T$FLAG=I$SUB
                                        .MEXIT
                                        .ENDC
                                        .IF IDN <SEG>,<TST>
                                        T$TEMP=T$$SEG
                                        T$FLAG=I$SEG
                                        .MEXIT
                                        .ENDC
                                        .IF IDN <INIT>,<TST>
                                        T$TEMP=T$$INIT
                                        T$FLAG=I$INIT
                                        .MEXIT
                                        .ENDC
                                        .IF IDN <CLN>,<TST>
                                        T$TEMP=T$$CLEAN
                                        T$FLAG=I$CLN
                                        .MEXIT
                                        .ENDC
                                        .IF IDN <SRV>,<TST>
                                        T$TEMP=T$$SRV
                                        T$FLAG=I$SRV
```

```
                                .MEXIT
                                .ENDC
                                .IF IDN <MSG>,<TST>
                                T$TEMP=T$$MSG
                                T$FLAG=F$JMP
                                .MEXIT
                                .ENDC
                                .IF IDN <RPT>,<TST>
                                T$TEMP=T$$RPT
                                T$FLAG=F$JMP
                                .MEXIT
                                .ENDC
                                .IF IDN <DU>,<TST>
                                T$TEMP=T$$DU
                                T$FLAG=F$JMP
                                .MEXIT
                                .ENDC
                                .IF IDN <AU>,<TST>
                                T$TEMP=T$$AU
                                T$FLAG=F$JMP
                                .MEXIT
                                .ENDC
                                .IF EQ T$FLAG-F$JMP
                                M$WORD  J$JMP
                                M$EXTJ  \T$TEMP
                                .MEXIT
                                .ENDC
                                .IF EQ  T$FLAG-F$BGN
     053042                     M$SVC   C$EXIT
                                .MCALL  M$GNINS,M$TSTLAB
     053042                     M$TSTLAB
                                .MCALL  M$TLABEL,M$INCR
                                .IIF LT T$TSTMAC, .MEXIT
                                .RADIX  10
                                M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                .RADIX  8
                                M$INCR  T$TSTSEQ
     053042                     M$GNINS <TRAP   C$EXIT>
                                .IF LT SVCINS
                                TRAP    C$EXIT
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        TRAP    C$EXIT
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
     053042  104432                                                     TRAP    C$EXIT
                                                .NLIST
                                .ENDC
                                .IF IDN <SEG>,<TST>
                                M$GETTOP T$SEK,T$SEGLEV,T$TEMP
                                M$EXSEG \T$TEMP
                                .IFF
```

```
        053044                          M$EXIT  \T$TEMP
                                        .MCALL  M$GNINS
        053044                          M$GNINS <.WORD  L10050-.>
                                        .IF LT SVCINS
                                        .WORD   L10050-.
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                .WORD   L10050-.
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
        053044  000076                                                                          .WORD   L10050-.
                                                        .NLIST
                                        .ENDC
                                        .ENDC
                                        .MEXIT
                                        .ENDC
                                        .IF IDN <HRD>,<TST>
                                        M$GETTOP        T$NS,T$NESTLEV,T$TEMP
                                        .IF EQ  F$HARD-T$TEMP
                                        .IRP    N,<\T$$HARD>
                                        XFER    L'N
                                        .ENDM
                                        .MEXIT
                                        .ENDC
                                        .ENDC
                                        .IF IDN <SFT>,<TST>
                                        M$GETTOP        T$NS,T$NESTLEV,T$TEMP
                                        .IF EQ  F$SOFT-T$TEMP
                                        .IRP    N,<\T$$SOFT>
                                        XFER    L'N
                                        .ENDM
                                        .MEXIT
                                        .ENDC
                                        .ENDC
                                        .ERROR  ;ILL. "EXIT TST" STMT.
   6470
   6471                                         .NLIST  BEX
   6472 053046     045     123     062  TSHD19: .ASCIZ  /%S2%ASERVICE REQUEST INTERFACE FUNCTION TEST OF CHANNEL 2%N/
   6473                                         .LIST   BEX
   6474                                         .EVEN
   6475 053142                                  ENDTST
                                        .MCALL  M$POP,M$GNTAG,M$SVC,M$ENDERR
                                        .IF EQ  F$BGN-I$TST
                000041                  I$TST=F$END
                                        .IFF
                                        .ERROR  ;MISSING "BGNTST"
                                        .MEXIT
                                        .ENDC
        053142                          M$POP   T$NS,T$NESTLEV,T$TEMP
                                        .MCALL  M$GETS,M$DECR
                                        .IF LT  T$NESTLEV
                                        .ERROR  T$NESTLEV       ; MACRO T$NS UNDERFLOW
```

```
                                        .MEXIT
                                        .ENDC
      053142                            M$GETS  T$NS,\T$NESTLEV,T$TEMP
             000001                     T$TEMP=T$NS1
      053142                            M$DECR  T$NESTLEV
             000000                     T$NESTLEV=T$NESTLEV-1
                                        .IF EQ F$TEST-T$TEMP
      0531 ?                            M$GNTAG L,T$$TEST
                                        .MCALL  M$GEN
      053142                            M$GEN   L,\T$$TEST,SVCTAG
                                        .IF LE  SVCTAG
                                        .IIF EQ SVCTAG,.LIST
                                        L10050:
                                        .IIF EQ SVCTAG,.NLIST
                                        .MEXIT
                                        .ENDC
                                        .LIST
      053142                                                                L10050:
                                                .NLIST
             010000                     S$LSYM=T$LSYM
      053142                            M$SVC   C$ETST
                                        .MCALL  M$GNINS,M$TSTLAB
      053142                            M$TSTLAB
                                        .MCALL  M$TLABEL,M$INCR
                                        .IIF LT T$TSTMAC, .MEXIT
                                        .RADIX  10
                                        M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                        .RADIX  8
                                        M$INCR  T$TSTSEQ
      053142                            M$GNINS <TRAP   C$ETST>
                                        .IF LT SVCINS
                                        TRAP    C$ETST
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                TRAP    C$ETST
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
      053142 104401                                                             TRAP    C$ETST
                                                        .NLIST
                                        .ENDC
             000041                     I$TST=F$END
                                        .IFF
                                        M$ENDERR        ENDTST,T$TEMP
                                        .ENDC
```

```
                                    .SBTTL  TEST 20: PARALLEL POLL INTERFACE FUNCTION TEST OF CHANNEL 1
                                    ;***********************************************************************
                                    ;               IEX - TEST 20
                                    ;PART 1 CHECKS PARALLEL POLL SEQUENCE (LOCAL CONFIGURED).
                                    ;
                                    ;PART 2 CHECKS PARALLEL POLL SEQUENCE (REMOTE CONFIGURED).
                                    ;***********************************************************************
053144                                      BGNTST
                                    .MCALL  M$INCR,M$GNTEST,M$PUSH,M$INCR
                                    .IF NE  F$END-I$SUB
                                    .ERROR  ;"BGNTST" IN SUB
                                    .MEXIT
                                    .ENDC
                                    .IF NE  F$END-I$SEG
                                    .ERROR  ;"BGNTST" IN SEG
                                    .MEXIT
                                    .ENDC
                                    .IF NE  F$END-I$TST
                                    .ERROR  ;"BGNTST" IN TST
                                    .MEXIT
                                    .IFF
        000040                      I$TST=F$BGN
                                    .ENDC
                                    .IF B
053144                              M$INCR  T$TESTNUM
        000024                      T$TESTNUM=T$TESTNUM+1
                                    .IFF
                                    T$TESTNUM=
                                    .ENDC
        000000                      T$SUBNUM=0
        000012                      .RADIX  10
053144                              M$GNTEST        \T$TESTNUM
                                    .MCALL  M$GEN
053144                              M$GEN   T,20:,SVCTST
                                    .IF LE  SVCTST
                                    .IIF EQ SVCTST,.LIST
                                    T20::
                                    .IIF EQ SVCTST,.NLIST
                                    .MEXIT
                                    .ENDC
                                    .LIST
053144                                                                        T20::
                                            .NLIST
        000010                      .RADIX  8
053144                              M$PUSH  T$NS,T$NESTLEV,F$TEST
                                    .MCALL  M$INCR,M$SETS
053144                              M$INCR  T$NESTLEV
        000001                      T$NESTLEV=T$NESTLEV+1
053144                              M$SETS  T$NS,\T$NESTLEV,F$TEST
        000001                      T$NS1=F$TEST
        010051                      T$$TEST=T$TAGNUM
053144                              M$INCR T$TAGNUM
        010052                      T$TAGNUM=T$TAGNUM+1
        000001                      T$TSTSEQ=1
053144  005737  002324                      TST     PNTF                    ;IS THE PNT FLAG SET
053150  001410                              BEQ     7$                      ;IF YES, PRINT THE TEST HEADER
053152                                      PRINTF  #TSHD20                 ;...
```

J12


```
                                        .MCALL  M$PRINT
                                        .IF B   #TSHD20
                                        .ERROR  ;MISSING FORMAT
                                        .MEXIT
                                        .ENDC
                                        .IF B   <>
      053152                            M$PRINT C$PNTF,#TSHD20
                                        .MCALL  M$COUNT,M$PUT,M$GNINS,M$SVC
             000001                     T$ARGCNT=1
      053152                            M$COUNT T$ARGCNT,<>,<>,<>,<>,<>,<>,<>,<>
                                        .IF NB <>
                                        M$COUNT T$ARGCNT,<>,<>,<>,<>,<>,<>,<>,<>
                                        .ENDC
                                        .IF NB <>
                                        T$ARGCNT=T$ARGCNT+1
                                        .ENDC
                                        .IRP    N,<\T$ARGCNT>
                                        M$PUT   #N,#TSHD20,<>,<>,<>,<>,<>,<>,<>,<>
                                        .ENDM
      053152                            M$PUT   #1,#TSHD20,<>,<>,<>,<>,<>,<>,<>,<>
                                        .MCALL  M$PUT1
                                        .IF NB  <#TSHD20>
      053152                            M$PUT   <#TSHD20>,<>,<>,<>,<>,<>,<>,<>,<>
                                        .MCALL  M$PUT1
                                        .IF NB  <>
                                        M$PUT   <>,<>,<>,<>,<>,<>,<>,<>,<>
                                        .ENDC
                                        .IF NB  <#TSHD20>
      053152                            M$PUT1  #TSHD20
                                        .MCALL  M$GNINS
                                        .IF B
      053152                            M$GNINS <MOV    #TSHD20,-(SP)>
                                        .IF LT SVCINS
                                        MOV     #TSHD20,-(SP)
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                MOV     #TSHD20,-(SP)
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
      053152  012746  054120                                                    MOV     #TSHD20,-(SP)
                                                        .NLIST
                                        .ENDC
                                        .IFF
                                        .IF DIF B,<#TSHD20>
                                        .ERROR  ;ILL. ARG. "#TSHD20" ONLY "B" IS ALLOWED.
                                        .MEXIT
                                        .ENDC
                                        M$GNINS <CLR    -(SP)>
                                        M$GNINS <BISB   ,(SP)>
                                        .ENDC
                                        .ENDC
                                        .ENDC
```

```
                                        .IF NB  <#1>
        053156                          M$PUT1  #1
                                        .MCALL  M$GNINS
                                        .IF B
        053156                          M$GNINS <MOV    #1,-(SP)>
                                        .IF LT SVCINS
                                        MOV     #1,-(SP)
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                MOV     #1,-(SP)
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
        053156  012746  000001                                                          MOV     #1,-(SP)
                                                        .NLIST
                                        .ENDC
                                        .IFF
                                        .IF DIF B,<#1>
                                        .ERROR  ;ILL. ARG. "#1" ONLY "B" IS ALLOWED.
                                        .MEXIT
                                        .ENDC
                                        M$GNINS <CLR    -(SP)>
                                        M$GNINS <BISB   ,(SP)>
                                        .ENDC
                                        .ENDC
        053162                          M$GNINS <MOV    SP,R0>
                                        .IF LT SVCINS
                                        MOV     SP,R0
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                MOV     SP,R0
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
        053162  010600                                                                  MOV     SP,R0
                                                        .NLIST
                                        .ENDC
        053164                          M$SVC   C$PNTF
                                        .MCALL  M$GNINS,M$TSTLAB
        053164                          M$TSTLAB
                                        .MCALL  M$TLABEL,M$INCR
                                        .IIF LT T$TSTMAC, .MEXIT
                                        .RADIX  10
                                        M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                        .RADIX  8
                                        M$INCR  T$TSTSEQ
        053164                          M$GNINS <TRAP   C$PNTF>
                                        .IF LT SVCINS
                                        TRAP    C$PNTF
```

```
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                TRAP    C$PNTF
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
        053164  104417                                                                  TRAP    C$PNTF
                                                        .NLIST
                                        .ENDC
                                        .IRP    N,<\T$ARGCNT*2+2>
                                        M$GNINS <ADD    #N,SP>
                                        .ENDM
        053166                          M$GNINS <ADD    #4,SP>
                                        .IF LT SVCINS
                                        ADD     #4,SP
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                ADD     #4,SP
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
        053166  062706  000004                                                          ADD     #4,SP
                                                        .NLIST
                                        .ENDC
                                        .MEXIT
                                        .ENDC
                                        .IF B   <>
                                        M$PRINT C$PNTF,#TSHD20,<>
                                        .MEXIT
                                        .ENDC
                                        .IF B   <>
                                        M$PRINT C$PNTF,#TSHD20,<>,<>
                                        .MEXIT
                                        .ENDC
                                        .IF B   <>
                                        M$PRINT C$PNTF,#TSHD20,<>,<>,<>
                                        .MEXIT
                                        .ENDC
                                        .IF B   <>
                                        M$PRINT C$PNTF,#TSHD20,<>,<>,<>,<>
                                        .MEXIT
                                        .ENDC
                                        .IF B   <>
                                        M$PRINT C$PNTF,#TSHD20,<>,<>,<>,<>,<>
                                        .MEXIT
                                        .ENDC
                                        .IF B   <>
                                        M$PRINT C$PNTF,#TSHD20,<>,<>,<>,<>,<>,<>
                                        .MEXIT
```

```
                                                .ENDC
                                                .IF B    <>
                                                M$PRINT C$PNTF,#TSHD20,<>,<>,<>,<>,<>,<>,<>
                                                .MEXIT
                                                .ENDC
                                                M$PRINT C$PNTF,#TSHD20,<>,<>,<>,<>,<>,<>,<>,<>
 6488 053172  012737  000001  002420   7$:      MOV     #1,MSA1                 ;LOAD DATA FOR PPR
 6489 053200  012737  000140  002402            MOV     #140,RSAVE              ;LOAD FIRST PPE
 6490 053206  004737  010210           ITAC20:  JSR     PC,CULPA                ;CLEAR ULPA BIT IN ISR 1 AND 2
 6491 053212  004737  010700                    JSR     PC,BGIN2                ;SET UP PARAMETER
 6492 053216  042777  000010  127054            BIC     #10,@CSRX               ;SELECT CHANNEL 1
 6493 053224  112777  000223  127036            MOVB    #223,@ICRHX             ;----LOAD DAI INTO ACR 1--------------
 6494 053232  112777  000040  127022            MOVB    #40,@ISRHX              ;----SET UCG BIT IN ISR 1-------------
 6495 053240                                    BGNSEG
                                       .MCALL   M$PUSH,M$INCR,M$SVC
              000040                   I$SEG=F$BGN
      053240                           M$PUSH   T$NS,T$NESTLEV,F$SEG
                                       .MCALL   M$INCR,M$SETS
      053240                           M$INCR   T$NESTLEV
              000002                   T$NESTLEV=T$NESTLEV+1
      053240                           M$SETS   T$NS,\T$NESTLEV,F$SEG
              000003                   T$NS2=F$SEG
              010000                   T$$SEG=S$LSYM
      053240                           M$PUSH   T$SEK,T$SEGLEV,T$$SEG
                                       .MCALL   M$INCR,M$SETS
      053240                           M$INCR   T$SEGLEV
              000000                   T$SEGLEV=T$SEGLEV+1
      053240                           M$SETS   T$SEK,\T$SEGLEV,T$$SEG
              010000                   T$SEKO=T$$SEG
      053240                           M$INCR   S$LSYM
              010001                   S$LSYM=S$LSYM+1
      053240                           M$SVC    C$BSEG
                                       .MCALL   M$GNINS,M$TSTLAB
      053240                           M$TSTLAB
                                       .MCALL   M$TLABEL,M$INCR
                                       .IIF LT T$TSTMAC, .MEXIT
                                       .RADIX   10
                                       M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                       .RADIX   8
                                       M$INCR   T$TSTSEQ
      053240                           M$GNINS <TRAP    C$BSEG>
                                       .IF LT SVCINS
                                       TRAP     C$BSEG
                                       .MEXIT
                                       .ENDC
                                       .IF EQ SVCINS
                                       .LIST
                                                TRAP    C$BSEG
                                                        .NLIST
                                       .MEXIT
                                       .ENDC
                                       .IF GT SVCINS
                                       .LIST
      053240  104404                                                                        TRAP    C$BSEG
                                                        .NLIST
                                       .ENDC
 6496 053242  042777  000010  127030            BIC     #10,@CSRX               ;SELECT CHANNEL 1
```

```
   6497 053250  112777  000020  127016          MOVB    #20,@IDRLX              ;----LOAD PP5 INTO PPR 1-------------
   6498 053256  052777  000010  127014          BIS     #10,@CSRX               ;SELECT CHANNEL 2
   6499 053264  012737  000002  002374          MOV     #2,CHAN                 ;LOAD CHANNEL NUMBER
   6500 053272  112777  000216  126770          MOVB    #216,@ICRHX             ;----LOAD RPP INTO ACR 2-------------
   6501 053300  017737  126760  002502          MOV     @ICRX,BAD               ;GET ICR2 CONTENTS
   6502 053306  122737  000020  002502          CMPB    #20,BAD                 ;ICR CONTENTS SHOULD BE 20
   6503 053314  001410                          BEQ     10$                     ;BRANCH IF YES
   6504 053316  012737  000020  002500          MOV     #20,GOOD                ;SET UP DATA FOR ERROR MESSAGE
   6505 053324                                  ERRSOFT 2001,E901,ERR501        ;ERROR HANDLER
                                        .MCALL  M$ERRINS
        053324                          M$ERRINS        2001,E901,ERR501,C$ERSOFT
                                        .MCALL  M$GNINS,M$WORD,M$TSTLAB
        053324                          M$SVC   C$ERSOFT
                                        .MCALL  M$GNINS,M$TSTLAB
        053324                          M$TSTLAB
                                        .MCALL  M$TLABEL,M$INCR
                                        .IIF LT T$TSTMAC, .MEXIT
                                        .RADIX  10
                                        M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                        .RADIX  8
                                        M$INCR  T$TSTSEQ
        053324                          M$GNINS <TRAP   C$ERSOFT>
                                        .IF LT SVCINS
                                        TRAP    C$ERSOFT
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                TRAP    C$ERSOFT
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
                                                                                                TRAP    C$ERSOFT
        053324  104457
                                                        .NLIST
                                        .ENDC
                000012                  .RADIX  10
                                        .IF NB  2001
                003721                  T$ERRNUM=2001
                                        .IFF
                                        .ERROR  ;MISSING ERROR NR
                                        .ENDC
        053326                          M$WORD  \T$ERRNUM
                                        .MCALL  M$GNINS
                                        .IRP    N,<2001>
                                        M$GNINS <.WORD  N>
                                        .ENDM
        053326                          M$GNINS <.WORD  2001>
                                        .IF LT SVCINS
                                        .WORD   2001
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                .WORD   2001
                                                        .NLIST
```

```
                        .MEXIT
                        .ENDC
                        .IF GT SVCINS
                        .LIST
053326  003721                                                  .WORD   2001
                                .NLIST
                        .ENDC
        000010          .RADIX  8
                        .IF NB E901
053330                  M$WORD  E901
                        .MCALL  M$GNINS
                        .IRP    N,<E901>
                        M$GNINS <.WORD  N>
                        .ENDM
053330                  M$GNINS <.WORD  E901>
                        .IF LT SVCINS
                        .WORD   E901
                        .MEXIT
                        .ENDC
                        .IF EQ SVCINS
                        .LIST
                            .WORD   E901
                                .NLIST
                        .MEXIT
                        .ENDC
                        .IF GT SVCINS
                        .LIST
053330  005634                                                  .WORD   E901
                                .NLIST
                        .ENDC
                        .IFF
                        M$WORD  0
                        .ENDC
                        .IF NB ERR501
053332                  M$WORD  ERR501
                        .MCALL  M$GNINS
                        .IRP    N,<ERR501>
                        M$GNINS <.WORD  N>
                        .ENDM
053332                  M$GNINS <.WORD  ERR501>
                        .IF LT SVCINS
                        .WORD   ERR501
                        .MEXIT
                        .ENDC
                        .IF EQ SVCINS
                        .LIST
                            .WORD   ERR501
                                .NLIST
                        .MEXIT
                        .ENDC
                        .IF GT SVCINS
                        .LIST
053332  003672                                                  .WORD   ERR501
                                .NLIST
                        .ENDC
                        .IFF
                        M$WORD  0
```

```
                                        .ENDC
 6506 053334                                    CKLOOP                          ;BRANCH TO BGNSEG IF ERRLOOP IS SET
                                        .MCALL  M$SVC
      053334                            M$SVC   C$CLP1
                                        .MCALL  M$GNINS,M$TSTLAB
      053334                            M$TSTLAB
                                        .MCALL  M$TLABEL,M$INCR
                                        .IIF LT T$TSTMAC, .MEXIT
                                        .RADIX  10
                                        M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                        .RADIX  8
                                        M$INCR  T$TSTSEQ
      053334                            M$GNINS <TRAP   C$CLP1>
                                        .IF LT SVCINS
                                        TRAP    C$CLP1
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                TRAP    C$CLP1
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
      053334  104406                                                                            TRAP    C$CLP1
                                                        .NLIST
                                        .ENDC
 6507 053336  017737  126714  002502    10$:    MOV     @ISRX,BAD               ;GET ISR2 CONTENTS
 6508 053344  022737  104040  002502            CMP     #104040,BAD             ;ATN,EOI,ATN SHOULD BE SET
 6509 053352  001410                            BEQ     20$                     ;BRANCH IF YES
 6510 053354  012737  104040  002500            MOV     #104040,GOOD            ;SET UP DATA FOR ERROR MESSAGE
 6511 053362                                    ERRSOFT 2002,E502,ERR501        ;ERROR HANDLER
                                        .MCALL  M$ERRINS
      053362                            M$ERRINS        2002,E502,ERR501,C$ERSOFT
                                        .MCALL  M$GNINS,M$WORD,M$TSTLAB
      053362                            M$SVC   C$ERSOFT
                                        .MCALL  M$GNINS,M$TSTLAB
      053362                            M$TSTLAB
                                        .MCALL  M$TLABEL,M$INCR
                                        .IIF LT T$TSTMAC, .MEXIT
                                        .RADIX  10
                                        M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                        .RADIX  8
                                        M$INCR  T$TSTSEQ
      053362                            M$GNINS <TRAP   C$ERSOFT>
                                        .IF LT SVCINS
                                        TRAP    C$ERSOFT
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                TRAP    C$ERSOFT
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
```

```
                          .LIST
053362  104457                                                                    TRAP    C$ERSOFT
                                  .NLIST
                          .ENDC
        000012            .RADIX  10
                          .IF NB  2002
        003722            T$ERRNUM=2002
                          .IFF
                          .ERROR  ;MISSING ERROR-NR
                          .ENDC
053364                    M$WORD  \T$ERRNUM
                          .MCALL  M$GNINS
                          .IRP    N,<2002>
                          M$GNINS <.WORD  N>
                          .ENDM
053364                    M$GNINS <.WORD  2002>
                          .IF LT SVCINS
                          .WORD   2002
                          .MEXIT
                          .ENDC
                          .IF EQ SVCINS
                          .LIST
                              .WORD   2002
                                  .NLIST
                          .MEXIT
                          .ENDC
                          .IF GT SVCINS
                          .LIST
053364  003722                                                                    .WORD   2002
                                  .NLIST
                          .ENDC
        000010            .RADIX  8
                          .IF NB E502
053366                    M$WORD  E502
                          .MCALL  M$GNINS
                          .IRP    N,<E502>
                          M$GNINS <.WORD  N>
                          .ENDM
053366                    M$GNINS <.WORD  E502>
                          .IF LT SVCINS
                          .WORD   E502
                          .MEXIT
                          .ENDC
                          .IF EQ SVCINS
                          .LIST
                              .WORD   E502
                                  .NLIST
                          .MEXIT
                          .ENDC
                          .IF GT SVCINS
                          .LIST
053366  005437                                                                    .WORD   E502
                                  .NLIST
                          .ENDC
                          .IFF
                          M$WORD  0
                          .ENDC
```

```
                                            .IF NB ERR501
       053370                               M$WORD  ERR501
                                            .MCALL  M$GNINS
                                            .IRP    N,<ERR501>
                                            M$GNINS <.WORD  N>
                                            .ENDM
       053370                               M$GNINS <.WORD  ERR501>
                                            .IF LT SVCINS
                                            .WORD   ERR501
                                            .MEXIT
                                            .ENDC
                                            .IF EQ SVCINS
                                            .LIST
                                                    .WORD   ERR501
                                                            .NLIST
                                            .MEXIT
                                            .ENDC
                                            .IF GT SVCINS
                                            .LIST
       053370  003672                                                                                   .WORD   ERR501
                                                            .NLIST
                                            .ENDC
                                            .IFF
                                            M$WORD  0
                                            .ENDC
  6512 053372                                       CKLOOP                          ;BRANCH TO BGNSEG IF ERRLOOP IS SET
                                            .MCALL  M$SVC
       053372                               M$SVC   C$CLP1
                                            .MCALL  M$GNINS,M$TSTLAB
       053372                               M$TSTLAB
                                            .MCALL  M$TLABEL,M$INCR
                                            .IIF LT T$TSTMAC, .MEXIT
                                            .RADIX  10
                                            M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                            .RADIX  8
                                            M$INCR  T$TSTSEQ
       053372                               M$GNINS <TRAP   C$CLP1>
                                            .IF LT SVCINS
                                            TRAP    C$CLP1
                                            .MEXIT
                                            .ENDC
                                            .IF EQ SVCINS
                                            .LIST
                                                    TRAP    C$CLP1
                                                            .NLIST
                                            .MEXIT  .
                                            .ENDC
                                            .IF GT SVCINS
                                            .LIST
       053372  104406                                                                                   TRAP    C$CLP1
                                                            .NLIST
                                            .ENDC
  6513 053374  112777  000016  126666       20$:    MOVB    #16,@ICRHX              ;--  -LOAD NOT RPP INTO ACR 2---------
  6514 053402                                       ENDSEG
                                            .MCALL  M$POP,M$GNLS,M$SVC,M$ENDERR
       053402                               M$POP   T$NS,T$NESTLEV,T$TEMP
                                            .MCALL  M$GETS,M$DECR
```

F13


```
                            .IF LT   T$NESTLEV
                            .ERROR   T$NESTLEV        ; MACRO T$NS UNDERFLOW
                            .MEXIT
                            .ENDC
053402                      M$GETS   T$NS,\T$NESTLEV,T$TEMP
           000003           T$TEMP=T$NS2
053402                      M$DECR   T$NESTLEV
           000001           T$NESTLEV=T$NESTLEV-1
                            .IF EQ F$SEG-T$TEMP
053402                      M$POP    T$SEK,T$SEGLEV,T$$SEG
                            .MCALL   M$GETS,M$DECR
                            .IF LT   T$SEGLEV
                            .ERROR   T$SEGLEV         ; MACRO T$SEK UNDERFLOW
                            .MEXIT
                            .ENDC
053402                      M$GETS   T$SEK,\T$SEGLEV,T$$SEG
           010000           T$$SEG=T$SEK0
053402                      M$DECR   T$SEGLEV
           177777           T$SEGLEV=T$SEGLEV-1
053402                      M$GNLS   T$$SEG
                            .MCALL   M$GEN
                            .IF NB T$$SEG
053402                      M$GEN    \T$$SEG,$,SVCTAG
                            .IF LE   SVCTAG
                            .IIF EQ SVCTAG,.LIST
                            10000$:
                            .IIF EQ SVCTAG,.NLIST
                            .MEXIT
                            .ENDC
                            .LIST
053402                                                                       10000$:
                                     .NLIST
                            .IFF
                            M$GEN    \S$LSYM,$,SVCTAG
                            .ENDC
053402                      M$SVC    C$ESEG
                            .MCALL   M$GNINS,M$TSTLAB
053402                      M$TSTLAB
                            .MCALL   M$TLABEL,M$INCR
                            .IIF LT T$TSTMAC, .MEXIT
                            .RADIX   10
                            M$TLABEL         \T$TESTNUN,\T$TSTSEQ
                            .RADIX   8
                            M$INCR   T$TSTSEQ
053402                      M$GNINS <TRAP    C$ESEG>
                            .IF LT SVCINS
                            TRAP     C$ESEG
                            .MEXIT
                            .ENDC
                            .IF EQ SVCINS
                            .LIST
                                     TRAP     C$ESEG
                                              .NLIST
                            .MEXIT
                            .ENDC
                            .IF GT SVCINS
                            .LIST
```

G13

```
     053402 104405                                                                          TRAP    C$ESEG
                                                  .NLIST
                                    .ENDC
                                    .IF EQ T$SEGLEV+1
            000041                  I$SEG=F$END
                                    .ENDC
                                    .IFF
                                    M$ENDERR        ENDSEG,T$TEMP
                                    .ENDC
6515                                ;+++ -- ---------------------- --------------------- -  ----------------
6516                                ;PART 2 CHECKS THE PARALLEL POLL SEQUENCE (REMOTE CONFIGURED)
6517                                ;+++---------------- ----------- ---------------- --------------------------
6518 053404                                 BGNSEG
                                    .MCALL  M$PUSH,M$INCR,M$SVC
            000040                  I$SEG=F$BGN
     053404                         M$PUSH  T$NS,T$NESTLEV,F$SEG
                                    .MCALL  M$INCR,M$SETS
     053404                         M$INCR  T$NESTLEV
            000002                  T$NESTLEV=T$NESTLEV+1
     053404                         M$SETS  T$NS,\T$NESTLEV,F$SEG
            000003                  T$NS2=F$SEG
            010001                  T$$SEG=S$LSYM
     053404                         M$PUSH  T$SEK,T$SEGLEV,T$$SEG
                                    .MCALL  M$INCR,M$SETS
     053404                         M$INCR  T$SEGLEV
            000000                  T$SEGLEV=T$SEGLEV+1
     053404                         M$SETS  T$SEK,\T$SEGLEV,T$$SEG
            010001                  T$SEK0=T$$SEG
     053404                         M$INCR  S$LSYM
            010002                  S$LSYM=S$LSYM+1
     053404                         M$SVC   C$BSEG
                                    .MCALL  M$GNINS,M$TSTLAB
     053404                         M$TSTLAB
                                    .MCALL  M$TLABEL,M$INCR
                                    .IIF LT T$TSTMAC, .MEXIT
                                    .RADIX  10
                                    M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                    .RADIX  8
                                    M$INCR  T$TSTSEQ
     053404                         M$GNINS <TRAP   C$BSEG>
                                    .IF LT SVCINS
                                    TRAP    C$BSEG
                                    .MEXIT
                                    .ENDC
                                    .IF EQ SVCINS
                                    .LIST
                                            TRAP    C$BSEG
                                                    .NLIST
                                    .MEXIT
                                    .ENDC
                                    .IF GT SVCINS
                                    .LIST
     053404 104404                                                                          TRAP    C$BSEG
                                                    .NLIST
                                    .ENDC
6519 053406 052777 000010 126664            BIS     #10,@CSRX               ;SELECT CHANNEL 2
6520 053414 112777 000025 126654            MOVB    #25,@1DRHX              ;   -LOAD PPU INTO DOR 2-  - -  --
```

```
6521 053422 004737 011050                JSR     PC,LOOP              ;WAIT A LITTLE
6522 053426 042777 000010 126644         BIC     #10,@CSRX            ;SELECT CHANNEL 1
6523 053434 012737 000001 002374         MOV     #1,CHAN              ;LOAD CHANNEL NUMBER
6524 053442 017737 126616 002502         MOV     @ICRX,BAD            ;GET ICR1 CONTENTS
6525 053450 122737 000025 002502         CMPB    #25,BAD              ;ICR CONTENTS SHOULD BE 25
6526 053456 001410                       BEQ     23$                  ;BRANCH IF YES
6527 053460 012737 000025 002500         MOV     #25,GOOD             ;SET UP DATA FOR ERROR MESSAGE
6528 053466                              ERRSOFT 2003,E901,ERR501     ;ERROR HANDLER
                                 .MCALL  M$ERRINS
     053466                      M$ERRINS        2003,E901,ERR501,C$ERSOFT
                                 .MCALL  M$GNINS,M$WORD,M$TSTLAB
     053466                      M$SVC   C$ERSOFT
                                 .MCALL  M$GNINS,M$TSTLAB
     053466                      M$TSTLAB
                                 .MCALL  M$TLABEL,M$INCR
                                 .IIF LT T$TSTMAC, .MEXIT
                                 .RADIX  10
                                 M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                 .RADIX  8
                                 M$INCR  T$TSTSEQ
     053466                      M$GNINS <TRAP   C$ERSOFT>
                                 .IF LT SVCINS
                                 TRAP    C$ERSOFT
                                 .MEXIT
                                 .ENDC
                                 .IF EQ SVCINS
                                 .LIST
                                         TRAP    C$ERSOFT
                                                 .NLIST
                                 .MEXIT
                                 .ENDC
                                 .IF GT SVCINS
                                 .LIST
     053466 104457                                                        TRAP    C$ERSOFT
                                                 .NLIST
                                 .ENDC
            000012               .RADIX  10
                                 .IF NB  2003
            003723               T$ERRNUM=2003
                                 .IFF
                                 .ERROR  ;MISSING ERROR-NR
                                 .ENDC
     053470                      M$WORD  \T$ERRNUM
                                 .MCALL  M$GNINS
                                 .IRP    N,<2003>
                                 M$GNINS <.WORD  N>
                                 .ENDM
     053470                      M$GNINS <.WORD  2003>
                                 .IF LT SVCINS
                                 .WORD   2003
                                 .MEXIT
                                 .ENDC
                                 .IF EQ SVCINS
                                 .LIST
                                         .WORD   2003
                                                 .NLIST
                                 .MEXIT
```

```
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
      053470  003723                                                                    .WORD   2003
                                                     .NLIST
                                        .ENDC
              000010                    .RADIX  8
                                        .IF NB E901
      053472                            M$WORD  E901
                                        .MCALL  M$GNINS
                                        .IRP    N,<E901>
                                        M$GNINS <.WORD  N>
                                        .ENDM
      053472                            M$GNINS <.WORD  E901>
                                        .IF LT SVCINS
                                        .WORD   E901
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                              .WORD   E901
                                                     .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
      053472  005634                                                                    .WORD   E901
                                                     .NLIST
                                        .ENDC
                                        .IFF
                                        M$WORD  0
                                        .ENDC
                                        .IF NB ERR501
      053474                            M$WORD  ERR501
                                        .MCALL  M$GNINS
                                        .IRP    N,<ERR501>
                                        M$GNINS <.WORD  N>
                                        .ENDM
      053474                            M$GNINS <.WORD  ERR501>
                                        .IF LT SVCINS
                                        .WORD   ERR501
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                              .WORD   ERR501
                                                     .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
      053474  003672                                                                    .WORD   ERR501
                                                     .NLIST
                                        .ENDC
                                        .IFF
                                        M$WORD  0
                                        .ENDC
```

```
6529 053476                                  CKLOOP                               ;BRANCH TO BGNSEG IF ERRLOOP IS SET
                                      .MCALL M$SVC
     053476                           M$SVC   C$CLP1
                                      .MCALL  M$GNINS,M$TSTLAB
     053476                           M$TSTLAB
                                      .MCALL  M$TLABEL,M$INCR
                                      .IIF LT T$TSTMAC, .MEXIT
                                      .RADIX  10
                                      M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                      .RADIX  8
                                      M$INCR  T$TSTSEQ
     053476                           M$GNINS <TRAP   C$CLP1>
                                      .IF LT SVCINS
                                      TRAP    C$CLP1
                                      .MEXIT
                                      .ENDC
                                      .IF EQ SVCINS
                                      .LIST
                                              TRAP    C$CLP1
                                                      .NLIST
                                      .MEXIT
                                      .ENDC
                                      .IF GT SVCINS
                                      .LIST
                                                                                  TRAP    C$CLP1
     053476  104406
                                                      .NLIST
                                      .ENDC
6530 053500  112777  000000  126566  23$:   MOVB    #0,@IDRLX                     ;----CLEAR PPR REGISTER---------------
6531 053506  112777  000001  126554          MOVB    #1,@ICRHX                     ; ---LOAD NOT DACR INTO ACR 1   ------
6532 053514  013701  002312                  MOV     DPA1,R1                       ;CREATE MLA1
6533 053520  062701  000040                  ADD     #40,R1                        ;...
6534 053524  010137  002410                  MOV     R1,MLA1                       ;STORE MLA1
6535 053530  052777  000010  126542          BIS     #10,@CSRX                     ;SELECT CHANNEL 2
6536 053536  113777  002410  126532          MOVB    MLA1,@IDRHX                   ;- --LOAD MLA1 INTO DOR 2 ------ -----
6537 053544  004737  011050                  JSR     PC,LOOP                       ;WAIT A LITTLE
6538 053550                                  ENDSEG
                                      .MCALL  M$POP,M$GNLS,M$SVC,M$ENDERR
     053550                           M$POP   T$NS,T$NESTLEV,T$TEMP
                                      .MCALL  M$GETS,M$DECR
                                      .IF LT  T$NESTLEV
                                      .ERROR  T$NESTLEV        ; MACRO T$NS UNDERFLOW
                                      .MEXIT
                                      .ENDC
     053550                           M$GETS  T$NS,\T$NESTLEV,T$TEMP
             000003                   T$TEMP=T$NS2
     053550                           M$DECR  T$NESTLEV
             000001                   T$NESTLEV=T$NESTLEV-1
                                      .IF EQ F$SEG-T$TEMP
     053550                           M$POP   T$SEK,T$SEGLEV,T$$SEG
                                      .MCALL  M$GETS,M$DECR
                                      .IF LT  T$SEGLEV
                                      .ERROR  T$SEGLEV         ; MACRO T$SEK UNDERFLOW
                                      .MEXIT
                                      .ENDC
     053550                           M$GETS  T$SEK,\T$SEGLEV,T$$SEG
             010001                   T$$SEG=T$SE<0
     053550                           M$DECR  T$SEGLEV
```

```
             177777          T$SEGLEV=T$SEGLEV-1
       053550                M$GNLS  T$$SEG
                             .MCALL  M$GEN
                             .IF NB T$$SEG
       053550                M$GEN   \T$$SEG,$,SVCTAG
                             .IF LE  SVCTAG
                             .IIF EQ SVCTAG,.LIST
                             10001$:
                             .IIF EQ SVCTAG,.NLIST
                             .MEXIT
                             .ENDC
                             .LIST
       053550                                                          10001$:
                                     .NLIST
                             .IFF
                             M$GEN   \S$LSYM,$,SVCTAG
                             .ENDC
       053550                M$SVC   C$ESEG
                             .MCALL  M$GNINS,M$TSTLAB
       053550                M$TSTLAB
                             .MCALL  M$TLABEL,M$INCR
                             .IIF LT T$TSTMAC, .MEXIT
                             .RADIX  10
                             M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                             .RADIX  8
                             M$INCR  T$TSTSEQ
       053550                M$GNINS <TRAP   C$ESEG>
                             .IF LT SVCINS
                             TRAP    C$ESEG
                             .MEXIT
                             .ENDC
                             .IF EQ SVCINS
                             .LIST
                                     TRAP    C$ESEG
                                             .NLIST
                             .MEXIT
                             .ENDC
                             .IF GT SVCINS
                             .LIST
       053550 104405                                                      TRAP    C$ESEG
                                             .NLIST
                             .ENDC
                             .IF EQ T$SEGLEV+1
             000041          I$SEG=F$END
                             .ENDC
                             .IFF
                             M$ENDERR        ENDSEG,T$TEMP
                             .ENDC
  6539 053552                        BGNSEG
                             .MCALL  M$PUSH,M$INCR,M$SVC
             000040          I$SEG=F$BGN
       053552                M$PUSH  T$NS,T$NESTLEV,F$SEG
                             .MCALL  M$INCR,M$SETS
       053552                M$INCR  T$NESTLEV
             000002          T$NESTLEV=T$NESTLEV+1
       053552                M$SETS  T$NS,\T$NESTLEV,F$SEG
             000003          T$NS2=F$SEG
```

```
             010002                      T$$SEG=S$LSYM
      053552                             M$PUSH  T$SEK,T$SEGLEV,T$$SEG
                                         .MCALL  M$INCR,M$SETS
      053552                             M$INCR  T$SEGLEV
             000000                      T$SEGLEV=T$SEGLEV+1
      053552                             M$SETS  T$SEK,\T$SEGLEV,T$$SEG
             010002                      T$SEKO=T$$SEG
      053552                             M$INCR  S$LSYM
             010003                      S$LSYM=S$LSYM+1
      053552                             M$SVC   C$BSEG
                                         .MCALL  M$GNINS,M$TSTLAB
      053552                             M$TSTLAB
                                         .MCALL  M$TLABEL,M$INCR
                                         .IIF LT T$TSTMAC, .MEXIT
                                         .RADIX  10
                                         M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                         .RADIX  8
                                         M$INCR  T$TSTSEQ
      053552                             M$GNINS <TRAP   C$BSEG>
                                         .IF LT SVCINS
                                         TRAP    C$BSEG
                                         .MEXIT
                                         .ENDC
                                         .IF EQ SVCINS
                                         .LIST
                                                 TRAP    C$BSEG
                                                         .NLIST
                                         .MEXIT
                                         .ENDC
                                         .IF GT SVCINS
                                         .LIST
                                                                                             TRAP    C$BSEG
      053552 104404
                                                         .NLIST
                                         .ENDC
 6540 053554 052777 000010 126516                BIS     #10,@CSRX                 ;SELECT CHANNEL 2
 6541 053562 112777 000005 126506                MOVB    #5,@IDRHX                 ;----LOAD PPC INTO DOR 2-------------
 6542 053570 004737 011050                       JSR     PC,LOOP                   ;WAIT A LITTLE
 6543 053574 042777 000010 126476                BIC     #10,@CSRX                 ;SELECT CHANNEL 1
 6544 053602 017737 126456 002502                MOV     @ICRX,BAD                 ;GET ICR1 CONTENTS
 6545 053610 122737 000005 002502                CMPB    #5,BAD                    ;ICR CONTENTS SHOULD BE 5
 6546 053616 001410                              BEQ     30$                       ;BRANCH IF YES
 6547 053620 012737 000005 002500                MOV     #5,GOOD                   ;SET UP DATA FOR ERROR MESSAGE
 6548 053626                                     ERRSOFT 2004,E901,ERR501          ;ERROR HANDLER
                                         .MCALL  M$ERRINS
      053626                             M$ERRINS        2004,E901,ERR501,C$ERSOFT
                                         .MCALL  M$GNINS,M$WORD,M$TSTLAB
      053626                             M$SVC   C$ERSOFT
                                         .MCALL  M$GNINS,M$TSTLAB
      053626                             M$TSTLAB
                                         .MCALL  M$TLABEL,M$INCR
                                         .IIF LT T$TSTMAC, .MEXIT
                                         .RADIX  10
                                         M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                         .RADIX  8
                                         M$INCR  T$TSTSEQ
      053626                             M$GNINS <TRAP   C$ERSOFT>
                                         .IF LT SVCINS
```

```
                        TRAP    C$ERSOFT
                        .MEXIT
                        .ENDC
                        .IF EQ SVCINS
                        .LIST
                                TRAP    C$ERSOFT
                                        .NLIST
                        .MEXIT
                        .ENDC
                        .IF GT SVCINS
                        .LIST
053626  104457                                                  TRAP    C$ERSOFT
                                        .NLIST
                        .ENDC
        000012          .RADIX  10
                        .IF NB  2004
        003724          T$ERRNUM=2004
                        .IFF
                        .ERROR  ;MISSING ERROR-NR
                        .ENDC
053630                  M$WORD  \T$ERRNUM
                        .MCALL  M$GNINS
                        .IRP    N,<2004>
                        M$GNINS <.WORD  N>
                        .ENDM
053630                  M$GNINS <.WORD  2004>
                        .IF LT SVCINS
                        .WORD   2004
                        .MEXIT
                        .ENDC
                        .IF EQ SVCINS
                        .LIST
                                .WORD   2004
                                        .NLIST
                        .MEXIT
                        .ENDC
                        .IF GT SVCINS
                        .LIST
053630  003724                                                  .WORD   2004
                                        .NLIST
                        .ENDC
        000010          .RADIX  8
                        .IF NB E901
053632                  M$WORD  E901
                        .MCALL  M$GNINS
                        .IRP    N,<E901>
                        M$GNINS <.WORD  N>
                        .ENDM
053632                  M$GNINS <.WORD  E901>
                        .IF LT SVCINS
                        .WORD   E901
                        .MEXIT
                        .ENDC
                        .IF EQ SVCINS
                        .LIST
                                .WORD   E901
                                        .NLIST
```

```
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
     053632  005634                                                                   .WORD   E901
                                          .NLIST
                                .ENDC
                                .IFF
                                M$WORD  0
                                .ENDC
                                .IF NB ERR501
     053634                     M$WORD  ERR501
                                .MCALL  M$GNINS
                                .IRP    N,<ERR501>
                                M$GNINS <.WORD  N>
                                .ENDM
     053634                     M$GNINS <.WORD  ERR501>
                                .IF LT SVCINS
                                .WORD   ERR501
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                     .WORD   ERR501
                                          .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
     053634  003672                                                                   .WORD   ERR501
                                          .NLIST
                                .ENDC
                                .IFF
                                M$WORD  0
                                .ENDC
6549 053636                          CKLOOP                        ;BRANCH BACK TO BGNSEG IF ERRLOOP IS SET
                                .MCALL  M$SVC
     053636                     M$SVC   C$CLP1
                                .MCALL  M$GNINS,M$TSTLAB
     053636                     M$TSTLAB
                                .MCALL  M$TLABEL,M$INCR
                                .IIF LT T$TSTMAC, .MEXIT
                                .RADIX  10
                                M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                .RADIX  8
                                M$INCR  T$TSTSEQ
     053636                     M$GNINS <TRAP   C$CLP1>
                                .IF LT SVCINS
                                TRAP    C$CLP1
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                     TRAP    C$CLP1
                                          .NLIST
                                .MEXIT
                                .ENDC
```

```
                                          .IF GT SVCINS
                                          .LIST
 053636  104406                                                                                          TRAP    C$CLP1
                                                        .NLIST
                                          .ENDC
 053640  112777  000024  126422  30$:     MOVB    #24,@ICRHX              ;----LOAD P[illegible] [illegible]O ACR 1- -- ---------
 053646  112777  000001  126414           MOVB    #1,@ICRHX               ;----LOAD NOT DACR INTO ACR 1---------
 053654                                   ENDSEG
                                          .MCALL  M$POP,M$GNLS,M$SVC,M$ENDERR
 053654                                   M$POP   T$NS,T$NESTLEV,T$TEMP
                                          .MCALL  M$GETS,M$DECR
                                          .IF LT  T$NESTLEV
                                          .ERROR  T$NESTLEV       ; MACRO T$NS UNDERFLOW
                                          .MEXIT
                                          .ENDC
 053654                                   M$GETS  T$NS,\T$NESTLEV,T$TEMP
         000003                           T$TEMP=T$NS2
 053654                                   M$DECR  T$NESTLEV
         000001                           T$NESTLEV=T$NESTLEV-1
                                          .IF EQ F$SEG-T$TEMP
 053654                                   M$POP   T$SEK,T$SEGLEV,T$$SEG
                                          .MCALL  M$GETS,M$DECR
                                          .IF LT  T$SEGLEV
                                          .ERROR  T$SEGLEV        ; MACRO T$SEK UNDERFLOW
                                          .MEXIT
                                          .ENDC
 053654                                   M$GETS  T$SEK,\T$SEGLEV,T$$SEG
         010002                           T$$SEG=T$SEK0
 053654                                   M$DECR  T$SEGLEV
         177777                           T$SEGLEV=T$SEGLEV-1
 053654                                   M$GNLS  T$$SEG
                                          .MCALL  M$GEN
                                          .IF NB T$$SEG
 053654                                   M$GEN   \T$$SEG,$,SVCTAG
                                          .IF LE  SVCTAG
                                          .IIF EQ SVCTAG,.LIST
                                          10002$:
                                          .IIF EQ SVCTAG,.NLIST
                                          .MEXIT
                                          .ENDC
                                          .LIST
 053654                                                                                    10002$:
                                                  .NLIST
                                          .IFF
                                          M$GEN   \S$LSYM,$,SVCTAG
                                          .ENDC
 053654                                   M$SVC   C$ESEG
                                          .MCALL  M$GNINS,M$TSTLAB
 053654                                   M$TSTLAB
                                          .MCALL  M$TLABEL,M$INCR
                                          .IIF LT T$TSTMAC, .MEXIT
                                           RADIX  10
                                          M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                          .RADIX  8
                                          M$INCR  T$TSTSEQ
 053654                                   M$GNINS <TRAP   C$ESEG>
                                          .IF LT SVCINS
```

```
                                        TRAP    C$ESEG
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                TRAP    C$ESEG
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
      053654  104405                                                                            TRAP    C$ESEG
                                                        .NLIST
                                        .ENDC
                                        .IF EQ T$SEGLEV+1
              000041                    I$SEG=F$END
                                        .ENDC
                                        .IFF
                                        M$ENDERR        ENDSEG,T$TEMP
                                        .ENDC
 6553 053656                                    BGNSEG
                                        .MCALL  M$PUSH,M$INCR,M$SVC
              000040                    I$SEG=F$BGN
      053656                            M$PUSH  T$NS,T$NESTLEV,F$SEG
                                        .MCALL  M$INCR,M$SETS
      053656                            M$INCR  T$NESTLEV
              000002                    T$NESTLEV=T$NESTLEV+1
      053656                            M$SETS  T$NS,\T$NESTLEV,F$SEG
              000003                    T$NS2=F$SEG
              010003                    T$$SEG=S$LSYM
      053656                            M$PUSH  T$SEK,T$SEGLEV,T$$SEG
                                        .MCALL  M$INCR,M$SETS
      053656                            M$INCR  T$SEGLEV
              000000                    T$SEGLEV=T$SEGLEV+1
      053656                            M$SETS  T$SEK,\T$SEGLEV,T$$SEG
              010003                    T$SEK0=T$$SEG
      053656                            M$INCR  S$LSYM
              010004                    S$LSYM=S$LSYM+1
      053656                            M$SVC   C$BSEG
                                        .MCALL  M$GNINS,M$TSTLAB
      053656                            M$TSTLAB
                                        .MCALL  M$TLABEL,M$INCR
                                        .IIF LT T$TSTMAC, .MEXIT
                                        .RADIX  10
                                        M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                        .RADIX  8
                                        M$INCR  T$TSTSEQ
      053656                            M$GNINS <TRAP   C$BSEG>
                                        .IF LT SVCINS
                                        TRAP    C$BSEG
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                TRAP    C$BSEG
                                                        .NLIST
                                        .MEXIT
```

```
                                            .ENDC
                                            .IF GT SVCINS
                                            .LIST
     053656  104404                                                                                TRAP    C$BSEG
                                                          .NLIST
                                            .ENDC
6554 053660  052777  000010  126412               BIS     #10,@CSRX             ;SELECT CHANNEL 2
6555 053666  113777  002402  126402               MOVB    RSAVE,@IDRHX          ;----LOAD PPE INTO DOR 2-------------
6556 053674  004737  011050                       JSR     PC,LOOP               ;WAIT A LITTLE
6557 053700  042777  000010  126372               BIC     #10,@CSRX             ;SELECT CHANNEL 1
6558 053706  012737  000001  002374               MOV     #1,CHAN               ;LOAD CHANNEL NUMBER
6559 053714  017737  126344  002502               MOV     @ICRX,BAD             ;GET ICR1 CONTENTS
6560 053722  123737  002402  002502               CMPB    RSAVE,BAD             ;ICR CONTENTS SHOULD BE PPE
6561 053730  001410                               BEQ     40$                   ;BRANCH IF YES
6562 053732  013737  002402  002500               MOV     RSAVE,GOOD            ;SET UP DATA FOR ERROR MESSAGE
6563 053740                                       ERRSOFT 2005,E901,ERR501      ;ERROR HANDLER
                                            .MCALL  M$ERRINS
     053740                                 M$ERRINS        2005,E901,EPR501,C$ERSOFT
                                            .MCALL  M$GNINS,M$WORD,M$TSTLAB
     053740                                 M$SVC   C$ERSOFT
                                            .MCALL  M$GNINS,M$TSTLAB
     053740                                 M$TSTLAB
                                            .MCALL  M$TLABEL,M$INCR
                                            .IIF LT T$TSTMAC, .MEXIT
                                            .RADIX  10
                                            M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                            .RADIX  8
                                            M$INCR  T$TSTSEQ
     053740                                 M$GNINS <TRAP   C$ERSOFT>
                                            .IF LT SVCINS
                                            TRAP    C$ERSOFT
                                            .MEXIT
                                            .ENDC
                                            .IF EQ SVCINS
                                            .LIST
                                                    TRAP    C$ERSOFT
                                                            .NLIST
                                            .MEXIT
                                            .ENDC
                                            .IF GT SVCINS
                                            .LIST
     053740  104457                                                                                TRAP    C$ERSOFT
                                                          .NLIST
                                            .ENDC
             000012                         .RADIX  10
                                            .IF NB  2005
             003725                         T$ERRNUM=2005
                                            .IFF
                                            .ERROR  ;MISSING ERROR NR
                                            .ENDC
     053742                                 M$WORD  \T$ERRNUM
                                            .MCALL  M$GNINS
                                            .IRP    N,<2005>
                                            M$GNINS <.WORD  N>
                                            .ENDM
     053742                                 M$GNINS <.WORD  2005>
                                            .IF LT SVCINS
```

```
                        .WORD   2005
                        .MEXIT
                        .ENDC
                        .IF EQ SVCINS
                        .LIST
                                .WORD   2005
                                        .NLIST
                        .MEXIT
                        .ENDC
                        .IF GT SVCINS
                        .LIST
053742  003725                                                  .WORD   2005
                                        .NLIST
                        .ENDC
        000010          .RADIX  8
                        .IF NB E901
053744                  M$WORD  E901
                        .MCALL  M$GNINS
                        .IRP    N,<E901>
                        M$GNINS <.WORD  N>
                        .ENDM
053744                  M$GNINS <.WORD  E901>
                        .IF LT SVCINS
                        .WORD   E901
                        .MEXIT
                        .ENDC
                        .IF EQ SVCINS
                        .LIST
                                .WORD   E901
                                        .NLIST
                        .MEXIT
                        .ENDC
                        .IF GT SVCINS
                        .LIST
053744  005634                                                  .WORD   E901
                                        .NLIST
                        .ENDC
                        .IFF
                        M$WORD  0
                        .ENDC
                        .IF NB ERR501
053746                  M$WORD  ERR501
                        .MCALL  M$GNINS
                        .IRP    N,<ERR501>
                        M$GNINS <.WORD  N>
                        .ENDM
053746                  M$GNINS <.WORD  ERR501>
                        .IF LT SVCINS
                        .WORD   ERR501
                        .MEXIT
                        .ENDC
                        .IF EQ SVCINS
                        .LIST
                                .WORD   ERR501
                                        .NLIST
                        .MEXIT
                        .ENDC
```

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```
                                        .IF GT SVCINS
                                        .LIST
     053746  003672                                                                          .WORD   ERR501
                                                     .NLIST
                                        .ENDC
                                        .IFF
                                        M$WORD  0
                                        .ENDC
6564 053750                                     CKLOOP                        ;BRANCH BACK TO BGNSEG IF ERRLOOP IS SET
                                        .MCALL  M$SVC
     053750                             M$SVC   C$CLP1
                                        .MCALL  M$GNINS,M$TSTLAB
     053750                             M$TSTLAB
                                        .MCALL  M$TLABEL,M$INCR
                                        .IIF LT T$TSTMAC, .MEXIT
                                        .RADIX  10
                                        M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                        .RADIX  8
                                        M$INCR  T$TSTSEQ
     053750                             M$GNINS <TRAP   C$CLP1>
                                        .IF LT SVCINS
                                        TRAP    C$CLP1
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                TRAP    C$CLP1
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
     053750  104406                                                                          TRAP    C$CLP1
                                                     .NLIST
                                        .ENDC
6565 053752  113777  002420  126314  40$:       MOVB    MSA1,@IDRLX           ;----LOAD DATA INTO PPR 1------------
6566 053760  112777  000001  126302             MOVB    #1,@ICRHX             ;----LOAD NOT DACR INTO ACR 1---------
6567 053766  052777  000010  126304             BIS     #10,@CSRX             ;SELECT CHANNEL 2
6568 053774  112777  000077  126274             MOVB    #77,@IDRHX            ;----LOAD UNL INTO DOR 2  -----------
6569 054002  004737  011050                     JSR     PC,LOOP               ;WAIT A LITTLE
6570 054006  112777  000216  126254             MOVB    #216,@ICRHX           ; ---LOAD RPP INTO ACR 2---- ---  ----
6571 054014  017737  126244  002502             MOV     @ICRX,BAD             ;GET ICR2 CONTENTS
6572 054022  123737  002420  002502             CMPB    MSA1,BAD              ;COMPARE DATA
6573 054030  001410                             BEQ     50$                   ;BRANCH IF YES
6574 054032  013737  002420  002500             MOV     MSA1,GOOD             ;SET UP DATA FOR ERROR MESSAGE
6575 054040                                     ERRSOFT 2006,E901,ERR501      ;ERROR HANDLER
                                        .MCALL  M$ERRINS
     054040                             M$ERRINS        2006,E901,ERR501,C$ERSOFT
                                        .MCALL  M$GNINS,M$WORD,M$TSTLAB
     054040                             M$SVC   C$ERSOFT
                                        .MCALL  M$GNINS,M$TSTLAB
     054040                             M$TSTLAB
                                        .MCALL  M$TLABEL,M$INCR
                                        .IIF LT T$TSTMAC, .MEXIT
                                        .RADIX  10
                                        M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                        .RADIX  8
```

```
                                M$INCR  T$TSTSEQ
054040                          M$GNINS <TRAP   C$ERSOFT>
                                .IF LT SVCINS
                                TRAP    C$ERSOFT
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        TRAP    C$ERSOFT
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
054040  104457                                                                  TRAP    C$ERSOFT
                                                .NLIST
                                .ENDC
        000012                  .RADIX  10
                                .IF NB  2006
        003726                  T$ERRNUM=2006
                                .IFF
                                .ERROR  ;MISSING ERROR NR
                                .ENDC
054042                          M$WORD  \T$ERRNUM
                                .MCALL  M$GNINS
                                .IRP    N,<2006>
                                M$GNINS <.WORD  N>
                                .ENDM
054042                          M$GNINS <.WORD  2006>
                                .IF LT SVCINS
                                .WORD   2006
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        .WORD   2006
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
054042  003726                                                                  .WORD   2006
                                                .NLIST
                                .ENDC
        000010                  .RADIX  8
                                .IF NB E901
054044                          M$WORD  E901
                                .MCALL  M$GNINS
                                .IRP    N,<E901>
                                M$GNINS <.WORD  N>
                                .ENDM
054044                          M$GNINS <.WORD  E901>
                                .IF LT SVCINS
                                .WORD   E901
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
```

```
                        .LIST
                                .WORD   E901
                                        .NLIST
                        .MEXIT
                        .ENDC
                        .IF GT SVCINS
                        .LIST
      054044  005634                                                              .WORD   E901
                                        .NLIST
                        .ENDC
                        .IFF
                        M$WORD  0
                        .ENDC
                        .IF NB ERR501
      054046            M$WORD  ERR501
                        .MCALL  M$GNINS
                        .IRP    N,<ERR501>
                        M$GNINS <.WORD  N>
                        .ENDM
      054046            M$GNINS <.WORD  ERR501>
                        .IF LT SVCINS
                        .WORD   ERR501
                        .MEXIT
                        .ENDC
                        .IF EQ SVCINS
                        .LIST
                                .WORD   ERR501
                                        .NLIST
                        .MEXIT
                        .ENDC
                        .IF GT SVCINS
                        .LIST
      054046  003672                                                              .WORD   ERR501
                                        .NLIST
                        .ENDC
                        .IFF
                        M$WORD  0
                        .ENDC
 6576 054050                    CKLOOP                          ;BRANCH TO BGNSEG IF ERRLOOP IS SET
                        .MCALL  M$SVC
      054050            M$SVC   C$CLP1
                        .MCALL  M$GNINS,M$TSTLAB
      054050            M$TSTLAB
                        .MCALL  M$TLABEL,M$INCR
                        .IIF LT T$TSTMAC, .MEXIT
                        .RADIX  10
                        M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                        .RADIX  8
                        M$INCR  T$TSTSEQ
      054050            M$GNINS <TRAP   C$CLP1>
                        .IF LT SVCINS
                        TRAP    C$CLP1
                        .MEXIT
                        .ENDC
                        .IF EQ SVCINS
                        .LIST
                                TRAP    C$CLP1
```

```
                                                .NLIST
                                    .MEXIT
                                    .ENDC
                                    .IF GT SVCINS
                                    .LIST
      054050  104406                                                                    TRAP    C$CLP1
                                                .NLIST
                                    .ENDC
6577  054052  112777  000016  126210  50$:   MOVB    #16,@ICRHX              ;----LOAD NOT RPP INTO ACR 2----------
6578  054060                                 ENDSEG
                                    .MCALL  M$POP,M$GNLS,M$SVC,M$ENDERR
      054060                        M$POP   T$NS,T$NESTLEV,T$TEMP
                                    .MCALL  M$GETS,M$DECR
                                    .IF LT  T$NESTLEV
                                    .ERROR  T$NESTLEV       ; MACRO T$NS UNDERFLOW
                                    .MEXIT
                                    .ENDC
      054060                        M$GETS  T$NS,\T$NESTLEV,T$TEMP
              000003                T$TEMP=T$NS2
      054060                        M$DECR  T$NESTLEV
              000001                T$NESTLEV=T$NESTLEV-1
                                    .IF EQ F$SEG-T$TEMP
      054060                        M$POP   T$SEK,T$SEGLEV,T$$SEG
                                    .MCALL  M$GETS,M$DECR
                                    .IF LT  T$SEGLEV
                                    .ERROR  T$SEGLEV        ; MACRO T$SEK UNDERFLOW
                                    .MEXIT
                                    .ENDC
      054060                        M$GETS  T$SEK,\T$SEGLEV,T$$SEG
              010003                T$$SEG=T$SEK0
      054060                        M$DECR  T$SEGLEV
              17                    T$SEGLEV=T$SEGLEV-1
      054060                        M$GNLS  T$$SEG
                                    .MCALL  M$GEN
                                    .IF NB T$$SEG
      054060                        M$GEN   \T$$SEG,$,SVCTAG
                                    .IF LE  SVCTAG
                                    .IIF EQ SVCTAG,.LIST
                                    10003$:
                                    .IIF EQ SVCTAG,.NLIST
                                    .MEXIT
                                    .ENDC
                                    .LIST
      054060                                                                    10003$:
                                         .NLIST
                                    .IFF
                                    M$GEN   \S$LSYM,$,SVCTAG
                                    .ENDC
      054060                        M$SVC   C$ESEG
                                    .MCALL  M$GNINS,M$TSTLAB
      054060                        M$TSTLAB
                                    .MCALL  M$TLABEL,M$INCR
                                    .IIF LT T$TSTMAC, .MEXIT
                                    .RADIX  10
                                    M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                    .RADIX  8
                                    M$INCR  T$TSTSEQ
```

```
        054060                                  M$GNINS <TRAP   C$ESEG>
                                                .IF LT SVCINS
                                                TRAP    C$ESEG
                                                .MEXIT
                                                .ENDC
                                                .IF EQ SVCINS
                                                .LIST
                                                        TRAP    C$ESEG
                                                                .NLIST
                                                .MEXIT
                                                .ENDC
                                                .IF GT SVCINS
                                                .LIST
        054060  104405                                                                                  TRAP    C$ESEG
                                                                .NLIST
                                                .ENDC
                                                .IF EQ T$SEGLEV+1
                000041                          I$SEG=F$END
                                                .ENDC
                                                .IFF
                                                M$ENDERR        ENDSEG,T$TEMP
                                                .ENDC
   6579 054062  005737  002234                          TST     QVP                     ;IS QUICK VERIFY PASS SELECTED
   6580 054066  001012                                  BNE     EXQV20                  ;IF YES EXIT TEST
   6581 054070  005237  002402                          INC     RSAVE                   ;CREATE NEW PPE
   6582 054074  106137  002420                          ROLB    MSA1                    ;CHANGE DATA
   6583 054100  022737  000157  002402                  CMP     #157,RSAVE              ;ALL PPE DONE
   6584 054106  001402                                  BEQ     EXQV20                  ;EXIT TEST IF YES
   6585 054110  000137  053206                          JMP     ITAC20                  ;IF NO TEST ITERATION
   6586 054114                                  EXQV20: EXIT    TST                     ;EXIT TEST
                                                .MCALL  M$SVC,M$EXIT,M$EXSEG,M$EXTJ,M$GETTOP,M$CHECK,M$WORD,XFER
                000041                          T$FLAG=F$END
        054114                                  M$CHECK TST,T$TEMP,T$FLAG
                                                .IF IDN <TST>,<TST>
                010051                          T$TEMP=T$$TEST
                000040                          T$FLAG=I$TST
                                                .MEXIT
                                                .ENDC
                                                .IF IDN <SUB>,<TST>
                                                T$TEMP=T$$SUB
                                                T$FLAG=I$SUB
                                                .MEXIT
                                                .ENDC
                                                .IF IDN <SEG>,<TST>
                                                T$TEMP=T$$SEG
                                                T$FLAG=I$SEG
                                                .MEXIT
                                                .ENDC
                                                .IF IDN <INIT>,<TST>
                                                T$TEMP=T$$INIT
                                                T$FLAG=I$INIT
                                                .MEXIT
                                                .ENDC
                                                .IF IDN <CLN>,<TST>
                                                T$TEMP-T$$CLEAN
                                                T$FLAG=I$CLN
                                                .MEXIT
```

```
                                        .ENDC
                                        .IF IDN <SRV>,<TST>
                                        T$TEMP-T$$SRV
                                        T$FLAG=I$SRV
                                        .MEXIT
                                        .ENDC
                                        .IF IDN <MSG>,<TST>
                                        T$TEMP=T$$MSG
                                        T$FLAG=F$JMP
                                        .MEXIT
                                        .ENDC
                                        .IF IDN <RPT>,<TST>
                                        T$TEMP=T$$RPT
                                        T$FLAG=F$JMP
                                        .MEXIT
                                        .ENDC
                                        .IF IDN <DU>,<TST>
                                        T$TEMP=T$$DU
                                        T$FLAG=F$JMP
                                        .MEXIT
                                        .ENDC
                                        .IF IDN <AU>,<TST>
                                        T$TEMP=T$$AU
                                        T$FLAG=F$JMP
                                        .MEXIT
                                        .ENDC
                                        .IF EQ T$FLAG-F$JMP
                                        M$WORD  J$JMP
                                        M$EXTJ  \T$TEMP
                                        .MEXIT
                                        .ENDC
                                        .IF EQ  T$FLAG-F$BGN
      054114                            M$SVC   C$EXIT
                                        .MCALL  M$GNINS,M$TSTLAB
      054114                            M$TSTLAB
                                        .MCALL  M$TLABEL,M$INCR
                                        .IIF LT T$TSTMAC, .MEXIT
                                        .RADIX  10
                                        M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                        .RADIX  8
                                        M$INCR  T$TSTSEQ
      054114                            M$GNINS <TRAP   C$EXIT>
                                        .IF LT SVCINS
                                        TRAP    C$EXIT
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                TRAP    C$EXIT
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
      054114  104432                                                                           TRAP    C$EXIT
                                                        .NLIST
                                        .ENDC
```

```
                                        .IF IDN <SEG>,<TST>
                                        M$GETTOP T$SEK,T$SEGLEV,T$TEMP
                                        M$EXSEG \T$TEMP
                                        .IFF
      054116                            M$EXIT  \T$TEMP
                                        .MCALL  M$GNINS
      054116                            M$GNINS <.WORD  L10051-.>
                                        .IF LT SVCINS
                                        .WORD   L10051-.
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                .WORD   L10051-.
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
      054116  000074                                                    .WORD   L10051-.
                                                        .NLIST
                                        .ENDC
                                        .ENDC
                                        .MEXIT
                                        .ENDC
                                        .IF IDN <HRD>,<TST>
                                        M$GETTOP        T$NS,T$NESTLEV,T$TEMP
                                        .IF EQ  F$HARD-T$TEMP
                                        .IRP    N,<\T$$HARD>
                                        XFER    L'N
                                        .ENDM
                                        .MEXIT
                                        .ENDC
                                        .ENDC
                                        .IF IDN <SFT>,<TST>
                                        M$GETTOP        T$NS,T$NESTLEV,T$TEMP
                                        .IF EQ  F$SOFT-T$TEMP
                                        .IRP    N,<\T$$SOFT>
                                        XFER    L'N
                                        .ENDM
                                        .MEXIT
                                        .ENDC
                                        .ENDC
                                        .ERROR  ;ILL. "EXIT TST" STMT.
  6587
  6588                                          .NLIST  BEX
  6589 054120    045    123    062     TSHD20: .ASCIZ  /%S2%APARALLEL POLL INTERFACE FUNCTION TEST OF CHANNEL 1%N/
  6590                                          .LIST   BEX
  6591                                          .EVEN
  6592 054212                                   ENDTST
                                        .MCALL  M$POP,M$GNTAG,M$SVC,M$ENDERR
                                        .IF EQ  F$BGN-I$TST
              000041                    I$TST=F$END
                                        .IFF
                                        .ERROR  ;MISSING "BGNTST"
                                        .MEXIT
                                        .ENDC
```

```
        054212                          M$POP   T$NS,T$NESTLEV,T$TEMP
                                        .MCALL  M$GETS,M$DECR
                                        .IF LT  T$NESTLEV
                                        .ERROR  T$NESTLEV       ; MACRO T$NS UNDERFLOW
                                        .MEXIT
                                        .ENDC
        054212                          M$GETS  T$NS,\T$NESTLEV,T$TEMP
                000001                  T$TEMP=T$NS1
        054212                          M$DECR  T$NESTLEV
                000000                  T$NESTLEV=T$NESTLEV-1
                                        .IF EQ F$TEST-T$TEMP
        054212                          M$GNTAG L,T$$TEST
                                        .MCALL  M$GEN
        054212                          M$GEN   L,\T$$TEST,SVCTAG
                                        .IF LE  SVCTAG
                                        .IIF EQ SVCTAG,.LIST
                                        L10051:
                                        .IIF EQ SVCTAG,.NLIST
                                        .MEXIT
                                        .ENDC
                                        .LIST
        054212                                                                  L10051:
                                                .NLIST
                010000                  S$LSYM=T$LSYM
        054212                          M$SVC   C$ETST
                                        .MCALL  M$GNINS,M$TSTLAB
        054212                          M$TSTLAB
                                        .MCALL  M$TLABEL,M$INCR
                                        .IIF LT T$TSTMAC, .MEXIT
                                        .RADIX  10
                                        M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                        .RADIX  8
                                        M$INCR  T$TSTSEQ
        054212                          M$GNINS <TRAP   C$ETST>
                                        .IF LT SVCINS
                                        TRAP    C$ETST
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                TRAP    C$ETST
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
        054212  104401                                                                  TRAP    C$ETST
                                                        .NLIST
                                        .ENDC
                000041                  I$TST=F$END
                                        .IFF
                                        M$ENDERR        ENDTST,T$TEMP
                                        .ENDC
```

```
                                  .SBTTL  TEST 21: PARALLEL POLL INTERFACE FUNCTION TEST OF CHANNEL 2
                                  ;***********************************************************************
                                  ;              IEX - TEST 21
                                  ;PART 1 CHECKS PARALLEL POLL SEQUENCE (LOCAL CONFIGURED).
                                  ;
                                  ;PART 2 CHECKS PARALLEL POLL SEQUENCE (REMOTE CONFIGURED).
                                  ;***********************************************************************
 054214                                   BGNTST
                                  .MCALL  M$INCR,M$GNTEST,M$PUSH,M$INCR
                                  .IF NE  F$END I$SUB
                                  .ERROR  ;"BGNTST" IN SUB
                                  .MEXIT
                                  .ENDC
                                  .IF NE  F$END I$SEG
                                  .ERROR  ;"BGNTST" IN SEG
                                  .MEXIT
                                  .ENDC
                                  .IF NE  F$END-I$TST
                                  .ERROR  ;"BGNTST" IN TST
                                  .MEXIT
                                  .IFF
         000040                   I$TST=F$BGN
                                  .ENDC
                                  .IF B
 054214                           M$INCR  T$TESTNUM
         000025                   T$TESTNUM=T$TESTNUM+1
                                  .IFF
                                  T$TESTNUM=
                                  .ENDC
         000000                   T$SUBNUM=0
         000012                   .RADIX  10
 054214                           M$GNTEST        \T$TESTNUM
                                  .MCALL  M$GEN
 054214                           M$GEN   T,21:,SVCTST
                                  .IF LE  SVCTST
                                  .IIF EQ SVCTST,.LIST
                                  T21::
                                  .IIF EQ SVCTST,.NLIST
                                  .MEXIT
                                  .ENDC
                                  .LIST
 054214                                                                       T21::
                                          .NLIST
         000010                   .RADIX  8
 054214                           M$PUSH  T$NS,T$NESTLEV,F$TEST
                                  .MCALL  M$INCR,M$SETS
 054214                           M$INCR  T$NESTLEV
         000001                   T$NESTLEV=T$NESTLEV+1
 054214                           M$SETS  T$NS,\T$NESTLEV,F$TEST
         000001                   T$NS1=F$TEST
         010052                   T$$TEST=T$TAGNUM
 054214                           M$INCR T$TAGNUM
         010053                   T$TAGNUM=T$TAGNUM+1
         000001                   T$TSTSEQ=1
 054214  005737  002324                   TST     PNTF                ;IS THE PNT FLAG SET
 054220  001410                           BEQ     7$                  ;IF YES, PRINT THE TEST HEADER
 054222                                   PRINTF  #TSHD21             ;...
```

```
                                .MCALL  M$PRINT
                                .IF B   #TSHD21
                                .ERROR  ;MISSING FORMAT
                                .MEXIT
                                .ENDC
                                .IF B   <>
054222                          M$PRINT C$PNTF,#TSHD21
                                .MCALL  M$COUNT,M$PUT,M$GNINS,M$SVC
        000001                  T$ARGCNT=1
054222                          M$COUNT T$ARGCNT,<>,<>,<>,<>,<>,<>,<>,<>
                                .IF NB <>
                                M$COUNT T$ARGCNT,<>,<>,<>,<>,<>,<>,<>,<>
                                .ENDC
                                .IF NB <>
                                T$ARGCNT=T$ARGCNT+1
                                .ENDC
                                .IRP    N,<\T$ARGCNT>
                                M$PUT   #N,#TSHD21,<>,<>,<>,<>,<>,<>,<>,<>
                                .ENDM
054222                          M$PUT   #1,#TSHD21,<>,<>,<>,<>,<>,<>,<>,<>
                                .MCALL  M$PUT1
                                .IF NB  <#TSHD21>
054222                          M$PUT   <#TSHD21>,<>,<>,<>,<>,<>,<>,<>,<>
                                .MCALL  M$PUT1
                                .IF NB  <>
                                M$PUT   <>,<>,<>,<>,<>,<>,<>,<>,<>
                                .ENDC
                                .IF NB  <#TSHD21>
054222                          M$PUT1  #TSHD21
                                .MCALL  M$GNINS
                                .IF B
054222                          M$GNINS <MOV    #TSHD21,-(SP)>
                                .IF LT SVCINS
                                MOV     #TSHD21,-(SP)
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        MOV     #TSHD21, (SP)
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
054222  012746  055170                                                  MOV     #TSHD21,-(SP)
                                                .NLIST
                                .ENDC
                                .IFF
                                .IF DIF B,<#TSHD21>
                                .ERROR  ;ILL. ARG. "#TSHD21" ONLY "B" IS ALLOWED.
                                .MEXIT
                                .ENDC
                                M$GNINS <CLR    -(SP)>
                                M$GNINS <BISB   ,(SP)>
                                .ENDC
                                .ENDC
                                .ENDC
```

C15


```
                                .IF NB  <#1>
054226                          M$PUT1  #1
                                .MCALL  M$GNINS
                                .IF B
054226                          M$GNINS <MOV    #1,-(SP)>
                                .IF LT SVCINS
                                MOV     #1,-(SP)
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        MOV     #1,-(SP)
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
054226  012746  000001                                                          MOV     #1,-(SP)
                                                .NLIST
                                .ENDC
                                .IFF
                                .IF DIF B,<#1>
                                .ERROR  ;ILL. ARG. "#1" ONLY "B" IS ALLOWED.
                                .MEXIT
                                .ENDC
                                M$GNINS <CLR    -(SP)>
                                M$GNINS <BISB   ,(SP)>
                                .ENDC
                                .ENDC
054232                          M$GNINS <MOV    SP,R0>
                                .IF LT SVCINS
                                MOV     SP,R0
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        MOV     SP,R0
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
054232  010600                                                                  MOV     SP,R0
                                                .NLIST
                                .ENDC
054234                          M$SVC   C$PNTF
                                .MCALL  M$GNINS,M$TSTLAB
054234                          M$TSTLAB
                                .MCALL  M$TLABEL,M$INCR
                                .IIF LT T$TSTMAC, .MEXIT
                                .RADIX  10
                                M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                .RADIX  8
                                M$INCR  T$TSTSEQ
054234                          M$GNINS <TRAP   C$PNTF>
                                .IF LT SVCINS
                                TRAP    C$PNTF
```

```
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        TRAP    C$PNTF
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
     054234  104417                                                          TRAP    C$PNTF
                                                .NLIST
                                .ENDC
                                .IRP    N,<\T$ARGCNT*2+2>
                                M$GNINS <ADD    #N,SP>
                                .ENDM
     054236                     M$GNINS <ADD    #4,SP>
                                .IF LT SVCINS
                                ADD     #4,SP
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        ADD     #4,SP
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
     054236  062706  000004                                                  ADD     #4,SP
                                                .NLIST
                                .ENDC
                                .MEXIT
                                .ENDC
                                .IF B   <>
                                M$PRINT C$PNTF,#TSHD21,<>
                                .MEXIT
                                .ENDC
                                .IF B   <>
                                M$PRINT C$PNTF,#TSHD21,<>,<>
                                .MEXIT
                                .ENDC
                                .IF B   <>
                                M$PRINT C$PNTF,#TSHD21,<>,<>,<>
                                .MEXIT
                                .ENDC
                                .IF B   <>
                                M$PRINT C$PNTF,#TSHD21,<>,<>,<>,<>
                                .MEXIT
                                .ENDC
                                .IF B   <>
                                M$PRINT C$PNTF,#TSHD21,<>,<>,<>,<>,<>
                                .MEXIT
                                .ENDC
                                .IF B   <>
                                M'PRINT C$PNTF,#TSHD21,<>,<>,<>,<>,<>,<>
                                .MEXIT
```

E15


```
                                                .ENDC
                                                .IF B   <>
                                                M$PRINT C$PNTF,#TSHD21,<>,<>,<>,<>,<>,<>,<>
                                                .MEXIT
                                                .ENDC
                                                M$PRINT C$PNTF,#TSHD21,<>,<>,<>,<>,<>,<>,<>,<>
   6605 054242  012737  000001  002420          7$:     MOV     #1,MSA1                 ;LOAD DATA FOR PPR
   6606 054250  012737  000140  002402                  MOV     #140,RSAVE              ;LOAD FIRST PPE
   6607 054256  004737  010210                  ITAC21: JSR     PC,CULPA                ;CLEAR 'LPA BIT ISR 1 AND 2
   6608 054262  004737  010524                          JSR     PC,BGIN1                ;SET UP PARAMETER
   6609 054266  052777  000010  126004                  BIS     #10,@CSRX               ;SELECT CHANNEL 2
   6610 054274  112777  000223  125766                  MOVB    #223,@ICRHX             ;----LOAD DAI INTO ACR 2--------------
   6611 054302  112777  000040  125752                  MOVB    #40,@ISRHX              ;----SET UCG BIT IN ISR 2-------------
   6612 054310                                          BGNSEG
                                                .MCALL  M$PUSH,M$INCR,M$SVC
                000040                          I$SEG=F$BGN
        054310                                  M$PUSH  T$NS,T$NESTLEV,F$SEG
                                                .MCALL  M$INCR,M$SETS
        054310                                  M$INCR  T$NESTLEV
                000002                          T$NESTLEV=T$NESTLEV+1
        054310                                  M$SETS  T$NS,\T$NESTLEV,F$SEG
                000003                          T$NS2=F$SEG
                010000                          T$$SEG=S$LSYM
        054310                                  M$PUSH  T$SEK,T$SEGLEV,T$$SEG
                                                .MCALL  M$INCR,M$SETS
        054310                                  M$INCR  T$SEGLEV
                000000                          T$SEGLEV=T$SEGLEV+1
        054310                                  M$SETS  T$SEK,\T$SEGLEV,T$$SEG
                010000                          T$SEK0=T$$SEG
        054310                                  M$INCR  S$LSYM
                010001                          S$LSYM=S$LSYM+1
        054310                                  M$SVC   C$BSEG
                                                .MCALL  M$GNINS,M$TSTLAB
        054310                                  M$TSTLAB
                                                .MCALL  M$TLABEL,M$INCR
                                                .IIF LT T$TSTMAC, .MEXIT
                                                .RADIX  10
                                                M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                                .RADIX  8
                                                M$INCR  T$TSTSEQ
        054310                                  M$GNINS <TRAP   C$BSEG>
                                                .IF LT SVCINS
                                                TRAP    C$BSEG
                                                .MEXIT
                                                .ENDC
                                                .IF EQ SVCINS
                                                .LIST
                                                        TRAP    C$BSEG
                                                                .NLIST
                                                .MEXIT
                                                .ENDC
                                                .IF GT SVCINS
                                                .LIST
        054310  104404                                                                                  TRAP    C$BSEG
                                                                .NLIST
                                                .ENDC
   6613 054312  052777  000010  125760                  BIS     #10,@CSRX               ;SELECT CHANNEL 2
```

```
6614 054320 112777 000020 125746        MOVB    #20,@IDRLX              ;----LOAD PP5 INTO PPR 2------ -------
6615 054326 042777 000010 125744        BIC     #10,@CSRX               ;SELECT CHANNEL 1
6616 054334 012737 000001 002374        MOV     #1,CHAN                 ;LOAD CHANNEL NUMBER
6617 054342 112777 000216 125720        MOVB    #216,@ICRHX             ;----LOAD RPP INTO ACR 1-------------
6618 054350 017737 125710 002502        MOV     @ICRX,BAD               ;GET ICR1 CONTENTS
6619 054356 122737 000020 002502        CMPB    #20,BAD                 ;ICR CONTENTS SHOULD BE 20
6620 054364 001410                      BEQ     10$                     ;BRANCH IF YES
6621 054366 012737 000020 002500        MOV     #20,GOOD                ;SET UP DATA FOR ERROR MESSAGE
6622 054374                             ERRSOFT 2101,E901,ERR501        ;ERROR HANDLER
                                  .MCALL  M$ERRINS
     054374                       M$ERRINS        2101,E901,ERR501,C$ERSOFT
                                  .MCALL  M$GNINS,M$WORD,M$TSTLAB
     054374                       M$SVC   C$ERSOFT
                                  .MCALL  M$GNINS,M$TSTLAB
     054374                       M$TSTLAB
                                  .MCALL  M$TLABEL,M$INCR
                                  .IIF LT T$TSTMAC, .MEXIT
                                  .RADIX  10
                                  M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                  .RADIX  8
                                  M$INCR  T$TSTSEQ
     054374                       M$GNINS <TRAP   C$ERSOFT>
                                  .IF LT SVCINS
                                  TRAP    C$ERSOFT
                                  .MEXIT
                                  .ENDC
                                  .IF EQ SVCINS
                                  .LIST
                                          TRAP    C$ERSOFT
                                                  .NLIST
                                  .MEXIT
                                  .ENDC
                                  .IF GT SVCINS
                                  .LIST
     054374 104457                                                              TRAP    C$ERSOFT
                                                  .NLIST
                                  .ENDC
            000012                .RADIX  10
                                  .IF NB  2101
            004065                T$ERRNUM=2101
                                  .IFF
                                  .ERROR  ;MISSING ERROR NR
                                  .ENDC
     054376                       M$WORD  \T$ERRNUM
                                  .MCALL  M$GNINS
                                  .IRP    N,<2101>
                                  M$GNINS <.WORD  N>
                                  .ENDM
     054376                       M$GNINS <.WORD  2101>
                                  .IF LT SVCINS
                                  .WORD   2101
                                  .MEXIT
                                  .ENDC
                                  .IF EQ SVCINS
                                  .LIST
                                          .WORD   2101
                                                  .NLIST
```

```
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
054376  004065                                                                      .WORD   2101
                                                     .NLIST
                                        .ENDC
        000010                          .RADIX  8
                                        .IF NB E901
054400                                  M$WORD  E901
                                        .MCALL  M$GNINS
                                        .IRP    N,<E901>
                                        M$GNINS <.WORD  N>
                                        .ENDM
054400                                  M$GNINS <.WORD  E901>
                                        .IF LT SVCINS
                                        .WORD   E901
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                               .WORD   E901
                                                     .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
054400  005634                                                                      .WORD   E901
                                                     .NLIST
                                        .ENDC
                                        .IFF
                                        M$WORD  0
                                        .ENDC
                                        .IF NB ERR501
054402                                  M$WORD  ERR501
                                        .MCALL  M$GNINS
                                        .IRP    N,<ERR501>
                                        M$GNINS <.WORD  N>
                                        .ENDM
054402                                  M$GNINS <.WORD  ERR501>
                                        .IF LT SVCINS
                                        .WORD   ERR501
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                               .WORD   ERR501
                                                     .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
054402  003672                                                                      .WORD   ERR501
                                                     .NLIST
                                        .ENDC
                                        .IFF
                                        M$WORD  0
```

```
                                        .ENDC
 6623 054404                                    CKLOOP                      ;BRANCH TO BGNSEG IF ERRLOOP IS SET
                                        .MCALL  M$SVC
      054404                            M$SVC   C$CLP1
                                        .MCALL  M$GNINS,M$TSTLAB
      054404                            M$TSTLAB
                                        .MCALL  M$TLABEL,M$INCR
                                        .IIF LT T$TSTMAC, .MEXIT
                                        .RADIX  10
                                        M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                        .RADIX  8
                                        M$INCR  T$TSTSEQ
      054404                            M$GNINS <TRAP   C$CLP1>
                                        .IF LT SVCINS
                                        TRAP    C$CLP1
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                TRAP    C$CLP1
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
      054404  104406                                                                            TRAP    C$CLP1
                                                        .NLIST
                                        .ENDC
 6624 054406  017737  125644  002502    10$:    MOV     @ISRX,BAD           ;GET ISR1 CONTENTS
 6625 054414  022737  104040  002502            CMP     #104040,BAD         ;ATN,EOI,ATN  SHOULD BE SET
 6626 054422  001410                            BEQ     20$                 ;BRANCH IF YES
 6627 054424  012737  104040  002500            MOV     #104040,GOOD        ;SET UP DATA FOR ERROR MESSAGE
 6628 054432                                    ERRSOFT 2102,E502,ERR501    ;ERROR HANDLER
                                        .MCALL  M$ERRINS
      054432                            M$ERRINS        2102,E502,ERR501,C$ERSOFT
                                        .MCALL  M$GNINS,M$WORD,M$TSTLAB
      054432                            M$SVC   C$ERSOFT
                                        .MCALL  M$GNINS,M$TSTLAB
      054432                            M$TSTLAB
                                        .MCALL  M$TLABEL,M$INCR
                                        .IIF LT T$TSTMAC, .MEXIT
                                        .RADIX  10
                                        M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                        .RADIX  8
                                        M$INCR  T$TSTSEQ
      054432                            M$GNINS <TRAP   C$ERSOFT>
                                        .IF LT SVCINS
                                        TRAP    C$ERSOFT
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                TRAP    C$ERSOFT
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
```

```
                                  .LIST
054432  104457                                                                      TRAP    C$ERSOFT
                                            .NLIST
                                  .ENDC
        000012                    .RADIX  10
                                  .IF NB  2102
        004066                    T$ERRNUM=2102
                                  .IFF
                                  .ERROR  ;MISSING ERROR NR
                                  .ENDC
054434                            M$WORD  \T$ERRNUM
                                  .MCALL  M$GNINS
                                  .IRP    N,<2102>
                                  M$GNINS <.WORD  N>
                                  .ENDM
054434                            M$GNINS <.WORD  2102>
                                  .IF LT SVCINS
                                  .WORD   2102
                                  .MEXIT
                                  .ENDC
                                  .IF EQ SVCINS
                                  .LIST
                                       .WORD    2102
                                            .NLIST
                                  .MEXIT
                                  .ENDC
                                  .IF GT SVCINS
                                  .LIST
054434  004066                                                                      .WORD   2102
                                            .NLIST
                                  .ENDC
        000010                    .RADIX  8
                                  .IF NB E502
054436                            M$WORD  E502
                                  .MCALL  M$GNINS
                                  .IRP    N,<E502>
                                  M$GNINS <.WORD  N>
                                  .ENDM
054436                            M$GNINS <.WORD  E502>
                                  .IF LT SVCINS
                                  .WORD   E502
                                  .MEXIT
                                  .ENDC
                                  .IF EQ SVCINS
                                  .LIST
                                       .WORD    E502
                                            .NLIST
                                  .MEXIT
                                  .ENDC
                                  .IF GT SVCINS
                                  .LIST
054436  005437                                                                      .WORD   E502
                                            .NLIST
                                  .ENDC
                                  .IFF
                                  M$WORD  0
                                  .ENDC
```

```
                                          .IF NB ERR501
     054440                               M$WORD  ERR501
                                          .MCALL  M$GNINS
                                          .IRP    N,<ERR501>
                                          M$GNINS <.WORD  N>
                                          .ENDM
     054440                               M$GNINS <.WORD  ERR501>
                                          .IF LT SVCINS
                                          .WORD   ERR501
                                          .MEXIT
                                          .ENDC
                                          .IF EQ SVCINS
                                          .LIST
                                                  .WORD   ERR501
                                                          .NLIST
                                          .MEXIT
                                          .ENDC
                                          .IF GT SVCINS
                                          .LIST
     054440  003672                                                                       .WORD   ERR501
                                                          .NLIST
                                          .ENDC
                                          .IFF
                                          M$WORD  0
                                          .ENDC
6629 054442                                       CKLOOP                     ;BRANCH TO BGNSEG IF ERRLOOP IS SET
                                          .MCALL  M$SVC
     054442                               M$SVC   C$CLP1
                                          .MCALL  M$GNINS,M$TSTLAB
     054442                               M$TSTLAB
                                          .MCALL  M$TLABEL,M$INCR
                                          .IIF LT T$TSTMAC, .MEXIT
                                          .RADIX  10
                                          M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                          .RADIX  8
                                          M$INCR  T$TSTSEQ
     054442                               M$GNINS <TRAP   C$CLP1>
                                          .IF LT SVCINS
                                          TRAP    C$CLP1
                                          .MEXIT
                                          .ENDC
                                          .IF EQ SVCINS
                                          .LIST
                                                  TRAP    C$CLP1
                                                          .NLIST
                                          .MEXIT
                                          .ENDC
                                          .IF GT SVCINS
                                          .LIST
     054442  104406                                                                       TRAP    C$CLP1
                                                          .NLIST
                                          .ENDC
6630 054444  112777  000016  125616  20$:         MOVB    #16,@ICRHX         ;--  -LOAD NOT RPP INTO ACR 1---------
6631 054452                                       ENDSEG
                                          .MCALL  M$POP,M$GNLS,M$SVC,M$ENDERR
     054452                               M$POP   T$NS,T$NESTLEV,T$TEMP
                                          .MCALL  M$GETS,M$DECR
```

```
                                .IF LT  T$NESTLEV
                                .ERROR  T$NESTLEV        ; MACRO T$NS UNDERFLOW
                                .MEXIT
                                .ENDC
054452                          M$GETS  T$NS,\T$NESTLEV,T$TEMP
        000003                  T$TEMP=T$NS2
054452                          M$DECR  T$NESTLEV
        000001                  T$NESTLEV=T$NESTLEV-1
                                .IF EQ F$SEG-T$TEMP
054452                          M$POP   T$SEK,T$SEGLEV,T$$SEG
                                .MCALL  M$GETS,M$DECR
                                .IF LT  T$SEGLEV
                                .ERROR  T;SEGLEV         ; MACRO T$SEK UNDERFLOW
                                .MEXIT
                                .ENDC
054452                          M$GETS  T$SEK,\T$SEGLEV,T$$SEG
        010000                  T$$SEG=T$SEK0
054452                          M$DECR  T$SEGLEV
        177777                  T$SEGLEV=T$SEGLEV-1
054452                          M$GNLS  T$$SEG
                                .MCALL  M$GEN
                                .IF NB T$$SEG
054452                          M$GEN   \T$$SEG,$,SVCTAG
                                .IF LE  SVCTAG
                                .IIF EQ SVCTAG,.LIST
                                10000$:
                                .IIF EQ SVCTAG,.NLIST
                                .MEXIT
                                .ENDC
                                .LIST
054452                                                                       10000$:
                                        .NLIST
                                .IFF
                                M$GEN   \S$LSYM,$,SVCTAG
                                .ENDC
054452                          M$SVC   C$ESEG
                                .MCALL  M$GNINS,M$TSTLAB
054452                          M$TSTLAB
                                .MCALL  M$TLABEL,M$INCR
                                .IIF LT T$TSTMAC, .MEX⊥T
                                .RADIX  10
                                M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                .RADIX  8
                                M$INCR  T$TSTSEQ
054452                          M$GNINS <TRAP   C$ESEG>
                                .IF LT SVCINS
                                TRAP    C$ESEG
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        TRAP    C$ESEG
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
```

```
        054452  104405                                                          TRAP    C$ESEG
                                                        .NLIST
                                        .ENDC
                                        .IF EQ T$SEGLEV+1
                000041                  I$SEG=F$END
                                        .ENDC
                                        .IFF
                                        M$ENDERR        ENDSEG,T$TEMP
                                        .ENDC
   6632                                 ;+++  ---------------------- - ------------------------ ----------------
   6633                                 ;PART 2 CHECKS THE PARALLEL POLL SEQUENCE (REMOTE CONFIGURED)
   6634                                 ;+++------------- ---- ------- -----------------------------------------
   6635 054454                                  BGNSEG
                                        .MCALL  M$PUSH,M$INCR,M$SVC
                000040                  I$SEG=F$BGN
        054454                          M$PUSH  T$NS,T$NESTLEV,F$SEG
                                        .MCALL  M$INCR,M$SETS
        054454                          M$INCR  T$NESTLEV
                000002                  T$NESTLEV=T$NESTLEV+1
        054454                          M$SETS  T$NS,\T$NESTLEV,F$SEG
                000003                  T$NS2=F$SEG
                010001                  T$$SEG=S$LSYM
        054454                          M$PUSH  T$SEK,T$SEGLEV,T$$SEG
                                        .MCALL  M$INCR,M$SETS
        054454                          M$INCR  T$SEGLEV
                000000                  T$SEGLEV=T$SEGLEV+1
        054454                          M$SETS  T$SEK,\T$SEGLEV,T$$SEG
                010001                  T$SEK0=T$$SEG
        054454                          M$INCR  S$LSYM
                010002                  S$LSYM=S$LSYM+1
        054454                          M$SVC   C$BSEG
                                        .MCALL  M$GNINS,M$TSTLAB
        054454                          M$TSTLAB
                                        .MCALL  M$TLABEL,M$INCR
                                        .IIF LT T$TSTMAC, .MEXIT
                                        .RADIX  10
                                        M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                        .RADIX  8
                                        M$INCR  T$TSTSEQ
        054454                          M$GNINS <TRAP   C$BSEG>
                                        .IF LT SVCINS
                                        TRAP    C$BSEG
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                TRAP    C$BSEG
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
        054454  104404                                                          TRAP    C$BSEG
                                                        .NLIST
                                        .ENDC
   6636 054456  042777  000010  125614          BIC     #10,@CSRX               ;SELECT CHANNEL 1
   6637 054464  112777  000025  125604          MOVB    #25,@IDRHX              ;- --LOAD PPU INTO DOR 1   --  -   -
```

```
6638 054472  004737  011050                  JSR     PC,LOOP                ;WAIT A LITTLE
6639 054476  052777  000010  125574          BIS     #10,@CSRX              ;SELECT CHANNEL 2
6640 054504  012737  000002  002374          MOV     #2,CHAN                ;LOAD CHANNEL NUMBER
6641 054512  017737  125546  002502          MOV     @ICRX,BAD              ;GET ICR2 CONTENTS
6642 054520  122737  000025  002502          CMPB    #25,BAD                ;ICR CONTENTS SHOULD BE 25
6643 054526  001410                          BEQ     23$                    ;BRANCH IF YES
6644 054530  012737  000025  002500          MOV     #25,GOOD               ;SET UP DATA FOR ERROR MESSAGE
6645 054536                                  ERRSOFT 2103,E901,ERR501       ;ERROR HANDLER
                                     .MCALL  M$ERRINS
     054536                          M$ERRINS        2103,E901,ERR501,C$ERSOFT
                                     .MCALL  M$GNINS,M$WORD,M$TSTLAB
     054536                          M$SVC   C$ERSOFT
                                     .MCALL  M$GNINS,M$TSTLAB
     054536                          M$TSTLAB
                                     .MCALL  M$TLABEL,M$INCR
                                     .IIF LT T$TSTMAC, .MEXIT
                                     .RADIX  10
                                     M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                     .RADIX  8
                                     M$INCR  T$TSTSEQ
     054536                          M$GNINS <TRAP   C$ERSOFT>
                                     .IF LT SVCINS
                                     TRAP    C$ERSOFT
                                     .MEXIT
                                     .ENDC
                                     .IF EQ SVCINS
                                     .LIST
                                             TRAP    C$ERSOFT
                                                     .NLIST
                                     .MEXIT
                                     .ENDC
                                     .IF GT SVCINS
                                     .LIST
     054536  104457                                                                       TRAP    C$ERSOFT
                                                     .NLIST
                                     .ENDC
             000012                  .RADIX  10
                                     .IF NB  2103
             004067                  T$ERRNUM=2103
                                     .IFF
                                     .ERROR  ;MISSING ERROR NR
                                     .FNDC
     054540                          M$WORD  \T$ERRNUM
                                     .MCALL  M$GNINS
                                     .IRP    N,<2103>
                                     M$GNINS <.WORD  N>
                                     .ENDM
     054540                          M$GNINS <.WORD  2103>
                                     .IF LT SVCINS
                                     .WORD   2103
                                     .MEXIT
                                     .ENDC
                                     .IF EQ SVCINS
                                     .LIST
                                             .WORD   2103
                                                     .NLIST
                                     .MEXIT
```

```
                                .ENDC
                                .IF GT SVCINS
                                .LIST
    054540  004067                                                                  .WORD   2103
                                            .NLIST
                                .ENDC
            000010              .RADIX  8
                                .IF NB E901
    054542                      M$WORD  E901
                                .MCALL  M$GNINS
                                .IRP    N,<E901>
                                M$GNINS <.WORD  N>
                                .ENDM
    054542                      M$GNINS <.WORD  E901>
                                .IF LT SVCINS
                                .WORD   E901
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        .WORD   E901
                                            .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
    054542  005634                                                                  .WORD   E901
                                            .NLIST
                                .ENDC
                                .IFF
                                M$WORD  0
                                .ENDC
                                .IF NB ERR501
    054544                      M$WORD  ERR501
                                .MCALL  M$GNINS
                                .IRP    N,<ERR501>
                                M$GNINS <.WORD  N>
                                .ENDM
    054544                      M$GNINS <.WORD  ERR501>
                                .IF LT SVCINS
                                .WORD   ERR501
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        .WORD   ERR501
                                            .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
    054544  003672                                                                  .WORD   ERR501
                                            .NLIST
                                .ENDC
                                .IFF
                                M$WORD  0
                                .ENDC
```

```
 6646 054546                                    CKLOOP                          ;BRANCH TO BGNSEG IF ERRLOOP IS SET
                                        .MCALL  M$SVC
      054546                            M$SVC   C$CLP1
                                        .MCALL  M$GNINS,M$TSTLAB
      054546                            M$TSTLAB
                                        .MCALL  M$TLABEL,M$INCR
                                        .IIF LT T$TSTMAC, .MEXIT
                                        .RADIX  10
                                        M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                        .RADIX  8
                                        M$INCR  T$TSTSEQ
      054546                            M$GNINS <TRAP   C$CLP1>
                                        .IF LT SVCINS
                                        TRAP    C$CLP1
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                TRAP    C$CLP1
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
      054546  104406                                                                    TRAP    C$CLP1
                                                        .NLIST
                                        .ENDC
 6647 054550  112777  000000  125516    23$:    MOVB    #0,@IDRLX       ;----CLEAR PPR REGISTER---------------
 6648 054556  112777  000001  125504            MOVB    #1,@ICRHX       ;----LOAD NOT DACR INTO ACR 2---------
 6649 054564  013701  002314                    MOV     DPA2,R1         ;CREATE MLA2
 6650 054570  062701  000040                    ADD     #40,R1          ;...
 6651 054574  010137  002412                    MOV     R1,MLA2         ;STORE MLA2
 6652 054600  042777  000010  125472            BIC     #10,@CSRX       ;SELECT CHANNEL 1
 6653 054606  113777  002412  125462            MOVB    MLA2,@IDRHX     ;----LOAD MLA2 INTO DOR 1-------------
 6654 054614  004737  011050                    JSR     PC,LOOP         ;WAIT A LITTLE
 6655 054620                                    ENDSEG
                                        .MCALL  M$POP,M$GNLS,M$SVC,M$ENDERR
      054620                            M$POP   T$NS,T$NESTLEV,T$TEMP
                                        .MCALL  M$GETS,M$DECR
                                        .IF LT  T$NESTLEV
                                        .ERROR  T$NESTLEV       ; MACRO T$NS UNDERFLOW
                                        .MEXIT
                                        .ENDC
      054620                            M$GETS  T$NS,\T$NESTLEV,T$TEMP
              000003                    T$TEMP=T$NS2
      054620                            M$DECR  T$NESTLEV
              000001                    T$NESTLEV=T$NESTLEV-1
                                        .IF EQ F$SEG-T$TEMP
      054620                            M$POP   T$SEK,T$SEGLEV,T$$SEG
                                        .MCALL  M$GETS,M$DECR
                                        .IF LT  T$SEGLEV
                                        .ERROR  T$SEGLEV        ; MACRO T$SEK UNDERFLOW
                                        .MEXIT
                                        .ENDC
      054620                            M$GETS  T$SEK,\T$SEGLEV,T$$SEG
              010001                    T$$SEG=T$SEK0
      054620                            M$DECR  T$SEGLEV
```

C16


```
        177777          T$SEGLEV=T$SEGLEV-1
  054620                M$GNLS  T$$SEG
                        .MCALL  M$GEN
                        .IF NB T$$SEG
  054620                M$GEN   \T$$SEG,$,SVCTAG
                        .IF LE  SVCTAG
                        .IIF EQ SVCTAG,.LIST
                        10001$:
                        .IIF EQ SVCTAG,.NLIST
                        .MEXIT
                        .ENDC
                        .LIST
  054620                                                        10001$:
                                .NLIST
                        .IFF
                        M$GEN   \S$LSYM,$,SVCTAG
                        .ENDC
  054620                M$SVC   C$ESEG
                        .MCALL  M$GNINS,M$TSTLAB
  054620                M$TSTLAB
                        .MCALL  M$TLABEL,M$INCR
                        .IIF LT T$TSTMAC, .MEXIT
                        .RADIX  10
                        M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                        .RADIX  8
                        M$INCR  T$TSTSEQ
  054620                M$GNINS <TRAP   C$ESEG>
                        .IF LT SVCINS
                        TRAP    C$ESEG
                        .MEXIT
                        .ENDC
                        .IF EQ SVCINS
                        .LIST
                                TRAP    C$ESEG
                                        .NLIST
                        .MEXIT
                        .ENDC
                        .IF GT SVCINS
                        .LIST
  054620 104405                                                     TRAP    C$ESEG
                                        .NLIST
                        .ENDC
                        .IF EQ T$SEGLEV+1
         000041         T$SEG=F$END
                        .ENDC
                        .IFF
                        M$ENDERR        ENDSEG,T$TEMP
                        .ENDC
6656 054622                     BGNSEG
                        .MCALL  M$PUSH,M$INCR,M$SVC
         000040         T$SEG=F$BGN
  054622                M$PUSH  T$NS,T$NESTLEV,F$SEG
                        .MCALL  M$INCR,M$SETS
  054622                M$INCR  T$NESTLEV
         000002         T$NESTLEV=T$NESTLEV+1
  054622                M$SETS  T$NS,\T$NESTLEV,F$SEG
         000003         T$NS2=F$SEG
```

D16


```
             010002                                  T$$SEG=S$LSYM
      054622                                         M$PUSH  T$SEK,T$SEGLEV,T$$SEG
                                                     .MCALL  M$INCR,M$SETS
      054622                                         M$INCR  T$SEGLEV
             000000                                  T$SEGLEV=T$SEGLEV+1
      054622                                         M$SETS  T$SEK,\T$SEGLEV,T$$SEG
             010002                                  T$SEK0=T$$SEG
      054622                                         M$INCR  S$LSYM
             010003                                  S$LSYM=S$LSYM+1
      054622                                         M$SVC   C$BSEG
                                                     .MCALL  M$GNINS,M$TSTLAB
      054622                                         M$TSTLAB
                                                     .MCALL  M$TLABEL,M$INCR
                                                     .IIF LT T$TSTMAC, .MEXIT
                                                     .RADIX  10
                                                     M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                                     .RADIX  8
                                                     M$INCR  T$TSTSEQ
      054622                                         M$GNINS <TRAP   C$BSEG>
                                                     .IF LT SVCINS
                                                     TRAP    C$BSEG
                                                     .MEXIT
                                                     .ENDC
                                                     .IF EQ SVCINS
                                                     .LIST
                                                             TRAP    C$BSEG
                                                                     .NLIST
                                                     .MEXIT
                                                     .ENDC
                                                     .IF GT SVCINS
                                                     .LIST
      054622 104404                                                                                  TRAP    C$BSEG
                                                                     .NLIST
                                                     .ENDC
 6657 054624 042777 000010 125446                            BIC     #10,@CSRX               ;SELECT CHANNEL 1
 6658 054632 112777 000005 125436                            MOVB    #5,@IDRHX               ;----LOAD PPC INTO DOR 1----- -  - ---
 6659 054640 004737 011050                                   JSR     PC,LOOP                 ;WAIT A LITTLE
 6660 054644 052777 000010 125426                            BIS     #10,@CSRX               ;SELECT CHANNEL 2
 6661 054652 017737 125406 002502                            MOV     @ICRX,BAD               ;GET ICR2 CONTENTS
 6662 054660 122737 000005 002502                            CMPB    #5,BAD                  ;ICR CONTENTS SHOULD BE 5
 6663 054666 001410                                          BEQ     30$                     ;BRANCH IF YES
 6664 054670 012737 000005 002500                            MOV     #5,GOOD                 ;SET UP DATA FOR ERROR MESSAGE
 6665 054676                                                 ERRSOFT 2104,E901,ERR501        ;ERROR HANDLER
                                                     .MCALL  M$ERRINS
      054676                                         M$ERRINS        2104,E901,ERR501,C$ERSOFT
                                                     .MCALL  M$GNINS,M$WORD,M$TSTLAB
      054676                                         M$SVC   C$ERSOFT
                                                     .MCALL  M$GNINS,M$TSTLAB
      054676                                         M$TSTLAB
                                                     .MCALL  M$TLABEL,M$INCR
                                                     .IIF LT T$TSTMAC, .MEXIT
                                                     .RADIX  10
                                                     M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                                     .RADIX  8
                                                     M$.NCR  T$TSTSEQ
      054676                                         M$GNINS <TRAP   C$ERSOFT>
                                                     .IF LT SVCINS
```

E16

TEST 21: PARALLEL POLL INTERFACE FUNCTION TEST OF CHANNEL 2

```
                          TRAP    C$ERSOFT
                          .MEXIT
                          .ENDC
                          .IF EQ SVCINS
                          .LIST
                                  TRAP    C$ERSOFT
                                          .NLIST
                          .MEXIT
                          .ENDC
                          .IF GT SVCINS
                          .LIST
054676  104457                                                  TRAP    C$ERSOFT
                                          .NLIST
                          .ENDC
        000012            .RADIX  10
                          .IF NB  2104
        004070            T$ERRNUM=2104
                          .IFF
                          .ERROR  ;MISSING ERROR-NR
                          .ENDC
054700                    M$WORD  \T$ERRNUM
                          .MCALL  M$GNINS
                          .IRP    N,<2104>
                          M$GNINS <.WORD  N>
                          .ENDM
054700                    M$GNINS <.WORD  2104>
                          .IF LT SVCINS
                          .WORD   2104
                          .MEXIT
                          .ENDC
                          .IF EQ SVCINS
                          .LIST
                                  .WORD   2104
                                          .NLIST
                          .MEXIT
                          .ENDC
                          .IF GT SVCINS
                          .LIST
054700  004070                                                  .WORD   2104
                                          .NLIST
                          .ENDC
        000010            .RADIX  8
                          .IF NB E901
054702                    M$WORD  E901
                          .MCALL  M$GNINS
                          .IRP    N,<E901>
                          M$GNINS <.WORD  N>
                          .ENDM
054702                    M$GNINS <.WORD  E901>
                          .IF LT SVCINS
                          .WORD   E901
                          .MEXIT
                          .ENDC
                          .IF EQ SVCINS
                          .LIST
                                  .WORD   E901
                                          .NLIST
```

```
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
     054702  005634                                                                  .WORD   E901
                                          .NLIST
                                .ENDC
                                .IFF
                                M$WORD  0
                                .ENDC
                                .IF NB ERR501
     054704                     M$WORD  ERR501
                                .MCALL  M$GNINS
                                .IRP    N,<ERR501>
                                M$GNINS <.WORD  N>
                                .ENDM
     054704                     M$GNINS <.WORD  ERR501>
                                .IF LT SVCINS
                                .WORD   ERR501
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                     .WORD   ERR501
                                          .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
     054704  003672                                                                  .WORD   ERR501
                                          .NLIST
                                .ENDC
                                .IFF
                                M$WORD  0
                                .ENDC
6666 054706                          CKLOOP                    ;BRANCH TO BGNSEG IF ERRLOOP IS SET
                                .MCALL  M$SVC
     054706                     M$SVC   C$CLP1
                                .MCALL  M$GNINS,M$TSTLAB
     054706                     M$TSTLAB
                                .MCALL  M$TLABEL,M$INCR
                                .IIF LT T$TSTMAC, .MEXIT
                                .RADIX  10
                                M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                .RADIX  8
                                M$INCR  T$TSTSEQ
     054706                     M$GNINS <TRAP   C$CLP1>
                                .IF LT SVCINS
                                TRAP    C$CLP1
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                     TRAP    C$CLP1
                                          .NLIST
                                .MEXIT
                                .ENDC
```

G16


```
                                           .IF GT SVCINS
                                           .LIST
      054706  104406                                                                               TRAP    C$CLP1
                                                         .NLIST
                                           .ENDC
6667  054710  112777  000024  125352      30$:    MOVB    #24,@ICRHX            ;----LOAD PTS INTO ACR 2-------------
6668  054716  112777  000001  125344              MOVB    #1,@ICRHX             ;----LOAD NOT DACR INTO ACR 2---------
6669  054724                                      ENDSEG
                                           .MCALL  M$POP,M$GNLS,M$SVC,M$ENDERR
      054724                               M$POP   T$NS,T$NESTLEV,T$TEMP
                                           .MCALL  M$GETS,M$DECR
                                           .IF LT  T$NESTLEV
                                           .ERROR  T$NESTLEV       ; MACRO T$NS UNDERFLOW
                                           .MEXIT
                                           .ENDC
      054724                               M$GETS  T$NS,\T$NESTLEV,T$TEMP
              000003                       T$TEMP=T$NS2
      054724                               M$DECR  T$NESTLEV
              000001                       T$NESTLEV=T$NESTLEV-1
                                           .IF EQ F$SEG-T$TEMP
      054724                               M$POP   T$SEK,T$SEGLEV,T$$SEG
                                           .MCALL  M$GETS,M$DECR
                                           .IF LT  T$SEGLEV
                                           .ERROR  T$SEGLEV        ; MACRO T$SEK UNDERFLOW
                                           .MEXIT
                                           .ENDC
      054724                               M$GETS  T$SEK,\T$SEGLEV,T$$SEG
              010002                       T$$SEG=T$SEK0
      054724                               M$DECR  T$SEGLEV
              177777                       T$SEGLEV=T$SEGLEV-1
      054724                               M$GNLS  T$$SEG
                                           .MCALL  M$GEN
                                           .IF NB T$$SEG
      054724                               M$GEN   \T$$SEG,$,SVCTAG
                                           .IF LE  SVCTAG
                                           .IIF EQ SVCTAG,.LIST
                                           10002$:
                                           .IIF EQ SVCTAG,.NLIST
                                           .MEXIT
                                           .ENDC
                                           .LIST
      054724                                                                          10002$:
                                                   .NLIST
                                           .IFF
                                           M$GEN   \S$LSYM,$,SVCTAG
                                           .ENDC
      054724                               M$SVC   C$ESEG
                                           .MCALL  M$GNINS,M$TSTLAB
      054724                               M$TSTLAB
                                           .MCALL  M$TLABEL,M$INCR
                                           .IIF LT T$TSTMAC, .MEXIT
                                           .RADIX  10
                                           M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                           .RADIX  8
                                           M$INCR  T$TSTSEQ
      054724                               M$GNINS <TRAP   C$ESEG>
                                           .IF LT SVCINS
```

H16


```
                                TRAP    C$ESEG
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        TRAP    C$ESEG
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
     054724  104405                                                              TRAP    C$ESEG
                                                .NLIST
                                .ENDC
                                .IF EQ T$SEGLEV+1
             000041             I$SEG=F$END
                                .ENDC
                                .IFF
                                M$ENDERR        ENDSEG,T$TEMP
                                .ENDC
6670 054726                             BGNSEG
                                .MCALL  M$PUSH,M$INCR,M$SVC
             000040             I$SEG=F$BGN
     054726                     M$PUSH  T$NS,T$NESTLEV,F$SEG
                                .MCALL  M$INCR,M$SETS
     054726                     M$INCR  T$NESTLEV
             000002             T$NESTLEV=T$NESTLEV+1
     054726                     M$SETS  T$NS,\T$NESTLEV,F$SEG
             000003             T$NS2=F$SEG
             010003             T$$SEG-S$LSYM
     054726                     M$PUSH  T$SEK,T$SEGLEV,T$$SEG
                                .MCALL  M$INCR,M$SETS
     054726                     M$INCR  T$SEGLEV
             000000             T$SEGLEV=T$SEGLEV+1
     054726                     M$SETS  T$SEK,\T$SEGLEV,T$$SEG
             010003             T$SEK0=T$$SEG
     054726                     M$INCR  S$LSYM
             010004             S$LSYM=S$LSYM+1
     054726                     M$SVC   C$BSEG
                                .MCALL  M$GNINS,M$TSTLAB
     054726                     M$TSTLAB
                                .MCALL  M$TLABEL,M$INCR
                                .IIF LT T$TSTMAC, .MEXIT
                                .RADIX  10
                                M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                .RADIX  8
                                M$INCR  T$TSTSEQ
     054726                     M$GNINS <TRAP   C$BSEG>
                                .IF LT SVCINS
                                TRAP    C$BSEG
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        TRAP    C$BSEG
                                                .NLIST
                                .MEXIT
```

```
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
     054726  104404                                                                          TRAP    C$BSEG
                                                     .NLIST
                                        .ENDC
     054730  042777  000010  125342           BIC     #10,@CSRX              ;SELECT CHANNEL 1
     054736  113777  002402  125332           MOVB    RSAVE,@IDRHX           ;----LOAD PPE INTO DOR 1-------------
     054744  004737  011050                   JSR     PC,LOOP                ;WAIT A LITTLE
     054750  052777  000010  125322           BIS     #10,@CSRX              ;SELECT CHANNEL 2
     054756  012737  000002  002374           MOV     #2,CHAN                ;LOAD CHANNEL NUMBER
     054764  017737  125274  002502           MOV     @ICRX,BAD              ;GET ICR2 CONTENTS
     054772  123737  002402  002502           CMPB    RSAVE,BAD              ;ICR CONTENTS SHOULD BE PPE
     055000  001410                           BEQ     40$                    ;BRANCH IF YES
     055002  013737  002402  002500           MOV     RSAVE,GOOD             ;SET UP DATA FOR ERROR MESSAGE
     055010                                   ERRSOFT 2105,E901,ERR501       ;ERROR HANDLER
                                        .MCALL  M$ERRINS
     055010                             M$ERRINS        2105,E901,ERR501,C$ERSOFT
                                        .MCALL  M$GNINS,M$WORD,M$TSTLAB
     055010                             M$SVC   C$ERSOFT
                                        .MCALL  M$GNINS,M$TSTLAB
     055010                             M$TSTLAB
                                        .MCALL  M$TLABEL,M$INCR
                                        .IIF LT T$TSTMAC, .MEXIT
                                        .RADIX  10
                                        M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                        .RADIX  8
                                        M$INCR  T$TSTSEQ
     055010                             M$GNINS <TRAP   C$ERSOFT>
                                        .IF LT SVCINS
                                        TRAP    C$ERSOFT
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                TRAP    C$ERSOFT
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
     055010  104457                                                                          TRAP    C$ERSOFT
                                                     .NLIST
                                        .ENDC
             000012                     .RADIX  10
                                        .IF NB  2105
             004071                     T$ERRNUM=2105
                                        .IFF
                                        .ERROR  ;MISSING ERROR NR
                                        .ENDC
     055012                             M$WORD  \T$ERRNUM
                                        .MCALL  M$GNINS
                                        .IRP    N,<2105>
                                        M$GNINS <.WORD  N>
                                        .ENDM
     055012                             M$GNINS <.WORD  2105>
                                        .IF LT SVCINS
```

```
                                        .WORD   2105
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                .WORD   2105
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
        055012  004071                                                                  .WORD   2105
                                                        .NLIST
                                        .ENDC
                000010                  .RADIX  8
                                        .IF NB E901
        055014                          M$WORD  E901
                                        .MCALL  M$GNINS
                                        .IRP    N,<E901>
                                        M$GNINS <.WORD  N>
                                        .ENDM
        055014                          M$GNINS <.WORD  E901>
                                        .IF LT SVCINS
                                        .WORD   E901
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                .WORD   E901
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
        055014  005634                                                                  .WORD   E901
                                                        .NLIST
                                        .ENDC
                                        .IFF
                                        M$WORD  0
                                        .ENDC
                                        .IF NB ERR501
        055016                          M$WORD  ERR501
                                        .MCALL  M$GNINS
                                        .IRP    N,<ERR501>
                                        M$GNINS <.WORD  N>
                                        .ENDM
        055016                          M$GNINS <.WORD  ERR501>
                                        .IF LT SVCINS
                                        .WORD   ERR501
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                .WORD   ERR501
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
```

K16

TEST 21: PARALLEL POLL INTERFACE FUNCTION TEST OF CHANN'L 2

```
                                        .IF GT SVCIN,
                                        .LIST
     055016  003672                                                                          .WORD   ERR501
                                                     .NLIST
                                        .ENDC
                                        .IFF
                                        M$WORD  0
                                        .ENDC
6681 055020                                     CKLOOP                          ;BRANCH TO BGNSEG IF ERRLOOP IS SET
                                        .MCALL  M$SVC
     055020                             M$SVC   C$CLP1
                                        .MCALL  M$GNINS,M$TSTLAB
     055020                             M$TSTLAB
                                        .MCALL  M$TLABEL,M$INCR
                                        .IIF LT T$TSTMAC, .MEXIT
                                        .RADIX  10
                                        M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                        .RADIX  8
                                        M$INCR  T$TSTSEQ
     055020                             M$GNINS <TRAP   C$CLP1>
                                        .IF LT SVCINS
                                        TRAP    C$CLP1
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                TRAP    C$CLP1
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
     055020  104406                                                                          TRAP    C$CLP1
                                                        .NLIST
                                        .ENDC
6682 055022  113777  002420  125244     40$:    MOVB    MSA1,@IDRLX             ;----LOAD DATA INTO PPR 2-------- -----
6683 055030  112777  000001  125232             MOVB    #1,@ICRHX               ;----LOAD NOT DACR INTO ACR 2------ --
6684 055036  042777  000010  125234             BIC     #10,@CSRX               ;SELECT CHAN.EL 1
6685 055044  112777  000077  125224             MOVB    #77,@IDRHX              ;----LOAD UNL INTO DOR 1------ -------
6686 055052  004737  011050                     JSR     PC,LOOP                 ;WAIT A LITTLE
6687 055056  112777  000216  125204             MOVB    #216,@ICRHX             ;----LOAD RPP INTO ACR 1- ------------
6688 055064  017737  125174  002502             MOV     @ICRX,BAD               ;GET ICR1 CONTENTS
6689 055072  123737  002420  002502             CMPB    MSA1,BAD                ;COMPARE DATA
6690 055100  001410                             BEQ     50$                     ;BRANCH IF YES
6691 055102  013737  002420  002500             MOV     MSA1,GOOD               ;SET UP DATA FOR ERROR MESSAGE
6692 055110                                     ERRSOFT 2106,E901,ERR501        ;ERROR HANDLER
                                        .MCALL  M$ERRINS
     055110                             M$ERRINS        2106,E901,ERR501,C$ERSOFT
                                        .MCALL  M$GNINS,M$WORD,M$TSTLAB
     055110                             M$SVC   C$ERSOFT
                                        .MCALL  M$GNINS,M$TSTLAB
     055110                             M$TSTLAB
                                        .MCALL  M$TLABEL,M$INCR
                                        .IIF LT T$TSTMAC, .MEXIT
                                        .RADIX  10
                                        M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                        .RADIX  8
```

```
                                M$INCR  T$TSTSEQ
055110                          M$GNINS <TRAP   C$ERSOFT>
                                .IF LT SVCINS
                                TRAP    C$ERSOFT
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        TRAP    C$ERSOFT
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
055110  104457                                                          TRAP    C$ERSOFT
                                                .NLIST
                                .ENDC
        000012                  .RADIX  10
                                .IF NB  2106
        004072                  T$ERRNUM=2106
                                .IFF
                                .ERROR  ;MISSING ERROR-NR
                                .ENDC
055112                          M$WORD  \T$ERRNUM
                                .MCALL  M$GNINS
                                .IRP    N,<2106>
                                M$GNINS <.WORD  N>
                                .ENDM
055112                          M$GNINS <.WORD  2106>
                                .IF LT SVCINS
                                .WORD   2106
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        .WORD   2106
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
055112  004072                                                          .WORD   2106
                                                .NLIST
                                .ENDC
        000010                  .RADIX  8
                                .IF NB E901
055114                          M$WORD  E901
                                .MCALL  M$GNINS
                                .IRP    N,<E901>
                                M$GNINS <.WORD  N>
                                .ENDM
055114                          M$GNINS <.WORD  E901>
                                .IF LT SVCINS
                                .WORD   F901
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
```

M16

TEST 21: PARALLEL POLL INTERFACE FUNCTION TEST OF CHANNEL 2

```
                                .LIST
                                        .WORD   E901
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
        055114  005634                                                                  .WORD   E901
                                                .NLIST
                                .ENDC
                                .IFF
                                M$WORD  0
                                .ENDC
                                .IF NB ERR501
        055116                  M$WORD  ERR501
                                .MCALL  M$GNINS
                                .IRP    N,<ERR501>
                                M$GNINS <.WORD  N>
                                .ENDM
        055116                  M$GNINS <.WORD  ERR501>
                                .IF LT SVCINS
                                .WORD   ERR501
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        .WORD   ERR501
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
        055116  003672                                                                  .WORD   ERR501
                                                .NLIST
                                .ENDC
                                .IFF
                                M$WORD  0
                                .ENDC
   6693 055120                          CKLOOP                  ;BRANCH TO BGNSEG IF ERRLOOP IS SET
                                .MCALL  M$SVC
        055120                  M$SVC   C$CLP1
                                .MCALL  M$GNINS,M$TSTLAB
        055120                  M$TSTLAB
                                .MCALL  M$TLABEL,M$INCR
                                .IIF LT T$TSTMAC, .MEXIT
                                .RADIX  10
                                M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                .RADIX  8
                                M$INCR  T$TSTSEQ
        055120                  M$GNINS <TRAP   C$CLP1>
                                .IF LT SVCINS
                                TRAP    C$CLP1
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        TRAP    C$CLP1
```

```
                                                   .NLIST
                                  .MEXIT
                                  .ENDC
                                  .IF GT SVCINS
                                  .LIST
      055120  104406                                                                   TRAP    C$CLP1
                                                   .NLIST
                                  .ENDC
 6694 055122  112777  000016  125140  50$:   MOVB    #16,@ICRHX           ; ---LOAD NOT RPP INTO ACR 1----
 6695 055130                              ENDSEG
                                  .MCALL  M$POP,M$GNLS,M$SVC,M$ENDERR
      055130                      M$POP   T$NS,T$NESTLEV,T$TEMP
                                  .MCALL  M$GETS,M$DECR
                                  .IF LT  T$NESTLEV
                                  .ERROR  T$NESTLEV        ; MACRO T$NS UNDERFLOW
                                  .MEXIT
                                  .ENDC
      055130                      M$GETS  T$NS,\T$NESTLEV,T$TEMP
              000003              T$TEMP=T$NS2
      055130                      M$DECR  T$NESTLEV
              000001              T$NESTLEV=T$NESTLEV-1
                                  .IF EQ F$SEG-T$TEMP
      055130                      M$POP   T$SEK,T$SEGLEV,T$$SEG
                                  .MCALL  M$GETS,M$DECR
                                  .IF LT  T$SEGLEV
                                  .ERROR  T$SEGLEV         ; MACRO T$SEK UNDERFLOW
                                  .MEXIT
                                  .ENDC
      055130                      M$GETS  T$SEK,\T$SEGLEV,T$$SEG
              010003              T$$SEG=T$SEK0
      055130                      M$DECR  T$SEGLEV
              177777              T$SEGLEV=T$SEGLEV-1
      055130                      M$GNLS  T$$SEG
                                  .MCALL  M$GEN
                                  .IF NB T$$SEG
      055130                      M$GEN   \T$$SEG,$,SVCTAG
                                  .IF LE  SVCTAG
                                  .IIF EQ SVCTAG,.LIST
                                  10003$:
                                  .IIF EQ SVCTAG,.NLIST
                                  .MEXIT
                                  .ENDC
                                  .LIST
      055130                                                                     10003$:
                                          .NLIST
                                  .IFF
                                  M$GEN   \S$LSYM,$,SVCTAG
                                  .ENDC
      055130                      M$SVC   C$ESEG
                                  .MCALL  M$GNINS,M$TSTLAB
      055130                      M$TSTLAB
                                  .MCALL  M$TLABEL,M$INCR
                                  .IIF LT T$TSTMAC, .MEXIT
                                  .RADIX  10
                                  M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                  .RADIX  8
                                  M$INCR  T$TSTSEQ
```

C1

C1


```
     055130                              M$GNINS <TRAP   C$ESEG>
                                         .IF LT SVCINS
                                         TRAP    C$ESEG
                                         .MEXIT
                                         .ENDC
                                         .IF EQ SVCINS
                                         .LIST
                                                 TRAP    C$ESEG
                                                         .NLIST
                                         .MEXIT
                                         .ENDC
                                         .IF GT SVCINS
                                         .LIST
     055130  104405                                                                                  TRAP    C$ESEG
                                                         .NLIST
                                         .ENDC
                                         .IF EQ T$SEGLEV+1
             000041                      I$SEG=F$END
                                         .ENDC
                                         .IFF
                                         M$ENDERR        ENDSEG,T$TEMP
                                         .ENDC
6696 055132  005737  002234                      TST     QVP                     ;IS QUICK VERIFY PASS SELECTED
6697 055136  001012                              BNE     EXQV21                  ;IF YES EXIT TEST
6698 055140  005237  002402                      INC     RSAVE                   ;CREATE NEW PPE
6699 055144  106137  002420                      ROLB    MSA1                    ;CHANGE DATA
6700 055150  022737  000157  002402              CMP     #157,RSAVE              ;ALL PPE DONE
6701 055156  001402                              BEQ     EXQV21                  ;EXIT TEST IF YES
6702 055160  000137  054256                      JMP     ITAC21                  ;IF NO TEST ITERATION
6703 055164                              EXQV21: EXIT    TST                     ;EXIT TEST
                                         .MCALL  M$SVC,M$EXIT,M$EXSEG,M$EXTJ,M$GETTOP,M$CHECK,M$WORD,XFER
             000041                      T$FLAG=F$END
     055164                              M$CHECK TST,T$TEMP,T$FLAG
                                         .IF IDN <TST>,<TST>
             010052                      T$TEMP=T$$TEST
             000040                      T$FLAG=I$TST
                                         .MEXIT
                                         .ENDC
                                         .IF IDN <SUB>,<TST>
                                         T$TEMP=T$$SUB
                                         T$FLAG=I$SUB
                                         .MEXIT
                                         .ENDC
                                         .IF IDN <SEG>,<TST>
                                         T$TEMP=T$$SEG
                                         T$FLAG=I$SEG
                                         .MEXIT
                                         .ENDC
                                         .IF IDN <INIT>,<TST>
                                         T$TEMP-T$$INIT
                                         T$FLAG=I$INIT
                                         .MEXIT
                                         .ENDC
                                         .IF IDN <CLN>,<TST>
                                         T$TEMP-T$$CLEAN
                                         T$FLAG-I$CLN
                                         .MEXIT
```

```
                                        .ENDC
                                        .IF IDN <SRV>,<TST>
                                        T$TEMP=T$$SRV
                                        T$FLAG=I$SRV
                                        .MEXIT
                                        .ENDC
                                        .IF IDN <MSG>,<TST>
                                        T$TEMP=T$$MSG
                                        T$FLAG=F$JMP
                                        .MEXIT
                                        .ENDC
                                        .IF IDN <RPT>,<TST>
                                        T$TEMP=T$$RPT
                                        T$FLAG=F$JMP
                                        .MEXIT
                                        .ENDC
                                        .IF IDN <DU>,<TST>
                                        T$TEMP=T$$DU
                                        T$FLAG=F$JMP
                                        .MEXIT
                                        .ENDC
                                        .IF IDN <AU>,<TST>
                                        T$TEMP=T$$AU
                                        T$FLAG=F$JMP
                                        .MEXIT
                                        .ENDC
                                        .IF EQ T$FLAG-F$JMP
                                        M$WORD  J$JMP
                                        M$EXTJ  \T$TEMP
                                        .MEXIT
                                        .ENDC
                                        .IF EQ  T$FLAG-F$BGN
      055164                            M$SVC   C$EXIT
                                        .MCALL  M$GNINS,M$TSTLAB
      055164                            M$TSTLAB
                                        .MCALL  M$TLABEL,M$INCR
                                        .IIF LT T$TSTMAC, .MEXIT
                                        .RADIX  10
                                        M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                        .RADIX  8
                                        M$INCR  T$TSTSEQ
      055164                            M$GNINS <TRAP   C$EXIT>
                                        .IF LT SVCINS
                                        TRAP    C$EXIT
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                TRAP    C$EXIT
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
      055164  104432                                                            TRAP    C$EXIT
                                                        .NLIST
                                        .ENDC
```

```
                                .IF IDN <SEG>,<TST>
                                M$GETTOP T$SEK,T$SEGLEV,T$TEMP
                                M$EXSEG \T$TEMP
                                .IFF
     055166                     M$EXIT  \T$TEMP
                                .MCALL  M$GNINS
     055166                     M$GNINS <.WORD  L10052-.>
                                .IF LT SVCINS
                                .WORD   L10052-.
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        .WORD   L10052-.
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
     055166  000074                                                                   .WORD   L10052-.
                                                .NLIST
                                .ENDC
                                .ENDC
                                .MEXIT
                                .ENDC
                                .IF IDN <HRD>,<TST>
                                M$GETTOP        T$NS,T$NESTLEV,T$TEMP
                                .IF EQ  F$HARD-T$TEMP
                                .IRP    N,<\T$$HARD>
                                XFER    L'N
                                .ENDM
                                .MEXIT
                                .ENDC
                                .ENDC
                                .IF IDN <SFT>,<TST>
                                M$GETTOP        T$NS,T$NESTLEV,T$TEMP
                                .IF EQ  F$SOFT-T$TEMP
                                .IRP    N,<\T$$SOFT>
                                XFER    L'N
                                .ENDM
                                .MEXIT
                                .ENDC
                                .ENDC
                                .ERROR  ;ILL. "EXIT TST" STMT.

                                        .NLIST  BEX
     055170    045     123     062  TSHD21: .ASCIZ  /%S2%APARALLEL POLL INTERFACE FUNCTION TEST OF CHANNEL 2%N/
                                        .LIST   BEX
                                        .EVEN
     055262                             ENDTST
                                .MCALL  M$POP,M$GNTAG,M$SVC,M$ENDERR
                                .IF EQ  F$BGN-I$TST
             000041             I$TST=F$END
                                .IFF
                                .ERROR  ;MISSING "BGNTST"
                                .MEXIT
                                .ENDC
```

```
055262                          M$POP   T$NS,T$NESTLEV,T$TEMP
                                .MCALL  M$GETS,M$DECR
                                .IF LT  T$NESTLEV
                                .ERROR  T$NESTLEV       ; MACRO T$NS UNDERFLOW
                                .MEXIT
                                .ENDC
055262                          M$GETS  T$NS,\T$NESTLEV,T$TEMP
        000001                  T$TEMP=T$NS1
055262                          M$DECR  T$NESTLEV
        000000                  T$NESTLEV=T$NESTLEV-1
                                .IF EQ F$TEST-T$TEMP
055262                          M$GNTAG L,T$$TEST
                                .MCALL  M$GEN
055262                          M$GEN   L,\T$$TEST,SVCTAG
                                .IF LE  SVCTAG
                                .IIF EQ SVCTAG,.LIST
                                L10052:
                                .IIF EQ SVCTAG,.NLIST
                                .MEXIT
                                .ENDC
                                .LIST
055262                                                                  L10052:
                                        .NLIST
        010000                  S$LSYM=T$LSYM
055262                          M$SVC   C$ETST
                                .MCALL  M$GNINS,M$TSTLAB
055262                          M$TSTLAB
                                .MCALL  M$TLABEL,M$INCR
                                .IIF LT T$TSTMAC, .MEXIT
                                .RADIX  10
                                M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                .RADIX  8
                                M$INCR  T$TSTSEQ
055262                          M$GNINS <TRAP   C$ETST>
                                .IF LT SVCINS
                                TRAP    C$ETST
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        TRAP    C$ETST
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
055262  104401                                                                  TRAP    C$ETST
                                                .NLIST
                                .ENDC
        000041                  I$TST=F$END
                                .IFF
                                M$ENDERR        ENDTST,T$TEMP
                                .ENDC
```

```
                                        .SBTTL  TEST 22: END OF A MESSAGE BLOCK TEST
                                        ;*******************************************************************************
                                        ;               IEX - TEST 22
                                        ;PART 1 CHECKS THE END OF A MESSAGE BLOCK FROM CHANNEL 1. CHANNEL 2 SENDS THE
                                        ;       EOI MESSAGE VIA THE IEC/IEEE BUS.
                                        ;PART 2 CHECKS THE END OF A MESSAGE BLOCK FROM CHANNEL 2. CHANNEL 1 SENDS THE
                                        ;       EOI MESSAGE VIA THE IEC/IEEE BUS.
                                        ;*******************************************************************************
055264                                          BGNTST
                                        .MCALL  M$INCR,M$GNTEST,M$PUSH,M$INCR
                                        .IF NE  F$END-I$SUB
                                        .ERROR  ;"BGNTST" IN SUB
                                        .MEXIT
                                        .ENDC
                                        .IF NE  F$END-I$SEG
                                        .ERROR  ;"BGNTST" IN SEG
                                        .MEXIT
                                        .ENDC
                                        .IF NE  F$END-I$TST
                                        .ERROR  ;"BGNTST" IN TST
                                        .MEXIT
                                        .IFF
        000040                          I$TST=F$BGN
                                        .ENDC
                                        .IF B
055264                                  M$INCR  T$TESTNUM
        000026                          T$TESTNUM=T$TESTNUM+1
                                        .IFF
                                        T$TESTNUM=
                                        .ENDC
        000000                          T$SUBNUM-0
        000012                          .RADIX  10
055264                                  M$GNTEST        \T$TESTNUM
                                        .MCALL  M$GEN
055264                                  M$GEN   T,22:,SVCTST
                                        .IF LE  SVCTST
                                        .IIF EQ SVCTST,.LIST
                                        T22::
                                        .IIF EQ SVCTST,.NLIST
                                        .MEXIT
                                        .ENDC
                                        .LIST
055264                                                                                  T22::
                                                .NLIST
        000010                          .RADIX  8
055264                                  M$PUSH  T$NS,T$NESTLEV,F$TEST
                                        .MCALL  M$INCR,M$SETS
055264                                  M$INCR  T$NESTLEV
        000001                          T$NESTLEV=T$NESTLEV+1
055264                                  M$SETS  T$NS,\T$NESTLEV,F$TEST
        000001                          T$NS1=F$TEST
        010053                          T$$TEST=T$TAGNUM
055264                                  M$INCR T$TAGNUM
        010054                          T$TAGNUM=T$TAGNUM+1
        000001                          T$TSTSEQ=1
055264  005737  002324                          TST     PNTF                    ;IS THE PNT FLAG SET
055270  001410                                  BEQ     7$                      ;IF YES, PRINT THE TEST HEADER
```

```
  6722 055272                               PRINTF  #TSHD22              ;...
                                    .MCALL  M$PRINT
                                    .IF B   #TSHD22
                                    .ERROR  ;MISSING FORMAT
                                    .MEXIT
                                    .ENDC
                                    .IF B   <>
       055272                       M$PRINT C$PNTF,#TSHD22
                                    .MCALL  M$COUNT,M$PUT,M$GNINS,M$SVC
              000001                T$ARGCNT=1
       055272                       M$COUNT T$ARGCNT,<>,<>,<>,<>,<>,<>,<>,<>
                                    .IF NB <>
                                    M$COUNT T$ARGCNT,<>,<>,<>,<>,<>,<>,<>,<>
                                    .ENDC
                                    .IF NB <>
                                    T$ARGCNT=T$ARGCNT+1
                                    .ENDC
                                    .IRP    N,<\T$ARGCNT>
                                    M$PUT   #N,#TSHD22,<>,<>,<>,<>,<>,<>,<>,<>
                                    .ENDM
       055272                       M$PUT   #1,#TSHD22,<>,<>,<>,<>,<>,<>,<>,<>
                                    .MCALL  M$PUT1
                                    .IF NB  <#TSHD22>
       055272                       M$PUT   <#TSHD22>,<>,<>,<>,<>,<>,<>,<>,<>
                                    .MCALL  M$PUT1
                                    .IF NB  <>
                                    M$PUT   <>,<>,<>,<>,<>,<>,<>,<>,<>
                                    .ENDC
                                    .IF NB  <#TSHD22>
       055272                       M$PUT1  #TSHD22
                                    .MCALL  M$GNINS
                                    .IF B
       055272                       M$GNINS <MOV    #TSHD22,-(SP)>
                                    .IF LT SVCINS
                                    MOV     #TSHD22,-(SP)
                                    .MEXIT
                                    .ENDC
                                    .IF EQ SVCINS
                                    .LIST
                                            MOV     #TSHD22,-(SP)
                                                    .NLIST
                                    .MEXIT
                                    .ENDC
                                    .IF GT SVCINS
                                    .LIST
       055272 012746  057204                                            MOV     #TSHD22,-(SP)
                                                    .NLIST
                                    .ENDC
                                    .IFF
                                    .IF DIF B,<#TSHD22>
                                    .ERROR  ;ILL. ARG. "#TSHD22" ONLY "B" IS ALLOWED.
                                    .MEXIT
                                    .ENDC
                                    M$GNINS <CLR    -(SP)>
                                    M$GNINS <BISB   ,(SP)>
                                    .ENDC
                                    .ENDC
```

```
                                        .ENDC
                                        .IF NB  <#1>
055276                                  M$PUT1  #1
                                        .MCALL  M$GNINS
                                        .IF B
055276                                  M$GNINS <MOV    #1,-(SP)>
                                        .IF LT SVCINS
                                        MOV     #1,-(SP)
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                MOV     #1,-(SP)
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
055276  012746  000001                                                                  MOV     #1, (SP)
                                                        .NLIST
                                        .ENDC
                                        .IFF
                                        .IF DIF B,<#1>
                                        .ERROR  ;ILL. ARG. "#1" ONLY "B" IS ALLOWED.
                                        .MEXIT
                                        .ENDC
                                        M$GNINS <CLR    -(SP)>
                                        M$GNINS <BISB   ,(SP)>
                                        .ENDC
                                        .ENDC
055302                                  M$GNINS <MOV    SP,R0>
                                        .IF LT SVCINS
                                        MOV     SP,R0
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                MOV     SP,R0
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
055302  010600                                                                          MOV     SP,R0
                                                        .NLIST
                                        .ENDC
055304                                  M$SVC   C$PNTF
                                        .MCALL  M$GNINS,M$TSTLAB
055304                                  M$TSTLAB
                                        .MCALL  M$TLABEL,M$INCR
                                        .IIF LT T$TSTMAC, .MEXIT
                                        .RADIX  10
                                        M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                        .RADIX  8
                                        M$INCR  T$TSTSEQ
055304                                  M$GNINS <TRAP   C$PNTF>
                                        .IF LT SVCINS
```

```
                                        TRAP    C$PNTF
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                TRAP    C$PNTF
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
       055304  104417                                                                   TRAP    C$PNTF
                                                        .NLIST
                                        .ENDC
                                        .IRP    N,<\T$ARGCNT*2+2>
                                        M$GNINS <ADD    #N,SP>
                                        .ENDM
       055306                           M$GNINS <ADD    #4,SP>
                                        .IF LT SVCINS
                                        ADD     #4,SP
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                ADD     #4,SP
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
       055306  062706  000004                                                           ADD     #4,SP
                                                        .NLIST
                                        .ENDC
                                        .MEXIT
                                        .ENDC
                                        .IF B   <>
                                        M$PRINT C$PNTF,#TSHD22,<>
                                        .MEXIT
                                        .ENDC
                                        .IF B   <>
                                        M$PRINT C$PNTF,#TSHD22,<>,<>
                                        .MEXIT
                                        .ENDC
                                        .IF B   <>
                                        M$PRINT C$PNTF,#TSHD22,<>,<>,<>
                                        .MEXIT
                                        .ENDC
                                        .IF B   <>
                                        M$PRINT C$PNTF,#TSHD22,<>,<>,<>,<>
                                        .MEXIT
                                        .ENDC
                                        .IF B   <>
                                        M$PRINT C$PNTF,#TSHD22,<>,<>,<>,<>,<>
                                        .MEXIT
                                        .ENDC
                                        .IF B   <>
                                        M$PRINT C$PNTF,#TSHD22,<>,<>,<>,<>,<>,<>
```

```
                                            .MEXIT
                                            .ENDC
                                            .IF B   <>
                                            M$PRINT C$PNTF,#TSHD22,<>,<>,<>,<>,<>,<>,<>
                                            .MEXIT
                                            .ENDC
                                            M$PRINT C$PNTF,#TSHD22,<>,<>,<>,<>,<>,<>,<>,<>
   6723 055312  005037  002322              7$:     CLR     ITRCNT                  ;CLEAR ITERATION COUNTER
   6724 055316  004737  010210                      JSR     PC,CULPA                ;CLEAR ULPA BIT IN ISR 1 AND 2
   6725 055322  004737  010524              ITAC22: JSR     PC,BGIN1                ;SET UP PARAMETER
   6726 055326                                      BGNSEG
                                            .MCALL  M$PUSH,M$INCR,M$SVC
                000040                      I$SEG=F$BGN
        055326                              M$PUSH  T$NS,T$NESTLEV,F$SEG
                                            .MCALL  M$INCR,M$SETS
        055326                              M$INCR  T$NESTLEV
                000002                      T$NESTLEV=T$NESTLEV+1
        055326                              M$SETS  T$NS,\T$NESTLEV,F$SEG
                000003                      T$NS2=F$SEG
                010000                      T$$SEG=S$LSYM
        055326                              M$PUSH  T$SEK,T$SEGLEV,T$$SEG
                                            .MCALL  M$INCR,M$SETS
        055326                              M$INCR  T$SEGLEV
                000000                      T$SEGLEV=T$SEGLEV+1
        055326                              M$SETS  T$SEK,\T$SEGLEV,T$$SEG
                010000                      T$SEK0=T$$SEG
        055326                              M$INCR  S$LSYM
                010001                      S$LSYM=S$LSYM+1
        055326                              M$SVC   C$BSEG
                                            .MCALL  M$GNINS,M$TSTLAB
        055326                              M$TSTLAB
                                            .MCALL  M$TLABEL,M$INCR
                                            .IIF LT T$TSTMAC, .MEXIT
                                            .RADIX  10
                                            M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                            .RADIX  8
                                            M$INCR  T$TSTSEQ
        055326                              M$GNINS <TRAP   C$BSEG>
                                            .IF LT SVCINS
                                            TRAP    C$BSEG
                                            .MEXIT
                                            .ENDC
                                            .IF EQ SVCINS
                                            .LIST
                                                    TRAP    C$BSEG
                                                            .NLIST
                                            .MEXIT
                                            .ENDC
                                            .IF GT SVCINS
                                            .LIST
        055326  104404                                                                          TRAP    C$BSEG
                                                            .NLIST
                                            .ENDC
   6727 055330  112777  000223  124732              MOVB    #223,@ICRHX             ;----LOAD DAI INTO ACR 1 -- -------
   6728 055336  052777  000010  124734              BIS     #10,@CSRX               ;SELECT CHANNEL 2
   6729 055344  112777  000223  124716              MOVB    #223,@ICRHX             ;----LOAD DAI INTO ACR 2 - --- -    -
   6730 055352  042777  000010  124720              BIC     #10,@CSRX               ;SELECT CHANNEL 1
```

TEST 22: END OF A MESSAGE BLOCK TEST

```
6731 055360 112777 000203 124702        MOVB    #203,@ICRHX            ;----LOAD HDFA INTO ACR 1------------
6732 055366 112777 000211 124674        MOVB    #211,@ICRHX            ; ---LOAD LON INTO ACR 1-------------
6733 055374 013701 002314               MOV     DPA2,R1                ;CREATE MTA2
6734 055400 062701 000100               ADD     #100,R1                ;...
6735 055404 010137 002416               MOV     R1,MTA2                ;STORE MTA2
6736 055410 113777 002416 124660        MOVB    MTA2,@IDRHX            ;----LOAD MTA2 INTO DOR 1------------
6737 055416 004737 011050               JSR     PC,LOOP                ;WAIT A LITTLE
6738 055422 112777 000013 124640        MOVB    #13,@ICRHX             ;----LOAD GTS INTO ACR 1-------------
6739 055430                             ENDSEG
                                .MCALL  M$POP,M$GNLS,M$SVC,M$ENDERR
     055430                     M$POP   T$NS,T$NESTLEV,T$TEMP
                                .MCALL  M$GETS,M$DECR
                                .IF LT  T$NESTLEV
                                .ERROR  T$NESTLEV       ; MACRO T$NS UNDERFLOW
                                .MEXIT
                                .ENDC
     055430                     M$GETS  T$NS,\T$NESTLEV,T$TEMP
            000003              T$TEMP=T$NS2
     055430                     M$DECR  T$NESTLEV
            000001              T$NESTLEV=T$NESTLEV-1
                                .IF EQ F$SEG-T$TEMP
     055430                     M$POP   T$SEK,T$SEGLEV,T$$SEG
                                .MCALL  M$GETS,M$DECR
                                .IF LT  T$SEGLEV
                                .ERROR  T$SEGLEV        ; MACRO T$SEK UNDERFLOW
                                .MEXIT
                                .ENDC
     055430                     M$GETS  T$SEK,\T$SEGLEV,T$$SEG
            010000              T$$SEG=T$SEK0
     055430                     M$DECR  T$SEGLEV
            177777              T$SEGLEV=T$SEGLEV-1
     055430                     M$GNLS  T$$SEG
                                .MCALL  M$GEN
                                .IF NB T$$SEG
     055430                     M$GEN   \T$$SEG,$,SVCTAG
                                .IF LE  SVCTAG
                                .IIF EQ SVCTAG,.LIST
                                10000$:
                                .IIF EQ SVCTAG,.NLIST
                                .MEXIT
                                .ENDC
                                .LIST
     055430                                                                     10000$:
                                        .NLIST
                                .IFF
                                M$GEN   \S$LSYM,$,SVCTAG
                                .ENDC
     055430                     M$SVC   C$ESEG
                                .MCALL  M$GNINS,M$TSTLAB
     055430                     M$TSTLAB
                                .MCALL  M$TLABEL,M$INCR
                                .IIF LT T$TSTMAC, .MEXIT
                                .RADIX  10
                                M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                .RADIX  8
                                M$INCR  T$TSTSEQ
     055430                     M$GNINS <TRAP   C$ESEG>
```

```
                                .IF LT SVCINS
                                TRAP    C$ESEG
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        TRAP    C$ESEG
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
     055430  104405                                                         TRAP    C$ESEG
                                                .NLIST
                                .ENDC
                                .IF EQ T$SEGLEV+1
             000041             I$SEG=F$END
                                .ENDC
                                .IFF
                                M$ENDERR        ENDSEG,T$TEMP
                                .ENDC
6740 055432                             BGNSEG
                                .MCALL  M$PUSH,M$INCR,M$SVC
             000040             I$SEG=F$BGN
     055432                     M$PUSH  T$NS,T$NESTLEV,F$SEG
                                .MCALL  M$INCR,M$SETS
     055432                     M$INCR  T$NESTLEV
             000002             T$NESTLEV=T$NESTLEV+1
     055432                     M$SETS  T$NS,\T$NESTLEV,F$SEG
             000003             T$NS2=F$SEG
             010001             T$$SEG=S$LSYM
     055432                     M$PUSH  T$SEK,T$SEGLEV,T$$SEG
                                .MCALL  M$INCR,M$SETS
     055432                     M$INCR  T$SEGLEV
             000000             T$SEGLEV=T$SEGLEV+1
     055432                     M$SETS  T$SEK,\T$SEGLEV,T$$SEG
             010001             T$SEK0=T$$SEG
     055432                     M$INCR  S$LSYM
             010002             S$LSYM=S$LSYM+1
     055432                     M$SVC   C$BSEG
                                .MCALL  M$GNINS,M$TSTLAB
     055432                     M$TSTLAB
                                .MCALL  M$TLABEL,M$INCR
                                .IIF LT T$TSTMAC, .MEXIT
                                .RADIX  10
                                M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                .RADIX  8
                                M$INCR  T$TSTSEQ
     055432                     M$GNINS <TRAP   C$BSEG>
                                .IF LT SVCINS
                                TRAP    C$BSEG
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        TRAP    C$BSEG
                                                .NLIST
```

```
                                                .MEXIT
                                                .ENDC
                                                .IF GT SVCINS
                                                .LIST
     055432  104404                                                                                  TRAP    C$BSEG
                                                                .NLIST
                                                .ENDC
6741 055434  052777  000010  124636                     BIS     #10,@CSRX               ;SELECT CHANNEL 2
6742 055442  112777  000125  124626                     MOVB    #125,@IDRHX             ;----LOAD DATA INTO DOR 2-------------
6743 055450  042777  000010  124622                     BIC     #10,@CSRX               ;SELECT CHANNEL 1
6744 055456  012737  000001  002374                     MOV     #1,CHAN                 ;LOAD CHANNEL NUMBER
6745 055464  017737  124560  002502                     MOV     @IIRX,BAD               ;GET IIR1 CONTENTS
6746 055472  022737  000060  002502                     CMP     #60,BAD                 ;BI,BO BIT SHOULD BE SET
6747 055500  001410                                     BEQ     10$                     ;BRANCH IF YES
6748 055502  012737  000060  002500                     MOV     #60,GOOD                ;SET UP DATA FOR ERROR MESSAGE
6749 055510                                             ERRSOFT 2201,E501,ERR501        ;ERROR HANDLER
                                                .MCALL  M$ERRINS
     055510                                     M$ERRINS        2201,E501,EPR501,C$ERSOFT
                                                .MCALL  M$GNINS,M$WORD,M$TSTLAB
     055510                                     M$SVC   C$ERSOFT
                                                .MCALL  M$GNINS,M$TSTLAB
     055510                                     M$TSTLAB
                                                .MCALL  M$TLABEL,M$INCR
                                                .IIF LT T$TSTMAC, .MEXIT
                                                .RADIX  10
                                                M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                                .RADIX  8
                                                M$INCR  T$TSTSEQ
     055510                                     M$GNINS <TRAP   C$ERSOFT>
                                                .IF LT SVCINS
                                                TRAP    C$ERSOFT
                                                .MEXIT
                                                .ENDC
                                                .IF EQ SVCINS
                                                .LIST
                                                        TRAP    C$ERSOFT
                                                                .NLIST
                                                .MEXIT
                                                .ENDC
                                                .IF GT SVCINS
                                                .LIST
     055510  104457                                                                                  TRAP    C$ERSOFT
                                                                .NLIST
                                                .ENDC
             000012                             .RADIX  10
                                                .IF NB  2201
             004231                             T$ERRNUM=2201
                                                .IFF
                                                .ERROR  ;MISSING ERROR-NR
                                                .ENDC
     055512                                     M$WORD  \T$ERRNUM
                                                .MCALL  M$GNINS
                                                .IRP    N,<2201>
                                                M$GNINS <.WORD  N>
                                                .ENDM
     055512                                     M$GNINS <.WORD  2201>
                                                .IF LT SVCINS
```

```
                                .WORD   2201
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        .WORD   2201
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
     055512  004231                                                                  .WORD   2201
                                                .NLIST
                                .ENDC
             000010             .RADIX  8
                                .IF NB E501
     055514                     M$WORD  E501
                                .MCALL  M$GNINS
                                .IRP    N,<E501>
                                M$GNINS <.WORD  N>
                                .ENDM
     055514                     M$GNINS <.WORD  E501>
                                .IF LT SVCINS
                                .WORD   E501
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        .WORD   E501
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
     055514  005376                                                                  .WORD   E501
                                                .NLIST
                                .ENDC
                                .IFF
                                M$WORD  0
                                .ENDC
                                .IF NB ERR501
     055516                     M$WORD  ERR501
                                .MCALL  M$GNINS
                                .IRP    N,<ERR501>
                                M$GNINS <.WORD  N>
                                .ENDM
     055516                     M$GNINS <.WORD  ERR501>
                                .IF LT SVCINS
                                .WORD   ERR501
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        .WORD   ERR501
                                                .NLIST
                                .MEXIT
                                .ENDC
```

```
                                        .IF GT SVCINS
                                        .LIST
      055516  003672                                                                          .WORD   ERR501
                                                     .NLIST
                                        .ENDC
                                        .IFF
                                        M$WORD  0
                                        .ENDC
 6750 055520                                  CKLOOP                          ;BRANCH BACK TO BGNSEG IF ERRLOOP IS SET
                                        .MCALL  M$SVC
      055520                            M$SVC   C$CLP1
                                        .MCALL  M$GNINS,M$TSTLAB
      055520                            M$TSTLAB
                                        .MCALL  M$TLABEL,M$INCR
                                        .IIF LT T$TSTMAC, .MEXIT
                                        .RADIX  10
                                        M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                        .RADIX  8
                                        M$INCR  T$TSTSEQ
      055520                            M$GNINS <TRAP   C$CLP1>
                                        .IF LT SVCINS
                                        TRAP    C$CLP1
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                              TRAP    C$CLP1
                                                      .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
      055520  104406                                                                          TRAP    C$CLP1
                                                      .NLIST
                                        .ENDC
 6751 055522  017737  124530  002502    10$:    MOV     @ISRX,BAD               ;GET ISR1 CONTENTS
 6752 055530  022737  030004  002502            CMP     #30004,BAD              ;NDAC,NRFD,LADS SHOULD BE SET
 6753 055536  001410                            BEQ     20$                     ;BRANCH IF YES
 6754 055540  012737  030004  002500            MOV     #30004,GOOD             ;SET UP DATA FOR ERROR MESSAGE
 6755 055546                                    ERRSOFT 2202,E502,ERR501        ;ERROR HANDLER
                                        .MCALL  M$ERRINS
      055546                            M$ERRINS        2202,E502,ERR501,C$ERSOFT
                                        .MCALL  M$GNINS,M$WORD,M$TSTLAB
      055546                            M$SVC   C$ERSOFT
                                        .MCALL  M$GNINS,M$TSTLAB
      055546                            M$TSTLAB
                                        .MCALL  M$TLABEL,M$INCR
                                        .IIF LT T$TSTMAC, .MEXIT
                                        .RADIX  10
                                        M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                        .RADIX  8
                                        M$INCR  T$TSTSEQ
      055546                            M$GNINS <TRAP   C$ERSOFT>
                                        .IF LT SVCINS
                                        TRAP    C$ERSOFT
                                        .MEXIT
                                        .ENDC
```

D2


```
                                        .IF EQ SVCINS
                                        .LIST
                                                TRAP    C$ERSOFT
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
      055546  104457                                                                    TRAP    C$ERSOFT
                                                        .NLIST
                                        .ENDC
              000012                    .RADIX  10
                                        .IF NB  2202
              004232                    T$ERRNUM=2202
                                        .IFF
                                        .ERROR  ;MISSING ERROR NR
                                        .ENDC
      055550                            M$WORD  \T$ERRNUM
                                        .MCALL  M$GNINS
                                        .IRP    N,<2202>
                                        M$GNINS <.WORD  N>
                                        .ENDM
      055550                            M$GNINS <.WORD  2202>
                                        .IF LT SVCINS
                                        .WORD   2202
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                .WORD   2202
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
      055550  004232                                                                    .WORD   2202
                                                        .NLIST
                                        .ENDC
              000010                    .RADIX  8
                                        .IF NB E502
      055552                            M$WORD  E502
                                        .MCALL  M$GNINS
                                        .IRP    N,<E502>
                                        M$GNINS <.WORD  N>
                                        .ENDM
      055552                            M$GNINS <.WORD  E502>
                                        .IF LT SVCINS
                                        .WORD   E502
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                .WORD   E502
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
```

```
                                .LIST
      055552  005437                                                                    .WORD   E502
                                          .NLIST
                                .ENDC
                                .IFF
                                M$WORD  0
                                .ENDC
                                .IF NB ERR501
      055554                    M$WORD  ERR501
                                .MCALL  M$GNINS
                                .IRP    N,<ERR501>
                                M$GNINS <.WORD  N>
                                .ENDM
      055554                    M$GNINS <.WORD  ERR501>
                                .IF LT SVCINS
                                .WORD   ERR501
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                     .WORD   ERR501
                                          .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
      055554  003672                                                                    .WORD   ERR501
                                          .NLIST
                                .ENDC
                                .IFF
                                M$WORD  0
                                .ENDC
 6756 055556                         CKLOOP                   ;BRANCH BACK TO BGNSEG IF ERRLOOP IS SET
                                .MCALL  M$SVC
      055556                    M$SVC   C$CLP1
                                .MCALL  M$GNINS,M$TSTLAB
      055556                    M$TSTLAB
                                .MCALL  M$TLABEL,M$INCR
                                .IIF LT T$TSTMAC, .MEXIT
                                .RADIX  10
                                M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                .RADIX  8
                                M$INCR  T$TSTSEQ
      055556                    M$GNINS <TRAP   C$CLP1>
                                .IF LT SVCINS
                                TRAP    C$CLP1
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                     TRAP    C$CLP1
                                          .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
      055556  104406                                                                    TRAP    C$CLP1
```

```
                                                      .NLIST
                                   .ENDC
     055560  017737  124506  002502  20$:      MOV     @IDRX,BAD                   ;GET DIR1 CONTENTS
     055566  105037  002502                    CLRB    BAD                         ;
     055572  000337  002502                    SWAB    BAD                         ;SWAB HIGH AND LOW BYTE
     055576  122737  000125  002502            CMPB    #125,BAD                    ;COMPARE WITH LOADED DATA
     055604  001410                            BEQ     23$                         ;BRANCH IF OK
     055606  012737  000125  002500            MOV     #125,GOOD                   ;SET UP DATA FOR ERROR MESSAGE
     055614                                    ERRSOFT 2203,E222,ERR501            ;ERROR HANDLER
                                   .MCALL  M$ERRINS
     055614                        M$ERRINS        2203,E222,ERR501,C$ERSOFT
                                   .MCALL  M$GNINS,M$WORD,M$TSTLAB
     055614                        M$SVC   C$ERSOFT
                                   .MCALL  M$GNINS,M$TSTLAB
     055614                        M$TSTLAB
                                   .MCALL  M$TLABEL,M$INCR
                                   .IIF LT T$TSTMAC, .MEXIT
                                   .RADIX  10
                                   M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                   .RADIX  8
                                   M$INCR  T$TSTSEQ
     055614                        M$GNINS <TRAP   C$ERSOFT>
                                   .IF LT SVCINS
                                   TRAP    C$ERSOFT
                                   .MEXIT
                                   .ENDC
                                   .IF EQ SVCINS
                                   .LIST
                                           TRAP    C$ERSOFT
                                                   .NLIST
                                   .MEXIT
                                   .ENDC
                                   .IF GT SVCINS
                                   .LIST
     055614  104457                                                                         TRAP    C$ERSOFT
                                                   .NLIST
                                   .ENDC
             000012                .RADIX  10
                                   .IF NB  2203
             004233                T$ERRNUM=2203
                                   .IFF
                                   .ERROR  ;MISSING ERROR NR
                                   .ENDC
     055616                        M$WORD  \T$ERRNUM
                                   .MCALL  M$GNINS
                                   .IRP    N,<2203>
                                   M$GNINS <.WORD  N>
                                   .ENDM
     055616                        M$GNINS <.WORD  2203>
                                   .IF LT SVCINS
                                   .WORD   2203
                                   .MEXIT
                                   .ENDC
                                   .IF EQ SVCINS
                                   .LIST
                                           .WORD   2203
                                                   .NLIST
```

```
                        .MEXIT
                        .ENDC
                        .IF GT SVCINS
                        .LIST
055616  004233                                                  .WORD   2203
                                        .NLIST
                        .ENDC
        000010          .RADIX  8
                        .IF NB E222
055620                  M$WORD  E222
                        .MCALL  M$GNINS
                        .IRP    N,<E222>
                        M$GNINS <.WORD  N>
                        .ENDM
055620                  M$GNINS <.WORD  E222>
                        .IF LT SVCINS
                        .WORD   E222
                        .MEXIT
                        .ENDC
                        .IF EQ SVCINS
                        .LIST
                                .WORD   E222
                                        .NLIST
                        .MEXIT
                        .ENDC
                        .IF GT SVCINS
                        .LIST
055620  005665                                                  .WORD   E222
                                        .NLIST
                        .ENDC
                        .IFF
                        M$WORD  0
                        .ENDC
                        .IF NB ERR501
055622                  M$WORD  ERR501
                        .MCALL  M$GNINS
                        .IRP    N,<ERR501>
                        M$GNINS <.WORD  N>
                        .ENDM
055622                  M$GNINS <.WORD  ERR501>
                        .IF LT SVCINS
                        .WORD   ERR501
                        .MEXIT
                        .ENDC
                        .IF EQ SVCINS
                        .LIST
                                .WORD   ERR501
                                        .NLIST
                        .MEXIT
                        .ENDC
                        .IF GT SVCINS
                        .LIST
055622  003672                                                  .WORD   ERR501
                                        .NLIST
                        .ENDC
                        .IFF
                        M$WORD  0
```

```
                                .ENDC
 6764 055624                            CKLOOP                          ;BRANCH BACK TO BGNSEG IF ERRLOOP IS SET
                                .MCALL  M$SVC
      055624                    M$SVC   C$CLP1
                                .MCALL  M$GNINS,M$TSTLAB
      055624                    M$TSTLAB
                                .MCALL  M$TLABEL,M$INCR
                                .IIF LT T$TSTMAC, .MEXIT
                                .RADIX  10
                                M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                .RADIX  8
                                M$INCR  T$TSTSEQ
      055624                    M$GNINS <TRAP   C$CLP1>
                                .IF LT SVCINS
                                TRAP    C$CLP1
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        TRAP    C$CLP1
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
      055624  104406                                                                    TRAP    C$CLP1
                                                .NLIST
                                .ENDC
 6765 055626                    23$:    ENDSEG
                                .MCALL  M$POP,M$GNLS,M$SVC,M$ENDERR
      055626                    M$POP   T$NS,T$NESTLEV,T$TEMP
                                .MCALL  M$GETS,M$DECR
                                .IF LT  T$NESTLEV
                                .ERROR  T$NESTLEV       ; MACRO T$NS UNDERFLOW
                                .MEXIT
                                .ENDC
      055626                    M$GETS  T$NS,\T$NESTLEV,T$TEMP
              000003            T$TEMP=T$NS2
      055626                    M$DECR  T$NESTLEV
              000001            T$NESTLEV=T$NESTLEV-1
                                .IF EQ F$SEG-T$TEMP
      055626                    M$POP   T$SEK,T$SEGLEV,T$$SEG
                                .MCALL  M$GETS,M$DECR
                                .IF LT  T$SEGLEV
                                .ERROR  T$SEGLEV        ; MACRO T$SEK UNDERFLOW
                                .MEXIT
                                .ENDC
      055626                    M$GETS  T$SEK,\T$SEGLEV,T$$SEG
              010001            T$$SEG=T$SEK0
      055626                    M$DECR  T$SEGLEV
              177777            T$SEGLEV=T$SEGLEV 1
      055626                    M$GNLS  T$$SEG
                                .MCALL  M$GEN
                                .IF NB T$$SEG
      055626                    M$GEN   \T$$SEG,$,SVCTAG
                                .IF LE  SVCTAG
                                .IIF EQ SVCTAG,.LIST
```

```
                                        10001$:
                                        .IIF EQ SVCTAG,.NLIST
                                        .MEXIT
                                        .ENDC
                                        .LIST
      055626                                                                                10001$:
                                                .NLIST
                                        .IFF
                                        M$GEN   \S$LSYM,$,SVCTAG
                                        .ENDC
      055626                            M$SVC   C$ESEG
                                        .MCALL  M$GNINS,M$TSTLAB
      055626                            M$TSTLAB
                                        .MCALL  M$TLABEL,M$INCR
                                        .IIF LT T$TSTMAC, .MEXIT
                                        .RADIX  10
                                        M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                        .RADIX  8
                                        M$INCR  T$TSTSEQ
      055626                            M$GNINS <TRAP   C$ESEG>
                                        .IF LT SVCINS
                                        TRAP    C$ESEG
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                TRAP    C$ESEG
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
      055626  104405                                                                              TRAP    C$ESEG
                                                        .NLIST
                                        .ENDC
                                        .IF EQ T$SEGLEV+1
              000041                    I$SEG=F$END
                                        .ENDC
                                        .IFF
                                        M$ENDERR        ENDSEG,T$TEMP
                                        .ENDC
 6766 055630  112777  000002  124432            MOVB    #2,@ICRHX               ; -  LOAD RHDF INTO ACR 1----------- -
 6767 055636  112777  000003  124424            MOVB    #3,@ICRHX               ; ---LOAD NOT HDFA INTO ACR 1--   --- -
 6768 055644  112777  000204  124416            MOVB    #204,@ICRHX             ;--- LOAD HDFE INTO ACR 1-- -------- -
 6769 055652                                   BGNSEG
                                        .MCALL  M$PUSH,M$INCR,M$SVC
              000040                    I$SEG=F$BGN
      055652                            M$PUSH  T$NS,T$NESTLEV,F$SEG
                                        .MCALL  M$INCR,M$SETS
      055652                            M$INCR  T$NESTLEV
              000002                    T$NESTLEV=T$NESTLEV+1
      055652                            M$SETS  T$NS,\T$NESTLEV,F$SEG
              000003                    T$NS2=F$SEG
              010002                    T$$SEG=S$LSYM
      055652                            M$PUSH  T$SEK,T$SEGLEV,T$$SEG
                                        .MCALL  M$INCR,M$SETS
      055652                            M$INCR  T$SEGLEV
```

```
                000000                      T$SEGLEV=T$SEGLEV+1
        055652                              M$SETS  T$SEK,\T$SEGLEV,T$$SEG
                010002                      T$SEKO=T$$SEG
        055652                              M$INCR  S$LSYM
                010003                      S$LSYM=S$LSYM+1
        055652                              M$SVC   C$BSEG
                                            .MCALL  M$GNINS,M$TSTLAB
        055652                              M$TSTLAB
                                            .MCALL  M$TLABEL,M$INCR
                                            .IIF LT T$TSTMAC, .MEXIT
                                            .RADIX  10
                                            M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                            .RADIX  8
                                            M$INCR  T$TSTSEQ
        055652                              M$GNINS <TRAP   C$BSEG>
                                            .IF LT SVCINS
                                            TRAP    C$BSEG
                                            .MEXIT
                                            .ENDC
                                            .IF EQ SVCINS
                                            .LIST
                                                    TRAP    C$BSEG
                                                            .NLIST
                                            .MEXIT
                                            .ENDC
                                            .IF GT SVCINS
                                            .LIST
        055652  104404                                                                          TRAP    C$BSEG
                                                            .NLIST
                                            .ENDC
   6770 055654  052777  000010  124416              BIS     #10,@CSRX               ;SELECT CHANNEL 2
   6771 055662  112777  000126  124406              MOVB    #126,@IDRHX             ;----LOAD DATA INTO DOR 2------------
   6772 055670  004737  011050                      JSR     PC,LOOP                 ;WAIT A LITTLE
   6773 055674  042777  000010  124376              BIC     #10,@CSRX               ;SELECT CHANNEL 1
   6774 055702  017737  124364  002502              MOV     @IDRX,BAD               ;READ DATA FROM DIR1
   6775 055710  105037  002502                      CLRB    BAD                     ;CLEAR LOW BYTE OF IDR REGISTER
   6776 055714  000337  002502                      SWAB    BAD                     ;SWAB HIGH WITH LOW BYTE
   6777 055720  122737  000126  002502              CMPB    #126,BAD                ;COMPARE DIR CONTENTS WITH LOADED DATA
   6778 055726  001410                              BEQ     30$                     ;BRANCH IF EQUAL
   6779 055730  012737  000126  002500              MOV     #126,GOOD               ;SET UP DATA FOR ERROR MESSAGE
   6780 055736                                      ERRSOFT 2204,E222,ERR501        ;ERROR HANDLER
                                            .MCALL  M$ERRINS
        055736                              M$ERRINS        2204,E222,ERR501,C$ERSOFT
                                            .MCALL  M$GNINS,M$WORD,M$TSTLAB
        055736                              M$SVC   C$ERSOFT
                                            .MCALL  M$GNINS,M$TSTLAB
        055736                              M$TSTLAB
                                            .MCALL  M$TLABEL,M$INCR
                                            .IIF LT T$TSTMAC, .MEXIT
                                            .RADIX  10
                                            M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                            .RADIX  8
                                            M$INCR  T$TSTSEQ
        055736                              M$GNINS <TRAP   C$ERSOFT>
                                            .IF LT SVCINS
                                            TRAP    C$ERSOFT
                                            .MEXIT
```

```
                                 .ENDC
                                 .IF EQ SVCINS
                                 .LIST
                                      TRAP    C$ERSOFT
                                           .NLIST
                                 .MEXIT
                                 .ENDC
                                 .IF GT SVCINS
                                 .LIST
      055736  104457                                                                  TRAP    C$ERSOFT
                                           .NLIST
                                 .ENDC
              000012             .RADIX  10
                                 .IF NB  2204
              004234             T$ERRNUM=2204
                                 .IFF
                                 .ERROR  ;MISSING ERROR NR
                                 .ENDC
      055740                     M$WORD  \T$ERRNUM
                                 .MCALL  M$GNINS
                                 .IRP    N,<2204>
                                 M$GNINS <.WORD  N>
                                 .ENDM
      055740                     M$GNINS <.WORD  2204>
                                 .IF LT SVCINS
                                 .WORD   2204
                                 .MEXIT
                                 .ENDC
                                 .IF EQ SVCINS
                                 .LIST
                                      .WORD   2204
                                           .NLIST
                                 .MEXIT
                                 .ENDC
                                 .IF GT SVCINS
                                 .LIST
      055740  004234                                                                  .WORD   2204
                                           .NLIST
                                 .ENDC
              000010             .RADIX  8
                                 .IF NB E222
      055742                     M$WORD  E222
                                 .MCALL  M$GNINS
                                 .IRP    N,<E222>
                                 M$GNINS <.WORD  N>
                                 .ENDM
      055742                     M$GNINS <.WORD  E222>
                                 .IF LT SVCINS
                                 .WORD   E222
                                 .MEXIT
                                 .ENDC
                                 .IF EQ SVCINS
                                 .LIST
                                      .WORD   E222
                                           .NLIST
                                 .MEXIT
                                 .ENDC
```

L2


```
                                 .IF GT SVCINS
                                 .LIST
     055742  005665                                                                   .WORD   E222
                                           .NLIST
                                 .ENDC
                                 .IFF
                                 M$WORD  0
                                 .ENDC
                                 .IF NB ERR501
     055744                      M$WORD  ERR501
                                 .MCALL  M$GNINS
                                 .IRP    N,<ERR501>
                                 M$GNINS <.WORD  N>
                                 .ENDM
     055744                      M$GNINS <.WORD  ERR501>
                                 .IF LT SVCINS
                                 .WORD   ERR501
                                 .MEXIT
                                 .ENDC
                                 .IF EQ SVCINS
                                 .LIST
                                         .WORD   ERR501
                                                 .NLIST
                                 .MEXIT
                                 .ENDC
                                 .IF GT SVCINS
                                 .LIST
     055744  003672                                                                   .WORD   ERR501
                                                 .NLIST
                                 .ENDC
                                 .IFF
                                 M$WORD  0
                                 .ENDC
6781 055746                              CKLOOP                          ;BRANCH BACK TO BGNSEG IF ERRLOOP IS SET
                                 .MCALL  M$SVC
     055746                      M$SVC   C$CLP1
                                 .MCALL  M$GNINS,M$TSTLAB
     055746                      M$TSTLAB
                                 .MCALL  M$TLABEL,M$INCR
                                 .IIF LT T$TSTMAC, .MEXIT
                                 .RADIX  10
                                 M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                 .RADIX  8
                                 M$INCR  T$TSTSEQ
     055746                      M$GNINS <TRAP   C$CLP1>
                                 .IF LT SVCINS
                                 TRAP    C$CLP1
                                 .MEXIT
                                 .ENDC
                                 .IF EQ SVCINS
                                 .LIST
                                         TRAP    C$CLP1
                                                 .NLIST
                                 .MEXIT
                                 .ENDC
                                 .IF GT SVCINS
                                 .LIST
```

```
     055746 104406                                                  TRAP    C$CLP1
                                        .NLIST
                              .ENDC
6782 055750                   30$:     ENDSEG
                              .MCALL   M$POP,M$GNLS,M$SVC,M$ENDERR
     055750                   M$POP    T$NS,T$NESTLEV,T$TEMP
                              .MCALL   M$GETS,M$DECR
                              .IF LT   T$NESTLEV
                              .ERROR   T$NESTLEV       ; MACRO T$NS UNDERFLOW
                              .MEXIT
                              .ENDC
     055750                   M$GETS   T$NS,\T$NESTLEV,T$TEMP
            000003            T$TEMP=T$NS2
     055750                   M$DECR   T$NESTLEV
            000001            T$NESTLEV=T$NESTLEV-1
                              .IF EQ F$SEG-T$TEMP
     055750                   M$POP    T$SEK,T$SEGLEV,T$$SEG
                              .MCALL   M$GETS,M$DECR
                              .IF LT   T$SEGLEV
                              .ERROR   T$SEGLEV        ; MACRO T$SEK UNDERFLOW
                              .MEXIT
                              .ENDC
     055750                   M$GETS   T$SEK,\T$SEGLEV,T$$SEG
            010002            T$$SEG=T$SEK0
     055750                   M$DECR   T$SEGLEV
            177777            T$SEGLEV=T$SEGLEV-1
     055750                   M$GNLS   T$$SEG
                              .MCALL   M$GEN
                              .IF NB T$$SEG
     055750                   M$GEN    \T$$SEG,$,SVCTAG
                              .IF LE   SVCTAG
                              .IIF EQ SVCTAG,.LIST
                              10002$:
                              .IIF EQ SVCTAG,.NLIST
                              .MEXIT
                              .ENDC
                              .LIST
     055750                                                   10002$:
                                   .NLIST
                              .IFF
                              M$GEN    \S$LSYM,$,SVCTAG
                              .ENDC
     055750                   M$SVC    C$ESEG
                              .MCALL   M$GNINS,M$TSTLAB
     055750                   M$TSTLAB
                              .MCALL   M$TLABEL,M$INCR
                              .IIF LT T$TSTMAC, .MEXIT
                              .RADIX   10
                              M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                              .RADIX   8
                              M$INCR   T$TSTSEQ
     055750                   M$GNINS <TRAP    C$ESEG>
                              .IF LT SVCINS
                              TRAP     C$ESEG
                              .MEXIT
                              .ENDC
                              .IF EQ SVCINS
```

```
                                .LIST
                                        TRAP    C$ESEG
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
      055750  104405                                                            TRAP    C$ESEG
                                                .NLIST
                                .ENDC
                                .IF EQ T$SEGLEV+1
              000041            I$SEG=F$END
                                .ENDC
                                .IFF
                                M$ENDERR        ENDSEG,T$TEMP
                                .ENDC
 6783 055752                            BGNSEG
                                .MCALL  M$PUSH,M$INCR,M$SVC
              000040            I$SEG=F$BGN
      055752                    M$PUSH  T$NS,T$NESTLEV,F$SEG
                                .MCALL  M$INCR,M$SETS
      055752                    M$INCR  T$NESTLEV
              000002            T$NESTLEV=T$NESTLEV+1
      055752                    M$SETS  T$NS,\T$NESTLEV,F$SEG
              000003            T$NS2=F$SEG
              010003            T$$SEG=S$LSYM
      055752                    M$PUSH  T$SEK,T$SEGLEV,T$$SEG
                                .MCALL  M$INCR,M$SETS
      055752                    M$INCR  T$SEGLEV
              000000            T$SEGLEV=T$SEGLEV+1
      055752                    M$SETS  T$SEK,\T$SEGLEV,T$$SEG
              010003            T$SEK0=T$$SEG
      055752                    M$INCR  S$LSYM
              010004            S$LSYM=S$LSYM+1
      055752                    M$SVC   C$BSEG
                                .MCALL  M$GNINS,M$TSTLAB
      055752                    M$TSTLAB
                                .MCALL  M$TLABEL,M$INCR
                                .IIF LT T$TSTMAC, .MEXIT
                                .RADIX  10
                                M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                .RADIX  8
                                M$INCR  T$TSTSEQ
      055752                    M$GNINS <TRAP   C$BSEG>
                                .IF LT SVCINS
                                TRAP    C$BSEG
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        TRAP    C$BSEG
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
      055752  104404                                                            TRAP    C$BSEG
```

B3


```
                                                          .NLIST
                                              .ENDC
   6784 055754  052777  000010  124316                BIS     #10,@CSRX                 ;SELECT CHANNEL 2
   6785 055762  112777  000010  124300                MOVB    #10,@ICRHX                ;----LOAD FEOI INTO ACR 2------------
   6786 055770  112777  000127  124300                MOVB    #127,@IDRHX               ;----LOAD DATA INTO DDR 2------------
   6787 055776  004737  011050                        JSR     PC,LOOP                   ;WAIT A LITTLE
   6788 056002  042777  000010  124270                BIC     #10,@CSRX                 ;SELECT CHANNEL 1
   6789 056010  017737  124234  002502                MOV     @IIRX,BAD                 ;GET IIR1 CONTENTS
   6790 056016  022737  000050  002502                CMP     #50,BAD                   ;BI,END BIT SHOULD BE SET
   6791 056024  001410                                BEQ     33$                       ;BRANCH IF YES
   6792 056026  012737  000050  002500                MOV     #50,GOOD                  ;SET UP DATA FOR ERROR MESSAGE
   6793 056034                                        ERRSOFT 2205,E501,ERR501          ;ERROR HANDLER
                                              .MCALL  M$ERRINS
        056034                                M$ERRINS        2205,E501,ERR501,C$ERSOFT
                                              .MCALL  M$GNINS,M$WORD,M$TSTLAB
        056034                                M$SVC   C$ERSOFT
                                              .MCALL  M$GNINS,M$TSTLAB
        056034                                M$TSTLAB
                                              .MCALL  M$TLABEL,M$INCR
                                              .IIF LT T$TSTMAC, .MEXIT
                                              .RADIX  10
                                              M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                              .RADIX  8
                                              M$INCR  T$TSTSEQ
        056034                                M$GNINS <TRAP   C$ERSOFT>
                                              .IF LT SVCINS
                                              TRAP    C$ERSOFT
                                              .MEXIT
                                              .ENDC
                                              .IF EQ SVCINS
                                              .LIST
                                                      TRAP    C$ERSOFT
                                                              .NLIST
                                              .MEXIT
                                              .ENDC
                                              .IF GT SVCINS
                                              .LIST
        056034  104457                                                                                        TRAP    C$ERSOFT
                                                              .NLIST
                                              .ENDC
                000012                        .RADIX  10
                                              .IF NB  2205
                004235                        T$ERRNUM=2205
                                              .IFF
                                              .ERROR  ;MISSING ERROR NR
                                              .ENDC
        056036                                M$WORD  \T$ERRNUM
                                              .MCALL  M$GNINS
                                              .IRP    N,<2205>
                                              M$GNINS <.WORD  N>
                                              .ENDM
        056036                                M$GNINS <.WORD  2205>
                                              .IF LT SVCINS
                                              .WORD   2205
                                              .MEXIT
                                              .ENDC
                                              .IF EQ SVCINS
```

```
                                .LIST
                                        .WORD   2205
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
        056036  004235                                                          .WORD   2205
                                                .NLIST
                                .ENDC
                000010          .RADIX  8
                                .IF NB E501
        056040                  M$WORD  E501
                                .MCALL  M$GNINS
                                .IRP    N,<E501>
                                M$GNINS <.WORD  N>
                                .ENDM
        056040                  M$GNINS <.WORD  E501>
                                .IF LT SVCINS
                                .WORD   E501
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        .WORD   E501
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
        056040  005376                                                          .WORD   E501
                                                .NLIST
                                .ENDC
                                .IFF
                                M$WORD  0
                                .ENDC
                                .IF NB ERR501
        056042                  M$WORD  ERR501
                                .MCALL  M$GNINS
                                .IRP    N,<ERR501>
                                M$GNINS <.WORD  N>
                                .ENDM
        056042                  M$GNINS <.WORD  ERR501>
                                .IF LT SVCINS
                                .WORD   ERR501
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        .WORD   ERR501
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
        056042  003672                                                          .WORD   ERR501
                                                .NLIST
```

```
                                                .ENDC
                                                .IFF
                                                M$WORD  0
                                                .ENDC
 6794 056044                                            CKLOOP                                  ;BRANCH BACK TO BGNSEG IF ERRLOOP IS SET
                                                .MCALL  M$SVC
      056044                                    M$SVC   C$CLP1
                                                .MCALL  M$GNINS,M$TSTLAB
      056044                                    M$TSTLAB
                                                .MCALL  M$TLABEL,M$INCR
                                                .IIF LT T$TSTMAC, .MEXIT
                                                .RADIX  10
                                                M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                                .RADIX  8
                                                M$INCR  T$TSTSEQ
      056044                                    M$GNINS <TRAP   C$CLP1>
                                                .IF LT SVCINS
                                                TRAP    C$CLP1
                                                .MEXIT
                                                .ENDC
                                                .IF EQ SVCINS
                                                .LIST
                                                        TRAP    C$CLP1
                                                                .NLIST
                                                .MEXIT
                                                .ENDC
                                                .IF GT SVCINS
                                                .LIST
      056044  104406                                                                                                  TRAP    C$CLP1
                                                                .NLIST
                                                .ENDC
 6795 056046  017737  124204  002502            33$:    MOV     @ISRX,BAD                       ;GET ISR1 CONTENTS
 6796 056054  022737  034004  002502                    CMP     #34004,BAD                      ;NDAC,NRFD,EOI,LADS, IS SET
 6797 056062  001410                                    BEQ     40$                             ;BRANCH IF YES
 6798 056064  013737  034004  002500                    MOV     34004,GOOD                      ;SET UP DATA FOR ERROR MESSAGE
 6799 056072                                            ERRSOFT 2206,E502,ERR501                ;ERROR HANDLER
                                                .MCALL  M$ERRINS
      056072                                    M$ERRINS        2206,E502,ERR501,C$ERSOFT
                                                .MCALL  M$GNINS,M$WORD,M$TSTLAB
      056072                                    M$SVC   C$ERSOFT
                                                .MCALL  M$GNINS,M$TSTLAB
      056072                                    M$TSTLAB
                                                .MCALL  M$TLABEL,M$INCR
                                                .IIF LT T$TSTMAC, .MEXIT
                                                .RADIX  10
                                                M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                                .RADIX  8
                                                M$INCR  T$TSTSEQ
      056072                                    M$GNINS <TRAP   C$ERSOFT>
                                                .IF LT SVCINS
                                                TRAP    C$ERSOFT
                                                .MEXIT
                                                .ENDC
                                                .IF EQ SVCINS
                                                .LIST
                                                        TRAP    C$ERSOFT
                                                                .NLIST
```

```
                        .MEXIT
                        .ENDC
                        .IF GT SVCINS
                        .LIST
056072  104457                                          TRAP    C$ERSOFT
                                .NLIST
                        .ENDC
        000012          .RADIX  10
                        .IF NB  2206
        004236          T$ERRNUM=2206
                        .IFF
                        .ERROR  ;MISSING ERROR NR
                        .ENDC
056074                  M$WORD  \T$ERRNUM
                        .MCALL  M$GNINS
                        .IRP    N,<2206>
                        M$GNINS <.WORD  N>
                        .ENDM
056074                  M$GNINS <.WORD  2206>
                        .IF LT SVCINS
                        .WORD   2206
                        .MEXIT
                        .ENDC
                        .IF EQ SVCINS
                        .LIST
                                .WORD   2206
                                        .NLIST
                        .MEXIT
                        .ENDC
                        .IF GT SVCINS
                        .LIST
056074  004236                                          .WORD   2206
                                        .NLIST
                        .ENDC
        000010          .RADIX  8
                        .IF NB E502
056076                  M$WORD  E502
                        .MCALL  M$GNINS
                        .IRP    N,<E502>
                        M$GNINS <.WORD  N>
                        .ENDM
056076                  M$GNINS <.WORD  E502>
                        .IF LT SVCINS
                        .WORD   E502
                        .MEXIT
                        .ENDC
                        .IF EQ SVCINS
                        .LIST
                                .WORD   E502
                                        .NLIST
                        .MEXIT
                        .ENDC
                        .IF GT SVCINS
                        .LIST
056076  005437                                          .WORD   E502
                                        .NLIST
                        .ENDC
```

```
                                        .IFF
                                        M$WORD  0
                                        .ENDC
                                        .IF NB ERR501
      056100                            M$WORD  ERR501
                                        .MCALL  M$GNINS
                                        .IRP    N,<ERR501>
                                        M$GNINS <.WORD  N>
                                        .ENDM
      056100                            M$GNINS <.WORD  ERR501>
                                        .IF LT SVCINS
                                        .WORD   ERR501
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                .WORD   ERR501
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
      056100  003672                                                                    .WORD   ERR501
                                                        .NLIST
                                        .ENDC
                                        .IFF
                                        M$WORD  0
                                        .ENDC
 6800 056102                                    CKLOOP                  ;BRANCH BACK TO BGNSEG IF ERRLOOP IS SET
                                        .MCALL  M$SVC
      056102                            M$SVC   C$CLP1
                                        .MCALL  M$GNINS,M$TSTLAB
      056102                            M$TSTLAB
                                        .MCALL  M$TLABEL,M$INCR
                                        .IIF LT T$TSTMAC, .MEXIT
                                        .RADIX  10
                                        M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                        .RADIX  8
                                        M$INCR  T$TSTSEQ
      056102                            M$GNINS <TRAP   C$CLP1>
                                        .IF LT SVCINS
                                        TRAP    C$CLP1
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                TRAP    C$CLP1
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
      056102  104406                                                                    TRAP    C$CLP1
                                                        .NLIST
                                        .ENDC
 6801 056104  017737  124162  002502    40$:    MOV     @IDRX,BAD       ;READ DATA FROM DIR1
 6802 056112  105037  002502                    CLRB    BAD             ;CLEAR LOW BYTE
```

```
6803 056116 000337  002502               SWAB    BAD                          ;SWAB HIGH WITH LOW BYTE
6804 056122 122737  000127  002502       CMPB    #127,BAD                     ;COMPARE LOADED DATA WITH DIR CONTENTS
6805 056130 001410                       BEQ     43$                          ;BRANCH IF EQUAL
6806 056132 012737  000127  002500       MOV     #127,GOOD                    ;SET UP DATA FOR ERROR MESSAGE
6807 056140                              ERRSOFT 2207,E222,ERR501             ;ERROR HANDLER
                                 .MCALL  M$ERRINS
     056140                      M$ERRINS        2207,E222,ERR501,C$ERSOFT
                                 .MCALL  M$GNINS,M$WORD,M$TSTLAB
     056140                      M$SVC   C$ERSOFT
                                 .MCALL  M$GNINS,M$TSTLAB
     056140                      M$TSTLAB
                                 .MCALL  M$TLABEL,M$INCR
                                 .IIF LT T$TSTMAC, .MEXIT
                                 .RADIX  10
                                 M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                 .RADIX  8
                                 M$INCR  T$TSTSEQ
     056140                      M$GNINS <TRAP   C$ERSOFT>
                                 .IF LT SVCINS
                                 TRAP    C$ERSOFT
                                 .MEXIT
                                 .ENDC
                                 .IF EQ SVCINS
                                 .LIST
                                         TRAP    C$ERSOFT
                                                 .NLIST
                                 .MEXIT
                                 .ENDC
                                 .IF GT SVCINS
                                 .LIST
     056140 104457                                                                          TRAP    C$ERSOFT
                                                 .NLIST
                                 .ENDC
            000012               .RADIX  10
                                 .IF NB  2207
            004237               T$ERRNUM=2207
                                 .IFF
                                 .ERROR  ;MISSING ERROR-NR
                                 .ENDC
     056142                      M$WORD  \T$ERRNUM
                                 .MCALL  M$GNINS
                                 .IRP    N,<2207>
                                 M$GNINS <.WORD  N>
                                 .ENDM
     056142                      M$GNINS <.WORD  2207>
                                 .IF LT SVCINS
                                 .WORD   2207
                                 .MEXIT
                                 .ENDC
                                 .IF EQ SVCINS
                                 .LIST
                                         .WORD   2207
                                                 .NLIST
                                 .MEXIT
                                 .ENDC
                                 .IF GT SVCINS
                                 .LIST
```

H3


```
        056142  004237                                                          .WORD   2207
                                                       .NLIST
                                        .ENDC
                000010                  .RADIX  8
                                        .IF NB E222
        056144                          M$WORD  E222
                                        .MCALL  M$GNINS
                                        .IRP    N,<E222>
                                        M$GNINS <.WORD  N>
                                        .ENDM
        056144                          M$GNINS <.WORD  E222>
                                        .IF LT SVCINS
                                        .WORD   E222
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                .WORD   E222
                                                       .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
        056144  005665                                                          .WORD   E222
                                                       .NLIST
                                        .ENDC
                                        .IFF
                                        M$WORD  0
                                        .ENDC
                                        .IF NB ERR501
        056146                          M$WORD  ERR501
                                        .MCALL  M$GNINS
                                        .IRP    N,<ERR501>
                                        M$GNINS <.WORD  N>
                                        .ENDM
        056146                          M$GNINS <.WORD  ERR501>
                                        .IF LT SVCINS
                                        .WORD   ERR501
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                .WORD   ERR501
                                                       .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
        056146  003672                                                          .WORD   ERR501
                                                       .NLIST
                                        .ENDC
                                        .IFF
                                        M$WORD  0
                                        .ENDC
   6808 056150                                  CKLOOP                  ;BRANCH BACK TO BGNSEG IF ERRLOOP IS SET
                                        .MCALL  M$SVC
        056150                          M$SVC   C$CLP1
```

```
                                .MCALL  M$GNINS,M$TSTLAB
      056150                    M$TSTLAB
                                .MCALL  M$TLABEL,M$INCR
                                .IIF LT T$TSTMAC, .MEXIT
                                .RADIX  10
                                M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                .RADIX  8
                                M$INCR  T$TSTSEQ
      056150                    M$GNINS <TRAP   C$CLP1>
                                .IF LT SVCINS
                                TRAP    C$CLP1
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        TRAP    C$CLP1
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
      056150  104406                                                        TRAP    C$CLP1
                                                .NLIST
                                .ENDC
 6809 056152                    43$:    ENDSEG
                                .MCALL  M$POP,M$GNLS,M$SVC,M$ENDERR
      056152                    M$POP   T$NS,T$NESTLEV,T$TEMP
                                .MCALL  M$GETS,M$DECR
                                .IF LT  T$NESTLEV
                                .ERROR  T$NESTLEV       ; MACRO T$NS UNDERFLOW
                                .MEXIT
                                .ENDC
      056152                    M$GETS  T$NS,\T$NESTLEV,T$TEMP
              000003            T$TEMP=T$NS2
      056152                    M$DECR  T$NESTLEV
              000001            T$NESTLEV=T$NESTLEV-1
                                .IF EQ F$SEG-T$TEMP
      056152                    M$POP   T$SEK,T$SEGLEV,T$$SEG
                                .MCALL  M$GETS,M$DECR
                                .IF LT  T$SEGLEV
                                .ERROR  T$SEGLEV        ; MACRO T$SEK UNDERFLOW
                                .MEXIT
                                .ENDC
      056152                    M$GETS  T$SEK,\T$SEGLEV,T$$SEG
              010003            T$$SEG=T$SEK0
      056152                    M$DECR  T$SEGLEV
              177777            T$SEGLEV=T$SEGLEV-1
      056152                    M$GNLS  T$$SEG
                                .MCALL  M$GEN
                                .IF NB T$$SEG
      056152                    M$GEN   \T$$SEG,$,SVCTAG
                                .IF LE  SVCTAG
                                .IIF EQ SVCTAG,.LIST
                                10003$:
                                .IIF EQ SVCTAG,.NLIST
                                .MEXIT
                                .ENDC
```

```
                                        .LIST
     056152                                                                         10C03$:
                                              .NLIST
                                        .IFF
                                        M$GEN   \S$LSYM,$,SVCTAG
                                        .ENDC
     056152                             M$SVC   C$ESEG
                                        .MCALL  M$GNINS,M$TSTLAB
     056152                             M$TSTLAB
                                        .MCALL  M$TLABEL,M$INCR
                                        .IIF LT T$TSTMAC, .MEXIT
                                        .RADIX  10
                                        M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                        .RADIX  8
                                        M$INCR  T$TSTSEQ
     056152                             M$GNINS <TRAP   C$ESEG>
                                        .IF LT SVCINS
                                        TRAP    C$ESEG
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                TRAP    C$ESEG
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
     056152 104405                                                                          TRAP    C$ESEG
                                                        .NLIST
                                        .ENDC
                                        .IF EQ T$SEGLEV+1
            000041                      I$SEG=F$END
                                        .ENDC
                                        .IFF
                                        M$ENDERR        ENDSEG,T$TEMP
                                        .ENDC
6810 056154 112777 000002 124106                MOVB    #2,@ICRHX               ;----LOAD RHDF INTO ACR 1------------
6811 056162 112777 000015 124100                MOVB    #15,@ICRHX              ;----LOAD TCS INTO ACR 1-------------
6812 056170 112777 000011 124072                MOVB    #11,@ICRHX              ;----LOAD NOT LON INTO ACR 1----------
6813 056176 112777 000137 124072                MOVB    #137,@IDRHX             ; ---LOAD UNT INTO DOR 1-------------
6814 056204 004737 011050                       JSR     PC,LOOP                 ;WAIT A LITTLE
6815 056210 112777 000200 124052                MOVB    #200,@ICRHX             ;----LOAD SWRST INTO ACR 1---------  -
6816 056216 112777 000000 124044                MOVB    #0,@ICRHX               ;----LOAD NOT SWRST INTO ACR 1- ------
6817                                    ;+++--------------------------------------- - -------------  ----------------
6818                                    ;PART 2 CHECKS THE "END OF A MESSAGE BLOCK" OF CHANNEL 2
6819                                    ;+++--------------------------------- - -----------------------------------
6820 056224 004737 010210               PSEU18: JSR     PC,CULPA                ;CLEAR ULPA BIT IN ISR 1AND 2
6821 056230 004737 010700                       JSR     PC,BGIN2                ;SET UP PARAMETER
6822 056234                                     BGNSEG
                                        .MCALL  M$PUSH,M$INCR,M$SVC
            000040                      I$SEG=F$BGN
     056234                             M$PUSH  T$NS,T$NESTLEV,F$SEG
                                        .MCALL  M$INCR,M$SETS
     056234                             M$INCR  T$NESTLEV
            000002                      T$NESTLEV=T$NESTLEV+1
     056234                             M$SETS  T$NS,\T$NESTLEV,F$SEG
```

K3

TEST 22: END OF A MESSAGE BLOCK TEST

```
               000003                        T$NS2=F$SEG
               010004                        T$$SEG=S$LSYM
      056234                                 M$PUSH  T$SEK,T$SEGLEV,T$$SEG
                                             .MCALL  M$INCR,M$SETS
      056234                                 M$INCR  T$SEGLEV
               000000                        T$SEGLEV=T$SEGLEV+1
      056234                                 M$SETS  T$SEK,\T$SEGLEV,T$$SEG
               010004                        T$SEK0=T$$SEG
      056234                                 M$INCR  S$LSYM
               010005                        S$LSYM=S$LSYM+1
      056234                                 M$SVC   C$BSEG
                                             .MCALL  M$GNINS,M$TSTLAB
      056234                                 M$TSTLAB
                                             .MCALL  M$TLABEL,M$INCR
                                             .IIF LT T$TSTMAC, .MEXIT
                                             .RADIX  10
                                             M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                             .RADIX  8
                                             M$INCR  T$TSTSEQ
      056234                                 M$GNINS <TRAP   C$BSEG>
                                             .IF LT SVCINS
                                             TRAP    C$BSEG
                                             .MEXIT
                                             .ENDC
                                             .IF EQ SVCINS
                                             .LIST
                                                     TRAP    C$BSEG
                                                             .NLIST
                                             .MEXIT
                                             .ENDC
                                             .IF GT SVCINS
                                             .LIST
      056234   104404                                                                              TRAP    C$BSEG
                                                             .NLIST
                                             .ENDC
 6823 056236   052777  000010  124034                BIS     #10,@CSRX                 ;SELECT CHANNEL 2
 6824 056244   112777  000223  124016                MOVB    #223,@ICRHX               ;----LOAD DAI INTO ACR 2 -------------
 6825 056252   042777  000010  124020                BIC     #10,@CSRX                 ;SELECT CHANNEL 1
 6826 056260   112777  000223  124002                MOVB    #223,@ICRHX               ;----LOAD DAI INTO ACR 1-------------
 6827 056266   052777  000010  124004                BIS     #10,@CSRX                 ;SELECT CHANNEL 2
 6828 056274   112777  000203  123766                MOVB    #203,@ICRHX               ;----LOAD HDFA INTO ACR 2--- ---------
 6829 056302   112777  000211  123760                MOVB    #211,@ICRHX               ;----LOAD LON INTO ACR 2----- --------
 6830 056310   013701  002312                        MOV     DPA1,R1                   ;CREATE MTA1
 6831 056314   062701  000100                        ADD     #100,R1                   ;...
 6832 056320   010137  002414                        MOV     R1,MTA1                   ;STORE MTA1
 6833 056324   113777  002414  123744                MOVB    MTA1,@IDRHX               ;----LOAD MTA1 INTO DOR 2- --- --- ---
 6834 056332   004737  011050                        JSR     PC,LOOP                   ;WAIT A LITTLE
 6835 056336   112777  000013  123724                MOVB    #13,@ICRHX                ;----LOAD GTS INTO ACR 2--  -- -- ----
 6836 056344                                         ENDSEG
                                             .MCALL  M$POP,M$GNLS,M$SVC,M$ENDERR
      056344                                 M$POP   T$NS,T$NESTLEV,T$TEMP
                                             .MCALL  M$GETS,M$DECR
                                             .IF LT  T$NESTLEV
                                             .ERROR  T$NESTLEV       ; MACRO T$NS UNDERFLOW
                                             .MEXIT
                                             .ENDC
      056344                                 M$GETS  T$NS,\T$NESTLEV,T$TEMP
```

```
        000003          T$TEMP=T$NS2
056344                  M$DECR  T$NESTLEV
        000001          T$NESTLEV=T$NESTLEV-1
                        .IF EQ F$SEG-T$TEMP
056344                  M$POP   T$SEK,T$SEGLEV,T$$SEG
                        .MCALL  M$GETS,M$DECR
                        .IF LT  T$SEGLEV
                        .ERROR  T$SEGLEV        ; MACRO T$SEK UNDERFLOW
                        .MEXIT
                        .ENDC
056344                  M$GETS  T$SEK,\T$SEGLEV,T$$SEG
        010004          T$$SEG=T$SEK0
056344                  M$DECR  T$SEGLEV
        177777          T$SEGLEV=T$SEGLEV-1
056344                  M$GNLS  T$$SEG
                        .MCALL  M$GEN
                        .IF NB T$$SEG
056344                  M$GEN   \T$$SEG,$,SVCTAG
                        .IF LE  SVCTAG
                        .IIF EQ SVCTAG,.LIST
                        10004$:
                        .IIF EQ SVCTAG,.NLIST
                        .MEXIT
                        .ENDC
                        .LIST
056344                                                                  10004$:
                                .NLIST
                        .IFF
                        M$GEN   \S$LSYM,$,SVCTAG
                        .ENDC
056344                  M$SVC   C$ESEG
                        .MCALL  M$GNINS,M$TSTLAB
056344                  M$TSTLAB
                        .MCALL  M$TLABEL,M$INCR
                        .IIF LT T$TSTMAC, .MEXIT
                        .RADIX  10
                        M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                        .RADIX  8
                        M$INCR  T$TSTSEQ
056344                  M$GNINS <TRAP   C$ESEG>
                        .IF LT SVCINS
                        TRAP    C$ESEG
                        .MEXIT
                        .ENDC
                        .IF EQ SVCINS
                        .LIST
                                TRAP    C$ESEG
                                        .NLIST
                        .MEXIT
                        .ENDC
                        .IF GT SVCINS
                        .LIST
056344  104405                                                              TRAP    C$ESEG
                                        .NLIST
                        .ENDC
                        .IF EQ T$SEGLEV+1
        000041          I$SEG=F$END
```

```
                                                .ENDC
                                                .IFF
                                                M$ENDERR        ENDSEG,T$TEMP
                                                .ENDC
6837 056346                                             BGNSEG
                                                .MCALL  M$PUSH,M$INCR,M$SVC
            000040                              I$SEG=F$BGN
     056346                                     M$PUSH  T$NS,T$NESTLEV,F$SEG
                                                .MCALL  M$INCR,M$SETS
     056346                                     M$INCR  T$NESTLEV
            000002                              T$NESTLEV=T$NESTLEV+1
     056346                                     M$SETS  T$NS,\T$NESTLEV,F$SEG
            000003                              T$NS2=F$SEG
            010005                              T$$SEG=S$LSYM
     056346                                     M$PUSH  T$SEK,T$SEGLEV,T$$SEG
                                                .MCALL  M$INCR,M$SETS
     056346                                     M$INCR  T$SEGLEV
            000000                              T$SEGLEV=T$SEGLEV+1
     056346                                     M$SETS  T$SEK,\T$SEGLEV,T$$SEG
            010005                              T$SEKO=T$$SEG
     056346                                     M$INCR  S$LSYM
            010006                              S$LSYM=S$LSYM+1
     056346                                     M$SVC   C$BSEG
                                                .MCALL  M$GNINS,M$TSTLAB
     056346                                     M$TSTLAB
                                                .MCALL  M$TLABEL,M$INCR
                                                .IIF LT T$TSTMAC, .MEXIT
                                                .RADIX  10
                                                M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                                .RADIX  8
                                                M$INCR  T$TSTSEQ
     056346                                     M$GNINS <TRAP   C$BSEG>
                                                .IF LT SVCINS
                                                TRAP    C$BSEG
                                                .MEXIT
                                                .ENDC
                                                .IF EQ SVCINS
                                                .LIST
                                                        TRAP    C$BSEG
                                                                .NLIST
                                                .MEXIT
                                                .ENDC
                                                .IF GT SVCINS
                                                .LIST
     056346 104404                                                                                  TRAP    C$BSEG
                                                                .NLIST
                                                .ENDC
6838 056350 042777 000010 123722                        BIC     #10,@CSRX               ;SELECT CHANNEL 1
6839 056356 112777 000125 123712                        MOVB    #125,@IDRHX             ;----LOAD DATA INTO DOR 1-- ----------
6840 056364 052777 000010 123706                        BIS     #10,@CSRX               ;SELECT CHANNEL 2
6841 056372 012737 000002 002374                        MOV     #2,CHAN                 ;LOAD CHANNEL NUMBER
6842 056400 017737 123644 002502                        MOV     @IIRX,BAD               ;GET IIR2 CONTENTS
6843 056406 022737 000060 002502                        CMP     #60,BAD                 ;B0,BI BIT SHOULD BE SET
6844 056414 001410                                      BEQ     10$                     ;BRANCH IF YES
6845 056416 012737 000060 002500                        MOV     #60,GOOD                ;SET UP DATA FOR ERROR MESSAGE
6846 056424                                             ERRSOFT 2208,E501,ERR501        ;ERROR HANDLER
                                                .MCALL  M$ERRINS
```

N3

TEST 22: END OF A MESSAGE BLOCK TEST

```
        056424                          M$ERRINS        2208,E501,ERR501,C$ERSOFT
                                        .MCALL  M$GNINS,M$WORD,M$TSTLAB
        056424                          M$SVC   C$ERSOFT
                                        .MCALL  M$GNINS,M$TSTLAB
        056424                          M$TSTLAB
                                        .MCALL  M$TLABEL,M$INCR
                                        .IIF LT T$TSTMAC, .MEXIT
                                        .RADIX  10
                                        M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                        .RADIX  8
                                        M$INCR  T$TSTSEQ
        056424                          M$GNINS <TRAP   C$ERSOFT>
                                        .IF LT SVCINS
                                        TRAP    C$ERSOFT
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                TRAP    C$ERSOFT
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
        056424  104457                                                                  TRAP    C$ERSOFT
                                                        .NLIST
                                        .ENDC
                000012                  .RADIX  10
                                        .IF NB  2208
                004240                  T$ERRNUM=2208
                                        .IFF
                                        .ERROR  ;MISSING ERROR-NR
                                        .ENDC
        056426                          M$WORD  \T$ERRNUM
                                        .MCALL  M$GNINS
                                        .IRP    N,<2208>
                                        M$GNINS <.WORD  N>
                                        .ENDM
        056426                          M$GNINS <.WORD  2208>
                                        .IF LT SVCINS
                                        .WORD   2208
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                .WORD   2208
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
        056426  004240                                                                  .WORD   2208
                                                        .NLIST
                                        .ENDC
                000010                  .RADIX  8
                                        .IF NB E501
        056430                          M$WORD  E501
```

TEST 22: END OF A MESSAGE BLOCK TEST

```
                                .MCALL  M$GNINS
                                .IRP    N,<E501>
                                M$GNINS <.WORD  N>
                                .ENDM
     056430                     M$GNINS <.WORD  E501>
                                .IF LT SVCINS
                                .WORD   E501
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        .WORD   E501
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
     056430  005376                                                                     .WORD   E501
                                                .NLIST
                                .ENDC
                                .IFF
                                M$WORD  0
                                .ENDC
                                .IF NB ERR501
     056432                     M$WORD  ERR501
                                .MCALL  M$GNINS
                                .IRP    N,<ERR501>
                                M$GNINS <.WORD  N>
                                .ENDM
     056432                     M$GNINS <.WORD  ERR501>
                                .IF LT SVCINS
                                .WORD   ERR501
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        .WORD   ERR501
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
     056432  003672                                                                     .WORD   ERR501
                                                .NLIST
                                .ENDC
                                .IFF
                                M$WORD  0
                                .ENDC
6847 056434                             CKLOOP                  ;BRANCH BACK TO BGNSEG IF ERRLOOP IS SET
                                .MCALL  M$SVC
     056434                     M$SVC   C$CLP1
                                .MCALL  M$GNINS,M$TSTLAB
     056434                     M$TSTLAB
                                .MCALL  M$TLABEL,M$INCR
                                .IIF LT T$TSTMAC, .MEXIT
                                .RADIX  10
                                M$TLABEL        \T$TESTNUN,\T$TSTSEQ
```

```
                                        .RADIX  8
                                        M$INCR  T$TSTSEQ
     056434                             M$GNINS <TRAP   C$CLP1>
                                        .IF LT SVCINS
                                        TRAP    C$CLP1
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                TRAP    C$CLP1
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
     056434  104406                                                                          TRAP    C$CLP1
                                                        .NLIST
                                        .ENDC
6848 056436  017737  123614  002502     10$:    MOV     @ISRX,BAD               ;GET ISR2 CONTENTS
6849 056444  022737  030004  002502             CMP     #30004,BAD              ;NDAC,NRFD,LADS SHOULD BE SET
6850 056452  001410                             BEQ     20$                     ;BRANCH IF YES
6851 056454  012737  030004  002500             MOV     #30004,GOOD             ;SET UP DATA FOR ERROR MESSAGE
6852 056462                                     ERRSOFT 2209,E502,ERR501        ;ERROR HANDLER
                                        .MCALL  M$ERRINS
     056462                             M$ERRINS        2209,E502,ERR501,C$ERSOFT
                                        .MCALL  M$GNINS,M$WORD,M$TSTLAB
     056462                             M$SVC   C$ERSOFT
                                        .MCALL  M$GNINS,M$TSTLAB
     056462                             M$TSTLAB
                                        .MCALL  M$TLABEL,M$INCR
                                        .IIF LT T$TSTMAC, .MEXIT
                                        .RADIX  10
                                        M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                        .RADIX  8
                                        M$INCR  T$TSTSEQ
     056462                             M$GNINS <TRAP   C$ERSOFT>
                                        .IF LT SVCINS
                                        TRAP    C$ERSOFT
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                TRAP    C$ERSOFT
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
     056462  104457                                                                          TRAP    C$ERSOFT
                                                        .NLIST
                                        .ENDC
             000012                     .RADIX  10
                                        .IF NB  2209
             004241                     T$ERRNUM=2209
                                        .IFF
                                        .ERROR  ;MISSING ERROR NR
                                        .ENDC
```

```
056464                          M$WORD  \T$ERRNUM
                                .MCALL  M$GNINS
                                .IRP    N,<2209>
                                M$GNINS <.WORD  N>
                                .ENDM
056464                          M$GNINS <.WORD  2209>
                                .IF LT SVCINS
                                .WORD   2209
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        .WORD   2209
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
056464  004241                                                                  .WORD   2209
                                                .NLIST
                                .ENDC
        000010                  .RADIX  8
                                .IF NB E502
056466                          M$WORD  E502
                                .MCALL  M$GNINS
                                .IRP    N,<E502>
                                M$GNINS <.WORD  N>
                                .ENDM
056466                          M$GNINS <.WORD  E502>
                                .IF LT SVCINS
                                .WORD   E502
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        .WORD   E502
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
056466  005437                                                                  .WORD   E502
                                                .NLIST
                                .ENDC
                                .IFF
                                M$WORD  0
                                .ENDC
                                .IF NB ERR501
056470                          M$WORD  ERR501
                                .MCALL  M$GNINS
                                .IRP    N,<ERR501>
                                M$GNINS <.WORD  N>
                                .ENDM
056470                          M$GNINS <.WORD  ERR501>
                                .IF LT SVCINS
                                .WORD   ERR501
                                .MEXIT
```

```
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                              .WORD   ERR501
                                                      .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
      056470  003672                                                                          .WORD   ERR501
                                                      .NLIST
                                        .ENDC
                                        .IFF
                                        M$WORD  0
                                        .ENDC
6853  056472                                  CKLOOP                          ;BRANCH BACK TO BGNSEG IF ERRLOOP IS SET
                                        .MCALL  M$SVC
      056472                            M$SVC   C$CLP1
                                        .MCALL  M$GNINS,M$TSTLAB
      056472                            M$TSTLAB
                                        .MCALL  M$TLABEL,M$INCR
                                        .IIF LT T$TSTMAC, .MEXIT
                                        .RADIX  10
                                        M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                        .RADIX  8
                                        M$INCR  T$TSTSEQ
      056472                            M$GNINS <TRAP   C$CLP1>
                                        .IF LT SVCINS
                                        TRAP    C$CLP1
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                              TRAP    C$CLP1
                                                      .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
      056472  104406                                                                          TRAP    C$CLP1
                                                      .NLIST
                                        .ENDC
6854  056474  017737  123572  002502    20$:    MOV     @IDRX,BAD               ;GET DIR2 CONTENTS
6855  056502  105037  002502                    CLRB    BAD                     ;
6856  056506  000337  002502                    SWAB    BAD                     ;SWAB HIGH AND LOW BYTE
6857  056512  122737  000125  002502            CMPB    #125,BAD                ;COMPARE WITH LOADED DATA
6858  056520  001410                            BEQ     23$                     ;BRANCH IF OK
6859  056522  012737  000125  002500            MOV     #125,GOOD               ;SET UP DATA FOR ERROR MESSAGE
6860  056530                                    ERRSOFT 2210,E222,ERR501        ;ERROR HANDLER
                                        .MCALL  M$ERRINS
      056530                            M$ERRINS        2210,E222,ERR501,C$ERSOFT
                                        .MCALL  M$GNINS,M$WORD,M$TSTLAB
      056530                            M$SVC   C$ERSOFT
                                        .MCALL  M$GNINS,M$TSTLAB
      056530                            M$TSTLAB
                                        .MCALL  M$TLABEL,M$INCR
                                        .IIF LT T$TSTMAC, .MEXIT
```

F4


```
                                        .RADIX  10
                                        M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                        .RADIX  8
                                        M$INCR  T$TSTSEQ
      056530                            M$GNINS <TRAP   C$ERSOFT>
                                        .IF LT SVCINS
                                        TRAP    C$ERSOFT
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                TRAP    C$ERSOFT
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
      056530  104457                                                                    TRAP    C$ERSOFT
                                                        .NLIST
                                        .ENDC
              000012                    .RADIX  10
                                        .IF NB  2210
              004242                    T$ERRNUM=2210
                                        .IFF
                                        .ERROR  ;MISSING ERROR-NR
                                        .ENDC
      056532                            M$WORD  \T$ERRNUM
                                        .MCALL  M$GNINS
                                        .IRP    N,<2210>
                                        M$GNINS <.WORD  N>
                                        .ENDM
      056532                            M$GNINS <.WORD  2210>
                                        .IF LT SVCINS
                                        .WORD   2210
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                .WORD   2210
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
      056532  004242                                                                    .WORD   2210
                                                        .NLIST
                                        .ENDC
              000010                    .RADIX  8
                                        .IF NB E222
      056534                            M$WORD  E222
                                        .MCALL  M$GNINS
                                        .IRP    N,<E222>
                                        M$GNINS <.WORD  N>
                                        .ENDM
      056534                            M$GNINS <.WORD  E222>
                                        .IF LT SVCINS
                                        .WORD   E222
```

G4


```
                              .MEXIT
                              .ENDC
                              .IF EQ SVCINS
                              .LIST
                                      .WORD   E222
                                              .NLIST
                              .MEXIT
                              .ENDC
                              .IF GT SVCINS
                              .LIST
      056534  005665                                                                      .WORD   E222
                                              .NLIST
                              .ENDC
                              .IFF
                              M$WORD  0
                              .ENDC
                              .IF NB ERR501
      056536                  M$WORD  ERR501
                              .MCALL  M$GNINS
                              .IRP    N,<ERR501>
                              M$GNINS <.WORD  N>
                              .ENDM
      056536                  M$GNINS <.WORD  ERR501>
                              .IF LT SVCINS
                              .WORD   ERR501
                              .MEXIT
                              .ENDC
                              .IF EQ SVCINS
                              .LIST
                                      .WORD   ERR501
                                              .NLIST
                              .MEXIT
                              .ENDC
                              .IF GT SVCINS
                              .LIST
      056536  003672                                                                      .WORD   ERR501
                                              .NLIST
                              .ENDC
                              .IFF
                              M$WORD  0
                              .ENDC
6861  056540                          CKLOOP                          ;BRANCH BACK TO BGNSEG IF ERRLOOP IS SET
                              .MCALL  M$SVC
      056540                  M$SVC   C$CLP1
                              .MCALL  M$GNINS,M$TSTLAB
      056540                  M$TSTLAB
                              .MCALL  M$TLABEL,M$INCR
                              .IIF LT T$TSTMAC, .MEXIT
                              .RADIX  10
                              M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                              .RADIX  8
                              M$INCR  T$TSTSEQ
      056540                  M$GNINS <TRAP   C$CLP1>
                              .IF LT SVCINS
                              TRAP    C$CLP1
                              .MEXIT
                              .ENDC
```

```
                                        .IF EQ SVCINS
                                        .LIST
                                              TRAP    C$CLP1
                                                      .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
        056540  104406                                                                TRAP    C$CLP1
                                                      .NLIST
                                        .ENDC
   6862 056542                          23$:    ENDSEG
                                        .MCALL  M$POP,M$GNLS,M$SVC,M$ENDERR
        056542                          M$POP   T$NS,T$NESTLEV,T$TEMP
                                        .MCALL  M$GETS,M$DECR
                                        .IF LT  T$NESTLEV
                                        .ERROR  T$NESTLEV       ; MACRO T$NS UNDERFLOW
                                        .MEXIT
                                        .ENDC
        056542                          M$GETS  T$NS,\T$NESTLEV,T$TEMP
                000003                  T$TEMP=T$NS2
        056542                          M$DECR  T$NESTLEV
                000001                  T$NESTLEV=T$NESTLEV-1
                                        .IF EQ F$SEG-T$TEMP
        056542                          M$POP   T$SEK,T$SEGLEV,T$$SEG
                                        .MCALL  M$GETS,M$DECR
                                        .IF LT  T$SEGLEV
                                        .ERROR  T$SEGLEV        ; MACRO T$SEK UNDERFLOW
                                        .MEXIT
                                        .ENDC
        056542                          M$GETS  T$SEK,\T$SEGLEV,T$$SEG
                010005                  T$$SEG=T$SEK0
        056542                          M$DECR  T$SEGLEV
                177777                  T$SEGLEV=T$SEGLEV-1
        056542                          M$GNLS  T$$SEG
                                        .MCALL  M$GEN
                                        .IF NB T$$SEG
        056542                          M$GEN   \T$$SEG,$,SVCTAG
                                        .IF LE  SVCTAG
                                        .IIF EQ SVCTAG,.LIST
                                        10005$:
                                        .IIF EQ SVCTAG,.NLIST
                                        .MEXIT
                                        .ENDC
                                        .LIST
        056542                                                                    10005$:
                                                .NLIST
                                        .IFF
                                        M$GEN   \S$LSYM,$,SVCTAG
                                        .ENDC
        056542                          M$SVC   C$ESEG
                                        .MCALL  M$GNINS,M$TSTLAB
        056542                          M$TSTLAB
                                        .MCALL  M$TLABEL,M$INCR
                                        .IIF LT T$TSTMAC, .MEXIT
                                        .RADIX  10
                                        M$TLABEL        \T$TESTNUN,\T$TSTSEQ
```

```
                                        .RADIX  8
                                        M$INCR  T$TSTSEQ
      056542                            M$GNINS <TRAP   C$ESEG>
                                        .IF LT SVCINS
                                        TRAP    C$ESEG
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                TRAP    C$ESEG
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
      056542  104405                                                                    TRAP    C$ESEG
                                                        .NLIST
                                        .ENDC
                                        .IF EQ T$SEGLEV+1
              000041                    I$SEG=F$END
                                        .ENDC
                                        .IFF
                                        M$ENDERR        ENDSEG,T$TEMP
                                        .ENDC
 6863 056544  112777  000002  123516            MOVB    #2,@ICRHX               ;----LOAD RHDF INTO ACR 2------- -----
 6864 056552  112777  000003  123510            MOVB    #3,@ICRHX               ;- --LOAD NOT HDFA INTO ACR 2---------
 6865 056560  112777  000204  123502            MOVB    #204,@ICRHX             ;----LOAD HDFE INTO ACR 2   ----------
 6866 056566                                    BGNSEG
                                        .MCALL  M$PUSH,M$INCR,M$SVC
              000040                    I$SEG=F$BGN
      056566                            M$PUSH  T$NS,T$NESTLEV,F$SEG
                                        .MCALL  M$INCR,M$SETS
      056566                            M$INCR  T$NESTLEV
              000002                    T$NESTLEV=T$NESTLEV+1
      056566                            M$SETS  T$NS,\T$NESTLEV,F$SEG
              000003                    T$NS2=F$SEG
              010006                    T$$SEG=S$LSYM
      056566                            M$PUSH  T$SEK,T$SEGLEV,T$$SEG
                                        .MCALL  M$INCR,M$SETS
      056566                            M$INCR  T$SEGLEV
              000000                    T$SEGLEV=T$SEGLEV+1
      056566                            M$SETS  T$SEK,\T$SEGLEV,T$$SEG
              010006                    T$SEK0=T$$SEG
      056566                            M$INCR  S$LSYM
              010007                    S$LSYM=S$LSYM+1
      056566                            M$SVC   C$BSEG
                                        .MCALL  M$GNINS,M$TSTLAB
      056566                            M$TSTLAB
                                        .MCALL  M$TLABEL,M$INCR
                                        .IIF LT T$TSTMAC, .MEXIT
                                        .RADIX  10
                                        M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                        .RADIX  8
                                        M$INCR  T$TSTSEQ
      056566                            M$GNINS <TRAP   C$BSEG>
                                        .IF LT SVCINS
                                        TRAP    C$BSEG
```

```
                                                .MEXIT
                                                .ENDC
                                                .IF EQ SVCINS
                                                .LIST
                                                        TRAP    C$BSEG
                                                                .NLIST
                                                .MEXIT
                                                .ENDC
                                                .IF GT SVCINS
                                                .LIST
     056566  104404                                                                                     TRAP    C$BSEG
                                                                .NLIST
                                                .ENDC
6867 056570  042777  000010  123502                     BIC     #10,@CSRX               ;SELECT CHANNEL 1
6868 056576  112777  000126  123472                     MOVB    #126,@IDRHX             ;----LOAD DATA INTO DOR 1------------
6869 056604  004737  011050                             JSR     PC,LOOP                 ;WAIT A LITTLE
6870 056610  052777  000010  123462                     BIS     #10,@CSRX               ;SELECT CHANNEL 2
6871 056616  017737  123450  002502                     MOV     @IDRX,BAD               ;READ DATA FROM DIR2
6872 056624  105037  002502                             CLRB    BAD                     ;CLEAR LOW BYTE OF IDR REGISTER
6873 056630  000337  002502                             SWAB    BAD                     ;SWAB HIGH WITH LOW BYTE
6874 056634  122737  000126  002502                     CMPB    #126,BAD                ;COMPARE DIR CONTENTS WITH LOADED DATA
6875 056642  001410                                     BEQ     30$                     ;BRANCH IF EQUAL
6876 056644  012737  000126  002500                     MOV     #126,GOOD               ;SET UP DATA FOR ERROR MESSAGE
6877 056652                                             ERRSOFT 2211,E222,E501          ;ERROR HANDLER
                                                .MCALL  M$ERRINS
     056652                                     M$ERRINS        2211,E222,E501,C$ERSOFT
                                                .MCALL  M$GNINS,M$WORD,M$TSTLAB
     056652                                     M$SVC   C$ERSOFT
                                                .MCALL  M$GNINS,M$TSTLAB
     056652                                     M$TSTLAB
                                                .MCALL  M$TLABEL,M$INCR
                                                .IIF LT T$TSTMAC, .MEXIT
                                                .RADIX  10
                                                M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                                .RADIX  8
                                                M$INCR  T$TSTSEQ
     056652                                     M$GNINS <TRAP   C$ERSOFT>
                                                .IF LT SVCINS
                                                TRAP    C$ERSOFT
                                                .MEXIT
                                                .ENDC
                                                .IF EQ SVCINS
                                                .LIST
                                                        TRAP    C$ERSOFT
                                                                .NLIST
                                                .MEXIT
                                                .ENDC
                                                .IF GT SVCINS
                                                .LIST
     056652  104457                                                                                     TRAP    C$ERSOFT
                                                                .NLIST
                                                .ENDC
             000012                             .RADIX  10
                                                .IF NB  2211
             004243                             T$ERRNUM=2211
                                                .IFF
                                                .ERROR  ;MISSING ERROR NR
```

```
                                   .ENDC
     056654                        M$WORD  \T$ERRNUM
                                   .MCALL  M$GNINS
                                   .IRP    N,<2211>
                                   M$GNINS <.WORD  N>
                                   .ENDM
     056654                        M$GNINS <.WORD  2211>
                                   .IF LT SVCINS
                                   .WORD   2211
                                   .MEXIT
                                   .ENDC
                                   .IF EQ SVCINS
                                   .LIST
                                           .WORD   2211
                                                   .NLIST
                                   .MEXIT
                                   .ENDC
                                   .IF GT SVCINS
                                   .LIST
     056654  004243                                                                        .WORD   2211
                                                   .NLIST
                                   .ENDC
             000010                .RADIX  8
                                   .IF NB E222
     056656                        M$WORD  E222
                                   .MCALL  M$GNINS
                                   .IRP    N,<E222>
                                   M$GNINS <.WORD  N>
                                   .ENDM
     056656                        M$GNINS <.WORD  E222>
                                   .IF LT SVCINS
                                   .WORD   E222
                                   .MEXIT
                                   .ENDC
                                   .IF EQ SVCINS
                                   .LIST
                                           .WORD   E222
                                                   .NLIST
                                   .MEXIT
                                   .ENDC
                                   .IF GT SVCINS
                                   .LIST
     056656  005665                                                                        .WORD   E222
                                                   .NLIST
                                   .ENDC
                                   .IFF
                                   M$WORD  0
                                   .ENDC
                                   .IF NB E501
     056660                        M$WORD  E501
                                   .MCALL  M$GNINS
                                   .IRP    N,<E501>
                                   M$GNINS <.WORD  N>
                                   .ENDM
     056660                        M$GNINS <.WORD  E501>
                                   .IF LT SVCINS
                                   .WORD   E501
```

```
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        .WORD   E501
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
     056660  005376                                                                                     .WORD   E501
                                                .NLIST
                                .ENDC
                                .IFF
                                M$WORD  0
                                .ENDC
6878 056662                             CKLOOP                          ;BRANCH BACK TO BGNSEG IF ERRLOOP IS SET
                                .MCALL  M$SVC
     056662                     M$SVC   C$CLP1
                                .MCALL  M$GNINS,M$TSTLAB
     056662                     M$TSTLAB
                                .MCALL  M$TLABEL,M$INCR
                                .IIF LT T$TSTMAC, .MEXIT
                                .RADIX  10
                                M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                .RADIX  8
                                M$INCR  T$TSTSEQ
     056662                     M$GNINS <TRAP   C$CLP1>
                                .IF LT SVCINS
                                TRAP    C$CLP1
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        TRAP    C$CLP1
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
     056662  104406                                                                                     TRAP    C$CLP1
                                                .NLIST
                                .ENDC
6879 056664                     30$:    ENDSEG
                                .MCALL  M$POP,M$GNLS,M$SVC,M$ENDERR
     056664                     M$POP   T$NS,T$NESTLEV,T$TEMP
                                .MCALL  M$GETS,M$DECR
                                .IF LT  T$NESTLEV
                                .ERROR  T$NESTLEV       ; MACRO T$NS UNDERFLOW
                                .MEXIT
                                .ENDC
     056664                     M$GETS  T$NS,\T$NESTLEV,T$TEMP
             000003             T$TEMP=T$NS2
     056664                     M$DECR  T$NESTLEV
             000001             T$NESTLEV=T$NESTLEV-1
                                .IF EQ F$SEG T$TEMP
     056664                     M$POP   T$SEK,T$SEGLEV,T$$SEG
```

M4


```
                                        .MCALL  M$GETS,M$DECR
                                        .IF LT  T$SEGLEV
                                        .ERROR  T$SEGLEV          ; MACRO T$SEK UNDERFLOW
                                        .MEXIT
                                        .ENDC
      056664                            M$GETS  T$SEK,\T$SEGLEV,T$$SEG
             010006                     T$$SEG=T$SEKO
      056664                            M$DECR  T$SEGLEV
             177777                     T$SEGLEV=T$SEGLEV-1
      056664                            M$GNLS  T$$SEG
                                        .MCALL  M$GEN
                                        .IF NB T$$SEG
      056664                            M$GEN   \T$$SEG,$,SVCTAG
                                        .IF LE  SVCTAG
                                        .IIF EQ SVCTAG,.LIST
                                        10006$:
                                        .IIF EQ SVCTAG,.NLIST
                                        .MEXIT
                                        .ENDC
                                        .LIST
      056664                                                                          10006$:
                                                .NLIST
                                        .IFF
                                        M$GEN   \S$LSYM,$,SVCTAG
                                        .ENDC
      056664                            M$SVC   C$ESEG
                                        .MCALL  M$GNINS,M$TSTLAB
      056664                            M$TSTLAB
                                        .MCALL  M$TLABEL,M$INCR
                                        .IIF LT T$TSTMAC, .MEXIT
                                        .RADIX  10
                                        M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                        .RADIX  8
                                        M$INCR  T$TSTSEQ
      056664                            M$GNINS <TRAP   C$ESEG>
                                        .IF LT SVCINS
                                        TRAP    C$ESEG
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                TRAP    C$ESEG
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
      056664 104405                                                                          TRAP    C$ESEG
                                                        .NLIST
                                        .ENDC
                                        .IF EQ T$SEGLEV+1
             000041                     I$SEG=F$END
                                        .ENDC
                                        .IFF
                                        M$ENDERR        ENDSEG,T$TEMP
                                        .ENDC
 6880 056666 042777 000010 123404               BIC     #10,@CSRX               ;SELECT CHANNEL 1
```

```
6881 056674  112777  000010  123366          MOVB    #10,@ICRHX              ;----LOAD FEOI INTO ACR 1------------
6882 056702                                  BGNSEG
                                     .MCALL  M$PUSH,M$INCR,M$SVC
     056702  000040                  I$SEG=F$BGN
     056702                          M$PUSH  T$NS,T$NESTLEV,F$SEG
                                     .MCALL  M$INCR,M$SETS
     056702                          M$INCR  T$NESTLEV
             000002                  T$NESTLEV=T$NESTLEV+1
     056702                          M$SETS  T$NS,\T$NESTLEV,F$SEG
             000003                  T$NS2=F$SEG
             010007                  T$$SEG=S$LSYM
     056702                          M$PUSH  T$SEK,T$SEGLEV,T$$SEG
                                     .MCALL  M$INCR,M$SETS
     056702                          M$INCR  T$SEGLEV
             000000                  T$SEGLEV=T$SEGLEV+1
     056702                          M$SETS  T$SEK,\T$SEGLEV,T$$SEG
             010007                  T$SEK0=T$$SEG
     056702                          M$INCR  S$LSYM
             010010                  S$LSYM=S$LSYM+1
     056702                          M$SVC   C$BSEG
                                     .MCALL  M$GNINS,M$TSTLAB
     056702                          M$TSTLAB
                                     .MCALL  M$TLABEL,M$INCR
                                     .IIF LT T$TSTMAC, .MEXIT
                                     .RADIX  10
                                     M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                     .RADIX  8
                                     M$INCR  T$TSTSEQ
     056702                          M$GNINS <TRAP   C$BSEG>
                                     .IF LT SVCINS
                                     TRAP    C$BSEG
                                     .MEXIT
                                     .ENDC
                                     .IF EQ SVCINS
                                     .LIST
                                             TRAP    C$BSEG
                                                     .NLIST
                                     .MEXIT
                                     .ENDC
                                     .IF GT SVCINS
                                     .LIST
     056702  104404                                                                          TRAP    C$BSEG
                                                     .NLIST
                                     .ENDC
6883 056704  112777  000127  123364          MOVB    #127,@IDRHX             ;----LOAD DATA INTO DOR 1-----------
6884 056712  004737  011050                  JSR     PC,LOOP                 ;WAIT A LITTLE
6885 056716  052777  000010  123354          BIS     #10,@CSRX               ;SELECT CHANNEL 2
6886 056724  017737  123320  002502          MOV     @IIRX,BAD               ;GET IIR2 CONTENTS
6887 056732  022737  000050  002502          CMP     #50,BAD                 ;BI,END BIT SHOULD BE SET
6888 056740  001410                          BEQ     33$                     ;BRANCH IF YES
6889 056742  012737  000050  002500          MOV     #50,GOOD                ;SET UP DATA FOR ERROR MESSAGE
6890 056750                                  ERRSOFT 2212,E501,ERR501        ;ERROR HANDLER
                                     .MCALL  M$ERRINS
     056750                          M$ERRINS        2212,E501,ERR501,C$ERSOFT
                                     .MCALL  M$GNINS,M$WORD,M$TSTLAB
     056750                          M$SVC   C$ERSOFT
                                     .MCALL  M$GNINS,M$TSTLAB
```

```
        056750                           M$TSTLAB
                                         .MCALL  M$TLABEL,M$INCR
                                         .IIF LT T$TSTMAC, .MEXIT
                                         .RADIX  10
                                         M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                         .RADIX  8
                                         M$INCR  T$TSTSEQ
        056750                           M$GNINS <TRAP   C$ERSOFT>
                                         .IF LT SVCINS
                                         TRAP    C$ERSOFT
                                         .MEXIT
                                         .ENDC
                                         .IF EQ SVCINS
                                         .LIST
                                                 TRAP    C$ERSOFT
                                                         .NLIST
                                         .MEXIT
                                         .ENDC
                                         .IF GT SVCINS
                                         .LIST
        056750  104457                                                                  TRAP    C$ERSOFT
                                                         .NLIST
                                         .ENDC
                000012                   .RADIX  10
                                         .IF NB  2212
                004244                   T$ERRNUM=2212
                                         .IFF
                                         .ERROR  ;MISSING ERROR-NR
                                         .ENDC
        056752                           M$WORD  \T$ERRNUM
                                         .MCALL  M$GNINS
                                         .IRP    N,<2212>
                                         M$GNINS <.WORD  N>
                                         .ENDM
        056752                           M$GNINS <.WORD  2212>
                                         .IF LT SVCINS
                                         .WORD   2212
                                         .MEXIT
                                         .ENDC
                                         .IF EQ SVCINS
                                         .LIST
                                                 .WORD   2212
                                                         .NLIST
                                         .MEXIT
                                         .ENDC
                                         .IF GT SVCINS
                                         .LIST
        056752  004244                                                                  .WORD   2212
                                                         .NLIST
                                         .ENDC
                000010                   .RADIX  8
                                         .IF NB E501
        056754                           M$WORD  E501
                                         .MCALL  M$GNINS
                                         .IRP    N,<E501>
                                         M$GNINS <.WORD  N>
                                         .ENDM
```

```
      056754                   M$GNINS <.WORD  E501>
                               .IF LT SVCINS
                               .WORD   E501
                               .MEXIT
                               .ENDC
                               .IF EQ SVCINS
                               .LIST
                                       .WORD   E501
                                               .NLIST
                               .MEXIT
                               .ENDC
                               .IF GT SVCINS
                               .LIST
      056754  005376                                                              .WORD   E501
                                               .NLIST
                               .ENDC
                               .IFF
                               M$WORD  0
                               .ENDC
                               .IF NB ERR501
      056756                   M$WORD  ERR501
                               .MCALL  M$GNINS
                               .IRP    N,<ERR501>
                               M$GNINS <.WORD  N>
                               .ENDM
      056756                   M$GNINS <.WORD  ERR501>
                               .IF LT SVCINS
                               .WORD   ERR501
                               .MEXIT
                               .ENDC
                               .IF EQ SVCINS
                               .LIST
                                       .WORD   ERR501
                                               .NLIST
                               .MEXIT
                               .ENDC
                               .IF GT SVCINS
                               .LIST
      056756  003672                                                              .WORD   ERR501
                                               .NLIST
                               .ENDC
                               .IFF
                               M$WORD  0
                               .ENDC
 6891 056760                           CKLOOP                    ;BRANCH BACK TO BGNSEG IF ERRLOOP IS SET
                               .MCALL  M$SVC
      056760                   M$SVC   C$CLP1
                               .MCALL  M$GNINS,M$TSTLAB
      056760                   M$TSTLAB
                               .MCALL  M$TLABEL,M$INCR
                               .IIF LT T$TSTMAC, .MEXIT
                               .RADIX  10
                               M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                               .RADIX  8
                               M$INCR  T$TSTSEQ
      056760                   M$GNINS <TRAP   C$CLP1>
                               .IF LT SVCINS
```

D5

```
                                        TRAP    C$CLP1
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                TRAP    C$CLP1
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
     056760  104406                                                                                     TRAP    C$CLP1
                                                        .NLIST
                                        .ENDC
6892 056762  017737  123270  002502     33$:    MOV     @ISRX,BAD               ;GET ISR2 CONTENTS
6893 056770  022737  034004  002502             CMP     #34004,BAD              ;NDAC,NRFD,EOI,LADS IS SET
6894 056776  001410                             BEQ     40$                     ;BRANCH IF YES
6895 057000  012737  034004  002500             MOV     #34004,GOOD             ;SET UP DATA FOR ERROR MESSAGE
6896 057006                                     ERRSOFT 2212,E502,ERR501        ;ERROR HANDLER
                                        .MCALL  M$ERRINS
     057006                             M$ERRINS        2212,E502,ERR501,C$ERSOFT
                                        .MCAL   M$GNINS,M$WORD,M$TSTLAB
     057006                             M$SVC   C$ERSOFT
                                        .MCALL  M$GNINS,M$TSTLAB
     057006                             M$TSTLAB
                                        .MCALL  M$TLABEL,M$INCR
                                        .IIF LT T$TSTMAC, .MEXIT
                                        .RADIX  10
                                        M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                        .RADIX  8
                                        M$INCR  T$TSTSEQ
     057006                             M$GNINS <TRAP   C$ERSOFT>
                                        .IF LT SVCINS
                                        TRAP    C$ERSOFT
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                TRAP    C$ERSOFT
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
     057006  104457                                                                                     TRAP    C$ERSOFT
                                                        .NLIST
                                        .ENDC
             000012                     .RADIX  10
                                        .IF NB  2212
             004244                     T$ERRNUM=2212
                                        .IFF
                                        .ERROR  ;MISSING ERROR NR
                                        .ENDC
     057010                             M$WORD  \T$ERRNUM
                                        .MCALL  M$GNINS
                                        .IRP    N,<2212>
                                        M$GNINS <.WORD  N>
```

```
                                .ENDM
      057010                    M$GNINS <.WORD  2212>
                                .IF LT SVCINS
                                .WORD   2212
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        .WORD   2212
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
      057010  004244                                                        .WORD   2212
                                                .NLIST
                                .ENDC
              000010            .RADIX  8
                                .IF NB E502
      057012                    M$WORD  E502
                                .MCALL  M$GNINS
                                .IRP    N,<E502>
                                M$GNINS <.WORD  N>
                                .ENDM
      057012                    M$GNINS <.WORD  E502>
                                .IF LT SVCINS
                                .WORD   E502
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        .WORD   E502
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
      057012  005437                                                        .WORD   E502
                                                .NLIST
                                .ENDC
                                .IFF
                                M$WORD  0
                                .ENDC
                                .IF NB ERR501
      057014                    M$WORD  ERR501
                                .MCALL  M$GNINS
                                .IRP    N,<ERR501>
                                M$GNINS <.WORD  N>
                                .ENDM
      057014                    M$GNINS <.WORD  ERR501>
                                .IF LT SVCINS
                                .WORD   ERR501
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        .WORD   ERR501
```

```
                                                              .NLIST
                                      .MEXIT
                                      .ENDC
                                      .IF GT SVCINS
                                      .LIST
      057014  003672                                                                                .WORD   ERR501
                                                              .NLIST
                                      .ENDC
                                      .IFF
                                      M$WORD  0
                                      .ENDC
 6897 057016                                  CKLOOP                              ;BRANCH BACK TO BGNSEG IF ERRLOOP IS SET
                                      .MCALL  M$SVC
      057016                          M$SVC   C$CLP1
                                      .MCALL  M$GNINS,M$TSTLAB
      057016                          M$TSTLAB
                                      .MCALL  M$TLABEL,M$INCR
                                      .IIF LT T$TSTMAC, .MEXIT
                                      .RADIX  10
                                      M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                      .RADIX  8
                                      M$INCR  T$TSTSEQ
      057016                          M$GNINS <TRAP   C$CLP1>
                                      .IF LT SVCINS
                                      TRAP    C$CLP1
                                      .MEXIT
                                      .ENDC
                                      .IF EQ SVCINS
                                      .LIST
                                              TRAP    C$CLP1
                                                      .NLIST
                                      .MEXIT
                                      .ENDC
                                      .IF GT SVCINS
                                      .LIST
      057016  104406                                                                                TRAP    C$CLP1
                                                              .NLIST
                                      .ENDC
 6898 057020  017737  123246  002502  40$:    MOV     @IDRX,BAD                   ;READ DATA FROM DIR2
 6899 057026  105037  002502                  CLRB    BAD                         ;CLEAR LOW BYTE
 6900 057032  000337  002502                  SWAB    BAD                         ;SWAB HIGH WITH LOW BYTE
 6901 057036  122737  000127  002502          CMPB    #127,BAD                    ;COMPARE LOADED DATA WITH DIR CONTENTS
 6902 057044  001410                          BEQ     43$                         ;BRANCH IF EQUAL
 6903 057046  012737  000127  002500          MOV     #127,GOOD                   ;SET UP DATA FOR ERROR MESSAGE
 6904 057054                                  ERRSOFT 2213,E222,ERR501            ;ERROR HANDLER
                                      .MCALL  M$ERRINS
      057054                          M$ERRINS        2213,E222,ERR501,C$ERSOFT
                                      .MCALL  M$GNINS,M$WORD,M$TSTLAB
      057054                          M$SVC   C$ERSOFT
                                      .MCALL  M$GNINS,M$TSTLAB
      057054                          M$TSTLAB
                                      .MCALL  M$TLABEL,M$INCR
                                      .IIF LT T$TSTMAC, .MEXIT
                                      .RADIX  10
                                      M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                      .RADIX  8
                                      M$INCR  T$TSTSEQ
```

G5

```
        057054                                  M$GNINS <TRAP   C$ERSOFT>
                                                .IF LT SVCINS
                                                TRAP    C$ERSOFT
                                                .MEXIT
                                                .ENDC
                                                .IF EQ SVCINS
                                                .LIST
                                                        TRAP    C$ERSOFT
                                                                .NLIST
                                                .MEXIT
                                                .ENDC
                                                .IF GT SVCINS
                                                .LIST
        057054  104457                                                                          TRAP    C$ERSOFT
                                                                .NLIST
                                                .ENDC
                000012                          .RADIX  10
                                                .IF NB  2213
                004245                          T$ERRNUM=2213
                                                .IFF
                                                .ERROR  ;MISSING ERROR-NR
                                                .ENDC
        057056                                  M$WORD  \T$ERRNUM
                                                .MCALL  M$GNINS
                                                .IRP    N,<2213>
                                                M$GNINS <.WORD  N>
                                                .ENDM
        057056                                  M$GNINS <.WORD  2213>
                                                .IF LT SVCINS
                                                .WORD   2213
                                                .MEXIT
                                                .ENDC
                                                .IF EQ SVCINS
                                                .LIST
                                                        .WORD   2213
                                                                .NLIST
                                                .MEXIT
                                                .ENDC
                                                .IF GT SVCINS
                                                .LIST
        057056  004245                                                                          .WORD   2213
                                                                .NLIST
                                                .ENDC
                000010                          .RADIX  8
                                                .IF NB E222
        057060                                  M$WORD  E222
                                                .MCALL  M$GNINS
                                                .IRP    N,<E222>
                                                M$GNINS <.WORD  N>
                                                .ENDM
        057060                                  M$GNINS <.WORD  E222>
                                                .IF LT SVCINS
                                                .WORD   E222
                                                .MEXIT
                                                .ENDC
                                                .IF EQ SVCINS
                                                .LIST
```

H5

```
                                 .WORD   E222
                                         .NLIST
                        .MEXIT
                        .ENDC
                        .IF GT SVCINS
                        .LIST
    057060  005665                                                              .WORD   E222
                                         .NLIST
                        .ENDC
                        .IFF
                        M$WORD  0
                        .ENDC
                        .IF NB ERR501
    057062              M$WORD  ERR501
                        .MCALL  M$GNINS
                        .IRP    N,<ERR501>
                        M$GNINS <.WORD  N>
                        .ENDM
    057062              M$GNINS <.WORD  ERR501>
                        .IF LT SVCINS
                        .WORD   ERR501
                        .MEXIT
                        .ENDC
                        .IF EQ SVCINS
                        .LIST
                                 .WORD   ERR501
                                         .NLIST
                        .MEXIT
                        .ENDC
                        .IF GT SVCINS
                        .LIST
    057062  003672                                                              .WORD   ERR501
                                         .NLIST
                        .ENDC
                        .IFF
                        M$WORD  0
                        .ENDC
6905 057064                      CKLOOP                        ;BRANCH BACK TO BGNSEG IF ERRLOOP IS SET
                        .MCALL  M$SVC
    057064              M$SVC   C$CLP1
                        .MCALL  M$GNINS,M$TSTLAB
    057064              M$TSTLAB
                        .MCALL  M$TLABEL,M$INCR
                        .IIF LT T$TSTMAC, .MEXIT
                        .RADIX  10
                        M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                        .RADIX  8
                        M$INCR  T$TSTSEQ
    057064              M$GNINS <TRAP   C$CLP1>
                        .IF LT SVCINS
                        TRAP    C$CLP1
                        .MEXIT
                        .ENDC
                        .IF EQ SVCINS
                        .LIST
                                 TRAP    C$CLP1
                                         .NLIST
```

```
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
      057064  104406                                                                    TRAP    C$CLP1
                                                    .NLIST
                                        .ENDC
 6906 057066                            43$:    ENDSEG
                                        .MCALL  M$POP,M$GNLS,M$SVC,M$ENDERR
      057066                            M$POP   T$NS,T$NESTLEV,T$TEMP
                                        .MCALL  M$GETS,M$DECR
                                        .IF LT  T$NESTLEV
                                        .ERROR  T$NESTLEV       ; MACRO T$NS UNDERFLOW
                                        .MEXIT
                                        .ENDC
      057066                            M$GETS  T$NS,\T$NESTLEV,T$TEMP
              000003                    T$TEMP=T$NS2
      057066                            M$DECR  T$NESTLEV
              000001                    T$NESTLEV=T$NESTLEV-1
                                        .IF EQ F$SEG-T$TEMP
      057066                            M$POP   T$SEK,T$SEGLEV,T$$SEG
                                        .MCALL  M$GETS,M$DECR
                                        .IF LT  T$SEGLEV
                                        .ERROR  T$SEGLEV        ; MACRO T$SEK UNDERFLOW
                                        .MEXIT
                                        .ENDC
      057066                            M$GETS  T$SEK,\T$SEGLEV,T$$SEG
              010007                    T$$SEG=T$SEK0
      057066                            M$DECR  T$SEGLEV
              177777                    T$SEGLEV=T$SEGLEV-1
      057066                            M$GNLS  T$$SEG
                                        .MCALL  M$GEN
                                        .IF NB T$$SEG
      057066                            M$GEN   \T$$SEG,$,SVCTAG
                                        .IF LE  SVCTAG
                                        .IIF EQ SVCTAG,.LIST
                                        10007$:
                                        .IIF EQ SVCTAG,.NLIST
                                        .MEXIT
                                        .ENDC
                                        .LIST
      057066                                                                    10007$:
                                                .NLIST
                                        .IFF
                                        M$GEN   \S$LSYM,$,SVCTAG
                                        .ENDC
      057066                            M$SVC   C$ESEG
                                        .MCALL  M$GNINS,M$TSTLAB
      057066                            M$TSTLAB
                                        .MCALL  M$TLABEL,M$INCR
                                        .IIF LT T$TSTMAC, .MEXIT
                                        .RADIX  10
                                        M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                        .RADIX  8
                                        M$INCR  T$TSTSEQ
      057066                            M$GNINS <TRAP   C$ESEG>
                                        .IF LT SVCINS
```

```
                                                TRAP    C$ESEG
                                                .MEXIT
                                                .ENDC
                                                .IF EQ SVCINS
                                                .LIST
                                                        TRAP    C$ESEG
                                                                .NLIST
                                                .MEXIT
                                                .ENDC
                                                .IF GT SVCINS
                                                .LIST
        057066  104405                                                                          TRAP    C$ESEG
                                                                .NLIST
                                                .ENDC
                                                .IF EQ T$SEGLEV+1
                000041                          I$SEG=F$END
                                                .ENDC
                                                .IFF
                                                M$ENDERR        ENDSEG,T$TEMP
                                                .ENDC
   6907 057070  112777  000002  123172                  MOVB    #2,@ICRHX               ;----LOAD RHDF INTO ACR 2---- --------
   6908 057076  112777  000015  123164                  MOVB    #15,@ICRHX              ;----LOAD TCS INTO ACR 2-------------
   6909 057104  112777  000011  123156                  MOVB    #11,@ICRHX              ;----LOAD NOT LON INTO ACR 2----------
   6910 057112  112777  000137  123156                  MOVB    #137,@IDRHX             ;----LOAD UNT INTO DOR 2-------------
   6911 057120  004737  011050                          JSR     PC,LOOP                 ;WAIT A LITTLE
   6912 057124  005737  002234                          TST     QVP                     ;IS QUICK VERIFY PASS SELECTED
   6913 057130  001023                                  BNE     EXQV22                  ;IF YES EXIT TEST
   6914 057132  005237  002322                          INC     ITRCNT                  ;INCREMENT COUNTER
   6915 057136  023737  002322  002320                  CMP     ITRCNT,ITRDEF           ;ALL DONE
   6916 057144  001415                                  BEQ     EXQV22                  ;IF YES, EXIT TEST
   6917 057146  042777  000010  123124                  BIC     #10,@CSRX               ;SELECT CHANNEL 1
   6918 057154  112777  000217  123106                  MOVB    #217,@ICRHX             ;----LOAD SIC INTO ACR 1----------
   6919 057162  004737  011062                          JSR     PC,WAIT                 ;WAIT A LITTLE
   6920 057166  112777  000017  123074                  MOVB    #17,@ICRHX              ;----LOAD NOT SIC INTO ACR 1------
   6921 057174  000137  055322                          JMP     ITAC22                  ;IF NO TEST ITERATION
   6922 057200                                  EXQV22: EXIT    TST                     ;EXIT TEST
                                                .MCALL  M$SVC,M$EXIT,M$EXSEG,M$EXTJ,M$GETTOP,M$CHECK,M$WORD,XFER
                000041                          T$FLAG=F$END
        057200                                  M$CHECK TST,T$TEMP,T$FLAG
                                                .IF IDN <TST>,<TST>
                010053                          T$TEMP=T$$TEST
                000040                          T$FLAG=I$TST
                                                .MEXIT
                                                .ENDC
                                                .IF IDN <SUB>,<TST>
                                                T$TEMP=T$$SUB
                                                T$FLAG=I$SUB
                                                .MEXIT
                                                .ENDC
                                                .IF IDN <SEG>,<TST>
                                                T$TEMP=T$$SEG
                                                T$FLAG=I$SEG
                                                .MEXIT
                                                .ENDC
                                                .IF IDN <INIT>,<TST>
                                                T$TEMP-T$$INIT
                                                T$FLAG-I$INIT
```

K5

```
                                .MEXIT
                                .ENDC
                                .IF IDN <CLN>,<TST>
                                T$TEMP=T$$CLEAN
                                T$FLAG=I$CLN
                                .MEXIT
                                .ENDC
                                .IF IDN <SRV>,<TST>
                                T$TEMP=T$$SRV
                                T$FLAG=I$SRV
                                .MEXIT
                                .ENDC
                                .IF IDN <MSG>,<TST>
                                T$TEMP=T$$MSG
                                T$FLAG=F$JMP
                                .MEXIT
                                .ENDC
                                .IF IDN <RPT>,<TST>
                                T$TEMP=T$$RPT
                                T$FLAG=F$JMP
                                .MEXIT
                                .ENDC
                                .IF IDN <DU>,<TST>
                                T$TEMP=T$$DU
                                T$FLAG=F$JMP
                                .MEXIT
                                .ENDC
                                .IF IDN <AU>,<TST>
                                T$TEMP=T$$AU
                                T$FLAG=F$JMP
                                .MEXIT
                                .ENDC
                                .IF EQ T$FLAG-F$JMP
                                M$WORD  J$JMP
                                M$EXTJ  \T$TEMP
                                .MEXIT
                                .ENDC
                                .IF EQ  T$FLAG-F$BGN
      057200                    M$SVC   C$EXIT
                                .MCALL  M$GNINS,M$TSTLAB
      057200                    M$TSTLAB
                                .MCALL  M$TLABEL,M$INCR
                                .IIF LT T$TSTMAC, .MEXIT
                                .RADIX  10
                                M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                .RADIX  8
                                M$INCR  T$TSTSEQ
      057200                    M$GNINS <TRAP   C$EXIT>
                                .IF LT SVCINS
                                TRAP    C$EXIT
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        TRAP    C$EXIT
                                                .NLIST
                                .MEXIT
```

```
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
       057200  104432                                                                     TRAP     C$EXIT
                                                    .NLIST
                                        .ENDC
                                        .IF IDN <SEG>,<TST>
                                        M$GETTOP T$SEK,T$SEGLEV,T$TEMP
                                        M$EXSEG \T$TEMP
                                        .IFF
       057202                           M$EXIT  \T$TEMP
                                        .MCALL  M$GNINS
       057202                           M$GNINS <.WORD  L10053-.>
                                        .IF LT SVCINS
                                        .WORD   L10053-.
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                              .WORD   L10053-.
                                                    .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
       057202  000046                                                                     .WORD    L10053-.
                                                    .NLIST
                                        .ENDC
                                        .ENDC
                                        .MEXIT
                                        .ENDC
                                        .IF IDN <HRD>,<TST>
                                        M$GETTOP        T$NS,T$NESTLEV,T$TEMP
                                        .IF EQ  F$HARD-T$TEMP
                                        .IRP    N,<\T$$HARD>
                                        XFER    L'N
                                        .ENDM
                                        .MEXIT
                                        .ENDC
                                        .ENDC
                                        .IF IDN <SFT>,<TST>
                                        M$GETTOP        T$NS,T$NESTLEV,T$TEMP
                                        .IF EQ  F$SOFT-T$TEMP
                                        .IRP    N,<\T$$SOFT>
                                        XFER    L'N
                                        .ENDM
                                        .MEXIT
                                        .ENDC
                                        .ENDC
                                        .ERROR  ;ILL. "EXIT TST" STMT.

                                              .NLIST  BEX
       057204      045      123      062  TSHD22: .ASCIZ  /%S2%AEND OF A MESSAGE BLOCK TEST%N/
                                              .LIST   BEX
                                              .EVEN
       057250                                 ENDTST
                                        .MCALL  M$POP,M$GNTAG,M$SVC,M$ENDERR
```

```
                                .IF EQ  F$BGN-I$TST
          000041                I$TST=F$END
                                .IFF
                                .ERROR  ;MISSING "BGNTST"
                                .MEXIT
                                .ENDC
  057250                        M$POP   T$NS,T$NESTLEV,T$TEMP
                                .MCALL  M$GETS,M$DECR
                                .IF LT  T$NESTLEV
                                .ERROR  T$NESTLEV       ; MACRO T$NS UNDERFLOW
                                .MEXIT
                                .ENDC
  057250                        M$GETS  T$NS,\T$NESTLEV,T$TEMP
          000001                T$TEMP=T$NS1
  057250                        M$DECR  T$NESTLEV
          000000                T$NESTLEV=T$NESTLEV-1
                                .IF EQ F$TEST-T$TEMP
  057250                        M$GNTAG L,T$$TEST
                                .MCALL  M$GEN
  057250                        M$GEN   L,\T$$TEST,SVCTAG
                                .IF LE  SVCTAG
                                .IIF EQ SVCTAG,.LIST
                                L10053:
                                .IIF EQ SVCTAG,.NLIST
                                .MEXIT
                                .ENDC
                                .LIST
  057250                                                                L10053:
                                        .NLIST
          010000                S$LSYM=T$LSYM
  057250                        M$SVC   C$ETST
                                .MCALL  M$GNINS,M$TSTLAB
  057250                        M$TSTLAB
                                .MCALL  M$TLABEL,M$INCR
                                .IIF LT T$TSTMAC, .MEXIT
                                .RADIX  10
                                M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                .RADIX  8
                                M$INCR  T$TSTSEQ
  057250                        M$GNINS <TRAP   C$ETST>
                                .IF LT SVCINS
                                TRAP    C$ETST
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        TRAP    C$ETST
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
  057250  104401                                                            TRAP    C$ETST
                                                .NLIST
                                .ENDC
          000041                I$TST=F$END
                                .IFF
```

```
        M$ENDERR        ENDTST,T$TEMP
        .ENDC
```

```
                                .SBTTL  TEST 23: DMA DATA TRANSFER TEST FROM CHANNEL 1 TO 2
                                ;*************************************************************************
                                ;                 IEX - TEST 23
                                ;PART 1 SENDS DATA VIA THE IEC/IEEE BUS FROM CHAN. 1 TO 2 BY MEANS OF A DMA
                                ;       I.E. CHAN. 1 WHICH IS SELECTED AS TALKER PERFORMS A DATI CYCLE,
                                ;       WHEREAS CHANNEL 2 WHICH IS SELECTED AS A LISTENER PERFORMS A DATOB
                                ;       CYCLE. THE MAX. SELECTABLE BYTE COUNT FOR THIS DATA TRANSFER IS
                                ;       2K BYTES AND THE HIGHEST BUS ADDRESS IS BELOW 32K.
                                ;PART 2 CHECKS THE NON EXISTENT MEMORY BIT OF CHANNEL 1
                                ;       THIS IS DONE BY A DMA FROM A NON EXISTING I/O PAGE ADDRESS SELECTED
                                ;       IN THE BUS ADDRESS REGISTER OF CHAN. 1 (DATI CYCLE).
                                ;PART 3 SAME PROCEDURE AS IN PART 1 EXCEPT THE DATA TRANSFER IS EXECUTED
                                ;       OVER 32K (IF MEMORY MANAGEMENT IS AVAILABLE).
                                ;PART 4 SAME PROCEDURE AS IN PART 1 EXCEPT THE DATA TRANSFER IS EXECUTED
                                ;       OVER 64K (IF MEMORY MANAGEMENT IS AVAILABLE).
                                ;*************************************************************************
057252                                  BGNTST
                                .MCALL  M$INCR,M$GNTEST,M$PUSH,M$INCR
                                .IF NE  F$END-I$SUB
                                .ERROR  ;"BGNTST" IN SUB
                                .MEXIT
                                .ENDC
                                .IF NE  F$END-I$SEG
                                .ERROR  ;"BGNTST" IN SEG
                                .MEXIT
                                .ENDC
                                .IF NE  F$END-I$TST
                                .ERROR  ;"BGNTST" IN TST
                                .MEXIT
                                .IFF
        000040                  I$TST=F$BGN
                                .ENDC
                                .IF B
057252                          M$INCR  T$TESTNUM
        000027                  T$TESTNUM=T$TESTNUM+1
                                .IFF
                                T$TESTNUM=
                                .ENDC
        000000                  T$SUBNUM=0
        000012                  .RADIX  10
057252                          M$GNTEST        \T$TESTNUM
                                .MCALL  M$GEN
057252                          M$GEN   T,23:,SVCTST
                                .IF LE  SVCTST
                                .IIF EQ SVCTST,.LIST
                                T23::
                                .IIF EQ SVCTST,.NLIST
                                .MEXIT
                                .ENDC
                                .LIST
057252                                                                          T23::
                                        .NLIST
        000010                  .RADIX  8
057252                          M$PUSH  T$NS,T$NESTLEV,F$TEST
                                .MCALL  M$INCR,M$SETS
057252                          M$INCR  T$NESTLEV
        000001                  T$NESTLEV=T$NESTLEV+1
```


C6

```
057252                      M$SETS  T$NS,\T$NESTLEV,F$TEST
       000001               T$NS1=F$TEST
       010054               T$$TEST=T$TAGNUM
057252                      M$INCR T$TAGNUM
       010055               T$TAGNUM=T$TAGNUM+1
       000001               T$TSTSEQ=1
057252 005737 002324                TST     PNTF            ;IS THE PNT FLAG SET
057256 001410                       BEQ     7$              ;IF YES, PRINT THE TEST HEADER
057260                              PRINTF  #TSHD23         ;...
                            .MCALL  M$PRINT
                            .IF B   #TSHD23
                            .ERROR  ;MISSING FORMAT
                            .MEXIT
                            .ENDC
                            .IF B   <>
057260                      M$PRINT C$PNTF,#TSHD23
                            .MCALL  M$COUNT,M$PUT,M$GNINS,M$SVC
       000001               T$ARGCNT=1
057260                      M$COUNT T$ARGCNT,<>,<>,<>,<>,<>,<>,<>,<>
                            .IF NB <>
                            M$COUNT T$ARGCNT,<>,<>,<>,<>,<>,<>,<>,<>
                            .ENDC
                            .IF NB <>
                            T$ARGCNT=T$ARGCNT+1
                            .ENDC
                            .IRP    N,<\T$ARGCNT>
                            M$PUT   #N,#TSHD23,<>,<>,<>,<>,<>,<>,<>,<>
                            .ENDM
057260                      M$PUT   #1,#TSHD23,<>,<>,<>,<>,<>,<>,<>,<>
                            .MCALL  M$PUT1
                            .IF NB  <#TSHD23>
057260                      M$PUT   <#TSHD23>,<>,<>,<>,<>,<>,<>,<>,<>
                            .MCALL  M$PUT1
                            .IF NB  <>
                            M$PUT   <>,<>,<>,<>,<>,<>,<>,<>,<>
                            .ENDC
                            .IF NB  <#TSHD23>
057260                      M$PUT1  #TSHD23
                            .MCALL  M$GNINS
                            .IF B
057260                      M$GNINS <MOV    #TSHD23,-(SP)>
                            .IF LT SVCINS
                            MOV     #TSHD23,-(SP)
                            .MEXIT
                            .ENDC
                            .IF EQ SVCINS
                            .LIST
                                    MOV     #TSHD23, (SP)
                                            .NLIST
                            .MEXIT
                            .ENDC
                            .IF GT SVCINS
                            .LIST
057260 012746 063206                                                    MOV     #TSHD23,-(SP)
                                            .NLIST
                            .ENDC
                            .IFF
```

```
                                              .IF DIF B,<ØTSHD23>
                                              .ERROR  ;ILL. ARG. "ØTSHD23" ONLY "B" IS ALLOWED.
                                              .MEXIT
                                              .ENDC
                                              M$GNINS <CLR     -(SP)>
                                              M$GNINS <BISB    ,(SP)>
                                              .ENDC
                                              .ENDC
                                              .ENDC
                                              .IF NB  <Ø1>
        057264                                M$PUT1  Ø1
                                              .MCALL  M$GNINS
                                              .IF B
        057264                                M$GNINS <MOV     Ø1,-(SP)>
                                              .IF LT SVCINS
                                              MOV     Ø1,-(SP)
                                              .MEXIT
                                              .ENDC
                                              .IF EQ SVCINS
                                              .LIST
                                                      MOV     Ø1,(SP)
                                                              .NLIST
                                              .MEXIT
                                              .ENDC
                                              .IF GT SVCINS
                                              .LIST
        057264  012746  000001                                                      MOV     Ø1,-(SP)
                                                              .NLIST
                                              .ENDC
                                              .IFF
                                              .IF DIF B,<Ø1>
                                              .ERROR  ;ILL. ARG. "Ø1" ONLY "B" IS ALLOWED.
                                              .MEXIT
                                              .ENDC
                                              M$GNINS <CLR     -(SP)>
                                              M$GNINS <BISB    ,(SP)>
                                              .ENDC
                                              .ENDC
        057270                                M$GNINS <MOV     SP,R0>
                                              .IF LT SVCINS
                                              MOV     SP,R0
                                              .MEXIT
                                              .ENDC
                                              .IF EQ SVCINS
                                              .LIST
                                                      MOV     SP,R0
                                                              .NLIST
                                              .MEXIT
                                              .ENDC
                                              .IF GT SVCINS
                                              .LIST
        057270  010600                                                              MOV     SP,R0
                                                              .NLIST
                                              .ENDC
        057272                                M$SVC   C$PNTF
                                              .MCALL  M$GNINS,M$TSTLAB
        057272                                M$TSTLAB
```

```
                                .MCALL  M$TLABEL,M$INCR
                                .IIF LT T$'STMAC, .MEXIT
                                .RADIX  10
                                M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                .RADIX  8
                                M$INCR  T$TSTSEQ
     057272                     M$GNINS <TRAP   C$PNTF>
                                .IF LT SVCINS
                                TRAP    C$PNTF
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        TRAP    C$PNTF
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
     057272  104417                                                                     TRAP    C$PNTF
                                                .NLIST
                                .ENDC
                                .IRP    N,<\T$ARGCNT*2+2>
                                M$GNINS <ADD    #N,SP>
                                .ENDM
     057274                     M$GNINS <ADD    #4,SP>
                                .IF LT SVCINS
                                ADD     #4,SP
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        ADD     #4,SP
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
     057274  062706  000004                                                             ADD     #4,SP
                                                .NLIST
                                .ENDC
                                .MEXIT
                                .ENDC
                                .IF B   <>
                                M$PRINT C$PNTF,#TSHD23,<>
                                .MEXIT
                                .ENDC
                                .IF B   <>
                                M$PRINT C$PNTF,#TSHD23,<>,<>
                                .MEXIT
                                .ENDC
                                .IF B   <>
                                M$PRINT C$PNTF,#TSHD23,<>,<>,<>
                                .MEXIT
                                .ENDC
                                .IF B   <>
                                M$PRINT C$PNTF,#TSHD23,<>,<>,<>,<>
```

```
                                        .MEXIT
                                        .ENDC
                                        .IF B   <>
                                        M$PRINT C$PNTF,#TSHD23,<>,<>,<>,<>,<>
                                        .MEXIT
                                        .ENDC
                                        .IF B   <>
                                        M$PRINT C$PNTF,#TSHD23,<>,<>,<>,<>,<>,<>
                                        .MEXIT
                                        .ENDC
                                        .IF B   <>
                                        M$PRINT C$PNTF,#TSHD23,<>,<>,<>,<>,<>,<>,<>
                                        .MEXIT
                                        .ENDC
                                        M$PRINT C$PNTF  TSHD23,<>,<>,<>,<>,<>,<>,<>,<>
 6950 057300  005037  002322            7$:     CLR     ITRCNT                  ;CLEAR ITERATION COUNTER
 6951 057304  004737  010524                    JSR     PC,BGIN1                ;SET UP PARAMETER
 6952 057310                            ITAC23: MEMORY  R0                      ;GET THE FIRST FREE MEMORY LOCATION
                                        .MCALL  M$SVC,M$RNRO
      057310                            M$SVC   C$MEM
                                        .MCALL  M$GNINS,M$TSTLAB
      057310                            M$TSTLAB
                                        .MCALL  M$TLABEL,M$INCR
                                        .IIF LT T$TSTMAC, .MEXIT
                                        .RADIX  10
                                        M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                        .RADIX  8
                                        M$INCR  T$TSTSEQ
      057310                            M$GNINS <TRAP   C$MEM>
                                        .IF LT SVCINS
                                        TRAP    C$MEM
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                TRAP    C$MEM
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
      057310  104431                                                                            TRAP    C$MEM
                                                        .NLIST
                                        .ENDC
      057312                            M$RNRO  R0,MEMORY
                                        .MCALL  M$GNINS
                                        .IF NB  R0
                                        .IF DIF R0,R0
                                        M$GNINS <MOV    R0,R0>
                                        .ENDC
                                        .IFF
                                        .ERROR  ;MISSING ARG. ON "MEMORY"
                                        .ENDC
 6953 057312  062700  000002                    ADD     #2,R0                   ;USE THE SEC.FREE LOCATION FOR BUFFER
 6954 057316  010037  002356                    MOV     R0,BUFAB                ;LOAD START ADDRESS OF BUFFER A
 6955 057322  012701  010000                    MOV     #10000,R1               ;BUILD 2K BUFFER SIZE
 6956 057326  005003                            CLR     R3                      ;R3 CONTAINS THE LOADED DATA
```


G6

G6

TEST 23: DMA DATA TRANSFER TEST FROM CHANNEL 1 TO 2

```
    6957 057330  110320          1$:     MOVB    R3,(R0)+                ;LOAD DATA INTO BUFFER A
    6958 057332  005203                  INC     R3                      ;CREATE NEW DATA
    6959 057334  005301                  DEC     R1                      ;2K LOADED
    6960 057336  001374                  BNE     1$                      ;IF NO ,LOAD NEXT DATA BYTE
    6961 057340  010037  002360          MOV     R0,BUFBB                ;LOAD START ADDRESS OF BUFFER B
    6962 057344                          SETVEC  VECC2,#INTSC2,#PRI07    ;SET VECTOR FOR CHANNEL 2
                                 .MCALL  M$PUT,M$SVC,M$GNINS
         057344                  M$PUT   #3,VECC2,#INTSC2,#PRI07
                                 .MCALL  M$PUT1
                                 .IF NB  <VECC2>
         057344                  M$PUT   <VECC2>,<#INTSC2>,<#PRI07>,<>,<>,<>,<>,<>,<>
                                 .MCALL  M$PUT1
                                 .IF NB  <#INTSC2>
         057344                  M$PUT   <#INTSC2>,<#PRI07>,<>,<>,<>,<>,<>,<>,<>
                                 .MCALL  M$PUT1
                                 .IF NB  <#PRI07>
         057344                  M$PUT   <#PRI07>,<>,<>,<>,<>,<>,<>,<>,<>
                                 .MCALL  M$PUT1
                                 .IF NB  <>
                                 M$PUT   <>,<>,<>,<>,<>,<>,<>,<>,<>
                                 .ENDC
                                 .IF NB  <#PRI07>
         057344                  M$PUT1  #PRI07
                                 .MCALL  M$GNINS
                                 .IF B
         057344                  M$GNINS <MOV    #PRI07,-(SP)>
                                 .IF LT SVCINS
                                 MOV     #PRI07,-(SP)
                                 .MEXIT
                                 .ENDC
                                 .IF EQ SVCINS
                                 .LIST
                                         MOV     #PRI07,-(SP)
                                                 .NLIST
                                 .MEXIT
                                 .ENDC
                                 .IF GT SVCINS
                                 .LIST
         057344  012746  000340                                                          MOV     #PRI07,-(SP)
                                                 .NLIST
                                 .ENDC
                                 .IFF
                                 .IF DIF B,<#PRI07>
                                 .ERROR  ;ILL. ARG. "#PRI07" ONLY "B" IS ALLOWED.
                                 .MEXIT
                                 .ENDC
                                 M$GNINS <CLR    -(SP)>
                                 M$GNINS <BISB   ,(SP)>
                                 .ENDC
                                 .ENDC
                                 .ENDC
                                 .IF NB  <#INTSC2>
         057350                  M$PUT1  #INTSC2
                                 .MCALL  M$GNINS
                                 .IF B
         057350                  M$GNINS <MOV    #INTSC2,-(SP)>
                                 .IF LT SVCINS
```

H6

```
                                MOV     #INTSC2,-(SP)
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        MOV     #INTSC2,-(SP)
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
057350  012746  010142                                                  MOV     #INTSC2,-(SP)
                                                .NLIST
                                .ENDC
                                .IFF
                                .IF DIF B,<#INTSC2>
                                .ERROR  ;ILL. ARG. "#INTSC2" ONLY "B" IS ALLOWED.
                                .MEXIT
                                .ENDC
                                M$GNINS <CLR    -(SP)>
                                M$GNINS <BISB   ,(SP)>
                                .ENDC
                                .ENDC
                                .ENDC
                                .IF NB  <VECC2>
057354                          M$PUT1  VECC2
                                .MCALL  M$GNINS
                                .IF B
057354                          M$GNINS <MOV    VECC2,-(SP)>
                                .IF LT SVCINS
                                MOV     VECC2,-(SP)
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        MOV     VECC2,-(SP)
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
057354  013746  002246                                                  MOV     VECC2,-(SP)
                                                .NLIST
                                .ENDC
                                .IFF
                                .IF DIF B,<VECC2>
                                .ERROR  ;ILL. ARG. "VECC2" ONLY "B" IS ALLOWED.
                                .MEXIT
                                .ENDC
                                M$GNINS <CLR     (SP)>
                                M$GNINS <BISB   ,(SP)>
                                .ENDC
                                .ENDC
                                .ENDC
                                .IF NB  <#3>
057360                          M$PUT1  #3
                                .MCALL  M$GNINS
```

I6

```
                                        .IF B
057360                                  M$GNINS <MOV    #3,-(SP)>
                                        .IF LT SVCINS
                                        MOV     #3,-(SP)
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                MOV     #3,-(SP)
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
057360  012746  000003                                                                  MOV     #3,-(SP)
                                                        .NLIST
                                        .ENDC
                                        .IFF
                                        .IF DIF B,<#3>
                                        .ERROR  ;ILL. ARG. "#3" ONLY "B" IS ALLOWED.
                                        .MEXIT
                                        .ENDC
                                        M$GNINS <CLR    -(SP)>
                                        M$GNINS <BISB   ,(SP)>
                                        .ENDC
                                        .ENDC
057364                                  M$SVC   C$SVEC
                                        .MCALL  M$GNINS,M$TSTLAB
057364                                  M$TSTLAB
                                        .MCALL  M$TLABEL,M$INCR
                                        .IIF LT T$TSTMAC, .MEXIT
                                        .RADIX  10
                                        M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                        .RADIX  8
                                        M$INCR  T$TSTSEQ
057364                                  M$GNINS <TRAP   C$SVEC>
                                        .IF LT SVCINS
                                        TRAP    C$SVEC
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                TRAP    C$SVEC
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
057364  104437                                                                          TRAP    C$SVEC
                                                        .NLIST
                                        .ENDC
057366                                  M$GNINS <ADD    #10,SP>
                                        .IF LT SVCINS
                                        ADD     #10,SP
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
```

```
                                        .LIST
                                                ADD     #10,SP
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
      057366  062706  000010                                                                    ADD     #10,SP
                                                        .NLIST
                                        .ENDC
  6963 057372                                   SETVEC  VECC1,#INTSC1,#PRI07    ;SET VECTOR FOR CHANNEL 1
                                        .MCALL  M$PUT,M$SVC,M$GNINS
      057372                            M$PUT   #3,VECC1,#INTSC1,#PRI07
                                        .MCALL  M$PUT1
                                        .IF NB  <VECC1>
      057372                            M$PUT   <VECC1>,<#INTSC1>,<#PRI07>,<>,<>,<>,<>,<>,<>
                                        .MCALL  M$PUT1
                                        .IF NB  <#INTSC1>
      057372                            M$PUT   <#INTSC1>,<#PRI07>,<>,<>,<>,<>,<>,<>,<>
                                        .MCALL  M$PUT1
                                        .IF NB  <#PRI07>
      057372                            M$PUT   <#PRI07>,<>,<>,<>,<>,<>,<>,<>,<>
                                        .MCALL  M$PUT1
                                        .IF NB  <>
                                        M$PUT   <>,<>,<>,<>,<>,<>,<>,<>,<>
                                        .ENDC
                                        .IF NB  <#PRI07>
      057372                            M$PUT1  #PRI07
                                        .MCALL  M$GNINS
                                        .IF B
      057372                            M$GNINS <MOV    #PRI07,-(SP)>
                                        .IF LT SVCINS
                                        MOV     #PRI07,-(SP)
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                MOV     #PRI07,-(SP)
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
      057372  012746  000340                                                                    MOV     #PRI07,-(SP)
                                                        .NLIST
                                        .ENDC
                                        .IFF
                                        .IF DIF B,<#PRI07>
                                        .ERROR  ;ILL. ARG. "#PRI07" ONLY "B" IS ALLOWED.
                                        .MEXIT
                                        .ENDC
                                        M$GNINS <CLR    -(SP)>
                                        M$GNINS <BISB   ,(SP)>
                                        .ENDC
                                        .ENDC
                                        .ENDC
                                        .IF NB  <#INTSC1>
```

K6


```
057376                          M$PUT1  #INTSC1
                                .MCALL  M$GNINS
                                .IF B
057376                          M$GNINS <MOV    #INTSC1,-(SP)>
                                .IF LT SVCINS
                                MOV     #INTSC1,-(SP)
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        MOV     #IN~SC1,-(SP)
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
057376  012746  010132                                                  MOV     #INTSC1,-(SP)
                                                .NLIST
                                .ENDC
                                .IFF
                                .IF DIF B,<#INTSC1>
                                .ERROR  ;ILL. ARG. "#INTSC1" ONLY "B" IS ALLOWED.
                                .MEXIT
                                .ENDC
                                M$GNINS <CLR    -(SP)>
                                M$GNINS <BISB   ,(SP)>
                                .ENDC
                                .ENDC
                                .ENDC
                                .IF NB  <VECC1>
057402                          M$PUT1  VECC1
                                .MCALL  M$GNINS
                                .IF B
057402                          M$GNINS <MOV    VECC1,-(SP)>
                                .IF LT SVCINS
                                MOV     VECC1,-(SP)
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        MOV     VECC1,-(SP)
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
057402  013746  002244                                                  MOV     VECC1,-(SP)
                                                .NLIST
                                .ENDC
                                .IFF
                                .IF DIF B,<VECC1>
                                .ERROR  ;ILL. ARG. "VECC1" ONLY "B" IS ALLOWED.
                                .MEXIT
                                .ENDC
                                M$GNINS <CLR    -(SP)>
                                M$GNINS <BISB   ,(SP)>
                                .ENDC
```

L6

```
                                        .ENDC
                                        .ENDC
                                        .IF NB  <#3>
      057406                            M$PUT1  #3
                                        .MCALL  M$GNINS
                                        .IF B
      057406                            M$GNINS <MOV    #3,-(SP)>
                                        .IF LT SVCINS
                                        MOV     #3,-(SP)
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                MOV     #3,-(SP)
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
      057406  012746  000003                                                                  MOV     #3,-(SP)
                                                        .NLIST
                                        .ENDC
                                        .IFF
                                        .IF DIF B,<#3>
                                        .ERROR  ;ILL. ARG. "#3" ONLY "B" IS ALLOWED.
                                        .MEXIT
                                        .ENDC
                                        M$GNINS <CLR    -(SP)>
                                        M$GNINS <BISB   ,(SP)>
                                        .ENDC
                                        .ENDC
      057412                            M$SVC   C$SVEC
                                        .MCALL  M$GNINS,M$TSTLAB
      057412                            M$TSTLAB
                                        .MCALL  M$TLABEL,M$INCR
                                        .IIF LT T$TSTMAC, .MEXIT
                                        .RADIX  10
                                        M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                        .RADIX  8
                                        M$INCR  T$TSTSEQ
      057412                            M$GNINS <TRAP   C$SVEC>
                                        .IF LT SVCINS
                                        TRAP    C$SVEC
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                TRAP    C$SVEC
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
      057412  104437                                                                          TRAP    C$SVEC
                                                        .NLIST
                                        .ENDC
      057414                            M$GNINS <ADD    #10,SP>
```

```
                                        .IF LT SVCINS
                                        ADD     #10,SP
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                ADD     #10,SP
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
      057414  062706  000010                                                          ADD     #10,SP
                                                        .NLIST
                                        .ENDC
 6964 057420  112777  000212  122642            MOVB    #212,@ICRHX             ;----LOAD TON INTO ACR 1--------------
 6965 057426  013701  002314                    MOV     DPA2,R1                 ;CREATE MLA2
 6966 057432  062701  000040                    ADD     #40,R1                  ;...
 6967 057436  010137  002412                    MOV     R1,MLA2                 ;STORE MLA2
 6968 057442  113777  002412  122626            MOVB    MLA2,@IDRHX             ;----LOAD MLA2 INTO DOR 1-------------
 6969 057450  004737  011050                    JSR     PC,LOOP                 ;WAIT A LITTLE
 6970 057454                                    BGNSEG
                                        .MCALL  M$PUSH,M$INCR,M$SVC
              000040                    I$SEG=F$BGN
      057454                            M$PUSH  T$NS,T$NESTLEV,F$SEG
                                        .MCALL  M$INCR,M$SETS
      057454                            M$INCR  T$NESTLEV
              000002                    T$NESTLEV=T$NESTLEV+1
      057454                            M$SETS  T$NS,\T$NESTLEV,F$SEG
              000003                    T$NS2=F$SEG
              010000                    T$$SEG=S$LSYM
      057454                            M$PUSH  T$SEK,T$SEGLEV,T$$SEG
                                        .MCALL  M$INCR,M$SETS
      057454                            M$INCR  T$SEGLEV
              000000                    T$SEGLEV=T$SEGLEV+1
      057454                            M$SETS  T$SEK,\T$SEGLEV,T$$SEG
              010000                    T$SEK0=T$$SEG
      057454                            M$INCR  S$LSYM
              010001                    S$LSYM=S$LSYM+1
      057454                            M$SVC   C$BSEG
                                        .MCALL  M$GNINS,M$TSTLAB
      057454                            M$TSTLAB
                                        .MCALL  M$TLABEL,M$INCR
                                        .IIF LT T$TSTMAC, .MEXIT
                                        .RADIX  10
                                        M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                        .RADIX  8
                                        M$INCR  T$TSTSEQ
      057454                            M$GNINS <TRAP   C$BSEG>
                                        .IF LT SVCINS
                                        TRAP    C$BSEG
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                TRAP    C$BSEG
                                                        .NLIST
```

N6

```
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
     057454  104404                                                                      TRAP    C$BSEG
                                                             .NLIST
                                        .ENDC
     057456  005037  002400                      CLR     INTFC2                 ;CLEAR INTERRUPT FLAG
     057462  005037  002376                      CLR     INTFC1                 ;CLEAR INTERRUPT FLAG
     057466  042777  000010  122604              BIC     #10,@CSRX              ;SELECT CHANNEL 1
     057474  013700  002360                      MOV     BUFBB,R0               ;
     057500  012701  010000                      MOV     #10000,R1              ;BUILD 2K BUFFER SIZE
     057504  105020                     2$:      CLRB    (R0)+                  ;FILL BUFFER B WITH ZERO
     057506  005301                              DEC     R1                     ;2K LOADED
     057510  001375                              BNE     2$                     ;IF NO, CLEAR NEXT BUFFER LOCATION
     057512  013777  002356  122562              MOV     BUFAB,@BARX            ;---LOAD START ADDRESS OF TABLE A ----
     057520  013737  002240  002402              MOV     BCINP,RSAVE            ;STORE BYTE COUNT INPUT
     057526  005437  002402                      NEG     RSAVE                  ;BILD 2'COMPL FOR BCR
     057532  013777  002402  122544              MOV     RSAVE,@BCRX            ;----LOAD INPUT INTO BCR 1-----------
     057540  012777  000107  122532              MOV     #107,@CSRX             ;----DMA ENB,DMA DIR,INT ENB,SYS CON.
     057546  052777  000010  122524              BIS     #10,@CSRX              ;SELECT CHANNEL 2
     057554  013777  002360  122520              MOV     BUFBB,@BARX            ;----LOAD START ADDRESS OF TABLE B----
     057562  013777  002402  122514              MOV     RSAVE,@BCRX            ;----LOAD INPUT INTO BCR 2---
     057570  012777  000101  122502              MOV     #101,@CSRX             ;----SET DMA ENB,INT ENB IN CSR2------
     057576                                      SETPRI  #PRI00                 ;SET PRIORITY TO ZERO
                                        .MCALL  M$LDR0,M$SVC
     057576                             M$LDR0  #PRI00,SETPRI
                                        .MCALL  M$GNINS
                                        .IF NB #PRI00
                                        .IF DIF R0,#PRI00
     057576                             M$GNINS <MOV     #PRI00,R0>
                                        .IF LT SVCINS
                                        MOV     #PRI00,R0
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                 MOV     #PRI00,R0
                                                         .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
     057576  012700  000000                                                              MOV     #PRI00,R0
                                                          .NLIST
                                        .ENDC
                                        .ENDC
                                        .IFF
                                        .ERROR  ;MISSING ARG. ON "SETPRI"
                                        .ENDC
     057602                             M$SVC   C$SPRI
                                        .MCALL  M$GNINS,M$TSTLAB
     057602                             M$TSTLAB
                                        .MCALL  M$TLABEL,M$INCR
                                        .IIF LT T$TSTMAC, .MEXIT
                                        .RADIX  10
                                        M$TLABEL        \T$TESTNUN,\T$TSTSEQ
```

```
                                              .RADIX  8
                                              M$INCR  T$TSTSEQ
      057602                                  M$GNINS <TRAP   C$SPRI>
                                              .IF LT SVCINS
                                              TRAP    C$SPRI
                                              .MEXIT
                                              .ENDC
                                              .IF EQ SVCINS
                                              .LIST
                                                      TRAP    C$SPRI
                                                              .NLIST
                                              .MEXIT
                                              .ENDC
                                              .IF GT SVCINS
                                              .LIST
      057602  104441                                                                              TRAP    C$SPRI
                                                              .NLIST
                                              .ENDC
 6989 057604  042777  000010  122466                  BIC     #10,@CSRX                 ;SELECT CHANNEL 1
 6990 057612  012737  000001  002374                  MOV     #1,CHAN                   ;LOAD CHANNEL NUMBER
 6991 057620  112777  000013  122442                  MOVB    #13,@ICRHX                ;----LOAD GTS INTO ACR 1-- -----------
 6992 057626  012701  077777                          MOV     #77777,R1                 ;LOAD LOOP COUNTER
 6993 057632  005737  002376                  13$:    TST     INTFC1                    ;HAS INTERRUPT IN CHANNEL 1 OCCERRED
 6994 057636  001015                                  BNE     10$                       ;BRANCH IF YES
 6995 057640  005301                                  DEC     R1                        ;DECREMENT COUNTER
 6996 057642  001373                                  BNE     13$                       ;IF MORE,TEST AGAIN
 6997 057644  017737  122430  002502                  MOV     @CSRX,BAD                 ;GET CSR1 CONTENTS
 6998 057652  012737  100006  002500                  MOV     #100006,GOOD              ;BC OF,DMA DIR,SYS CONT SHOULD BE SET
 6999 057660                                          ERRSOFT 2301,E232,ERR201          ;ERROR HANDLER
                                              .MCALL  M$ERRINS
      057660                                  M$ERRINS        2301,E232,ERR201,C$ERSOFT
                                              .MCALL  M$GNINS,M$WORD,M$TSTLAB
      057660                                  M$SVC   C$ERSOFT
                                              .MCALL  M$GNINS,M$TSTLAB
      057660                                  M$TSTLAB
                                              .MCALL  M$TLABEL,M$INCR
                                              .IIF LT T$TSTMAC, .MEXIT
                                              .RADIX  10
                                              M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                              .RADIX  8
                                              M$INCR  T$TSTSEQ
      057660                                  M$GNINS <TRAP   C$ERSOFT>
                                              .IF LT SVCINS
                                              TRAP    C$ERSOFT
                                              .MEXIT
                                              .ENDC
                                              .IF EQ SVCINS
                                              .LIST
                                                      TRAP    C$ERSOFT
                                                              .NLIST
                                              .MEXIT
                                              .ENDC
                                              .IF GT SVCINS
                                              .LIST
      057660  104457                                                                              TRAP    C$ERSOFT
                                                              .NLIST
                                              .ENDC
```

```
                000012                  .RADIX  10
                                        .IF NB  2301
                004375                  T$ERRNUM=2301
                                        .IFF
                                        .ERROR  ;MISSING ERROR-NR
                                        .ENDC
        057662                          M$WORD  \T$ERRNUM
                                        .MCALL  M$GNINS
                                        .IRP    N,<2301>
                                        M$GNINS <.WORD  N>
                                        .ENDM
        057662                          M$GNINS <.WORD  2301>
                                        .IF LT SVCINS
                                        .WORD   2301
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                .WORD   2301
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
        057662  004375                                                                  .WORD   2301
                                                        .NLIST
                                        .ENDC
                000010                  .RADIX  8
                                        .IF NB E232
        057664                          M$WORD  E232
                                        .MCALL  M$GNINS
                                        .IRP    N,<E232>
                                        M$GNINS <.WORD  N>
                                        .ENDM
        057664                          M$GNINS <.WORD  E232>
                                        .IF LT SVCINS
                                        .WORD   E232
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                .WORD   E232
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
        057664  006062                                                                  .WORD   E232
                                                        .NLIST
                                        .ENDC
                                        .IFF
                                        M$WORD  0
                                        .ENDC
                                        .IF NB ERR201
        057666                          M$WORD  ERR201
                                        .MCALL  M$GNINS
                                        .IRP    N,<ERR201>
```

```
                                                M$GNINS <.WORD  N>
                                                .ENDM
      057666                                    M$GNINS <.WORD  ERR201>
                                                .IF LT SVCINS
                                                .WORD   ERR201
                                                .MEXIT
                                                .ENDC
                                                .IF EQ SVCINS
                                                .LIST
                                                        .WORD   ERR201
                                                                .NLIST
                                                .MEXIT
                                                .ENDC
                                                .IF GT SVCINS
                                                .LIST
      057666  003470                                                                                    .WORD   ERR201
                                                                .NLIST
                                                .ENDC
                                                .IFF
                                                M$WORD  0
                                                .ENDC
 7000 057670                                            CKLOOP                      ;BRANCH TO BGNSEG IF ERRLOOP IS SET
                                                .MCALL  M$SVC
      057670                                    M$SVC   C$CLP1
                                                .MCALL  M$GNINS,M$TSTLAB
      057670                                    M$TSTLAB
                                                .MCALL  M$TLABEL,M$INCR
                                                .IIF LT T$TSTMAC, .MEXIT
                                                .RADIX  10
                                                M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                                .RADIX  8
                                                M$INCR  T$TSTSEQ
      057670                                    M$GNINS <TRAP   C$CLP1>
                                                .IF LT SVCINS
                                                TRAP    C$CLP1
                                                .MEXIT
                                                .ENDC
                                                .IF EQ SVCINS
                                                .LIST
                                                        TRAP    C$CLP1
                                                                .NLIST
                                                .MEXIT
                                                .ENDC
                                                .IF GT SVCINS
                                                .LIST
      057670  104406                                                                                    TRAP    C$CLP1
                                                                .NLIST
                                                .ENDC
 7001 057672  052777  000010  122400  10$:      BIS     #10,@CSRX                   ;SELECT CHANNEL 2
 7002 057700  012737  000002  002374            MOV     #2,CHAN                     ;LOAD CHANNEL NUMBER
 7003 057706  005737  002400                    TST     INTFC2                      ;HAS INTERRUPT IN CHANNEL 2 OCCURRED
 7004 057712  001013                            BNE     11$                         ;BRANCH IF YES
 7005 057714  017737  122360  002502            MOV     @CSRX,BAD                   ;GET CSR2 CONTENTS
 7006 057722  012737  100010  002500            MOV     #100010,GOOD                ;BC OF,MUX SHOULD BE SET
 7007 057730                                    ERRSOFT 2302,E232,ERR201            ;ERROR HANDLER
                                                .MCALL  M$ERRINS
      057730                                    M$ERRINS        2302,E232,ERR201,C$ERSOFT
```

E7

```
                                  .MCALL  M$GNINS,M$WORD,M$TSTLAB
     057730                       M$SVC   C$ERSOFT
                                  .MCALL  M$GNINS,M$TSTLAB
     057730                       M$TSTLAB
                                  .MCALL  M$TLABEL,M$INCR
                                  .IIF LT T$TSTMAC, .MEXIT
                                  .RADIX  10
                                  M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                  .RADIX  8
                                  M$INCR  T$TSTSEQ
     057730                       M$GNINS <TRAP   C$ERSOFT>
                                  .IF LT SVCINS
                                  TRAP    C$ERSOFT
                                  .MEXIT
                                  .ENDC
                                  .IF EQ SVCINS
                                  .LIST
                                          TRAP    C$ERSOFT
                                                  .NLIST
                                  .MEXIT
                                  .ENDC
                                  .IF GT SVCINS
                                  .LIST
     057730  104457                                                       TRAP    C$ERSOFT
                                                  .NLIST
                                  .ENDC
             000012               .RADIX  10
                                  .IF NB  2302
             004376               T$ERRNUM=2302
                                  .IFF
                                  .ERROR  ;MISSING ERROR NR
                                  .ENDC
     057732                       M$WORD  \T$ERRNUM
                                  .MCALL  M$GNINS
                                  .IRP    N,<2302>
                                  M$GNINS <.WORD  N>
                                  .ENDM
     057732                       M$GNINS <.WORD  2302>
                                  .IF LT SVCINS
                                  .WORD   2302
                                  .MEXIT
                                  .ENDC
                                  .IF EQ SVCINS
                                  .LIST
                                          .WORD   2302
                                                  .NLIST
                                  .MEXIT
                                  .ENDC
                                  .IF GT SVCINS
                                  .LIST
     057732  004376                                                       .WORD   2302
                                                  .NLIST
                                  .ENDC
             000010               .RADIX  8
                                  .IF NB E232
     057734                       M$WORD  E232
                                  .MCALL  M$GNINS
```

F7

```
                                .IRP    N,<E232>
                                M$GNINS <.WORD  N>
                                .ENDM
      057734                    M$GNINS <.WORD  E232>
                                .IF LT SVCINS
                                .WORD   E232
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        .WORD   E232
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
      057734  006062                                                        .WORD   E232
                                                .NLIST
                                .ENDC
                                .IFF
                                M$WORD  0
                                .ENDC
                                .IF NB ERR201
      057736                    M$WORD  ERR201
                                .MCALL  M$GNINS
                                .IRP    N,<ERR201>
                                M$GNINS <.WORD  N>
                                .ENDM
      057736                    M$GNINS <.WORD  ERR201>
                                .IF LT SVCINS
                                .WORD   ERR201
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        .WORD   ERR201
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
      057736  003470                                                        .WORD   ERR201
                                                .NLIST
                                .ENDC
                                .IFF
                                M$WORD  0
                                .ENDC
 7008 057740                            CKLOOP                  ;BRANCH TO BGNSEG IF ERRLOOP IS SET
                                .MCALL  M$SVC
      057740                    M$SVC   C$CLP1
                                .MCALL  M$GNINS,M$TSTLAB
      057740                    M$TSTLAB
                                .MCALL  M$TLABEL,M$INCR
                                .IIF LT T$TSTMAC, .MEXIT
                                .RADIX  10
                                M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                .RADIX  8
```

```
                                        M$INCR  T$TSTSEQ
      057740                            M$GNINS <TRAP    C$CLP1>
                                        .IF LT SVCINS
                                        TRAP     C$CLP1
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                TRAP     C$CLP1
                                                         .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
      057740  104406                                                                     TRAP     C$CLP1
                                                         .NLIST
                                        .ENDC
 7009 057742                            11$:    SETPRI  #PRI07              ;NO FURTHER INTERRUPT ALLOWED
                                        .MCALL  M$LDRO,M$SVC
      057742                            M$LDRO  #PRI07,SETPRI
                                        .MCALL  M$GNINS
                                        .IF NB #PRI07
                                        .IF DIF RO,#PRI07
      057742                            M$GNINS <MOV     #PRI07,RO>
                                        .IF LT SVCINS
                                        MOV      #PRI07,RO
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                MOV      #PRI07,RO
                                                         .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
      057742  012700  000340                                                             MOV      #PRI07,RO
                                                         .NLIST
                                        .ENDC
                                        .ENDC
                                        .IFF
                                        .ERROR  ;MISSING ARG. ON "SETPRI"
                                        .ENDC
      057746                            M$SVC   C$SPRI
                                        .MCALL  M$GNINS,M$TSTLAB
      057746                            M$TSTLAB
                                        .MCALL  M$TLABEL,M$INCR
                                        .IIF LT T$TSTMAC, .MEXIT
                                        .RADIX  10
                                        M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                        .RADIX  8
                                        M$INCR  T$TSTSEQ
      057746                            M$GNINS <TRAP    C$SPRI>
                                        .IF LT SVCINS
                                        TRAP     C$SPRI
                                        .MEXIT
                                        .ENDC
```

```
                                        .IF EQ SVCINS
                                        .LIST
                                                TRAP    C$SPRI
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
     057746  104441                                                                     TRAP    C$SPRI
                                                        .NLIST
                                        .ENDC
7010 057750  042777  000010  122322             BIC     #10,@CSRX               ;SELECT CHANNEL 1
7011 057756  012737  000001  002374             MOV     #1,CHAN                 ;LOAD CHANNEL NUMBER
7012 057764  013737  002356  002500             MOV     BUFAB,GOOD              ;SET UP COMPARE VALUE
7013 057772  063737  002240  002500             ADD     BCINP,GOOD              ;...
7014 060000  017737  122276  002502             MOV     @BARX,BAD               ;GET BAR1 CONTENTS
7015 060006  023737  002502  002500             CMP     BAD,GOOD                ;HAS BAR1 THE CORRECT ADDRESS
7016 060014  001405                             BEQ     23$                     ;BRANCH IF YES
7017 060016                                     ERRSOFT 2303,E234,ERR501        ;ERROR HANDLER
                                        .MCALL  M$ERRINS
     060016                             M$ERRINS        2303,E234,ERR501,C$ERSOFT
                                        .MCALL  M$GNINS,M$WORD,M$TSTLAB
     060016                             M$SVC   C$ERSOFT
                                        .MCALL  M$GNINS,M$TSTLAB
     060016                             M$TSTLAB
                                        .MCALL  M$TLABEL,M$INCR
                                        .IIF LT T$TSTMAC, .MEXIT
                                        .RADIX  10
                                        M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                        .RADIX  8
                                        M$INCR  T$TSTSEQ
     060016                             M$GNINS <TRAP   C$ERSOFT>
                                        .IF LT SVCINS
                                        TRAP    C$ERSOFT
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                TRAP    C$ERSOFT
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
     060016  104457                                                                     TRAP    C$ERSOFT
                                                        .NLIST
                                        .ENDC
             000012                     .RADIX  10
                                        .IF NB  2303
             004377                     T$ERRNUM=2303
                                        .IFF
                                        .ERROR  ;MISSING ERROR NR
                                        .ENDC
     060020                             M$WORD  \T$ERRNUM
                                        .MCALL  M$GNINS
                                        .IRP    N,<2303>
                                        M$GNINS <.WORD  N>
```

I7

```
                                        .ENDM
      060020                            M$GNINS <.WORD  2303>
                                        .IF LT SVCINS
                                        .WORD   2303
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                .WORD   2303
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
      060020  004377                                                                            .WORD   2303
                                                        .NLIST
                                        .ENDC
              000010                    .RADIX  8
                                        .IF NB E234
      060022                            M$WORD  E234
                                        .MCALL  M$GNINS
                                        .IRP    N,<E234>
                                        M$GNINS <.WORD  N>
                                        .ENDM
      060022                            M$GNINS <.WORD  E234>
                                        .IF LT SVCINS
                                        .WORD   E234
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                .WORD   E234
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
      060022  006170                                                                            .WORD   E234
                                                        .NLIST
                                        .ENDC
                                        .IFF
                                        M$WORD  0
                                        .ENDC
                                        .IF NB ERR501
      060024                            M$WORD  ERR501
                                        .MCALL  M$GNINS
                                        .IRP    N,<ERR501>
                                        M$GNINS <.WORD  N>
                                        .ENDM
      060024                            M$GNINS <.WORD  ERR501>
                                        .IF LT SVCINS
                                        .WORD   ERR501
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                .WORD   ERR501
```

```
                                                    .NLIST
                                    .MEXIT
                                    .ENDC
                                    .IF GT SVCINS
                                    .LIST
      060024  003672                                                                                .WORD   ERR501
                                                    .NLIST
                                    .ENDC
                                    .IFF
                                    M$WORD  0
                                    .ENDC
 7018 060026                                CKLOOP                          ;BRANCH TO BGNSEG IF ERRLOOP IS SET
                                    .MCALL  M$SVC
      060026                        M$SVC   C$CLP1
                                    .MCALL  M$GNINS,M$TSTLAB
      060026                        M$TSTLAB
                                    .MCALL  M$TLABEL,M$INCR
                                    .IIF LT T$TSTMAC, .MEXIT
                                    .RADIX  10
                                    M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                    .RADIX  8
                                    M$INCR  T$TSTSEQ
      060026                        M$GNINS <TRAP   C$CLP1>
                                    .IF LT SVCINS
                                    TRAP    C$CLP1
                                    .MEXIT
                                    .ENDC
                                    .IF EQ SVCINS
                                    .LIST
                                            TRAP    C$CLP1
                                                    .NLIST
                                    .MEXIT
                                    .ENDC
                                    .IF GT SVCINS
                                    .LIST
      060026  104406                                                                                TRAP    C$CLP1
                                                    .NLIST
                                    .ENDC
 7019 060030  017737  122250  002502  23$:   MOV     @BCRX,BAD               ;GET BCR1 CONTENTS
 7020 060036  005037  002500                 CLR     GOOD                    ;
 7021 060042  023737  002502  002500         CMP     BAD,GOOD                ;IS BCR1 ZERO
 7022 060050  001405                         BEQ     30$                     ;BRANCH IF YES
 7023 060052                                 ERRSOFT 2304,E235,ERR501        ;ERROR HANDLER
                                    .MCALL  M$ERRINS
      060052                        M$ERRINS        2304,E235,ERR501,C$ERSOFT
                                    .MCALL  M$GNINS,M$WORD,M$TSTLAB
      060052                        M$SVC   C$ERSOFT
                                    .MCALL  M$GNINS,M$TSTLAB
      060052                        M$TSTLAB
                                    .MCALL  M$TLABEL,M$INCR
                                    .IIF LT T$TSTMAC, .MEXIT
                                    .RADIX  10
                                    M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                    .RADIX  8
                                    M$INCR  T$TSTSEQ
      060052                        M$GNINS <TRAP   C$ERSOFT>
                                    .IF LT SVCINS
```

K7

K7


```
                                TRAP    C$ERSOFT
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        TRAP    C$ERSOFT
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
      060052  104457                                                            TRAP    C$ERSOFT
                                                .NLIST
                                .ENDC
              000012            .RADIX  10
                                .IF NB  2304
              004400            T$ERRNUM=2304
                                .IFF
                                .ERROR  ;MISSING ERROR NR
                                .ENDC
      060054                    M$WORD  \T$ERRNUM
                                .MCALL  M$GNINS
                                .IRP    N,<2304>
                                M$GNINS <.WORD  N>
                                .ENDM
      060054                    M$GNINS <.WORD  2304>
                                .IF LT SVCINS
                                .WORD   2304
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        .WORD   2304
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
      060054  004400                                                            .WORD   2304
                                                .NLIST
                                .ENDC
              000010            .RADIX  8
                                .IF NB E235
      060056                    M$WORD  E235
                                .MCALL  M$GNINS
                                .IRP    N,<E235>
                                M$GNINS <.WORD  N>
                                .ENDM
      060056                    M$GNINS <.WORD  E235>
                                .IF LT SVCINS
                                .WORD   E235
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        .WORD   E235
                                                .NLIST
```

L7

```
                              .MEXIT
                              .ENDC
                              .IF GT SVCINS
                              .LIST
     060056  006221                                                              .WORD   E235
                                                .NLIST
                              .ENDC
                              .IFF
                              M$WORD  0
                              .ENDC
                              .IF NB ERR501
     060060                   M$WORD  ERR501
                              .MCALL  M$GNINS
                              .IRP    N,<ERR501>
                              M$GNINS <.WORD  N>
                              .ENDM
     060060                   M$GNINS <.WORD  ERR501>
                              .IF LT SVCINS
                              .WORD   ERR501
                              .MEXIT
                              .ENDC
                              .IF EQ SVCINS
                              .LIST
                                      .WORD   ERR501
                                              .NLIST
                              .MEXIT
                              .ENDC
                              .IF GT SVCINS
                              .LIST
     060060  003672                                                              .WORD   ERR501
                                                .NLIST
                              .ENDC
                              .IFF
                              M$WORD  0
                              .ENDC
7024 060062                           CKLOOP                       ;BRANCH TO BGNSEG IF ERRLOOP IS SET
                              .MCALL  M$SVC
     060062                   M$SVC   C$CLP1
                              .MCALL  M$GNINS,M$TSTLAB
     060062                   M$TSTLAB
                              .MCALL  M$TLABEL,M$INCR
                              .IIF LT T$TSTMAC, .MEXIT
                              .RADIX  10
                              M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                              .RADIX  8
                              M$INCR  T$TSTSEQ
     060062                   M$GNINS <TRAP   C$CLP1>
                              .IF LT SVCINS
                              TRAP    C$CLP1
                              .MEXIT
                              .ENDC
                              .IF EQ SVCINS
                              .LIST
                                      TRAP    C$CLP1
                                              .NLIST
                              .MEXIT
                              .ENDC
```


M7

```
                                        .IF GT SVCINS
                                        .LIST
     060062  104406                                                                                  TRAP    C$CLP1
                                                             .NLIST
                                        .ENDC
     060064  052777  000010  122206     30$:      BIS      #10,@CSRX                   ;SELECT CHANNEL 2
     060072  012737  000002  002374               MOV      #2,CHAN                     ;LOAD CHANNEL NUMBER
     060100  013737  002360  002500     33$:      MOV      BUFBB,GOOD                  ;SET UP COMPARE VALUE
     060106  063737  002240  002500               ADD      BCINP,GOOD                  ;...
     060114  017737  122162  002502               MOV      @BARX,BAD                   ;GET BAR2 CONTENTS
     060122  023737  002500  002502               CMP      GOOD,BAD                    ;HAS BAR2 THE CORRECT ADDRESS
     060130  001405                               BEQ      40$                         ;BRANCH IF YES
     060132                                       ERRSOFT  2305,E234,ERR501            ;ERROR HANDLER
                                        .MCALL   M$ERRINS
     060132                             M$ERRINS           2305,E234,ERR501,C$ERSOFT
                                        .MCALL   M$GNINS,M$WORD,M$TSTLAB
     060132                             M$SVC    C$ERSOFT
                                        .MCALL   M$GNINS,M$TSTLAB
     060132                             M$TSTLAB
                                        .MCALL   M$TLABEL,M$INCR
                                        .IIF LT T$TSTMAC, .MEXIT
                                        .RADIX  10
                                        M$TLABEL           \T$TESTNUN,\T$TSTSEQ
                                        .RADIX  8
                                        M$INCR   T$TSTSEQ
     060132                             M$GNINS <TRAP    C$ERSOFT>
                                        .IF LT SVCINS
                                        TRAP     C$ERSOFT
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                 TRAP      C$ERSOFT
                                                           .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
     060132  104457                                                                                  TRAP    C$ERSOFT
                                                             .NLIST
                                        .ENDC
             000012                     .RADIX  10
                                        .IF NB  2305
             004401                     T$ERRNUM=2305
                                        .IFF
                                        .ERROR   ;MISSING ERROR-NR
                                        .ENDC
     060134                             M$WORD   \T$ERRNUM
                                        .MCALL   M$GNINS
                                        .IRP     N,<2305>
                                        M$GNINS <.WORD   N>
                                        .ENDM
     060134                             M$GNINS <.WORD  2305>
                                        .IF LT SVCINS
                                        .WORD    2305
                                        .MEXIT
                                        .ENDC
```

N7

```
                                        .IF EQ SVCINS
                                        .LIST
                                                .WORD   2305
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
        060134  004401                                                                          .WORD   2305
                                                        .NLIST
                                        .ENDC
                000010                  .RADIX  8
                                        .IF NB E234
        060136                          M$WORD  E234
                                        .MCALL  M$GNINS
                                        .IRP    N,<E234>
                                        M$GNINS <.WORD  N>
                                        .ENDM
        060136                          M$GNINS <.WORD  E234>
                                        .IF LT SVCINS
                                        .WORD   E234
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                .WORD   E234
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
        060136  006170                                                                          .WORD   E234
                                                        .NLIST
                                        .ENDC
                                        .IFF
                                        M$WORD  0
                                        .ENDC
                                        .IF NB ERR501
        060140                          M$WORD  ERR501
                                        .MCALL  M$GNINS
                                        .IRP    N,<ERR501>
                                        M$GNINS <.WORD  N>
                                        .ENDM
        060140                          M$GNINS <.WORD  ERR501>
                                        .IF LT SVCINS
                                        .WORD   ERR501
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                .WORD   ERR501
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
        060140  003672                                                                          .WORD   ERR501
```

```
                                                    .NLIST
                                      .ENDC
                                      .IFF
                                      M$WORD  0
                                      .ENDC
  7033 060142                               CKLOOP                          ;BRANCH TO BGNSEG IF ERRLOOP IS SET
                                      .MCALL  M$SVC
       060142                         M$SVC   C$CLP1
                                      .MCALL  M$GNINS,M$TSTLAB
       060142                         M$TSTLAB
                                      .MCALL  M$TLABEL,M$INCR
                                      .IIF LT T$TSTMAC, .MEXIT
                                      .RADIX  10
                                      M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                      .RADIX  8
                                      M$INCR  T$TSTSEQ
       060142                         M$GNINS <TRAP   C$CLP1>
                                      .IF LT SVCINS
                                      TRAP    C$CLP1
                                      .MEXIT
                                      .ENDC
                                      .IF EQ SVCINS
                                      .LIST
                                              TRAP    C$CLP1
                                                      .NLIST
                                      .MEXIT
                                      .ENDC
                                      .IF GT SVCINS
                                      .LIST
       060142  104406                                                                    TRAP    C$CLP1
                                                      .NLIST
                                      .ENDC
  7034 060144  017737  122134  002502 40$:    MOV     @BCRX,BAD               ;GET BCR2 CONTENTS
  7035 060152  005737  002502                 TST     BAD                     ;BCR2 CONTENTS SHOULD BE ZERO
  7036 060156  001407                         BEQ     43$                     ;BRANCH IF YES
  7037 060160  005037  002500                 CLR     GOOD                    ;SET UP DATA FOR ERROR MESSAGE
  7038 060164                                 ERRSOFT 2306,E235,ERR501        ;ERROR HANDLER
                                      .MCALL  M$ERRINS
       060164                         M$ERRINS        2306,E235,ERR501,C$ERSOFT
                                      .MCALL  M$GNINS,M$WORD,M$TSTLAB
       060164                         M$SVC   C$ERSOFT
                                      .MCALL  M$GNINS,M$TSTLAB
       060164                         M$TSTLAB
                                      .MCALL  M$TLABEL,M$INCR
                                      .IIF LT T$TSTMAC, .MEXIT
                                      .RADIX  10
                                      M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                      .RADIX  8
                                      M$INCR  T$TSTSEQ
       060164                         M$GNINS <TRAP   C$ERSOFT>
                                      .IF LT SVCINS
                                      TRAP    C$ERSOFT
                                      .MEXIT
                                      .ENDC
                                      .IF EQ SVCINS
                                      .LIST
                                              TRAP    C$ERSOFT
```

```
                                        .NLIST
                        .MEXIT
                        .ENDC
                        .IF GT SVCINS
                        .LIST
    060164  104457                                                      TRAP    C$ERSOFT
                                        .NLIST
                        .ENDC
            000012      .RADIX  10
                        .IF NB  2306
            004402      T$ERRNUM=2306
                        .IFF
                        .ERROR  ;MISSING ERROR NR
                        .ENDC
    060166              M$WORD  \T$ERRNUM
                        .MCALL  M$GNINS
                        .IRP    N,<2306>
                        M$GNINS <.WORD  N>
                        .ENDM
    060166              M$GNINS <.WORD  2306>
                        .IF LT SVCINS
                        .WORD   2306
                        .MEXIT
                        .ENDC
                        .IF EQ SVCINS
                        .LIST
                                .WORD   2306
                                        .NLIST
                        .MEXIT
                        .ENDC
                        .IF GT SVCINS
                        .LIST
    060166  004402                                                      .WORD   2306
                                        .NLIST
                        .ENDC
            000010      .RADIX  8
                        .IF NB E235
    060170              M$WORD  E235
                        .MCALL  M$GNINS
                        .IRP    N,<E235>
                        M$GNINS <.WORD  N>
                        .ENDM
    060170              M$GNINS <.WORD  E235>
                        .IF LT SVCINS
                        .WORD   E235
                        .MEXIT
                        .ENDC
                        .IF EQ SVCINS
                        .LIST
                                .WORD   E235
                                        .NLIST
                        .MEXIT
                        .ENDC
                        .IF GT SVCINS
                        .LIST
    060170  006221                                                      .WORD   E235
                                        .NLIST
```

D8

```
                                          .ENDC
                                          .IFF
                                          M$WORD  0
                                          .ENDC
                                          .IF NB ERR501
      060172                              M$WORD  ERR501
                                          .MCALL  M$GNINS
                                          .IRP    N,<ERR501>
                                          M$GNINS <.WORD  N>
                                          .ENDM
      060172                              M$GNINS <.WORD  ERR501>
                                          .IF LT SVCINS
                                          .WORD   ERR501
                                          .MEXIT
                                          .ENDC
                                          .IF EQ SVCINS
                                          .LIST
                                                  .WORD   ERR501
                                                          .NLIST
                                          .MEXIT
                                          .ENDC
                                          .IF GT SVCINS
                                          .LIST
      060172  003672                                                                     .WORD   ERR501
                                                          .NLIST
                                          .ENDC
                                          .IFF
                                          M$WORD  0
                                          .ENDC
 7039 060174                                      CKLOOP                  ;BRANCH TO BGNSEG IF ERRLOOP IS SET
                                          .MCALL  M$SVC
      060174                              M$SVC   C$CLP1
                                          .MCALL  M$GNINS,M$TSTLAB
      060174                              M$TSTLAB
                                          .MCALL  M$TLABEL,M$INCR
                                          .IIF LT T$TSTMAC, .MEXIT
                                          .RADIX  10
                                          M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                          .RADIX  8
                                          M$INCR  T$TSTSEQ
      060174                              M$GNINS <TRAP   C$CLP1>
                                          .IF LT SVCINS
                                          TRAP    C$CLP1
                                          .MEXIT
                                          .ENDC
                                          .IF EQ SVCINS
                                          .LIST
                                                  TRAP    C$CLP1
                                                          .NLIST
                                          .MEXIT
                                          .ENDC
                                          .IF GT SVCINS
                                          .LIST
      060174  104406                                                                     TRAP    C$CLP1
                                                          .NLIST
                                          .ENDC
 7040 060176  013701  002356              43$:    MOV     BUFAB,R1                ;PROVIDE FIRST BYTE OF BUFFER A
```

```
 7041 060202  013702  002360                     MOV     BUFBB,R2              ;PROVIDE FIRST BYTE OF BUFFER B
 7042 060206  005037  002404                     CLR     CNT1                  ;CLEAR BUFFER COUNTER
 7043 060212  005237  002404          44$:       INC     CNT1                  ;
 7044 060216  122122                             CMPB    (R1)+,(R2)+           ;BUFFER A EQUAL BUFFER B
 7045 060220  001433                             BEQ     46$                   ;IF YES CONTINUE
 7046 060222  005037  002500                     CLR     GOOD                  ;CLEAR GOOD
 7047 060226  005037  002502                     CLR     BAD                   ;CLEAR BAD
 7048 060232  005037  002426                     CLR     TXADRH                ;SET UP DATA FOR ERROR MESSAGE
 7049 060236  010137  002430                     MOV     R1,TXADRL             ;...
 7050 060242  005337  002430                     DEC     TXADRL                ;...
 7051 060246  005037  002422                     CLR     RXADRH                ;...
 7052 060252  010237  002424                     MOV     R2,RXADRL             ;...
 7053 060256  005337  002424                     DEC     RXADRL                ;...
 7054 060262  116137  177777  002500             MOVB    -1(R1),GOOD           ;...
 7055 060270  116237  177777  002502             MOVB    -1(R2),BAD            ;...
 7056 060276                                     ERRSOFT 2307,E231,ERR231      ;ERROR HANDLER
                                      .MCALL  M$ERRINS
      060276                          M$ERRINS        2307,E231,EPR231,C$ERSOFT
                                      .MCALL  M$GNINS,M$WORD,M$TSTLAB
      060276                          M$SVC   C$ERSOFT
                                      .MCALL  M$GNINS,M$TSTLAB
      060276                          M$TSTLAB
                                      .MCALL  M$TLABEL,M$INCR
                                      .IIF LT T$TSTMAC, .MEXIT
                                      .RADIX  10
                                      M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                      .RADIX  8
                                      M$INCR  T$TSTSEQ
      060276                          M$GNINS <TRAP   C$ERSOFT>
                                      .IF LT SVCINS
                                      TRAP    C$ERSOFT
                                      .MEXIT
                                      .ENDC
                                      .IF EQ SVCINS
                                      .LIST
                                              TRAP    C$ERSOFT
                                                      .NLIST
                                      .MEXIT
                                      .ENDC
                                      .IF GT SVCINS
                                      .LIST
      060276  104457                                                                           TRAP    C$ERSOFT
                                                      .NLIST
                                      .ENDC
              000012                  .RADIX  10
                                      .IF NB  2307
              004403                  T$ERRNUM=2307
                                      .IFF
                                      .ERROR  ;MISSING ERROR-NR
                                      .ENDC
      060300                          M$WORD  \T$ERRNUM
                                      .MCALL  M$GNINS
                                      .IRP    N,<2307>
                                      M$GNINS <.WORD  N>
                                      .ENDM
      060300                          M$GNINS <.WORD  2307>
                                      .IF LT SVCINS
```

F8

```
                                .WORD   2307
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        .WORD   2307
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
        060300  004403                                                          .WORD   2307
                                                .NLIST
                                .ENDC
                000010          .RADIX  8
                                .IF NB E231
        060302                  M$WORD  E231
                                .MCALL  M$GNINS
                                .IRP    N,<E231>
                                M$GNINS <.WORD  N>
                                .ENDM
        060302                  M$GNINS <.WORD  E231>
                                .IF LT SVCINS
                                .WORD   E231
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        .WORD   E231
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
        060302  006000                                                          .WORD   E231
                                                .NLIST
                                .ENDC
                                .IFF
                                M$WORD  0
                                .ENDC
                                .IF NB ERR231
        060304                  M$WORD  ERR231
                                .MCALL  M$GNINS
                                .IRP    N,<ERR231>
                                M$GNINS <.WORD  N>
                                .ENDM
        060304                  M$GNINS <.WORD  ERR231>
                                .IF LT SVCINS
                                .WORD   ERR231
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        .WORD   ERR231
                                                .NLIST
                                .MEXIT
                                .ENDC
```

```
                                        .IF GT SVCINS
                                        .LIST
      060304  003734                                                                                  .WORD   ERR231
                                                    .NLIST
                                        .ENDC
                                        .IFF
                                        M$WORD  0
                                        .ENDC
 7057 060306                                  CKLOOP                        ;BRANCH TO BGNSEG IF ERRLOOP IS SET
                                        .MCALL  M$SVC
      060306                            M$SVC   C$CLP1
                                        .MCALL  M$GNINS,M$TSTLAB
      060306                            M$TSTLAB
                                        .MCALL  M$TLABEL,M$INCR
                                        .IIF LT T$TSTMAC, .MEXIT
                                        .RADIX  10
                                        M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                        .RADIX  8
                                        M$INCR  T$TSTSEQ
      060306                            M$GNINS <TRAP   C$CLP1>
                                        .IF LT SVCINS
                                        TRAP    C$CLP1
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                TRAP    C$CLP1
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
      060306  104406                                                                                  TRAP    C$CLP1
                                                    .NLIST
                                        .ENDC
 7058 060310  023737  002404  002240    46$:    CMP     CNT1,BCINP            ;ALL BYTES COMPARED ?
 7059 060316  001335                            BNE     44$                   ;IF NO, GET NEXT ONE
 7060 060320                                    ENDSEG
                                        .MCALL  M$POP,M$GNLS,M$SVC,M$ENDERR
      060320                            M$POP   T$NS,T$NESTLEV,T$TEMP
                                        .MCALL  M$GETS,M$DECR
                                        .IF LT  T$NESTLEV
                                        .ERROR  T$NESTLEV       ; MACRO T$NS UNDERFLOW
                                        .MEXIT
                                        .ENDC
      060320                            M$GETS  T$NS,\T$NESTLEV,T$TEMP
              000003                    T$TEMP=T$NS2
      060320                            M$DECR  T$NESTLEV
              000001                    T$NESTLEV=T$NESTLEV-1
                                        .IF EQ F$SEG-T$TEMP
      060320                            M$POP   T$SEK,T$SEGLEV,T$$SEG
                                        .MCALL  M$GETS,M$DECR
                                        .IF LT  T$SEGLEV
                                        .ERROR  T$SEGLEV        ; MACRO T$SEK UNDERFLOW
                                        .MEXIT
                                        .ENDC
      060320                            M$GETS  T$SEK,\T$SEGLEV,T$$SEG
```

```
                 010000                        T$$SEG=T$SEKO
          060320                               M$DECR  T$SEGLEV
                 177777                        T$SEGLEV=T$SEGLEV-1
          060320                               M$GNLS  T$$SEG
                                               .MCALL  M$GEN
                                               .IF NB T$$SEG
          060320                               M$GEN    \T$$SEG,$,SVCTAG
                                               .IF LE  SVCTAG
                                               .IIF EQ SVCTAG,.LIST
                                               10000$:
                                               .IIF EQ SVCTAG,.NLIST
                                               .MEXIT
                                               .ENDC
                                               .LIST
          060320                                                                          10000$:
                                                       .NLIST
                                               .IFF
                                               M$GEN    \S$LSYM,$,SVCTAG
                                               .ENDC
          060320                               M$SVC    C$ESEG
                                               .MCALL  M$GNINS,M$TSTLAB
          060320                               M$TSTLAB
                                               .MCALL  M$TLABEL,M$INCR
                                               .IIF LT T$TSTMAC, .MEXIT
                                               .RADIX  10
                                               M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                               .RADIX  8
                                               M$INCR  T$TSTSEQ
          060320                               M$GNINS <TRAP   C$ESEG>
                                               .IF LT SVCINS
                                               TRAP    C$ESEG
                                               .MEXIT
                                               .ENDC
                                               .IF EQ SVCINS
                                               .LIST
                                                       TRAP    C$ESEG
                                                               .NLIST
                                               .MEXIT
                                               .ENDC
                                               .IF GT SVCINS
                                               .LIST
          060320 104405                                                                       TRAP    C$ESEG
                                                               .NLIST
                                               .ENDC
                                               .IF EQ T$SEGLEV+1
                 000041                        I$SEG=F$END
                                               .ENDC
                                               .IFF
                                               M$ENDERR        ENDSEG,T$TEMP
                                               .ENDC
     7061 060322 005077  121752                        CLR     @CSRX                   ;CLEAR CSR2, SELECT CHANNEL 1
     7062 060326 112777  000014  121734                MOVB    #14,@ICRHX              ; ---LOAD TCA INTO ACR 1-- -- --------
     7063 060334 017737  121732  002502                MOV     @IDRX,BAD               ;READ DIR1 FOR CLEAR BO BIT IN IIR
     7064 060342 005077  121732                        CLR     @CSRX                   ;CLEAR CSR1
     7065                                      ;+++------------------- ---- --------- ------------ ------------- -------
     7066                                      ;PART 2 CHECK THE NON EXISTENT MEMORY BIT OF CHAN. 1 (THE I/O PAGE IS USED
     7067                                      ;       FOR NON EXISTENT MEMORY
```

```
   7068                                           ;+++-----------------------------------------------------------------------
   7069 060346  012701  002624           PSEU23: MOV     #TABE,R1                 ;CLEAR TWO WORD IN TABEL E
   7070 060352  012737  000001  002374           MOV     #1,CHAN                  ;LOAD CHANNEL NUMBER
   7071 060360  005021                           CLR     (R1)+                    ;...
   7072 060362  005011                           CLR     (R1)                     ;...
   7073 060364                                   SETVEC  #4,#NXM,#PRI07           ;SET UP VECTOR FOR TRAP TO 4
                                         .MCALL  M$PUT,M$SVC,M$GNINS
        060364                           M$PUT   #3,#4,#NXM,#PRI07
                                         .MCALL  M$PUT1
                                         .IF NB  <#4>
        060364                           M$PUT   <#4>,<#NXM>,<#PRI07>,<>,<>,<>,<>,<>,<>
                                         .MCALL  M$PUT1
                                         .IF NB  <#NXM>
        060364                           M$PUT   <#NXM>,<#PRI07>,<>,<>,<>,<>,<>,<>,<>
                                         .MCALL  M$PUT1
                                         .IF NB  <#PRI07>
        060364                           M$PUT   <#PRI07>,<>,<>,<>,<>,<>,<>,<>,<>
                                         .MCALL  M$PUT1
                                         .IF NB  <>
                                         M$PUT   <>,<>,<>,<>,<>,<>,<>,<>,<>
                                         .ENDC
                                         .IF NB  <#PRI07>
        060364                           M$PUT1  #PRI07
                                         .MCALL  M$GNINS
                                         .IF B
        060364                           M$GNINS <MOV    #PRI07,-(SP)>
                                         .IF LT SVCINS
                                         MOV     #PRI07,-(SP)
                                         .MEXIT
                                         .ENDC
                                         .IF EQ SVCINS
                                         .LIST
                                                 MOV     #PRI07,-(SP)
                                                         .NLIST
                                         .MEXIT
                                         .ENDC
                                         .IF GT SVCINS
                                         .LIST
        060364  012746  000340                                                                   MOV     #PRI07,-(SP)
                                                         .NLIST
                                         .ENDC
                                         .IFF
                                         .IF DIF B,<#PRI07>
                                         .ERROR  ;ILL. ARG. "#PRI07" ONLY "B" IS ALLOWED.
                                         .MEXIT
                                         .ENDC
                                         M$GNINS <CLR    -(SP)>
                                         M$GNINS <BISB   ,(SP)>
                                         .ENDC
                                         .ENDC
                                         .ENDC
                                         .IF NB  <#NXM>
        060370                           M$PUT1  #NXM
                                         .MCALL  M$GNINS
                                         .IF B
        060370                           M$GNINS <MOV    #NXM,-(SP)>
                                         .IF LT SVCINS
```

```
                                        MOV     #NXM,-(SP)
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                MOV     #NXM,-(SP)
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
        060370  012746  010122                                                                  MOV     #NXM,(SP)
                                                        .NLIST
                                        .ENDC
                                        .IFF
                                        .IF DIF B,<#NXM>
                                        .ERROR  ;ILL. ARG. "#NXM" ONLY "B" IS ALLOWED.
                                        .MEXIT
                                        .ENDC
                                        M$GNINS <CLR    -(SP)>
                                        M$GNINS <BISB   ,(SP)>
                                        .ENDC
                                        .ENDC
                                        .ENDC
                                        .IF NB  <#4>
        060374                          M$PUT1  #4
                                        .MCALL  M$GNINS
                                        .IF B
        060374                          M$GNINS <MOV    #4,-(SP)>
                                        .IF LT SVCINS
                                        MOV     #4,-(SP)
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                MOV     #4,-(SP)
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
        060374  012746  000004                                                                  MOV     #4,(SP)
                                                        .NLIST
                                        .ENDC
                                        .IFF
                                        .IF DIF B,<#4>
                                        .ERROR  ;ILL. ARG. "#4" ONLY "B" IS ALLOWED.
                                        .MEXIT
                                        .ENDC
                                        M$GNINS <CLR    -(SP)>
                                        M$GNINS <BISB   ,(SP)>
                                        .ENDC
                                        .ENDC
                                        .ENDC
                                        .IF NB  <#3>
        060400                          M$PUT1  #3
                                        .MCALL  M$GNINS
```

```
                                        .IF B
      060400                            M$GNINS <MOV    #3,-(SP)>
                                        .IF LT SVCINS
                                        MOV     #3,-(SP)
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                MOV     #3,-(SP)
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
      060400  012746  000003                                                            MOV     #3,-(SP)
                                                        .NLIST
                                        .ENDC
                                        .IFF
                                        .IF DIF B,<#3>
                                        .ERROR  ;ILL. ARG. "#3" ONLY "B" IS ALLOWED.
                                        .MEXIT
                                        .ENDC
                                        M$GNINS <CLR    -(SP)>
                                        M$GNINS <BISB   ,(SP)>
                                        .ENDC
                                        .ENDC
      060404                            M$SVC   C$SVEC
                                        .MCALL  M$GNINS,M$TSTLAB
      060404                            M$TSTLAB
                                        .MCALL  M$TLABEL,M$INCR
                                        .IIF LT T$TSTMAC, .MEXIT
                                        .RADIX  10
                                        M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                        .RADIX  8
                                        M$INCR  T$TSTSEQ
      060404                            M$GNINS <TRAP   C$SVEC>
                                        .IF LT SVCINS
                                        TRAP    C$SVEC
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                TRAP    C$SVEC
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
      060404  104437                                                                    TRAP    C$SVEC
                                                        .NLIST
                                        .ENDC
      060406                            M$GNINS <ADD    #10,SP>
                                        .IF LT SVCINS
                                        ADD     #10,SP
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
```

L8

```
                                        .LIST
                                                ADD     #10,SP
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
      060406  062706  000010                                                          ADD     #10,SP
                                                        .NLIST
                                        .ENDC
      060412  005037  002326                    CLR     NXMFLG                  ;CLEAR FLAG
      060416  012701  160000                    MOV     #160000,R1              ;LOAD FIRST ADDRESS OF I/O PAGE
      060422  005711                    1$:     TST     (R1)                    ;FIND A NON EXISTEND LOCATION
      060424  005737  002326                    TST     NXMFLG                  ;...
      060430  062701  000002                    ADD     #2,R1                   ;NEXT I/O PAGE ADD.(NO AUTO INCR.11/44!)
      060434  001772                            BEQ     1$                      ;
      060436                                    CLRVEC  #4                      ;SET VECTOR 4 TO NORMAL STATE
                                        .MCALL  M$LDRO,M$SVC
      060436                            M$LDRO  #4,CLRVEC
                                        .MCALL  M$GNINS
                                        .IF NB #4
                                        .IF DIF R0,#4
      060436                            M$GNINS <MOV    #4,R0>
                                        .IF LT SVCINS
                                        MOV     #4,R0
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                MOV     #4,R0
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
      060436  012700  000004                                                          MOV     #4,R0
                                                        .NLIST
                                        .ENDC
                                        .ENDC
                                        .IFF
                                        .ERROR  ;MISSING ARG. ON "CLRVEC"
                                        .ENDC
      060442                            M$SVC   C$CVEC
                                        .MCALL  M$GNINS,M$TSTLAB
      060442                            M$TSTLAB
                                        .MCALL  M$TLABEL,M$INCR
                                        .IIF LT T$TSTMAC, .MEXIT
                                        .RADIX  10
                                        M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                        .RADIX  8
                                        M$INCR  T$TSTSEQ
      060442                            M$GNINS <TRAP   C$CVEC>
                                        .IF LT SVCINS
                                        TRAP    C$CVEC
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
```

```
                                        .LIST
                                                TRAP    C$CVEC
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
      060442  104436                                                                            TRAP    C$CVEC
                                                        .NLIST
                                        .ENDC
 7081 060444  162701  000002                    SUB     #2,R1                   ;...
 7082 060450                                    BGNSEG
                                        .MCALL  M$PUSH,M$INCR,M$SVC
              000040                    I$SEG=F$BGN
      060450                            M$PUSH  T$NS,T$NESTLEV,F$SEG
                                        .MCALL  M$INCR,M$SETS
      060450                            M$INCR  T$NESTLEV
              000002                    T$NESTLEV=T$NESTLEV+1
      060450                            M$SETS  T$NS,\T$NESTLEV,F$SEG
              000003                    T$NS2=F$SEG
              010001                    T$$SEG=S$LSYM
      060450                            M$PUSH  T$SEK,T$SEGLEV,T$$SEG
                                        .MCALL  M$INCR,M$SETS
      060450                            M$INCR  T$SEGLEV
              000000                    T$SEGLEV=T$SEGLEV+1
      060450                            M$SETS  T$SEK,\T$SEGLEV,T$$SEG
              010001                    T$SEK0=T$$SEG
      060450                            M$INCR  S$LSYM
              010002                    S$LSYM=S$LSYM+1
      060450                            M$SVC   C$BSEG
                                        .MCALL  M$GNINS,M$TSTLAB
      060450                            M$TSTLAB
                                        .MCALL  M$TLABEL,M$INCR
                                        .IIF LT T$TSTMAC, .MEXIT
                                        .RADIX  10
                                        M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                        .RADIX  8
                                        M$INCR  T$TSTSEQ
      060450                            M$GNINS <TRAP   C$BSEG>
                                        .IF LT SVCINS
                                        TRAP    C$BSEG
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                TRAP    C$BSEG
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
      060450  104404                                                                            TRAP    C$BSEG
                                                        .NLIST
                                        .ENDC
 7083 060452  005037  002376                    CLR     INTFC1                  ;CLEAR INTERRUPT FLAG
 7084 060456  005037  002400                    CLR     INTFC2                  ;CLEAR INTERRUPT FLAG
 7085 060462  042777  000010  121610            BIC     #10,@CSRX               ;SELECT CHANNEL 1
```

```
 7086 060470  010177  121606                 MOV     R1,@BARX           ;LOAD BAR1 WITH A NON EXISTS I/O ADRR.
 7087 060474  012737  000002  002402         MOV     #2,RSAVE           ;LOAD NUMBER OF BYTE COUNTS
 7088 060502  005437  002402                 NEG     RSAVE              ;BILD 2'COMPLEMENT
 7089 060506  013777  002402  121570         MOV     RSAVE,@BCRX        ;LOAD BCR1
 7090 060514  012777  017167  121556         MOV     #17167,@CSRX       ;DMA ENB,DMA DIR,INT ENB,BA16-21,SYS
 7091 060522  052777  000010  121550         BIS     #10,@CSRX          ;SELECT CHANNEL 2
 7092 060530  012777  002624  121544         MOV     #TABE,@BARX        ;LOAD BAR2 WITH STAR ADDRESS OF TABE
 7093 060536  013777  002402  121540         MOV     RSAVE,@BCRX        ;LOAD BCR2
 7094 060544  012777  000101  121526         MOV     #101,@CSRX         ;---SET DMA ENB,INT ENB CSR2----------
 7095 060552  042777  000010  121520         BIC     #10,@CSRX          ;SELECT CHANNEL 1
 7096 060560  012737  000001  002374         MOV     #1,CHAN            ;LOAD CHANNEL NUMBER
 7097 060566                                SETPRI  #PRIOO             ;SET PRIORITY TO ZERO
                                     .MCALL  M$LDRO,M$SVC
      060566                         M$LDRO  #PRIOO,SETPRI
                                     .MCALL  M$GNINS
                                     .IF NB #PRIOO
                                     .IF DIF RO,#PRIOO
      060566                         M$GNINS <MOV     #PRIOO,RO>
                                     .IF LT SVCINS
                                     MOV     #PRIOO,RO
                                     .MEXIT
                                     .ENDC
                                     .IF EQ SVCINS
                                     .LIST
                                             MOV     #PRIOO,RO
                                                     .NLIST
                                     .MEXIT
                                     .ENDC
                                     .IF GT SVCINS
                                     .LIST
      060566  012700  000000                                                          MOV     #PRIOO,RO
                                                     .NLIST
                                     .ENDC
                                     .ENDC
                                     .IFF
                                     .ERROR  ;MISSING ARG. ON "SETPRI"
                                     .ENDC
      060572                         M$SVC   C$SPRI
                                     .MCALL  M$GNINS,M$TSTLAB
      060572                         M$TSTLAB
                                     .MCALL  M$TLABEL,M$INCR
                                     .IIF LT T$TSTMAC, .MEXIT
                                     .RADIX  10
                                     M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                     .RADIX  8
                                     M$INCR  T$TSTSEQ
      060572                         M$GNINS <TRAP    C$SPRI>
                                     .IF LT SVCINS
                                     TRAP    C$SPRI
                                     .MEXIT
                                     .ENDC
                                     .IF EQ SVCINS
                                     .LIST
                                             TRAP    C$S  I
                                                     .NLIST
                                     .ME IT
                                     .ENDC
```

78 8018 3673-6

```
                                          .IF ...
                                          .LIST
        060572  104441                                                                                           TRAP    C$...
                                                       .NLIST
                                          .ENDC
        060574  112777  000013  121466          MOVB    #13,@ICRMX                    ;  LOAD GTS INTO ACR 1
        060602  012702  077777                  MOV     #77777,R2                     ;LOAD LOOP COUNTER
        060606  005737  002376          3$:     TST     INTFC1                        ;IS INTERRUPT IN CHANNEL 1 OCCER
        060612  001015                          BNE     6$                            ;BRANCH IF YES
        06061.  005302                          DEC     R2                            ;DECREMENT COUNTER
        06061.  001373                          BNE     3$                            ;IF NO,TEST AGIN
        060620  017737  121454  002502          MOV     @CSRX,BAD                     ;GET CSR1 CONTENTS
        060626  012737  040066  002500          MOV     #40066,GOOD                   ;NXM,BA 16-17,DMA DIR,SYS CONT
        060634                                  ERRSOFT 2308,E233,ERR201              ;ERROR HANDLER
                                          .MCALL  M$ERRINS
        060634                            M$ERRINS        2308,E233,ERR201,C$ERSOFT
                                          .MCALL  M$GNINS,M$WORD,M$TSTLAB
        060634                            M$SVC   C$ERSOFT
                                          .MCALL  M$GNINS,M$TSTLAB
        060634                            M$TSTLAB
                                          .MCALL  M$TLABEL,M$INCR
                                          .IIF LT T$TSTMAC, .MEXIT
                                          .RADIX  10
                                          M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                          .RADIX  8
                                          M$INCR  T$TSTSEQ
        060634                            M$GNINS <TRAP   C$ERSOFT>
                                          .IF LT SVCINS
                                          TRAP    C$ERSOFT
                                          .MEXIT
                                          .ENDC
                                          .IF EQ SVCINS
                                          .LIST
                                                  TRAP    C$ERSOFT
                                                          .NLIST
                                          .MEXIT
                                          .ENDC
                                          .IF GT SVCINS
                                          .LIST
        060634  104457                                                                                           TRAP    C$ERSOFT
                                                          .NLIST
                                          .ENDC
                000012                    .RADIX  10
                                          .IF NB  2308
                004404                    T$ERRNUM=2308
                                          .IFF
                                          .ERROR  ;MISSING ERROR NR
                                          .ENDC
        060636                            M$WORD  \T$ERRNUM
                                          .MCALL  M$GNINS
                                          .IRP    N,<2308>
                                          M$GNINS <.WORD  N>
                                          .ENDM
        060636                            M$GNINS <.WORD  2308>
                                          .IF LT SVCINS
                                          .WORD   2308
                                          .MEXIT
```

```
                                  .ENDC
                                  .IF EQ SVCINS
                                  .LIST
                                          .WORD   2308
                                                  .NLIST
                                  .MEXIT
                                  .ENDC
                                  .IF GT SVCINS
                                  .LIST
     060636  004404                                                                   .WORD   2308
                                                  .NLIST
                                  .ENDC
             000010               .RADIX  8
                                  .IF NB E233
     060640                       M$WORD  E233
                                  .MCALL  M$GNINS
                                  .IRP     N,<E233>
                                  M$GNINS <.WORD  N>
                                  .ENDM
     060640                       M$GNINS <.WORD  E233>
                                  .IF LT SVCINS
                                  .WORD   E233
                                  .MEXIT
                                  .ENDC
                                  .IF EQ SVCINS
                                  .LIST
                                          .WORD   E233
                                                  .NLIST
                                  .MEXIT
                                  .ENDC
                                  .IF GT SVCINS
                                  .LIST
     060640  006113                                                                   .WORD   E233
                                                  .NLIST
                                  .ENDC
                                  .IFF
                                  M$WORD  0
                                  .ENDC
                                  .IF NB ERR201
     060642                       M$WORD  ERR201
                                  .MCALL  M$GNINS
                                  .IRP     N,<ERR201>
                                  M$GNINS <.WORD  N>
                                  .ENDM
     060642                       M$GNINS <.WORD  ERR201>
                                  .IF LT SVCINS
                                  .WORD   ERR201
                                  .MEXIT
                                  .ENDC
                                  .IF EQ SVCINS
                                  .LIST
                                          .WORD   ERR201
                                                  .NLIST
                                  .MEXIT
                                  .ENDC
                                  .IF GT SVCINS
                                  .LIST
```

```
      060642  003470                                                       .WORD   ERR201
                                             .NLIST
                               .ENDC
                               .IFF
                               M$WORD  0
                               .ENDC
 7107 060644                           CKLOOP                  ;BRANCH TO BGNSEG IF ERRLOOP IS SET
                               .MCALL  M$SVC
      060644                   M$SVC   C$CLP1
                               .MCALL  M$GNINS,M$TSTLAB
      060644                   M$TSTLAB
                               .MCALL  M$TLABEL,M$INCR
                               .IIF LT T$TSTMAC, .MEXIT
                               .RADIX  10
                               M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                               .RADIX  8
                               M$INCR  T$TSTSEQ
      060644                   M$GNINS <TRAP   C$CLP1>
                               .IF LT SVCINS
                               TRAP    C$CLP1
                               .MEXIT
                               .ENDC
                               .IF EQ SVCINS
                               .LIST
                                       TRAP    C$CLP1
                                               .NLIST
                               .MEXIT
                               .ENDC
                               .IF GT SVCINS
                               .LIST
      060644  104406                                                       TRAP    C$CLP1
                                               .NLIST
                               .ENDC
 7108 060646                   6$:     SETPRI  #PRI07          ;NO FURTHER INTERRUPT ALLOWED
                               .MCALL  M$LDR0,M$SVC
      060646                   M$LDR0  #PRI07,SETPRI
                               .MCALL  M$GNINS
                               .IF NB #PRI07
                               .IF DIF R0,#PRI07
      060646                   M$GNINS <MOV    #PRI07,R0>
                               .IF LT SVCINS
                               MOV     #PRI07,R0
                               .MEXIT
                               .ENDC
                               .IF EQ SVCINS
                               .LIST
                                       MOV     #PRI07,R0
                                               .NLIST
                               .MEXIT
                               .ENDC
                               .IF GT SVCINS
                               .LIST
      060646  012700  000340                                               MOV     #PRI07,R0
                                               .NLIST
                               .ENDC
                               .ENDC
                               .IFF
```

E9

```
                                                    .ERROR  ;MISSING ARG. ON "SETPRI"
                                                    .ENDC
        060652                                      M$SVC   C$SPRI
                                                    .MCALL  M$GNINS,M$TSTLAB
        060652                                      M$TSTLAB
                                                    .MCALL  M$TLABEL,M$INCR
                                                    .IIF LT T$TSTMAC   .MEXIT
                                                    .RADIX  10
                                                    M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                                    .RADIX  8
                                                    M$INCR  T$TSTSEQ
        060652                                      M$GNINS <TRAP   C$SPRI>
                                                    .IF LT SVCINS
                                                    TRAP    C$SPRI
                                                    .MEXIT
                                                    .ENDC
                                                    .IF EQ SVCINS
                                                    .LIST
                                                            TRAP    C$SPRI
                                                                    .NLIST
                                                    .MEXIT
                                                    .ENDC
                                                    .IF GT SVCINS
                                                    .LIST
        060652  104441                                                                                  TRAP    C$SPRI
                                                                    .NLIST
                                                    .ENDC
   7109 060654  112777  000014  121406                      MOVB    #14,@ICRHX              ;----LOAD TCA INTO ACR 1------   ------
   7110 060662  052777  000010  121410              10$:    BIS     #10,@CSRX               ;SELECT CHANNEL 2
   7111 060670  012737  000002  002374                      MOV     #2,CHAN                 ;LOAD CHANNEL NUMBER
   7112 060676  017737  121376  002502                      MOV     @CSRX,BAD               ;GET CSR2 CONTENTS
   7113 060704  042737  017000  002502                      BIC     #17000,BAD              ;IGNORE BIT 9-12
   7114 060712  022737  000111  002502                      CMP     #111,BAD                ;INT ENB,MUX,DMA ENB SHOULD BE SET
   7115 060720  001410                                      BEQ     12$                     ;BRANCH IF YES
   7116 060722  012737  000111  002500                      MOV     #111,GOOD               ;SET UP DATA FOR ERROR MESSAGE
   7117 060730                                              ERRSOFT 2309,E401,ERR501        ;ERROR HANDLER
                                                    .MCALL  M$ERRINS
        060730                                      M$ERRINS        2309,E401,ERR501,C$ERSOFT
                                                    .MCALL  M$GNINS,M$WORD,M$TSTLAB
        060730                                      M$SVC   C$ERSOFT
                                                    .MCALL  M$GNINS,M$TSTLAB
        060730                                      M$TSTLAB
                                                    .MCALL  M$TLABEL,M$INCR
                                                    .IIF LT T$TSTMAC,  .MEXIT
                                                    .RADIX  10
                                                    M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                                    .RADIX  8
                                                    M$INCR  T$TSTSEQ
        060730                                      M$GNINS <TRAP   C$ERSOFT>
                                                    .IF LT SVCINS
                                                    TRAP    C$ERSOFT
                                                    .MEXIT
                                                    .ENDC
                                                    .IF EQ SVCINS
                                                    .LIST
                                                            TRAP    C$ERSOFT
                                                                    .NLIST
```

F9

```
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
      060730  104457                                                             TRAP     C$ERSOFT
                                          .NLIST
                                .ENDC
              000012            .RADIX  10
                                .IF NB  2309
              004405            T$ERRNUM=2309
                                .IFF
                                .ERROR  ;MISSING ERROR-NR
                                .ENDC
      060732                    M$WORD  \T$ERRNUM
                                .MCALL  M$GNINS
                                .IRP    N,<2309>
                                M$GNINS <.WORD  N>
                                .ENDM
      060732                    M$GNINS <.WORD  2309>
                                .IF LT SVCINS
                                .WORD   2309
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                     .WORD   2309
                                          .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
      060732  004405                                                             .WORD    2309
                                          .NLIST
                                .ENDC
              000010            .RADIX  8
                                .IF NB E401
      060734                    M$WORD  E401
                                .MCALL  M$GNINS
                                .IRP    N,<E401>
                                M$GNINS <.WORD  N>
                                .ENDM
      060734                    M$GNINS <.WORD  E401>
                                .IF LT SVCINS
                                .WORD   E401
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                     .WORD   E401
                                          .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
      060734  005255                                                             .WORD    E401
                                          .NLIST
                                .ENDC
```


G9

```
                                        .IFF
                                        M$WORD  0
                                        .ENDC
                                        .IF NB ERR501
      060736                            M$WORD  ERR501
                                        .MCALL  M$GNINS
                                        .IRP    N,<ERR501>
                                        M$GNINS <.WORD  N>
                                        .ENDM
      060736                            M$GNINS <.WORD  ERR501>
                                        .IF LT SVCINS
                                        .WORD   ERR501
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                .WORD   ERR501
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
      060736  003672                                                                                    .WORD   ERR501
                                                        .NLIST
                                        .ENDC
                                        .IFF
                                        M$WORD  0
                                        .ENDC
 7118 060740                                    CKLOOP                          ;BRANCH TO BGNSEG IF ERRLOOP IS SET
                                        .MCALL  M$SVC
      060740                            M$SVC   C$CLP1
                                        .MCALL  M$GNINS,M$TSTLAB
      060740                            M$TSTLAB
                                        .MCALL  M$TLABEL,M$INCR
                                        .IIF LT T$TSTMAC, .MEXIT
                                        .RADIX  10
                                        M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                        .RADIX  8
                                        M$INCR  T$TSTSEQ
      060740                            M$GNINS <TRAP   C$CLP1>
                                        .IF LT SVCINS
                                        TRAP    C$CLP1
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                TRAP    C$CLP1
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
      060740  104406                                                                                    TRAP    C$CLP1
                                                        .NLIST
                                        .ENDC
 7119 060742                            12$:    ENDSEG
                                        .MCALL  M$POP,M$GNLS,M$SVC,M$ENDERR
```

H9

```
060742                          M$POP   T$NS,T$NESTLEV,T$TEMP
                                .MCALL  M$GETS,M$DECR
                                .IF LT  T$NESTLEV
                                .ERROR  T$NESTLEV       ; MACRO T$NS UNDERFLOW
                                .MEXIT
                                .ENDC
060742                          M$GETS  T$NS,\T$NESTLEV,T$TEMP
        000003                  T$TEMP=T$NS2
060742                          M$DECR  T$NESTLEV
        000001                  T$NESTLEV=T$NESTLEV-1
                                .IF EQ F$SEG-T$TEMP
060742                          M$POP   T$SEK,T$SEGLEV,T$$SEG
                                .MCALL  M$GETS,M$DECR
                                .IF LT  T$SEGLEV
                                .ERROR  T$SEGLEV        ; MACRO T$SEK UNDERFLOW
                                .MEXIT
                                .ENDC
060742                          M$GETS  T$SEK,\T$SEGLEV,T$$SEG
        010001                  T$$SEG=T$SEK0
060742                          M$DECR  T$SEGLEV
        177777                  T$SEGLEV=T$SEGLEV-1
060742                          M$GNLS  T$$SEG
                                .MCALL  M$GEN
                                .IF NB T$$SEG
060742                          M$GEN   \T$$SEG,$,SVCTAG
                                .IF LE  SVCTAG
                                .IIF EQ SVCTAG,.LIST
                                10001$:
                                .IIF EQ SVCTAG,.NLIST
                                .MEXIT
                                .ENDC
                                .LIST
060742                                                                  10001$:
                                        .NLIST
                                .IFF
                                M$GEN   \S$LSYM,$,SVCTAG
                                .ENDC
060742                          M$SVC   C$ESEG
                                .MCALL  M$GNINS,M$TSTLAB
060742                          M$TSTLAB
                                .MCALL  M$TLABEL,M$INCR
                                .IIF LT T$TSTMAC, .MEXIT
                                .RADIX  10
                                M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                .RADIX  8
                                M$INCR  T$TSTSEQ
060742                          M$GNINS <TRAP   C$ESEG>
                                .IF LT SVCINS
                                TRAP    C$ESEG
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        TRAP    C$ESEG
                                                .NLIST
                                .MEXIT
                                .ENDC
```

```
                                        .IF GT SVCINS
                                        .LIST
 060742  104405                                                                                    TRAP    C$ESEG
                                                            .NLIST
                                        .ENDC
                                        .IF EQ T$SEGLEV+1
         000041                         I$SEG=F$END
                                        .ENDC
                                        .IFF
                                        M$ENDERR            ENDSEG,T$TEMP
                                        .ENDC
 060744  005077  121330                         CLR     @CSRX                   ;CLEAR CSR2 ,SELECT CHANNEL 1
 060750  017737  121316  002502                 MOV     @IDRX,BAD               ;READ DIR1 FOR CLEAR B0 BIT IN IIR
 060756  005077  121316                         CLR     @CSRX                   ;CLEAR CSR1
                                        ;+++-- ----------------------------------------------------------------
                                        ;PART 3 DMA OVER 32K
                                        ;+++- - ---------------------------------------------------------------
 060762  005037  002376                         CLR     INTFC1                  ;CLEAR INTERRUPT FLAG
 060766  005037  002400                         CLR     INTFC2                  ;CLEAR INTERRUPT FLAG
 060772  023727  002342  000001                 CMP     PHHSIZ,#1               ;IS THERE MORE THAN 32K
 061000  002404                                 BLT     11$                     ;IF NO SKIP TEST
 061002  003005                                 BGT     13$                     ;
 061004  005737  002344                         TST     PHLSIZ                  ;
 061010  001002                                 BNE     13$                     ;
 061012  000137  063202                 11$:    JMP     EXQV23                  ;JUMP TO TEST END
 061016  005037  002336                 13$:    CLR     PHLOW                   ;LOAD INPUT FOR CONVERSION ROUTINE
 061022  012737  000001  002334                 MOV     #1,PHHIGH               ;...
 061030  004737  007714                         JSR     PC,PVCON                ;CREATE VIRTUAL ADDRESS
 061034  013700  002340                         MOV     VIADD,R0                ;GET START ADDRESS OF BUFFER A
 061040  010037  002356                         MOV     R0,BUFAB                ;LOAD START ADDRESS OF BUFFER A
 061044  012701  010000                         MOV     #10000,R1               ;LOAD COUNTER FOR 2K
 061050  005003                                 CLR     R3                      ;R3 CONTAINS
 061052  012737  000001  177572                 MOV     #1,SR0                  ;**ENABLE MEMORY MANAGEMENT**
 061060  110320                         16$:    MOVB    R3,(R0)+                ;LOAD BUFFER WITH DATA
 061062  005203                                 INC     R3                      ;CREAT NEXT DATA
 061064  005301                                 DEC     R1                      ;
 061066  001374                                 BNE     16$                     ;
 061070  012701  010000                         MOV     #10000,R1               ;LOAD 2K
 061074  010037  002360                         MOV     R0,BUFBB                ;LOAD START ADDRESS OF BUFFER B
 061100  105020                         20$:    CLRB    (R0)+                   ;CLEAR BUFFER B
 061102  005301                                 DEC     R1                      ;2K CLEARED
 061104  001375                                 BNE     20$                     ;IF YES,DO THE TEST
 061106  005037  177572                         CLR     SR0                     ;**DISABLE MEMORY MANAGEMENT**
 061112  112777  000212  121150                 MOVB    #212,@ICRHX             ;----LOAD TON INTO ACR 1-------------
 061120  013701  002314                         MOV     DPA2,R1                 ;CREATE MLA2
 061124  062701  000040                         ADD     #40,R1                  ;...
 061130  010137  002412                         MOV     R1,MLA2                 ;STORE MLA2
 061134  113777  002412  121134                 MOVB    MLA2,@IDRHX             ;----LOAD MLA2 INTO DOR 1------------
 061142  004737  011050                         JSR     PC,LOOP                 ;WAIT A LITTLE
 061146  005077  121130                         CLR     @BARX                   ;---LOAD START ADDRESS OF BUFFER A----
 061152  013737  002240  002402                 MOV     BCINP,RSAVE             ;STORE BYTE COUNT INPUT
 061160  005437  002402                         NEG     RSAVE                   ;BILD 2'COMPL FOR BCR
 061164  013777  002402  121112                 MOV     RSAVE,@BCRX             ;----LOAD INPUT INTO BCR 1----------
 061172  012777  000127  121100                 MOV     #127,@CSRX              ;-DMA ENB,DMA DIR,INT ENB,BIT 16,SYS C
 061200  052777  000010  121072                 BIS     #10,@CSRX               ;SELECT CHANNEL 2
 061206  012777  010000  121066                 MOV     #10000,@BARX            ;  --LOAD START ADDRESS OF BUFFER B---
 061214  013777  002402  121062                 MOV     RSAVE,@BCRX             ;   -LOAD INPUT INTO BCR 2 --
```

J9

```
 7166 061222  012777  000121  121050          MOV     #121,@CSRX                  ;--  SET DMA ENB,INT ENB,BIT16 IN CSR2
 7167 061230                                  SETPRI  #PRI00                      ;SET PRIORITY TO ZERO
                                      .MCALL  M$LDR0,M$SVC
      061230                          M$LDR0  #PRI00,SETPRI
                                      .MCALL  M$GNINS
                                      .IF NB #PRI00
                                      .IF DIF R0,#PRI00
      061230                          M$GNINS <MOV     #PRI00,R0>
                                      .IF LT SVCINS
                                      MOV     #PRI00,R0
                                      .MEXIT
                                      .ENDC
                                      .IF EQ SVCINS
                                      .LIST
                                              MOV     #PRI00,R0
                                                      .NLIST
                                      .MEXIT
                                      .ENDC
                                      .IF GT SVCINS
                                      .LIST
      061230  012700  000000                                                                       MOV     #PRI00,R0
                                                      .NLIST
                                      .ENDC
                                      .ENDC
                                      .IFF
                                      .ERROR  ;MISSING ARG. ON "SETPRI"
                                      .ENDC
      061234                          M$SVC   C$SPRI
                                      .MCALL  M$GNINS,M$TSTLAB
      061234                          M$TSTLAB
                                      .MCALL  M$TLABEL,M$INCR
                                      .IIF LT T$TSTMAC, .MEXIT
                                      .RADIX  10
                                      M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                      .RADIX  8
                                      M$INCR  T$TSTSEQ
      061234                          M$GNINS <TRAP    C$SPRI>
                                      .IF LT SVCINS
                                      TRAP    C$SPRI
                                      .MEXIT
                                      .ENDC
                                      .IF EQ SVCINS
                                      .LIST
                                              TRAP    C$SPRI
                                                      .NLIST
                                      .MEXIT
                                      .ENDC
                                      .IF GT SVCINS
                                      .LIST
      061234  104441                                                                               TRAP    C$SPRI
                                                      .NLIST
                                      .ENDC
 7168 061236  042777  000010  121034          BIC     #10,@CSRX                   ;SELECT CHANNEL 1
 7169 061244  012737  000001  002374          MOV     #1,CHAN                     ;LOAD CHANNEL NUMBER
 7170 061252  112777  000013  121010          MOVB    #13,@ICRHX                  ; ---LOAD GTS INTO ACR 1   -  - --
 7171 061260  012701  077777                  MOV     #77777,R1                   ;LOAD LOOP COUNTER
 7172 061264  005737  002376          23$:    TST     INTFC1                      ;IS INTERRUPT IN CHANNEL 1 OCCER
```

```
 7173 061270  001014                          BNE     24$                         ;BRANCH IF YES
 7174 061272  005301                          DEC     R1                          ;DECREMENT COUNTER
 7175 061274  001373                          BNE     23$                         ;IF NO,TEST AGIN
 7176 061276  017737  120776  002502         MOV     @CSRX,BAD                   ;GET CSR1 CONTENTS
 7177 061304  012737  100026  002500         MOV     #100026,GOOD                ;BC OF,DMA DIR,BA 16,SYS CONT
 7178 061312                                 ERRSOFT 2310,E232,ERR201            ;ERROR HANDLER
                                     .MCALL  M$ERRINS
      061312                         M$ERRINS        2310,E232,ERR201,C$ERSOFT
                                     .MCALL  M$GNINS,M$WORD,M$TSTLAB
      061312                         M$SVC   C$ERSOFT
                                     .MCALL  M$GNINS,M$TSTLAB
      061312                         M$TSTLAB
                                     .MCALL  M$TLABEL,M$INCR
                                     .IIF LT T$TSTMAC, .MEXIT
                                     .RADIX  10
                                     M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                     .RADIX  8
                                     M$INCR  T$TSTSEQ
      061312                         M$GNINS <TRAP   C$ERSOFT>
                                     .IF LT SVCINS
                                     TRAP    C$ERSOFT
                                     .MEXIT
                                     .ENDC
                                     .IF EQ SVCINS
                                     .LIST
                                             TRAP    C$ERSOFT
                                                     .NLIST
                                     .MEXIT
                                     .ENDC
                                     .IF GT SVCINS
                                     .LIST
      061312  104457                                                                      TRAP    C$ERSOFT
                                                     .NLIST
                                     .ENDC
              000012                 .RADIX  10
                                     .IF NB  2310
              004406                 T$ERRNUM=2310
                                     .IFF
                                     .ERROR  ;MISSING ERROR NR
                                     .ENDC
      061314                         M$WORD  \T$ERRNUM
                                     .MCALL  M$GNINS
                                     .IRP    N,<2310>
                                     M$GNINS <.WORD  N>
                                     .ENDM
      061314                         M$GNINS <.WORD  2310>
                                     .IF LT SVCINS
                                     .WORD   2310
                                     .MEXIT
                                     .ENDC
                                     .IF EQ SVCINS
                                     .LIST
                                             .WORD   2310
                                                     .NLIST
                                     .MEXIT
                                     .ENDC
                                     .IF GT SVCINS
```

```
                                        .LIST
      061314  004406                                                                        .WORD   2310
                                                    .NLIST
                                        .ENDC
              000010                    .RADIX  8
                                        .IF NB E232
      061316                            M$WORD  E232
                                        .MCALL  M$GNINS
                                        .IRP    N,<E232>
                                        M$GNINS <.WORD  N>
                                        .ENDM
      061316                            M$GNINS <.WORD  E232>
                                        .IF LT SVCINS
                                        .WORD   E232
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                .WORD   E232
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
      061316  006062                                                                        .WORD   E232
                                                    .NLIST
                                        .ENDC
                                        .IFF
                                        M$WORD  0
                                        .ENDC
                                        .IF NB ERR201
      061320                            M$WORD  ERR201
                                        .MCALL  M$GNINS
                                        .IRP    N,<ERR201>
                                        M$GNINS <.WORD  N>
                                        .ENDM
      061320                            M$GNINS <.WORD  ERR201>
                                        .IF LT SVCINS
                                        .WORD   ERR201
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                .WORD   ERR201
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
      061320  003470                                                                        .WORD   ERR201
                                                    .NLIST
                                        .ENDC
                                        .IFF
                                        M$WORD  0
                                        .ENDC
 7179 061322  052777  000010  120750    24$:    BIS     #10,@CSRX               ;SELECT CHANNEL 2
 7180 061330  012737  000002  002374            MOV     #2,CHAN                 ;LOAD CHANNEL NUMBER
```

```
7181 061336  005737  002400                 TST     INTFC2              ;IS AN INTERRUPT IN CHANNEL 2 OCCURED
7182 061342  001012                         BNE     25$                 ;BRANCH IF YES
7183 061344  017737  120730  002502         MOV     @CSRX,BAD           ;GET CSR2 CONTENTS
7184 061352  012737  100030  002500         MOV     #100030,GOOD        ;BC OF,BA 16,MUX SHOULD BE SET
7185 061360                                 ERRSOFT 2311,E232,ERR201    ;ERROR HANDLER
                                    .MCALL  M$ERRINS
     061360                         M$ERRINS        2311,E232,ERR201,C$ERSOFT
                                    .MCALL  M$GNINS,M$WORD,M$TSTLAB
     061360                         M$SVC   C$ERSOFT
                                    .MCALL  M$GNINS,M$TSTLAB
     061360                         M$TSTLAB
                                    .MCALL  M$TLABEL,M$INCR
                                    .IIF LT T$TSTMAC, .MEXIT
                                    .RADIX  10
                                    M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                    .RADIX  8
                                    M$INCR  T$TSTSEQ
     061360                         M$GNINS <TRAP   C$F...JFT>
                                    .IF LT SVCINS
                                    TRAP    C$ERSOFT
                                    .MEXIT
                                    .ENDC
                                    .IF EQ SVCINS
                                    .LIST
                                            TRAP    C$ERSOFT
                                                    .NLIST
                                    .MEXIT
                                    .ENDC
                                    .IF GT SVCINS
                                    .LIST
     061360  104457                                                          TRAP    C$ERSOFT
                                                    .NLIST
                                    .ENDC
             000012                 .RADIX  10
                                    .IF NB  2311
             004407                 T$ERRNUM=2311
                                    .IFF
                                    .ERROR  ;MISSING ERROR NR
                                    .ENDC
     061362                         M$WORD  \T$ERRNUM
                                    .MCALL  M$GNINS
                                    .IRP    N,<2311>
                                    M$GNINS <.WORD  N>
                                    .ENDM
     061362                         M$GNINS <.WORD  2311>
                                    .IF LT SVCINS
                                    .WORD   2311
                                    .MEXIT
                                    .ENDC
                                    .IF EQ SVCINS
                                    .LIST
                                            .WORD   2311
                                                    .NLIST
                                    .MEXIT
                                    .ENDC
                                    .IF GT SVCINS
                                    .LIST
```

```
      061362 004407                                                  .WORD   2311
                                          .NLIST
                            .ENDC
             000010         .RADIX  8
                            .IF NB E232
      061364                M$WORD  E232
                            .MCALL  M$GNINS
                            .IRP    N,<E232>
                            M$GNINS <.WORD  N>
                            .ENDM
      061364                M$GNINS <.WORD  E232>
                            .IF LT SVCINS
                            .WORD   E232
                            .MEXIT
                            .ENDC
                            .IF EQ SVCINS
                            .LIST
                                    .WORD   E232
                                            .NLIST
                            .MEXIT
                            .ENDC
                            .IF GT SVCINS
                            .LIST
      061364 006062                                                  .WORD   E232
                                          .NLIST
                            .ENDC
                            .IFF
                            M$WORD  0
                            .ENDC
                            .IF NB ERR201
      061366                M$WORD  ERR201
                            .MCALL  M$GNINS
                            .IRP    N,<ERR201>
                            M$GNINS <.WORD  N>
                            .ENDM
      061366                M$GNINS <.WORD  ERR201>
                            .IF LT SVCINS
                            .WORD   ERR201
                            .MEXIT
                            .ENDC
                            .IF EQ SVCINS
                            .LIST
                                    .WORD   ERR201
                                            .NLIST
                            .MEXIT
                            .ENDC
                            .IF GT SVCINS
                            .LIST
      061366 003470                                                  .WORD   ERR201
                                          .NLIST
                            .ENDC
                            .IFF
                            M$WORD  0
                            .ENDC
 7186 061370                25$:    SETPRI  #PRI07              ;NO FURTHER INTERRUPT ALLOWED
                            .MCALL  M$LDR0 M$SVC
      061370                M$LDR0  #PRI07,SETPRI
```

TEST 23: DMA DATA TRANSFER TEST FROM CHANNEL 1 TO 2

```
                                        .MCALL  M$GNINS
                                        .IF NB #PRIO7
                                        .IF DIF R0,#PRIO7
      061370                            M$GNINS <MOV     #PRIO7,R0>
                                        .IF LT SVCINS
                                        MOV     #PRIO7,R0
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                MOV     #PRIO7,R0
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
      061370  012700  000340                                                            MOV     #PRIO7,R0
                                                        .NLIST
                                        .ENDC
                                        .ENDC
                                        .IFF
                                        .ERROR  ;MISSING ARG. ON "SETPRI"
                                        .ENDC
      061374                            M$SVC   C$SPRI
                                        .MCALL  M$GNINS,M$TSTLAB
      061374                            M$TSTLAB
                                        .MCALL  M$TLABEL,M$INCR
                                        .IIF LT T$TSTMAC, .MEXIT
                                        .RADIX  10
                                        M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                        .RADIX  8
                                        M$INCR  T$TSTSEQ
      061374                            M$GNINS <TRAP   C$SPRI>
                                        .IF LT SVCINS
                                        TRAP    C$SPRI
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                TRAP    C$SPRI
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
      061374  104441                                                                    TRAP    C$SPRI
                                                        .NLIST
                                        .ENDC
      061376  042777  000010  120674            BIC     #10,@CSRX               ;SELECT CHANNEL 1
      061404  012737  000001  002374            MOV     #1,CHAN                 ;LOAD CHANNEL NUMBER
      061412  112777  000014  120650            MOVB    #14,@ICRHX              ;- --LOAD TCA INTO ACR 1-   -   -
      061420  013737  002336  002500            MOV     PHLOW,GOOD              ;SET UP COMPARE VALUE
      061426  063737  002240  002500            ADD     BCINP,GOOD              ;...
      061434  017737  120642  002502            MOV     @BARX,BAD               ;GET BAR1 CONTENTS
      061442  023737  002502  002500            CMP     BAD,GOOD                ;HAS BAR1 THE CORRECT ADDRESS
      061450  001404                            BEQ     30$                     ;BRANCH IF YES
      061452                                    ERRSOFT 2312,E234,ERR501        ;ERROR HANDLER
```

C10

```
                                .MCALL  M$ERRINS
061452                          M$ERRINS        2312,E234,ERR501,C$ERSOFT
                                .MCALL  M$GNINS,M$WORD,M$TSTLAB
061452                          M$SVC   C$ERSOFT
                                .MCALL  M$GNINS,M$TSTLAB
061452                          M$TSTLAB
                                .MCALL  M$TLABEL,M$INCR
                                .IIF LT T$TSTMAC, .MEXIT
                                .RADIX  10
                                M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                .RADIX  8
                                M$INCR  T$TSTSEQ
061452                          M$GNINS <TRAP   C$ERSOFT>
                                .IF LT SVCINS
                                TRAP    C$ERSOFT
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        TRAP    C$ERSOFT
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
061452  104457                                                                  TRAP    C$ERSOFT
                                                .NLIST
                                .ENDC
        000012                  .RADIX  10
                                .IF NB  2312
        004410                  T$ERRNUM=2312
                                .IFF
                                .ERROR  ;MISSING ERROR NR
                                .ENDC
061454                          M$WORD  \T$ERRNUM
                                .MCALL  M$GNINS
                                .IRP    N,<2312>
                                M$GNINS <.WORD  N>
                                .ENDM
061454                          M$GNINS <.WORD  2312>
                                .IF LT SVCINS
                                .WORD   2312
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        .WORD   2312
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
061454  004410                                                                  .WORD   2312
                                                .NLIST
                                .ENDC
        000010                  .RADIX  8
                                .IF NB E234
```

```
        061456                          M$WORD  E234
                                        .MCALL  M$GNINS
                                        .IRP    N,<E234>
                                        M$GNINS <.WORD  N>
                                        .ENDM
        061456                          M$GNINS <.WORD  E234>
                                        .IF LT SVCINS
                                        .WORD   E234
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                .WORD   E234
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
        061456  006170                                                                  .WORD   E234
                                                        .NLIST
                                        .ENDC
                                        .IFF
                                        M$WORD  0
                                        .ENDC
                                        .IF NB ERR501
        061460                          M$WORD  ERR501
                                        .MCALL  M$GNINS
                                        .IRP    N,<ERR501>
                                        M$GNINS <.WORD  N>
                                        .ENDM
        061460                          M$GNINS <.WORD  ERR501>
                                        .IF LT SVCINS
                                        .WORD   ERR501
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                .WORD   ERR501
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
        061460  003672                                                                  .WORD   ERR501
                                                        .NLIST
                                        .ENDC
                                        .IFF
                                        M$WORD  0
                                        .ENDC
   7196 061462  017737  120616  002502  30$:    MOV     @BCRX,BAD               ;GET BCR1 CONTENTS
   7197 061470  005037  002500                  CLR     GOOD                    ;
   7198 061474  023737  002502  002500          CMP     BAD,GOOD                ;IS BCR1 ZERO
   7199 061502  001404                          BEQ     31$                     ;BRANCH IF YES
   7200 061504                                  ERRSOFT 2313,E235,ERR501        ;ERROR HANDLER
                                        .MCALL  M$ERRINS
        061504                          M$ERRINS        2313,E235,ERR501,C$ERSOFT
                                        .MCALL  M$GNINS,M$WORD,M$TSTLAB
```

```
        061504                          M$SVC   C$ERSOFT
                                        .MCALL  M$GNINS,M$TSTLAB
        061504                          M$TSTLAB
                                        .MCALL  M$TLABEL,M$INCR
                                        .IIF LT T$TSTMAC, .MEXIT
                                        .RADIX  10
                                        M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                        .RADIX  8
                                        M$INCR  T$TSTSEQ
        061504                          M$GNINS <TRAP   C$ERSOFT>
                                        .IF LT SVCINS
                                        TRAP    C$ERSOFT
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                TRAP    C$ERSOFT
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
        061504  104457                                                          TRAP    C$ERSOFT
                                                        .NLIST
                                        .ENDC
                000012                  .RADIX  10
                                        .IF NB  2313
                004411                  T$ERRNUM=2313
                                        .IFF
                                        .ERROR  ;MISSING ERROR NR
                                        .ENDC
        061506                          M$WORD  \T$ERRNUM
                                        .MCALL  M$GNINS
                                        .IRP    N,<2313>
                                        M$GNINS <.WORD  N>
                                        .ENDM
        061506                          M$GNINS <.WORD  2313>
                                        .IF LT SVCINS
                                        .WORD   2313
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                .WORD   2313
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
        061506  004411                                                          .WORD   2313
                                                        .NLIST
                                        .ENDC
                000010                  .RADIX  8
                                        .IF NB E235
        061510                          M$WORD  E235
                                        .MCALL  M$GNINS
                                        .IRP    N,<E235>
```

```
                                        M$GNINS <.WORD  N>
                                        .ENDM
      061510                            M$GNINS <.WORD  E235>
                                        .IF LT SVCINS
                                        .WORD   E235
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                               .WORD   E235
                                                       .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
      061510  006221                                                               .WORD   E235
                                                       .NLIST
                                        .ENDC
                                        .IFF
                                        M$WORD  0
                                        .ENDC
                                        .IF NB ERR501
      061512                            M$WORD  ERR501
                                        .MCALL  M$GNINS
                                        .IRP    N,<ERR501>
                                        M$GNINS <.WORD  N>
                                        .ENDM
      061512                            M$GNINS <.WORD  ERR501>
                                        .IF LT SVCINS
                                        .WORD   ERR501
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                               .WORD   ERR501
                                                       .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
      061512  003672                                                               .WORD   ERR501
                                                       .NLIST
                                        .ENDC
                                        .IFF
                                        M$WORD  0
                                        .ENDC
 7201 061514  052777  000010  120556    31$:    BIS     #10,@CSRX               ;SELECT CHANNEL 2
 7202 061522  012737  000002  002374            MOV     #2,CHAN                 ;LOAD CHANNEL NUMBER
 7203 061530  013737  002360  002500            MOV     BUFBB,GOOD              ;SET UP COMPARE VALUE
 7204 061536  042737  160000  002500            BIC     #160000,GOOD            ;CLEAR BIT 13+14+15
 7205 061544  063737  002240  002500            ADD     BCINP,GOOD              ;...
 7206 061552  017737  120524  002502            MOV     @BARX,BAD               ;GET BAR2 CONTENTS
 7207 061560  023737  002500  002502            CMP     GOOD,BAD                ;HAS BAR2 THE CORRECT ADDRESS
 7208 061566  001404                            BEQ     40$                     ;BRANCH IF YES
 7209 061570                                    ERRSOFT 2314,E234,ERR501        ;ERROR HANDLER
                                        .MCALL  M$ERRINS
      061570                            M$ERRINS        2314,E234,ERR501,C$ERSOFT
```

G10

G10


```
                                .MCALL  M$GNINS,M$WORD,M$TSTLAB
      061570                    M$SVC   C$ERSOFT
                                .MCALL  M$GNINS,M$TSTLAB
      061570                    M$TSTLAB
                                .MCALL  M$TLABEL,M$INCR
                                .IIF LT T$TSTMAC, .MEXIT
                                .RADIX  10
                                M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                .RADIX  8
                                M$INCR  T$TSTSEQ
      061570                    M$GNINS <TRAP   C$ERSOFT>
                                .IF LT SVCINS
                                TRAP    C$ERSOFT
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        TRAP    C$ERSOFT
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
      061570  104457                                                        TRAP    C$ERSOFT
                                                .NLIST
                                .ENDC
              000012            .RADIX  10
                                .IF NB  2314
              004412            T$ERRNUM=2314
                                .IFF
                                .ERROR  ;MISSING ERROR NR
                                .ENDC
      061572                    M$WORD  \T$ERRNUM
                                .MCALL  M$GNINS
                                .IRP    N,<2314>
                                M$GNINS <.WORD  N>
                                .ENDM
      061572                    M$GNINS <.WORD  2314>
                                .IF LT SVCINS
                                .WORD   2314
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        .WORD   2314
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
      061572  004412                                                        .WORD   2314
                                                .NLIST
                                .ENDC
              000010            .RADIX  8
                                .IF NB E234
      061574                    M$WORD  E234
                                .MCALL  M$GNINS
```

H10

```
                                        .IRP    N,<E234>
                                        M$GNINS <.WORD  N>
                                        .ENDM
      061574                            M$GNINS <.WORD  E234>
                                        .IF LT SVCINS
                                        .WORD   E234
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                .WORD   E234
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
      061574  006170                                                            .WORD   E234
                                                        .NLIST
                                        .ENDC
                                        .IFF
                                        M$WORD  0
                                        .ENDC
                                        .IF NB ERR501
      061576                            M$WORD  ERR501
                                        .MCALL  M$GNINS
                                        .IRP    N,<ERR501>
                                        M$GNINS <.WORD  N>
                                        .ENDM
      061576                            M$GNINS <.WORD  ERR501>
                                        .IF LT SVCINS
                                        .WORD   ERR501
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                .WORD   ERR501
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
      061576  003672                                                            .WORD   ERR501
                                                        .NLIST
                                        .ENDC
                                        .IFF
                                        M$WORD  0
                                        .ENDC
 7210 061600  017737  120500  002502    40$:    MOV     @BCRX,BAD               ;GET BCR2 CONTENTS
 7211 061606  005737  002502                    TST     BAD                     ;BCR2 CONTENTS SHOULD BE ZERO
 7212 061612  001406                            BEQ     43$                     ;BRANCH IF YES
 7213 061614  005037  002500                    CLR     GOOD                    ;SET UP DATA FOR ERROR MESSAGE
 7214 061620                                    ERRSOFT 2315,E235,ERR501        ;ERROR HANDLER
                                        .MCALL  M$ERRINS
      061620                            M$ERRINS        2315,E235,ERR501,C$ERSOFT
                                        .MCALL  M$GNINS,M$WORD,M$TSTLAB
      061620                            M$SVC   C$ERSOFT
                                        .MCALL  M$GNINS,M$TSTLAB
```

```
061620                          M$TSTLAB
                                .MCALL  M$TLABEL,M$INCR
                                .IIF LT T$TSTMAC, .MEXIT
                                .RADIX  10
                                M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                .RADIX  8
                                M$INCR  T$TSTSEQ
061620                          M$GNINS <TRAP   C$ERSOFT>
                                .IF LT SVCINS
                                TRAP    C$ERSOFT
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        TRAP    C$ERSOFT
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
061620  104457                                                          TRAP    C$ERSOFT
                                                .NLIST
                                .ENDC
        000012                  .RADIX  10
                                .IF NB  2315
        004413                  T$ERRNUM=2315
                                .IFF
                                .ERROR  ;MISSING ERROR NR
                                .ENDC
061622                          M$WORD  \T$ERRNUM
                                .MCALL  M$GNINS
                                .IRP    N,<2315>
                                M$GNINS <.WORD  N>
                                .ENDM
061622                          M$GNINS <.WORD  2315>
                                .IF LT SVCINS
                                .WORD   2315
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        .WORD   2315
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
061622  004413                                                          .WORD   2315
                                                .NLIST
                                .ENDC
        000010                  .RADIX  8
                                .IF NB E235
061624                          M$WORD  E235
                                .MCALL  M$GNINS
                                .IRP    N,<E235>
                                M$GNINS <.WORD  N>
                                .ENDM
```

J10


```
061624                          M$GNINS <.WORD  E235>
                                .IF LT SVCINS
                                .WORD   E235
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        .WORD   E235
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
061624  006221                                                                  .WORD   E235
                                                .NLIST
                                .ENDC
                                .IFF
                                M$WORD  0
                                .ENDC
                                .IF NB ERR501
061626                          M$WORD  ERR501
                                .MCALL  M$GNINS
                                .IRP    N,<ERR501>
                                M$GNINS <.WORD  N>
                                .ENDM
061626                          M$GNINS <.WORD  ERR501>
                                .IF LT SVCINS
                                .WORD   ERR501
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        .WORD   ERR501
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
061626  003672                                                                  .WORD   ERR501
                                                .NLIST
                                .ENDC
                                .IFF
                                M$WORD  0
                                .ENDC
061630  012737  000001  177572  43$:    MOV     #1,SR0          ;**ENABLE MEMORY MANAGEMENT**
061636  013701  002356                  MOV     BUFAB,R1        ;PROVIDE FIRST BYTE OF BUFFER A
061642  013702  002360                  MOV     BUFBB,R2        ;PROVIDE FIRST BYTE OF BUFFER B
061646  005037  002404                  CLR     CNT1            ;CLEAR BUFFER COUNTER
061652  005237  002404          44$:    INC     CNT1            ;
061656  122122                          CMPB    (R1)+,(R2)+     ;BUFFER A EQUAL BUFFER B
061660  001446                          BEQ     46$             ;IF YES CONTINUE
061662  005037  002500                  CLR     GOOD            ;CLEAR GOOD
061666  005037  002502                  CLR     BAD             ;CLEAR BAD
061672  012737  000001  002426          MOV     #1,TXADRH       ;TX ADDRESS IS OVER 32K
061700  012737  000001  002422          MOV     #1,RXADRH       ;RX ADDRESS IS OVER 32K
061706  010137  002430                  MOV     R1,TXADRL       ;GET ADDRESS OVER 32K
061712  005337  002430                  DEC     TXADRL          ;...
```

K10

```
061716  042737  160000  002430          BIC     #160000,TXADRL          ;CLEAR PAR INFORMATION
061724  013737  002430  002424          MOV     TXADRL,RXADRL           ;GENERATE RX ADDRESS FROM TX ADDRESS
061732  052737  010000  002424          BIS     #10000,RXADRL           ;RX ADRRES IS TX ADDRESS +2K
061740  116137  177777  002500          MOVB    -1(R1),GOOD             ;...
061746  116237  177777  002502          MOVB    -1(R2),BAD              ;...
061754  005037  177572                  CLR     SR0                     ;**DISABLE MEMORY MANAGEMENT**
061760                                  ERRSOFT 2316,E231,ERR231        ;ERROR HANDLER
                                .MCALL  M$ERRINS
061760                          M$ERRINS        2316,E231,ERR231,C$ERSOFT
                                .MCALL  M$GNINS,M$WORD,M$TSTLAB
061760                          M$SVC   C$ERSOFT
                                .MCALL  M$GNINS,M$TSTLAB
061760                          M$TSTLAB
                                .MCALL  M$TLABEL,M$INCR
                                .IIF LT T$TSTMAC, .MEXIT
                                .RADIX  10
                                M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                .RADIX  8
                                M$INCR  T$TSTSEQ
061760                          M$GNINS <TRAP   C$ERSOFT>
                                .IF LT SVCINS
                                TRAP    C$ERSOFT
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        TRAP    C$ERSOFT
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
061760  104457                                                                          TRAP    C$ERSOFT
                                                .NLIST
                                .ENDC
        000012                  .RADIX  10
                                .IF NB  2316
        004414                  T$ERRNUM=2316
                                .IFF
                                .ERROR  ;MISSING ERROR-NR
                                .ENDC
061762                          M$WORD  \T$ERRNUM
                                .MCALL  M$GNINS
                                .IRP    N,<2316>
                                M$GNINS <.WORD  N>
                                .ENDM
061762                          M$GNINS <.WORD  2316>
                                .IF LT SVCINS
                                .WORD   2316
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        .WORD   2316
                                                .NLIST
                                .MEXIT
                                .ENDC
```

L10

```
                                  .IF GT SVCINS
                                  .LIST
     061762  004414                                                                .WORD   2316
                                            .NLIST
                                  .ENDC
             000010               .RADIX  8
                                  .IF NB E231
     061764                       M$WORD  E231
                                  .MCALL  M$GNINS
                                  .IRP    N,<E231>
                                  M$GNINS <.WORD  N>
                                  .ENDM
     061764                       M$GNINS <.WORD  E231>
                                  .IF LT SVCINS
                                  .WORD   E231
                                  .MEXIT
                                  .ENDC
                                  .IF EQ SVCINS
                                  .LIST
                                       .WORD   E231
                                            .NLIST
                                  .MEXIT
                                  .ENDC
                                  .IF GT SVCINS
                                  .LIST
     061764  006000                                                                .WORD   E231
                                            .NLIST
                                  .ENDC
                                  .IFF
                                  M$WORD  0
                                  .ENDC
                                  .IF NB ERR231
     061766                       M$WORD  ERR231
                                  .MCALL  M$GNINS
                                  .IRP    N,<ERR231>
                                  M$GNINS <.WORD  N>
                                  .ENDM
     061766                       M$GNINS <.WORD  ERR231>
                                  .IF LT SVCINS
                                  .WORD   ERR231
                                  .MEXIT
                                  .ENDC
                                  .IF EQ SVCINS
                                  .LIST
                                       .WORD   ERR231
                                            .NLIST
                                  .MEXIT
                                  .ENDC
                                  .IF GT SVCINS
                                  .LIST
     061766  003734                                                                .WORD   ERR231
                                            .NLIST
                                  .ENDC
                                  .IFF
                                  M$WORD  0
                                  .ENDC
7235 061770  012737  000001  177572    MOV     #1,SR0              ;**ENABLE MEMORY MANAGEMENT**
```

```
 061776  023737  002404  002240  46$:    CMP     CNT1,BCINP              ;ALL BYTES COMPARED ?
 062004  001322                          BNE     44$                     ;IF NO, GET NEXT ONE
 062006  005037  177572                  CLR     SR0                     ;**DISABLE MEMORY MANAGEMENT**
 062012  005077  120262                  CLR     @CSRX                   ;CLEAR CSR2,SELECT CHANNEL 1
 062016  017737  120250  002502          MOV     @IDRX,BAD               ;READ DIR1 FOR CLEAR B0 BIT IN IIR
 062024  005077  120250                  CLR     @CSRX                   ;CLEAR CSR1
                                 ;***-------------------- --------------------------------------------------
                                 ;PART 4 DMA OVER 64K
                                 ;***-----------------------------------------------------------------------
 062030  005037  002376          PSEU33: CLR     INTFC1                  ;CLEAR INTERRUPT FLAG
 062034  005037  002400                  CLR     INTFC2                  ;CLEAR INTERRUPT FLAG
 062040  023727  002342  000002          CMP     PHHSIZ,#2               ;IS THERE MORE THAN 64K
 062046  002404                          BLT     11$                     ;IF NO SKIP TEST
 062050  003005                          BGT     13$                     ;
 062052  005737  002344                  TST     PHLSIZ                  ;
 062056  001002                          BNE     13$                     ;
 062060  000137  063202          11$:    JMP     EXQV23                  ;JUMP TO TEST END
 062064  005037  002336          13$:    CLR     PHLOW                   ;LOAD INPUT FOR CONVERSION ROUTINE
 062070  012737  000002  002334          MOV     #2,PHHIGI               ;...
 062076  004737  007714                  JSR     PC,PVCON                ;CREATE VIRTUAL ADDRESS
 062102  013700  002340                  MOV     VIADD,R0                ;GET START ADDRESS OF BUFFER A
 062106  010037  002356                  MOV     R0,BUFAB                ;LOAD START ADDRESS OF BUFFER A
 062112  012701  010000                  MOV     #10000,R1               ;LOAD COUNTER FOR 2K
 062116  005003                          CLR     R3                      ;R3 CONTAINS
 062120  012737  000001  177572          MOV     #1,SR0                  ;**ENABLE MEMORY MANAGEMENT**
 062126  110320                  16$:    MOVB    R3,(R0)+                ;LOAD BUFFER WITH DATA
 062130  005203                          INC     R3                      ;CREAT NEXT DATA
 062132  005301                          DEC     R1                      ;
 062134  001374                          BNE     16$                     ;
 062136  012701  010000                  MOV     #10000,R1               ;LOAD 2K
 062142  010037  002360                  MOV     R0,BUFBB                ;LOAD START ADDRESS OF BUFFER B
 062146  105020                  20$:    CLRB    (R0)+                   ;CLEAR BUFFER B
 062150  005301                          DEC     R1                      ;2K CLEARED
 062152  001375                          BNE     20$                     ;IF YES,DO THE TEST
 062154  005037  177572                  CLR     SR0                     ;**DISABLE MEMORY MANAGEMENT**
 062160  112777  000212  120102          MOVB    #212,@ICRHX             ;----LOAD TON INTO ACR 1--------------
 062166  013701  002314                  MOV     DPA2,R1                 ;CREATE MLA2
 062172  062701  000040                  ADD     #40,R1                  ;...
 062176  010137  002412                  MOV     R1,MLA2                 ;STORE MLA2
 062202  113777  002412  120066          MOVB    MLA2,@IDRHX             ;--- LOAD MLA2 INTO DOR 1  -------  --
 062210  004737  011050                  JSR     PC,LOOP                 ;WAIT A LITTLE
 062214  005077  120062                  CLR     @BARX                   ;---LOAD START ADDRESS OF BUFFER A- --
 062220  013737  002240  002402          MOV     BCINP,RSAVE             ;STORE BYTE COUNT INPUT
 062226  005437  002402                  NEG     RSAVE                   ;BILD 2'COMPL FOR BCR
 062232  013777  002402  120044          MOV     RSAVE,@BCRX             ;----LOAD INPUT INTO BCR 1--- ---- --
 062240  012777  000147  120032          MOV     #147,@CSRX              ;-DMA ENB,DMA DIR,INT ENB,BA 17,SYS C
 062246  052777  000010  120024          BIS     #10,@CSRX               ;SELECT CHANNEL 2
 062254  012777  010000  120020          MOV     #10000,@BARX            ;----LOAD START ADDRESS OF BUFFER B---
 062262  013777  002402  120014          MOV     RSAVE,@BCRX             ;----LOAD INPUT INTO BCR 1--
 062270  012777  000141  120002          MOV     #141,@CSRX              ;--- SET DMA ENB,INT ENB,BIT17 IN CSR2
 062276                                  SETPRI  #PRI00                  ;SET PRIORITY TO ZERO
                                 .MCALL  M$LDR0,M$SVC
 062276                          M$LDR0  #PRI00,SETPRI
                                 .MCALL  M$GNINS
                                 .IF NB #PRI00
                                 .IF DIF R0,#PRI00
 062276                          M$GNINS <MOV     #PRI00,R0>
```

```
                                        .IF LT SVCINS
                                        MOV     #PRIOO,RO
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                MOV     #PRIOO,RO
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
     062276  012700  000000                                                              MOV     #PRIOO,RO
                                                        .NLIST
                                        .ENDC
                                        .ENDC
                                        .IFF
                                        .ERROR  ;MISSING ARG. ON "SETPRI"
                                        .ENDC
     062302                             M$SVC   C$SPRI
                                        .MCALL  M$GNINS,M$TSTLAB
     062302                             M$TSTLAB
                                        .MCALL  M$TLABEL,M$INCR
                                        .IIF LT T$TSTMAC, .MEXIT
                                        .RADIX  10
                                        M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                        .RADIX  8
                                        M$INCR  T$TSTSEQ
     062302                             M$GNINS <TRAP   C$SPRI>
                                        .IF LT SVCINS
                                        TRAP    C$SPRI
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                TRAP    C$SPRI
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
     062302  104441                                                                      TRAP    C$SPRI
                                                        .NLIST
                                        .ENDC
     062304  042777  000010  117766             BIC     #10,@CSRX               ;SELECT CHANNEL 1
     062312  012737  000001  002374             MOV     #1,CHAN                 ;LOAD CHANNEL NUMBER
     062320  112777  000013  117742             MOVB    #13,@ICRHX              ;----LOAD GTS INTO ACR 1--- ------- --
     062326  012701  077777                     MOV     #77777,R1               ;LOAD LOOP COUNTER
     062332  005737  002376             23$:    TST     INTFC1                  ;IS INTERRUPT IN CHANNEL 1 OCCER
     062336  001014                             BNE     24$                     ;BRANCH IF YES
     062340  005301                             DEC     R1                      ;DECREMENT COUNTER
     062342  001373                             BNE     23$                     ;IF NO,TEST AGIN
     062344  017737  117730  002502             MOV     @CSRX,BAD               ;GET CSR1 CONTENTS
     062352  012737  100046  002500             MOV     #100046,GOOD            ;BC OF,DMA DIR,BA 17,SYS CONT
     062360                                     ERRSOFT 2317,E232,ERR201        ;ERROR HANDLER
                                        .MCALL  M$ERRINS
     062360                             M$ERRINS        2317,E232,ERR201,C$ERSOFT
```

B11


```
                                .MCALL  M$GNINS,M$WORD,M$TSTLAB
062360                          M$SVC   C$ERSOFT
                                .MCALL  M$GNINS,M$TSTLAB
062360                          M$TSTLAB
                                .MCALL  M$TLABEL,M$INCR
                                .IIF LT T$TSTMAC, .MEXIT
                                .RADIX  10
                                M$TLABEL        \T$TESTNUM,\T$TSTSEQ
                                .RADIX  8
                                M$INCR  T$TSTSEQ
062360                          M$GNINS <TRAP   C$ERSOFT>
                                .IF LT SVCINS
                                TRAP    C$ERSOFT
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        TRAP    C$ERSOFT
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
062360  104457                                                                  TRAP    C$ERSOFT
                                                .NLIST
                                .ENDC
        000012                  .RADIX  10
                                .IF NB  2317
        004415                  T$ERRNUM=2317
                                .IFF
                                .ERROR  ;MISSING ERROR-NR
                                .ENDC
062362                          M$WORD  \T$ERRNUM
                                .MCALL  M$GNINS
                                .IRP    N,<2317>
                                M$GNINS <.WORD  N>
                                .ENDM
062362                          M$GNINS <.WORD  2317>
                                .IF LT SVCINS
                                .WORD   2317
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        .WORD   2317
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
062362  004415                                                                  .WORD   2317
                                                .NLIST
                                .ENDC
        000010                  .RADIX  8
                                .IF NB E232
062364                          M$WORD  E232
                                .MCALL  M$GNINS
```

C11

```
                                                    .IRP    N,<E232>
                                                    M$GNINS <.WORD  N>
                                                    .ENDM
       062364                                       M$GNINS <.WORD  E232>
                                                    .IF LT SVCINS
                                                    .WORD   E232
                                                    .MEXIT
                                                    .ENDC
                                                    .IF EQ SVCINS
                                                    .LIST
                                                            .WORD   E232
                                                                    .NLIST
                                                    .MEXIT
                                                    .ENDC
                                                    .IF GT SVCINS
                                                    .LIST
       062364  006062                                                                                   .WORD   E232
                                                                    .NLIST
                                                    .ENDC
                                                    .IFF
                                                    M$WORD  0
                                                    .ENDC
                                                    .IF NB ERR201
       062366                                       M$WORD  ERR201
                                                    .MCALL  M$GNINS
                                                    .IRP    N,<ERR201>
                                                    M$GNINS <.WORD  N>
                                                    .ENDM
       062366                                       M$GNINS <.WORD  ERR201>
                                                    .IF LT SVCINS
                                                    .WORD   ERR201
                                                    .MEXIT
                                                    .ENDC
                                                    .IF EQ SVCINS
                                                    .LIST
                                                            .WORD   ERR201
                                                                    .NLIST
                                                    .MEXIT
                                                    .ENDC
                                                    .IF GT SVCINS
                                                    .LIST
       062366  003470                                                                                   .WORD   ERR201
                                                                    .NLIST
                                                    .ENDC
                                                    .IFF
                                                    M$WORD  0
                                                    .ENDC
  7298 062370  052777  000010  117702               24$:    BIS     #10,@CSRX               ;SELECT CHANNEL 2
  7299 062376  012737  000002  002374                       MOV     #2,CHAN                 ;LOAD CHANNEL NUMBER
  7300 062404  005737  002400                               TST     INTFC2                  ;IS AN INTERRUPT IN CHANNEL 2 OCCURED
  7301 062410  001012                                       BNE     25$                     ;BRANCH IF YES
  7302 062412  017737  117662  002502                       MOV     @CSRX,BAD               ;GET CSR2 CONTENTS
  7303 062420  012737  100050  002500                       MOV     #100050,GOOD            ;BC OF,BA 17,MUX SHOULD BE SET
  7304 062426                                               ERRSOFT 2318,E232,ERR201        ;ERROR HANDLER
                                                    .MCALL  M$ERRINS
       062426                                       M$ERRINS        2318,E232,ERR201,C$ERSOFT
                                                    .MCALL  M$GNINS,M$WORD,M$TSTLAB
```

```
062426                        M$SVC   C$ERSOFT
                              .MCALL  M$GNINS,M$TSTLAB
062426                        M$TSTLAB
                              .MCALL  M$TLABEL,M$INCR
                              .IIF LT T$TSTMAC, .MEXIT
                              .RADIX  10
                              M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                              .RADIX  8
                              M$INCR  T$TSTSEQ
062426                        M$GNINS <TRAP   C$ERSOFT>
                              .IF LT SVCINS
                              TRAP    C$ERSOFT
                              .MEXIT
                              .ENDC
                              .IF EQ SVCINS
                              .LIST
                                      TRAP    C$ERSOFT
                                              .NLIST
                              .MEXIT
                              .ENDC
                              .IF GT SVCINS
                              .LIST
062426  104457                                                                  TRAP    C$ERSOFT
                                              .NLIST
                              .ENDC
        000012                .RADIX  10
                              .IF NB  2318
        004416                T$ERRNUM=2318
                              .IFF
                              .ERROR  ;MISSING ERROR NR
                              .ENDC
062430                        M$WORD  \T$ERRNUM
                              .MCALL  M$GNINS
                              .IRP    N,<2318>
                              M$GNINS <.WORD  N>
                              .ENDM
062430                        M$GNINS <.WORD  2318>
                              .IF LT SVCINS
                              .WORD   2318
                              .MEXIT
                              .ENDC
                              .IF EQ SVCINS
                              .LIST
                                      .WORD   2318
                                              .NLIST
                              .MEXIT
                              .ENDC
                              .IF GT SVCINS
                              .LIST
062430  004416                                                                  .WORD   2318
                                              .NLIST
                              .ENDC
        000010                .RADIX  8
                              .IF NB E232
062432                        M$WORD  E232
                              .MCALL  M$GNINS
                              .IRP    N,<E232>
```

E11

E11


```
                                M$GNINS <.WORD  N>
                                .ENDM
     062432                     M$GNINS <.WORD  E232>
                                .IF LT SVCINS
                                .WORD   E232
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        .WORD   E232
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
     062432  006062                                                                   .WORD   E232
                                                .NLIST
                                .ENDC
                                .IFF
                                M$WORD  0
                                .ENDC
                                .IF NB ERR201
     062434                     M$WORD  ERR201
                                .MCALL  M$GNINS
                                .IRP    N,<ERR201>
                                M$GNINS <.WORD  N>
                                .ENDM
     062434                     M$GNINS <.WORD  ERR201>
                                .IF LT SVCINS
                                .WORD   ERR201
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        .WORD   ERR201
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
     062434  003470                                                                   .WORD   ERR201
                                                .NLIST
                                .ENDC
                                .IFF
                                M$WORD  0
                                .ENDC
7305 062436                     25$:    SETPRI  #PRI07                  ;NO FURTHER INTERRUPT ALLOWED
                                .MCALL  M$LDR0,M$SVC
     062436                     M$LDR0  #PRI07,SETPRI
                                .MCALL  M$GNINS
                                .IF NB #PRI07
                                .IF DIF R0,#PRI07
     062436                     M$GNINS <MOV    #PRI07,R0>
                                .IF LT SVCINS
                                MOV     #PRI07,R0
                                .MEXIT
                                .ENDC
```

F11

```
                                .IF EQ SVCINS
                                .LIST
                                        MOV     #PRI07,R0
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
      062436  012700  000340                                                    MOV     #PRI07,R0
                                                .NLIST
                                .ENDC
                                .ENDC
                                .IFF
                                .ERROR  ;MISSING ARG. ON "SETPRI"
                                .ENDC
      062442                    M$SVC   C$SPRI
                                .MCALL  M$GNINS,M$TSTLAB
      062442                    M$TSTLAB
                                .MCALL  M$TLABEL,M$INCR
                                .IIF LT T$TSTMAC, .MEXIT
                                .RADIX  10
                                M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                .RADIX  8
                                M$INCR  T$TSTSEQ
      062442                    M$GNINS <TRAP   C$SPRI>
                                .IF LT SVCINS
                                TRAP    C$SPRI
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        TRAP    C$SPRI
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
      062442  104441                                                            TRAP    C$SPRI
                                                .NLIST
                                .ENDC
 7306 062444  042777  000010  117626    BIC     #10,@CSRX               ;SELECT CHANNEL 1
 7307 062452  012737  000001  002374    MOV     #1,CHAN                 ;LOAD CHANNEL NUMBER
 7308 062460  112777  000014  117602    MOVB    #14,@ICRHX              ;----LOAD TCA INTO ACR 1-- ---   -- --
 7309 062466  013737  002336  002500    MOV     PHLOW,GOOD              ;SET UP COMPARE VALUE
 7310 062474  063737  002240  002500    ADD     BCINP,GOOD              ;...
 7311 062502  017737  117574  002502    MOV     @BARX,BAD               ;GET BAR1 CONTENTS
 7312 062510  023737  002502  002500    CMP     BAD,GOOD                ;HAS BAR1 THE CORRECT ADDRESS
 7313 062516  001404                    BEQ     30$                     ;BRANCH IF YES
 7314 062520                            ERRSOFT 2319,E234,ERR501        ;ERROR HANDLER
                                .MCALL  M$ERRINS
      062520                    M$ERRINS        2319,E234,ERR501,C$ERSOFT
                                .MCALL  M$GNINS,M$WORD,M$TSTLAB
      062520                    M$SVC   C$ERSOFT
                                .MCALL  M$GNINS,M$TSTLAB
      062520                    M$TSTLAB
                                .MCALL  M$TLABEL,M$INCR
                                .IIF LT T$TSTMAC, .MEXIT
```

G11

```
                                .RADIX  10
                                M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                .RADIX  8
                                M$INCR  T$TSTSEQ
062520                          M$GNINS <TRAP   C$ERSOFT>
                                .IF LT SVCINS
                                TRAP    C$ERSOFT
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        TRAP    C$ERSOFT
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
062520  104457                                                          TRAP    C$ERSOFT
                                                .NLIST
                                .ENDC
        000012                  .RADIX  10
                                .IF NB  2319
        004417                  T$ERRNUM=2319
                                .IFF
                                .ERROR  ;MISSING ERROR-NR
                                .ENDC
062522                          M$WORD  \T$ERRNUM
                                .MCALL  M$GNINS
                                .IRP    N,<2319>
                                M$GNINS <.WORD  N>
                                .ENDM
062522                          M$GNINS <.WORD  2319>
                                .IF LT SVCINS
                                .WORD   2319
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        .WORD   2319
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
062522  004417                                                          .WORD   2319
                                                .NLIST
                                .ENDC
        000010                  .RADIX  8
                                .IF NB E234
062524                          M$WORD  E234
                                .MCALL  M$GNINS
                                .IRP    N,<E234>
                                M$GNINS <.WORD  N>
                                .ENDM
062524                          M$GNINS <.WORD  E234>
                                .IF LT SVCINS
                                .WORD   E234
```

```
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                .WORD   E234
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
     062524  006170                                                                   .WORD   E234
                                                        .NLIST
                                        .ENDC
                                        .IFF
                                        M$WORD  0
                                        .ENDC
                                        .IF NB ERR501
     062526                             M$WORD  ERR501
                                        .MCALL  M$GNINS
                                        .IRP    N,<ERR501>
                                        M$GNINS <.WORD  N>
                                        .ENDM
     062526                             M$GNINS <.WORD  ERR501>
                                        .IF LT SVCINS
                                        .WORD   ERR501
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                .WORD   ERR501
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
     062526  003672                                                                   .WORD   ERR501
                                                        .NLIST
                                        .ENDC
                                        .IFF
                                        M$WORD  0
                                        .ENDC
7315 062530  017737  117550  002502     30$:    MOV     @BCRX,BAD               ;GET BCR1 CONTENTS
7316 062536  005037  002500                     CLR     GOOD                    ;
7317 062542  023737  002502  002500             CMP     BAD,GOOD                ;IS BCR1 ZERO
7318 062550  001404                             BEQ     31$                     ;BRANCH IF YES
7319 062552                                     ERRSOFT 2320,E235,ERR501        ;ERROR HANDLER
                                        .MCALL  M$ERRINS
     062552                             M$ERRINS        2320,E235,ERR501,C$ERSOFT
                                        .MCALL  M$GNINS,M$WORD,M$TSTLAB
     062552                             M$SVC   C$ERSOFT
                                        .MCALL  M$GNINS,M$TSTLAB
     062552                             M$TSTLAB
                                        .MCALL  M$TLABEL,M$INCR
                                        .IIF LT T$TSTMAC, .MEXIT
                                        .RADIX  10
                                        M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                        .RADIX  8
```

```
                                M$INCR  T$TSTSEQ
062552                          M$GNINS <TRAP   C$ERSOFT>
                                .IF LT SVCINS
                                TRAP    C$ERSOFT
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        TRAP    C$ERSOFT
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
062552  104457                                                                  TRAP    C$ERSOFT
                                                .NLIST
                                .ENDC
        000012                  .RADIX  10
                                .IF NB  2320
        004420                  T$ERRNUM=2320
                                .IFF
                                .ERROR  ;MISSING ERROR-NR
                                .ENDC
062554                          M$WORD  \T$ERRNUM
                                .MCALL  M$GNINS
                                .IRP    N,<2320>
                                M$GNINS <.WORD  N>
                                .ENDM
062554                          M$GNINS <.WORD  2320>
                                .IF LT SVCINS
                                .WORD   2320
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        .WORD   2320
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
062554  004420                                                                  .WORD   2320
                                                .NLIST
                                .ENDC
        000010                  .RADIX  8
                                .IF NB E235
062556                          M$WORD  E235
                                .MCALL  M$GNINS
                                .IRP    N,<E235>
                                M$GNINS <.WORD  N>
                                .ENDM
062556                          M$GNINS <.WORD  E235>
                                .IF LT SVCINS
                                .WORD   E235
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
```

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```
                                                .LIST
                                                        .WORD   E235
                                                                .NLIST
                                                .MEXIT
                                                .ENDC
                                                .IF GT SVCINS
                                                .LIST
      062556  006221                                                                        .WORD   E235
                                                                .NLIST
                                                .ENDC
                                                .IFF
                                                M$WORD  0
                                                .ENDC
                                                .IF NB ERR501
      062560                                    M$WORD  ERR501
                                                .MCALL  M$GNINS
                                                .IRP    N,<ERR501>
                                                M$GNINS <.WORD  N>
                                                .ENDM
      062560                                    M$GNINS <.WORD  ERR501>
                                                .IF LT SVCINS
                                                .WORD   ERR501
                                                .MEXIT
                                                .ENDC
                                                .IF EQ SVCINS
                                                .LIST
                                                        .WORD   ERR501
                                                                .NLIST
                                                .MEXIT
                                                .ENDC
                                                .IF GT SVCINS
                                                .LIST
      062560  003672                                                                        .WORD   ERR501
                                                                .NLIST
                                                .ENDC
                                                .IFF
                                                M$WORD  0
                                                .ENDC
7320  )62562  052777  000010  117510  31$:      BIS     #10,@CSRX               ;SELECT CHANNEL 2
7321  )62570  012737  000002  002374            MOV     #2,CHAN                 ;LOAD CHANNEL NUMBER
7322  062576  013737  002360  002500            MOV     BUFBB,GOOD              ;SET UP COMPARE VALUE
7323  062604  042737  160000  002500            BIC     #160000,GOOD            ;CLEAR BIT 13+14+15
7324  062612  063737  002240  002500            ADD     BCINP,GOOD              ;...
7325  062620  017737  117456  002502            MOV     @BARX,BAD               ;GET BAR2 CONTENTS
7326  062626  023737  002500  002502            CMP     GOOD,BAD                ;HAS BAR2 THE CORRECT ADDRESS
7327  062634  001404                            BEQ     40$                     ;BRANCH IF YES
7328  062636                                    ERRSOFT 2321,E234,ERR501        ;ERROR HANDLER
                                                .MCALL  M$ERRINS
      062636                                    M$ERRINS        2321,E234,ERR501,C$ERSOFT
                                                .MCALL  M$GNINS,M$WORD,M$TSTLAB
      062636                                    M$SVC   C$ERSOFT
                                                .MCALL  M$GNINS,M$TSTLAB
      062636                                    M$TSTLAB
                                                .MCALL  M$TLABEL,M$INCR
                                                .IIF LT T$TSTMAC, .MEXIT
                                                .RADIX  10
                                                M$TLABEL        \T$TESTNUN,\T$TSTSEQ
```

K11


```
                                        .RADIX  8
                                        M$INCR  T$TSTSEQ
      062636                            M$GNINS <TRAP   C$ERSOFT>
                                        .IF LT SVCINS
                                        TRAP    C$ERSOFT
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                TRAP    C$ERSOFT
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
      062636  104457                                                                          TRAP    C$ERSOFT
                                                        .NLIST
                                        .ENDC
              000012                    .RADIX  10
                                        .IF NB  2321
              004421                    T$ERRNUM=2321
                                        .IFF
                                        .ERROR  ;MISSING ERROR-NR
                                        .ENDC
      062640                            M$WORD  \T$ERRNUM
                                        .MCALL  M$GNINS
                                        .IRP    N,<2321>
                                        M$GNINS <.WORD  N>
                                        .ENDM
      062640                            M$GNINS <.WORD  2321>
                                        .IF LT SVCINS
                                        .WORD   2321
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                .WORD   2321
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
      062640  004421                                                                          .WORD   2321
                                                        .NLIST
                                        .ENDC
              000010                    .RADIX  8
                                        .IF NB E234
      062642                            M$WORD  E234
                                        .MCALL  M$GNINS
                                        .IRP    N,<E234>
                                        M$GNINS <.WORD  N>
                                        .ENDM
      062642                            M$GNINS <.WORD  E234>
                                        .IF LT SVCINS
                                        .WORD   E234
                                        .MEXIT
                                        .ENDC
```

```
                                        .IF EQ SVCINS
                                        .LIST
                                                .WORD   E234
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
      062642  006170                                                                          .WORD   E234
                                                        .NLIST
                                        .ENDC
                                        .IFF
                                        M$WORD  0
                                        .ENDC
                                        .IF NB ERR501
      062644                            M$WORD  ERR501
                                        .MCALL  M$GNINS
                                        .IRP    N,<ERR501>
                                        M$GNINS <.WORD  N>
                                        .ENDM
      062644                            M$GNINS <.WORD  ERR501>
                                        .IF LT SVCINS
                                        .WORD   ERR501
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                .WORD   ERR501
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
      062644  003672                                                                          .WORD   ERR501
                                                        .NLIST
                                        .ENDC
                                        .IFF
                                        M$WORD  0
                                        .ENDC
 7329 062646  017737  117432  002502    40$:    MOV     @BCRX,BAD               ;GET BCR2 CONTENTS
 7330 062654  005737  002502                    TST     BAD                     ;BCR2 CONTENTS SHOULD BE ZERO
 7331 062660  001406                            BEQ     43$                     ;BRANCH IF YES
 7332 062662  005037  002500                    CLR     GOOD                    ;SET UP DATA FOR ERROR MESSAGE
 7333 062666                                    ERRSOFT 2322,E235,ERR501        ;ERROR HANDLER
                                        .MCALL  M$ERRINS
      062666                            M$ERRINS        2322,E235,ERR501,C$ERSOFT
                                        .MCALL  M$GNINS,M$WORD,M$TSTLAB
      062666                            M$SVC   C$ERSOFT
                                        .MCALL  M$GNINS,M$TSTLAB
      062666                            M$TSTLAB
                                        .MCALL  M$TLABEL,M$INCR
                                        .IIF LT T$TSTMAC, .MEXIT
                                        .RADIX  10
                                        M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                        .RADIX  8
                                        M$INCR  T$TSTSEQ
      062666                            M$GNINS <TRAP   C$ERSOFT>
```

```
                                .IF LT SVCINS
                                TRAP    C$ERSOFT
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        TRAP    C$ERSOFT
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
062666  104457                                                          TRAP    C$ERSOFT
                                                .NLIST
                                .ENDC
        000012                  .RADIX  10
                                .IF NB  2322
        004422                  T$ERRNUM=2322
                                .IFF
                                .ERROR  ;MISSING ERROR NR
                                .ENDC
062670                          M$WORD  \T$ERRNUM
                                .MCALL  M$GNINS
                                .IRP    N,<2322>
                                M$GNINS <.WORD  N>
                                .ENDM
062670                          M$GNINS <.WORD  2322>
                                .IF LT SVCINS
                                .WORD   2322
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        .WORD   2322
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
062670  004422                                                          .WORD   2322
                                                .NLIST
                                .ENDC
        000010                  .RADIX  8
                                .IF NB E235
062672                          M$WORD  E235
                                .MCALL  M$GNINS
                                .IRP    N,<E235>
                                M$GNINS <.WORD  N>
                                .ENDM
062672                          M$GNINS <.WORD  E235>
                                .IF LT SVCINS
                                .WORD   E235
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        .WORD   E235
```

```
                                                        .NLIST
                                          .MEXIT
                                          .ENDC
                                          .IF GT SVCINS
                                          .LIST
     062672  006221                                                                        .WORD   E235
                                                        .NLIST
                                          .ENDC
                                          .IFF
                                          M$WORD  0
                                          .ENDC
                                          .IF NB ERR501
     062674                               M$WORD  ERR501
                                          .MCALL  M$GNINS
                                          .IRP    N,<ERR501>
                                          M$GNINS <.WORD  N>
                                          .ENDM
     062674                               M$GNINS <.WORD  ERR501>
                                          .IF LT SVCINS
                                          .WORD   ERR501
                                          .MEXIT
                                          .ENDC
                                          .IF EQ SVCINS
                                          .LIST
                                                  .WORD   ERR501
                                                        .NLIST
                                          .MEXIT
                                          .ENDC
                                          .IF GT SVCINS
                                          .LIST
     062674  003672                                                                        .WORD   ERR501
                                                        .NLIST
                                          .ENDC
                                          .IFF
                                          M$WORD  0
                                          .ENDC
     062676  012737  000001  177572  43$:     MOV     #1,SR0              ;**ENABLE MEMORY MANAGEMENT**
     062704  013701  002356                   MOV     BUFAB,R1            ;PROVIDE FIRST BYTE OF BUFFER A
     062710  013702  002360                   MOV     BUFBB,R2            ;PROVIDE FIRST BYTE OF BUFFER B
     062714  005037  002404                   CLR     CNT1                ;CLEAR BUFFER COUNTER
     062720  005237  002404          44$:     INC     CNT1                ;
     062724  122122                           CMPB    (R1)+,(R2)+         ;BUFFER A EQUAL BUFFER B
     062726  001446                           BEQ     46$                 ;IF YES CONTINUE
     062730  005037  002500                   CLR     GOOD                ;CLEAR GOOD
     062734  005037  002502                   CLR     BAD                 ;CLEAR BAD
     062740  012737  000002  002426           MOV     #2,TXADRH           ;TX ADDRESS IS OVER 64K
     062746  012737  000002  002422           MOV     #2,RXADRH           ;RX ADDRESS IS OVER 64K
     062754  010137  002430                   MOV     R1,TXADRL           ;GET ADDRESS OVER 64K
     062760  005337  002430                   DEC     TXADRL              ;...
     062764  042737  160000  002430           BIC     #160000,TXADRL      ;CLEAR PAR INFORMATION
     062772  013737  002430  002424           MOV     TXADRL,RXADRL       ;GENERATE RX ADDRESS FROM TX ADDRESS
     063000  052737  010000  002424           BIS     #10000,RXADRL       ;RX ADRRES IS TX ADDRESS +2K
     063006  116137  177777  002500           MOVB    -1(R1),GOOD         ;SET UP DATA FOR ERROR MESSAGE
     063014  116237  177777  002502           MOVB    -1(R2),BAD          ;...
     063022  005037  177572                   CLR     SR0                 ;**DISABLE MEMORY MANAGEMENT**
     063026                                   ERRSOFT 2323,E231,ERR231    ;ERROR HANDLER
                                          .MCALL  M$ERRINS
```

```
        063026                          M$ERRINS        2323,E231,ERR231,C$ERSOFT
                                        .MCALL  M$GNINS,M$WORD,M$TSTLAB
        063026                          M$SVC   C$ERSOFT
                                        .MCALL  M$GNINS,M$TSTLAB
        063026                          M$TSTLAB
                                        .MCALL  M$TLABEL,M$INCR
                                        .IIF LT T$TSTMAC, .MEXIT
                                        .RADIX  10
                                        M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                        .RADIX  8
                                        M$INCR  T$TSTSEQ
        063026                          M$GNINS <TRAP   C$ERSOFT>
                                        .IF LT SVCINS
                                        TRAP    C$ERSOFT
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                TRAP    C$ERSOFT
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
        063026  104457                                                                          TRAP    C$ERSOFT
                                                        .NLIST
                                        .ENDC
                000012                  .RADIX  10
                                        .IF NB  2323
                004423                  T$ERRNUM=2323
                                        .IFF
                                        .ERROR  ;MISSING ERROR-NR
                                        .ENDC
        063030                          M$WORD  \T$ERRNUM
                                        .MCALL  M$GNINS
                                        .IRP    N,<2323>
                                        M$GNINS <.WORD  N>
                                        .ENDM
        063030                          M$GNINS <.WORD  2323>
                                        .IF LT SVCINS
                                        .WORD   2323
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                .WORD   2323
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
        063030  004423                                                                          .WORD   2323
                                                        .NLIST
                                        .ENDC
                000010                  .RADIX  8
                                        .IF NB E231
        063032                          M$WORD  E231
```

```
                                          .MCALL  M$GNINS
                                          .IRP    N,<E231>
                                          M$GNINS <.WORD  N>
                                          .ENDM
      063032                              M$GNINS <.WORD  E231>
                                          .IF LT SVCINS
                                          .WORD   E231
                                          .MEXIT
                                          .ENDC
                                          .IF EQ SVCINS
                                          .LIST
                                                  .WORD   E231
                                                          .NLIST
                                          .MEXIT
                                          .ENDC
                                          .IF GT SVCINS
                                          .LIST
      063032  006000                                                                          .WORD   E231
                                                          .NLIST
                                          .ENDC
                                          .IFF
                                          M$WORD  0
                                          .ENDC
                                          .IF NB ERR231
      063034                              M$WORD  ERR231
                                          .MCALL  M$GNINS
                                          .IRP    N,<ERR231>
                                          M$GNINS <.WORD  N>
                                          .END
      063034                              M$GNINS <.WORD  ERR231>
                                          .IF LT SVCINS
                                          .WORD   ERR231
                                          .MEXIT
                                          .ENDC
                                          .IF EQ SVCINS
                                          .LIST
                                                  .WORD   ERR231
                                                          .NLIST
                                          .MEXIT
                                          .ENDC
                                          .IF GT SVCINS
                                          .LIST
      063034  003734                                                                          .WORD   ERR231
                                                          .NLIST
                                          .ENDC
                                          .IFF
                                          M$WORD  0
                                          .ENDC
      063036  012737  000001  177572              MOV     #1,SR0              ;**ENABLE MEMORY MANAGEMENT**
      063044  023737  002404  002240      46$:    CMP     CNT1,BCINP          ;ALL BYTES COMPARED ?
      063052  001322                              BNE     44$                 ;IF NO, GET NEXT ONE
      063054  005037  177572                      CLR     SR0                 ;**DISABLE MEMORY MANAGEMENT**
      063060  042777  000010  117212              BIC     #10,@CSRX           ;SELECT CHANNEL 1
      063066  112777  000077  117202              MOVB    #77,@IDRHX          ;----LOAD UNL INTO DOR 1--------- ----
      063074  004737  011050                      JSR     PC,LOOP             ;WAIT A LITTLE
      063100  112777  000200  117162              MOVB    #200,@ICRHX         ;---LOAD SWRST INTO ACR 1 -- ------ --
      063106  112777  000000  117154              MOVB    #0,@ICRHX           ;- -LOAD NOT SWRST INTO ACR 1---------
```

```
   7363 063114  005737  002234                 TST     QVP                     ;IS QUICK VERIFY PASS SELECTED
   7364 063120  001030                         BNE     EXQV23                  ;IF YES EXIT TEST
   7365 063122  005237  002322                 INC     ITRCNT                  ;INCPEMENT COUNTER
   7366 063126  023737  002322  002320         CMP     ITRCNT,ITRDEF           ;ALL DONE
   7367 063134  001422                         BEQ     EXQV23                  ;BRANCH IF YES
   7368 063136  112777  000217  117124         MOVB    #217,@ICRHX             ;----LOAD SIC INTO ACR 1----------
   7369 063144  004737  011062                 JSR     PC,WAIT                 ;WAIT A LITTLE
   7370 063150  112777  000017  117112         MOVB    #17,@ICRHX              ;----LOAD NOT SIC INTO ACR 1------
   7371 063156  012777  000010  117114         MOV     #10,@CSRX               ;CLEAR CSR1,SELECT CHANNEL 2
   7372 063164  005077  117110                 CLR     @CSRX                   ;CLEAR CSR2,SELECT CHANNEL 1
   7373 063170  017737  117076  002502         MOV     @IDRX,BAD               ;READ DIR1 FOR CLEAR BO BIT IN IIR
   7374 063176  000137  057310                 JMP     ITAC23                  ;IF NO TEST ITERATION
   7375 063202                         EXQV23: EXIT    TST                     ;EXIT TEST
                                       .MCALL  M$SVC,M$EXIT,M$EXSEG,M$EXTJ,M$GETTOP,M$CHECK,M$WORD,XFER
                000041                 T$FLAG=F$END
        063202                         M$CHECK TST,T$TEMP,T$FLAG
                                       .IF IDN <TST>,<TST>
                010054                 T$TEMP=T$$TEST
                000040                 T$FLAG=I$TST
                                       .MEXIT
                                       .ENDC
                                       .IF IDN <SUB>,<TST>
                                       T$TEMP=T$$SUB
                                       T$FLAG=I$SUB
                                       .MEXIT
                                       .ENDC
                                       .IF IDN <SEG>,<TST>
                                       T$TEMP=T$$SEG
                                       T$FLAG=I$SEG
                                       .MEXIT
                                       .ENDC
                                       .IF IDN <INIT>,<TST>
                                       T$TEMP=T$$INIT
                                       T$FLAG=I$INIT
                                       .MEXIT
                                       .ENDC
                                       .IF IDN <CLN>,<TST>
                                       T$TEMP-T$$CLEAN
                                       T$FLAG=I$CLN
                                       .MEXIT
                                       .ENDC
                                       .IF IDN <SRV>,<TST>
                                       T$TEMP=T$$SRV
                                       T$FLAG=I$SRV
                                       .MEXIT
                                       .ENDC
                                       .IF IDN <MSG>,<TST>
                                       T$TEMP=T$$MSG
                                       T$FLAG=F$JMP
                                       .MEXIT
                                       .ENDC
                                       .IF IDN <RPT>,<TST>
                                       T$TEMP=T$$RPT
                                       T$FLAG=F$JMP
                                       .MEXIT
                                       .ENDC
                                       .IF IDN <DU>,<TST>
```

```
                                T$TEMP=T$$DU
                                T$FLAG=F$JMP
                                .MEXIT
                                .ENDC
                                .IF IDN <AU>,<TST>
                                T$TEMP=T$$AU
                                T$FLAG=F$JMP
                                .MEXIT
                                .ENDC
                                .IF EQ T$FLAG F$JMP
                                M$WORD  J$JMP
                                M$EXTJ  \T$TEMP
                                .MEXIT
                                .ENDC
                                .IF EQ  T$FLAG-F$BGN
      063202                    M$SVC   C$EXIT
                                .MCALL  M$GNINS,M$TSTLAB
      063202                    M$TSTLAB
                                .MCALL  M$TLABEL,M$INCR
                                .IIF LT T$TSTMAC, .MEXIT
                                .RADIX  10
                                M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                .RADIX  8
                                M$INCR  T$TSTSEQ
      063202                    M$GNINS <TRAP    C$EXIT>
                                .IF LT SVCINS
                                TRAP    C$EXIT
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        TRAP    C$EXIT
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
      063202  104432                                                            TRAP    C$EXIT
                                                .NLIST
                                .ENDC
                                .IF IDN <SEG>,<TST>
                                M$GETTOP T$SEK,T$SEGLEV,T$TEMP
                                M$EXSEG \T$TEMP
                                .IFF
      063204                    M$EXIT  \T$TEMP
                                .MCALL  M$GNINS
      063204                    M$GNINS <.WORD  L10054-.>
                                .IF LT SVCINS
                                .WORD   L10054-.
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        .WORD   L10054-.
                                                .NLIST
                                .MEXIT
                                .ENDC
```

```
                                        .IF GT SVCINS
                                        .LIST
       063204  000064                                                                  .WORD   L10054-.
                                                    .NLIST
                                        .ENDC
                                        .ENDC
                                        .MEXIT
                                        .ENDC
                                        .IF IDN <HRD>,<TST>
                                        M$GETTOP        T$NS,T$NESTLEV,T$TEMP
                                        .IF EQ  F$HARD-T$TEMP
                                        .IRP    N,<\T$$HARD>
                                        XFER    L'N
                                        .ENDM
                                        .MEXIT
                                        .ENDC
                                        .ENDC
                                        .IF IDN <SFT>,<TST>
                                        M$GETTOP        T$NS,T$NESTLEV,T$TEMP
                                        .IF EQ  F$SOFT-T$TEMP
                                        .IRP    N,<\T$$SOFT>
                                        XFER    L'N
                                        .ENDM
                                        .MEXIT
                                        .ENDC
                                        .ENDC
                                        .ERROR  ;ILL. "EXIT TST" STMT.

                                                .NLIST  BEX
       063206     045     123     062   TSHD23: .ASCIZ  /*S2*ADMA DATA TRANSFER TEST FROM CHANNEL 1 TO 2*N/
                                                .LIST   BEX
                                                .EVEN
       063270                                   ENDTST
                                        .MCALL  M$POP,M$GNTAG,M$SVC,M$ENDERR
                                        .IF EQ  F$BGN-I$TST
               000041                   I$TST=F$END
                                        .IFF
                                        .ERROR  ;MISSING "BGNTST"
                                        .MEXIT
                                        .ENDC
       063270                           M$POP   T$NS,T$NESTLEV,T$TEMP
                                        .MCALL  M$GETS,M$DECR
                                        .IF LT  T$NESTLEV
                                        .ERROR  T$NESTLEV       ; MACRO T$NS UNDERFLOW
                                        .MEXIT
                                        .ENDC
       063270                           M$GETS  T$NS,\T$NESTLEV,T$TEMP
               000001                   T$TEMP=T$NS1
       063270                           M$DECR  T$NESTLEV
               000000                   T$NESTLEV=T$NESTLEV 1
                                        .IF EQ F$TEST T$TEMP
       063270                           M$GNTAG L,T$$TEST
                                        .MCALL  M$GEN
       063270                           M$GEN   L,\T$$TEST,SVCTAG
                                        .IF LE  SVCTAG
                                        .IIF EQ SVCTAG,.LIST
                                        L10054:
```

G12

```
                            .IIF EQ SVCTAG,.NLIST
                            .MEXIT
                            .ENDC
                            .LIST
063270                                                        L10054:
                                    .NLIST
        010000              S$LSYM=T$LSYM
063270                      M$SVC   C$ETST
                            .MCALL  M$GNINS,M$TSTLAB
063270                      M$TSTLAB
                            .MCALL  M$TLABEL,M$INCR
                            .IIF LT T$TSTMAC, .MEXIT
                            .RADIX  10
                            M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                            .RADIX  8
                            M$INCR  T$TSTSEQ
063270                      M$GNINS <TRAP   C$ETST>
                            .IF LT SVCINS
                            TRAP    C$ETST
                            .MEXIT
                            .ENDC
                            .IF EQ SVCINS
                            .LIST
                                    TRAP    C$ETST
                                            .NLIST
                            .MEXIT
                            .ENDC
                            .IF GT SVCINS
                            .LIST
063270  104401                                                    TRAP    C$ETST
                                            .NLIST
                            .ENDC
        000041              I$TST=F$END
                            .IFF
                            M$ENDERR        ENDTST,T$TEMP
                            .ENDC
```

```
                                .SBTTL  TEST 24: DMA DATA TRANSFER TEST FROM CHANNEL 2 TO 1
                                ;***************************************************************************
                                ;               IEX - TEST 24
                                ;PART 1 SENDS DATA VIA THE IEC/IEEE BUS FROM CHAN. 2 TO 1 BY MEANS OF A DMA
                                ;       I.E. CHANNEL 2 WHICH IS SELECTED AS TALKER PERFORMS A DATI CYCLE,
                                ;       WHEREAS CHANNEL 1 WHICH IS SELECTED AS A LISTENER PERFORMS A DATOB
                                ;       CYCLE.  THE MAX. SELECTABLE BYTE COUNT FOR THIS DATA TRANSFER IS
                                ;       IS 2K BYTES AND THE HIGHEST BUS ADDRESS IS BELOW 32K.
                                ;PART 2 CHECKS THE NON EXISTENT MEMORY BIT OF CHANNEL 1.
                                ;       THIS IS DONE BY A DMA FROM A NON EXISTING I/O PAGE ADDRESS SELECTED
                                ;       IN THE BUS ADDRESS REGISTER OF CHANNEL 2 (DATOB CYCLE).
                                ;PART 3 SAME PROCEDURE AS IN PART 1 EXCEPT THE DATA TRANSFER IS EXECUTED
                                ;       OVER 32K (IF MEMORY MANAGEMENT IS AVAILABLE).
                                ;PART 4 SAME PROCEDURE AS IN PART 1 EXCEPT THE DATA TRANSFER IS EXECUTED
                                ;       OVER 64K (IF MEMORY MANAGEMENT IS AVAILABLE).
                                ;***************************************************************************
063272                                  BGNTST
                                .MCALL  M$INCR,M$GNTEST,M$PUSH,M$INCR
                                .IF NE  F$END-I$SUB
                                .ERROR  ;"BGNTST" IN SUB
                                .MEXIT
                                .ENDC
                                .IF NE  F$END-I$SEG
                                .ERROR  ;"BGNTST" IN SEG
                                .MEXIT
                                .ENDC
                                .IF NE  F$END-I$TST
                                .ERROR  ;"BGNTST" IN TST
                                .MEXIT
                                .IFF
        000040                  I$TST=F$BGN
                                .ENDC
                                .IF B
063272                          M$INCR  T$TESTNUM
        000030                  T$TESTNUM=T$TESTNUM+1
                                .IFF
                                T$TESTNUM=
                                .ENDC
        000000                  T$SUBNUM=0
        000012                  .RADIX  10
063272                          M$GNTEST        \T$TESTNUM
                                .MCALL  M$GEN
063272                          M$GEN   T,24:,SVCTST
                                .IF LE  SVCTST
                                .IIF EQ SVCTST,.LIST
                                T24::
                                .IIF EQ SVCTST,.NLIST
                                .MEXIT
                                .ENDC
                                .LIST
063272                                                                  T24::
                                        .NLIST
        000010                  .RADIX  8
063272                          M$PUSH  T$NS,T$NESTLEV,F$TEST
                                .MCALL  M$INCR,M$SETS
063272                          M$INCR  T$NESTLEV
        000001                  T$NESTLEV=T$NESTLEV+1
```

```
       063272                          M$SETS  T$NS,\T$NESTLEV,F$TEST
              000001                   T$NS1=F$TEST
              010055                   T$$TEST=T$TAGNUM
       063272                          M$INCR T$TAGNUM
              010056                   T$TAGNUM=T$TAGNUM+1
              000001                   T$TSTSEQ=1
  7400 063272 005737  002324                   TST     PNTF                    ;IS THE PNT FLAG SET
  7401 063276 001410                           BEQ     7$                      ;IF YES, PRINT THE TEST HEADER
  7402 063300                                  PRINTF  #TSHD24                 ;...
                                       .MCALL  M$PRINT
                                       .IF B   #TSHD24
                                       .ERROR  ;MISSING FORMAT
                                       .MEXIT
                                       .ENDC
                                       .IF B   <>
       063300                          M$PRINT C$PNTF,#TSHD24
                                       .MCALL  M$COUNT,M$PUT,M$GNINS,M$SVC
              000001                   T$ARGCNT=1
       063300                          M$COUNT T$ARGCNT,<>,<>,<>,<>,<>,<>,<>,<>
                                       .IF NB <>
                                       M$COUNT T$ARGCNT,<>,<>,<>,<>,<>,<>,<>,<>
                                       .ENDC
                                       .IF NB <>
                                       T$ARGCNT=T$ARGCNT+1
                                       .ENDC
                                       .IRP    N,<\T$ARGCNT>
                                       M$PUT   #N,#TSHD24,<>,<>,<>,<>,<>,<>,<>,<>
                                       .ENDM
       063300                          M$PUT   #1,#TSHD24,<>,<>,<>,<>,<>,<>,<>,<>
                                       .MCALL  M$PUT1
                                       .IF NB  <#TSHD24>
       063300                          M$PUT   <#TSHD24>,<>,<>,<>,<>,<>,<>,<>,<>
                                       .MCALL  M$PUT1
                                       .IF NB  <>
                                       M$PUT   <>,<>,<>,<>,<>,<>,<>,<>,<>
                                       .ENDC
                                       .IF NB  <#TSHD24>
       063300                          M$PUT1  #TSHD24
                                       .MCALL  M$GNINS
                                       .IF B
       063300                          M$GNINS <MOV    #TSHD24,-(SP)>
                                       .IF LT SVCINS
                                       MOV     #TSHD24,-(SP)
                                       .MEXIT
                                       .ENDC
                                       .IF EQ SVCINS
                                       .LIST
                                               MOV     #TSHD24,-(SP)
                                                       .NLIST
                                       .MEXIT
                                       .ENDC
                                       .IF GT SVCINS
                                       .LIST
       063300 012746  067206                                                           MOV     #TSHD24,-(SP)
                                                       .NLIST
                                       .ENDC
                                       .IFF
```

```
                                        .IF DIF B,<#TSHD24>
                                        .ERROR  ;ILL. ARG. "#TSHD24" ONLY "B" IS ALLOWED.
                                        .MEXIT
                                        .ENDC
                                        M$GNINS <CLR    -(SP)>
                                        M$GNINS <BISB   ,(SP)>
                                        .ENDC
                                        .ENDC
                                        .ENDC
                                        .IF NB  <#1>
063304                                  M$PUT1  #1
                                        .MCALL  M$GNINS
                                        .IF B
063304                                  M$GNINS <MOV    #1,-(SP)>
                                        .IF LT SVCINS
                                        MOV     #1,-(SP)
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                MOV     #1,(SP)
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
063304  012746  000001                                                          MOV     #1,(SP)
                                                        .NLIST
                                        .ENDC
                                        .IFF
                                        .IF DIF B,<#1>
                                        .ERROR  ;ILL. ARG. "#1" ONLY "B" IS ALLOWED.
                                        .MEXIT
                                        .ENDC
                                        M$GNINS <CLR    -(SP)>
                                        M$GNINS <BISB   ,(SP)>
                                        .ENDC
                                        .ENDC
063310                                  M$GNINS <MOV    SP,R0>
                                        .IF LT SVCINS
                                        MOV     SP,R0
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                MOV     SP,R0
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
063310  010600                                                                  MOV     SP,R0
                                                        .NLIST
                                        .ENDC
063312                                  M$SVC   C$PNTF
                                        .MCALL  M$GNINS,M$TSTLAB
063312                                  M$TST_AB
```

```
                                        .MCALL  M$TLABEL,M$INCR
                                        .IIF LT T$TSTMAC, .MEXIT
                                        .RADIX  10
                                        M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                        .RADIX  8
                                        M$INCR  T$TSTSEQ
063312                                  M$GNINS <TRAP   C$PNTF>
                                        .IF LT SVCINS
                                        TRAP    C$PNTF
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                TRAP    C$PNTF
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
063312  104417                                                                  TRAP    C$PNTF
                                                        .NLIST
                                        .ENDC
                                        .IRP    N,<\T$ARGCNT*2+2>
                                        M$GNINS <ADD    #N,SP>
                                        .ENDM
063314                                  M$GNINS <ADD    #4,SP>
                                        .IF LT SVCINS
                                        ADD     #4,SP
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                ADD     #4,SP
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
063314  062706  000004                                                          ADD     #4,SP
                                                        .NLIST
                                        .ENDC
                                        .MEXIT
                                        .ENDC
                                        .IF B   <>
                                        M$PRINT C$PNTF,#TSHD24,<>
                                        .MEXIT
                                        .ENDC
                                        .IF B   <>
                                        M$PRINT C$PNTF,#TSHD24,<>,<>
                                        .MEXIT
                                        .ENDC
                                        .IF B   <>
                                        M$PRINT C$PNTF,#TSHD24,<>,<>,<>
                                        .MEXIT
                                        .ENDC
                                        .IF B   <>
                                        M$PRINT C$PNTF,#TSHD24,<>,<>,<>,<>
```

```
                                        .MEXIT
                                        .ENDC
                                        .IF B   <>
                                        M$PRINT C$PNTF,#TSHD24,<>,<>,<>,<>,<>
                                        .MEXIT
                                        .ENDC
                                        .IF B   <>
                                        M$PRINT C$PNTF,#TSHD24,<>,<>,<>,<>,<>,<>
                                        .MEXIT
                                        .ENDC
                                        .IF B   <>
                                        M$PRINT C$PNTF,#TSHD24,<>,<>,<>,<>,<>,<>,<>
                                        .MEXIT
                                        .ENDC
                                        M$PRINT C$PNTF,#TSHD24,<>,<>,<>,<>,<>,<>,<>,<>
 7403 063320  005037  002322            7$:     CLR     ITRCNT                  ;CLEAR ITERATION COUNTER
 7404 063324  004737  010700            ITAC24: JSR     PC,BGIN2                ;SET UP PARAMETER
 7405 063330                                    MEMORY  R0                      ;GET THE FIRST FREE MEMORY LOCATION
                                        .MCALL  M$SVC,M$RNRO
      063330                            M$SVC   C$MEM
                                        .MCALL  M$GNINS,M$TSTLAB
      063330                            M$TSTLAB
                                        .MCALL  M$TLABEL,M$INCR
                                        .IIF LT T$TSTMAC, .MEXIT
                                        .RADIX  10
                                        M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                        .RADIX  8
                                        M$INCR  T$TSTSEQ
      063330                            M$GNINS <TRAP   C$MEM>
                                        .IF LT SVCINS
                                        TRAP    C$MEM
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                TRAP    C$MEM
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
      063330  104431                                                                    TRAP    C$MEM
                                                        .NLIST
                                        .ENDC
      063332                            M$RNRO  R0,MEMORY
                                        .MCALL  M$GNINS
                                        .IF NB  R0
                                        .IF DIF R0,R0
                                        M$GNINS <MOV    R0,R0>
                                        .ENDC
                                        .IFF
                                        .ERROR  ;MISSING ARG. ON "MEMORY"
                                        .ENDC
 7406 063332  062700  000002                    ADD     #2,R0                   ;USE THE SEC.FREE LOCATION FOR BUFFER
 7407 063336  010037  002356                    MOV     R0,BUFAB                ;LOAD START ADDRESS OF BUFFER A
 7408 063342  012701  010000                    MOV     #10000,R1               ;BUILD 2K BUFFER SIZE
 7409 063346  005003                            CLR     R3                      ;R3 CONTAINS THE LOADED DATA
```

M12

TEST 24: DMA DATA TRANSFER TEST FROM CHANNEL 2 TO 1

```
7410 063350  110320          1$:     MOVB    R3,(R0)+                  ;LOAD DATA INTO BUFFER A
7411 063352  005203                  INC     R3                        ;CREATE NEW DATA
7412 063354  005301                  DEC     R1                        ;2K LOADED
7413 063356  001374                  BNE     1$                        ;IF NO ,LOAD NEXT DATA BYTE
7414 063360  010037  002360          MOV     R0,BUFBB                  ;LOAD START ADDRESS OF BUFFER B
7415 063364                          SETVEC  VECC2,#INTSC2,#PRI07      ;SET VECTOR FOR CHANNEL 2
                             .MCALL  M$PUT,M$SVC,M$GNINS
     063364                  M$PUT   #3,VECC2,#INTSC2,#PRI07
                             .MCALL  M$PUT1
                             .IF NB  <VECC2>
     063364                  M$PUT   <VECC2>,<#INTSC2>,<#PRI07>,<>,<>,<>,<>,<>,<>
                             .MCALL  M$PUT1
                             .IF NB  <#INTSC2>
     063364                  M$PUT   <#INTSC2>,<#PRI07>,<>,<>,<>,<>,<>,<>,<>
                             .MCALL  M$PUT1
                             .IF NB  <#PRI07>
     063364                  M$PUT   <#PRI07>,<>,<>,<>,<>,<>,<>,<>,<>
                             .MCALL  M$PUT1
                             .IF NB  <>
                             M$PUT   <>,<>,<>,<>,<>,<>,<>,<>,<>
                             .ENDC
                             .IF NB  <#PRI07>
     063364                  M$PUT1  #PRI07
                             .MCALL  M$GNINS
                             .IF B
     063364                  M$GNINS <MOV    #PRI07,-(SP)>
                             .IF LT SVCINS
                             MOV     #PRI07,-(SP)
                             .MEXIT
                             .ENDC
                             .IF EQ SVCINS
                             .LIST
                                     MOV     #PRI07, (SP)
                                             .NLIST
                             .MEXIT
                             .ENDC
                             .IF GT SVCINS
                             .LIST
     063364  012746  000340                                                        MOV     #PRI07,-(SP)
                                             .NLIST
                             .ENDC
                             .IFF
                             .IF DIF B,<#PRI07>
                             .ERROR  ;ILL. ARG. "#PRI07" ONLY "B" IS ALLOWED.
                             .MEXIT
                             .ENDC
                             M$GNINS <CLR    -(SP)>
                             M$GNINS <BISB   ,(SP)>
                             .ENDC
                             .ENDC
                             .ENDC
                             .IF NB  <#INTSC2>
     063370                  M$PUT1  #INTSC2
                             .MCALL  M$GNINS
                             .IF B
     063370                  M$GNINS <MOV    #INTSC2,-(SP)>
                             .IF LT SVCINS
```

```
                                MOV     #INTSC2,-(SP)
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        MOV     #INTSC2,-(SP)
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
063370  012746  010142                                                          MOV     #INTSC2,(SP)
                                                .NLIST
                                .ENDC
                                .IFF
                                .IF DIF B,<#INTSC2>
                                .ERROR  ;ILL. ARG. "#INTSC2" ONLY "B" IS ALLOWED.
                                .MEXIT
                                .ENDC
                                M$GNINS <CLR     (SP)>
                                M$GNINS <BISB   ,(SP)>
                                .ENDC
                                .ENDC
                                .ENDC
                                .IF NB  <VECC2>
063374                          M$PUT1  VECC2
                                .MCALL  M$GNINS
                                .IF B
063374                          M$GNINS <MOV    VECC2,-(SP)>
                                .IF LT SVCINS
                                MOV     VECC2,(SP)
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        MOV     VECC2,-(SP)
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
063374  013746  002246                                                          MOV     VECC2,-(SP)
                                                .NLIST
                                .ENDC
                                .IFF
                                .IF DIF B,<VECC2>
                                .ERROR  ;ILL. ARG. "VECC2" ONLY "B" IS ALLOWED.
                                .MEXIT
                                .ENDC
                                M$GNINS <CLR     (SP)>
                                M$GNINS <BISB   ,(SP)>
                                .ENDC
                                .ENDC
                                .ENDC
                                .IF NB  <#3>
063400                          M$PUT1  #3
                                .MCALL  M$GNINS
```

```
                                        .IF B
063400                                  M$GNINS <MOV    #3,-(SP)>
                                        .IF LT SVCINS
                                        MOV     #3,-(SP)
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                MOV     #3,-(SP)
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
063400  012746  000003                                                          MOV     #3,-(SP)
                                                        .NLIST
                                        .ENDC
                                        .IFF
                                        .IF DIF B,<#3>
                                        .ERROR  ;ILL. ARG. '#3' ONLY 'B' IS ALLOWED.
                                        .MEXIT
                                        .ENDC
                                        M$GNINS <CLR    -(SP)>
                                        M$GNINS <BISB   ,(SP)>
                                        .ENDC
                                        .ENDC
063404                                  M$SVC   C$SVEC
                                        .MCALL  M$GNINS,M$TSTLAB
063404                                  M$TSTLAB
                                        .MCALL  M$TLABEL,M$INCR
                                        .IIF LT T$TSTMAC, .MEXIT
                                        .RADIX  10
                                        M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                        .RADIX  8
                                        M$INCR  T$TSTSEQ
063404                                  M$GNINS <TRAP   C$SVEC>
                                        .IF LT SVCINS
                                        TRAP    C$SVEC
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                TRAP    C$SVEC
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
063404  104437                                                                  TRAP    C$SVEC
                                                        .NLIST
                                        .ENDC
063406                                  M$GNINS <ADD    #10,SP>
                                        .IF LT SVCINS
                                        ADD     #10,SP
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
```

C13

```
                                  .LIST
                                          ADD     #10,SP
                                                  .NLIST
                                  .MEXIT
                                  .ENDC
                                  .IF GT SVCINS
                                  .LIST
     063406  062706  000010                                                        ADD     #10,SP
                                                  .NLIST
                                  .ENDC
7416 063412                               SETVEC  VECC1,#INTSC1,#PRI07    ;SET VECTOR FOR CHANNEL 1
                                  .MCALL  M$PUT,M$SVC,M$GNINS
     063412                       M$PUT   #3,VECC1,#INTSC1,#PRI07
                                  .MCALL  M$PUT1
                                  .IF NB  <VECC1>
     063412                       M$PUT   <VECC1>,<#INTSC1>,<#PRI07>,<>,<>,<>,<>,<>,<>
                                  .MCALL  M$PUT1
                                  .IF NB  <#INTSC1>
     063412                       M$PUT   <#INTSC1>,<#PRI07>,<>,<>,<>,<>,<>,<>,<>
                                  .MCALL  M$PUT1
                                  .IF NB  <#PRI07>
     063412                       M$PUT   <#PRI07>,<>,<>,<>,<>,<>,<>,<>,<>
                                  .MCALL  M$PUT1
                                  .IF NB  <>
                                  M$PUT   <>,<>,<>,<>,<>,<>,<>,<>,<>
                                  .ENDC
                                  .IF NB  <#PRI07>
     063412                       M$PUT1  #PRI07
                                  .MCALL  M$GNINS
                                  .IF B
     063412                       M$GNINS <MOV    #PRI07,-(SP)>
                                  .IF LT SVCINS
                                  MOV     #PRI07,-(SP)
                                  .MEXIT
                                  .ENDC
                                  .IF EQ SVCINS
                                  .LIST
                                          MOV     #PRI07,-(SP)
                                                  .NLIST
                                  .MEXIT
                                  .ENDC
                                  .IF GT SVCINS
                                  .LIST
     063412  012746  000340                                                        MOV     #PRI07,-(SP)
                                                  .NLIST
                                  .ENDC
                                  .IFF
                                  .IF DIF B,<#PRI07>
                                  .ERROR  ;ILL. ARG. "#PRI07" ONLY "B" IS ALLOWED.
                                  .MEXIT
                                  .ENDC
                                  M$GNINS <CLR    -(SP)>
                                  M$GNINS <BISB   ,(SP)>
                                  .ENDC
                                  .ENDC
                                  .ENDC
                                  .IF NB  <#INTSC1>
```

```
        063416                          M$PUT1  #INTSC1
                                        .MCALL  M$GNINS
                                        .IF B
        063416                          M$GNINS <MOV    #INTSC1,-(SP)>
                                        .IF LT SVCINS
                                        MOV     #INTSC1,-(SP)
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                MOV     #INTSC1,-(SP)
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
        063416  012746  010132                                                          MOV     #INTSC1,-(SP)
                                                        .NLIST
                                        .ENDC
                                        .IFF
                                        .IF DIF B,<#INTSC1>
                                        .ERROR  ;ILL. ARG. "#INTSC1" ONLY "B" IS ALLOWED.
                                        .MEXIT
                                        .ENDC
                                        M$GNINS <CLR    -(SP)>
                                        M$GNINS <BISB   ,(SP)>
                                        .ENDC
                                        .ENDC
                                        .ENDC
                                        .IF NB  <VECC1>
        063422                          M$PUT1  VECC1
                                        .MCALL  M$GNINS
                                        .IF B
        063422                          M$GNINS <MOV    VECC1,-(SP)>
                                        .IF LT SVCINS
                                        MOV     VECC1,-(SP)
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                MOV     VECC1, (SP)
                                                        .NLIST
                                        .MEXIT
                                        .FNDC
                                        .IF GT SVCINS
                                        .LIST
        063422  013746  002244                                                          MOV     VECC1,-(SP)
                                                        .NLIST
                                        .ENDC
                                        .IFF
                                        .IF DIF B,<VECC1>
                                        .ERROR  ;ILL. ARG. "VECC1" ONLY "B" IS ALLOWED.
                                        .MEXIT
                                        .ENDC
                                        M$GNINS <CLR    -(SP)>
                                        M$GNINS <BISB   ,(SP)>
                                        .ENDC
```

```
                                        .ENDC
                                        .ENDC
                                        .IF NB  <#3>
      063426                            M$PUT1  #3
                                        .MCALL  M$GNINS
                                        .IF B
      063426                            M$GNINS <MOV    #3,-(SP)>
                                        .IF LT SVCINS
                                        MOV     #3,-(SP)
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                MOV     #3,-(SP)
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
      063426  012746  000003                                                    MOV     #3,-(SP)
                                                        .NLIST
                                        .ENDC
                                        .IFF
                                        .IF DIF B,<#3>
                                        .ERROR  ;ILL. ARG. "#3" ONLY "B" IS ALLOWED.
                                        .MEXIT
                                        .ENDC
                                        M$GNINS <CLR    -(SP)>
                                        M$GNINS <BISB   ,(SP)>
                                        .ENDC
                                        .ENDC
      063432                            M$SVC   C$SVEC
                                        .MCALL  M$GNINS,M$TSTLAB
      063432                            M$TSTLAB
                                        .MCALL  M$TLABEL,M$INCR
                                        .IIF LT T$TSTMAC, .MEXIT
                                        .RADIX  10
                                        M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                        .RADIX  8
                                        M$INCR  T$TSTSEQ
      063432                            M$GNINS <TRAP   C$SVEC>
                                        .IF LT SVCINS
                                        TRAP    C$SVEC
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                TRAP    C$SVEC
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
      063432  104437                                                            TRAP    C$SVEC
                                                        .NLIST
                                        .ENDC
      063434                            M$GNINS <ADD    #10,SP>
```

```
                                        .IF LT SVCINS
                                        ADD     #10,SP
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                ADD     #10,SP
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
     063434  062706  000010                                                                     ADD     #10,SP
                                                        .NLIST
                                        .ENDC
7417 063440  112777  000212  116622             MOVB    #212,@ICRHX             ;----LOAD TON INTO ACR 2--------------
7418 063446  013701  002312                     MOV     DPA1,R1                 ;CREATE MLA1
7419 063452  062701  000040                     ADD     #40,R1                  ;...
7420 063456  010137  002410                     MOV     R1,MLA1                 ;STORE MLA1
7421 063462  113777  002410  116606             MOVB    MLA1,@IDRHX             ;----LOAD MLA1 INTO DOR 2-------------
7422 063470  004737  011050                     JSR     PC,LOOP                 ;WAIT A LITTLE
7423 063474                                     BGNSEG
                                        .MCALL  M$PUSH,M$INCR,M$SVC
             000040                     I$SEG=F$BGN
     063474                             M$PUSH  T$NS,T$NESTLEV,F$SEG
                                        .MCALL  M$INCR,M$SETS
     063474                             M$INCR  T$NESTLEV
             000002                     T$NESTLEV=T$NESTLEV+1
     063474                             M$SETS  T$NS,\T$NESTLEV,F$SEG
             000003                     T$NS2=F$SEG
             010000                     T$$SEG=S$LSYM
     063474                             M$PUSH  T$SEK,T$SEGLEV,T$$SEG
                                        .MCALL  M$INCR,M$SETS
     063474                             M$INCR  T$SEGLEV
             000000                     T$SEGLEV=T$SEGLEV+1
     063474                             M$SETS  T$SEK,\T$SEGLEV,T$$SEG
             010000                     T$SEK0=T$$SEG
     063474                             M$INCR  S$LSYM
             010001                     S$LSYM=S$LSYM+1
     063474                             M$SVC   C$BSEG
                                        .MCALL  M$GNINS,M$TSTLAB
     063474                             M$TSTLAB
                                        .MCALL  M$TLABEL,M$INCR
                                        .IIF LT T$TSTMAC, .MEXIT
                                        .RADIX  10
                                        M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                        .RADIX  8
                                        M$INCR  T$TSTSEQ
     063474                             M$GNINS <TRAP   C$BSEG>
                                        .IF LT SVCINS
                                        TRAP    C$BSEG
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                TRAP    C$BSEG
                                                        .NLIST
```

```
                                       .MEXIT
                                       .ENDC
                                       .IF GT SVCINS
                                       .LIST
      063474  104404                                                                         TRAP    C$BSEG
                                                          .NLIST
                                       .ENDC
 7424 063476  005037  002400                   CLR     INTFC2                  ;CLEAR INTERRUPT FLAG
 7425 063502  005037  002376                   CLR     INTFC1                  ;CLEAR INTERRUPT FLAG
 7426 063506  052777  000010  116564           BIS     #10,@CSRX               ;SELECT CHANNEL 2
 7427 063514  013777  002356  116560           MOV     BUFAB,@BARX             ;---LOAD START ADDRESS OF TABLE A ----
 7428 063522  013737  002240  002402           MOV     BCINP,RSAVE             ;STORE BYTE COUNT INPUT
 7429 063530  005437  002402                   NEG     RSAVE                   ;BILD 2'COMPL FOR BCR
 7430 063534  013777  002402  116542           MOV     RSAVE,@BCRX             ; ---LOAD INPUT INTO BCR 2-----------
 7431 063542  012777  000107  116530           MOV     #107,@CSRX              ;----DMA ENB,DMA DTR,INT ENB,SYS CON.
 7432 063550  042777  000010  116522           BIC     #10,@CSRX               ;SELECT CHANNEL 1
 7433 063556  013700  002360                   MOV     BUFBB,R0                ;LOAD START ADDRESS OF BUFFER B
 7434 063562  012701  010000                   MOV     #10000,R1               ;BUILD 2K BUFFER SIZE
 7435 063566  105020                  2$:     CLRB    (R0)+                   ;FILL BUFFER B WITH ZERO
 7436 063570  005301                           DEC     R1                      ;2K LOADED
 7437 063572  001375                           BNE     2$                      ;IF NO, CLEAR NEXT BUFFER LOCATION
 7438 063574  013777  002360  116500           MOV     BUFBB,@BARX             ;----LOAD START ADDRESS OF TABLE B----
 7439 063602  013777  002402  116474           MOV     RSAVE,@BCRX             ;----LOAD INPUT INTO BCR 1---
 7440 063610  012777  000101  116462           MOV     #101,@CSRX              ;--- SET DMA ENB,INT ENB IN CSR1------
 7441 063616                                   SETPRI  #PRI00                  ;SET PRIORITY TO ZERO
                                       .MCALL  M$LDR0,M$SVC
      063616                           M$LDR0  #PRI00,SETPRI
                                       .MCALL  M$GNINS
                                       .IF NB #PRI00
                                       .IF DIF R0,#PRI00
      063616                           M$GNINS <MOV     #PRI00,R0>
                                       .IF LT SVCINS
                                       MOV     #PRI00,R0
                                       .MEXIT
                                       .ENDC
                                       .IF EQ SVCINS
                                       .LIST
                                               MOV      #PRI00,R0
                                                         .NLIST
                                       .MEXIT
                                       .ENDC
                                       .IF GT SVCINS
                                       .LIST
      063616  012700  000000                                                                 MOV     #PRI00,R0
                                                         .NLIST
                                       .ENDC
                                       .ENDC
                                       .IFF
                                       .ERROR  ;MISSING ARG. ON "SETPRI"
                                       .ENDC
      063622                           M$SVC   C$SPRI
                                       .MCALL  M$GNINS,M$TSTLAB
      063622                           M$TSTLAB
                                       .MCALL  M$TLABEL,M$INCR
                                       .IIF LT T$TSTMAC, .MEXIT
                                       .RADIX  10
                                       M$TLABEL        \T$TESTNUN,\T$TSTSEQ
```

```
                                        .RADIX  8
                                        M$INCR  T$TSTSEQ
     063622                             M$GNINS <TRAP    C$SPRI>
                                        .IF LT SVCINS
                                        TRAP    C$SPRI
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                TRAP    C$SPRI
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
     063622  104441                                                                     TRAP    C$SPRI
                                                        .NLIST
                                        .ENDC
7442 063624  052777  000010  116446             BIS     #10,@CSRX               ;SELECT CHANNEL 2
7443 063632  012737  000002  002374             MOV     #2,CHAN                 ;LOAD CHANNEL NUMBER
7444 063640  112777  000013  116422             MOVB    #13,@ICRHX              ;----LOAD GTS INTO ACR 2-    ----- -
7445 063646  012701  077777                     MOV     #77777,R1               ;LOAD LOOP COUNTER
7446 063652  005737  002400             13$:    TST     INTFC2                  ;IS INTERRUPT IN CHANNEL 2 OCCER
7447 063656  001015                             BNE     10$                     ;BRANCH IF YES
7448 063660  005301                             DEC     R1                      ;DECREMENT COUNTER
7449 063662  001373                             BNE     13$                     ;IF MORE,TEST AGAIN
7450 063664  017737  116410  002502             MOV     @CSRX,BAD               ;GET CSR2 CONTENTS
7451 063672  012737  100016  002500             MOV     #100016,GOOD            ;BC OF,MUX,DMA DTR,SYS CONT SHOULD SET
7452 063700                                     ERRSOFT 2401,E232,ERR201        ;ERROR HANDLER
                                        .MCALL  M$ERRINS
     063700                             M$ERRINS        2401,E232,ERR201,C$ERSOFT
                                        .MCALL  M$GNINS,M$WORD,M$TSTLAB
     063700                             M$SVC   C$ERSOFT
                                        .MCALL  M$GNINS,M$TSTLAB
     063700                             M$TSTLAB
                                        .MCALL  M$TLABEL,M$INCR
                                        .IIF LT T$TSTMAC, .MEXIT
                                        .RADIX  10
                                        M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                        .RADIX  8
                                        M$INCR  T$TSTSEQ
     063700                             M$GNINS <TRAP    C$ERSOFT>
                                        .IF LT SVCINS
                                        TRAP    C$ERSOFT
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                TRAP    C$ERSOFT
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
     063700  104457                                                                     TRAP    C$ERSOFT
                                                        .NLIST
                                        .ENDC
```

I13


```
                 000012          .RADIX  10
                                 .IF NB  2401
                 004541          T$ERRNUM=2401
                                 .IFF
                                 .ERROR  ;MISSING ERROR-NR
                                 .ENDC
         063702                  M$WORD  \T$ERRNUM
                                 .MCALL  M$GNINS
                                 .IRP    N,<2401>
                                 M$GNINS <.WORD  N>
                                 .ENDM
         063702                  M$GNINS <.WORD  2401>
                                 .IF LT SVCINS
                                 .WORD   2401
                                 .MEXIT
                                 .ENDC
                                 .IF EQ SVCINS
                                 .LIST
                                         .WORD   2401
                                                 .NLIST
                                 .MEXIT
                                 .ENDC
                                 .IF GT SVCINS
                                 .LIST
         063702  004541                                                          .WORD   2401
                                                 .NLIST
                                 .ENDC
                 000010          .RADIX  8
                                 .IF NB E232
         063704                  M$WORD  E232
                                 .MCALL  M$GNINS
                                 .IRP    N,<E232>
                                 M$GNINS <.WORD  N>
                                 .ENDM
         063704                  M$GNINS <.WORD  E232>
                                 .IF LT SVCINS
                                 .WORD   E232
                                 .MEXIT
                                 .ENDC
                                 .IF EQ SVCINS
                                 .LIST
                                         .WORD   E232
                                                 .NLIST
                                 .MEXIT
                                 .ENDC
                                 .IF GT SVCINS
                                 .LIST
         063704  006062                                                          .WORD   E232
                                                 .NLIST
                                 .ENDC
                                 .IFF
                                 M$WORD  0
                                 .ENDC
                                 .IF NB ERR201
         063706                  M$WORD  ERR201
                                 .MCALL  M$GNINS
                                 .IRP    N,<ERR201>
```

```
                                        M$GNINS <.WORD  N>
                                        .ENDM
     063706                             M$GNINS <.WORD  ERR201>
                                        .IF LT SVCINS
                                        .WORD   ERR201
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                .WORD   ERR201
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
     063706  003470                                                                  .WORD   ERR201
                                                        .NLIST
                                        .ENDC
                                        .IFF
                                        M$WORD  0
                                        .ENDC
7453 063710                                     CKLOOP                  ;BRANCH TO BGNSEG IF ERRLOOP IS SET
                                        .MCALL  M$SVC
     063710                             M$SVC   C$CLP1
                                        .MCALL  M$GNINS,M$TSTLAB
     063710                             M$TSTLAB
                                        .MCALL  M$TLABEL,M$INCR
                                        .IIF LT T$TSTMAC, .MEXIT
                                        .RADIX  10
                                        M$TLABEL        \T$T STNUN,\T$TSTSEQ
                                        .RADIX  8
                                        M$INCR  T$TSTSEQ
     063710                             M$GNINS <TRAP   C$CLP1>
                                        .IF LT SVCINS
                                        TRAP    C$CLP1
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                TRAP    C$CLP1
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
     063710  104406                                                                  TRAP    C$CLP1
                                                        .NLIST
                                        .ENDC
7454 063712  042777  000010  116360     10$:    BIC     #10,@CSRX       ;SELECT CHANNEL 2
7455 063720  012737  000001  002374             MOV     #1,CHAN         ;LOAD CHANNEL NUMBER
7456 063726  005737  002376                     TST     INTFC1          ;IS AN INTERRUPT IN CHANNEL 1 OCCURED
7457 063732  001013                             BNE     11$             ;BRANCH IF YES
7458 063734  017737  116340  002502             MOV     @CSRX,BAD       ;GET CSR1 CONTENTS
7459 063742  012737  100000  002500             MOV     #100000,GOOD    ;BC OF SHUOLD BE SET
7460 063750                                     ERRSOFT 2402,E232,ERR201 ;ERROR HANDLER
                                        .MCALL  M$ERRINS
     063750                             M$ERRINS        2402,E232,ERR201,C$ERSOFT
```

```
                                        .MCALL  M$GNINS,M$WORD,M$TSTLAB
      063750                            M$SVC   C$ERSOFT
                                        .MCALL  M$GNINS,M$TSTLAB
      063750                            M$TSTLAB
                                        .MCALL  M$TLABEL,M$INCR
                                        .IIF LT T$TSTMAC, .MEXIT
                                        .RADIX  10
                                        M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                        .RADIX  8
                                        M$INCR  T$TSTSEQ
      063750                            M$GNINS <TRAP   C$ERSOFT>
                                        .IF LT SVCINS
                                        TRAP    C$ERSOFT
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                TRAP    C$ERSOFT
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
      063750  104457                                                                  TRAP    C$ERSOFT
                                                        .NLIST
                                        .ENDC
              000012                    .RADIX  10
                                        .IF NB  2402
              004542                    T$ERRNUM=2402
                                        .IFF
                                        .ERROR  ;MISSING ERROR NR
                                        .ENDC
      063752                            M$WORD  \T$ERRNUM
                                        .MCALL  M$GNINS
                                        .IRP    N,<2402>
                                        M$GNINS <.WORD  N>
                                        .ENDM
      063752                            M$GNINS <.WORD  2402>
                                        .IF LT SVCINS
                                        .WORD   2402
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                .WORD   2402
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
      063752  004542                                                                  .WORD   2402
                                                        .NLIST
                                        .ENDC
              000010                    .RADIX  8
                                        .IF NB E232
      063754                            M$WORD  E232
                                        .MCALL  M$GNINS
```

```
                                .IRP    N,<E232>
                                M$GNINS <.WORD  N>
                                .ENDM
     063754                     M$GNINS <.WORD  E232>
                                .IF LT SVCINS
                                .WORD   E232
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        .WORD   E232
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
     063754  006062                                                             .WORD   E232
                                                .NLIST
                                .ENDC
                                .IFF
                                M$WORD  0
                                .ENDC
                                .IF NB ERR201
     063756                     M$WORD  ERR201
                                .MCALL  M$GNINS
                                .IRP    N,<ERR201>
                                M$GNINS <.WORD  N>
                                .ENDM
     063756                     M$GNINS <.WORD  ERR201>
                                .IF LT SVCINS
                                .WORD   ERR201
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        .WORD   ERR201
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
     063756  003470                                                             .WORD   ERR201
                                                .NLIST
                                .ENDC
                                .IFF
                                M$WORD  0
                                .ENDC
7461 063760                             CKLOOP                  ;BRANCH TO BGNSEG IF ERRLOOP IS SET
                                .MCALL  M$SVC
     063760                     M$SVC   C$CLP1
                                .MCALL  M$GNINS,M$TSTLAB
     063760                     M$TSTLAB
                                .MCALL  M$TLABEL,M$INCR
                                .IIF LT T$TSTMAC, .MEXIT
                                .RADIX  10
                                M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                .RADIX  8
```

M13

TEST 24: DMA DATA TRANSFER TEST FROM CHANNEL 2 TO 1

```
                                                M$INCR  T$TSTSEQ
     063760                                     M$GNINS <TRAP   C$CLP1>
                                                .IF LT SVCINS
                                                TRAP    C$CLP1
                                                .MEXIT
                                                .ENDC
                                                .IF EQ SVCINS
                                                .LIST
                                                        TRAP    C$CLP1
                                                                .NLIST
                                                .MEXIT
                                                .ENDC
                                                .IF GT SVCINS
                                                .LIST
     063760  104406                                                                                   TRAP    C$CLP1
                                                                .NLIST
                                                .ENDC
7462 063762  052777  000010  116310             11$:    BIS     #10,@CSRX               ;SELECT CHANNEL 2
7463 063770  012737  000002  002374                     MOV     #2,CHAN                 ;LOAD CHANNEL NUMBER
7464 063776                                             SETPRI  #PRI07                  ;NO FURTHER INTERRUPT ALLOWED
                                                .MCALL  M$LDR0,M$SVC
     063776                                     M$LDR0  #PRI07,SETPRI
                                                .MCALL  M$GNINS
                                                .IF NB #PRI07
                                                .IF DIF R0,#PRI07
     063776                                     M$GNINS <MOV    #PRI07,R0>
                                                .IF LT SVCINS
                                                MOV     #PRI07,R0
                                                .MEXIT
                                                .ENDC
                                                .IF EQ SVCINS
                                                .LIST
                                                        MOV     #PRI07,R0
                                                                .NLIST
                                                .MEXIT
                                                .ENDC
                                                .IF GT SVCINS
                                                .LIST
     063776  012700  000340                                                                           MOV     #PRI07,R0
                                                                .NLIST
                                                .ENDC
                                                .ENDC
                                                .IFF
                                                .ERROR  ;MISSING ARG. ON "SETPRI"
                                                .ENDC
     064002                                     M$SVC   C$SPRI
                                                .MCALL  M$GNINS,M$TSTLAB
     064002                                     M$TSTLAB
                                                .MCALL  M$TLABEL,M$INCR
                                                .IIF LT T$TSTMAC, .MEXIT
                                                .RADIX  10
                                                M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                                .RADIX  8
                                                M$INCR  T$TSTSEQ
     064002                                     M$GNINS <TRAP   C$SPRI>
                                                .IF LT SVCINS
                                                TRAP    C$SPRI
```

```
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                TRAP    C$SPRI
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
      064002  104441                                                                  TRAP    C$SPRI
                                                        .NLIST
                                        .ENDC
 7465 064004  112777  000014  116256            MOVB    #14,@ICRHX            ;----LOAD TCA INTO ACR 2-------------
 7466 064012  013737  002356  002500            MOV     BUFAB,GOOD            ;SET UP COMPARE VALUE
 7467 064020  063737  002240  002500            ADD     BCINP,GOOD            ;...
 7468 064026  017737  116250  002502            MOV     @BARX,BAD             ;GET BAR2 CONTENTS
 7469 064034  023737  002502  002500            CMP     BAD,GOOD              ;HAS BAR2 THE CORRECT ADDRESS
 7470 064042  001405                            BEQ     23$                   ;BRANCH IF YES
 7471 064044                                    ERRSOFT 2403,E234,ERR501      ;ERROR HANDLER
                                        .MCALL  M$ERRINS
      064044                            M$ERRINS        2403,E234,ERR501,C$ERSOFT
                                        .MCALL  M$GNINS,M$WORD,M$TSTLAB
      064044                            M$SVC   C$ERSOFT
                                        .MCALL  M$GNINS,M$TSTLAB
      064044                            M$TSTLAB
                                        .MCALL  M$TLABEL,M$INCR
                                        .IIF LT T$TSTMAC, .MEXIT
                                        .RADIX  10
                                        M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                        .RADIX  8
                                        M$INCR  T$TSTSEQ
      064044                            M$GNINS <TRAP   C$ERSOFT>
                                        .IF LT SVCINS
                                        TRAP    C$ERSOFT
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                TRAP    C$ERSOFT
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
      064044  104457                                                                  TRAP    C$ERSOFT
                                                        .NLIST
                                        .ENDC
              000012                    .RADIX  10
                                        .IF NB  2403
              004543                    T$ERRNUM=2403
                                        .IFF
                                        .ERROR  ;MISSING ERROR NR
                                        .ENDC
      064046                            M$WORD  \T$ERRNUM
                                        .MCALL  M$GNINS
                                        .IRP    N,<2403>
```

```
                                   M$GNINS <.WORD  N>
                                   .ENDM
      064046                       M$GNINS <.WORD  2403>
                                   .IF LT SVCINS
                                   .WORD   2403
                                   .MEXIT
                                   .ENDC
                                   .IF EQ SVCINS
                                   .LIST
                                           .WORD   2403
                                                   .NLIST
                                   .MEXIT
                                   .ENDC
                                   .IF GT SVCINS
                                   .LIST
      064046  004543                                                                   .WORD   2403
                                                   .NLIST
                                   .ENDC
              000010               .RADIX  8
                                   .IF NB E234
      064050                       M$WORD  E234
                                   .MCALL  M$GNINS
                                   .IRP    N,<E234>
                                   M$GNINS <.WORD  N>
                                   .ENDM
      064050                       M$GNINS <.WORD  E234>
                                   .IF LT SVCINS
                                   .WORD   E234
                                   .MEXIT
                                   .ENDC
                                   .IF EQ SVCINS
                                   .LIST
                                           .WORD   E234
                                                   .NLIST
                                   .MEXIT
                                   .ENDC
                                   .IF GT SVCINS
                                   .LIST
      064050  006170                                                                   .WORD   E234
                                                   .NLIST
                                   .ENDC
                                   .IFF
                                   M,WORD  0
                                   .ENDC
                                   .IF NB ERR501
      064052                       M$WORD  ERR501
                                   .MCALL  M$GNINS
                                   .IRP    N,<ERR501>
                                   M$GNINS <.WORD  N>
                                   .ENDM
      064052                       M$GNINS <.WORD  ERR501>
                                   .IF LT SVCINS
                                   .WORD   ERR501
                                   .MEXIT
                                   .ENDC
                                   .IF EQ SVCINS
                                   .LIST
```

```
                                                .WORD   ERR501
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
     064052  003672                                                                                  .WORD   ERR501
                                                        .NLIST
                                        .ENDC
                                        .IFF
                                        M$WORD  0
                                        .ENDC
7472 064054                                     CKLOOP                          ;BRANCH TO BGNSEG IF ERRLOOP IS SET
                                        .MCALL  M$SVC
     064054                             M$SVC   C$CLP1
                                        .MCALL  M$GNINS,M$TSTLAB
     064054                             M$TSTLAB
                                        .MCALL  M$TLABEL,M$INCR
                                        .IIF LT T$TSTMAC, .MEXIT
                                        .RADIX  10
                                        M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                        .RADIX  8
                                        M$INCR  T$TSTSEQ
     064054                             M$GNINS <TRAP   C$CLP1>
                                        .IF LT SVCINS
                                        TRAP    C$CLP1
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                TRAP    C$CLP1
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
     064054  104406                                                                                  TRAP    C$CLP1
                                                        .NLIST
                                        .ENDC
7473 064056  017737  116222  002502  23$:       MOV     @BCRX,BAD               ;GET BCR2 CONTENTS
7474 064064  005037  002500                     CLR     GOOD                    ;
7475 064070  023737  002502  002500             CMP     BAD,GOOD                ;IS BCR2 ZERO
7476 064076  001405                             BEQ     30$                     ;BRANCH IF YES
7477 064100                                     ERRSOFT 2404,E235,ERR501        ;ERROR HANDLER
                                        .MCALL  M$ERRINS
     064100                             M$ERRINS        2404,E235,ERR501,C$ERSOFT
                                        .MCALL  M$GNINS,M$WORD,M$TSTLAB
     064100                             M$SVC   C$ERSOFT
                                        .MCALL  M$GNINS,M$TSTLAB
     064100                             M$TSTLAB
                                        .MCALL  M$TLABEL,M$INCR
                                        .IIF LT T$TSTMAC, .MEXIT
                                        .RADIX  10
                                        M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                        .RADIX  8
                                        M$INCR  T$TSTSEQ
     064100                             M$GNINS <TRAP   C$ERSOFT>
```

```
                              .IF LT SVCINS
                              TRAP    C$ERSOFT
                              .MEXIT
                              .ENDC
                              .IF EQ SVCINS
                              .LIST
                                      TRAP    C$ERSOFT
                                              .NLIST
                              .MEXIT
                              .ENDC
                              .IF GT SVCINS
                              .LIST
     064100  104457                                                                   TRAP    C$ERSOFT
                                              .NLIST
                              .ENDC
             000012           .RADIX  10
                              .IF NB  2404
             004544           T$ERRNUM=2404
                              .IFF
                              .ERROR  ;MISSING ERROR NR
                              .ENDC
     064102                   M$WORD  \T$ERRNUM
                              .MCALL  M$GNINS
                              .IRP    N,<2404>
                              M$GNINS <.WORD  N>
                              .ENDM
     064102                   M$GNINS <.WORD  2404>
                              .IF LT SVCINS
                              .WORD   2404
                              .MEXIT
                              .ENDC
                              .IF EQ SVCINS
                              .LIST
                                      .WORD   2404
                                              .NLIST
                              .MEXIT
                              .ENDC
                              .IF GT SVCINS
                              .LIST
     064102  004544                                                                   .WORD   2404
                                              .NLIST
                              .ENDC
             000010           .RADIX  8
                              .IF NE E235
     064104                   M$WORD  E235
                              .MCALL  M$GNINS
                              .IRP    N,<E235>
                              M$GNINS <.WORD  N>
                              .ENDM
     064104                   M$GNINS <.WORD  E235>
                              .IF LT SVCINS
                              .WORD   E235
                              .MEXIT
                              .ENDC
                              .IF EQ SVCINS
                              .LIST
                                      .WORD   E235
```

```
                                            .NLIST
                              .MEXIT
                              .ENDC
                              .IF GT SVCINS
                              .LIST
     064104  006221                                                              .WORD   E235
                                            .NLIST
                              .ENDC
                              .IFF
                              M$WORD  0
                              .ENDC
                              .IF NB ERR501
     064106                   M$WORD  ERR501
                              .MCALL  M$GNINS
                              .IRP    N,<ERR501>
                              M$GNINS <.WORD  N>
                              .ENDM
     064106                   M$GNINS <.WORD  ERR501>
                              .IF LT SVCINS
                              .WORD   ERR501
                              .MEXIT
                              .ENDC
                              .IF EQ SVCINS
                              .LIST
                                      .WORD   ERR501
                                            .NLIST
                              .MEXIT
                              .ENDC
                              .IF GT SVCINS
                              .LIST
     064106  003672                                                              .WORD   ERR501
                                            .NLIST
                              .ENDC
                              .IFF
                              M$WORD  0
                              .ENDC
 7478 064110                          CKLOOP                    ;BRANCH TO BGNSEG IF ERRLOOP IS SET
                              .MCALL  M$SVC
     064110                   M$SVC   C$CLP1
                              .MCALL  M$GNINS,M$TSTLAB
     064110                   M$TSTLAB
                              .MCALL  M$TLABEL,M$INCR
                              .IIF LT T$TSTMAC, .MEXIT
                              .RADIX  10
                              M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                              .RADIX  8
                              M$INCR  T$TSTSEQ
     064110                   M$GNINS <TRAP   C$CLP1>
                              .IF LT SVCINS
                              TRAP    C$CLP1
                              .MEXIT
                              .ENDC
                              .IF EQ SVCINS
                              .LIST
                                      TRAP    C$CLP1
                                            .NLIST
                              .MEXIT
```

```
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
      064110  104406                                                                            TRAP     C$CLP1
                                                            .NLIST
                                        .ENDC
 7479 064112  042777  000010  116160    30$:     BIC      #10,@CSRX             ;SELECT CHANNEL 1
 7480 064120  012737  000001  002374             MOV      #1,CHAN               ;LOAD CHANNEL NUMBER
 7481 064126  013737  002360  002500             MOV      BUFBB,GOOD            ;SET UP COMPARE VALUE
 7482 064134  063737  002240  002500             ADD      BCINP,GOOD            ;...
 7483 064142  017737  116134  002502             MOV      @BARX,BAD             ;GET BAR1 CONTENTS
 7484 064150  023737  002500  002502             CMP      GOOD,BAD              ;HAS BAR1 THE CORRECT ADDRESS
 7485 064156  001405                             BEQ      40$                   ;BRANCH IF YES
 7486 064160                                    ERRSOFT  2405,E234,ERR501      ;ERROR HANDLER
                                        .MCALL   M$ERRINS
      064160                            M$ERRINS          2405,E234,ERR501,C$ERSOFT
                                        .MCALL   M$GNINS,M$WORD,M$TSTLAB
      064160                            M$SVC    C$ERSOFT
                                        .MCALL   M$GNINS,M$TSTLAB
      064160                            M$TSTLAB
                                        .MCALL   M$TLABEL,M$INCR
                                        .IIF LT T$TSTMAC, .MEXIT
                                        .RADIX  10
                                        M$TLABEL          \T$TESTNUN,\T$TSTSEQ
                                        .RADIX  8
                                        M$INCR   T$TSTSEQ
      064160                            M$GNINS <TRAP     C$ERSOFT>
                                        .IF LT SVCINS
                                        TRAP     C$ERSOFT
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                 TRAP     C$ERSOFT
                                                          .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
      064160  104457                                                                            TRAP     C$ERSOFT
                                                          .NLIST
                                        .ENDC
              000012                    .RADIX  10
                                        .IF NB  2405
              004545                    T$ERRNUM=2405
                                        .IFF
                                        .ERROR   ;MISSING ERROR NR
                                        .ENDC
      064162                            M$WORD   \T$ERRNUM
                                        .MCALL   M$GNINS
                                        .IRP     N,<2405>
                                        M$GNINS <.WORD   N>
                                        .ENDM
      064162                            M$GNINS <.WORD   2405>
                                        .IF LT SVCINS
                                        .WORD    2405
                                        .MEXIT
```

```
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        .WORD   2405
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
        064162  004545                                                          .WORD   2405
                                                .NLIST
                                .ENDC
                000010          .RADIX  8
                                .IF NB E234
        064164                  M$WORD  E234
                                .MCALL  M$GNINS
                                .IRP    N,<E234>
                                M$GNINS <.WORD  N>
                                .ENDM
        064164                  M$GNINS <.WORD  E234>
                                .IF LT SVCINS
                                .WORD   E234
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        .WORD   E234
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
        064164  006170                                                          .WORD   E234
                                                .NLIST
                                .ENDC
                                .IFF
                                M$WORD  0
                                .ENDC
                                .IF NB ERR501
        064166                  M$WORD  ERR501
                                .MCALL  M$GNINS
                                .IRP    N,<ERR501>
                                M$GNINS <.WORD  N>
                                .ENDM
        064166                  M$GNINS <.WORD  ERR501>
                                .IF LT SVCINS
                                .WORD   ERR501
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        .WORD   ERR501
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
```

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```
      064166  003672                                                         .WORD   ERR501
                                                  .NLIST
                                   .ENDC
                                   .IFF
                                   M$WORD  0
                                   .ENDC
 7487 064170                                CKLOOP                      ;BRANCH TO BGNSEG IF ERRLOOP IS SET
                                   .MCALL  M$SVC
      064170                       M$SVC   C$CLP1
                                   .MCALL  M$GNINS,M$TSTLAB
      064170                       M$TSTLAB
                                   .MCALL  M$TLABEL,M$INCR
                                   .IIF LT T$TSTMAC, .MEXIT
                                   .RADIX  10
                                   M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                   .RADIX  8
                                   M$INCR  T$TSTSEQ
      064170                       M$GNINS <TRAP    C$CLP1>
                                   .IF LT SVCINS
                                   TRAP    C$CLP1
                                   .MEXIT
                                   .ENDC
                                   .IF EQ SVCINS
                                   .LIST
                                            TRAP    C$CLP1
                                                    .NLIST
                                   .MEXIT
                                   .ENDC
                                   .IF GT SVCINS
                                   .LIST
      064170  104406                                                         TRAP    C$CLP1
                                                    .NLIST
                                   .ENDC
 7488 064172  017737  116106  002502  40$:     MOV     @BCRX,BAD             ;GET BCR1 CONTENTS
 7489 064200  005737  002502                   TST     BAD                   ;BCR1 CONTENTS SHOULD BE ZERO
 7490 064204  001407                           BEQ     43$                   ;BRANCH IF YES
 7491 064206  005037  002500                   CLR     GOOD                  ;SET UP DATA FOR ERROR MESSAGE
 7492 064212                                   ERRSOFT 2406,E235,ERR501      ;ERROR HANDLER
                                   .MCALL  M$ERRINS
      064212                       M$ERRINS        2406,E235,ERR501,C$ERSOFT
                                   .MCALL  M$GNINS,M$WORD,M$TSTLAB
      064212                       M$SVC   C$ERSOFT
                                   .MCALL  M$GNINS,M$TSTLAB
      064212                       M$TSTLAB
                                   .MCALL  M$TLABEL,M$INCR
                                   .IIF LT T$TSTMAC, .MEXIT
                                   .RADIX  10
                                   M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                   .RADIX  8
                                   M$INCR  T$TSTSEQ
      064212                       M$GNINS <TRAP    C$ERSOFT>
                                   .IF LT SVCINS
                                   TRAP    C$ERSOFT
                                   .MEXIT
                                   .ENDC
                                   .IF EQ SVCINS
                                   .LIST
```

```
                                         TRAP    C$ERSOFT
                                                 .NLIST
                                 .MEXIT
                                 .ENDC
                                 .IF GT SVCINS
                                 .LIST
        064212  104457                                                          TRAP    C$ERSOFT
                                                 .NLIST
                                 .ENDC
                000012           .RADIX  10
                                 .IF NB  2406
                004546           T$ERRNUM=2406
                                 .IFF
                                 .ERROR  ;MISSING ERROR NR
                                 .ENDC
        064214                   M$WORD  \T$ERRNUM
                                 .MCALL  M$GNINS
                                 .IRP    N,<2406>
                                 M$GNINS <.WORD  N>
                                 .ENDM
        064214                   M$GNINS <.WORD  2406>
                                 .IF LT SVCINS
                                 .WORD   2406
                                 .MEXIT
                                 .ENDC
                                 .IF EQ SVCINS
                                 .LIST
                                         .WORD   2406
                                                 .NLIST
                                 .MEXIT
                                 .ENDC
                                 .IF GT SVCINS
                                 .LIST
        064214  004546                                                          .WORD   2406
                                                 .NLIST
                                 .ENDC
                000010           .RADIX  8
                                 .IF NB E235
        064216                   M$WORD  E235
                                 .MCALL  M$GNINS
                                 .IRP    N,<E235>
                                 M$GNINS <.WORD  N>
                                 .ENDM
        064216                   M$GNINS <.WORD  E235>
                                 .IF LT SVCINS
                                 .WORD   E235
                                 .MEXIT
                                 .ENDC
                                 .IF EQ SVCINS
                                 .LIST
                                         .WORD   E235
                                                 .NLIST
                                 .MEXIT
                                 .ENDC
                                 .IF GT SVCINS
                                 .LIST
        064216  006221                                                          .WORD   E235
```

```
                                                .NLIST
                                .ENDC
                                .IFF
                                M$WORD  0
                                .ENDC
                                .IF NB ERR501
      064220                    M$WORD  ERR501
                                .MCALL  M$GNINS
                                .IRP    N,<ERR501>
                                M$GNINS <.WORD  N>
                                .ENDM
      064220                    M$GNINS <.WORD  ERR501>
                                .IF LT SVCINS
                                .WORD   ERR501
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        .WORD   ERR501
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
      064220  003672                                                    .WORD   ERR501
                                                .NLIST
                                .ENDC
                                .IFF
                                M$WORD  0
                                .ENDC
 7493 064222                            CKLOOP                  ;BRANCH TO BGNSEG IF ERRLOOP IS SET
                                .MCALL  M$SVC
      064222                    M$SVC   C$CLP1
                                .MCALL  M$GNINS,M$TSTLAB
      064222                    M$TSTLAB
                                .MCALL  M$TLABEL,M$INCR
                                .IIF LT T$TSTMAC, .MEXIT
                                .RADIX  10
                                M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                .RADIX  8
                                M$INCR  T$TSTSEQ
      064222                    M$GNINS <TRAP   C$CLP1>
                                .IF LT SVCINS
                                TRAP    C$CLP1
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        TRAP    C$CLP1
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
      064222  104406                                                    TRAP    C$CLP1
                                                .NLIST
                                .ENDC
```

TEST 24: DMA DATA TRANSFER TEST FROM CHANNEL 2 TO 1

```
064224  013701  002356          43$:    MOV     BUFAB,R1                ;PROVIDE FIRST BYTE OF BUFFER A
064230  013702  002360                  MOV     BUFBB,R2                ;PROVIDE FIRST BYTE OF BUFFER B
064234  005037  002404                  CLR     CNT1                    ;CLEAR BUFFER COUNTER
064240  005237  002404          44$:    INC     CNT1                    ;
064244  122122                          CMPB    (R1)+,(R2)+             ;BUFFER A EQUAL BUFFER B
064246  001433                          BEQ     46$                     ;IF YES CONTINUE
064250  005037  002500                  CLR     GOOD                    ;CLEAR GOOD
064252  005037  002502                  CLR     BAD                     ;CLEAR BAD
064260  005037  002426                  CLR     TXADRH                  ;SET UP DATA FOR ERROR MESSAGE
064264  010137  002430                  MOV     R1,TXADRL               ;...
064270  005337  002430                  DEC     TXADRL                  ;...
064274  005037  002422                  CLR     RXADRH                  ;...
064300  010237  002424                  MOV     R2,RXADRL               ;...
064304  005337  002424                  DEC     RXADRL                  ;...
064310  116137  177777  002500          MOVB    -1(R1),GOOD             ;SET UP DATA FOR ERROR MESSAGE
064316  116237  177777  002502          MOVB    -1(R2),BAD              ;...
064324                                  ERRSOFT 2407,E250,ERR231        ;ERROR HANDLER
                                .MCALL  M$ERRINS
064324                          M$ERRINS        2407,E250,ERR231,C$ERSOFT
                                .MCALL  M$GNINS,M$WORD,M$TSTLAB
064324                          M$SVC   C$ERSOFT
                                .MCALL  M$GNINS,M$TSTLAB
064324                          M$TSTLAB
                                .MCALL  M$TLABEL,M$INCR
                                .IIF LT T$TSTMAC, .MEXIT
                                .RADIX  10
                                M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                .RADIX  8
                                M$INCR  T$TSTSEQ
064324                          M$GNINS <TRAP   C$ERSOFT>
                                .IF LT SVCINS
                                TRAP    C$ERSOFT
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        TRAP    C$ERSOFT
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
064324  104457                                                                  TRAP    C$ERSOFT
                                                .NLIST
                                .ENDC
        000012                  .RADIX  10
                                .IF NB  2407
        004547                  T$ERRNUM=2407
                                .IFF
                                .ERROR  ;MISSING ERROR NR
                                .ENDC
064326                          M$WORD  \T$ERRNUM
                                .MCALL  M$GNINS
                                .IRP    N,<2407>
                                M$GNINS <.WORD  N>
                                .ENDM
064326                          M$GNINS <.WORD  2407>
```

```
                                        .IF LT SVCINS
                                        .WORD   2407
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                .WORD   2407
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
        064326  004547                                                                  .WORD   2407
                                                        .NLIST
                                        .ENDC
                000010                  .RADIX  8
                                        .IF NB E250
        064330                          M$WORD  E250
                                        .MCALL  M$GNINS
                                        .IRP    N,<E250>
                                        M$GNINS <.WORD  N>
                                        .ENDM
        064330                          M$GNINS <.WORD  E250>
                                        .IF LT SVCINS
                                        .WORD   E250
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                .WORD   E250
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
        064330  005716                                                                  .WORD   E250
                                                        .NLIST
                                        .ENDC
                                        .IFF
                                        M$WORD  0
                                        .ENDC
                                        .IF NB ERR231
        064332                          M$WORD  ERR231
                                        .MCALL  M$GNINS
                                        .IRP    N,<ERR231>
                                        M$GNINS <.WORD  N>
                                        .ENDM
        064332                          M$GNINS <.WORD  ERR231>
                                        .IF LT SVCINS
                                        .WORD   ERR231
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                .WORD   ERR231
                                                        .NLIST
                                        .MEXIT
```

```
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
      064332  003734                                                                                          .WORD   ERR231
                                                    .NLIST
                                        .ENDC
                                        .IFF
                                        M$WORD  0
                                        .ENDC
 7511 064334                                  CKLOOP                            ;BRANCH TO BGNSEG IF ERRLOOP IS SET
                                        .MCALL  M$SVC
      064334                            M$SVC   C$CLP1
                                        .MCALL  M$GNINS,M$TSTLAB
      064334                            M$TSTLAB
                                        .MCALL  M$TLABEL,M$INCR
                                        .IIF LT T$TSTMAC, .MEXIT
                                        .RADIX  10
                                        M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                        .RADIX  8
                                        M$INCR  T$TSTSEQ
      064334                            M$GNINS <TRAP   C$CLP1>
                                        .IF LT SVCINS
                                        TRAP    C$CLP1
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                TRAP    C$CLP1
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
      064334  104406                                                                                          TRAP    C$CLP1
                                                    .NLIST
                                        .ENDC
 7512 064336  023737  002404  002240    46$:    CMP     CNT1,BCINP              ;ALL BYTES COMPARED ?
 7513 064344  001335                            BNE     44$                     ;IF NO, GET NEXT ONE
 7514 064346                                    ENDSEG
                                        .MCALL  M$POP,M$GNLS,M$SVC,M$ENDERR
      064346                            M$POP   T$NS,T$NESTLEV,T$TEMP
                                        .MCALL  M$GETS,M$DECR
                                        .IF LT  T$NESTLEV
                                        .ERROR  T$NESTLEV       ; MACRO T$NS UNDERFLOW
                                        .MEXIT
                                        .ENDC
      064346                            M$GETS  T$NS,\T$NFSTLEV,T$TEMP
              000003                    T$TEMP=T$NS2
      064346                            M$DECR  T$NESTLEV
              000001                    T$NESTLEV=T$NESTLEV-1
                                        .IF EQ F$SEG-T$TEMP
      064346                            M$POP   T$SEK,T$SEGLEV,T$$SEG
                                        .MCALL  M$GETS,M$DECR
                                        .IF LT  T$SEGLEV
                                        .ERROR  T$SEGLEV        ; MACRO T$SEK UNDERFLOW
                                        .MEXIT
                                        .ENDC
```

TEST 24: DMA DATA TRANSFER TEST FROM CHANNEL 2 TO 1

```
 064346                               M$GETS  T$SEK,\T$SEGLEV,T$$SEG
         010000                       T$$SEG=T$SEKO
 064346                               M$DECR  T$SEGLEV
         177777                       T$SEGLEV=T$SEGLEV-1
 064346                               M$GNLS  T$$SEG
                                      .MCALL  M$GEN
                                      .IF NB T$$SEG
 064346                               M$GEN   \T$$SEG,$,SVCTAG
                                      .IF LE  SVCTAG
                                      .IIF EQ SVCTAG,.LIST
                                      10000$:
                                      .IIF EQ SVCTAG,.NLIST
                                      .MEXIT
                                      .ENDC
                                      .LIST
 064346                                                                           10000$:
                                              .NLIST
                                      .IFF
                                      M$GEN   \S$LSYM,$,SVCTAG
                                      .ENDC
 064346                               M$SVC   C$ESEG
                                      .MCALL  M$GNINS,M$TSTLAB
 064346                               M$TSTLAB
                                      .MCALL  M$TLABEL,M$INCR
                                      .IIF LT T$TSTMAC, .MEXIT
                                      .RADIX  10
                                      M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                      .RADIX  8
                                      M$INCR  T$TSTSEQ
 064346                               M$GNINS <TRAP   C$ESEG>
                                      .IF LT SVCINS
                                      TRAP    C$ESEG
                                      .MEXIT
                                      .ENDC
                                      .IF EQ SVCINS
                                      .LIST
                                              TRAP    C$ESEG
                                                      .NLIST
                                      .MEXIT
                                      .ENDC
                                      .IF GT SVCINS
                                      .LIST
 064346  104405                                                                         TRAP    C$ESEG
                                                      .NLIST
                                      .ENDC
                                      .IF EQ T$SEGLEV+1
         000041                       I$SEG=F$END
                                      .ENDC
                                      .IFF
                                      M$ENDERR        ENDSEG,T$TEMP
                                      .ENDC
 064350  005077  115724                       CLR     @CSRX                   ;CLEAR CSR1.
 064354  017737  115712  002502               MOV     @IDRX,BAD               ;READ DIR1 FOR CLEAR BO BIT IN IIR
 064362  052777  000010  115710               BIS     #10,@CSRX               ;SELECT CHANNEL 2
 064370  005077  115704                       CLR     @CSRX                   ;CLEAR CSR2,SELECT CHANNEL 1
                                      ;+++ ---- - -  --------------- -------- --- ------  ---- -- - -----------
                                      ;PART 2 CHECK THE NON EXISTENT MEMORY BIT OF CHAN. 1 (THE I/O PAGE IS USED
```

```
                                 ;       FOR NON EXISTENT MEMORY)
                                 ;....
 064374  012701  002624          PSEU24: MOV     #TABE,R1                        ;CLEAR TWO WORD IN TABEL E
 064400  005021                          CLR     (R1)+                           ;...
 064402  005011                          CLR     (R1)                            ;...
 064404                                  SETVEC  #4,#NXM,#PRI07                  ;SET UP VECTOR FOR TRAP TO 4
                                 .MCALL  M$PUT,M$SVC,M$GNINS
 064404                          M$PUT   #3,#4,#NXM,#PRI07
                                 .MCALL  M$PUT1
                                 .IF NB  <#4>
 064404                          M$PUT   <#4>,<#NXM>,<#PRI07>,<>,<>,<>,<>,<>,<>
                                 .MCALL  M$PUT1
                                 .IF NB  <#NXM>
 064404                          M$PUT   <#NXM>,<#PRI07>,<>,<>,<>,<>,<>,<>,<>
                                 .MCALL  M$PUT1
                                 .IF NB  <#PRI07>
 064404                          M$PUT   <#PRI07>,<>,<>,<>,<>,<>,<>,<>,<>
                                 .MCALL  M$PUT1
                                 .IF NB  <>
                                 M$PUT   <>,<>,<>,<>,<>,<>,<>,<>,<>
                                 .ENDC
                                 .IF NB  <#PRI07>
 064404                          M$PUT1  #PRI07
                                 .MCALL  M$GNINS
                                 .IF B
 064404                          M$GNINS <MOV     #PRI07,-(SP)>
                                 .IF LT SVCINS
                                 MOV     #PRI07,-(SP)
                                 .MEXIT
                                 .ENDC
                                 .IF EQ SVCINS
                                 .LIST
                                         MOV     #PRI07,-(SP)
                                                 .NLIST
                                 .MEXIT
                                 .ENDC
                                 .IF GT SVCINS
                                 .LIST
 064404  012746  000340                                                                  MOV     #PRI07,-(SP)
                                                 .NLIST
                                 .ENDC
                                 .IFF
                                 .IF DIF B,<#PRI07>
                                 .ERROR  ;ILL. ARG. "#PRI07" ONLY "B" IS ALLOWED.
                                 .MEXIT
                                 .ENDC
                                 M$GNINS <CLR     -(SP)>
                                 M$GNINS <BISB    ,(SP)>
                                 .ENDC
                                 .ENDC
                                 .ENDC
                                 .IF NB  <#NXM>
 064410                          M$PUT1  #NXM
                                 .MCALL  M$GNINS
                                 .IF B
 064410                          M$GNINS <MOV     #NXM,-(SP)>
                                 .IF LT SVCINS
```

```
                                        MOV     #NXM,-(SP)
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                MOV     #NXM,-(SP)
                                                        .NLIST
                                         MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
      064410  012746  010122                                                                    MOV     #NXM,-(SP)
                                                        .NLIST
                                        .ENDC
                                        .IFF
                                        .IF DIF B,<#NXM>
                                        .ERROR  ;ILL. ARG. "#NXM" ONLY "B" IS ALLOWED.
                                        .MEXIT
                                        .ENDC
                                        M$GNINS <CLR    -(SP)>
                                        M$GNINS <BISB   ,(SP)>
                                        .ENDC
                                        .ENDC
                                        .ENDC
                                        .IF NB  <#4>
      064414                            M$PUT1  #4
                                        .MCALL  M$GNINS
                                        .IF B
      064414                            M$GNINS <MOV    #4,-(SP)>
                                        .IF LT SVCINS
                                        MOV     #4,-(SP)
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                MOV     #4,-(SP)
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
      064414  012746  000004                                                                    MOV     #4,-(SP)
                                                        .NLIST
                                        .ENDC
                                        .IFF
                                        .IF DIF B,<#4>
                                        .ERROR  ;ILL. ARG. "#4" ONLY "B" IS ALLOWED.
                                        .MEXIT
                                        .ENDC
                                        M$GNINS <CLR    -(SP)>
                                        M$GNINS <BISB   ,(SP)>
                                        .ENDC
                                        .ENDC
                                        .ENDC
                                        .IF NB  <#3>
      064420                            M$PUT1  #3
                                        .MCALL  M$GNINS
```

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```
                                        .IF B
064420                                  M$GNINS <MOV    #3,-(SP)>
                                        .IF LT SVCINS
                                        MOV     #3,-(SP)
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                MOV     #3, (SP)
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
064420  012746  000003                                                                  MOV     #3, (SP)
                                                        .NLIST
                                        .ENDC
                                        .IFF
                                        .IF DIF B,<#3>
                                        .ERROR  ;ILL. ARG. "#3" ONLY "B" IS ALLOWED.
                                        .MEXIT
                                        .ENDC
                                        M$GNINS <CLR    -(SP)>
                                        M$GNINS <BISB   ,(SP)>
                                        .ENDC
                                        .ENDC
064424                                  M$SVC   C$SVEC
                                        .MCALL  M$GNINS,M$TSTLAB
064424                                  M$TSTLAB
                                        .MCALL  M$TLABEL,M$INCR
                                        .IIF LT T$TSTMAC, .MEXIT
                                        .RADIX  10
                                        M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                        .RADIX  8
                                        M$INCR  T$TSTSEQ
064424                                  M$GNINS <TRAP   C$SVEC>
                                        .IF LT SVCINS
                                        TRAP    C$SVEC
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                TRAP    C$SVEC
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
064424  104437                                                                          TRAP    C$SVEC
                                                        .NLIST
                                        .ENDC
064426                                  M$GNINS <ADD    #10,SP>
                                        .IF LT SVCINS
                                        ADD     #10,SP
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
```

```
                                .LIST
                                        ADD     #10,SP
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
     064426  062706  000010                                                     ADD     #10,SP
                                                .NLIST
                                .ENDC
7527 064432  005037  002326             CLR     NXMFLG                  ;CLEAR FLAG
7528 064436  012701  160000             MOV     #160000,R1              ;LOAD FIRST ADDRESS OF I/O PAGE
7529 064442  005711             1$:     TST     (R1)                    ;FIND A NON EXISTEND LOCATION
7530 064444  005737  002326             TST     NXMFLG                  ;...
7531 064450  062701  000002             ADD     #2,R1                   ;NEXT I/O PAGE ADD.(NO AUTO INCR.11/44!)
7532 064454  001772                     BEQ     1$                      ;
7533 064456                             CLRVEC  #4                      ;SET VECTOR 4 TO NORMAL STATE
                                .MCALL  M$LDRO,M$SVC
     064456                     M$LDRO  #4,CLRVEC
                                .MCALL  M$GNINS
                                .IF NB #4
                                .IF DIF R0,#4
     064456                     M$GNINS <MOV    #4,R0>
                                .IF LT SVCINS
                                MOV     #4,R0
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        MOV     #4,R0
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
     064456  012700  000004                                                     MOV     #4,R0
                                                .NLIST
                                .ENDC
                                .ENDC
                                .IFF
                                .ERROR  ;MISSING ARG. ON "CLRVEC"
                                .ENDC
     064462                     M$SVC   C$CVEC
                                .MCALL  M$GNINS,M$TSTLAB
     064462                     M$TSTLAB
                                .MCALL  M$TLABEL,M$INCR
                                .IIF LT T$TSTMAC, .MEXIT
                                .RADIX  10
                                M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                .RADIX  8
                                M$INCR  T$TSTSEQ
     064462                     M$GNINS <TRAP   C$CVEC>
                                .IF LT SVCINS
                                TRAP    C$CVEC
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
```

```
                                        .LIST
                                                TRAP    C$CVEC
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
     064462  104436                                                                                  TRAP    C$CVEC
                                                        .NLIST
                                        .ENDC
7534 064464  162701  000002                     SUB     #2,R1                   ;...
7535 064470                                     BGNSEG
                                        .MCALL  M$PUSH,M$INCR,M$SVC
             000040                     I$SEG=F$BGN
     064470                             M$PUSH  T$NS,T$NESTLEV,F$SEG
                                        .MCALL  M$INCR,M$SETS
     064470                             M$INCR  T$NESTLEV
             000002                     T$NESTLEV=T$NESTLEV+1
     064470                             M$SETS  T$NS,\T$NESTLEV,F$SEG
             000003                     T$NS2=F$SEG
             010001                     T$$SEG=S$LSYM
     064470                             M$PUSH  T$SEK,T$SEGLEV,T$$SEG
                                        .MCALL  M$INCR,M$SETS
     064470                             M$INCR  T$SEGLEV
             000000                     T$SEGLEV=T$SEGLEV+1
     064470                             M$SETS  T$SEK,\T$SEGLEV,T$$SEG
             010001                     T$SEK0=T$$SEG
     064470                             M$INCR  S$LSYM
             010002                     S$LSYM=S$LSYM+1
     064470                             M$SVC   C$BSEG
                                        .MCALL  M$GNINS,M$TSTLAB
     064470                             M$TSTLAB
                                        .MCALL  M$TLABEL,M$INCR
                                        .IIF LT T$TSTMAC, .MEXIT
                                        .RADIX  10
                                        M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                        .RADIX  8
                                        M$INCR  T$TSTSEQ
     064470                             M$GNINS <TRAP   C$BSEG>
                                        .IF LT SVCINS
                                        TRAP    C$BSEG
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                TRAP    C$BSEG
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
     064470  104404                                                                                  TRAP    C$BSEG
                                                        .NLIST
                                        .ENDC
7536 064472  005037  002376                     CLR     INTFC1                  ;CLEAR INTERRUPT FLAG
7537 064476  005037  002400                     CLR     INTFC2                  ;CLEAR INTERRUPT FLAG
7538 064502  042777  000010  115570             BIC     #10,@CSRX               ;SELECT CHANNEL 1
```

```
7539 064510 010177 115566               MOV     R1,@BARX               ;LOAD BAR1 WITH A NON EXISTS I/O ADRR.
7540 064514 012737 000002 002402        MOV     #2,RSAVE               ;LOAD NUMBER OF BYTE COUNTS
7541 064522 005437 002402               NEG     RSAVE                  ;BILD 2'COMPLEMENT
7542 064526 013777 002402 115550        MOV     RSAVE,@BCRX            ;LOAD BCR1
7543 064534 052777 000010 115536        BIS     #10,@CSRX              ;SELECT CHANNEL 2
7544 064542 012777 000117 115530        MOV     #117,@CSRX             ;DMA ENB,DMA DIR,INT ENB,SYS
7545 064550 012777 002624 115524        MOV     #TABE,@BARX            ;LOAD BAR2 WITH STAR ADDRESS OF TABE
7546 064556 013777 002402 115520        MOV     RSAVE,@BCRX            ;LOAD BCR2
7547 064564 042777 000010 115506        BIC     #10,@CSRX              ;SELECT CHANNEL 1
7548 064572 012777 017161 115500        MOV     #17161,@CSRX           ;---SET DMA ENB,BA 16-21,INT ENB CSR1-
7549 064600 052777 000010 115472        BIS     #10,@CSRX              ;SELECT CHANNEL 2
7550 064606 012737 000002 002374        MOV     #2,CHAN                ;LOAD CHANNEL NUMBER
7551 064614                             SETPRI  #PRI00                 ;SET PRIORITY TO ZERO
                                .MCALL  M$LDR0,M$SVC
     064614                     M$LDR0  #PRI00,SETPRI
                                .MCALL  M$GNINS
                                .IF NB #PRI00
                                .IF DIF R0,#PRI00
     064614                     M$GNINS <MOV     #PRI00,R0>
                                .IF LT SVCINS
                                MOV     #PRI00,R0
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        MOV     #PRI00,R0
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
     064614 012700 000000                                                              MOV     #PRI00,R0
                                                .NLIST
                                .ENDC
                                .ENDC
                                .IFF
                                .ERROR  ;MISSING ARG. ON "SETPRI"
                                .ENDC
     064620                     M$SVC   C$SPRI
                                .MCALL  M$GNINS,M$TSTLAB
     064620                     M$TSTLAB
                                .MCALL  M$TLABEL,M$INCR
                                .IIF LT T$TSTMAC, .MEXIT
                                .RADIX  10
                                M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                .RADIX  8
                                M$INCR  T$TSTSEQ
     064620                     M$GNINS <TRAP    C$SPRI>
                                .IF LT SVCINS
                                TRAP    C$SPRI
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        TRAP    C$SPRI
                                                .NLIST
                                .MEXIT
```

```
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
     064620  104441                                                                   TRAP    C$SPRI
                                                      .NLIST
                                        .ENDC
7552 064622  112777  000013  115440           MOVB    #13,@ICRHX              ;---LOAD GTS INTO ACR 2 --------------
7553 064630  012702  077777                   MOV     #77777,R2               ;LOAD LOOP COUNTER
7554 064634  005737  002400           3$:     TST     INTFC2                  ;IS INTERRUPT IN CHANNEL 2 OCCER
7555 064640  001015                           BNE     6$                      ;BRANCH IF YES
7556 064642  005302                           DEC     R2                      ;DECREMENT COUNTER
7557 064644  001373                           BNE     3$                      ;IF NO,TEST AGIN
7558 064646  017737  115426  002502           MOV     @CSRX,BAD               ;GET CSR2 CONTENTS
7559 064654  012737  100016  002500           MOV     #100016,GOOD            ;BC OF,MUX,DMA DIR,SYS CONT SHOULD SET
7560 064662                                   ERRSOFT 2408,E232,ERR201        ;ERROR HANDLER
                                        .MCALL  M$ERRINS
     064662                             M$ERRINS      2408,E232,ERR201,C$ERSOFT
                                        .MCALL  M$GNINS,M$WORD,M$TSTLAB
     064662                             M$SVC   C$ERSOFT
                                        .MCALL  M$GNINS,M$TSTLAB
     064662                             M$TSTLAB
                                        .MCALL  M$TLABEL,M$INCR
                                        .IIF LT T$TSTMAC, .MEXIT
                                        .RADIX  10
                                        M$TLABEL      \T$TESTNUN,\T$TSTSEQ
                                        .RADIX  8
                                        M$INCR  T$TSTSEQ
     064662                             M$GNINS <TRAP   C$ERSOFT>
                                        .IF LT SVCINS
                                        TRAP    C$ERSOFT
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                TRAP    C$ERSOFT
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
     064662  104457                                                                   TRAP    C$ERSOFT
                                                        .NLIST
                                        .ENDC
             000012                     .RADIX  10
                                        .IF NB  2408
             004550                     T$ERRNUM=2408
                                        .IFF
                                        .ERROR  ;MISSING ERROR NR
                                        .ENDC
     064664                             M$WORD  \T$ERRNUM
                                        .MCALL  M$GNINS
                                        .IRP    N,<2408>
                                        M$GNINS <.WORD  N>
                                        .ENDM
     064664                             M$GNINS <.WORD  2408>
                                        .IF LT SVCINS
                                        .WORD   2408
```

```
                                          .MEXIT
                                          .ENDC
                                          .IF EQ SVCINS
                                          .LIST
                                                  .WORD   2408
                                                          .NLIST
                                          .MEXIT
                                          .ENDC
                                          .IF GT SVCINS
                                          .LIST
      064664  004550                                                                                 .WORD   2408
                                                          .NLIST
                                          .ENDC
              000010                      .RADIX  8
                                          .IF NB E232
      064666                              M$WORD  E232
                                          .MCALL  M$GNINS
                                          .IRP    N,<E232>
                                          M$GNINS <.WORD  N>
                                          .ENDM
      064666                              M$GNINS <.WORD  E232>
                                          .IF LT SVCINS
                                          .WORD   E232
                                          .MEXIT
                                          .ENDC
                                          .IF EQ SVCINS
                                          .LIST
                                                  .WORD   E232
                                                          .NLIST
                                          .MEXIT
                                          .ENDC
                                          .IF GT SVCINS
                                          .LIST
      064666  006062                                                                                 .WORD   E232
                                                          .NLIST
                                          .ENDC
                                          .IFF
                                          M$WORD  0
                                          .ENDC
                                          .IF NB ERR201
      064670                              M$WORD  ERR201
                                          .MCALL  M$GNINS
                                          .IRP    N,<ERR201>
                                          M$GNINS <.WORD  N>
                                          .ENDM
      064670                              M$GNINS <.WORD  ERR201>
                                          .IF LT SVCINS
                                          .WORD   ERR201
                                          .MEXIT
                                          .ENDC
                                          .IF EQ SVCINS
                                          .LIST
                                                  .WORD   ERR201
                                                          .NLIST
                                          .MEXIT
                                          .ENDC
                                          .IF GT SVCINS
```

```
                                  .LIST
     064670  003470                                                              .WORD   ERR201
                                            .NLIST
                                  .ENDC
                                  .IFF
                                  M$WORD  0
                                  .ENDC
7561 064672                               CKLOOP                        ;BRANCH TO BGNSEG IF ERRLOOP IS SET
                                  .MCALL  M$SVC
     064672                       M$SVC   C$CLP1
                                  .MCALL  M$GNINS,M$TSTLAB
     064672                       M$TSTLAB
                                  .MCALL  M$TLABEL,M$INCR
                                  .IIF LT T$TSTMAC, .MEXIT
                                  .RADIX  10
                                  M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                  .RADIX  8
                                  M$INCR  T$TSTSEQ
     064672                       M$GNINS <TRAP   C$CLP1>
                                  .IF LT SVCINS
                                  TRAP    C$CLP1
                                  .MEXIT
                                  .ENDC
                                  .IF EQ SVCINS
                                  .LIST
                                          TRAP    C$CLP1
                                                  .NLIST
                                  .MEXIT
                                  .ENDC
                                  .IF GT SVCINS
                                  .LIST
     064672  104406                                                              TRAP    C$CLP1
                                            .NLIST
                                  .ENDC
7562 064674                       6$:     SETPRI  #PRI07                ;NO FURTHER INTERRUPT ALLOWED
                                  .MCALL  M$LDR0,M$SVC
     064674                       M$LDR0  #PRI07,SETPRI
                                  .MCALL  M$GNINS
                                  .IF NB #PRI07
                                  .IF DIF R0,#PRI07
     064674                       M$GNINS <MOV    #PRI07,R0>
                                  .IF LT SVCINS
                                  MOV     #PRI07,R0
                                  .MEXIT
                                  .ENDC
                                  .IF EQ SVCINS
                                  .LIST
                                          MOV     #PRI07,R0
                                                  .NLIST
                                  .MEXIT
                                  .ENDC
                                  .IF GT SVCINS
                                  .LIST
     064674  012700  000340                                                      MOV     #PRI07,R0
                                            .NLIST
                                  .ENDC
                                  .ENDC
```

```
                                                .IFF
                                                .ERROR  ;MISSING ARG. ON "SETPRI"
                                                .ENDC
      064700                                    M$SVC   C$SPRI
                                                .MCALL  M$GNINS,M$TSTLAB
      064700                                    M$TSTLAB
                                                .MCALL  M$TLABEL,M$INCR
                                                .IIF LT T$TSTMAC, .MEXIT
                                                .RADIX  10
                                                M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                                .RADIX  8
                                                M$INCR  T$TSTSEQ
      064700                                    M$GNINS <TRAP   C$SPRI>
                                                .IF LT SVCINS
                                                TRAP    C$SPRI
                                                .MEXIT
                                                .ENDC
                                                .IF EQ SVCINS
                                                .LIST
                                                        TRAP    C$SPRI
                                                                .NLIST
                                                .MEXIT
                                                .ENDC
                                                .IF GT SVCINS
                                                .LIST
      064700  104441                                                                    TRAP    C$SPRI
                                                                .NLIST
                                                .ENDC
 7563 064702  112777  000014  115360                    MOVB    #14,@ICRHX              ;-  -LOAD TCA INTO ACR 2-- -----------
 7564 064710  042777  000010  115362                    BIC     #10,@CSRX               ;SELECT CHANNEL 1
 7565 064716  012737  000001  002374                    MOV     #1,CHAN                 ;LOAD CHANNEL NUMBER
 7566 064724  017737  115350  002502                    MOV     @CSRX,BAD               ;GET CSR1 CONTENTS
 7567 064732  042737  017000  002502                    BIC     #17000,BAD              ;IGNORE BIT 9-12
 7568 064740  022737  040060  002502                    CMP     #40060,BAD              ;NXM,BA 16+17 SHOULD BE SET
 7569 064746  001410                                    BEQ     12$                     ;BRANCH IF YES
 7570 064750  012737  040060  002500                    MOV     #40060,GOOD             ;SET UP DATA FOR ERROR MESSAGE
 7571 064756                                            ERRSOFT 2409,E401,ERR501        ;ERROR HANDLER
                                                .MCALL  M$ERRINS
      064756                                    M$ERRINS        2409,E401,ERR501,C$ERSOFT
                                                .MCALL  M$GNINS,M$WORD,M$TSTLAB
      064756                                    M$SVC   C$ERSOFT
                                                .MCALL  M$GNINS,M$TSTLAB
      064756                                    M$TSTLAB
                                                .MCALL  M$TLABEL,M$INCR
                                                .IIF LT T$TSTMAC, .MEXIT
                                                .RADIX  10
                                                M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                                .RADIX  8
                                                M$INCR  T$TSTSEQ
      064756                                    M$GNINS <TRAP   C$ERSOFT>
                                                .IF LT SVCINS
                                                TRAP    C$ERSOFT
                                                .MEXIT
                                                .ENDC
                                                .IF EQ SVCINS
                                                .LIST
                                                        TRAP    C$ERSOFT
```

```
                                        .NLIST
                              .MEXIT
                              .ENDC
                              .IF GT SVCINS
                              .LIST
     064756  104457                                                               TRAP    C$ERSOFT
                                        .NLIST
                              .ENDC
             000012           .RADIX  10
                              .IF NB  2409
             004551           T$ERRNUM=2409
                              .IFF
                              .ERROR  ;MISSING ERROR NR
                              .ENDC
     064760                   M$WORD  \T$ERRNUM
                              .MCALL  M$GNINS
                              .IRP    N,<2409>
                              M$GNINS <.WORD  N>
                              .ENDM
     064760                   M$GNINS <.WORD  2409>
                              .IF LT SVCINS
                              .WORD   2409
                              .MEXIT
                              .ENDC
                              .IF EQ SVCINS
                              .LIST
                                   .WORD   2409
                                        .NLIST
                              .MEXIT
                              .ENDC
                              .IF GT SVCINS
                              .LIST
     064760  004551                                                               .WORD   2409
                                        .NLIST
                              .ENDC
             000010           .RADIX  8
                              .IF NB E401
     064762                   M$WORD  E401
                              .MCALL  M$GNINS
                              .IRP    N,<E401>
                              '$GNINS <.WORD  N>
                              .ENDM
     064762                   M$GNINS <.WORD  E401>
                              .IF LT SVCINS
                              .WORD   E401
                              .MEXIT
                              .ENDC
                              .IF EQ SVCINS
                              .LIST
                                   .WORD   E401
                                        .NLIST
                              .MEXIT
                              .ENDC
                              .IF GT SVCINS
                              .LIST
     064762  005255                                                               .WORD   E401
                                        .NLIST
```

M15


```
                                        .ENDC
                                        .IFF
                                        M$WORD  0
                                        .ENDC
                                        .IF NB ERR501
      064764                            M$WORD  ERR501
                                        .MCALL  M$GNINS
                                        .IRP    N,<ERR501>
                                        M$GNINS <.WORD  N>
                                        .ENDM
      064764                            M$GNINS <.WORD  ERR501>
                                        .IF LT SVCINS
                                        .WORD   ERR501
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                .WORD   ERR501
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
      064764  003672                                                                            .WORD   ERR501
                                                        .NLIST
                                        .ENDC
                                        .IFF
                                        M$WORD  0
                                        .ENDC
 7572 064766                                    CKLOOP                  ;BRANCH TO BGNSEG IF ERRLOOP IS SET
                                        .MCALL  M$SVC
      064766                            M$SVC   C$CLP1
                                        .MCALL  M$GNINS,M$TSTLAB
      064766                            M$TSTLAB
                                        .MCALL  M$TLABEL,M$INCR
                                        .IIF LT T$TSTMAC, .MEXIT
                                        .RADIX  10
                                        M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                        .RADIX  8
                                        M$INCR  T$TSTSEQ
      064766                            M$GNINS <TRAP   C$CLP1>
                                        .IF LT SVCINS
                                        TRAP    C$CLP1
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                TRAP    C$CLP1
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
      C54766  104406                                                                            TRAP    C$CLP1
                                                        .NLIST
                                        .ENDC
 7573 064770                            12$:    ENDSEG
```

```
                                .MCALL  M$POP,M$GNLS,M$SVC,M$ENDERR
064770                          M$POP   T$NS,T$NESTLEV,T$TEMP
                                .MCALL  M$GETS,M$DECR
                                .IF LT  T$NESTLEV
                                .ERROR  T$NESTLEV       ; MACRO T$NS UNDERFLOW
                                .MEXIT
                                .ENDC
064770                          M$GETS  T$NS,\T$NESTLEV,T$TEMP
        000003                  T$TEMP=T$NS2
064770                          M$DECR  T$NESTLEV
        000001                  T$NESTLEV=T$NESTLEV 1
                                .IF EQ F$SEG-T$TEMP
064770                          M$POP   T$SEK,T$SEGLEV,T$$SEG
                                .MCALL  M$GETS,M$DECR
                                .IF LT  T$SEGLEV
                                .ERROR  T$SEGLEV        ; MACRO T$SEK UNDERFLOW
                                .MEXIT
                                .ENDC
064770                          M$GETS  T$SEK,\T$SEGLEV,T$$SEG
        010001                  T$$SEG=T$SEK0
064770                          M$DECR  T$SEGLEV
        177777                  T$SEGLEV=T$SEGLEV-1
064770                          M$GNLS  T$$SEG
                                .MCALL  M$GEN
                                .IF NB T$$SEG
064770                          M$GEN   \T$$SEG,$,SVCTAG
                                .IF LE  SVCTAG
                                .IIF EQ SVCTAG,.LIST
                                10001$:
                                .IIF EQ SVCTAG,.NLIST
                                .MEXIT
                                .ENDC
                                .LIST
064770                                                                  10001$:
                                        .NLIST
                                .IFF
                                M$GEN   \S$LSYM,$,SVCTAG
                                .ENDC
064770                          M$SVC   C$ESEG
                                .MCALL  M$GNINS,M$TSTLAB
064770                          M$TSTLAB
                                .MCALL  M$TLABEL,M$INCR
                                .IIF LT T$TSTMAC, .MEXIT
                                .RADIX  10
                                M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                .RADIX  8
                                M$INCR  T$TSTSEQ
064770                          M$GNINS <TRAP   C$ESEG>
                                .IF LT SVCINS
                                TRAP    C$ESEG
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        TRAP    C$ESEG
                                                .NLIST
                                .MEXIT
```

```
                                    .ENDC
                                    .IF GT SVCINS
                                    .LIST
       064770  104405                                                                          TRAP    C$ESEG
                                                   .NLIST
                                    .ENDC
                                    .IF EQ T$SEGLEV-1
               000041               I$SEG=F$END
                                    .ENDC
                                    .IFF
                                    M$ENDERR        ENDSEG,T$TEMP
                                    .ENDC
       064772  005077  115302                   CLR     @CSRX                   ;CLEAR CSR1
       064776  017737  115270  002502           MOV     @IDRX,BAD               ;READ DIR1 FOR CLEAR B0 BIT IN IIR
       065004  052777  000010  115266           BIS     #10,@CSRX               ;SELECT CHANNEL 2
       065012  005077  115262                   CLR     @CSRX                   ;CLEAR CSR2,SELECT CHANNEL1
                                    ;*** ------------------------------------------------------------------
                                    ;PART 3 DMA OVER 32K
                                    ;*** ------------------------------------------------------------------
       065016  005037  002376                   CLR     INTFC1                  ;CLEAR INTERRUPT FLAG
       065022  005037  002400                   CLR     INTFC2                  ;CLEAR INTERRUPT FLAG
       065026  023727  002342  000001           CMP     PHHSIZ,#1               ;IS THERE MORE THAN 32K
       065034  002404                           BLT     11$                     ;IF NO SKIP TEST
       065036  003005                           BGT     13$                     ;
       065040  005737  002344                   TST     PHLSIZ                  ;
       065044  001002                           BNE     13$                     ;
       065046  000137  067202       11$:        JMP     EXQV24                  ;JUMP TO TEST END
       065052  005037  002336       13$:        CLR     PHLOW                   ;LOAD INPUT FOR CONVERSION ROUTINE
       065056  012737  000001  002334           MOV     #1,PHHIGH               ;...
       065064  004737  007714                   JSR     PC,PVCON                ;CREATE VIRTUAL ADDRESS
       065070  013700  002340                   MOV     VIADD,R0                ;GET START ADDRESS OF BUFFER A
       065074  010037  002356                   MOV     R0,BUFAB                ;LOAD START ADDRESS OF BUFFER A
       065100  012701  010000                   MOV     #10000,R1               ;LOAD COUNTER FOR 2K
       065104  005003                           CLR     R3                      ;R3 CONTAINS
       065106  012737  000001  177572           MOV     #1,SR0                  ;**ENABLE MEMORY MANAGEMENT**
       065114  110320               16$:        MOVB    R3,(R0)+                ;LOAD BUFFER WITH DATA
       065116  005203                           INC     R3                      ;CREAT NEXT DATA
       065120  005301                           DEC     R1                      ;
       065122  001374                           BNE     16$                     ;
       065124  012701  010000                   MOV     #10000,R1               ;LOAD 2K
       065130  010037  002360                   MOV     R0,BUFBB                ;LOAD START ADDRESS OF BUFFER B
       065134  105020               20$:        CLRB    (R0)+                   ;CLEAR BUFFER B
       065136  005301                           DEC     R1                      ;2K CLEARED
       065140  001375                           BNE     20$                     ;IF YES,DO THE TEST
       065142  052777  000010  115130           BIS     #10,@CSRX               ;SELECT CHANNEL 2
       065150  005037  177572                   CLR     SR0                     ;**DISABLE MEMORY MANAGEMENT**
       065154  112777  000212  115106           MOVB    #212,@ICRHX             ;----LOAD TON INTO ACR 2--------------
       065162  013701  002312                   MOV     DPA1,R1                 ;CREATE MLA1
       065166  062701  000040                   ADD     #40,R1                  ;...
       065172  010137  002410                   MOV     R1,MLA1                 ;STORE MLA1
       065176  113777  002410  115072           MOVB    MLA1,@IDRHX             ;- --LOAD MLA1 INTO DOR 2------ -- -
       065204  004737  011050                   JSR     PC,LOOP                 ;WAIT A LITTLE
       065210                                   BGNSEG
                                    .MCALL      M$PUSH,M$INCR,M$SVC
               000040               I$SEG=F$BGN
       065210                       M$PUSH      T$NS,T$NESTLEV,F$SEG
                                    .MCALL      M$INCR,M$SETS
```

```
     065210                                   M$INCR  T$NESTLEV
             000002                           T$NESTLEV=T$NESTLEV+1
     065210                                   M$SETS  T$NS,\T$NESTLEV,F$SEG
             000003                           T$NS2=F$SEG
             010002                           T$$SEG=S$LSYM
     065210                                   M$PUSH  T$SEK,T$SEGLEV,T$$SEG
                                              .MCALL  M$INCR,M$SETS
     065210                                   M$INCR  T$SEGLEV
             000000                           T$SEGLEV=T$SEGLEV+1
     065210                                   M$SETS  T$SEK,\T$SEGLEV,T$$SEG
             010002                           T$SEK0=T$$SEG
     065210                                   M$INCR  S$LSYM
             010003                           S$LSYM=S$LSYM+1
     065210                                   M$SVC   C$BSEG
                                              .MCALL  M$GNINS,M$TSTLAB
     065210                                   M$TSTLAB
                                              .MCALL  M$TLABEL,M$INCR
                                              .IIF LT T$TSTMAC, .MEXIT
                                              .RADIX  10
                                              M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                              .RADIX  8
                                              M$INCR  T$TSTSEQ
     065210                                   M$GNINS <TRAP   C$BSEG>
                                              .IF LT SVCINS
                                              TRAP    C$BSEG
                                              .MEXIT
                                              .ENDC
                                              .IF EQ SVCINS
                                              .LIST
                                                      TRAP    C$BSEG
                                                              .NLIST
                                              .MEXIT
                                              .ENDC
                                              .IF GT SVCINS
                                              .LIST
     065210  104404                                                                                     TRAP    C$BSEG
                                                              .NLIST
                                              .ENDC
     065212  052777  000010  115060                   BIS     #10,@CSRX               ;SELECT CHANNEL 2
     065220  005077  115056                           CLR     @BARX                   ;---LOAD START ADDRESS OF BUFFER A----
     065224  013737  002240  002402                   MOV     BCINP,RSAVE             ;STORE BYTE COUNT INPUT
     065232  005437  002402                           NEG     RSAVE                   ;BILD 2'COMPL FOR BCR
     065236  013777  002402  115040                   MOV     RSAVE,@BCRX             ;--- LOAD INPUT INTO BCR 2--------- -
     065244  012777  000127  115026                   MOV     #127,@CSRX              ;-DMA ENB,DMA DIR,INT ENB,BIT 16,SYS C
     065252  042777  000010  115020                   BIC     #10,@CSRX               ;SELECT CHANNEL 1
     065260  012777  010000  115014                   MOV     #10000,@BARX            ; ---LOAD START ADDRESS OF BUFFER B---
     065266  013777  002402  115010                   MOV     RSAVE,@BCRX             ;----LOAD INPUT INTO BCR 1---
     065274  012777  000121  114776                   MOV     #121,@CSRX              ; ---SET DMA ENB,INT ENB,BIT16 IN CSR1
     065302                                           SETPRI  #PRI00                  ;SET PRIORITY TO ZERO
                                              .MCALL  M$LDR0,M$SVC
     065302                                   M$LDR0  #PRI00,SETPRI
                                              .MCALL  M$GNINS
                                              .IF NB #PRI00
                                              .IF DIF R0,#PRI00
     065302                                   M$GNINS <MOV    #PRI00,R0>
                                              .IF LT SVCINS
                                              MOV     #PRI00,R0
```

```
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                MOV     #PRI00,R0
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
      065302  012700  000000                                                                    MOV     #PRI00,R0
                                                        .NLIST
                                        .ENDC
                                        .ENDC
                                        .IFF
                                        .ERROR  ;MISSING ARG. ON "SETPRI"
                                        .ENDC
      065306                            M$SVC   C$SPRI
                                        .MCALL  M$GNINS,M$TSTLAB
      065306                            M$TSTLAB
                                        .MCALL  M$TLABEL,M$INCR
                                        .IIF LT T$TSTMAC, .MEXIT
                                        .RADIX  10
                                        M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                        .RADIX  8
                                        M$INCR  T$TSTSEQ
      065306                            M$GNINS <TRAP   C$SPRI>
                                        .IF LT SVCINS
                                        TRAP    C$SPRI
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                TRAP    C$SPRI
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
      065306  104441                                                                            TRAP    C$SPRI
                                                        .NLIST
                                        .ENDC
 7626 065310  052777  000010  114762            BIS     #10,@CSRX               ;SELECT CHANNEL 2
 7627 065316  012737  000002  002374            MOV     #2,CHAN                 ;LOAD CHANNEL NUMBER
 7628 065324  112777  000013  114736            MOVB    #13,@ICRHX              ;- --LOAD GTS INTO ACR 2---------- --
 7629 065332  012701  077777                    MOV     #77777,R1               ;LOAD LOOP COUNTER
 7630 065336  005737  002400            23$:    TST     INTFC2                  ;IS INTERRUPT IN CHANNEL 2 OCCER
 7631 065342  001015                            BNE     24$                     ;BRANCH IF YES
 7632 065344  005301                            DEC     R1                      ;DECREMENT COUNTER
 7633 065346  001373                            BNE     23$                     ;IF NO,TEST AGIN
 7634 065350  017737  114724  002502            MOV     @CSRX,BAD               ;GET CSR2 CONTENTS
 7635 065356  012737  100036  002500            MOV     #100036,GOOD            ;DC OF,MUX,DMA DIR,BA 16,SYS CONT
 7636 065364                                    ERRSOFT 2410,E232,ERR201        ;ERROR HANDLER
                                        .MCALL  M$ERRINS
      065364                            M$ERRINS        2410,E232,ERR201,C$ERSOFT
                                        .MCALL  M$GNINS,M$WORD,M$TSTLAB
      065364                            M$SVC   C$ERSOFT
```

E16


```
                                        .MCALL  M$GNINS,M$TSTLAB
        065364                          M$TSTLAB
                                        .MCALL  M$TLABEL,M$INCR
                                        .IIF LT T$TSTMAC, .MEXIT
                                        .RADIX  10
                                        M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                        .RADIX  8
                                        M$INCR  T$TSTSEQ
        065364                          M$GNINS <TRAP   C$ERSOFT>
                                        .IF LT SVCINS
                                        TRAP    C$ERSOFT
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                TRAP    C$ERSOFT
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
        065364  104457                                                                  TRAP    C$ERSOFT
                                                        .NLIST
                                        .ENDC
                000012                  .RADIX  10
                                        .IF NB  2410
                004552                  T$ERRNUM=2410
                                        .IFF
                                        .ERROR  ;MISSING ERROR-NR
                                        .ENDC
        065366                          M$WORD  \T$ERRNUM
                                        .MCALL  M$GNINS
                                        .IRP    N,<2410>
                                        M$GNINS <.WORD  N>
                                        .ENDM
        065366                          M$GNINS <.WORD  2410>
                                        .IF LT SVCINS
                                        .WORD   2410
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                .WORD   2410
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
        065366  004552                                                                  .WORD   2410
                                                        .NLIST
                                        .ENDC
                000010                  .RADIX  8
                                        .IF NB E232
        065370                          M$WORD  E232
                                        .MCALL  M$GNINS
                                        .IRP    N,<E232>
                                        M$GNINS <.WORD  N>
```

```
                                        .ENDM
      065370                            M$GNINS <.WORD  E232>
                                        .IF LT SVCINS
                                        .WORD   E232
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                .WORD   E232
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
      065370  006062                                                                    .WORD   E232
                                                        .NLIST
                                        .ENDC
                                        .IFF
                                        M$WORD  0
                                        .ENDC
                                        .IF NB ERR201
      065372                            M$WORD  ERR201
                                        .MCALL  M$GNINS
                                        .IRP    N,<ERR201>
                                        M$GNINS <.WORD  N>
                                        .ENDM
      065372                            M$GNINS <.WORD  ERR201>
                                        .IF LT SVCINS
                                        .WORD   ERR201
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                .WORD   ERR201
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
      065372  003470                                                                    .WORD   ERR201
                                                        .NLIST
                                        .ENDC
                                        .IFF
                                        M$WORD  0
                                        .ENDC
 7637 065374                                    CKLOOP                  ;BRANCH TO BGNSEG IF ERRLOOP IS SET
                                        .MCALL  M$SVC
      065374                            M$SVC   C$CLP1
                                        .MCALL  M$GNINS,M$TSTLAB
      065374                            M$TSTLAB
                                        .MCALL  M$TLABEL,M$INCR
                                        .IIF LT T$TSTMAC, .MEXIT
                                        .RADIX  10
                                        M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                        .RADIX  8
                                        M$INCR  T$TSTSEQ
      065374                            M$GNINS <TRAP   C$CLP1>
```

```
                                        .IF LT SVCINS
                                        TRAP    C$CLP1
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                TRAP    C$CLP1
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
     065374  104406                                                                    TRAP    C$CLP1
                                                        .NLIST
                                        .ENDC
     065376  042777  000010  114674     24$:    BIC     #10,@CSRX          ;SELECT CHANNEL 1
     065404  012737  000001  002374             MOV     #1,CHAN            ;LOAD CHANNEL NUMBER
     065412  005737  002376                     TST     INTFC1             ;IS AN INTERRUPT IN CHANNEL 1 OCCURED
     065416  001013                             BNE     25$                ;BRANCH IF YES
     065420  017737  114654  002502             MOV     @CSRX,BAD          ;GET CSR1 CONTENTS
     065426  012737  100020  002500             MOV     #100020,GOOD       ;BC OF,BA 16 SHOULD BE SET
     065434                                     ERRSOFT 2411,E232,ERR201   ;ERROR HANDLER
                                        .MCALL  M$ERRINS
     065434                             M$ERRINS        2411,E232,ERR201,C$ERSOFT
                                        .MCALL  M$GNINS,M$WORD,M$TSTLAB
     065434                             M$SVC   C$ERSOFT
                                        .MCALL  M$GNINS,M$TSTLAB
     065434                             M$TSTLAB
                                        .MCALL  M$TLABEL,M$INCR
                                        .IIF LT T$TSTMAC, .MEXIT
                                        .RADIX  10
                                        M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                        .RADIX  8
                                        M$INCR  T$TSTSEQ
     065434                             M$GNINS <TRAP   C$ERSOFT>
                                        .IF LT SVCINS
                                        TRAP    C$ERSOFT
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                TRAP    C$ERSOFT
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
     065434  104457                                                                    TRAP    C$ERSOFT
                                                        .NLIST
                                        .ENDC
             000012                     .RADIX  10
                                        .IF NB  2411
             004553                     T$ERRNUM-2411
                                        .IFF
                                        .ERROR  ;MISSING ERROR NR
                                        .ENDC
     065436                             M$WORD  \T$ERRNUM
```

```
                                        .MCALL  M$GNINS
                                        .IRP    N,<2411>
                                        M$GNINS <.WORD  N>
                                        .ENDM
       065436                           M$GNINS <.WORD  2411>
                                        .IF LT SVCINS
                                        .WORD   2411
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                .WORD   2411
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
       065436  004553                                                                       .WORD   2411
                                                        .NLIST
                                        .ENDC
               000010                   .RADIX  8
                                        .IF NB E232
       065440                           M$WORD  E232
                                        .MCALL  M$GNINS
                                        .IRP    N,<E232>
                                        M$GNINS <.WORD  N>
                                        .ENDM
       065440                           M$GNINS <.WORD  E232>
                                        .IF LT SVCINS
                                        .WORD   E232
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                .WORD   E232
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        LIST
       065440  006062                                                                       .WORD   E232
                                                        .NLIST
                                        .ENDC
                                        .IFF
                                        M$WORD  0
                                        .ENDC
                                        .IF NB ERR201
       065442                           M$WORD  ERR201
                                        .MCALL  M$GNINS
                                        .IRP    N,<ERR201>
                                        M$GNINS <.WORD  N>
                                        .ENDM
       065442                           M$GNINS <.WORD  ERR201>
                                        .IF LT SVCINS
                                        .WORD   ERR201
                                        .MEXIT
                                        .ENDC
```

```
                                .IF EQ SVCINS
                                .LIST
                                        .WORD   ERR201
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
      065442  003470                                                                    .WORD   ERR201
                                                .NLIST
                                .ENDC
                                .IFF
                                M$WORD  0
                                .ENDC
 7645 065444                            CKLOOP                          ;BRANCH TO BGNSEG IF ERRLOOP IS SET
                                .MCALL  M$SVC
      065444                    M$SVC   C$CLP1
                                .MCALL  M$GNINS,M$TSTLAB
      065444                    M$TSTLAB
                                .MCALL  M$TLABEL,M$INCR
                                .IIF LT T$TSTMAC, .MEXIT
                                .RADIX  10
                                M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                .RADIX  8
                                M$INCR  T$TSTSEQ
      065444                    M$GNINS <TRAP   C$CLP1>
                                .IF LT SVCINS
                                TRAP    C$CLP1
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        TRAP    C$CLP1
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
      065444  104406                                                                    TRAP    C$CLP1
                                                .NLIST
                                .ENDC
 7646 065446                    25$:    SETPRI  #PRI07                  ;NO FURTHER INTERRUPT ALLOWED
                                .MCALL  M$LDR0,M$SVC
      065446                    M$LDR0  #PRI07,SETPRI
                                .MCALL  M$GNINS
                                .IF NB #PRI07
                                .IF DIF R0,#PRI07
      065446                    M$GNINS <MOV    #PRI07,R0>
                                .IF LT SVCINS
                                MOV     #PRI07,R0
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        MOV     #PRI07,R0
                                                .NLIST
                                .MEXIT
```

```
                                             .ENDC
                                             .IF GT SVCINS
                                             .LIST
      065446  012700  000340                                                           MOV     #PRI07,R0
                                                           .NLIST
                                             .ENDC
                                             .ENDC
                                             .IFF
                                             .ERROR  ;MISSING ARG. ON "SETPRI"
                                             .ENDC
      065452                                 M$SVC   C$SPRI
                                             .MCALL  M$GNINS,M$TSTLAB
      065452                                 M$TSTLAB
                                             .MCALL  M$TLABEL,M$INCR
                                             .IIF LT T$TSTMAC, .MEXIT
                                             .RADIX  10
                                             M$TLABEL        \T$TFSTNUN,\T$TSTSEQ
                                             .RADIX  8
                                             M$INCR  T$TSTSEQ
      065452                                 M$GNINS <TRAP   C$SPRI>
                                             .IF LT SVCINS
                                             TRAP    C$SPRI
                                             .MEXIT
                                             .ENDC
                                             .IF EQ SVCINS
                                             .LIST
                                                     TRAP    C$SPRI
                                                             .NLIST
                                             .MEXIT
                                             .ENDC
                                             .IF GT SVCINS
                                             .LIST
      065452  104441                                                                   TRAP    C$SPRI
                                                           .NLIST
                                             .ENDC
 7647 065454  052777  000010  114616                 BIS     #10,@CSRX               ;SELECT CHANNEL 2
 7648 065462  012737  000002  002374                 MOV     #2,CHAN                 ;LOAD CHANNEL NUMBER
 7649 065470  112777  000014  114572                 MOVB    #14,@ICRHX              ;----LOAD TCA INTO ACR 2-------------
 7650 065476  013737  002336  002500                 MOV     PHLOW,GOOD              ;SET UP COMPARE VALUE
 7651 065504  063737  002240  002500                 ADD     BCINP,GOOD              ;...
 7652 065512  017737  114564  002502                 MOV     @BARX,BAD               ;GET BAR2 CONTENTS
 7653 065520  023737  002502  002500                 CMP     BAD,GOOD                ;HAS BAR2 THE CORRECT ADDRESS
 7654 065526  001404                                 BEQ     30$                     ;BRANCH IF YES
 7655 065530                                         ERRSOFT 2412,E234,ERR501        ;ERROR HANDLER
                                             .MCALL  M$ERRINS
      065530                                 M$ERRINS        2412,E234,ERR501,C$ERSOFT
                                             .MCALL  M$GNINS,M$WORD,M$TSTLAB
      065530                                 M$SVC   C$ERSOFT
                                             .MCALL  M$GNINS,M$TSTLAB
      065530                                 M$TSTLAB
                                             .MCALL  M$TLABEL,M$INCR
                                             .IIF LT T$TSTMAC, .MEXIT
                                             .RADIX  10
                                             M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                             .RADIX  8
                                             M$INCR  T$TSTSEQ
      065530                                 M$GNINS <TRAP   C$ERSOFT>
```

```
                                .IF LT SVCINS
                                TRAP    C$ERSOFT
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        TRAP    C$ERSOFT
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
065530  104457                                                          TRAP    C$ERSOFT
                                                .NLIST
                                .ENDC
        000012                  .RADIX  10
                                .IF NB  2412
        004554                  T$ERRNUM=2412
                                .IFF
                                .ERROR  ;MISSING ERROR NR
                                .ENDC
065532                          M$WORD  \T$ERRNUM
                                .MCALL  M$GNINS
                                .IRP    N,<2412>
                                M$GNINS <.WORD  N>
                                .ENDM
065532                          M$GNINS <.WORD  2412>
                                .IF LT SVCINS
                                .WORD   2412
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        .WORD   2412
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
065532  004554                                                          .WORD   2412
                                                .NLIST
                                .ENDC
        000010                  .RADIX  8
                                .IF NB E234
065534                          M$WORD  E234
                                .MCALL  M$GNINS
                                .IRP    N,<E234>
                                M$GNINS <.WORD  N>
                                .ENDM
065534                          M$GNINS <.WORD  E234>
                                .IF LT SVCINS
                                .WORD   E234
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        .WORD   E234
```

```
                                                .NLIST
                                    .MEXIT
                                    .ENDC
                                    .IF GT SVCINS
                                    .LIST
      065534  006170                                                                     .WORD   E234
                                                .NLIST
                                    .ENDC
                                    .IFF
                                    M$WORD  0
                                    .ENDC
                                    .IF NB ERR501
      065536                        M$WORD  ERR501
                                    .MCALL  M$GNINS
                                    .IRP    N,<ERR501>
                                    M$GNINS <.WORD  N>
                                    .ENDM
      065536                        M$GNINS <.WORD  ERR501>
                                    .IF LT SVCINS
                                    .WORD   ERR501
                                    .MEXIT
                                    .ENDC
                                    .IF EQ SVCINS
                                    .LIST
                                            .WORD   ERR501
                                                    .NLIST
                                    .MEXIT
                                    .ENDC
                                    .IF GT SVCINS
                                    .LIST
      065536  003672                                                                     .WORD   ERR501
                                                .NLIST
                                    .ENDC
                                    .IFF
                                    M$WORD  0
                                    .ENDC
 7656 065540  017737  114540  002502  30$:  MOV     @BCRX,BAD               ;GET BCR2 CONTENTS
 7657 065546  005037  002500                CLR     GOOD                    ;
 7658 065552  023737  002502  002500        CMP     BAD,GOOD                ;IS BCR2 ZERO
 7659 065560  001404                        BEQ     31$                     ;BRANCH IF YES
 7660 065562                                ERRSOFT 2413,E235,ERR501        ;ERROR HANDLER
                                    .MCALL  M$ERRINS
      065562                        M$ERRINS        2413,E235,ERR501,C$ERSOFT
                                    .MCALL  M$GNINS,M$WORD,M$TSTLAB
      065562                        M$SVC   C$ERSOFT
                                    .MCALL  M$GNINS,M$TSTLAB
      065562                        M$TSTLAB
                                    .MCALL  M$TLABEL,M$INCR
                                    .IIF LT T$TSTMAC, .MEXIT
                                    .RADIX  10
                                    M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                    .RADIX  8
                                    M$INCR  T$TSTSEQ
      065562                        M$GNINS <TRAP   C$ERSOFT>
                                    .IF LT SVCINS
                                    TRAP    C$ERSOFT
                                    .MEXIT
```

M16


```
                          .ENDC
                          .IF EQ SVCINS
                          .LIST
                                  TRAP    C$ERSOFT
                                          .NLIST
                          .MEXIT
                          .ENDC
                          .IF GT SVCINS
                          .LIST
065562  104457                                                    TRAP    C$ERSOFT
                                          .NLIST
                          .ENDC
        000012            .RADIX  10
                          .IF NB  2413
        004555            T$ERRNUM=2413
                          .IFF
                          .ERROR  ;MISSING ERROR-NR
                          .ENDC
065564                    M$WORD  \T$ERRNUM
                          .MCALL  M$GNINS
                          .IRP    N,<2413>
                          M$GNINS <.WORD  N>
                          .ENDM
065564                    M$GNINS <.WORD  2413>
                          .IF LT SVCINS
                          .WORD   2413
                          .MEXIT
                          .ENDC
                          .IF EQ SVCINS
                          .LIST
                                  .WORD   2413
                                          .NLIST
                          .MEXIT
                          .ENDC
                          .IF GT SVCINS
                          .LIST
065564  004555                                                    .WORD   2413
                                          .NLIST
                          .ENDC
        000010            .RADIX  8
                          .IF NB E235
065566                    M$WORD  E235
                          .MCALL  M$GNINS
                          .IRP    N,<E235>
                          M$GNINS <.WORD  N>
                          .ENDM
065566                    M$GNINS <.WORD  E235>
                          .IF LT SVCINS
                          .WORD   E235
                          .MEXIT
                          .ENDC
                          .IF EQ SVCINS
                          .LIST
                                  .WORD   E235
                                          .NLIST
                          .MEXIT
                          .ENDC
```

```
                                        .IF GT SVCINS
                                        .LIST
     065566  006221                                                                                   .WORD   E235
                                                      .NLIST
                                        .ENDC
                                        .IFF
                                        M$WORD  0
                                        .ENDC
                                        .IF NB ERR501
     065570                             M$WORD  ERR501
                                        .MCALL  M$GNINS
                                        .IRP    N,<ERR501>
                                        M$GNINS <.WORD  N>
                                        .ENDM
     065570                             M$GNINS <.WORD  ERR501>
                                        .IF LT SVCINS
                                        .WORD   ERR501
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                .WORD   ERR501
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
     065570  003672                                                                                   .WORD   ERR501
                                                      .NLIST
                                        .ENDC
                                        .IFF
                                        M$WORD  0
                                        .ENDC
     065572  042777  000010  114500     31$:    BIC     #10,@CSRX               ;SELECT CHANNEL 1
     065600  012737  000001  002374             MOV     #1,CHAN                 ;LOAD CHANNEL NUMBER
     065606  013737  002360  002500             MOV     BUFBB,GOOD              ;SET UP COMPARE VALUE
     065614  042737  160000  002500             BIC     #160000,GOOD            ;CLEAR BIT 13.14.15
     065622  063737  002240  002500             ADD     BCINP,GOOD              ;...
     065630  017737  114446  002502             MOV     @BARX,BAD               ;GET BAR1 CONTENTS
     065636  023737  002500  002502             CMP     GOOD,BAD                ;HAS BAR1 THE CORRECT ADDRESS
     065644  001404                             BEQ     40$                     ;BRANCH IF YES
     065646                                     ERRSOFT 2414,E234,ERR501        ;ERROR HANDLER
                                        .MCALL  M$ERRINS
     065646                             M$ERRINS        2414,E234,ERR501,C$ERSOFT
                                        .MCALL  M$GNINS,M$WORD,M$TSTLAB
     065646                             M$SVC   C$ERSOFT
                                        .MCALL  M$GNINS,M$TSTLAB
     065646                             M$TSTLAB
                                        .MCALL  M$TLABEL,M$INCR
                                        .IIF LT T$TSTMAC, .MEXIT
                                        .RADIX  10
                                        M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                        .RADIX  8
                                        M$INCR  T$TSTSEQ
     065646                             M$GNINS <TRAP   C$ERSOFT>
                                        .IF LT SVCINS
                                        TRAP    C$ERSOFT
```

C1

```
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        TRAP    C$ERSOFT
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
     065646  104457                                                     TRAP    C$ERSOFT
                                                .NLIST
                                .ENDC
             000012             .RADIX  10
                                .IF NB  2414
             004556             T$ERRNUM=2414
                                .IFF
                                .ERROR  ;MISSING ERROR-NR
                                .ENDC
     065650                     M$WORD  \T$ERRNUM
                                .MCALL  M$GNINS
                                .IRP    N,<2414>
                                M$GNINS <.WORD  N>
                                .ENDM
     065650                     M$GNINS <.WORD  2414>
                                .IF LT SVCINS
                                .WORD   2414
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        .WORD   2414
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
     065650  004556                                                     .WORD   2414
                                                .NLIST
                                .ENDC
             000010             .RADIX  8
                                .IF NB E234
     065652                     M$WORD  E234
                                .MCALL  M$GNINS
                                .IRP    N,<E234>
                                M$GNINS <.WORD  N>
                                .ENDM
     065652                     M$GNINS <.WORD  E234>
                                .IF LT SVCINS
                                .WORD   E234
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        .WORD   E234
                                                .NLIST
                                .MEXIT
```

D1


```
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
      065652  006170                                                                     .WORD   E234
                                                     .NLIST
                                        .ENDC
                                        .IFF
                                        M$WORD  0
                                        .ENDC
                                        .IF NB ERR501
      065654                            M$WORD  ERR501
                                        .MCALL  M$GNINS
                                        .IRP    N,<ERR501>
                                        M$GNINS <.WORD  N>
                                        .ENDM
      065654                            M$GNINS <.WORD  ERR501>
                                        .IF LT SVCINS
                                        .WORD   ERR501
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                              .WORD   ERR501
                                                      .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
      065654  003672                                                                     .WORD   ERR501
                                                     .NLIST
                                        .ENDC
                                        .IFF
                                        M$WORD  0
                                        .ENDC
 7670 065656  017737  114422  002502    40$:    MOV     @BCRX,BAD              ;GET BCR1 CONTENTS
 7671 065664  005737  002502                    TST     BAD                    ;BCR1 CONTENTS SHOULD BE ZERO
 7672 065670  001406                            BEQ     43$                    ;BRANCH IF YES
 7673 065672  005037  002500                    CLR     GOOD                   ;SET UP DATA FOR ERROR MESSAGE
 7674 065676                                    ERRSOFT 2415,E235,ERR501       ;ERROR HANDLER
                                        .MCALL  M$ERRINS
      065676                            M$ERRINS        2415,E235,ERR501,C$ERSOFT
                                        .MCALL  M$GNINS,M$WORD,M$TSTLAB
      065676                            M$SVC   C$ERSOFT
                                        .MCALL  M$GNINS,M$TSTLAB
      065676                            M$TSTLAB
                                        .MCALL  M$TLABEL,M$INCR
                                        .IIF LT T$TSTMAC, .MEXIT
                                        .RADIX  10
                                        M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                        .RADIX  8
                                        M$INCR  T$TSTSEQ
      065676                            M$GNINS <TRAP   C$ERSOFT>
                                        .IF LT SVCINS
                                        TRAP    C$ERSOFT
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
```

```
                                .LIST
                                        TRAP    C$ERSOFT
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
        065676  104457                                                          TRAP    C$ERSOFT
                                                .NLIST
                                .ENDC
                000012          .RADIX  10
                                .IF NB  2415
                004557          T$ERRNUM=2415
                                .IFF
                                .ERROR  ;MISSING ERROR-NR
                                .ENDC
        065700                  M$WORD  \T$ERRNUM
                                .MCALL  M$GNINS
                                .IRP    N,<2415>
                                M$GNINS <.WORD  N>
                                .ENDM
        065700                  M$GNINS <.WORD  2415>
                                .IF LT SVCINS
                                .WORD   2415
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        .WORD   2415
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
        065700  004557                                                          .WORD   2415
                                                .NLIST
                                .ENDC
                000010          .RADIX  8
                                .IF NB E235
        065702                  M$WORD  E235
                                .MCALL  M$GNINS
                                .IRP    N,<E235>
                                M$GNINS <.WORD  N>
                                .ENDM
        065702                  M$GNINS <.WORD  E235>
                                .IF LT SVCINS
                                .WORD   E235
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        .WORD   E235
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
```

F1


```
     065702  006221                                                              .WORD   E235
                                              .NLIST
                              .ENDC
                              .IFF
                              M$WORD  0
                              .ENDC
                              .IF NB ERR501
     065704                   M$WORD  ERR501
                              .MCALL  M$GNINS
                              .IRP    N,<ERR501>
                              M$GNINS <.WORD  N>
                              .ENDM
     065704                   M$GNINS <.WORD  ERR501>
                              .IF LT SVCINS
                              .WORD   ERR501
                              .MEXIT
                              .ENDC
                              .IF EQ SVCINS
                              .LIST
                                      .WORD   ERR501
                                              .NLIST
                              .MEXIT
                              .ENDC
                              .IF GT SVCINS
                              .LIST
     065704  003672                                                              .WORD   ERR501
                                              .NLIST
                              .ENDC
                              .IFF
                              M$WORD  0
                              .ENDC
     065706  012737  000001  177572  43$:    MOV     #1,SR0          ;**ENABLE MEMORY MANAGEMENT**
     065714  013701  002356                  MOV     BUFAB,R1        ;PROVIDE FIRST BYTE OF BUFFER A
     065720  013702  002360                  MOV     BUFBB,R2        ;PROVIDE FIRST BYTE OF BUFFER B
     065724  005037  002404                  CLR     CNT1            ;CLEAR BUFFER COUNTER
     065730  005237  002404          44$:    INC     CNT1            ;
     065734  122122                          CMPB    (R1)+,(R2)+     ;BUFFER A EQUAL BUFFER B
     065736  001446                          BEQ     46$             ;IF YES CONTINUE
     065740  005037  002500                  CLR     GOOD            ;CLEAR GOOD
     065744  005037  002502                  CLR     BAD             ;CLEAR BAD
     065750  012737  000001  002426          MOV     #1,TXADRH       ;TX ADDRESS IS OVER 32K
     065756  012737  000001  002422          MOV     #1,RXADRH       ;RX ADDRESS IS OVER 32K
     065764  010137  002430                  MOV     R1,TXADRL       ;GET ADDRESS OVER 32K
     065770  005337  002430                  DEC     TXADRL          ;...
     065774  042737  160000  002430          BIC     #160000,TXADRL  ;CLEAR PAR INFORMATION
     066002  013737  002430  002424          MOV     TXADRL,RXADRL   ;GENERATE RX ADDRESS FROM TX ADDRESS
     066010  052737  010000  002424          BIS     #10000,RXADRL   ;RX ADRRES IS TX ADDRESS +2K
     066016  116137  177777  002500          MOVB    -1(R1),GOOD     ;SET UP DATA FOR ERROR MESSAGE
     066024  116237  177777  002502          MOVB    -1(R2),BAD      ;...
     066032  005037  177572                  CLR     SR0             ;**DISABLE MEMORY MANAGEMENT**
     066036                                  ERRSOFT 2416,E250,ERR231 ;ERROR HANDLER
                              .MCALL  M$ERRINS
     066036                   M$ERRINS        2416,E250,ERR231,C$ERSOFT
                              .MCALL  M$GNINS,M$WORD,M$TSTLAB
     066036                   M$SVC   C$ERSOFT
                              .MCALL  M$GNINS,M$TSTLAB
     066036                   M$TSTLAB
```

```
                                .MCALL  M$TLABEL,M$INCR
                                .IIF LT T$TSTMAC, .MEXIT
                                .RADIX  10
                                M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                .RADIX  8
                                M$INCR  T$TSTSEQ
 066036                         M$GNINS <TRAP   C$ERSOFT>
                                .IF LT SVCINS
                                TRAP    C$ERSOFT
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        TRAP    C$ERSOFT
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
 066036  104457                                                                 TRAP    C$ERSOFT
                                                .NLIST
                                .ENDC
         000012                 .RADIX  10
                                .IF NB  2416
         004560                 T$ERRNUM=2416
                                .IFF
                                .ERROR  ;MISSING ERROR-NR
                                .ENDC
 066040                         M$WORD  \T$ERRNUM
                                .MCALL  M$GNINS
                                .IRP    N,<2416>
                                M$GNINS <.WORD  N>
                                .ENDM
 066040                         M$GNINS <.WORD  2416>
                                .IF LT SVCINS
                                .WORD   2416
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        .WORD   2416
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
 066040  004560                                                                 .WORD   2416
                                                .NLIST
                                .ENDC
         000010                 .RADIX  8
                                .IF NB E250
 066042                         M$WORD  E250
                                .MCALL  M$GNINS
                                .IRP    N,<E250>
                                M$GNINS <.WORD  N>
                                .ENDM
 066042                         M$GNINS <.WORD  E250>
```

```
                                        .IF LT SVCINS
                                        .WORD   E250
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                .WORD   E250
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
     066042  005716                                                                         .WORD   E250
                                                        .NLIST
                                        .ENDC
                                        .IFF
                                        M$WORD  0
                                        .ENDC
                                        .IF NB ERR231
     066044                             M$WORD  ERR231
                                        .MCALL  M$GNINS
                                        .IRP    N,<ERR231>
                                        M$GNINS <.WORD  N>
                                        .ENDM
     066044                             M$GNINS <.WORD  ERR231>
                                        .IF LT SVCINS
                                        .WORD   ERR231
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                .WORD   ERR231
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
     066044  003734                                                                         .WORD   ERR231
                                                        .NLIST
                                        .ENDC
                                        .IFF
                                        M$WORD  0
                                        .ENDC
7695 066046  012737  000001  177572             MOV     #1,SR0                  ;**ENABLE MEMORY MANAGEMENT**
7696 066054  023737  002404  002240     46$:    CMP     CNT1,BCINP              ;ALL BYTES COMPARED ?
7697 066062  001322                             BNE     44$                     ;IF NO, GET NEXT ONE
7698 066064  005037  177572                     CLR     SR0                     ;**DISABLE MEMORY MANAGEMENT**
7699 066070                                     ENDSEG
                                        .MCALL  M$POP,M$GNLS,M$SVC,M$ENDERR
     066070                             M$POP   T$NS,T$NESTLEV,T$TEMP
                                        .MCALL  M$GETS,M$DECR
                                        .IF LT  T$NESTLEV
                                        .ERROR  T$NESTLEV       ; MACRO T$NS UNDERFLOW
                                        .MEXIT
                                        .ENDC
     066070                             M$GETS  T$NS,\T$NESTLEV,T$TEMP
             000003                     T$TEMP=T$NS2
```

```
      066070                          M$DECR  T$NESTLEV
               000001                 T$NESTLEV=T$NESTLEV-1
                                      .IF EQ F$SEG-T$TEMP
      066070                          M$POP   T$SEK,T$SEGLEV,T$$SEG
                                      .MCALL  M$GETS,M$DECR
                                      .IF LT  T$SEGLEV
                                      .ERROR  T$SEGLEV        ; MACRO T$SEK UNDERFLOW
                                      .MEXIT
                                      .ENDC
      066070                          M$GETS  T$SEK,\T$SEGLEV,T$$SEG
               010002                 T$$SEG=T$SEK0
      066070                          M$DECR  T$SEGLEV
               177777                 T$SEGLEV=T$SEGLEV-1
      066070                          M$GNLS  T$$SEG
                                      .MCALL  M$GEN
                                      .IF NB T$$SEG
      066070                          M$GEN   \T$$SEG,$,SVCTAG
                                      .IF LE  SVCTAG
                                      .IIF EQ SVCTAG,.LIST
                                      10002$:
                                      .IIF EQ SVCTAG,.NLIST
                                      .MEXIT
                                      .ENDC
                                      .LIST
      066070                                                                     10002$:
                                              .NLIST
                                      .IFF
                                      M$GEN   \S$LSYM,$,SVCTAG
                                      .ENDC
      066070                          M$SVC   C$ESEG
                                      .MCALL  M$GNINS,M$TSTLAB
      066070                          M$TSTLAB
                                      .MCALL  M$TLABEL,M$INCR
                                      .IIF LT T$TSTMAC, .MEXIT
                                      .RADIX  10
                                      M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                      .RADIX  8
                                      M$INCR  T$TSTSEQ
      066070                          M$GNINS <TRAP   C$ESEG>
                                      .IF LT SVCINS
                                      TRAP    C$ESEG
                                      .MEXIT
                                      .ENDC
                                      .IF EQ SVCINS
                                      .LIST
                                              TRAP    C$ESEG
                                                      .NLIST
                                      .MEXIT
                                      .ENDC
                                      .IF GT SVCINS
                                      .LIST
      066070   104405                                                                    TRAP    C$ESEG
                                                      .NLIST
                                      .ENDC
                                      .IF EQ T$SEGLEV+1
               000041                 T$SEG=F$END
                                      .ENDC
```

TEST 24: DMA DATA TRANSFER TEST FROM CHANNEL 2 TO 1

```
                                        .IFF
                                        M$ENDERR        ENDSEG,T$TEMP
                                        .ENDC
066072  005077  114202                          CLR     @CSRX                   ;CLEAR CSR1
066076  017737  114170  002502                  MOV     @IDRX,BAD               ;READ DIR1 FOR CLEAR BO BIT IN IIR
066104  052777  000010  114166                  BIS     #10,@CSRX               ;SELECT CHANNEL 2
066112  005077  114162                          CLR     @CSRX                   ;CLEAR CHANNEL 2,SELECT CHANNEL 1
                                        ;***-----------------------------------------------------------------------
                                        ;PART 4 DMA OVER 64K
                                        ;****- - ------------------ -----------------------------------------------
066116  005037  002376                  PSEU34: CLR     INTFC1                  ;CLEAR INTERRUPT FLAG
066122  005037  002400                          CLR     INTFC2                  ;CLEAR INTERRUPT FLAG
066126  023727  002342  000002                  CMP     PHHSIZ,#2               ;IS THERE MORE THAN 64K
066134  002404                                  BLT     11$                     ;IF NO SKIP TEST
066136  003005                                  BGT     13$                     ;
066140  005737  002344                          TST     PHLSIZ                  ;
066144  001002                                  BNE     13$                     ;
066146  000137  067202                  11$:    JMP     EXQV24                  ;JUMP TO TEST END
066152  005037  002336                  13$:    CLR     PHLOW                   ;LOAD INPUT FOR CONVERSION ROUTINE
066156  012737  000002  002334                  MOV     #2,PHHIGH               ;...
066164  004737  007714                          JSR     PC,PVCON                ;CREATE VIRTUAL ADDRESS
066170  013700  002340                          MOV     VIADD,R0                ;GET START ADDRESS OF BUFFER A
066174  010037  002356                          MOV     R0,BUFAB                ;LOAD START ADDRESS OF BUFFER A
066200  012701  010000                          MOV     #10000,R1               ;LOAD COUNTER FOR 2K
066204  005003                                  CLR     R3                      ;R3 CONTAINS
066206  012737  000001  177572                  MOV     #1,SR0                  ;**ENABLE MEMORY MANAGEMENT**
066214  110320                          16$:    MOVB    R3,(R0)+                ;LOAD BUFFER WITH DATA
066216  005203                                  INC     R3                      ;CREAT NEXT DATA
066220  005301                                  DEC     R1                      ;
066222  001374                                  BNE     16$                     ;
066224  012701  010000                          MOV     #10000,R1               ;LOAD 2K
066230  010037  002360                          MOV     R0,BUFBB                ;LOAD START ADDRESS OF BUFFER B
066234  105020                          20$:    CLRB    (R0)+                   ;CLEAR BUFFER B
066236  005301                                  DEC     R1                      ;2K CLEARED
066240  001375                                  BNE     20$                     ;IF YES,DO THE TEST
066242  052777  000010  114030                  BIS     #10,@CSRX               ;SELECT CHANNEL 2
066250  005037  177572                          CLR     SR0                     ;**DISABLE MEMORY MANAGEMENT**
066254  112777  000212  114006                  MOVB    #212,@ICRHX             ;----LOAD TON INTO ACR 2-------------
066262  013701  002312                          MOV     DPA1,R1                 ;CREATE MLA1
066266  062701  000040                          ADD     #40,R1                  ;...
066272  010137  002410                          MOV     R1,MLA1                 ;STORE MLA1
066276  113777  002410  113772                  MOVB    MLA1,@IDRHX             ;----LOAD MLA1 INTO DOR 2------------
066304  004737  011050                          JSR     PC,LOOP                 ;WAIT A LITTLE
066310  005077  113766                          CLR     @BARX                   ;---LOAD START ADDRESS OF BUFFER A----
066314  013737  002240  002402                  MOV     BCINP,RSAVE             ;STORE BYTE COUNT INPUT
066322  005437  002402                          NEG     RSAVE                   ;BILD 2'COMPL FOR BCR
066326  013777  002402  113750                  MOV     RSAVE,@BCRX             ;----LOAD INPUT INTO BCR 1----------
066334  012777  000147  113736                  MOV     #147,@CSRX              ;-DMA ENB,DMA DIR,INT ENB,BA 17,SYS C
066342  042777  000010  113730                  BIC     #10,@CSRX               ;SELECT CHANNEL 1
066350  012777  010000  113724                  MOV     #10000,@BARX            ;----LOAD START ADDRESS OF BUFFER B---
066356  013777  002402  113720                  MOV     RSAVE,@BCRX             ;----LOAD INPUT INTO BCR 1---
066364  012777  000141  113706                  MOV     #141,@CSRX              ;----SET DMA ENB,INT ENB,BIT17 IN CSR1
066372                                          SETPRI  #PRI00                  ;SET PRIORITY TO ZERO
                                        .MCALL  M$LDRO,M$SVC
066372                                  M$LDRO  #PRI00,SETPRI
                                        .MCALL  M$GNINS
                                        .IF NB #PRI00
```

```
                                        .IF DIF R0,#PRI00
      066372                            M$GNINS <MOV    #PRI00,R0>
                                        .IF LT SVCINS
                                        MOV     #PRI00,R0
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                MOV     #PRI00,R0
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
      066372  012700  000000                                                                MOV     #PRI00,R0
                                                        .NLIST
                                        .ENDC
                                        .ENDC
                                        .IFF
                                        .ERROR  ;MISSING ARG. ON "SETPRI"
                                        .ENDC
      066376                            M$SVC   C$SPRI
                                        .MCALL  M$GNINS,M$TSTLAB
      066376                            M$TSTLAB
                                        .MCALL  M$TLABEL,M$INCR
                                        .IIF LT T$TSTMAC, .MEXIT
                                        .RADIX  10
                                        M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                        .RADIX  8
                                        M$INCR  T$TSTSEQ
      066376                            M$GNINS <TRAP   C$SPRI>
                                        .IF LT SVCINS
                                        TRAP    C$SPRI
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                TRAP    C$SPRI
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
      066376  104441                                                                        TRAP    C$SPRI
                                                        .NLIST
                                        .ENDC
 7750 066400  052777  000010  113672            BIS     #10,@CSRX               ;SELECT CHANNEL 2
 7751 066406  012737  000002  002374            MOV     #2,CHAN                 ;LOAD CHANNEL NUMBER
 7752 066414  112777  000013  113646            MOVB    #13,@ICRHX              ;--- LOAD GTS INTO ACR 2-- ---    - - -
 7753 066422  012701  077777                    MOV     #77777,R1               ;LOAD LOOP COUNTER
 7754 066426  005737  002400            23$:    TST     INTFC2                  ;IS INTERRUPT IN CHANNEL 2 OCCER
 7755 066432  001014                            BNE     24$                     ;BRANCH IF YES
 7756 066434  005301                            DEC     R1                      ;DECREMENT COUNTER
 7757 066436  001373                            BNE     23$                     ;IF NO,TEST AGIN
 7758 066440  017737  113634  002502            MOV     @CSRX,BAD               ;GET CSR2 CONTENTS
 7759 066446  012737  100056  002500            MOV     #100056,GOOD            ;BC OF,MUX,DMA DIR,BA 17,SYS CONT
 7760 066454                                    ERRSOFT 2417,E232,ERR201        ;ERROR HANDLER
```

L1


```
                                .MCALL  M$ERRINS
066454                          M$ERRINS        2417,E232,ERR201,C$ERSOFT
                                .MCALL  M$GNINS,M$WORD,M$TSTLAB
066454                          M$SVC   C$ERSOFT
                                .MCALL  M$GNINS,M$TSTLAB
066454                          M$TSTLAB
                                .MCALL  M$TLABEL,M$INCR
                                .IIF LT T$TSTMAC, .MEXIT
                                .RADIX  10
                                M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                .RADIX  8
                                M$INCR  T$TSTSEQ
066454                          M$GNINS <TRAP   C$ERSOFT>
                                .IF LT SVCINS
                                TRAP    C$ERSOFT
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        TRAP    C$ERSOFT
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
066454  104457                                                          TRAP    C$ERSOFT
                                                .NLIST
                                .ENDC
        000012                  .RADIX  10
                                .IF NB  2417
        004561                  T$ERRNUM=2417
                                .IFF
                                .ERROR  ;MISSING ERROR-NR
                                .ENDC
066456                          M$WORD  \T$ERRNUM
                                .MCALL  M$GNINS
                                .IRP    N,<2417>
                                M$GNINS <.WORD  N>
                                .ENDM
066456                          M$GNINS <.WORD  2417>
                                .IF LT SVCINS
                                .WORD   2417
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        .WORD   2417
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
066456  004561                                                          .WORD   2417
                                                .NLIST
                                .ENDC
        000010                  .RADIX  8
                                .IF NB E232
```

M1

```
        066460                          M$WORD  E232
                                        .MCALL  M$GNINS
                                        .IRP    N,<E232>
                                        M$GNINS <.WORD  N>
                                        .ENDM
        066460                          M$GNINS <.WORD  E232>
                                        .IF LT SVCINS
                                        .WORD   E232
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                .WORD   E232
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
        066460  006062                                                                  .WORD   E232
                                                        .NLIST
                                        .ENDC
                                        .IFF
                                        M$WORD  0
                                        .ENDC
                                        .IF NB ERR201
        066462                          M$WORD  ERR201
                                        .MCALL  M$GNINS
                                        .IRP    N,<ERR201>
                                        M$GNINS <.WORD  N>
                                        .ENDM
        066462                          M$GNINS <.WORD  ERR201>
                                        .IF LT SVCINS
                                        .WORD   ERR201
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                .WORD   ERR201
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
        066462  003470                                                                  .WORD   ERR201
                                                        .NLIST
                                        .ENDC
                                        .IFF
                                        M$WORD  0
                                        .ENDC
   7761 066464  042777  000010  113606  24$:    BIC     #10,@CSRX               ;SELECT CHANNEL 1
   7762 066472  012737  000001  002374          MOV     #1,CHAN                 ;LOAD CHANNEL NUMBER
   7763 066500  005737  002376                  TST     INTFC1                  ;IS AN INTERRUPT IN CHANNEL 1 OCCURED
   7764 066504  001012                          BNE     25$                     ;BRANCH IF YES
   7765 066506  017737  113566  002502          MOV     @CSRX,BAD               ;GET CSR1 CONTENTS
   7766 066514  012737  100040  002500          MOV     #100040,GOOD            ;BC OF,BA 17 SHOULD BE SET
   7767 066522                                  ERRSOFT 2418,E232,ERR201        ;ERROR HANDLER
                                        .MCALL  M$ERRINS
```

```
        066522                    M$ERRINS        2418,E232,ERR201,C$ERSOFT
                                  .MCALL  M$GNINS,M$WORD,M$TSTLAB
        066522                    M$SVC   C$ERSOFT
                                  .MCALL  M$GNINS,M$TSTLAB
        066522                    M$TSTLAB
                                  .MCALL  M$TLABEL,M$INCR
                                  .IIF LT T$TSTMAC, .MEXIT
                                  .RADIX  10
                                  M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                  .RADIX  8
                                  M$INCR  T$TSTSEQ
        066522                    M$GNINS <TRAP   C$ERSOFT>
                                  .IF LT SVCINS
                                  TRAP    C$ERSOFT
                                  .MEXIT
                                  .ENDC
                                  .IF EQ SVCINS
                                  .LIST
                                          TRAP    C$ERSOFT
                                                  .NLIST
                                  .MEXIT
                                  .ENDC
                                  .IF GT SVCINS
                                  .LIST
        066522  104457                                                    TRAP    C$ERSOFT
                                                  .NLIST
                                  .ENDC
                000012            .RADIX  10
                                  .IF NB  2418
                004562            T$ERRNUM=2418
                                  .IFF
                                  .ERROR  ;MISSING ERROR-NR
                                  .ENDC
        066524                    M$WORD  \T$ERRNUM
                                  .MCALL  M$GNINS
                                  .IRP    N,<2418>
                                  M$GNINS <.WORD  N>
                                  .ENDM
        066524                    M$GNINS <.WORD  2418>
                                  .IF LT SVCINS
                                  .WORD   2418
                                  .MEXIT
                                  .ENDC
                                  .IF EQ SVCINS
                                  .LIST
                                          .WORD   2418
                                                  .NLIST
                                  .MEXIT
                                  .ENDC
                                  .IF GT SVCINS
                                  .LIST
        066524  004562                                                    .WORD   2418
                                                  .NLIST
                                  .ENDC
                000010            .RADIX  8
                                  .IF NB E232
        066526                    M$WORD  E232
```

```
                                        .MCALL  M$GNINS
                                        .IRP    N,<E232>
                                        M$GNINS <.WORD  N>
                                        .ENDM
      066526                            M$GNINS <.WORD  E232>
                                        .IF LT SVCINS
                                        .WORD   E232
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                .WORD   E232
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
      066526  006062                                                                      .WORD   E232
                                                        .NLIST
                                        .ENDC
                                        .IFF
                                        M$WORD  0
                                        .ENDC
                                        .I^ NB ERR201
      066530                            M$WORD  ERR201
                                        .MCALL  M$GNINS
                                        .IRP    N,<ERR201>
                                        M$GNINS <.WORD  N>
                                        .ENDM
      066530                            M$GNINS <.WORD  ERR201>
                                        .IF LT SVCINS
                                        .WORD   ERR201
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                .WORD   ERR201
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
      066530  003470                                                                      .WORD   ERR201
                                                        .NLIST
                                        .ENDC
                                        .IFF
                                        M$WORD  0
                                        .ENDC
 7768 066532                            25$:    SETPRI  #PRI07              ;NO FURTHER INTERRUPT ALLOWED
                                        .MCALL  M$LDR0,M$SVC
      066532                            M$LDR0  #PRI07,SETPRI
                                        .MCALL  M$GNINS
                                        .IF NB #PRI07
                                        .IF DIF R0,#PRI07
      066532                            M$GNINS <MOV    #PRI07,R0>
                                        .IF LT SVCINS
                                        MOV     #PRI07,R0
```

```
                                                .MEXIT
                                                .ENDC
                                                .IF EQ SVCINS
                                                .LIST
                                                        MOV     #PRI07,R0
                                                                .NLIST
                                                .MEXIT
                                                .ENDC
                                                .IF GT SVCINS
                                                .LIST
      066532  012700  000340                                                                    MOV     #PRI07,R0
                                                                .NLIST
                                                .ENDC
                                                .ENDC
                                                .IFF
                                                .ERROR  ;MISSING ARG. ON "SETPRI"
                                                .ENDC
      066536                                    M$SVC   C$SPRI
                                                .MCALL  M$GNINS,M$TSTLAB
      066536                                    M$TSTLAB
                                                .MCALL  M$TLABEL,M$INCR
                                                .IIF LT T$TSTMAC, .MEXIT
                                                .RADIX  10
                                                M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                                .RADIX  8
                                                M$INCR  T$TSTSEQ
      066536                                    M$GNINS <TRAP   C$SPRI>
                                                .IF LT SVCINS
                                                TRAP    C$SPRI
                                                .MEXIT
                                                .ENDC
                                                .IF EQ SVCINS
                                                .LIST
                                                        TRAP    C$SPRI
                                                                .NLIST
                                                .MEXIT
                                                .ENDC
                                                .IF GT SVCINS
                                                .LIST
      066536  104441                                                                            TRAP    C$SPRI
                                                                .NLIST
                                                .ENDC
      066540  052777  000010  113532                    BIS     #10,@CSRX               ;SELECT CHANNEL 2
      066546  012737  000002  002374                    MOV     #2,CHAN                 ;LOAD CHANNEL NUMBER
      066554  112777  000014  113506                    MOVB    #14,@ICRHX              ;- --LOAD TCA INTO ACR 2-  ------- ---
      066562  013737  002336  002500                    MOV     PHLOW,GOOD              ;SET UP COMPARE VALUE
      066570  063737  002240  002500                    ADD     BCINP,GOOD              ;...
      066576  017737  113500  002502                    MOV     @BARX,BAD               ;GET BAR2 CONTENTS
      066604  023737  002502  002500                    CMP     BAD,GOOD                ;HAS BAR2 THE CORRECT ADDRESS
      066612  001404                                    BEQ     30$                     ;BRANCH IF YES
      066614                                            ERRSOFT 2419,E234,ERR501        ;ERROR HANDLER
                                                .MCALL  M$ERRINS
      066614                                    M$ERRINS        2419,E234,ERR501,C$ERSOFT
                                                .MCALL  M$GNINS,M$WORD,M$TSTLAB
      066614                                    M$SVC   C$ERSOFT
                                                .MCALL  M$GNINS,M$TSTLAB
      066614                                    M$TSTLAB
```

```
                        .MCALL  M$TLABEL,M$INCR
                        .IIF LT T$TSTMAC, .MEXIT
                        .RADIX  10
                        M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                        .RADIX  8
                        M$INCR  T$TSTSEQ
066614                  M$GNINS <TRAP   C$ERSOFT>
                        .IF LT SVCINS
                        TRAP    C$ERSOFT
                        .MEXIT
                        .ENDC
                        .IF EQ SVCINS
                        .LIST
                                TRAP    C$ERSOFT
                                        .NLIST
                        .MEXIT
                        .ENDC
                        .IF GT SVCINS
                        .LIST
066614  104457                                                  TRAP    C$ERSOFT
                                        .NLIST
                        .ENDC
        000012          .RADIX  10
                        .IF NB  2419
        004563          T$ERRNUM=2419
                        .IFF
                        .ERROR  ;MISSING ERROR-NR
                        .ENDC
066616                  M$WORD  \T$ERRNUM
                        .MCALL  M$GNINS
                        .IRP    N,<2419>
                        M$GNINS <.WORD  N>
                        .ENDM
066616                  M$GNINS <.WORD  2419>
                        .IF LT SVCINS
                        .WORD   2419
                        .MEXIT
                        .ENDC
                        .IF EQ SVCINS
                        .LIST
                                .WORD   2419
                                        .NLIST
                        .MEXIT
                        .ENDC
                        .IF GT SVCINS
                        .LIST
066616  004563                                                  .WORD   2419
                                        .NLIST
                        .ENDC
        000010          .RADIX  8
                        .IF NB E234
066620                  M$WORD  E234
                        .MCALL  M$GNINS
                        .IRP    N,<E234>
                        M$GNINS <.WORD  N>
                        .ENDM
066620                  M$GNINS <.WORD  E234>
```

```
                                              .IF LT SVCINS
                                              .WORD   E234
                                              .MEXIT
                                              .ENDC
                                              .IF EQ SVCINS
                                              .LIST
                                                      .WORD   E234
                                                              .NLIST
                                              .MEXIT
                                              .ENDC
                                              .IF GT SVCINS
                                              .LIST
      066620  006170                                                                           .WORD   E234
                                                              .NLIST
                                              .ENDC
                                              .IFF
                                              M$WORD  0
                                              .ENDC
                                              .IF NB ERR501
      066622                                  M$WORD  ERR501
                                              .MCALL  M$GNINS
                                              .IRP    N,<ERR501>
                                              M$GNINS <.WORD  N>
                                              .ENDM
      066622                                  M$GNINS <.WORD  ERR501>
                                              .IF LT SVCINS
                                              .WORD   ERR501
                                              .MEXIT
                                              .ENDC
                                              .IF EQ SVCINS
                                              .LIST
                                                      .WORD   ERR501
                                                              .NLIST
                                              .MEXIT
                                              .ENDC
                                              .IF GT SVCINS
                                              .LIST
      066622  003672                                                                           .WORD   ERR501
                                                              .NLIST
                                              .ENDC
                                              .IFF
                                              M$WORD  0
                                              .ENDC
 7778 066624  017737  113454  002502  30$:    MOV     @BCRX,BAD               ;GET BCR2 CONTENTS
 7779 066632  005037  002500                          CLR     GOOD                    ;
 7780 066636  023737  002502  002500                  CMP     BAD,GOOD                ;IS BCR2 ZERO
 7781 066644  001404                                  BEQ     31$                     ;BRANCH IF YES
 7782 066646                                          ERRSOFT 2420,E235,ERR501        ;ERROR HANDLER
                                              .MCALL  M$ERRINS
      066646                                  M$ERRINS        2420,E235,ERR501,C$ERSOFT
                                              .MCALL  M$GNINS,M$WORD,M$TSTLAB
      066646                                  M$SVC   C$ERSOFT
                                              .MCALL  M$GNINS,M$TSTLAB
      066646                                  M$TSTLAB
                                              .MCALL  M$TLABEL,M$INCR
                                              .IIF LT T$TSTMAC, .MEXIT
                                              .RADIX  10
```

F2


```
                                M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                .RADIX  8
                                M$INCR  T$TSTSEQ
066646                          M$GNINS <TRAP   C$ERSOFT>
                                .IF LT SVCINS
                                TRAP    C$ERSOFT
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        TRAP    C$ERSOFT
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
066646  104457                                                          TRAP    C$ERSOFT
                                                .NLIST
                                .ENDC
        000012                  .RADIX  10
                                .IF NB  2420
        004564                  T$ERRNUM=2420
                                .IFF
                                .ERROR  ;MISSING ERROR NR
                                .ENDC
066650                          M$WORD  \T$ERRNUM
                                .MCALL  M$GNINS
                                .IRP    N,<2420>
                                M$GNINS <.WORD  N>
                                .ENDM
066650                          M$GNINS <.WORD  2420>
                                .IF LT SVCINS
                                .WORD   2420
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        .WORD   2420
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
066650  004564                                                          .WORD   2420
                                                .NLIST
                                .ENDC
        000010                  .RADIX  8
                                .IF NB E235
066652                          M$WORD  E235
                                .MCALL  M$GNINS
                                .IRP    N,<E235>
                                M$GNINS <.WORD  N>
                                .ENDM
066652                          M$GNINS <.WORD  E235>
                                .IF LT SVCINS
                                .WORD   E235
                                .MEXIT
```

78 8018 3673-6

```
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                .WORD   E235
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
      066652  006221                                                                  .WORD   E235
                                                        .NLIST
                                        .ENDC
                                        .IFF
                                        M$WORD  0
                                        .ENDC
                                        .IF NB ERR501
      066654                            M$WORD  ERR501
                                        .MCALL  M$GNINS
                                        .IRP    N,<ERR501>
                                        M$GNINS <.WORD  N>
                                        .ENDM
      066654                            M$GNINS <.WORD  ERR501>
                                        .IF LT SVCINS
                                        .WORD   ERR501
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                .WORD   ERR501
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
      066654  003672                                                                  .WORD   ERR501
                                                        .NLIST
                                        .ENDC
                                        .IFF
                                        M$WORD  0
                                        .ENDC
      066656  042777  000010  113414    31$:    BIC     #10,@CSRX               ;SELECT CHANNEL 1
      066664  012737  000001  002374            MOV     #1,CHAN                 ;LOAD CHANNEL NUMBER
      066672  013737  002360  002500            MOV     BUFBB,GOOD              ;SET UP COMPARE VALUE
      066700  042737  160000  002500            BIC     #160000,GOOD            ;CLEAR BIT 13+14+15
      066706  063737  002240  002500            ADD     BCINP,GOOD              ;...
      066714  017737  113362  002502            MOV     @BARX,BAD               ;GET BAR1 CONTENTS
      066722  023737  002500  002502            CMP     GOOD,BAD                ;HAS BAR1 THE CORRECT ADDRESS
      066730  001404                            BEQ     40$                     ;BRANCH IF YES
      066732                                    ERRSOFT 2421,E234,ERR501        ;ERROR HANDLER
                                        .MCALL  M$ERRINS
      066732                            M$ERRINS        2421,E234,ERR501,C$ERSOFT
                                        .MCALL  M$GNINS,M$WORD,M$TSTLAB
      066732                            M$SVC   C$ERSOFT
                                        .MCALL  M$GNINS,M$TSTLAB
      066732                            M$TSTLAB
                                        .MCALL  M$TLABEL,M$INCR
                                        .IIF LT T$TSTMAC, .MEXIT
```

```
                                .RADIX  10
                                M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                .RADIX  8
                                M$INCR  T$TSTSEQ
     066732                     M$GNINS <TRAP   C$ERSOFT>
                                .IF LT SVCINS
                                TRAP    C$ERSOFT
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        TRAP    C$ERSOFT
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
     066732  104457                                                                     TRAP    C$ERSOFT
                                                .NLIST
                                .ENDC
             000012             .RADIX  10
                                .IF NB  2421
             004565             T$ERRNUM=2421
                                .IFF
                                .ERROR  ;MISSING ERROR-NR
                                .ENDC
     066734                     M$WORD  \T$ERRNUM
                                .MCALL  M$GNINS
                                .IRP    N,<2421>
                                M$GNINS <.WORD  N>
                                .ENDM
     066734                     M$GNINS <.WORD  2421>
                                .IF LT SVCINS
                                .WORD   2421
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        .WORD   2421
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
     066734  004565                                                                     .WORD   2421
                                                .NLIST
                                .ENDC
             000010             .RADIX  8
                                .IF NB E234
     066736                     M$WORD  E234
                                .MCALL  M$GNINS
                                .IRP    N,<E234>
                                M$GNINS <.WORD  N>
                                .ENDM
     066736                     M$GNINS <.WORD  E234>
                                .IF LT SVCINS
                                .WORD   E234
```

```
                                         .MEXIT
                                         .ENDC
                                         .IF EQ SVCINS
                                         .LIST
                                                 .WORD   E234
                                                         .NLIST
                                         .MEXIT
                                         .ENDC
                                         .IF GT SVCINS
                                         .LIST
      066736  006170                                                                                       .WORD   E234
                                                         .NLIST
                                         .ENDC
                                         .IFF
                                         M$WORD  0
                                         .ENDC
                                         .IF NB ERR501
      066740                             M$WORD  ERR501
                                         .MCALL  M$GNINS
                                         .IRP    N,<ERR501>
                                         M$GNINS <.WORD  N>
                                         .ENDM
      066740                             M$GNINS <.WORD  ERR501>
                                         .IF LT SVCINS
                                         .WORD   ERR501
                                         .MEXIT
                                         .ENDC
                                         .IF EQ SVCINS
                                         .LIST
                                                 .WORD   ERR501
                                                         .NLIST
                                         .MEXIT
                                         .ENDC
                                         .IF GT SVCINS
                                         .LIST
      066740  003672                                                                                       .WORD   ERR501
                                                         .NLIST
                                         .ENDC
                                         .IFF
                                         M$WORD  0
                                         .ENDC
 7792 066742  017737  113336  002502     40$:    MOV     @BCRX,BAD                 ;GET BCR1 CONTENTS
 7793 066750  005737  002502                     TST     BAD                       ;BCR1 CONTENTS SHOULD BE ZERO
 7794 066754  001406                             BEQ     43$                       ;BRANCH IF YES
 7795 066756  005037  002500                     CLR     GOOD                      ;SET UP DATA FOR ERROR MESSAGE
 7796 066762                                     ERRSOFT 2422,E235,ERR501          ;ERROR HANDLER
                                         .MCALL  M$ERRINS
      066762                             M$ERRINS        2422,E235,ERR501,C$ERSOFT
                                         .MCALL  M$GNINS,M$WORD,M$TSTLAB
      066762                             M$SVC   C$ERSOFT
                                         .MCALL  M$GNINS,M$TSTLAB
      066762                             M$TSTLAB
                                         .MCALL  M$TLABEL,M$INCR
                                         .IIF LT T$TSTMAC, .MEXIT
                                         .RADIX  10
                                         M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                         .RADIX  8
```

```
                                M$INCR  T$TSTSEQ
066762                          M$GNINS <TRAP   C$ERSOFT>
                                .IF LT SVCINS
                                TRAP    C$ERSOFT
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        TRAP    C$ERSOFT
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
066762  104457                                                                  TRAP    C$ERSOFT
                                                .NLIST
                                .ENDC
        000012                  .RADIX  10
                                .IF NB  2422
        004566                  T$ERRNUM=2422
                                .IFF
                                .ERROR  ;MISSING ERROR-NR
                                .ENDC
066764                          M$WORD  \T$ERRNUM
                                .MCALL  M$GNINS
                                .IRP    N,<2422>
                                M$GNINS <.WORD  N>
                                .ENDM
066764                          M$GNINS <.WORD  2422>
                                .IF LT SVCINS
                                .WORD   2422
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        .WORD   2422
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
066764  004566                                                                  .WORD   2422
                                                .NLIST
                                .ENDC
        000010                  .RADIX  8
                                .IF NB E235
066766                          M$WORD  E235
                                .MCALL  M$GNINS
                                .IRP    N,<E235>
                                M$GNINS <.WORD  N>
                                .ENDM
066766                          M$GNINS <.WORD  E235>
                                .IF LT SVCINS
                                .WORD   E235
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
```

```
                                              .LIST
                                                      .WORD   E235
                                                              .NLIST
                                              .MEXIT
                                              .ENDC
                                              .IF GT SVCINS
                                              .LIST
      066766  006221                                                                                    .WORD   E235
                                                              .NLIST
                                              .ENDC
                                              .IFF
                                              M$WORD  0
                                              .ENDC
                                              .IF NB ERR501
      066770                                  M$WORD  ERR501
                                              .MCALL  M$GNINS
                                              .IRP    N,<ERR501>
                                              M$GNINS <.WORD  N>
                                              .ENDM
      066770                                  M$GNINS <.WORD  ERR501>
                                              .IF LT SVCINS
                                              .WORD   ERR501
                                              .MEXIT
                                              .ENDC
                                              .IF EQ SVCINS
                                              .LIST
                                                      .WORD   ERR501
                                                              .NLIST
                                              .MEXIT
                                              .ENDC
                                              .IF GT SVCINS
                                              .LIST
      066770  003672                                                                                    .WORD   ERR501
                                                              .NLIST
                                              .ENDC
                                              .IFF
                                              M$WORD  0
                                              .ENDC
 7797 066772  012737  000001  177572  43$:     MOV     #1,SR0                  ;**ENABLE MEMORY MANAGEMENT**
 7798 067000  013701  002356                    MOV     BUFAB,R1                ;PROVIDE FIRST BYTE OF BUFFER A
 7799 067004  013702  002360                    MOV     BUFBB,R2                ;PROVIDE FIRST BYTE OF BUFFER B
 7800 067010  005037  002404                    CLR     CNT1                    ;CLEAR BUFFER COUNTER
 7801 067014  005237  002404          44$:      INC     CNT1                    ;
 7802 067020  122122                            CMPB    (R1)+,(R2)+             ;BUFFER A EQUAL BUFFER B
 7803 067022  001446                            BEQ     46$                     ;IF YES CONTINUE
 7804 067024  005037  002500                    CLR     GOOD                    ;CLEAR GOOD
 7805 067030  005037  002502                    CLR     BAD                     ;CLEAR BAD
 7806 067034  012737  000002  002426            MOV     #2,TXADRH               ;TX ADDRESS IS OVER 64K
 7807 067042  012737  000002  002422            MOV     #2,RXADRH               ;RX ADDRESS IS OVER 64K
 7808 067050  010137  002430                    MOV     R1,TXADRL               ;GET ADDRESS OVER 64K
 7809 067054  005337  002430                    DEC     TXADRL                  ;...
 7810 067060  042737  160000  002430            BIC     #160000,TXADRL          ;CLEAR PAR INFORMATION
 7811 067066  013737  002430  002424            MOV     TXADRL,RXADRL           ;GENERATE RX ADDRESS FROM TX ADDRESS
 7812 067074  052737  010000  002424            BIS     #10000,RXADRL           ;RX ADRRES IS TX ADDRESS +2K
 7813 067102  116137  177777  002500            MOVB    -1(R1),GOOD             ;SET UP DATA FOR ERROR MESSAGE
 7814 067110  116237  177777  002502            MOVB    -1(R2),BAD              ;...
 7815 067116  005037  177572                    CLR     SR0                     ;**DISABLE MEMORY MANAGEMENT**
```

L2


```
 7816 067122                      ERRSOFT 2423,E250,ERR231        ;ERROR HANDLER
                         .MCALL  M$ERRINS
      067122             M$ERRINS        2423,E250,ERR231,C$ERSOFT
                         .MCALL  M$GNINS,M$WORD,M$TSTLAB
      067122             M$SVC   C$ERSOFT
                         .MCALL  M$GNINS,M$TSTLAB
      067122             M$TSTLAB
                         .MCALL  M$TLABEL,M$INCR
                         .IIF LT T$TSTMAC, .MEXIT
                         .RADIX  10
                         M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                         .RADIX  8
                         M$INCR  T$TSTSEQ
      067122             M$GNINS <TRAP   C$ERSOFT>
                         .IF LT SVCINS
                         TRAP    C$ERSOFT
                         .MEXIT
                         .ENDC
                         .IF EQ SVCINS
                         .LIST
                                 TRAP    C$ERSOFT
                                         .NLIST
                         .MEXIT
                         .ENDC
                         .IF GT SVCINS
                         .LIST
      067122  104457                                                        TRAP    C$ERSOFT
                                         .NLIST
                         .ENDC
              000012     .RADIX  10
                         .IF NB  2423
              004567     T$ERRNUM=2423
                         .IFF
                         .ERROR  ;MISSING ERROR NR
                         .ENDC
      067124             M$WORD  \T$ERRNUM
                         .MCALL  M$GNINS
                         .IRP    N,<2423>
                         M$GNINS <.WORD  N>
                         .ENDM
      067124             M$GNINS <.WORD  2423>
                         .IF LT SVCINS
                         .WORD   2423
                         .MEXIT
                         .ENDC
                         .IF EQ SVCINS
                         .LIST
                                 .WORD   2423
                                         .NLIST
                         .MEXIT
                         .ENDC
                         .IF GT SVCINS
                         .LIST
      067124  004567                                                        .WORD   2423
                                         .NLIST
                         .ENDC
              000010     .RADIX  8
```

```
                                        .IF NB E250
      067126                            M$WORD  E250
                                        .MCALL  M$GNINS
                                        .IRP    N,<E250>
                                        M$GNINS <.WORD  N>
                                        .ENDM
      067126                            M$GNINS <.WORD  E250>
                                        .IF LT SVCINS
                                        .WORD   E250
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                .WORD   E250
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
      067126  005716                                                                    .WORD   E250
                                                        .NLIST
                                        .ENDC
                                        .IFF
                                        M$WORD  0
                                        .ENDC
                                        .IF NB ERR231
      067130                            M$WORD  ERR231
                                        .MCALL  M$GNINS
                                        .IRP    N,<ERR231>
                                        M$GNINS <.WORD  N>
                                        .ENDM
      067130                            M$GNINS <.WORD  ERR231>
                                        .IF LT SVCINS
                                        .WORD   ERR231
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                .WORD   ERR231
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
      067130  003734                                                                    .WORD   ERR231
                                                        .NLIST
                                        .ENDC
                                        .IFF
                                        M$WORD  0
                                        .ENDC
 7817 067132  012737  000001  177572            MOV     #1,SR0                  ;**ENABLE MEMORY MANAGEMENT**
 7818 067140  023737  002404  002240   46$:     CMP     CNT1,BCINP              ;ALL BYTES COMPARED ?
 7819 067146  001322                            BNE     44$                     ;IF NO, GET NEXT ONE
 7820 067150  005037  177572                    CLR     SR0                     ;**DISABLE MEMORY MANAGEMENT**
 7821 067154  005737  002234                    TST     QVP                     ;IS QUICK VERIFY PASS SELECTED
 7822 067160  001010                            BNE     EXQV24                  ;IF YES EXIT TEST
 7823 067162  005237  002322                    INC     ITRCNT                  ;INCREMENT COUNTER
```

TEST 24: DMA DATA TRANSFER TEST FROM CHANNEL 2 TO 1

```
   7824 067166  023737  002322  002320          CMP     ITRCNT,ITRDEF           ;ALL DONE
   7825 067174  001402                          BEQ     EXQV24                  ;BRANCH IF YES
   7826 067176  000137  063324                  JMP     ITAC24                  ;IF NO TEST ITERATION
   7827 067202                          EXQV24: EXIT    TST                     ;EXIT TEST
                                        .MCALL  M$SVC,M$EXIT,M$EXSEG,M$EXTJ,M$GETTOP,M$CHECK,M$WORD,XFER
                000041                  T$FLAG=F$END
        067202                          M$CHECK TST,T$TEMP,T$FLAG
                                        .IF IDN <TST>,<TST>
                010055                  T$TEMP=T$$TEST
                000040                  T$FLAG=I$TST
                                        .MEXIT
                                        .ENDC
                                        .IF IDN <SUB>,<TST>
                                        T$TEMP=T$$SUB
                                        T$FLAG=I$SUB
                                        .MEXIT
                                        .ENDC
                                        .IF IDN <SEG>,<TST>
                                        T$TEMP=T$$SEG
                                        T$FLAG=I$SEG
                                        .MEXIT
                                        .ENDC
                                        .IF IDN <INIT>,<TST>
                                        T$TEMP=T$$INIT
                                        T$FLAG=I$INIT
                                        .MEXIT
                                        .ENDC
                                        .IF IDN <CLN>,<TST>
                                        T$TEMP=T$$CLEAN
                                        T$FLAG=I$CLN
                                        .MEXIT
                                        .ENDC
                                        .IF IDN <SRV>,<TST>
                                        T$TEMP=T$$SRV
                                        T$FLAG=I$SRV
                                        .MEXIT
                                        .ENDC
                                        .IF IDN <MSG>,<TST>
                                        T$TEMP=T$$MSG
                                        T$FLAG=F$JMP
                                        .MEXIT
                                        .ENDC
                                        .IF IDN <RPT>,<TST>
                                        T$TEMP=T$$RPT
                                        T$FLAG=F$JMP
                                        .MEXIT
                                        .ENDC
                                        .IF IDN <DU>,<TST>
                                        T$TEMP=T$$DU
                                        T$FLAG=F$JMP
                                        .MEXIT
                                        .ENDC
                                        .IF IDN <AU>,<TST>
                                        T$TEMP=T$$AU
                                        T$FLAG=F$JMP
                                        .MEXIT
                                        .ENDC
```

B3


```
                                      .IF EQ T$FLAG-F$JMP
                                      M$WORD  J$JMP
                                      M$EXIT  \T$TEMP
                                      .MEXIT
                                      .ENDC
                                      .IF EQ  T$FLAG-F$BGN
      067202                          M$SVC   C$EXIT
                                      .MCALL  M$GNINS,M$TSTLAB
      067202                          M$TSTLAB
                                      .MCALL  M$TLABEL,M$INCR
                                      .IIF LT T$TSTMAC, .MEXIT
                                      .RADIX  10
                                      M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                      .RADIX  8
                                      M$INCR  T$TSTSEQ
      067202                          M$GNINS <TRAP    C$EXIT>
                                      .IF LT SVCINS
                                      TRAP    C$EXIT
                                      .MEXIT
                                      .ENDC
                                      .IF EQ SVCINS
                                      .LIST
                                              TRAP    C$EXIT
                                                      .NLIST
                                      .MEXIT
                                      .ENDC
                                      .IF GT SVCINS
                                      .LIST
      067202  104432                                                               TRAP    C$EXIT
                                                      .NLIST
                                      .ENDC
                                      .IF IDN <SEG>,<TST>
                                      M$GETTOP T$SEK,T$SEGLEV,T$TEMP
                                      M$EXSEG \T$TEMP
                                      .IFF
      067204                          M$EXIT  \T$TEMP
                                      .MCALL  M$GNINS
      067204                          M$GNINS <.WORD  L10055-.>
                                      .IF LT SVCINS
                                      .WORD   L10055-.
                                      .MEXIT
                                      .ENDC
                                      .IF EQ SVCINS
                                      .LIST
                                              .WORD   L10055 .
                                                      .NLIST
                                      .MEXIT
                                      .ENDC
                                      .IF GT SVCINS
                                      .LIST
      067204  000064                                                               .WORD   L10055-.
                                                      .NLIST
                                      .ENDC
                                      .ENDC
                                      .MEXIT
                                      .ENDC
                                      .IF IDN <HRD>,<TST>
```

C3

```
                                        M$GETTOP        T$NS,T$NESTLEV,T$TEMP
                                        .IF EQ  F$HARD-T$TEMP
                                        .IRP    N,<\T$$HARD>
                                        XFER    L'N
                                        .ENDM
                                        .MEXIT
                                        .ENDC
                                        .ENDC
                                        .IF IDN <SFT>,<TST>
                                        M$GETTOP        T$NS,T$NESTLEV,T$TEMP
                                        .IF EQ  F$SOFT-T$TEMP
                                        .IRP    N,<\T$$SOFT>
                                        XFER    L'N
                                        .ENDM
                                        .MEXIT
                                        .ENDC
                                        .ENDC
                                        .ERROR  ;ILL. "EXIT TST" STMT.
7828
7829                                            .NLIST  BEX
7830 067206    045     123     062      TSHD24: .ASCIZ  /#S2#ADMA DATA TRANSFER TEST FROM CHANNEL 2 TO 1#N/
7831                                            .LIST   BEX
7832                                            .EVEN
7833 067270                                     ENDTST
                                        .MCALL  M$POP,M$GNTAG,M$SVC,M$ENDERR
                                        .IF EQ  F$BGN-I$TST
             000041                     I$TST=F$END
                                        .IFF
                                        .ERROR  ;MISSING "BGNTST"
                                        .MEXIT
                                        .ENDC
     067270                             M$POP   T$NS,T$NESTLEV,T$TEMP
                                        .MCALL  M$GETS,M$DECR
                                        .IF LT  T$NESTLEV
                                        .ERROR  T$NESTLEV       ; MACRO T$NS UNDERFLOW
                                        .MEXIT
                                        .ENDC
     067270                             M$GETS  T$NS,\T$NESTLEV,T$TEMP
             000001                     T$TEMP=T$NS1
     067270                             M$DECR  T$NESTLEV
             000000                     T$NESTLEV=T$NESTLEV 1
                                        .IF EQ F$TEST-T$TEMP
     067270                             M$GNTAG L,T$$TEST
                                        .MCALL  M$GEN
     067270                             M$GEN   L,\T$$TEST,SVCTAG
                                        .IF LE  SVCTAG
                                        .IIF EQ SVCTAG,.LIST
                                        L10055:
                                        .IIF EQ SVCTAG,.NLIST
                                        .MEXIT
                                        .ENDC
                                        .LIST
     067270                                                                             L10055:
                                                .NLIST
             010000                     S$LSYM=T$LSYM
     067270                             M$SVC   C$ETST
                                        .MCALL  M$GNINS,M$TSTLAB
```

```
        067270                          M$TSTLAB
                                        .MCALL  M$TLABEL,M$INCR
                                        .IIF LT T$TSTMAC, .MEXIT
                                        .RADIX  10
                                        M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                        .RADIX  8
                                        M$INCR  T$TSTSEQ
        067270                          M$GNINS <TRAP   C$ETST>
                                        .IF LT SVCINS
                                        TRAP    C$ETST
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                TRAP    C$ETST
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
        067270  104401                                                          TRAP    C$ETST
                                                        .NLIST
                                        .ENDC
                000041                  I$TST=F$END
                                        .IFF
                                        M$ENDERR        ENDTST,T$TEMP
                                        .ENDC
```

```
                                        .SBTTL  TEST 25: MCR FUNCTION TEST OF CHANNEL 1
                                ;*****************************************************************************
                                ;               IEX - TEST 25
                                ;PART 1 CHANNEL 2 TRANSMITS 9 DATA BYTES (50)AND THAN
                                ;       A PREDEFINED QUANTITY (MC INPUT)OF SUCCESSIVE EOS CHARACTERS (177)
                                ;       VIA THE IEC/IEEE BUS TO CHANNEL 1.  AFTER RECEIVING THESE CHARACTERS
                                ;       THE DMA DATA TRANSFER IS TERMINATED BY CHANNEL 1 (COMP END).
                                ;PART 2 SAME AS PART 1 EXCEPT THAT A WRONG QUANTITY OF SUCCESSIVE EOS
                                ;       CHARACTERS ARE TRANSMITTED BEFORE THE CORRECT QUANTITY OF SUCCESSIVE
                                ;       EOS CHARACTERS ARE TRANSMITTED.
                                ;       I.E 2 EOS CHAR.(25),1 DATA BYTE (50)THAN THE PREDEFINED EOS CHAR.(25)
                                ;*****************************************************************************
067272                                  BGNTST
                                .MCALL  M$INCR,M$GNTEST,M$PUSH,M$INCR
                                .IF NE  F$END-I$SUB
                                .ERROR  ;"BGNTST" IN SUB
                                .MEXIT
                                .ENDC
                                .IF NE  F$END-I$SEG
                                .ERROR  ;"BGNTST" IN SEG
                                .MEXIT
                                .ENDC
                                .IF NE  F$END I$TST
                                .ERROR  ;"BGNTST" IN TST
                                .MEXIT
                                .IFF
        000040                  I$TST=F$BGN
                                .ENDC
                                .IF B
067272                          M$INCR  T$TESTNUM
        000031                  T$TESTNUM=T$TESTNUM+1
                                .IFF
                                T$TESTNUM=
                                .ENDC
        000000                  T$SUBNUM=0
        000012                  .RADIX  10
067272                          M$GNTEST        \T$TESTNUM
                                .MCALL  M$GEN
067272                          M$GEN   T,25:,SVCTST
                                .IF LE  SVCTST
                                .IIF EQ SVCTST,.LIST
                                T25::
                                .IIF EQ SVCTST,.NLIST
                                .MEXIT
                                .ENDC
                                .LIST
067272                                                                  T25::
                                        .NLIST
        000010                  .RADIX  8
067272                          M$PUSH  T$NS,T$NESTLEV,F$TEST
                                .MCALL  M$INCR,M$SETS
067272                          M$INCR  T$NESTLEV
        000001                  T$NESTLEV=T$NESTLEV+1
067272                          M$SETS  T$NS,\T$NESTLEV,F$TEST
        000001                  T$NS1=F$TEST
        010056                  T$$TEST=T$TAGNUM
067272                          M$INCR T$TAGNUM
```

F3


```
                010057                          T$TAGNUM=T$TAGNUM+1
                000001                          T$TSTSEQ=1
 7848 067272    005737  002324                          TST     PNTF                    ;IS THE PNT FLAG SET
 7849 067276    001410                                  BEQ     7$                      ;IF YES, PRINT THE TEST HEADER
 7850 067300                                            PRINTF  #TSHD25                 ;...
                                                .MCALL  M$PRINT
                                                .IF B   #TSHD25
                                                .ERROR  ;MISSING FORMAT
                                                .MEXIT
                                                .ENDC
                                                .IF B   <>
      067300                                    M$PRINT C$PNTF,#TSHD25
                                                .MCALL  M$COUNT,M$PUT,M$GNINS,M$SVC
                000001                          T$ARGCNT=1
      067300                                    M$COUNT T$ARGCNT,<>,<>,<>,<>,<>,<>,<>,<>
                                                .IF NB <>
                                                M$COUNT T$ARGCNT,<>,<>,<>,<>,<>,<>,<>,<>
                                                .ENDC
                                                .IF NB <>
                                                T$ARGCNT=T$ARGCNT+1
                                                .ENDC
                                                .IRP    N,<\T$ARGCNT>
                                                M$PUT   #N,#TSHD25,<>,<>,<>,<>,<>,<>,<>,<>
                                                .ENDM
      067300                                    M$PUT   #1,#TSHD25,<>,<>,<>,<>,<>,<>,<>,<>
                                                .MCALL  M$PUT1
                                                .IF NB  <#TSHD25>
      067300                                    M$PUT   <#TSHD25>,<>,<>,<>,<>,<>,<>,<>,<>
                                                .MCALL  M$PUT1
                                                .IF NB  <>
                                                M$PUT   <>,<>,<>,<>,<>,<>,<>,<>,<>
                                                .ENDC
                                                .IF NB  <#TSHD25>
      067300                                    M$PUT1  #TSHD25
                                                .MCALL  M$GNINS
                                                .IF B
      067300                                    M$GNINS <MOV    #TSHD25,-(SP)>
                                                .IF LT SVCINS
                                                MOV     #TSHD25,-(SP)
                                                .MEXIT
                                                .ENDC
                                                .IF EQ SVCINS
                                                .LIST
                                                        MOV     #TSHD25,-(SP)
                                                                .NLIST
                                                .MEXIT
                                                .ENDC
                                                .IF GT SVCINS
                                                .LIST
      067300    012746  070744                                                          MOV     #TSHD25,-(SP)
                                                                .NLIST
                                                .ENDC
                                                .IFF
                                                .IF DIF B,<#TSHD25>
                                                .ERROR  ;ILL. ARG. "#TSHD25" ONLY "B" IS ALLOWED.
                                                .MEXIT
                                                .ENDC
```

```
                                M$GNINS <CLR    -(SP)>
                                M$GNINS <BISB   ,(SP)>
                                .ENDC
                                .ENDC
                                .ENDC
                                .IF NB  <Ø1>
        067304                  M$PUT1  Ø1
                                .MCALL  M$GNINS
                                .IF B
        067304                  M$GNINS <MOV    Ø1,-(SP)>
                                .IF LT SVCINS
                                MOV     Ø1,-(SP)
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        MOV     Ø1,-(SP)
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
        067304  012746  000001                                          MOV     Ø1,-(SP)
                                                .NLIST
                                .ENDC
                                .IFF
                                .IF DIF B,<Ø1>
                                .ERROR  ;ILL. ARG. "Ø1" ONLY "B" IS ALLOWED.
                                .MEXIT
                                .ENDC
                                M$GNINS <CLR    -(SP)>
                                M$GNINS <BISB   ,(SP)>
                                .ENDC
                                .ENDC
        067310                  M$GNINS <MOV    SP,R0>
                                .IF LT SVCINS
                                MOV     SP,R0
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        MOV     SP,R0
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
        067310  010600                                                  MOV     SP,R0
                                                .NLIST
                                .ENDC
        067312                  M$SVC   C$PNTF
                                .MCALL  M$GNINS,M$TSTLAB
        067312                  M$TSTLAB
                                .MCALL  M$TLABEL,M$INCR
                                .IIF LT T$TSTMAC, .MEXIT
                                .RADIX  10
                                M$TLABEL        \T$TESTNUN,\T$TSTSEQ
```

```
                                .RADIY  8
                                M$INCR  T$TSTSEQ
067312                          M$GNINS <TRAP    C$PNTF>
                                .IF LT SVCINS
                                TRAP     C$PNTF
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                         TRAP     C$PNTF
                                                  .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
067312  104417                                                          TRAP    C$PNTF
                                                  .NLIST
                                .ENDC
                                .IRP     N,<\T$ARGCNT*2+2>
                                M$GNINS <ADD     #N,SP>
                                .ENDM
067314                          M$GNINS <ADD     #4,SP>
                                .IF LT SVCINS
                                ADD      #4,SP
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                         ADD      #4,SP
                                                  .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
067314  062706  000004                                                  ADD     #4,SP
                                                  .NLIST
                                .ENDC
                                .MEXIT
                                .ENDC
                                .IF B    <>
                                M$PRINT C$PNTF,#TSHD25,<>
                                .MEXIT
                                .ENDC
                                .IF B    <>
                                M$PRINT C$PNTF,#TSHD25,<>,<>
                                .MEXIT
                                .ENDC
                                .IF B    <>
                                M$PRINT C$PNTF,#TSHD25,<>,<>,<>
                                .MEXIT
                                .ENDC
                                .IF B    <>
                                M$PRINT C$PNTF,#TSHD25,<>,<>,<>,<>
                                .MEXIT
                                .ENDC
                                .IF B    <>
                                M$PRINT C$PNTF,#TSHD25,<>,<>,<>,<>,<>
```

```
                                        .MEXIT
                                        .ENDC
                                        .IF B   <>
                                        M$PRINT C$PNTF,#TSHD25,<>,<>,<>,<>,<>,<>
                                        .MEXIT
                                        .ENDC
                                        .IF B   <>
                                        M$PRINT C$PNTF,#TSHD25,<>,<>,<>,<>,<>,<>,<>
                                        .MEXIT
                                        .ENDC
                                        M$PRINT C$PNTF,#TSHD25,<>,<>,<>,<>,<>,<>,<>,<>
 7851 067320  005037  002322            7$:     CLR     ITRCNT                  ;CLEAR ITERATION COUNTER
 7852 067324  004737  010700                    JSR     PC,BGIN2                ;SET UP PARAMETER
 7853 067330                            ITAC25: SETVEC  VECC2,#INTSC2,#PRI07    ;SET VECTOR FOR CHANNEL 2
                                        .MCALL  M$PUT,M$SVC,M$GNINS
      067330                            M$PUT   #3,VECC2,#INTSC2,#PRI07
                                        .MCALL  M$PUT1
                                        .IF NB  <VECC2>
      067330                            M$PUT   <VECC2>,<#INTSC2>,<#PRI07>,<>,<>,<>,<>,<>,<>
                                        .MCALL  M$PUT1
                                        .IF NB  <#INTSC2>
      067330                            M$PUT   <#INTSC2>,<#PRI07>,<>,<>,<>,<>,<>,<>,<>
                                        .MCALL  M$PUT1
                                        .IF NB  <#PRI07>
      067330                            M$PUT   <#PRI07>,<>,<>,<>,<>,<>,<>,<>,<>
                                        .MCALL  M$PUT1
                                        .IF NB  <>
                                        M$PUT   <>,<>,<>,<>,<>,<>,<>,<>,<>
                                        .ENDC
                                        .IF NB  <#PRI07>
      067330                            M$PUT1  #PRI07
                                        .MCALL  M$GNINS
                                        .IF B
      067330                            M$GNINS <MOV    #PRI07,-(SP)>
                                        .IF LT SVCINS
                                        MOV     #PRI07,-(SP)
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                MOV     #PRI07, (SP)
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
      067330  012746  000340                                                                    MOV     #PRI07, (SP)
                                                        .NLIST
                                        .ENDC
                                        .IFF
                                        .IF DIF B,<#PRI07>
                                        .ERROR  ;ILL. ARG. "#PRI07" ONLY "B" IS ALLOWED.
                                        .MEXIT
                                        .ENDC
                                        M$GNINS <CLR    -(SP)>
                                        M$GNINS <BISB   ,(SP)>
                                        .ENDC
```

```
                                        .ENDC
                                        .ENDC
                                        .IF NB  <#INTSC2>
      067334                            M$PUT1  #INTSC2
                                        .MCALL  M$GNINS
                                        .IF B
      067334                            M$GNINS <MOV    #INTSC2, (SP)>
                                        .IF LT SVCINS
                                        MOV     #INTSC2,-(SP)
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                MOV     #INTSC2,-(SP)
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
      067334  012746  010142                                                    MOV     #INTSC2,-(SP)
                                                        .NLIST
                                        .ENDC
                                        .IFF
                                        .IF DIF B,<#INTSC2>
                                        .ERROR  ;ILL. ARG. "#INTSC2" ONLY "B" IS ALLOWED.
                                        .MEXIT
                                        .ENDC
                                        M$GNINS <CLR    -(SP)>
                                        M$GNINS <BISB   ,(SP)>
                                        .ENDC
                                        .ENDC
                                        .ENDC
                                        .IF NB  <VECC2>
      067340                            M$PUT1  VECC2
                                        .MCALL  M$GNINS
                                        .IF B
      067340                            M$GNINS <MOV    VECC2,-(SP)>
                                        .IF LT SVCINS
                                        MOV     VECC2,-(SP)
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                MOV     VECC2,-(SP)
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
      067340  013746  002246                                                    MOV     VECC2,-(SP)
                                                        .NLIST
                                        .ENDC
                                        .IFF
                                        .IF DIF B,<VECC2>
                                        .ERROR  ;ILL. ARG. "VECC2" ONLY "B" IS ALLOWED.
                                        .MEXIT
                                        .ENDC
```

```
                                        M$GNINS <CLR    -(SP)>
                                        M$GNINS <BISB   ,(SP)>
                                        .ENDC
                                        .ENDC
                                        .ENDC
                                        .IF NB  <#3>
      067344                            M$PUT1  #3
                                        .MCALL  M$GNINS
                                        .IF B
      067344                            M$GNINS <MOV    #3,-(SP)>
                                        .IF LT SVCINS
                                        MOV     #3,-(SP)
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                MOV     #3,-(SP)
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
      067344  012746  000003                                                                    MOV     #3,-(SP)
                                                        .NLIST
                                        .ENDC
                                        .IFF
                                        .IF DIF B,<#3>
                                        .ERROR  ;ILL. ARG. "#3" ONLY "B" IS ALLOWED.
                                        .MEXIT
                                        .ENDC
                                        M$GNINS <CLR    -(SP)>
                                        M$GNINS <BISB   ,(SP)>
                                        .ENDC
                                        .ENDC
      067350                            M$SVC   C$SVEC
                                        .MCALL  M$GNINS,M$TSTLAB
      067350                            M$TSTLAB
                                        .MCALL  M$TLABEL,M$INCR
                                        .IIF LT T$TSTMAC, .MEXIT
                                        .RADIX  10
                                        M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                        .RADIX  8
                                        M$INCR  T$TSTSEQ
      067350                            M$GNINS <TRAP   C$SVEC>
                                        .IF LT SVCINS
                                        TRAP    C$SVEC
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                TRAP    C$SVEC
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
      067350  104437                                                                            TRAP    C$SVEC
```

```
                                                        .NLIST
                                        .ENDC
      067352                            M$GNINS <ADD    #10,SP>
                                        .IF LT SVCINS
                                        ADD     #10,SP
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                ADD     #10,SP
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
      067352  062706  000010                                                            ADD     #10,SP
                                                        .NLIST
                                        .ENDC
 7854 067356                                    SETVEC  VECC1,#INTSC1,#PRI07    ;SET VECTOR FOR CHANNEL 1
                                        .MCALL  M$PUT,M$SVC,M$GNINS
      067356                            M$PUT   #3,VECC1,#INTSC1,#PRI07
                                        .MCALL  M$PUT1
                                        .IF NB  <VECC1>
      067356                            M$PUT   <VECC1>,<#INTSC1>,<#PRI07>,<>,<>,<>,<>,<>,<>
                                        .MCALL  M$PUT1
                                        .IF NB  <#INTSC1>
      067356                            M$PUT   <#INTSC1>,<#PRI07>,<>,<>,<>,<>,<>,<>,<>
                                        .MCALL  M$PUT1
                                        .IF NB  <#PRI07>
      067356                            M$PUT   <#PRI07>,<>,<>,<>,<>,<>,<>,<>,<>
                                        .MCALL  M$PUT1
                                        .IF NB  <>
                                        M$PUT   <>,<>,<>,<>,<>,<>,<>,<>,<>
                                        .ENDC
                                        .IF NB  <#PRI07>
      067356                            M$PUT1  #PRI07
                                        .MCALL  M$GNINS
                                        .IF B
      067356                            M$GNINS <MOV    #PRI07,-(SP)>
                                        .IF LT SVCINS
                                        MOV     #PRI07,-(SP)
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                MOV     #PRI07,-(SP)
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
      067356  012746  000340                                                            MOV     #PRI07,-(SP)
                                                        .NLIST
                                        .ENDC
                                        .IFF
                                        .IF DIF B,<#PRI07>
                                        .ERROR  ;ILL. ARG. "#PRI07" ONLY "B" IS ALLOWED.
```

```
                                .MEXIT
                                .ENDC
                                M$GNINS <CLR    -(SP)>
                                M$GNINS <BISB   ,(SP)>
                                .ENDC
                                .ENDC
                                .ENDC
                                .IF NB  <#INTSC1>
     067362                     M$PUT1  #INTSC1
                                .MCALL  M$GNINS
                                .IF B
     067362                     M$GNINS <MOV    #INTSC1,-(SP)>
                                .IF LT SVCINS
                                MOV     #INTSC1,-(SP)
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        MOV     #INTSC1,-(SP)
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
     067362  012746  010132                                                         MOV     #INTSC1,-(SP)
                                                .NLIST
                                .ENDC
                                .IFF
                                .IF DIF B,<#INTSC1>
                                .ERROR  ;ILL. ARG. "#INTSC1" ONLY "B" IS ALLOWED.
                                .MEXIT
                                .ENDC
                                M$GNINS <CLR    -(SP)>
                                M$GNINS <BISB   ,(SP)>
                                .ENDC
                                .ENDC
                                .ENDC
                                .IF NB  <VECC1>
     067366                     M$PUT1  VECC1
                                .MCALL  M$GNINS
                                .IF B
     067366                     M$GNINS <MOV    VECC1,-(SP)>
                                .IF LT SVCINS
                                MOV     VECC1,-(SP)
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        MOV     VECC1,-(SP)
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
     067366  013746  002244                                                         MOV     VECC1,-(SP)
                                                .NLIST
                                .ENDC
```

```
                                        .IFF
                                        .IF DIF B,<VECC1>
                                        .ERROR  ;ILL. ARG. "VECC1" ONLY "B" IS ALLOWED.
                                        .MEXIT
                                        .ENDC
                                        M$GNINS <CLR    -(SP)>
                                        M$GNINS <BISB   ,(SP)>
                                        .ENDC
                                        .ENDC
                                        .ENDC
                                        .IF NB  <#3>
      067372                            M$PUT1  #3
                                        .MCALL  M$GNINS
                                        .IF B
      067372                            M$GNINS <MOV    #3,-(SP)>
                                        .IF LT SVCINS
                                        MOV     #3,-(SP)
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                MOV     #3,-(SP)
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
      067372  012746  000003                                                    MOV     #3,-(SP)
                                                        .NLIST
                                        .ENDC
                                        .IFF
                                        .IF DIF B,<#3>
                                        .ERROR  ;ILL. ARG. "#3" ONLY "B" IS ALLOWED.
                                        .MEXIT
                                        .ENDC
                                        M$GNINS <CLR    -(SP)>
                                        M$GNINS <BISB   ,(SP)>
                                        .ENDC
                                        .ENDC
      067376                            M$SVC   C$SVEC
                                        .MCALL  M$GNINS,M$TSTLAB
      067376                            M$TSTLAB
                                        .MCALL  M$TLABEL,M$INCR
                                        .IIF LT T$TSTMAC, .MEXIT
                                        .RADIX  10
                                        M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                        .RADIX  8
                                        M$INCR  T$TSTSEQ
      067376                            M$GNINS <TRAP   C$SVEC>
                                        .IF LT SVCINS
                                        TRAP    C$SVEC
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                TRAP    C$SVEC
                                                        .NLIST
```

```
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
      067376  104437                                                          TRAP    C$SVEC
                                                    .NLIST
                                        .ENDC
      067400                            M$GNINS <ADD    #10,SP>
                                        .IF LT SVCINS
                                        ADD     #10,SP
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                              ADD       #10,SP
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
      067400  062706  000010                                                  ADD     #10,SP
                                                        .NLIST
                                        .ENDC
 7855 067404  112777  000212  112656          MOVB      #212,@ICRHX           ;----LOAD TON INTO ACR 2-------------
 7856 067412  013701  002312                  MOV       DPA1,R1               ;CREATE MLA1
 7857 067416  062701  000040                  ADD       #40,R1                ;...
 7858 067422  010137  002410                  MOV       R1,MLA1               ;STORE MLA1
 7859 067426  113777  002410  112642          MOVB      MLA1,@IDRHX           ;----LOAD MLA1 INTO DOR 2------ ------
 7860 067434  004737  011050                  JSR       PC,LOOP               ;WAIT A LITTLE
 7861 067440  042777  000010  112632          BIC       #10,@CSRX             ;SELECT CHANNEL 1
 7862 067446  005077  112634                  CLR       @MCRX                 ;CLEAR THE MATCH CHARACTER REGISTER
 7863 067452  113777  002236  112630          MOVB      MCINP,@MCRHX          ;---LOAD CNT INPUT INTO MCR HIGH BYTE-
 7864 067460  052777  100177  112620          BIS       #100177,@MCRX         ;--- ENB MATCH BIT +EOS (177)IN MCR1--
 7865 067466  052777  000010  112604          BIS       #10,@CSRX             ;SELECT CHANNEL 2
 7866 067474  012777  002734  112600          MOV       #TABF,@BARX           ;---LOAD START ADDRESS OF TABLE F ----
 7867 067502  013737  002236  002402          MOV       MCINP,RSAVE           ;STORE MATCH CHARACTER COUNT INPUT
 7868 067510  062737  000011  002402          ADD       #11,RSAVE             ;ADD 11(OCTAL) DATA BYTES TO INPUT
 7869 067516  005437  002402                  NEG       RSAVE                 ;BILD 2'COMPL FOR BCR
 7870 067522  013777  002402  112554          MOV       RSAVE,@BCRX           ;----LOAD INPUT+DATA BYTES INTO BCR 2-
 7871 067530  005437  002402                  NEG       RSAVE                 ;REBUILD INPUT + DATA FOR COUNTER
 7872 067534  012777  000107  112536          MOV       #107,@CSRX            ; ---DMA ENB,DMA DIR,INT ENB IN CSR2--
 7873 067542                                  BGNSEG
                                        .MCALL  M$PUSH,M$INCR,M$SVC
              000040                    I$SEG=F$BGN
      067542                            M$PUSH  T$NS,T$NESTLEV,F$SEG
                                        .MCALL  M$INCR,M$SETS
      067542                            M$INCR  T$NESTLEV
              000002                    T$NESTLEV=T$NESTLEV+1
      067542                            M$SETS  T$NS,\T$NESTLEV,F$SEG
              000003                    T$NS2=F$SEG
              010000                    T$$SEG=S$LSYM
      067542                            M$PUSH  T$SEK,T$SEGLEV,T$$SEG
                                        .MCALL  M$INCR,M$SETS
      067542                            M$INCR  T$SEGLEV
              000000                    T$SEGLEV=T$SEGLEV+1
      067542                            M$SETS  T$SEK,\T$SEGLEV,T$$SEG
              010000                    T$SEK0=T$$SEG
```

C4

```
     067542                      M$INCR  S$LSYM
             010001              S$LSYM=S$LSYM+1
     067542                      M$SVC   C$BSEG
                                 .MCALL  M$GNINS,M$TSTLAB
     067542                      M$TSTLAB
                                 .MCALL  M$TLABEL,M$INCR
                                 .IIF LT T$TSTMAC, .MEXIT
                                 .RADIX  10
                                 M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                 .RADIX  8
                                 M$INCR  T$TSTSEQ
     067542                      M$GNINS <TRAP   C$BSEG>
                                 .IF LT SVCINS
                                 TRAP    C$BSEG
                                 .MEXIT
                                 .ENDC
                                 .IF EQ SVCINS
                                 .LIST
                                         TRAP    C$BSEG
                                                 .NLIST
                                 .MEXIT
                                 .ENDC
                                 .IF GT SVCINS
                                 .LIST
     067542  104404                                                                    TRAP    C$BSEG
                                                 .NLIST
                                 .ENDC
     067544  005037  002400              CLR     INTFC2                  ;CLEAR INTERRUPT FLAG
     067550  005037  002376              CLR     INTFC1                  ;CLEAR INTERRUPT FLAG
     067554  042777  000010  112516      BIC     #10,@CSRX               ;SELECT CHANNEL 1
     067562  012700  000110              MOV     #72.,R0                 ;CLEAR BUFFER TABE
     067566  012701  002624              MOV     #TABE,R1                ;...
     067572  105021              2$:     CLRB    (R1)+                   ;...
     067574  105300                      DECB    R0                      ;...
     067576  001375                      BNE     2$                      ;...
     067600  012777  002624  112474      MOV     #TABE,@BARX             ;----LOAD START ADDRESS OF TABLE E----
     067606  012777  177667  112470      MOV     #177667,@BCRX           ;----LOAD                INTO BCR 1---
     067614  012777  000101  112456      MOV     #101,@CSRX              ;----SET DMA ENB,INT ENB IN CSR1
     067622                              SETPRI  #PRI00                  ;SET PRIORITY TO ZERO
                                 .MCALL  M$LDR0,M$SVC
     067622                      M$LDR0  #PRI00,SETPRI
                                 .MCALL  M$GNINS
                                 .IF NB #PRI00
                                 .IF DIF R0,#PRI00
     067622                      M$GNINS <MOV    #PRI00,R0>
                                 .IF LT SVCINS
                                 MOV     #PRI00,R0
                                 .MEXIT
                                 .ENDC
                                 .IF EQ SVCINS
                                 .LIST
                                         MOV     #PRI00,R0
                                                 .NLIST
                                 .MEXIT
                                 .ENDC
                                 .IF GT SVCINS
                                 .LIST
```

```
     067622  012700  000000                                                      MOV     #PRI00,R0
                                                      .NLIST
                                        .ENDC
                                        .ENDC
                                        .IFF
                                        .ERROR  ;MISSING ARG. ON "SETPRI"
                                        .ENDC
     067626                             M$SVC   C$SPRI
                                        .MCALL  M$GNINS,M$TSTLAB
     067626                             M$TSTLAB
                                        .MCALL  M$TLABEL,M$INCR
                                        .IIF LT T$TSTMAC, .MEXIT
                                        .RADIX  10
                                        M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                        .RADIX  8
                                        M$INCR  T$TSTSEQ
     067626                             M$GNINS <TRAP   C$SPRI>
                                        .IF LT SVCINS
                                        TRAP    C$SPRI
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                TRAP    C$SPRI
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
     067626  104441                                                              TRAP    C$SPRI
                                                        .NLIST
                                        .ENDC
7886 067630  052777  000010  112442             BIS     #10,@CSRX               ;SELECT CHANNEL 2
7887 067636  012737  000002  002374             MOV     #2,CHAN                 ;LOAD CHANNEL NUMBER
7888 067644  112777  000013  112416             MOVB    #13,@ICRHX              ;----LOAD GTS INTO ACR 2 -------  ----
7889 067652  012701  077777                     MOV     #77777,R1               ;LOAD LOOP COUNTER
7890 067656  005737  002400             13$:    TST     INTFC2                  ;IS INTERRUPT IN CHANNEL 2 OCCER
7891 067662  001015                             BNE     10$                     ;BRANCH IF YES
7892 067664  005301                             DEC     R1                      ;DECREMENT COUNTER
7893 067666  001373                             BNE     13$                     ;IF COUNTER NO ZERO,TEST AGIN
7894 067670  017737  112404  002502             MOV     @CSRX,BAD               ;GET CSR2 CONTENTS
7895 067676  012737  100016  002500             MOV     #100016,GOOD            ;BC OF,DMA DIR,MUX,SYS CONT SHOULD SET
7896 067704                                     ERRSOFT 2501,E232,ERR201        ;ERROR HANDLER
                                        .MCALL  M$ERRINS
     067704                             M$ERRINS        2501,E232,ERR201,C$ERSOFT
                                        .MCALL  M$GNINS,M$WORD,M$TSTLAB
     067704                             M$SVC   C$ERSOFT
                                        .MCALL  M$GNINS,M$TSTLAB
     067704                             M$TSTLAB
                                        .MCALL  M$TLABEL,M$INCR
                                        .IIF LT T$TSTMAC, .MEXIT
                                        .RADIX  10
                                        M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                        .RADIX  8
                                        M$INCR  T$TSTSEQ
     067704                             M$GNINS <TRAP   C$ERSOFT>
                                        .IF LT SVCINS
```

```
                        TRAP    C$ERSOFT
                        .MEXIT
                        .ENDC
                        .IF EQ SVCINS
                        .LIST
                                TRAP    C$ERSOFT
                                        .NLIST
                        .MEXIT
                        .ENDC
                        .IF GT SVCINS
                        .LIST
067704  104457                                                  TRAP    C$ERSOFT
                                        .NLIST
                        .ENDC
        000012          .RADIX  10
                        .IF NB  2501
        004705          T$ERRNUM=2501
                        .IFF
                        .ERROR  ;MISSING ERROR-NR
                        .ENDC
067706                  M$WORD  \T$ERRNUM
                        .MCALL  M$GNINS
                        .IRP    N,<2501>
                        M$GNINS <.WORD  N>
                        .ENDM
067706                  M$GNINS <.WORD  2501>
                        .IF LT SVCINS
                        .WORD   2501
                        .MEXIT
                        .ENDC
                        .IF EQ SVCINS
                        .LIST
                                .WORD   2501
                                        .NLIST
                        .MEXIT
                        .ENDC
                        .IF GT SVCINS
                        .LIST
067706  004705                                                  .WORD   2501
                                        .NLIST
                        .ENDC
        000010          .RADIX  8
                        .IF NB E232
067710                  M$WORD  E232
                        .MCALL  M$GNINS
                        .IRP    N,<E232>
                        M$GNINS <.WORD  N>
                        .ENDM
067710                  M$GNINS <.WORD  E232>
                        .IF LT SVCINS
                        .WORD   E232
                        .MEXIT
                        .ENDC
                        .IF EQ SVCINS
                        .LIST
                                .WORD   E232
                                        .NLIST
```

```
                        .MEXIT
                        .ENDC
                        .IF GT SVCINS
                        .LIST
     067710  006062                                                   .WORD   E232
                                        .NLIST
                        .ENDC
                        .IFF
                        M$WORD  0
                        .ENDC
                        .IF NB ERR201
     067712             M$WORD  ERR201
                        .MCALL  M$GNINS
                        .IRP    N,<ERR201>
                        M$GNINS <.WORD  N>
                        .ENDM
     067712             M$GNINS <.WORD  ERR201>
                        .IF LT SVCINS
                        .WORD   ERR201
                        .MEXIT
                        .ENDC
                        .IF EQ SVCINS
                        .LIST
                                .WORD   ERR201
                                        .NLIST
                        .MEXIT
                        .ENDC
                        .IF GT SVCINS
                        .LIST
     067712  003470                                                   .WORD   ERR201
                                        .NLIST
                        .ENDC
                        .IFF
                        M$WORD  0
                        .ENDC
7897 067714                     CKLOOP                  ;BRANCH TO BGNSEG IF ERRLOOP IS SET
                        .MCALL  M$SVC
     067714             M$SVC   C$CLP1
                        .MCALL  M$GNINS,M$TSTLAB
     067714             M$TSTLAB
                        .MCALL  M$TLABEL,M$INCR
                        .IIF LT T$TSTMAC, .MEXIT
                        .RADIX  10
                        M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                        .RADIX  8
                        M$INCR  T$TSTSEQ
     067714             M$GNINS <TRAP   C$CLP1>
                        .IF LT SVCINS
                        TRAP    C$CLP1
                        .MEXIT
                        .ENDC
                        .IF EQ SVCINS
                        .LIST
                                TRAP    C$CLP1          -
                                        .NLIST
                        .MEXIT
                        .ENDC
```

```
                                                .IF GT SVCINS
                                                .LIST
        067714  104406                                                                          TRAP    C$CLP1
                                                                .NLIST
                                                .ENDC
   7898 067716  042777  000010  112354  10$:    BIC     #10,@CSRX               ;SELECT CHANNEL 1
   7899 067724  012737  000001  002374           MOV     #1,CHAN                 ;LOAD CHANNEL NUMBER
   7900 067732  005737  002376                   TST     INTFC1                  ;IS AN INTERRUPT IN CHANNEL 1 OCCURED
   7901 067736  001013                           BNE     11$                     ;BRANCH IF YES
   7902 067740  017737  112334  002502           MOV     @CSRX,BAD               ;GET CSR1 CONTENTS
   7903 067746  012737  020000  002500           MOV     #20000,GOOD             ;COMP END SHOULD BE SET
   7904 067754                                   ERRSOFT 2502,E232,ERR201        ;ERROR HANDLER
                                                .MCALL  M$ERRINS
        067754                                  M$ERRINS        2502,E232,ERR201,C$ERSOFT
                                                .MCALL  M$GNINS,M$WORD,M$TSTLAB
        067754                                  M$SVC   C$ERSOFT
                                                .MCALL  M$GNINS,M$TSTLAB
        067754                                  M$TSTLAB
                                                .MCALL  M$TLABEL,M$INCR
                                                .IIF LT T$TSTMAC, .MEXIT
                                                .RADIX  10
                                                M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                                .RADIX  8
                                                M$INCR  T$TSTSEQ
        067754                                  M$GNINS <TRAP   C$ERSOFT>
                                                .IF LT SVCINS
                                                TRAP    C$ERSOFT
                                                .MEXIT
                                                .ENDC
                                                .IF EQ SVCINS
                                                .LIST
                                                        TRAP    C$ERSOFT
                                                                .NLIST
                                                .MEXIT
                                                .ENDC
                                                .IF GT SVCINS
                                                .LIST
        067754  104457                                                                          TRAP    C$ERSOFT
                                                                .NLIST
                                                .ENDC
                000012                          .RADIX  10
                                                .IF NB  2502
                004706                          T$ERRNUM=2502
                                                .IFF
                                                .ERROR  ;MISSING ERROR NR
                                                .ENDC
        067756                                  M$WORD  \T$ERRNUM
                                                .MCALL  M$GNINS
                                                .IRP    N,<2502>
                                                M$GNINS <.WORD  N>
                                                .ENDM
        067756                                  M$GNINS <.WORD  2502>
                                                .IF LT SVCINS
                                                .WORD   2502
                                                .MEXIT
                                                .ENDC
                                                .IF EQ SVCINS
```

```
                        .LIST
                                .WORD   2502
                                        .NLIST
                        .MEXIT
                        .ENDC
                        .IF GT SVCINS
                        .LIST
067756  004706                                                          .WORD   2502
                                        .NLIST
                        .ENDC
        000010          .RADIX  8
                        .IF NB E232
067760                  M$WORD  E232
                        .MCALL  M$GNINS
                        .IRP    N,<E232>
                        M$GNINS <.WORD  N>
                        .ENDM
067760                  M$GNINS <.WORD  E232>
                        .IF LT SVCINS
                        .WORD   E232
                        .MEXIT
                        .ENDC
                        .IF EQ SVCINS
                        .LIST
                                .WORD   E232
                                        .NLIST
                        .MEXIT
                        .ENDC
                        .IF GT SVCINS
                        .LIST
067760  006062                                                          .WORD   E232
                                        .NLIST
                        .ENDC
                        .IFF
                        M$WORD  0
                        .ENDC
                        .IF NB ERR201
067762                  M$WORD  ERR201
                        .MCALL  M$GNINS
                        .IRP    N,<ERR201>
                        M$GNINS <.WORD  N>
                        .ENDM
067762                  M$GNINS <.WORD  ERR201>
                        .IF LT SVCINS
                        .WORD   ERR201
                        .MEXIT
                        .ENDC
                        .IF EQ SVCINS
                        .LIST
                                .WORD   ERR201
                                        .NLIST
                        .MEXIT
                        .ENDC
                        .IF G~ SVCINS
                        .LIST
067762  003470                                                          .WORD   ERR201
                                        .NLIST
```

```
                                        .ENDC
                                        .IFF
                                        M$WORD  0
                                        .ENDC
  7905 067764                                   CKLOOP                          ;BRANCH TO BGNSEG IF ERRLOOP IS SET
                                        .MCALL  M$SVC
       067764                           M$SVC   C$CLP1
                                        .MCALL  M$GNINS,M$TSTLAB
       067764                           M$TSTLAB
                                        .MCALL  M$TLABEL,M$INCR
                                        .IIF LT T$TSTMAC, .MEXIT
                                        .RADIX  10
                                        M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                        .RADIX  8
                                        M$INCR  T$TSTSEQ
       067764                           M$GNINS <TRAP   C$CLP1>
                                        .IF LT SVCINS
                                        TRAP    C$CLP1
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                TRAP    C$CLP1
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
       067764  104406                                                                           TRAP    C$CLP1
                                                        .NLIST
                                        .ENDC
  7906 067766                           11$:    SETPRI  #PRI07                  ;NO FURTHER INTERRUPT ALLOWED
                                        .MCALL  M$LDRO,M$SVC
       067766                           M$LDRO  #PRI07,SETPRI
                                        .MCALL  M$GNINS
                                        .IF NB #PRI07
                                        .IF DIF R0,#PRI07
       067766                           M$GNINS <MOV    #PRI07,R0>
                                        .IF LT SVCINS
                                        MOV     #PRI07,R0
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                MOV     #PRI07,R0
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
       067766  012700  000340                                                                   MOV     #PRI07,R0
                                                        .NLIST
                                        .ENDC
                                        .ENDC
                                        .IFF
                                        .ERROR  ;MISSING ARG. ON "SETPRI"
                                        .ENDC
```

```
     067772                           M$SVC   C$SPRI
                                      .MCALL  M$GNINS,M$TSTLAB
     067772                           M$TSTLAB
                                      .MCALL  M$TLABEL,M$INCR
                                      .IIF LT T$TSTMAC, .MEXIT
                                      .RADIX  10
                                      M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                      .RADIX  8
                                      M$INCR  T$TS|SEQ
     067772                           M$GNINS <TRAP   C$SPRI>
                                      .IF LT SVCINS
                                      TRAP    C$SPRI
                                      .MEXIT
                                      .ENDC
                                      .IF EQ SVCINS
                                      .LIST
                                              TRAP    C$SPRI
                                                      .NLIST
                                      .MEXIT
                                      .ENDC
                                      .IF GT SVCINS
                                      .LIST
     067772  104441                                                                   TRAP    C$SPRI
                                                      .NLIST
                                      .ENDC
     067774  012701  002734                   MOV     #TABF,R1                ;PROVIDE FIRST BYTE OF BUFFER F
     070000  012702  002624                   MOV     #TABE,R2                ;PROVIDE FIRST BYTE OF BUFFER E
     070004  005037  002404                   CLR     CNT1                    ;CLEAR BUFFER COUNTER
     070010  005237  002404           30$:    INC     CNT1                    ;BYTE COUNT
     070014  122122                           CMPB    (R1)+,(R2)+             ;BUFFER F EQUAL TO BUFFER E
     070016  001431                           BEQ     33$                     ;IF YES, CONTINUE
     070020  005037  002500                   CLR     GOOD                    ;CLEAR GOOD
     070024  005037  002502                   CLR     BAD                     ;CLEAR BAD
     070030  005037  002426                   CLR     TXADRH                  ;SET UP DATA FOR ERROR MESSAGE
     070034  010137  002430                   MOV     R1,TXADRL               ;...
     070040  005337  002430                   DEC     TXADRL                  ;...
     070044  005037  002422                   CLR     RXADRH                  ;...
     070050  010237  002424                   MOV     R2,RXADRL               ;...
     070054  005337  002424                   DEC     RXADRL                  ;...
     070060  114137  002500                   MOVB    -(R1),GOOD              ;SET UP DATA FOR ERROR MESSAGE
     070064  114237  002502                   MOVB    -(R2),BAD               ;...
     070070                                   ERRSOFT 2503,E250,ERR231        ;ERROR HANDLER
                                      .MCALL  M$ERRINS
     070070                           M$ERRINS        2503,E250,ERR231,C$ERSOFT
                                      .MCALL  M$GNINS,M$WORD,M$TSTLAB
     070070                           M$SVC   C$ERSOFT
                                      .MCALL  M$GNINS,M$TSTLAB
     070070                           M$TSTLAB
                                      .MCALL  M$TLABEL,M$INCR
                                      .IIF LT T$TSTMAC, .MEXIT
                                      .RADIX  10
                                      M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                      .RADIX  8
                                      M$INCR  T$TSTSEQ
     070070                           M$GNINS <TRAP   C$ERSOFT>
                                      .IF LT SVCINS
                                      TRAP    C$ERSOFT
```

```
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        TRAP    C$ERSOFT
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
      070070  104457                                                                TRAP    C$ERSOFT
                                                .NLIST
                                .ENDC
              000012            .RADIX  10
                                .IF NB  2503
              004707            T$ERRNUM=2503
                                .IFF
                                .ERROR  ;MISSING ERROR-NR
                                .ENDC
      070072                    M$WORD  \T$ERRNUM
                                .MCALL  M$GNINS
                                .IRP    N,<2503>
                                M$GNINS <.WORD  N>
                                .ENDM
      070072                    M$GNINS <.WORD  2503>
                                .IF LT SVCINS
                                .WORD   2503
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        .WORD   2503
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
      070072  004707                                                                .WORD   2503
                                                .NLIST
                                .ENDC
              000010            .RADIX  8
                                .IF NB E250
      070074                    M$WORD  E250
                                .MCALL  M$GNINS
                                .IRP    N,<E250>
                                M$GNINS <.WORD  N>
                                .ENDM
      070074                    M$GNINS <.WORD  E250>
                                .IF LT SVCINS
                                .WORD   E250
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        .WORD   E250
                                                .NLIST
                                .MEXIT
```

```
                                .ENDC
                                .IF GT SVCINS
                                .LIST
     070074  005716                                                                  .WORD   E250
                                          .NLIST
                                .ENDC
                                .IFF
                                M$WORD  0
                                .ENDC
                                .IF NB ERR231
     070076                     M$WORD  ERR231
                                .MCALL  M$GNINS
                                .IRP    N,<ERR231>
                                M$GNINS <.WORD  N>
                                .ENDM
     070076                     M$GNINS <.WORD  ERR231>
                                .IF LT SVCINS
                                .WORD   ERR231
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        .WORD   ERR231
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
     070076  003734                                                                  .WORD   ERR231
                                          .NLIST
                                .ENDC
                                .IFF
                                M$WORD  0
                                .ENDC
7924 070100                             CKLOOP                        ;BRANCH TO BGNSEG IF ERRLOOP IS SET
                                .MCALL  M$SVC
     070100                     M$SVC   C$CLP1
                                .MCALL  M$GNINS,M$TSTLAB
     070100                     M$TSTLAB
                                .MCALL  M$TLABEL,M$INCR
                                .IIF LT T$TSTMAC, .MEXIT
                                .RADIX  10
                                M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                .RADIX  8
                                M$INCR  T$TSTSEQ
     070100                     M$GNINS <TRAP   C$CLP1>
                                .IF LT SVCINS
                                TRAP    C$CLP1
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        TRAP    C$CLP1
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
```

```
                                          .LIST
      070100  104406                                                                            TRAP    C$CLP1
                                                        .NLIST
                                          .ENDC
 7925 070102  023737  002404  002402    33$:    CMP     CNT1,RSAVE              ;ALL BYTES COMPARED ?
 7926 070110  001337                            BNE     30$                     ;IF NOT, GET NEXT ONE
 7927 070112                                    ENDSEG
                                          .MCALL  M$POP,M$GNLS,M$SVC,M$ENDERR
      070112                              M$POP   T$NS,T$NESTLEV,T$TEMP
                                          .MCALL  M$GETS,M$DECR
                                          .IF LT  T$NESTLEV
                                          .ERROR  T$NESTLEV       ; MACRO T$NS UNDERFLOW
                                          .MEXIT
                                          .ENDC
      070112                              M$GETS  T$NS,\T$NESTLEV,T$TEMP
              000003                      T$TEMP=T$NS2
      070112                              M$DECR  T$NESTLEV
              000001                      T$NESTLEV=T$NESTLEV-1
                                          .IF EQ F$SEG-T$TEMP
      070112                              M$POP   T$SEK,T$SEGLEV,T$$SEG
                                          .MCALL  M$GETS,M$DECR
                                          .IF LT  T$SEGLEV
                                          .ERROR  T$SEGLEV        ; MACRO T$SEK UNDERFLOW
                                          .MEXIT
                                          .ENDC
      070112                              M$GETS  T$SEK,\T$SEGLEV,T$$SEG
              010000                      T$$SEG=T$SEK0
      070112                              M$DECR  T$SEGLEV
              177777                      T$SEGLEV=T$SEGLEV-1
      070112                              M$GNLS  T$$SEG
                                          .MCALL  M$GEN
                                          .IF NB T$$SEG
      070112                              M$GEN   \T$$SEG,$,SVCTAG
                                          .IF LE  SVCTAG
                                          .IIF EQ SVCTAG,.LIST
                                          10000$:
                                          .IIF EQ SVCTAG,.NLIST
                                          .MEXIT
                                          .ENDC
                                          .LIST
      070112                                                                          10000$:
                                                .NLIST
                                          .IFF
                                          M$GEN   \S$LSYM,$,SVCTAG
                                          .ENDC
      070112                              M$SVC   C$ESEG
                                          .MCALL  M$GNINS,M$TSTLAB
      070112                              M$TSTLAB
                                          .MCALL  M$TLABEL,M$INCR
                                          .IIF LT T$TSTMAC, .MEXIT
                                          .RADIX  10
                                          M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                          .RADIX  8
                                          M$INCR  T$TSTSEQ
      070112                              M$GNINS <TRAP   C$ESEG>
                                          .IF LT SVCINS
                                          TRAP    C$ESEG
```

```
                                         .MEXIT
                                         .ENDC
                                         .IF EQ SVCINS
                                         .LIST
                                                 TRAP    C$ESEG
                                                         .NLIST
                                         .MEXIT
                                         .ENDC
                                         .IF GT SVCINS
                                         .LIST
 070112  104405                                                                                          TRAP    C$ESEG
                                                         .NLIST
                                         .ENDC
                                         .IF EQ T$SEGLEV+1
         000041                          I$SEG=F$END
                                         .ENDC
                                         .IFF
                                         M$ENDERR        ENDSEG,T$TEMP
                                         .ENDC
 070114  012777  000010  112156                  MOV     #10,@CSRX               ;SELECT CHA. 2 ,CLR ALL BIT IN CHA.1
 070122  112777  000014  112140                  MOVB    #14,@ICRHX              ;----LOAD TCA INTO ACR 2--------------
 070130  017737  112136  002502                  MOV     @IDRX,BAD               ;READ DIR2 REG. FOR CLEAR ACCRQ SIGNAL
                                         ;+++--------------------------------------------------------------------------
                                         ;PART 2 CHECK THE FALSE NUMBER OF EOS CHARACTERS
                                         ;+++--------------------------------------------------------------------------
 070136  012777  000002  112134                  MOV     #2,@CSRX                ;SELECT CHANNEL 1,SET SYS CON.IN CHA.2
 070144  005077  112136                          CLR     @MCRX                   ;CLEAR MCR1 REGISTER
 070150  113777  002236  112132                  MOVB    MCINP,@MCRHX            ;----LOAD CNT INPUT INTO MCR 1--------
 070156  052777  100025  112122                  BIS     #100025,@MCRX           ;----ENB MATCH + EOS CHARACTER (25))
 070164  052777  000010  112106                  BIS     #10,@CSRX               ;SELECT CHANNEL 2
 070172  012777  003250  112102                  MOV     #TABK,@BARX             ;---LOAD START ADDRESS OF BUFFER K----
 070200  013737  002236  002402                  MOV     MCINP,RSAVE             ;STORE MATCH CHARACTER CNT INPUT
 070206  062737  000003  002402                  ADD     #3,RSAVE                ;ADD 3 DATA BYTES TO CNT INPUT
 070214  005437  002402                          NEG     RSAVE                   ;BILD 2'COMPL FOR BCR
 070220  013777  002402  112056                  MOV     RSAVE,@BCRX             ;---LOAD BYTE COUNT REGISTER----------
 070226  005437  002402                          NEG     RSAVE                   ;REBUILD INPUT+ DATA FOR COUNTER CNT1
 070232  012777  000107  112040                  MOV     #107,@CSRX              ;---DMA ENB,DMA DIR,INT ENB,SYS CON
 070240                                          BGNSEG
                                         .MCALL  M$PUSH,M$INCR,M$SVC
         000040                          I$SEG=F$BGN
 070240                                  M$PUSH  T$NS,T$NESTLEV,F$SEG
                                         .MCALL  M$INCR,M$SETS
 070240                                  M$INCR  T$NESTLEV
         000002                          T$NESTLEV=T$NESTLEV+1
 070240                                  M$SETS  T$NS,\T$NESTLEV,F$SEG
         000003                          T$NS2=F$SEG
         010001                          T$$SEG=S$LSYM
 070240                                  M$PUSH  T$SEK,T$SEGLEV,T$$SEG
                                         .MCALL  M$INCR,M$SETS
 070240                                  M$INCR  T$SEGLEV
         000000                          T$SEGLEV=T$SEGLEV+1
 070240                                  M$SETS  T$SE<,\T$SEGLEV,T$$SEG
         010001                          T$SE<0=T$$SEG
 070240                                  M$INCR  S$LSYM
         010002                          S$LSYM=S$LSYM+1
 070240                                  M$SVC   C$BSEG
                                         .MCALL  M$GNINS,M$TSTLAB
```

B5

TEST 25: MCR FUNCTION TEST OF CHANNEL 1

```
      070240                              M$TSTLAB
                                          .MCALL  M$TLABEL,M$INCR
                                          .IIF LT T$TSTMAC, .MEXIT
                                          .RADIX  10
                                          M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                          .RADIX  8
                                          M$INCR  T$TSTSEQ
      070240                              M$GNINS <TRAP   C$BSEG>
                                          .IF LT SVCINS
                                          TRAP    C$BSEG
                                          .MEXIT
                                          .ENDC
                                          .IF EQ SVCINS
                                          .LIST
                                                  TRAP    C$BSEG
                                                          .NLIST
                                          .MEXIT
                                          .ENDC
                                          .IF GT SVCINS
                                          .LIST
      070240  104404                                                                  TRAP    C$BSEG
                                                          .NLIST
                                          .ENDC
 7947 070242  005037  002400                      CLR     INTFC2          ;CLEAR INTERRUPT FLAG
 7948 070246  005037  002376                      CLR     INTFC1          ;CLEAR INTERRUPT FLAG
 7949 070252  042777  000010  112020              BIC     #10,@CSRX       ;SELECT CHANNEL 1
 7950 070260  012700  000102                      MOV     #66.,R0         ;CLEAR BUFFER TABH
 7951 070264  012701  003146                      MOV     #TABH,R1        ;...
 7952 070270  105021                      34$:    CLRB    (R1)+           ;...
 7953 070272  105300                              DECB    R0              ;...
 7954 070274  001375                              BNE     34$             ;...
 7955 070276  012777  003146  111776              MOV     #TABH,@BARX     ;---LOAD START ADDRESS OF BUFFER H---
 7956 070304  012777  177675  111772              MOV     #177675,@BCRX   ;---LOAD MAX. TRANSFER INTO BCR 1---
 7957 070312  012777  000101  111760              MOV     #101,@CSRX      ;---SET DMA ENB,INT ENB IN CSR1-
 7958 070320  052777  000010  111752              BIS     #10,@CSRX       ;SELECT CHANNEL 2
 7959 070326  012737  000002  002374              MOV     #2,CHAN         ;LOAD CHANNEL NUMBER
 7960 070334                                      SETPRI  #PRI00          ;SET PRI. TO ZERO (ALLOW INTERRUPT)
                                          .MCALL  M$LDR0,M$SVC
      070334                              M$LDR0  #PRI00,SETPRI
                                          .MCALL  M$GNINS
                                          .IF NB #PRI00
                                          .IF DIF R0,#PRI00
      070334                              M$GNINS <MOV    #PRI00,R0>
                                          .IF LT SVCINS
                                          MOV     #PRI00,R0
                                          .MEXIT
                                          .ENDC
                                          .IF EQ SVCINS
                                          .LIST
                                                  MOV     #PRI00,R0
                                                          .NLIST
                                          .MEXIT
                                          .ENDC
                                          .IF GT SVCINS
                                          .LIST
      070334  012700  000000                                                          MOV     #PRI00,R0
                                                          .NLIST
```

C5

```
                                        .ENDC
                                        .ENDC
                                        .IFF
                                        .ERROR  ;MISSING ARG. ON "SETPRI"
                                        .ENDC
      070340                            M$SVC   C$SPRI
                                        .MCALL  M$GNINS,M$TSTLAB
      070340                            M$TSTLAB
                                        .MCALL  M$TLABEL,M$INCR
                                        .IIF LT T$TSTMAC, .MEXIT
                                        .RADIX  10
                                        M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                        .RADIX  8
                                        M$INCR  T$TSTSEQ
      070340                            M$GNINS <TRAP   C$SPRI>
                                        .IF LT SVCINS
                                        TRAP    C$SPRI
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                TRAP    C$SPRI
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
      070340  104441                                                                            TRAP    C$SPRI
                                                        .NLIST
                                        .ENDC
 7961 070342  112777  000013  111720            MOVB    #13,@ICRHX              ;---LOAD GTS INTO ACR 2-------------
 7962 070350  012701  007777                    MOV     #7777,R1                ;LOAD COUNTER
 7963 070354  005737  002400            40$:    TST     INTFC2                  ;IS INTERRUPT IN CHANNEL 2 OCCUR
 7964 070360  001015                            BNE     43$                     ;BRANCH IF YES
 7965 070362  005301                            DEC     R1                      ;IS TIME OVER
 7966 070364  001373                            BNE     40$                     ;IF NO, TEST AGAIN
 7967 070366  017737  111706  002502            MOV     @CSRX,BAD               ;GET CSR2 CONTENTS
 7968 070374  012737  100016  002500            MOV     #100016,GOOD            ;BC OF,DMA DIR,SYS CONT,MUX SHOULD SET
 7969 070402                                    ERRSOFT 2504,E232,ERR201        ;ERROR HANDLER
                                        .MCALL  M$ERRINS
      070402                            M$ERRINS        2504,E232,ERR201,C$ERSOFT
                                        .MCALL  M$GNINS,M$WORD,M$TSTLAB
      070402                            M$SVC   C$ERSOFT
                                        .MCALL  M$GNINS,M$TSTLAB
      070402                            M$TSTLAB
                                        .MCALL  M$TLABEL,M$INCR
                                        .IIF LT T$TSTMAC, .MEXIT
                                        .RADIX  10
                                        M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                        .RADIX  8
                                        M$INCR  T$TSTSEQ
      070402                            M$GNINS <TRAP   C$ERSOFT>
                                        .IF LT SVCINS
                                        TRAP    C$ERSOFT
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
```

D5


```
                                .LIST
                                        TRAP    C$ERSOFT
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
        070402  104457                                                                  TRAP    C$ERSOFT
                                                .NLIST
                                .ENDC
                000012          .RADIX  10
                                .IF NB  2504
                004710          T$ERRNUM=2504
                                .IFF
                                .ERROR  ;MISSING ERROR-NR
                                .ENDC
        070404                  M$WORD  \T$ERRNUM
                                .MCALL  M$GNINS
                                .IRP    N,<2504>
                                M$GNINS <.WORD  N>
                                .ENDM
        070404                  M$GNINS <.WORD  2504>
                                .IF LT SVCINS
                                .WORD   2504
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        .WORD   2504
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
        070404  004710                                                                  .WORD   2504
                                                .NLIST
                                .ENDC
                000010          .RADIX  8
                                .IF NB E232
        070406                  M$WORD  E232
                                .MCALL  M$GNINS
                                .IRP    N,<E232>
                                M$GNINS <.WORD  N>
                                .ENDM
        070406                  M$GNINS <.WORD  E232>
                                .IF LT SVCINS
                                .WORD   E232
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        .WORD   E232
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
```

E5

```
      070406  006062                                                            .WORD   E232
                                              .NLIST
                                  .ENDC
                                  .IFF
                                  M$WORD  0
                                  .ENDC
                                  .IF NB ERR201
      070410                      M$WORD  ERR201
                                  .MCALL  M$GNINS
                                  .IRP    N,<ERR201>
                                  M$GNINS <.WORD  N>
                                  .ENDM
      070410                      M$GNINS <.WORD  ERR201>
                                  .IF LT SVCINS
                                  .WORD   ERR201
                                  .MEXIT
                                  .ENDC
                                  .IF EQ SVCINS
                                  .LIST
                                          .WORD   ERR201
                                                  .NLIST
                                  .MEXIT
                                  .ENDC
                                  .IF GT SVCINS
                                  .LIST
      070410  003470                                                            .WORD   ERR201
                                                  .NLIST
                                  .ENDC
                                  .IFF
                                  M$WORD  0
                                  .ENDC
 7970 070412                              CKLOOP                  ;BRANCH TO BGNSEG IF ERRLOOP IS SET
                                  .MCALL  M$SVC
      070412                      M$SVC   C$CLP1
                                  .MCALL  M$GNINS,M$TSTLAB
      070412                      M$TSTLAB
                                  .MCALL  M$TLABEL,M$INCR
                                  .IIF LT T$TSTMAC, .MEXIT
                                  .RADIX  10
                                  M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                  .RADIX  8
                                  M$INCR  T$TSTSEQ
      070412                      M$GNINS <TRAP   C$CLP1>
                                  .IF LT SVCINS
                                  TRAP    C$CLP1
                                  .MEXIT
                                  .ENDC
                                  .IF EQ SVCINS
                                  .LIST
                                          TRAP    C$CLP1
                                                  .NLIST
                                  .MEXIT
                                  .ENDC
                                  .IF GT SVCINS
                                  .LIST
      070412  104406                                                            TRAP    C$CLP1
                                                  .NLIST
```

F5


```
                                               .ENDC
   7971 070414  042777  000010  111656  43$:       BIC      #10,@CSRX                   ;SELECT CHANNEL1
   7972 070422  012737  000001  002374             MOV      #1,CHAN                     ;LOAD CHANNEL NUMBER
   7973 070430  005737  002376                     TST      INTFC1                      ;IS THERE AN INTERR. IN CHANNEL 1 ALSO
   7974 070434  001013                             BNE      41$                         ;BRANCH IF YES
   7975 070436  017737  111636  002502             MOV      @CSRX,BAD                   ;GET CSR1 CONTENTS
   7976 070444  012737  020000  002500             MOV      #20000,GOOD                 ;COMP END SHOULD BE SET
   7977 070452                                     ERRSOFT  2505,E232,ERR201            ;ERROR HANDLER
                                               .MCALL   M$ERRINS
        070452                                 M$ERRINS          2505,E232,ERR201,C$ERSOFT
                                               .MCALL   M$GNINS,M$WORD,M$TSTLAB
        070452                                 M$SVC    C$ERSOFT
                                               .MCALL   M$GNINS,M$TSTLAB
        070452                                 M$TSTLAB
                                               .MCALL   M$TLABEL,M$INCR
                                               .IIF LT T$TSTMAC, .MEXIT
                                               .RADIX  10
                                               M$TLABEL          \T$TESTNUN,\T$TSTSEQ
                                               .RADIX  8
                                               M$INCR   T$TSTSEQ
        070452                                 M$GNINS <TRAP    C$ERSOFT>
                                               .IF LT SVCINS
                                               TRAP     C$ERSOFT
                                               .MEXIT
                                               .ENDC
                                               .IF EQ SVCINS
                                               .LIST
                                                        TRAP     C$ERSOFT
                                                                 .NLIST
                                               .MEXIT
                                               .ENDC
                                               .IF GT SVCINS
                                               .LIST
        070452  104457                                                                                  TRAP     C$ERSOFT
                                                                 .NLIST
                                               .ENDC
                000012                         .RADIX  10
                                               .IF NB  2505
                004711                         T$ERRNUM=2505
                                               .IFF
                                               .ERROR  ;MISSING ERROR-NR
                                               .ENDC
        070454                                 M$WORD   \T$ERRNUM
                                               .MCALL   M$GNINS
                                               .IRP     N,<2505>
                                               M$GNINS <.WORD   N>
                                               .ENDM
        070454                                 M$GNINS <.WORD  2505>
                                               .IF LT SVCINS
                                               .WORD    2505
                                               .MEXIT
                                               .ENDC
                                               .IF EQ SVCINS
                                               .LIST
                                                        .WORD    2505
                                                                 .NLIST
                                               .MEXIT
```

G5

```
                                .ENDC
                                .IF GT SVCINS
                                .LIST
     070454  004711                                                             .WORD   2505
                                          .NLIST
                                .ENDC
             000010             .RADIX  8
                                .IF NB E232
     070456                     M$WORD  E232
                                .MCALL  M$GNINS
                                .IRP    N,<E232>
                                M$GNINS <.WORD  N>
                                .ENDM
     070456                     M$GNINS <.WORD  E232>
                                .IF LT SVCINS
                                .WORD   E232
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                     .WORD   E232
                                          .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
     070456  006062                                                             .WORD   E232
                                          .NLIST
                                .ENDC
                                .IFF
                                M$WORD  0
                                .ENDC
                                .IF NB ERR201
     070460                     M$WORD  ERR201
                                .MCALL  M$GNINS
                                .IRP    N,<ERR201>
                                M$GNINS <.WORD  N>
                                .ENDM
     070460                     M$GNINS <.WORD  ERR201>
                                .IF LT SVCINS
                                .WORD   ERR201
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                     .WORD   ERR201
                                          .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
     070460  003470                                                             .WORD   ERR201
                                          .NLIST
                                .ENDC
                                .IFF
                                M$WORD  0
                                .ENDC
```

```
 7978 070462                              CKLOOP                               ;BRANCH TO BGNSEG IF ERRLOOP IS SET
                                 .MCALL   M$SVC
      070462                     M$SVC    C$CLP1
                                 .MCALL   M$GNINS,M$TSTLAB
      070462                     M$TSTLAB
                                 .MCALL   M$TLABEL,M$INCR
                                 .IIF LT T$TSTMAC, .MEXIT
                                 .RADIX  10
                                 M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                 .RADIX  8
                                 M$INCR   T$TSTSEQ
      070462                     M$GNINS <TRAP    C$CLP1>
                                 .IF LT SVCINS
                                 TRAP     C$CLP1
                                 .MEXIT
                                 .ENDC
                                 .IF EQ SVCINS
                                 .LIST
                                          TRAP    C$CLP1
                                                  .NLIST
                                 .MEXIT
                                 .ENDC
                                 .IF GT SVCINS
                                 .LIST
      070462  104406                                                                                 TRAP    C$CLP1
                                                  .NLIST
                                 .ENDC
 7979 070464                     41$:     SETPRI  #PRI07                       ;DISABLE INTERRUPTS
                                 .MCALL   M$LDR0,M$SVC
      070464                     M$LDR0   #PRI07,SETPRI
                                 .MCALL   M$GNINS
                                 .IF NB #PRI07
                                 .IF DIF R0,#PRI07
      070464                     M$GNINS <MOV     #PRI07,R0>
                                 .IF LT SVCINS
                                 MOV      #PRI07,R0
                                 .MEXIT
                                 .ENDC
                                 .IF EQ SVCINS
                                 .LIST
                                          MOV     #PRI07,R0
                                                  .NLIST
                                 .MEXIT
                                 .ENDC
                                 .IF GT SVCINS
                                 .LIST
      070464  012700  000340                                                                         MOV     #PRI07,R0
                                                  .NLIST
                                 .ENDC
                                 .ENDC
                                 .IFF
                                 .ERROR   ;MISSING ARG. ON "SETPRI"
                                 .ENDC
      070470                     M$SVC    C$SPRI
                                 .MCALL   M$GNINS,M$TSTLAB
      070470                     M$TSTLAB
                                 .MCALL   M$TLABEL,M$INCR
```

I5

```
                                  .IIF LT T$TSTMAC, .MEXIT
                                  .RADIX  10
                                  M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                  .RADIX  8
                                  M$INCR  T$TSTSEQ
 070470                           M$GNINS <TRAP   C$SPRI>
                                  .IF LT SVCINS
                                  TRAP    C$SPRI
                                  .MEXIT
                                  .ENDC
                                  .IF EQ SVCINS
                                  .LIST
                                          TRAP    C$SPRI
                                                  .NLIST
                                  .MEXIT
                                  .ENDC
                                  .IF GT SVCINS
                                  .LIST
 070470  104441                                                                                 TRAP    C$SPRI
                                                  .NLIST
                                  .ENDC
 070472  012701  003250                   MOV     #TABK,R1                ;PROVIDE FIRST BYTE OF BUFFER K
 070476  012702  003146                   MOV     #TABH,R2                ;PROVIDE FIRST BYTE OF BUFFER H
 070502  005037  002404                   CLR     CNT1                    ;CLEAR COUNTER
 070506  005237  002404           60$:    INC     CNT1                    ;BYTE COUNT
 070512  122122                           CMPB    (R1)+,(R2)+             ;BUFFER K EQUAL BUFFER H
 070514  001433                           BEQ     63$                     ;IF YES,CONTINUE
 070516  005037  002500                   CLR     GOOD                    ;CLEAR GOOD
 070522  005037  002502                   CLR     BAD                     ;CLEAR BAD
 070526  005037  002426                   CLR     TXADRH                  ;SET UP DATA FOR ERROR MESSAGE
 070532  010137  002430                   MOV     R1,TXADRL               ;...
 070536  005337  002430                   DEC     TXADRL                  ;...
 070542  005037  002422                   CLR     RXADRH                  ;...
 070546  010237  002424                   MOV     R2,RXADRL               ;...
 070552  005337  002424                   DEC     RXADRL                  ;...
 070556  116137  177777  002500           MOVB    -1(R1),GOOD             ;SET UP DATA FOR ERROR MESSAGE
 070564  116237  177777  002502           MOVB    -1(R2),BAD              ;...
 070572                                   ERRSOFT 2506,E250,ERR231        ;ERROR HANDLER
                                  .MCALL  M$ERRINS
 070572                           M$ERRINS        2506,E250,ERR231,C$ERSOFT
                                  .MCALL  M$GNINS,M$WORD,M$TSTLAB
 070572                           M$SVC   C$ERSOFT
                                  .MCALL  M$GNINS,M$TSTLAB
 070572                           M$TSTLAB
                                  .MCALL  M$TLABEL,M$INCR
                                  .IIF LT T$TSTMAC, .MEXIT
                                  .RADIX  10
                                  M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                  .RADIX  8
                                  M$INCR  T$TSTSEQ
 070572                           M$GNINS <TRAP   C$ERSOFT>
                                  .IF LT SVCINS
                                  TRAP    C$ERSOFT
                                  .MEXIT
                                  .ENDC
                                  .IF EQ SVCINS
                                  .LIST
```

```
                                        TRAP    C$ERSOFT
                                                .NLIST
                                  .MEXIT
                                  .ENDC
                                  .IF GT SVCINS
                                  .LIST
     070572  104457                                                                     TRAP    C$ERSOFT
                                                .NLIST
                                  .ENDC
             000012               .RADIX  10
                                  .IF NB  2506
             004712               T$ERRNUM=2506
                                  .IFF
                                  .ERROR  ;MISSING ERROR-NR
                                  .ENDC
     070574                       M$WORD  \T$ERRNUM
                                  .MCALL  M$GNINS
                                  .IRP    N,<2506>
                                  M$GNINS <.WORD  N>
                                  .ENDM
     070574                       M$GNINS <.WORD  2506>
                                  .IF LT SVCINS
                                  .WORD   2506
                                  .MEXIT
                                  .ENDC
                                  .IF EQ SVCINS
                                  .LIST
                                        .WORD   2506
                                                .NLIST
                                  .MEXIT
                                  .ENDC
                                  .IF GT SVCINS
                                  .LIST
     070574  004712                                                                     .WORD   2506
                                                .NLIST
                                  .ENDC
             000010               .RADIX  8
                                  .IF NB E250
     070576                       M$WORD  E250
                                  .MCALL  M$GNINS
                                  .IRP    N,<E250>
                                  M$GNINS <.WORD  N>
                                  .ENDM
     070576                       M$GNINS <.WORD  E250>
                                  .IF LT SVCINS
                                  .WORD   E250
                                  .MEXIT
                                  .ENDC
                                  .IF EQ SVCINS
                                  .LIST
                                        .WORD   E250
                                                .NLIST
                                  .MEXIT
                                  .ENDC
                                  .IF GT SVCINS
                                  .LIST
     070576  005716                                                                     .WORD   E250
```

```
                                        .NLIST
                         .ENDC
                         .IFF
                         M$WORD  0
                         .ENDC
                         .IF NB ERR231
     070600              M$WORD  ERR231
                         .MCALL  M$GNINS
                         .IRP    N,<ERR231>
                         M$GNINS <.WORD  N>
                         .ENDM
     070600              M$GNINS <.WORD  ERR231>
                         .IF LT SVCINS
                         .WORD   ERR231
                         .MEXIT
                         .ENDC
                         .IF EQ SVCINS
                         .LIST
                                 .WORD   ERR231
                                        .NLIST
                         .MEXIT
                         .ENDC
                         .IF GT SVCINS
                         .LIST
     070600  003734                                                  .WORD   ERR231
                                        .NLIST
                         .ENDC
                         .IFF
                         M$WORD  0
                         .ENDC
7997 070602                      CKLOOP                ;BRANCH TO BGNSEG IF ERRLOOP IS SET
                         .MCALL  M$SVC
     070602              M$SVC   C$CLP1
                         .MCALL  M$GNINS,M$TSTLAB
     070602              M$TSTLAB
                         .MCALL  M$TLABEL,M$INCR
                         .IIF LT T$TSTMAC, .MEXIT
                         .RADIX  10
                         M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                         .RADIX  8
                         M$INCR  T$TSTSEQ
     070602              M$GNINS <TRAP   C$CLP1>
                         .IF LT SVCINS
                         TRAP    C$CLP1
                         .MEXIT
                         .ENDC
                         .IF EQ SVCINS
                         .LIST
                                 TRAP    C$CLP1
                                        .NLIST
                         .MEXIT
                         .ENDC
                         .IF GT SVCINS
                         .LIST
     070602  104406                                                  TRAP    C$CLP1
                                        .NLIST
                         .ENDC
```

L5

```
     070604  023737  002404  002402  63$:     CMP     CNT1,RSAVE               ;ALL BYTES COMPARED ?
     070612  001335                           BNE     60$                      ;IF NO,GET NEXT ONE
     070614                                   ENDSEG
                                     .MCALL   M$POP,M$GNLS,M$SVC,M$ENDERR
     070614                          M$POP    T$NS,T$NESTLEV,T$TEMP
                                     .MCALL   M$GETS,M$DECR
                                     .IF LT   T$NESTLEV
                                     .ERROR   T$NESTLEV        ; MACRO T$NS UNDERFLOW
                                     .MEXIT
                                     .ENDC
     070614                          M$GETS   T$NS,\T$NESTLEV,T$TEMP
             000003                  T$TEMP=T$NS2
     070614                          M$DECR   T$NESTLEV
             000001                  T$NESTLEV=T$NESTLEV-1
                                     .IF EQ F$SEG-T$TEMP
     070614                          M$POP    T$SEK,T$SEGLEV,T$$SEG
                                     .MCALL   M$GETS,M$DECR
                                     .IF LT   T$SEGLEV
                                     .ERROR   T$SEGLEV         ; MACRO T$SEK UNDERFLOW
                                     .MEXIT
                                     .ENDC
     070614                          M$GETS   T$SEK,\T$SEGLEV,T$$SEG
             010001                  T$$SEG=T$SEK0
     070614                          M$DECR   T$SEGLEV
             177777                  T$SEGLEV=T$SEGLEV-1
     070614                          M$GNLS   T$$SEG
                                     .MCALL   M$GEN
                                     .IF NB T$$SEG
     070614                          M$GEN    \T$$SEG,$,SVCTAG
                                     .IF LE   SVCTAG
                                     .IIF EQ  SVCTAG,.LIST
                                     10001$:
                                     .IIF EQ  SVCTAG,.NLIST
                                     .MEXIT
                                     .ENDC
                                     .LIST
     070614                                                                         10001$:
                                              .NLIST
                                     .IFF
                                     M$GEN    \S$LSYM,$,SVCTAG
                                     .ENDC
     070614                          M$SVC    C$ESEG
                                     .MCALL   M$GNINS,M$TSTLAB
     070614                          M$TSTLAB
                                     .MCALL   M$TLABEL,M$INCR
                                     .IIF LT  T$TSTMAC, .MEXIT
                                     .RADIX   10
                                     M$TLABEL         \T$TESTNUN,\T$TSTSEQ
                                     .RADIX   8
                                     M$INCR   T$TSTSEQ
     070614                          M$GNINS <TRAP    C$ESEG>
                                     .IF LT SVCINS
                                     TRAP     C$ESEG
                                     .MEXIT
                                     .ENDC
                                     .IF EQ SVCINS
                                     .LIST
```

```
                                                TRAP    C$ESEG
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
 070614 104405                                                                          TRAP    C$ESEG
                                                        .NLIST
                                        .ENDC
                                        .IF EQ T$SEGLEV+1
        000041                          I$SEG=F$END
                                        .ENDC
                                        .IFF
                                        M$ENDERR        ENDSEG,T$TEMP
                                        .ENDC
 070616 052777 000010 111454                    BIS     #10,@CSRX               ;SELECT CHANNEL 2
 070624 112777 000014 111436                    MOVB    #14,@ICRHX              ;---LOAD TCA INTO ACR 2-------------
 070632 112777 000077 111436                    MOVB    #77,@IDRHX              ;----LOAD UNL INTO DOR 2-------------
 070640 004737 011050                           JSR     PC,LOOP                 ;WAIT A LITTLE
 070644 112777 000200 111416                    MOVB    #200,@ICRHX             ;---LOAD SWRST INTO ACR 2------------
 070652 112777 000000 111410                    MOVB    #0,@ICRHX               ;---LOAD NOT SWRST INTO ACR 2---------
 070660 005737 002234                           TST     QVP                     ;IS QUICK VERIFY PASS SELECTED ?
 070664 001025                                  BNE     EXQV25                  ;IF YES EXIT TEST
 070666 005237 002322                           INC     ITRCNT                  ;ITERATION COUNTER +1
 070672 023737 002322 002320                    CMP     ITRCNT,ITRDEF           ;DEFAULT ITERATION EXECUTED
 070700 001417                                  BEQ     EXQV25                  ;IF YES EXIT TEST
 070702 005077 111372                           CLR     @CSRX                   ;SELECT CHAN.1,CLR ALL BITS IN CHAN.2
 070706 012777 000010 111364                    MOV     #10,@CSRX               ;CLEAR CSR1,SELECT CHANNEL 2
 070714 112777 000217 111346                    MOVB    #217,@ICRHX             ;----LOAD SIC INTO ACR 2--- ------
 070722 004737 011062                           JSR     PC,WAIT                 ;WAIT A LITTLE
 070726 112777 000017 111334                    MOVB    #17,@ICRHX              ;----LOAD NOT SIC INTO ACR 2------
 070734 000137 067330                           JMP     ITAC25                  ;IF NO TEST ITERATION
 070740                                 EXQV25: EXIT    TST
                                        .MCALL  M$SVC,M$EXIT,M$EXSEG,M$EXTJ,M$GETTOP,M$CHECK,M$WORD,XFER
        000041                          T$FLAG=F$END
 070740                                 M$CHECK TST,T$TEMP,T$FLAG
                                        .IF IDN <TST>,<TST>
        010056                          T$TEMP=T$$TEST
        000040                          T$FLAG=I$TST
                                        .MEXIT
                                        .ENDC
                                        .IF IDN <SUB>,<TST>
                                        T$TEMP=T$$SUB
                                        T$FLAG=I$SUB
                                        .MEXIT
                                        .ENDC
                                        .IF IDN <SEG>,<TST>
                                        T$TEMP=T$$SEG
                                        T$FLAG=I$SEG
                                        .MEXIT
                                        .ENDC
                                        .IF IDN <INIT>,<TST>
                                        T$TEMP=T$$INIT
                                        T$FLAG=I$INIT
                                        .MEXIT
                                        .ENDC
                                        .IF IDN <CLN>,<TST>
```

```
                                T$TEMP=T$$CLEAN
                                T$FLAG=I$CLN
                                .MEXIT
                                .ENDC
                                .IF IDN <SRV>,<TST>
                                T$TEMP=T$$SRV
                                T$FLAG=I$SRV
                                .MEXIT
                                .ENDC
                                .IF IDN <MSG>,<TST>
                                T$TEMP=T$$MSG
                                T$FLAG=F$JMP
                                .MEXIT
                                .ENDC
                                .IF IDN <RPT>,<TST>
                                T$TEMP=T$$RPT
                                T$FLAG=F$JMP
                                .MEXIT
                                .ENDC
                                .IF IDN <DU>,<TST>
                                T$TEMP=T$$DU
                                T$FLAG=F$JMP
                                .MEXIT
                                .ENDC
                                .IF IDN <AU>,<TST>
                                T$TEMP=T$$AU
                                T$FLAG=F$JMP
                                .MEXIT
                                .ENDC
                                .IF EQ T$FLAG-F$JMP
                                M$WORD  J$JMP
                                M$EXTJ  \T$TEMP
                                .MEXIT
                                .ENDC
                                .IF EQ  T$FLAG-F$BGN
     070740                     M$SVC   C$EXIT
                                .MCALL  M$GNINS,M$TSTLAB
     070740                     M$TSTLAB
                                .MCALL  M$TLABEL,M$INCR
                                .IIF LT T$TSTMAC, .MEXIT
                                .RADIX  10
                                M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                .RADIX  8
                                M$INCR  T$TSTSEQ
     070740                     M$GNINS <TRAP   C$EXIT>
                                .IF LT SVCINS
                                TRAP    C$EXIT
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        TRAP    C$EXIT
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
```

```
     070740  104432                                                      TRAP      C$EXIT
                                                .NLIST
                                   .ENDC
                                   .IF IDN <SEG>,<TST>
                                   M$GETTOP T$SEK,T$SEGLEV,T$TEMP
                                   M$EXSEG \T$TEMP
                                   .IFF
     070742                        M$EXIT  \T$TEMP
                                   .MCALL  M$GNINS
     070742                        M$GNINS <.WORD  L10056-.>
                                   .IF LT SVCINS
                                   .WORD   L10056-.
                                   .MEXIT
                                   .ENDC
                                   .IF EQ SVCINS
                                   .LIST
                                           .WORD   L10056-.
                                                .NLIST
                                   .MEXIT
                                   .ENDC
                                   .IF GT SVCINS
                                   .LIST
     070742  000050                                                      .WORD     L10056-.
                                                .NLIST
                                   .ENDC
                                   .ENDC
                                   .MEXIT
                                   .ENDC
                                   .IF IDN <HRD>,<TST>
                                   M$GETTOP        T$NS,T$NESTLEV,T$TEMP
                                   .IF EQ  F$HARD-T$TEMP
                                   .IRP    N,<\T$$HARD>
                                   XFER    L'N
                                   .ENDM
                                   .MEXIT
                                   .ENDC
                                   .ENDC
                                   .IF IDN <SFT>,<TST>
                                   M$GETTOP        T$NS,T$NESTLEV,T$TEMP
                                   .IF EQ  F$SOFT-T$TEMP
                                   .IRP    N,<\T$$SOFT>
                                   XFER    L'N
                                   .ENDM
                                   .MEXIT
                                   .ENDC
                                   .ENDC
                                   .ERROR  ;ILL. "EXIT TST" STMT.

                                           .NLIST  BEX
     070744     045     123     062 TSHD25: .ASCIZ  /*S2*AMCR FUNCTION TEST OF CHANNEL 1*N/
                                           .LIST   BEX
                                           .EVEN
     071012                                ENDTST
                                   .MCALL  M$POP,M$GNTAG,M$SVC,M$ENDERR
                                   .IF EQ  F$BGN I$TST
             000041                I$TST=F$END
                                   .IFF
```

C6

```
                                .ERROR  ;MISSING "BGNTST"
                                .MEXIT
                                .ENDC
     071012                     M$POP   T$NS,T$NESTLEV,T$TEMP
                                .MCALL  M$GETS,M$DECR
                                .IF LT  T$NESTLEV
                                .ERROR  T$NESTLEV         ; MACRO T$NS UNDERFLOW
                                .MEXIT
                                .ENDC
     071012                     M$GETS  T$NS,\T$NESTLEV,T$TEMP
            000001              T$TEMP=T$NS1
     071012                     M$DECR  T$NESTLEV
            000000              T$NESTLEV=T$NESTLEV-1
                                .IF EQ F$TEST-T$TEMP
     071012                     M$GNTAG L,T$$TEST
                                .MCALL  M$GEN
     071012                     M$GEN   L,\T$$TEST,SVCTAG
                                .IF LE  SVCTAG
                                .IIF EQ SVCTAG,.LIST
                                L10056:
                                .IIF EQ SVCTAG,.NLIST
                                .MEXIT
                                .ENDC
                                .LIST
     071012                                                         L10056:
                                         .NLIST
            010000              S$LSYM=T$LSYM
     071012                     M$SVC   C$ETST
                                .MCALL  M$GNINS,M$TSTLAB
     071012                     M$TSTLAB
                                .MCALL  M$TLABEL,M$INCR
                                .IIF LT T$TSTMAC, .MEXIT
                                .RADIX  10
                                M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                .RADIX  8
                                M$INCR  T$TSTSEQ
     071012                     M$GNINS <TRAP   C$ETST>
                                .IF LT SVCINS
                                TRAP    C$ETST
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        TRAP    C$ETST
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
     071012 104401                                                       TRAP    C$ETST
                                                .NLIST
                                .ENDC
            000041              I$TST=F$END
                                .IFF
                                M$ENDERR        ENDTST,T$TEMP
                                .ENDC
```

D6

```
8026                          .SBTTL  TEST 26: MCR FUNCTION TEST OF CHANNEL 2
8027                          ;***********************************************************************
8028                          ;               IEX - TEST 26
8029                          ;PART 1 CHANNEL 1 TRANSMITS 9 DATA BYTES (50)AND THAN
8030                          ;       A PREDEFINED QUANTITY (MC INPUT)OF SUCCESSIVE EOS CHARACTERS (177)
8031                          ;       VIA THE IEC/IEEE BUS TO CHANNEL 2.  AFTER RECEIVING THESE CHARACTERS
8032                          ;       THE DMA DATA TRANSFER IS TERMINATED BY CHANNEL 2 (COMP END).
8033                          ;PART 2 SAME AS PART 1 EXCEPT THAT A WRONG QUANTITY OF SUCCESSIVE EOS
8034                          ;       CHARACTERS ARE TRANSMITTED BEFORE THE CORRECT QUANTITY OF SUCCESSIVE
8035                          ;       EOS CHARACTERS ARE TRANSMITTED.
8036                          ;       I.E 2 EOS CHAR.(25),1 DATA BYTE (50)THAN THE PREDEFINED EOS CHAR.(25)
8037                          ;***********************************************************************
8038 071014                           BGNTST
                              .MCALL  M$INCR,M$GNTEST,M$PUSH,M$INCR
                              .IF NE  F$END-I$SUB
                              .ERROR  ;"BGNTST" IN SUB
                              .MEXIT
                              .ENDC
                              .IF NE  F$END-I$SEG
                              .ERROR  ;"BGNTST" IN SEG
                              .MEXIT
                              .ENDC
                              .IF NE  F$END-I$TST
                              .ERROR  ;"BGNTST" IN TST
                              .MEXIT
                              .IFF
              000040          I$TST=F$BGN
                              .ENDC
                              .IF B
     071014                   M$INCR  T$TESTNUM
              000032          T$TESTNUM-T$TESTNUM+1
                              .IFF
                              T$TESTNUM=
                              .ENDC
              000000          T$SUBNUM=0
              000012          .RADIX  10
     071014                   M$GNTEST        \T$TESTNUM
                              .MCALL  M$GEN
     071014                   M$GEN   T,26:,SVCTST
                              .IF LE  SVCTST
                              .IIF EQ SVCTST,.LIST
                              T26::
                              .IIF EQ SVCTST,.NLIST
                              .MEXIT
                              .ENDC
                              .LIST
     071014                                                          T26::
                                      .NLIST
              000010          .RADIX  8
     071014                   M$PUSH  T$NS,T$NESTLEV,F$TEST
                              .MCALL  M$INCR,M$SETS
     071014                   M$INCR  T$NESTLEV
              000001          T$NESTLEV=T$NESTLEV+1
     071014                   M$SETS  T$NS,\T$NESTLEV,F$TEST
              000001          T$NS1=F$TEST
              010057          T$$TEST=T$TAGNUM
     071014                   M$INCR T$TAGNUM
```

```
                 010060                      T$TAGNUM=T$TAGNUM+1
                 000001                      T$TSTSEQ=1
  8039 071014    005737   002324                      TST      PNTF                     ;IS THE PNT FLAG SET
  8040 071020    001410                               BEQ      7$                       ;IF YES, PRINT THE TEST HEADER
  8041 071022                                         PRINTF   #TSHD26                  ;...
                                             .MCALL   M$PRINT
                                             .IF B    #TSHD26
                                             .ERROR   ;MISSING FORMAT
                                             .MEXIT
                                             .ENDC
                                             .IF B    <>
       071022                                M$PRINT C$PNTF,#TSHD26
                                             .MCALL   M$COUNT,M$PUT,M$GNINS,M$SVC
                 000001                      T$ARGCNT=1
       071022                                M$COUNT T$ARGCNT,<>,<>,<>,<>,<>,<>,<>,<>
                                             .IF NB <>
                                             M$COUNT T$ARGCNT,<>,<>,<>,<>,<>,<>,<>,<>
                                             .ENDC
                                             .IF NB <>
                                             T$ARGCNT=T$ARGCNT+1
                                             .ENDC
                                             .IRP     N,<\T$ARGCNT>
                                             M$PUT    #N,#TSHD26,<>,<>,<>,<>,<>,<>,<>,<>
                                             .ENDM
       071022                                M$PUT    #1,#TSHD26,<>,<>,<>,<>,<>,<>,<>,<>
                                             .MCALL   M$PUT1
                                             .IF NB   <#TSHD26>
       071022                                M$PUT    <#TSHD26>,<>,<>,<>,<>,<>,<>,<>,<>
                                             .MCALL   M$PUT1
                                             .IF NB   <>
                                             M$PUT    <>,<>,<>,<>,<>,<>,<>,<>,<>
                                             .ENDC
                                             .IF NB   <#TSHD26>
       071022                                M$PUT1   #TSHD26
                                             .MCALL   M$GNINS
                                             .IF B
       071022                                M$GNINS <MOV      #TSHD26,-(SP)>
                                             .IF LT SVCINS
                                             MOV      #TSHD26,-(SP)
                                             .MEXIT
                                             .ENDC
                                             .IF EQ SVCINS
                                             .LIST
                                                      MOV      #TSHD26,-(SP)
                                                               .NLIST
                                             .MEXIT
                                             .ENDC
                                             .IF GT SVCINS
                                             .LIST
       071022    012746   072476                                                                   MOV      #TSHD26,(SP)
                                                               .NLIST
                                             .ENDC
                                             .IFF
                                             .IF DIF B,<#TSHD26>
                                             .ERROR   ;ILL. ARG. "#TSHD26" ONLY "B" IS ALLOWED.
                                             .MEXIT
                                             .ENDC
```

```
                                M$GNINS <CLR    -(SP)>
                                M$GNINS <BISB   ,(SP)>
                                .ENDC
                                .ENDC
                                .ENDC
                                .IF NB  <#1>
071026                          M$PUT1  #1
                                .MCALL  M$GNINS
                                .IF B
071026                          M$GNINS <MOV    #1,-(SP)>
                                .IF LT SVCINS
                                MOV     #1,-(SP)
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        MOV     #1,-(SP)
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
071026  012746  000001                                                  MOV     #1,-(SP)
                                                .NLIST
                                .ENDC
                                .IFF
                                .IF DIF B,<#1>
                                .ERROR  ;ILL. ARG. "#1" ONLY "B" IS ALLOWED.
                                .MEXIT
                                .ENDC
                                M$GNINS <CLR    -(SP)>
                                M$GNINS <BISB   ,(SP)>
                                .ENDC
                                .ENDC
071032                          M$GNINS <MOV    SP,R0>
                                .IF LT SVCINS
                                MOV     SP,R0
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        MOV     SP,R0
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
071032  010600                                                          MOV     SP,R0
                                                .NLIST
                                .ENDC
071034                          M$SVC   C$PNTF
                                .MCALL  M$GNINS,M$TSTLAB
071034                          M$TSTLAB
                                .MCALL  M$TLABEL,M$INCR
                                .IIF LT T$TSTMAC, .MEXIT
                                .RADIX  10
                                M$TLABEL        \T$TESTNUN,\T$TSTSEQ
```

G6

```
                                .RADIX  8
                                M$INCR  T$TSTSEQ
     071034                     M$GNINS <TRAP   C$PNTF>
                                .IF LT SVCINS
                                TRAP    C$PNTF
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        TRAP    C$PNTF
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
     071034  104417                                                              TRAP    C$PNTF
                                                .NLIST
                                .ENDC
                                .IRP    N,<\T$ARGCNT*2+2>
                                M$GNINS <ADD    #N,SP>
                                .ENDM
     071036                     M$GNINS <ADD    #4,SP>
                                .IF LT SVCINS
                                ADD     #4,SP
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        ADD     #4,SP
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
     071036  062706  000004                                                      ADD     #4,SP
                                                .NLIST
                                .ENDC
                                .MEXIT
                                .ENDC
                                .IF B   <>
                                M$PRINT C$PNTF,#TSHD26,<>
                                .MEXIT
                                .ENDC
                                .IF B   <>
                                M$PRINT C$PNTF,#TSHD26,<>,<>
                                .MEXIT
                                .ENDC
                                .IF B   <>
                                M$PRINT C$PNTF,#TSHD26,<>,<>,<>
                                .MEXIT
                                .ENDC
                                .IF B   <>
                                M$PRINT C$PNTF,#TSHD26,<>,<>,<>,<>
                                .MEXIT
                                .ENDC
                                .IF B   <>
                                M$PRINT C$PNTF,#TSHD26,<>,<>,<>,<>,<>
```

H6

```
                                        .MEXIT
                                        .ENDC
                                        .IF B   <>
                                        M$PRINT C$PNTF,#TSHD26,<>,<>,<>,<>,<>,<>
                                        .MEXIT
                                        .ENDC
                                        .IF B   <>
                                        M$PRINT C$PNTF,#TSHD26,<>,<>,<>,<>,<>,<>,<>
                                        .MEXIT
                                        .ENDC
                                        M$PRINT C$PNTF,#TSHD26,<>,<>,<>,<>,<>,<>,<>,<>
 8042 071042  005037  002322            7$:     CLR     ITRCNT                  ;CLEAR ITERATION COUNTER
 8043 071046  004737  010524                    JSR     PC,BGIN1                ;SET UP PARAMETER
 8044 071052                            ITAC26: SETVEC  VECC2,#INTSC2,#PRI07    ;SET VECTOR FOR CHANNEL 2
                                        .MCALL  M$PUT,M$SVC,M$GNINS
      071052                            M$PUT   #3,VECC2,#INTSC2,#PRI07
                                        .MCALL  M$PUT1
                                        .IF NB  <VECC2>
      071052                            M$PUT   <VECC2>,<#INTSC2>,<#PRI07>,<>,<>,<>,<>,<>,<>
                                        .MCALL  M$PUT1
                                        .IF NB  <#INTSC2>
      071052                            M$PUT   <#INTSC2>,<#PRI07>,<>,<>,<>,<>,<>,<>,<>
                                        .MCALL  M$PUT1
                                        .IF NB  <#PRI07>
      071052                            M$PUT   <#PRI07>,<>,<>,<>,<>,<>,<>,<>,<>
                                        .MCALL  M$PUT1
                                        .IF NB  <>
                                        M$PUT   <>,<>,<>,<>,<>,<>,<>,<>,<>
                                        .ENDC
                                        .IF NB  <#PRI07>
      071052                            M$PUT1  #PRI07
                                        .MCALL  M$GNINS
                                        .IF B
      071052                            M$GNINS <MOV    #PRI07,-(SP)>
                                        .IF LT SVCINS
                                        MOV     #PRI07,-(SP)
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                MOV     #PRI07,-(SP)
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
      071052  012746  000340                                                    MOV     #PRI07,-(SP)
                                                        .NLIST
                                        .ENDC
                                        .IFF
                                        .IF DIF B,<#PRI07>
                                        .ERROR  ;ILL. ARG. "#PRI07" ONLY "B" IS ALLOWED.
                                        .MEXIT
                                        .ENDC
                                        M$GNINS <CLR    -(SP)>
                                        M$GNINS <BISB   ,(SP)>
                                        .ENDC
```

I6

```
                                        .ENDC
                                        .ENDC
                                        .IF NB   <#INTSC2>
      071056                            M$PUT1   #INTSC2
                                        .MCALL   M$GNINS
                                        .IF B
      071056                            M$GNINS <MOV     #INTSC2,-(SP)>
                                        .IF LT SVCINS
                                        MOV      #INTSC2,-(SP)
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                 MOV     #INTSC2,-(SP)
                                                         .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
      071056  012746  010142                                                          MOV     #INTSC2,-(SP)
                                                         .NLIST
                                        .ENDC
                                        .IFF
                                        .IF DIF B,<#INTSC2>
                                        .ERROR  ;ILL. ARG. "#INTSC2" ONLY "B" IS ALLOWED.
                                        .MEXIT
                                        .ENDC
                                        M$GNINS <CLR     -(SP)>
                                        M$GNINS <BISB    ,(SP)>
                                        .ENDC
                                        .ENDC
                                        .ENDC
                                        .IF NB   <VECC2>
      071062                            M$PUT1   VECC2
                                        .MCALL   M$GNINS
                                        .IF B
      071062                            M$GNINS <MOV     VECC2,-(SP)>
                                        .IF LT SVCINS
                                        MOV      VECC2,-(SP)
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                 MOV     VECC2,-(SP)
                                                         .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
      071062  013746  002246                                                          MOV     VECC2, (SP)
                                                         .NLIST
                                        .ENDC
                                        .IFF
                                        .IF DIF B,<VECC2>
                                        .ERROR  ;ILL. ARG. "VECC2" ONLY "B" IS ALLOWED.
                                        .MEXIT
                                        .ENDC
```

J6

```
                              M$GNINS <CLR    -(SP)>
                              M$GNINS <BISB   ,(SP)>
                              .ENDC
                              .ENDC
                              .ENDC
                              .IF NB  <#3>
071066                        M$PUT1  #3
                              .MCALL  M$GNINS
                              .IF B
071066                        M$GNINS <MOV    #3,-(SP)>
                              .IF LT SVCINS
                              MOV     #3,-(SP)
                              .MEXIT
                              .ENDC
                              .IF EQ SVCINS
                              .LIST
                                      MOV     #3,-(SP)
                                              .NLIST
                              .MEXIT
                              .ENDC
                              .IF GT SVCINS
                              .LIST
071066  012746  000003                                                MOV     #3,-(SP)
                                              .NLIST
                              .ENDC
                              .IFF
                              .IF DIF B,<#3>
                              .ERROR  ;ILL. ARG. "#3" ONLY "B" IS ALLOWED.
                              .MEXIT
                              .ENDC
                              M$GNINS <CLR    -(SP)>
                              M$GNINS <BISB   ,(SP)>
                              .ENDC
                              .ENDC
071072                        M$SVC   C$SVEC
                              .MCALL  M$GNINS,M$TSTLAB
071072                        M$TSTLAB
                              .MCALL  M$TLABEL,M$INCR
                              .IIF LT T$TSTMAC, .MEXIT
                              .RADIX  10
                              M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                              .RADIX  8
                              M$INCR  T$TSTSEQ
071072                        M$GNINS <TRAP   C$SVEC>
                              .IF LT SVCINS
                              TRAP    C$SVEC
                              .MEXIT
                              .ENDC
                              .IF EQ SVCINS
                              .LIST
                                      TRAP    C$SVEC
                                              .NLIST
                              .MEXIT
                              .ENDC
                              .IF GT SVCINS
                              .LIST
071072  104437                                                        TRAP    C$SVEC
```

K6

K6


```
                                                  .NLIST
                                   .ENDC
     071074                        M$GNINS <ADD     #10,SP>
                                   .IF LT SVCINS
                                   ADD     #10,SP
                                   .MEXIT
                                   .ENDC
                                   .IF EQ SVCINS
                                   .LIST
                                           ADD      #10,SP
                                                    .NLIST
                                   .MEXIT
                                   .ENDC
                                   .IF GT SVCINS
                                   .LIST
     071074  062706  000010                                                         ADD     #10,SP
                                                    .NLIST
                                   .ENDC
8045 071100                                SETVEC  VECC1,#INTSC1,#PRI07    ;SET VECTOR FOR CHANNEL 1
                                   .MCALL  M$PUT,M$SVC,M$GNINS
     071100                        M$PUT   #3,VECC1,#INTSC1,#PRI07
                                   .MCALL  M$PUT1
                                   .IF NB  <VECC1>
     071100                        M$PUT   <VECC1>,<#INTSC1>,<#PRI07>,<>,<>,<>,<>,<>,<>
                                   .MCALL  M$PUT1
                                   .IF NB  <#INTSC1>
     071100                        M$PUT   <#INTSC1>,<#PRI07>,<>,<>,<>,<>,<>,<>,<>
                                   .MCALL  M$PUT1
                                   .IF NB  <#PRI07>
     071100                        M$PUT   <#PRI07>,<>,<>,<>,<>,<>,<>,<>,<>
                                   .MCALL  M$PUT1
                                   .IF NB  <>
                                   M$PUT   <>,<>,<>,<>,<>,<>,<>,<>,<>
                                   .ENDC
                                   .IF NB  <#PRI07>
     071100                        M$PUT1  #PRI07
                                   .MCALL  M$GNINS
                                   .IF B
     071100                        M$GNINS <MOV     #PRI07,-(SP)>
                                   .IF LT SVCINS
                                   MOV     #PRI07,-(SP)
                                   .MEXIT
                                   .ENDC
                                   .IF EQ SVCINS
                                   .LIST
                                           MOV      #PRI07,-(SP)
                                                    .NLIST
                                   .MEXIT
                                   .ENDC
                                   .IF GT SVCINS
                                   .LIST
     071100  012746  000340                                                         MOV     #PRI07,-(SP)
                                                    .NLIST
                                   .ENDC
                                   .IFF
                                   .IF DIF B,<#PRI07>
                                   .ERROR  ;ILL. ARG. "#PRI07" ONLY "B" IS ALLOWED.
```

L6

L6


```
                                        .MEXIT
                                        .ENDC
                                        M$GNINS <CLR    -(SP)>
                                        M$GNINS <BISB   ,(SP)>
                                        .ENDC
                                        .ENDC
                                        .ENDC
                                        .IF NB  <#INTSC1>
      071104                            M$PUT1  #INTSC1
                                        .MCALL  M$GNINS
                                        .IF B
      071104                            M$GNINS <MOV    #INTSC1,-(SP)>
                                        .IF LT SVCINS
                                        MOV     #INTSC1,-(SP)
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                MOV     #INTSC1,-(SP)
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
      071104  012746  010132                                                    MOV     #INTSC1,-(SP)
                                                        .NLIST
                                        .ENDC
                                        .IFF
                                        .IF DIF B,<#INTSC1>
                                        .ERROR  ;ILL. ARG. "#INTSC1" ONLY "B" IS ALLOWED.
                                        .MEXIT
                                        .ENDC
                                        M$GNINS <CLR    -(SP)>
                                        M$GNINS <BISB   ,(SP)>
                                        .ENDC
                                        .ENDC
                                        .ENDC
                                        .IF NB  <VECC1>
      071110                            M$PUT1  VECC1
                                        .MCALL  M$GNINS
                                        .IF B
      071110                            M$GNINS <MOV    VECC1,-(SP)>
                                        .IF LT SVCINS
                                        MOV     VECC1,-(SP)
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                MOV     VECC1,-(SP)
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
      071110  013746  002244                                                    MOV     VECC1,-(SP)
                                                        .NLIST
                                        .ENDC
```

M6

```
                                        .IFF
                                        .IF DIF B,<VECC1>
                                        .ERROR  ;ILL. ARG. "VECC1" ONLY "B" IS ALLOWED.
                                        .MEXIT
                                        .ENDC
                                        M$GNINS <CLR    -(SP)>
                                        M$GNINS <BISB   ,(SP)>
                                        .ENDC
                                        .ENDC
                                        .ENDC
                                        .IF NB  <#3>
      071114                            M$PUT1  #3
                                        .MCALL  M$GNINS
                                        .IF B
      071114                            M$GNINS <MOV    #3,-(SP)>
                                        .IF LT SVCINS
                                        MOV     #3,-(SP)
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                MOV     #3,-(SP)
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
      071114  012746  000003                                                          MOV     #3,-(SP)
                                                        .NLIST
                                        .ENDC
                                        .IFF
                                        .IF DIF B,<#3>
                                        .ERROR  ;ILL. ARG. "#3" ONLY "B" IS ALLOWED.
                                        .MEXIT
                                        .ENDC
                                        M$GNINS <CLR    -(SP)>
                                        M$GNINS <BISB   ,(SP)>
                                        .ENDC
                                        .ENDC
      071120                            M$SVC   C$SVEC
                                        .MCALL  M$GNINS,M$TSTLAB
      071120                            M$TSTLAB
                                        .MCALL  M$TLABEL,M$INCR
                                        .IIF LT T$TSTMAC, .MEXIT
                                        .RADIX  10
                                        M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                        .RADIX  8
                                        M$INCR  T$TSTSEQ
      071120                            M$GNINS <TRAP   C$SVEC>
                                        .IF LT SVCINS
                                        TRAP    C$SVEC
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                TRAP    C$SVEC
                                                        .NLIST
```

```
                                       .MEXIT
                                       .ENDC
                                       .IF GT SVCINS
                                       .LIST
      071120  104437                                                                       TRAP    C$SVEC
                                                    .NLIST
                                       .ENDC
      071122                           M$GNINS <ADD     #10,SP>
                                       .IF LT SVCINS
                                       ADD      #10,SP
                                       .MEXIT
                                       .ENDC
                                       .IF EQ SVCINS
                                       .LIST
                                             ADD     #10,SP
                                                    .NLIST
                                       .MEXIT
                                       .ENDC
                                       .IF GT SVCINS
                                       .LIST
      071122  062706  000010                                                               ADD     #10,SP
                                                    .NLIST
                                       .ENDC
8046  071126  112777  000212  111134         MOVB    #212,@ICRHX            ;----LOAD TON INTO ACR 1--------------
8047  071134  013701  002314                 MOV     DPA2,R1                ;CREATE MLA2
8048  071140  062701  000040                 ADD     #40,R1                 ;...
8049  071144  010137  002412                 MOV     R1,MLA2                ;STORE MLA2
8050  071150  113777  002412  111120         MOVB    MLA2,@IDRHX            ;----LOAD MLA2 INTO DOR 1-------------
8051  071156  004737  011050                 JSR     PC,LOOP                ;WAIT A LITTLE
8052  071162  052777  000010  111110         BIS     #10,@CSRX              ;SELECT CHANNEL 2
8053  071170  005077  111112                 CLR     @MCRX                  ;CLEAR MCR2 REGISTER
8054  071174  113777  002236  111106         MOVB    MCINP,@MCRHX           ;---LOAD CNT INPUT INTO MCR HIGH BYTE-
8055  071202  052777  100125  111076         BIS     #100125,@MCRX          ;--- ENB MATCH BIT +EOS (125)IN MCR2--
8056  071210                                 BGNSEG
                                       .MCALL  M$PUSH,M$INCR,M$SVC
              000040                   I$SEG=F$BGN
      071210                           M$PUSH  T$NS,T$NESTLEV,F$SEG
                                       .MCALL  M$INCR,M$SETS
      071210                           M$INCR  T$NESTLEV
              000002                   T$NESTLEV=T$NESTLEV+1
      071210                           M$SETS  T$NS,\T$NESTLEV,F$SEG
              000003                   T$NS2=F$SEG
              010000                   T$$SEG=S$LSYM
      071210                           M$PUSH  T$SEK,T$SEGLEV,T$$SEG
                                       .MCALL  M$INCR,M$SETS
      071210                           M$INCR  T$SEGLEV
              000000                   T$SEGLEV=T$SEGLEV+1
      071210                           M$SETS  T$SEK,\T$SEGLEV,T$$SEG
              010000                   T$SEK0=T$$SEG
      071210                           M$INCR  S$LSYM
              010001                   S$LSYM=S$LSYM+1
      071210                           M$SVC   C$BSEG
                                       .MCALL  M$GNINS,M$TSTLAB
      071210                           M$TSTLAB
                                       .MCALL  M$TLABEL,M$INCR
                                       .IIF LT T$TSTMAC, .MEXIT
                                       .RADIX  10
```

```
                                         M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                         .RADIX  8
                                         M$INCR  T$TSTSEQ
     071210                              M$GNINS <TRAP   C$BSEG>
                                         .IF LT SVCINS
                                         TRAP    C$BSEG
                                         .MEXIT
                                         .ENDC
                                         .IF EQ SVCINS
                                         .LIST
                                                 TRAP    C$BSEG
                                                         .NLIST
                                         .MEXIT
                                         .ENDC
                                         .IF GT SVCINS
                                         .LIST
     071210  104404                                                                                TRAP    C$BSEG
                                                         .NLIST
                                         .ENDC
8057 071212  005037  002400                      CLR     INTFC2                  ;CLEAR INTERRUPT FLAG
8058 071216  005037  002376                      CLR     INTFC1                  ;CLEAR INTERRUPT FLAG
8059 071222  042777  000010  111050              BIC     #10,@CSRX               ;SELECT CHANNEL 1
8060 071230  012777  002514  111044              MOV     #TABD,@BARX             ;---LOAD START ADDRESS OF TABLE D ----
8061 071236  013737  002236  002402              MOV     MCINP,RSAVE             ;STORE MATCH CHARACTER  COUNT INPUT
8062 071244  062737  000011  002402              ADD     #11,RSAVE               ;ADD 11(OCTAL) DATA BYTES TO INPUT
8063 071252  005437  002402                      NEG     RSAVE                   ;BILD 2'COMPL FOR BCR
8064 071256  013777  002402  111020              MOV     RSAVE,@BCRX             ;----LOAD INPUT+DATA BYTES INTO BCR 1
8065 071264  005437  002402                      NEG     RSAVE                   ;REBUILD INPUT+DATA FOR COUNTER CNT1
8066 071270  012777  000107  111002              MOV     #107,@CSRX              ;----DMA ENB,DMA DIR,INT ENB,SYS CONT
8067 071276  052777  000010  110774              BIS     #10,@CSRX               ;SELECT CHANNEL 2
8068 071304  012700  000110                      MOV     #72.,R0                 ;CLEAR BUFFER TABE
8069 071310  012701  002624                      MOV     #TABE,R1                ;...
8070 071314  105021                          2$: CLRB    (R1)+                   ;...
8071 071316  105300                              DECB    R0                      ;...
8072 071320  001375                              BNE     2$                      ;...
8073 071322  012777  002624  110752              MOV     #TABE,@BARX             ;----LOAD START ADDRESS OF TABLE E----
8074 071330  012777  177667  110746              MOV     #177667,@BCRX           ;----LOAD              INTO BCR 1---
8075 071336  012777  000101  110734              MOV     #101,@CSRX              ;----SET DMA ENB,INT ENB IN CSR2
8076 071344                                      SETPRI  #PRI00                  ;SET PRIORITY TO ZERO
                                         .MCALL  M$LDR0,M$SVC
     071344                              M$LDR0  #PRI00,SETPRI
                                         .MCALL  M$GNINS
                                         .IF NB #PRI00
                                         .IF DIF R0,#PRI00
     071344                              M$GNINS <MOV    #PRI00,R0>
                                         .IF LT SVCINS
                                         MOV     #PRI00,R0
                                         .MEXIT
                                         .ENDC
                                         .IF EQ SVCINS
                                         .LIST
                                                 MOV     #PRI00,R0
                                                         .NLIST
                                         .MEXIT
                                         .ENDC
                                         .IF GT SVCINS
                                         .LIST
```

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```
     071344  012700  000000                                                          MOV     #PRI00,R0
                                                .NLIST
                                 .ENDC
                                 .ENDC
                                 .IFF
                                 .ERROR  ;MISSING ARG. ON "SETPRI"
                                 .ENDC
     071350                      M$SVC   C$SPRI
                                 .MCALL  M$GNINS,M$TSTLAB
     071350                      M$TSTLAB
                                 .MCALL  M$TLABEL,M$INCR
                                 .IIF LT T$TSTMAC, .MEXIT
                                 .RADIX  10
                                 M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                 .RADIX  8
                                 M$INCR  T$TSTSEQ
     071350                      M$GNINS <TRAP   C$SPRI>
                                 .IF LT SVCINS
                                 TRAP    C$SPRI
                                 .MEXIT
                                 .ENDC
                                 .IF EQ SVCINS
                                 .LIST
                                         TRAP    C$SPRI
                                                 .NLIST
                                 .MEXIT
                                 .ENDC
                                 .IF GT SVCINS
                                 .LIST
     071350  104441                                                                  TRAP    C$SPRI
                                                 .NLIST
                                 .ENDC
     071352  042777  000010  110720      BIC     #10,@CSRX               ;SELECT CHANNEL 1
     071360  012737  000001  002374      MOV     #1,CHAN                 ;LOAD CHANNEL NUMBER
     071366  112777  000013  110674      MOVB    #13,@ICRHX              ;----LOAD GTS INTO ACR 1--- ---- -----
     071374  012701  077777              MOV     #77777,R1               ;LOAD LOOP COUNTER
     071400  005737  002376      13$:    TST     INTFC1                  ;IS INTERRUPT IN CHANNEL 1 OCCER
     071404  001015                      BNE     10$                     ;BRANCH IF YES
     071406  005301                      DEC     R1                      ;DECREMENT COUNTER
     071410  001373                      BNE     13$                     ;IF NO,TEST AGIN
     071412  017737  110662  002502      MOV     @CSRX,BAD               ;GET CSR1 CONTENTS
     071420  012737  100006  002500      MOV     #100006,GOOD            ;BC OF,DMA DIR,SYS CONT SHOULD BE SET
     071426                              ERRSOFT 2601,E232,ERR201        ;ERROR HANDLER
                                 .MCALL  M$ERRINS
     071426                      M$ERRINS        2601,E232,ERR201,C$ERSOFT
                                 .MCALL  M$GNINS,M$WORD,M$TSTLAB
     071426                      M$SVC   C$ERSOFT
                                 .MCALL  M$GNINS,M$TSTLAB
     071426                      M$TSTLAB
                                 .MCALL  M$TLABEL,M$INCR
                                 .IIF LT T$TSTMAC, .MEXIT
                                 .RADIX  10
                                 M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                 .RADIX  8
                                 M$INCR  T$TSTSEQ
     071426                      M$GNINS <TRAP   C$ERSOFT>
                                 .IF LT SVCINS
```

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```
                                        TRAP    C$ERSOFT
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                TRAP    C$ERSOFT
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
        071426  104457                                                          TRAP    C$ERSOFT
                                                        .NLIST
                                        .ENDC
                000012                  .RADIX  10
                                        .IF NB  2601
                005051                  T$ERRNUM=2601
                                        .IFF
                                        .ERROR  ;MISSING ERROR-NR
                                        .ENDC
        071430                          M$WORD  \T$ERRNUM
                                        .MCALL  M$GNINS
                                        .IRP    N,<2601>
                                        M$GNINS <.WORD  N>
                                        .ENDM
        071430                          M$GNINS <.WURD  2601>
                                        .IF LT SVCINS
                                        .WORD   2601
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                .WORD   2601
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
        071430  005051                                                          .WORD   2601
                                                        .NLIST
                                        .ENDC
                000010                  .RADIX  8
                                        .IF NB E232
        071432                          M$WORD  E232
                                        .MCALL  M$GNINS
                                        .IRP    N,<E232>
                                        M$GNINS <.WORD  N>
                                        .ENDM
        071432                          M$GNINS <.WORD  E232>
                                        .IF LT SVCINS
                                        .WORD   E232
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                .WORD   E232
                                                        .NLIST
```


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```
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
     071432  006062                                                                        .WORD   E232
                                          .NLIST
                                .ENDC
                                .IFF
                                M$WORD  0
                                .ENDC
                                .IF NB ERR201
     071434                     M$WORD  ERR201
                                .MCALL  M$GNINS
                                .IRP    N,<ERR201>
                                M$GNINS <.WORD  N>
                                .ENDM
     071434                     M$GNINS <.WORD  ERR201>
                                .IF LT SVCINS
                                .WORD   ERR201
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                     .WORD   ERR201
                                          .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
     071434  003470                                                                        .WORD   ERR201
                                          .NLIST
                                .ENDC
                                .IFF
                                M$WORD  0
                                .ENDC
8088 071436                          CKLOOP                    ;BRANCH TO BGNSEG IF ERRLOOP IS SET
                                .MCALL  M$SVC
     071436                     M$SVC   C$CLP1
                                .MCALL  M$GNINS,M$TSTLAB
     071436                     M$TSTLAB
                                .MCALL  M$TLABEL,M$INCR
                                .IIF LT T$TSTMAC, .MEXIT
                                .RADIX  10
                                M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                .RADIX  8
                                M$INCR  T$TSTSEQ
     071436                     M$GNINS <TRAP   C$CLP1>
                                .IF LT SVCINS
                                TRAP    C$CLP1
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                     TRAP    C$CLP1
                                          .NLIST
                                .MEXIT
                                .ENDC
```

```
                                        .IF GT SVCINS
                                        .LIST
      071436  104406                                                                    TRAP    C$CLP1
                                                     .NLIST
                                        .ENDC
 8089 071440  052777  000010  110632   10$:    BIS     #10,@CSRX              ;SELECT CHANNEL 2
 8090 071446  012737  000002  002374           MOV     #2,CHAN                ;LOAD CHANNEL NUMBER
 8091 071454  005737  002400                   TST     INTFC2                 ;IS AN INTERRUPT IN CHANNEL 2 OCCURED
 8092 071460  001013                           BNE     11$                    ;BRANCH IF YES
 8093 071462  017737  110612  002502           MOV     @CSRX,BAD              ;GET CSR2 CONTENTS
 8094 071470  012737  020010  002500           MOV     #20010,GOOD            ;COMP END,MUX SHOULD BE SET
 8095 071476                                   ERRSOFT 2602,E232,ERR201       ;ERROR HANDLER
                                        .MCALL  M$ERRINS
      071476                            M$ERRINS        2602,E232,ERR201,C$ERSOFT
                                        .MCALL  M$GNINS,M$WORD,M$TSTLAB
      071476                            M$SVC   C$ERSOFT
                                        .MCALL  M$GNINS,M$TSTLAB
      071476                            M$TSTLAB
                                        .MCALL  M$TLABEL,M$INCR
                                        .IIF LT T$TSTMAC, .MEXIT
                                        .RADIX  10
                                        M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                        .RADIX  8
                                        M$INCR  T$TSTSEQ
      071476                            M$GNINS <TRAP   C$ERSOFT>
                                        .IF LT SVCINS
                                        TRAP    C$ERSOFT
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                TRAP    C$ERSOFT
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
      071476  104457                                                                    TRAP    C$ERSOFT
                                                        .NLIST
                                        .ENDC
              000012                    .RADIX  10
                                        .IF NB  2602
              005052                    T$ERRNUM=2602
                                        .IFF
                                        .ERROR  ;MISSING ERROR-NR
                                        .ENDC
      071500                            M$WORD  \T$ERRNUM
                                        .MCALL  M$GNINS
                                        .IRP    N,<2602>
                                        M$GNINS <.WORD  N>
                                        .ENDM
      071500                            M$GNINS <.WORD  2602>
                                        .IF LT SVCINS
                                        .WORD   2602
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
```

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G7

```
                                        .LIST
                                                .WORD   2602
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
      071500  005052                                                                         .WORD   2602
                                                        .NLIST
                                        .ENDC
              000010                    .RADIX  8
                                        .IF NB E232
      071502                            M$WORD  E232
                                        .MCALL  M$GNINS
                                        .IRP    N,<E232>
                                        M$GNINS <.WORD  N>
                                        .ENDM
      071502                            M$GNINS <.WORD  E232>
                                        .IF LT SVCINS
                                        .WORD   E232
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                .WORD   E232
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
      071502  006062                                                                         .WORD   E232
                                                        .NLIST
                                        .ENDC
                                        .IFF
                                        M$WORD  0
                                        .ENDC
                                        .IF NB ERR201
      071504                            M$WORD  ERR201
                                        .MCALL  M$GNINS
                                        .IRP    N,<ERR201>
                                        M$GNINS <.WORD  N>
                                        .ENDM
      071504                            M$GNINS <.WORD  ERR201>
                                        .IF LT SVCINS
                                        .WORD   ERR201
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                .WORD   ERR201
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
      071504  003470                                                                         .WORD   ERR201
                                                        .NLIST
```

```
                                    .ENDC
                                    .IFF
                                    M$WORD  0
                                    .ENDC
  8096 071506                               CKLOOP                              ;BRANCH TO BGNSEG IF ERRLOOP IS SET
                                    .MCALL  M$SVC
       071506                       M$SVC   C$CLP1
                                    .MCALL  M$GNINS,M$TSTLAB
       071506                       M$TSTLAB
                                    .MCALL  M$TLABEL,M$INCR
                                    .IIF LT T$TSTMAC, .MEXIT
                                    .RADIX  10
                                    M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                    .RADIX  8
                                    M$INCR  T$TSTSEQ
       071506                       M$GNINS <TRAP   C$CLP1>
                                    .IF LT SVCINS
                                    TRAP    C$CLP1
                                    .MEXIT
                                    .ENDC
                                    .IF EQ SVCINS
                                    .LIST
                                            TRAP    C$CLP1
                                                    .NLIST
                                    .MEXIT
                                    .ENDC
                                    .IF GT SVCINS
                                    .LIST
       071506  104406                                                                           TRAP    C$CLP1
                                                    .NLIST
                                    .ENDC
  8097 071510                       11$:    SETPRI  #PRI07                      ;NO FURTHER INTERRUPT ALLOWED
                                    .MCALL  M$LDR0,M$SVC
       071510                       M$LDR0  #PRI07,SETPRI
                                    .MCALL  M$GNINS
                                    .IF NB #PRI07
                                    .IF DIF R0,#PRI07
       071510                       M$GNINS <MOV    #PRI07,R0>
                                    .IF LT SVCINS
                                    MOV     #PRI07,R0
                                    .MEXIT
                                    .ENDC
                                    .IF EQ SVCINS
                                    .LIST
                                            MOV     #PRI07,R0
                                                    .NLIST
                                    .MEXIT
                                    .ENDC
                                    .IF GT SVCINS
                                    .LIST
       071510  012700  000340                                                                   MOV     #PRI07,R0
                                                    .NLIST
                                    .ENDC
                                    .ENDC
                                    .IFF
                                    .ERROR  ;MISSING ARG. ON "SETPRI"
                                    .ENDC
```

TEST 26: MCR FUNCTION TEST OF CHANNEL 2

```
071514                                   M$SVC   C$SPRI
                                         .MCALL  M$GNINS,M$TSTLAB
071514                                   M$TSTLAB
                                         .MCALL  M$TLABEL,M$INCR
                                         .IIF LT T$TSTMAC, .MEXIT
                                         .RADIX  10
                                         M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                         .RADIX  8
                                         M$INCR  T$TSTSEQ
071514                                   M$GNINS <TRAP   C$SPRI>
                                         .IF LT SVCINS
                                         TRAP    C$SPRI
                                         .MEXIT
                                         .ENDC
                                         .IF EQ SVCINS
                                         .LIST
                                                 TRAP    C$SPRI
                                                         .NLIST
                                         .MEXIT
                                         .ENDC
                                         .IF GT SVCINS
                                         .LIST
071514  104441                                                                              TRAP    C$SPRI
                                                         .NLIST
                                         .ENDC
071516  012701  002514                           MOV     #TABD,R1           ;PROVIDE FIRST BYTE OF BUFFER D
071522  012702  002624                           MOV     #TABE,R2           ;PROVIDE FIRST BYTE OF BUFFER E
071526  005037  002404                           CLR     CNT1               ;CLEAR BUFFER COUNTER
071532  005237  002404                   30$:    INC     CNT1               ;BYTE COUNT
071536  122122                                   CMPB    (R1)+,(R2)+        ;BUFFER D EQUAL TO BUFFER E
071540  001433                                   BEQ     33$                ;IF YES, CONTINUE
071542  005037  002500                           CLR     GOOD               ;CLEAR GOOD
071546  005037  002502                           CLR     BAD                ;CLEAR BAD
071552  005037  002426                           CLR     TXADRH             ;SET UP DATA FOR ERROR MESSAGE
071556  010137  002430                           MOV     R1,TXADRL          ;...
071562  005337  002430                           DEC     TXADRL             ;...
071566  005037  002422                           CLR     RXADRH             ;...
071572  010237  002424                           MOV     R2,RXADRL          ;...
071576  005337  002424                           DEC     RXADRL             ;...
071602  116137  177777  002500                   MOVB    -1(R1),GOOD        ;SET UP DATA FOR ERROR MESSAGE
071610  116237  177777  002502                   MOVB    -1(R2),BAD         ;...
071616                                           ERRSOFT 2603,E231,ERR231   ;ERROR HANDLER
                                         .MCALL  M$ERRINS
071616                                   M$ERRINS        2603,E231,ERR231,C$ERSOFT
                                         .MCALL  M$GNINS,M$WORD,M$TSTLAB
071616                                   M$SVC   C$ERSOFT
                                         .MCALL  M$GNINS,M$TSTLAB
071616                                   M$TSTLAB
                                         .MCALL  M$TLABEL,M$INCR
                                         .IIF LT T$TSTMAC, .MEXIT
                                         .RADIX  10
                                         M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                         .RADIX  8
                                         M$INCR  T$TSTSEQ
071616                                   M$GNINS <TRAP   C$ERSOFT>
                                         .IF LT SVCINS
                                         TRAP    C$ERSOFT
```

```
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        TRAP    C$ERSOFT
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
     071616  104457                                                                     TRAP    C$ERSOFT
                                                .NLIST
                                .ENDC
             000012             .RADIX  10
                                .IF NB  2603
             005053             T$ERRNUM=2603
                                .IFF
                                .ERROR  ;MISSING ERROR-NR
                                .ENDC
     071620                     M$WORD  \T$ERRNUM
                                .MCALL  M$GNINS
                                .IRP    N,<2603>
                                M$GNINS <.WORD  N>
                                .ENDM
     071620                     M$GNINS <.WORD  2603>
                                .IF LT SVCINS
                                .WORD   2603
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        .WORD   2603
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
     071620  005053                                                                     .WORD   2603
                                                .NLIST
                                .ENDC
             000010             .RADIX  8
                                .IF NB E231
     071622                     M$WORD  E231
                                .MCALL  M$GNINS
                                .IRP    N,<E231>
                                M$GNINS <.WORD  N>
                                .ENDM
     071622                     M$GNINS <.WORD  E231>
                                .IF LT SVCINS
                                .WORD   F231
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        .WORD   E231
                                                .NLIST
                                .MEXIT
```

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```
                                .ENDC
                                .IF GT SVCINS
                                .LIST
      071622  006000                                                        .WORD   E231
                                           .NLIST
                                .ENDC
                                .IFF
                                M$WORD  0
                                .ENDC
                                .IF NB ERR231
      071624                    M$WORD  ERR231
                                .MCALL  M$GNINS
                                .IRP    N,<ERR231>
                                M$GNINS <.WORD  N>
                                .ENDM
      071624                    M$GNINS <.WORD  ERR231>
                                .IF LT SVCINS
                                .WORD   ERR231
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        .WORD   ERR231
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
      071624  003734                                                        .WORD   ERR231
                                           .NLIST
                                .ENDC
                                .IFF
                                M$WORD  0
                                .ENDC
 8115 071626                            CKLOOP                  ;BRANCH TO BGNSEG IF ERRLOOP IS SET
                                .MCALL  M$SVC
      071626                    M$SVC   C$CLP1
                                .MCALL  M$GNINS,M$TSTLAB
      071626                    M$TSTLAB
                                .MCALL  M$TLABEL,M$INCR
                                .IIF LT T$TSTMAC, .MEXIT
                                .RADIX  10
                                M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                .RADIX  8
                                M$INCR  T$TSTSEQ
      071626                    M$GNINS <TRAP   C$CLP1>
                                .IF LT SVCINS
                                TRAP    C$CLP1
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        TRAP    C$CLP1
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
```

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```
                                        .LIST
     071626  104406                                                                              TRAP    C$CLP1
                                                      .NLIST
                                        .ENDC
8116 071630  023737  002404  002402     33$:    CMP     CNT1,RSAVE              ;ALL BYTES COMPARED ?
8117 071636  001335                             BNE     30$                     ;IF NOT, GET NEXT ONE
8118 071640                                     ENDSEG
                                        .MCALL  M$POP,M$GNLS,M$SVC,M$ENDERR
     071640                             M$POP   T$NS,T$NESTLEV,T$TEMP
                                        .MCALL  M$GETS,M$DECR
                                        .IF LT  T$NESTLEV
                                        .ERROR  T$NESTLEV       ; MACRO T$NS UNDERFLOW
                                        .MEXIT
                                        .ENDC
     071640                             M$GETS  T$NS,\T$NESTLEV,T$TEMP
             000003                     T$TEMP=T$NS2
     071640                             M$DECR  T$NESTLEV
             000001                     T$NESTLEV=T$NESTLEV-1
                                        .IF EQ F$SEG-T$TEMP
     071640                             M$POP   T$SEK,T$SEGLEV,T$$SEG
                                        .MCALL  M$GETS,M$DECR
                                        .IF LT  T$SEGLEV
                                        .ERROR  T$SEGLEV        ; MACRO T$SEK UNDERFLOW
                                        .MEXIT
                                        .ENDC
     071640                             M$GETS  T$SEK,\T$SEGLEV,T$$SEG
             010000                     T$$SEG=T$SEK0
     071640                             M$DECR  T$SEGLEV
             177777                     T$SEGLEV=T$SEGLEV-1
     071640                             M$GNLS  T$$SEG
                                        .MCALL  M$GEN
                                        .IF NB T$$SEG
     071640                             M$GEN   \T$$SEG,$,SVCTAG
                                        .IF LE  SVCTAG
                                        .IIF EQ SVCTAG,.LIST
                                        10000$:
                                        .IIF EQ SVCTAG,.NLIST
                                        .MEXIT
                                        .ENDC
                                        .LIST
     071640                                                                          10000$:
                                                .NLIST
                                        .IFF
                                        M$GEN   \S$LSYM,$,SVCTAG
                                        .ENDC
     071640                             M$SVC   C$ESEG
                                        .MCALL  M$GNINS,M$TSTLAB
     071640                             M$TSTLAB
                                        .MCALL  M$TLABEL,M$INCR
                                        .IIF LT T$TSTMAC, .MEXIT
                                        .RADIX  10
                                        M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                        .RADIX  8
                                        M$INCR  T$TSTSEQ
     071640                             M$GNINS <TRAP   C$ESEG>
                                        .IF LT SVCINS
                                        TRAP    C$ESEG
```

```
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                TRAP    C$ESEG
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
071640  104405                                                                          TRAP    C$ESEG
                                                        .NLIST
                                        .ENDC
                                        .IF EQ T$SEGLEV+1
        000041                          I$SEG=F$END
                                        .ENDC
                                        .IFF
                                        M$ENDERR        ENDSEG,T$TEMP
                                        .ENDC
071642  005077  110432                          CLR     @CSRX                   ;SELECT CHAN. 1 ,CLR ALL BIT IN CHA.2
071646  112777  000014  110414                  MOVB    #14,@ICRHX              ;----LOAD TCA INTO ACR 1-------------
071654  017737  110412  002502                  MOV     @IDRX,BAD               ;READ DIR1 TO CLEAR ACCRQ SIGNAL
071662  005077  110412                          CLR     @CSRX                   ;CLEAR CSR1
                                        ;+++---------------------------------------------------------------
                                        ;PART 2 CHECK THE FALSE NUMBER OF EOS CHARACTERS
                                        ;+++- -------------------------------------------------------------
071666  052777  000012  110404                  BIS     #12,@CSRX               ;SET SYS CON IN CHA 1,SELECT CHANNEL 2
071674  005077  110406                          CLR     @MCRX                   ;CLEAR MCR2 REGISTER
071700  113777  002236  110402                  MOVB    MCINP,@MCRHX            ;----LOAD CNT INPUT INTO MCR 2--------
071706  052777  100012  110372                  BIS     #100012,@MCRX           ;---- ENB MATCH + EOS CHARACTER (12)
071714  042777  000010  110356                  BIC     #10,@CSRX               ;SELECT CHANNEL 1
071722  012737  000001  002374                  MOV     #1,CHAN                 ;LOAD CHANNEL NUMBER
071730  012777  003044  110344                  MOV     #TABG,@BARX             ;---LOAD START ADDRESS OF BUFFER G----
071736  013737  002236  002402                  MOV     MCINP,RSAVE             ;STORE MATCH CHARACTER CNT INPUT
071744  062737  000003  002402                  ADD     #3,RSAVE                ;ADD 3 DATA BYTES TO CNT INPUT
071752  005437  002402                          NEG     RSAVE                   ;BILD 2'COMPL FOR BCR
071756  013777  002402  110320                  MOV     RSAVE,@BCRX             ;---LOAD BYTE COUNT REGISTER 1--------
071764  005437  002402                          NEG     RSAVE                   ;REBUILD INPUT+DATA FOR COUNTER CNT1
071770  012777  000107  110302                  MOV     #107,@CSRX              ;--- DMA ENB,DMA DIR,INT ENB,SYS CONT
071776                                          BGNSEG
                                        .MCALL  M$PUSH,M$INCR,M$SVC
        000040                          I$SEG=F$BGN
071776                                  M$PUSH  T$NS,T$NESTLEV,F$SEG
                                        .MCALL  M$INCR,M$SETS
071776                                  M$INCR  T$NESTLEV
        000002                          T$NESTLEV=T$NESTLEV+1
071776                                  M$SETS  T$NS,\T$NESTLEV,F$SEG
        000003                          T$NS2=F$SEG
        010001                          T$$SEG=S$LSYM
071776                                  M$PUSH  T$SEK,T$SEGLEV,T$$SEG
                                        .MCALL  M$INCR,M$SETS
071776                                  M$INCR  T$SEGLEV
        000000                          T$SEGLEV=T$SEGLEV+1
071776                                  M$SETS  T$SEK,\T$SEGLEV,T$$SEG
        010001                          T$SEK0=T$$SEG
071776                                  M$INCR  S$LSYM
        010002                          S$LSYM=S$LSYM+1
```

```
        071776                                M$SVC   C$BSEG
                                              .MCALL  M$GNINS,M$TSTLAB
        071776                                M$TSTLAB
                                              .MCALL  M$TLABEL,M$INCR
                                              .IIF LT T$TSTMAC, .MEXIT
                                              .RADIX  10
                                              M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                              .RADIX  8
                                              M$INCR  T$TSTSEQ
        071776                                M$GNINS <TRAP   C$BSEG>
                                              .IF LT SVCINS
                                              TRAP    C$BSEG
                                              .MEXIT
                                              .ENDC
                                              .IF EQ SVCINS
                                              .LIST
                                                      TRAP    C$BSEG
                                                              .NLIST
                                              .MEXIT
                                              .ENDC
                                              .IF GT SVCINS
                                              .LIST
        071776  104404                                                                         TRAP    C$BSEG
                                                              .NLIST
                                              .ENDC
   8140 072000  005037  002400                        CLR     INTFC2                  ;CLEAR INTERRUPT FLAG
   8141 072004  005037  002376                        CLR     INTFC1                  ;CLEAR INTERRUPT FLAG
   8142 072010  052777  000010  110262                BIS     #10,@CSRX               ;SELECT CHANNEL 2
   8143 072016  012700  000102                        MOV     #66.,R0                 ;CLEAR BUFFER TABH
   8144 072022  012701  003146                        MOV     #TABH,R1                ;...
   8145 072026  105021                        34$:    CLRB    (R1)+                   ;...
   8146 072030  105300                                DECB    R0                      ;...
   8147 072032  001375                                BNE     34$                     ;...
   8148 072034  012777  003146  110240                MOV     #TABH,@BARX             ;---LOAD START ADDRESS OF BUFFER H---
   8149 072042  012777  177675  110234                MOV     #177675,@BCRX           ;---LOAD MAX. TRANSFER INTO BCR 2 --
   8150 072050  012777  000101  110222                MOV     #101,@CSRX              ;---SET DMA ENB,INT ENB IN CSR2 -----
   8151 072056  042777  000010  110214                BIC     #10,@CSRX               ;SELECT CHANNEL 1
   8152 072064  012737  000001  002374                MOV     #1,CHAN                 ;LOAD CHANNEL NUMBER
   8153 072072                                        SETPRI  #PRI00                  ;SET PRI. TO ZERO (ALLOW INTERRUPT)
                                              .MCALL  M$LDR0,M$SVC
        072072                                M$LDR0  #PRI00,SETPRI
                                              .MCALL  M$GNINS
                                              .IF NB #PRI00
                                              .IF DIF R0,#PRI00
        072072                                M$GNINS <MOV    #PRI00,R0>
                                              .IF LT SVCINS
                                              MOV     #PRI00,R0
                                              .MEXIT
                                              .ENDC
                                              .IF EQ SVCINS
                                              .LIST
                                                      MOV     #PRI00,R0
                                                              .NLIST
                                              .MEXIT
                                              .ENDC
                                              .IF GT SVCINS
                                              .LIST
```

```
072072  012700  000000                                                    MOV     #PRI00,R0
                                              .NLIST
                             .ENDC
                             .ENDC
                             .IFF
                             .ERROR  ;MISSING ARG. ON "SETPRI"
                             .ENDC
072076                       M$SVC   C$SPRI
                             .MCALL  M$GNINS,M$TSTLAB
072076                       M$TSTLAB
                             .MCALL  M$TLABEL,M$INCR
                             .IIF LT T$TSTMAC, .MEXIT
                             .RADIX  10
                             M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                             .RADIX  8
                             M$INCR  T$TSTSEQ
072076                       M$GNINS <TRAP   C$SPRI>
                             .IF LT SVCINS
                             TRAP    C$SPRI
                             .MEXIT
                             .ENDC
                             .IF EQ SVCINS
                             .LIST
                                     TRAP    C$SPRI
                                             .NLIST
                             .MEXIT
                             .ENDC
                             .IF GT SVCINS
                             .LIST
072076  104441                                                            TRAP    C$SPRI
                                             .NLIST
                             .ENDC
072100  112777  000013  110162      MOVB    #13,@ICRHX        ;---LOAD GTS INTO ACR 1--------------
072106  012701  077777              MOV     #77777,R1         ;LOAD COUNTER
072112  005737  002376      40$:    TST     INTFC1            ;IS INTERRUPT IN CHANNEL 1 OCCUR
072116  001015                      BNE     43$               ;BRANCH IF YES
072120  005301                      DEC     R1                ;IS TIME OVER
072122  001373                      BNE     40$               ;IF NO, TEST AGAIN
072124  017737  110150  002502      MOV     @CSRX,BAD         ;GET CSR1 CONTENTS
072132  012737  100006  002500      MOV     #100006,GOOD      ;BC OF,DMA DIR,SYS CONT,SHOULD BE SET
072140                              ERRSOFT 2604,E232,ERR201  ;ERROR HANDLER
                             .MCALL  M$ERRINS
072140                       M$ERRINS        2604,E232,ERR201,C$ERSOFT
                             .MCALL  M$GNINS,M$WORD,M$TSTLAB
072140                       M$SVC   C$ERSOFT
                             .MCALL  M$GNINS,M$TSTLAB
072140                       M$TSTLAB
                             .MCALL  M$TLABEL,M$INCR
                             .IIF LT T$TSTMAC, .MEXIT
                             .RADIX  10
                             M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                             .RADIX  8
                             M$INCR  T$TSTSEQ
072140                       M$GNINS <TRAP   C$ERSOFT>
                             .IF LT SVCINS
                             TRAP    C$ERSOFT
                             .MEXIT
```

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```
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                TRAP    C$ERSOFT
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
        072140  104457                                                          TRAP    C$ERSOFT
                                                        .NLIST
                                        .ENDC
                000012                  .RADIX  10
                                        .IF NB  2604
                005054                  T$ERRNUM=2604
                                        .IFF
                                        .ERROR  ;MISSING ERROR NO
```

```
                                .IF GT SVCINS
                                .LIST
      072144  006062                                                        .WORD   E232
                                          .NLIST
                                .ENDC
                                .IFF
                                M$WORD  0
                                .ENDC
                                .IF NB ERR201
      072146                    M$WORD  ERR201
                                .MCALL  M$GNINS
                                .IRP    N,<ERR201>
                                M$GNINS <.WORD  N>
                                .ENDM
      072146                    M$GNINS <.WORD  ERR201>
                                .IF LT SVCINS
                                .WORD   ERR201
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        .WORD   ERR201
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
      072146  003470                                                        .WORD   ERR201
                                          .NLIST
                                .ENDC
                                .IFF
                                M$WORD  0
                                .ENDC
 8163 072150                            CKLOOP                  ;BRANCH TO BGNSEG IF ERRLOOP IS SET
                                .MCALL  M$SVC
      072150                    M$SVC   C$CLP1
                                .MCALL  M$GNINS,M$TSTLAB
      072150                    M$TSTLAB
                                .MCALL  M$TLABEL,M$INCR
                                .IIF LT T$TSTMAC, .MEXIT
                                .RADIX  10
                                M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                .RADIX  8
                                M$INCR  T$TSTSEQ
      072150                    M$GNINS <TRAP   C$CLP1>
                                .IF LT SVCINS
                                TRAP    C$CLP1
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        TRAP    C$CLP1
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
```

```
       072150  104406                                                                             TRAP    C$CLP1
                                                            .NLIST
                                          .ENDC
  8164 072152  052777  000010  110120     43$:      BIS     #10,@CSRX               ;SELECT CHANNEL 2
  8165 072160  012737  000002  002374               MOV     #2,CHAN                 ;LOAD CHANNEL NUMBER
  8166 072166  005737  002400                       TST     INTFC2                  ;IS THERE AN INTERRUPT IN CHANNEL 2 -
  8167 072172  001013                               BNE     41$                     ;BRANCH IF YES
  8168 072174  017737  110100  002502               MOV     @CSRX,BAD               ;GET CSR2 CONTENTS
  8169 072202  012737  020010  002500               MOV     #20010,GOOD             ;COMP END,MUX SHOULD BE SET
  8170 072210                                       ERRSOFT 2605,E232,ERR201        ;ERROR HANDLER
                                          .MCALL  M$ERRINS
       072210                             M$ERRINS          2605,E232,ERR201,C$ERSOFT
                                          .MCALL  M$GNINS,M$WORD,M$TSTLAB
       072210                             M$SVC   C$ERSOFT
                                          .MCALL  M$GNINS,M$TSTLAB
       072210                             M$TSTLAB
                                          .MCALL  M$TLABEL,M$INCR
                                          .IIF LT T$TSTMAC, .MEXIT
                                          .RADIX  10
                                          M$TLABEL          \T$TESTNUN,\T$TSTSEQ
                                          .RADIX  8
                                          M$INCR  T$TSTSEQ
       072210                             M$GNINS <TRAP   C$ERSOFT>
                                          .IF LT SVCINS
                                          TRAP    C$ERSOFT
                                          .MEXIT
                                          .ENDC
                                          .IF EQ SVCINS
                                          .LIST
                                                  TRAP    C$ERSOFT
                                                          .NLIST
                                          .MEXIT
                                          .ENDC
                                          .IF GT SVCINS
                                          .LIST
       072210  104457                                                                             TRAP    C$ERSOFT
                                                            .NLIST
                                          .ENDC
               000012                     .RADIX  10
                                          .IF NB  2605
               005055                     T$ERRNUM=2605
                                          .IFF
                                          .ERROR  ;MISSING ERROR NR
                                          .ENDC
       072212                             M$WORD  \T$ERRNUM
                                          .MCALL  M$GNINS
                                          .IRP    N,<2605>
                                          M$GNINS <.WORD  N>
                                          .ENDM
       072212                             M$GNINS <.WORD  2605>
                                          .IF LT SVCINS
                                          .WORD   2605
                                          .MEXIT
                                          .ENDC
                                          .IF EQ SVCINS
                                          .LIST
                                                  .WORD   2605
```

```
                                          .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
      072212  005055                                                  .WORD   2605
                                          .NLIST
                                .ENDC
              000010            .RADIX  8
                                .IF NB E232
      072214                    M$WORD  E232
                                .MCALL  M$GNINS
                                .IRP    N,<E232>
                                M$GNINS <.WORD  N>
                                .ENDM
      072214                    M$GNINS <.WORD  E232>
                                .IF LT SVCINS
                                .WORD   E232
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                     .WORD   E232
                                          .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
      072214  006062                                                  .WORD   E232
                                          .NLIST
                                .ENDC
                                .IFF
                                M$WORD  0
                                .ENDC
                                .IF NB ERR201
      072216                    M$WORD  ERR201
                                .MCALL  M$GNINS
                                .IRP    N,<ERR201>
                                M$GNINS <.WORD  N>
                                .ENDM
      072216                    M$GNINS <.WORD  ERR201>
                                .IF LT SVCINS
                                .WORD   ERR201
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                     .WORD   ERR201
                                          .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
      072216  003470                                                  .WORD   ERR201
                                          .NLIST
                                .ENDC
                                .IFF
```

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```
                                M$WORD  0
                                .ENDC
 8171 072220                            CKLOOP                          ;BRANCH TO BGNSEG IF ERRLOOP IS SET
                                .MCALL  M$SVC
      072220                    M$SVC   C$CLP1
                                .MCALL  M$GNINS,M$TSTLAB
      072220                    M$TSTLAB
                                .MCALL  M$TLABEL,M$INCR
                                .IIF LT T$TSTMAC, .MEXIT
                                .RADIX  10
                                M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                .RADIX  8
                                M$INCR  T$TSTSEQ
      072220                    M$GNINS <TRAP   C$CLP1>
                                .IF LT SVCINS
                                TRAP    C$CLP1
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        TRAP    C$CLP1
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
      072220  104406                                                                    TRAP    C$CLP1
                                                .NLIST
                                .ENDC
 8172 072222                    41$:    SETPRI  #PRI07                  ;DISABLE INTERRUPTS
                                .MCALL  M$LDR0,M$SVC
      072222                    M$LDR0  #PRI07,SETPRI
                                .MCALL  M$GNINS
                                .IF NB #PRI07
                                .IF DIF R0,#PRI07
      072222                    M$GNINS <MOV    #PRI07,R0>
                                .IF LT SVCINS
                                MOV     #PRI07,R0
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        MOV     #PRI07,R0
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
      072222  012700  000340                                                            MOV     #PRI07,R0
                                                .NLIST
                                .ENDC
                                .ENDC
                                .IFF
                                .ERROR  ;MISSING ARG. ON "SETPRI"
                                .ENDC
      072226                    M$SVC   C$SPRI
                                .MCALL  M$GNINS,M$TSTLAB
```

```
072226                         M$TSTLAB
                               .MCALL  M$TLABEL,M$INCR
                               .IIF LT T$TSTMAC, .MEXIT
                               .RADIX  10
                               M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                               .RADIX  8
                               M$INCR  T$TSTSEQ
072226                         M$GNINS <TRAP   C$SPRI>
                               .IF LT SVCINS
                               TRAP    C$SPRI
                               .MEXIT
                               .ENDC
                               .IF EQ SVCINS
                               .LIST
                                       TRAP    C$SPRI
                                               .NLIST
                               .MEXIT
                               .ENDC
                               .IF GT SVCINS
                               .LIST
072226  104441                                                                 TRAP    C$SPRI
                                               .NLIST
                               .ENDC
072230  012701  003044                 MOV     #TABG,R1                ;PROVIDE FIRST BYTE OF BUFFER G
072234  012702  003146                 MOV     #TABH,R2                ;PROVIDE FIRST BYTE OF BUFFER H
072240  005037  002404                 CLR     CNT1                    ;CLEAR COUNTER
072244  005237  002404         60$:    INC     CNT1                    ;BYTE COUNT
072250  122122                         CMPB    (R1)+,(R2)+             ;BUFFER G EQUAL BUFFER H
072252  001431                         BEQ     63$                     ;IF YES,CONTINUE
072254  005037  002500                 CLR     GOOD                    ;CLEAR GOOD
072260  005037  002502                 CLR     BAD                     ;CLEAR BAD
072264  005037  002426                 CLR     TXADRH                  ;SET UP DATA FOR ERROR MESSAGE
072270  010137  002430                 MOV     R1,TXADRL               ;...
072274  005337  002430                 DEC     TXADRL                  ;...
072300  005037  002422                 CLR     RXADRH                  ;...
072304  010237  002424                 MOV     R2,RXADRL               ;...
072310  005337  002424                 DEC     RXADRL                  ;...
072314  114137  002500                 MOVB    -(R1),GOOD              ;SET UP DATA FOR ERROR MESSAGE
072320  114237  002502                 MOVB    -(R2),BAD               ;...
072324                                 ERRSOFT 2606,E231,ERR231        ;ERROR HANDLER
                               .MCALL  M$ERRINS
072324                         M$ERRINS        2606,E231,ERR231,C$ERSOFT
                               .MCALL  M$GNINS,M$WORD,M$TSTLAB
072324                         M$SVC   C$ERSOFT
                               .MCALL  M$GNINS,M$TSTLAB
072324                         M$TSTLAB
                               .MCALL  M$TLABEL,M$INCR
                               .IIF LT T$TSTMAC, .MEXIT
                               .RADIX  10
                               M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                               .RADIX  8
                               M$INCR  T$TSTSEQ
072324                         M$GNINS <TRAP   C$ERSOFT>
                               .IF LT SVCINS
                               TRAP    C$ERSOFT
                               .MEXIT
                               .ENDC
```

```
                        .IF EQ SVCINS
                        .LIST
                                TRAP    C$ERSOFT
                                        .NLIST
                        .MEXIT
                        .ENDC
                        .IF GT SVCINS
                        .LIST
072324  104457                                                          TRAP    C$ERSOFT
                                        .NLIST
                        .ENDC
        000012          .RADIX  10
                        .IF NB  2606
        005056          T$ERRNUM=2606
                        .IFF
                        .ERROR  ;MISSING ERROR-NR
                        .ENDC
072326                  M$WORD  \T$ERRNUM
                        .MCALL  M$GNINS
                        .IRP    N,<2606>
                        M$GNINS <.WORD  N>
                        .ENDM
072326                  M$GNINS <.WORD  2606>
                        .IF LT SVCINS
                        .WORD   2606
                        .MEXIT
                        .ENDC
                        .IF EQ SVCINS
                        .LIST
                                .WORD   2606
                                        .NLIST
                        .MEXIT
                        .ENDC
                        .IF GT SVCINS
                        .LIST
072326  005056                                                          .WORD   2606
                                        .NLIST
                        .ENDC
        000010          .RADIX  8
                        .IF NB E231
072330                  M$WORD  E231
                        .MCALL  M$GNINS
                        .IRP    N,<E231>
                        M$GNINS <.WORD  N>
                        .ENDM
072330                  M$GNINS <.WORD  E231>
                        .IF LT SVCINS
                        .WORD   E231
                        .MEXIT
                        .ENDC
                        .IF EQ SVCINS
                        .LIST
                                .WORD   E231
                                        .NLIST
                        .MEXIT
                        .ENDC
                        .IF GT SVCINS
```

```
                                .LIST
      072330  006000                                                         .WORD   E231
                                          .NLIST
                                .ENDC
                                .IFF
                                M$WORD  0
                                .ENDC
                                .IF NB ERR231
      072332                    M$WORD  ERR231
                                .MCALL  M$GNINS
                                .IRP    N,<ERR231>
                                M$GNINS <.WORD  N>
                                .ENDM
      072332                    M$GNINS <.WORD  ERR231>
                                .IF LT SVCINS
                                .WORD   ERR231
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        .WORD   ERR231
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
      072332  003734                                                         .WORD   ERR231
                                                .NLIST
                                .ENDC
                                .IFF
                                M$WORD  0
                                .ENDC
 8190 072334                            CKLOOP                  ;BRANCH TO BGNSEG IF ERRLOOP IS SET
                                .MCALL  M$SVC
      072334                    M$SVC   C$CLP1
                                .MCALL  M$GNINS,M$TSTLAB
      072334                    M$TSTLAB
                                .MCALL  M$TLABEL,M$INCR
                                .IIF LT T$TSTMAC, .MEXIT
                                .RADIX  10
                                M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                .RADIX  8
                                M$INCR  T$TSTSEQ
      072334                    M$GNINS <TRAP   C$CLP1>
                                .IF LT SVCINS
                                TRAP    C$CLP1
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        TRAP    C$CLP1
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
      072334  104406                                                         TRAP    C$CLP1
```

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```
                                                        .NLIST
                                          .ENDC
  8191 072336  023737  002404  002402   63$:     CMP     CNT1,RSAVE              ;ALL BYTES COMPARED ?
  8192 072344  001337                            BNE     60$                     ;IF NO,GET NEXT ONE
  8193 072346                                    ENDSEG
                                          .MCALL  M$POP,M$GNLS,M$SVC,M$ENDERR
       072346                             M$POP   T$NS,T$NESTLEV,T$TEMP
                                          .MCALL  M$GETS,M$DECR
                                          .IF LT  T$NESTLEV
                                          .ERROR  T$NESTLEV       ; MACRO T$NS UNDERFLOW
                                          .MEXIT
                                          .ENDC
       072346                             M$GETS  T$NS,\T$NESTLEV,T$TEMP
               000003                     T$TEMP=T$NS2
       072346                             M$DECR  T$NESTLEV
               000001                     T$NESTLEV=T$NESTLEV-1
                                          .IF EQ F$SEG-T$TEMP
       072346                             M$POP   T$SEK,T$SEGLEV,T$$SEG
                                          .MCALL  M$GETS,M$DECR
                                          .IF LT  T$SEGLEV
                                          .ERROR  T$SEGLEV        ; MACRO T$SEK UNDERFLOW
                                          .MEXIT
                                          .ENDC
       072346                             M$GETS  T$SEK,\T$SEGLEV,T$$SEG
               010001                     T$$SEG=T$SEK0
       072346                             M$DECR  T$SEGLEV
               177777                     T$SEGLEV=T$SEGLEV-1
       072346                             M$GNLS  T$$SEG
                                          .MCALL  M$GEN
                                          .IF NB T$$SEG
       072346                             M$GEN   \T$$SEG,$,SVCTAG
                                          .IF LE  SVCTAG
                                          .IIF EQ SVCTAG,.LIST
                                          10001$:
                                          .IIF EQ SVCTAG,.NLIST
                                          .MEXIT
                                          .ENDC
                                          .LIST
       072346                                                                          10001$:
                                                  .NLIST
                                          .IFF
                                          M$GEN   \S$LSYM,$,SVCTAG
                                          .ENDC
       072346                             M$SVC   C$ESEG
                                          .MCALL  M$GNINS,M$TSTLAB
       072346                             M$TSTLAB
                                          .MCALL  M$TLABEL,M$INCR
                                          .IIF LT T$TSTMAC, .MEXIT
                                          .RADIX  10
                                          M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                          .RADIX  8
                                          M$INCR  T$TSTSEQ
       072346                             M$GNINS <TRAP   C$ESEG>
                                          .IF LT SVCINS
                                          TRAP    C$ESEG
                                          .MEXIT
                                          .ENDC
```

L8

```
                                        .IF EQ SVCINS
                                        .LIST
                                                TRAP    C$ESEG
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
 072346  104405                                                                         TRAP    C$ESEG
                                                        .NLIST
                                        .ENDC
                                        .IF EQ T$SEGLEV+1
         000041                         I$SEG=F$END
                                        .ENDC
                                        .IFF
                                        M$ENDERR        ENDSEG,T$TEMP
                                        .ENDC
 072350  042777  000010  107722                 BIC     #10,@CSRX               ;SELECT CHANNEL 1
 072356  112777  000014  107704                 MO/B    #14,@ICRHX              ;---LOAD TCA INTO ACR 1--------------
 072364  112777  000077  107704                 MOVB    #77,@IDRHX              ;----LOAD UNL INTO DOR 1--------------
 072372  004737  011050                         JSR     PC,LOOP                 ;WAIT A LITTLE
 072376  112777  000200  107664                 MOVB    #200,@ICRHX             ;---LOAD SWRST INTO ACR 1-------------
 072404  112777  000000  107656                 MOVB    #0,@ICRHX               ;---LOAD NOT SWRST INTO ACR 1---------
 072412  005737  002234                         TST     QVP                     ;IS QUICK VERIFY PASS SELECTED ?
 072416  001025                                 BNE     EXQV26                  ;IF YES EXIT TEST
 072420  005237  002322                         INC     ITRCNT                  ;ITERATION COUNTER +1
 072424  023737  002322  002320                 CMP     ITRCNT,ITRDEF           ;DEFAULT ITERATION EXECUTED
 072432  001417                                 BEQ     EXQV26                  ;IF YES EXIT TEST
 072434  012777  000010  107636                 MOV     #10,@CSRX               ;CLEAR CSR1,SELECT CHANNEL 2
 072442  005077  107632                         CLR     @CSRX                   ;CLEAR CSR2,SELECT CHANNEL 1
 072446  112777  000217  107614                 MOVB    #217,@ICRHX             ;----LOAD SIC INTO ACR 1---  -----
 072454  004737  011062                         JSR     PC,WAIT                 ;WAIT A LIT_E
 072460  112777  000017  107602                 MOVB    #17,@ICRHX              ;----LOAD NOT SIC INTO ACR 1------
 072466  000137  071052                         JMP     ITAC26                  ;IF NO TEST ITERATION
 072472                                 EXQV26: EXIT    TST
                                        .MCALL  M$SVC,M$EXIT,M$EXSEG,M$EXTJ,M$GETTOP,M$CHECK,M$WORD,XFER
         000041                         T$FLAG=F$END
 072472                                 M$CHECK TST,T$TEMP,T$FLAG
                                        .IF IDN <TST>,<TST>
         010057                         T$TEMP=T$$TEST
         000040                         T$FLAG=I$TST
                                        .MEXIT
                                        .ENDC
                                        .IF IDN <SUB>,<TST>
                                        T$TEMP=T$$SUB
                                        T$FLAG=I$SUB
                                        .MEXIT
                                        .ENDC
                                        .IF IDN <SEG>,<TST>
                                        T$TEMP=T$$SEG
                                        T$FLAG=I$SEG
                                        .MEXIT
                                        .ENDC
                                        .IF IDN <INIT>,<TST>
                                        T$TEMP=T$$INIT
                                        T$FLAG-I$INIT
                                        .MEXIT
```

```
                                .ENDC
                                .IF IDN <CLN>,<TST>
                                T$TEMP=T$$CLEAN
                                T$FLAG=I$CLN
                                .MEXIT
                                .ENDC
                                .IF IDN <SRV>,<TST>
                                T$TEMP=T$$SRV
                                T$FLAG=I$SRV
                                .MEXIT
                                .ENDC
                                .IF IDN <MSG>,<TST>
                                T$TEMP=T$$MSG
                                T$FLAG=F$JMP
                                .MEXIT
                                .ENDC
                                .IF IDN <RPT>,<TST>
                                T$TEMP=T$$RPT
                                T$FLAG=F$JMP
                                .MEXIT
                                .ENDC
                                .IF IDN <DU>,<TST>
                                T$TEMP=T$$DU
                                T$FLAG=F$JMP
                                .MEXIT
                                .ENDC
                                .IF IDN <AU>,<TST>
                                T$TEMP=T$$AU
                                T$FLAG=F$JMP
                                .MEXIT
                                .ENDC
                                .IF EQ T$FLAG-F$JMP
                                M$WORD  J$JMP
                                M$EXTJ  \T$TEMP
                                .MEXIT
                                .ENDC
                                .IF EQ  T$FLAG-F$BGN
        072472                  M$SVC   C$EXIT
                                .MCALL  M$GNINS,M$TSTLAB
        072472                  M$TSTLAB
                                .MCALL  M$TLABEL,M$INCR
                                .IIF LT T$TSTMAC, .MEXIT
                                .RADIX  10
                                M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                .RADIX  8
                                M$INCR  T$TSTSEQ
        072472                  M$GNINS <TRAP   C$EXIT>
                                .IF LT SVCINS
                                TRAP    C$EXIT
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        TRAP    C$EXIT
                                                .NLIST
                                .MEXIT
                                .ENDC
```

N8

```
                                        .IF GT SVCINS
                                        .LIST
      072472  104432                                                                     TRAP    C$EXIT
                                                     .NLIST
                                        .ENDC
                                        .IF IDN <SEG>,<TST>
                                        M$GETTOP T$SEK,T$SEGLEV,T$TEMP
                                        M$EXSEG \T$TEMP
                                        .IFF
      072474                            M$EXIT  \T$TEMP
                                        .MCALL  M$GNINS
      072474                            M$GNINS <.WORD  L10057-.>
                                        .IF LT SVCINS
                                        .WORD   L10057-.
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                .WORD   L10057-.
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
      072474  000050                                                                     .WORD   L10057-.
                                                     .NLIST
                                        .ENDC
                                        .ENDC
                                        .MEXIT
                                        .ENDC
                                        .IF IDN <HRD>,<TST>
                                        M$GETTOP        T$NS,T$NESTLEV,T$TEMP
                                        .IF EQ  F$HARD-T$TEMP
                                        .IRP    N,<\T$$HARD>
                                        XFER    L'N
                                        .ENDM
                                        .MEXIT
                                        .ENDC
                                        .ENDC
                                        .IF IDN <SFT>,<TST>
                                        M$GETTOP        T$NS,T$NESTLEV,T$TEMP
                                        .IF EQ  F$SOFT-T$TEMP
                                        .IRP    N,<\T$$SOFT>
                                        XFER    L'N
                                        .ENDM
                                        .MEXIT
                                        .ENDC
                                        .ENDC
                                        .ERROR  ;ILL. "EXIT TST" STMT.
  8212                                          .NLIST  BEX
  8213
  8214 072476     04?     123     062   TSHD26: .ASCIZ  /%S2%AMCR FUNCTION TEST OF CHANNEL 2%N/
  8215                                          .LIST   BEX
  8216                                          .EVEN
  8217 072544                                   ENDTST
                                        .MCALL  M$POP,M$GNTAG,M$SVC,M$ENDERR
                                        .IF EQ  F$BGN-I$TST
```

```
                000041                  I$TST=F$END
                                        .IFF
                                        .ERROR  ;MISSING "BGNTST"
                                        .MEXIT
                                        .ENDC
        072544                          M$POP   T$NS,T$NESTLEV,T$TEMP
                                        .MCALL  M$GETS,M$DECR
                                        .IF LT  T$NESTLEV
                                        .ERROR  T$NESTLEV       ; MACRO T$NS UNDERFLOW
                                        .MEXIT
                                        .ENDC
        072544                          M$GETS  T$NS,\T$NESTLEV,T$TEMP
                000001                  T$TEMP=T$NS1
        072544                          M$DECR  T$NESTLEV
                000000                  T$NESTLEV=T$NESTLEV-1
                                        .IF EQ F$TEST-T$TEMP
        072544                          M$GNTAG L,T$$TEST
                                        .MCALL  M$GEN
        072544                          M$GEN   L,\T$$TEST,SVCTAG
                                        .IF LE  SVCTAG
                                        .IIF EQ SVCTAG,.LIST
                                        L10057:
                                        .IIF EQ SVCTAG,.NLIST
                                        .MEXIT
                                        .ENDC
                                        .LIST
        072544                                                                  L10057:
                                                .NLIST
                010000                  S$LSYM=T$LSYM
        072544                          M$SVC   C$ETST
                                        .MCALL  M$GNINS,M$TSTLAB
        072544                          M$TSTLAB
                                        .MCALL  M$TLABEL,M$INCR
                                        .IIF LT T$TSTMAC, .MEXIT
                                        .RADIX  10
                                        M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                        .RADIX  8
                                        M$INCR  T$TSTSEQ
        072544                          M$GNINS <TRAP   C$ETST>
                                        .IF LT SVCINS
                                        TRAP    C$ETST
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                TRAP    C$ETST
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
        072544  104401                                                              TRAP    C$ETST
                                                        .NLIST
                                        .ENDC
                000041                  I$TST=F$END
                                        .IFF
                                        M$ENDERR        ENDTST,T$TEMP
```

```
                                .ENDC
```

```
                            .SBTTL  TEST 27: EXTENDED ADDRESS BIT (Q22 BUS)TEST
                            ;**********************************************************************
                            ;                 IEX - TEST 27
                            ;THIS TEST IS ONLY BE CARRIED OUT IF A 22-BIT Q BUS (11/23B)IS USED
                            ;AND IF THE AVAILABLE MEMORY IS GREATER THAN 128K.
                            ;
                            ;PART 1 FINDS OUT IF AVAILABLE MEMORY IS GREATER THAN 128K.IF YES,THEN
                            ;        A DMA IS CARRIED OUT BY SENDING 2K DATA VIA THE IEC/IEEE BUS
                            ;        FROM CHANNEL 1 TO 2.THE DMA CROSS THE 128K BOUNDERY.
                            ;        THE SEQUENCE DESCRIBED ABOVE IS ALSO EXECUTED WITH MEMORY
                            ;        GREATER THAN 256K (BA 19 SET),GREATER THAN 512K (BA 20 SET)
                            ;        AND GREATER THAN 1024K (BA 21 SET).
                            ;PART 2 SAME AS PART 1 EXCEPT THE CHANNELS .THE DMA DATA TRANSFER
                            ;        IS CARRIED OUT FROM CHANNEL 2 TO 1.
                            ;**********************************************************************
072546                              BGNTST
                            .MCALL  M$INCR,M$GNTEST,M$PUSH,M$INCR
                            .IF NE  F$END-I$SUB
                            .ERROR  ;"BGNTST" IN SUB
                            .MEXIT
                            .ENDC
                            .IF NE  F$END-I$SEG
                            .ERROR  ;"BGNTST" IN SEG
                            .MEXIT
                            .ENDC
                            .IF NE   $END-I$TST
                            .ERROR  ;"BGNTST" IN TST
                            .MEXIT
                            .IFF
        000040              I$TST=F$BGN
                            .ENDC
                            .IF B
072546                      M$INCR  T$TESTNUM
        000033              T$TESTNUM=T$TESTNUM+1
                            .IFF
                            T$TESTNUM=
                            .ENDC
        000000              T$SUBNUM=0
        000012              .RADIX  10
072546                      M$GNTEST        \T$TESTNUM
                            .MCALL  M$GEN
072546                      M$GEN   T,27:,SVCTST
                            .IF LE  SVCTST
                            .IIF EQ SVCTST,.LIST
                            T27::
                            .IIF EQ SVCTST,.NLIST
                            .MEXIT
                            .ENDC
                            .LIST
072546                                                                  T27::
                                    .NLIST
        000010              .RADIX  8
072546                      M$PUSH  T$NS,T$NESTLEV  $TEST
                            .MCALL  M$INCR,M$SETS
072546                      M$INCR  T$NESTLEV
        000001              T$NESTLEV=T$NESTLEV+1
072546                      M$SETS  T$NS,\T$NESTL V,F$TEST
```

```
               000001                  T$NS1=F$TEST
               010060                  T$$TEST=T$TAGNUM
          072546                       M$INCR T$TAGNUM
               010061                  T$TAGNUM=T$TAGNUM+1
               000001                  T$TSTSEQ=1
     8235 072546                               READBUS                         ;DETERMINE BUS TYPE
                                       .MCALL  M$SVC
          072546                       M$SVC   C$RDBU
                                       .MCALL  M$GNINS,M$TSTLAB
          072546                       M$TSTLAB
                                       .MCALL  M$TLABEL,M$INCR
                                       .IIF LT T$TSTMAC, .MEXIT
                                       .RADIX  10
                                       M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                       .RADIX  8
                                       M$INCR  T$TSTSEQ
          072546                       M$GNINS <TRAP   C$RDBU>
                                       .IF LT SVCINS
                                       TRAP    C$RDBU
                                       .MEXIT
                                       .ENDC
                                       .IF EQ SVCINS
                                       .LIST
                                               TRAP    C$RDBU
                                                       .NLIST
                                       .MEXIT
                                       .ENDC
                                       .IF GT SVCINS
                                       .LIST
          072546  104407                                                                  TRAP    C$RDBU
                                                       .NLIST
                                       .ENDC
     8236 072550                               BCOMPLETE 3$                    ;BRANCH IF Q-BUS
                                       .MCALL  M$GNINS
          072550                       M$GNINS <BCS    3$>
                                       .IF LT SVCINS
                                       BCS     3$
                                       .MEXIT
                                       .ENDC
                                       .IF EQ SVCINS
                                       .LIST
                                               BCS     3$
                                                       .NLIST
                                       .MEXIT
                                       .ENDC
                                       .IF GT SVCINS
                                       .LIST
          072550  103415                                                                  BCS     3$
                                                       .NLIST
                                       .ENDC
     8237 072552  005737  002324               TST     PNTF                    ;IS THE PNT FLAG SET
     8238 072556  001410                       BEQ     2$                      ;IF YES, PRINT MESSAGE
     8239 072560                               PRINTF  #INF03                  ;...
                                       .MCALL  M$PRINT
                                       .IF B   #INF03
                                       .ERROR  ;MISSING FORMAT
                                       .MEXIT
```

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```
                                        .ENDC
                                        .IF B   <>
      072560                            M$PRINT C$PNTF,#INF03
                                        .MCALL  M$COUNT,M$PUT,M$GNINS,M$SVC
             000001                     T$ARGCNT=1
      072560                            M$COUNT T$ARGCNT,<>,<>,<>,<>,<>,<>,<>,<>
                                        .IF NB <>
                                        M$COUNT T$ARGCNT,<>,<>,<>,<>,<>,<>,<>,<>
                                        .ENDC
                                        .IF NB <>
                                        T$ARGCNT=T$ARGCNT+1
                                        .ENDC
                                        .IRP    N,<\T$ARGCNT>
                                        M$PUT   #N,#INF03,<>,<>,<>,<>,<>,<>,<>,<>
                                        .ENDM
      072560                            M$PUT   #1,#INF03,<>,<>,<>,<>,<>,<>,<>,<>
                                        .MCALL  M$PUT1
                                        .IF NB  <#INF03>
      072560                            M$PUT   <#INF03>,<>,<>,<>,<>,<>,<>,<>,<>
                                        .MCALL  M$PUT1
                                        .IF NB  <>
                                        M$PUT   <>,<>,<>,<>,<>,<>,<>,<>,<>
                                        .ENDC
                                        .IF NB  <#INF03>
      072560                            M$PUT1  #INF03
                                        .MCALL  M$GNINS
                                        .IF B
      072560                            M$GNINS <MOV    #INF03,-(SP)>
                                        .IF LT SVCINS
                                        MOV     #INF03, (SP)
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                MOV     #INF03,-(SP)
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
      072560  012746  076504                                                    MOV     #INF03,-(SP)
                                                        .NLIST
                                        .ENDC
                                        .IFF
                                        .IF DIF B,<#INF03>
                                        .ERROR  ;ILL. ARG. "#INF03" ONLY "B" IS ALLOWED.
                                        .MEXIT
                                        .ENDC
                                        M$GNINS <CLR    -(SP)>
                                        M$GNINS <BISB   ,(SP)>
                                        .ENDC
                                        .ENDC
                                        .ENDC
                                        .IF NB  <#1>
      072564                            M$PUT1  #1
                                        .MCALL  M$GNINS
                                        .IF B
```

```
072564                      M$GNINS <MOV    #1,-(SP)>
                            .IF LT SVCINS
                            MOV     #1,-(SP)
                            .MEXIT
                            .ENDC
                            .IF EQ SVCINS
                            .LIST
                                    MOV     #1,-(SP)
                                            .NLIST
                            .MEXIT
                            .ENDC
                            .IF GT SVCINS
                            .LIST
072564  012746  000001                                          MOV     #1,-(SP)
                                            .NLIST
                            .ENDC
                            .IFF
                            .IF DIF B,<#1>
                            .ERROR  ;ILL. ARG. "#1" ONLY "B" IS ALLOWED.
                            .MEXIT
                            .ENDC
                            M$GNINS <CLR    -(SP)>
                            M$GNINS <BISB   ,(SP)>
                            .ENDC
                            .ENDC
072570                      M$GNINS <MOV    SP,R0>
                            .IF LT SVCINS
                            MOV     SP,R0
                            .MEXIT
                            .ENDC
                            .IF EQ SVCINS
                            .LIST
                                    MOV     SP,R0
                                            .NLIST
                            .MEXIT
                            .ENDC
                            .IF GT SVCINS
                            .LIST
072570  010600                                                  MOV     SP,R0
                                            .NLIST
                            .ENDC
072572                      M$SVC   C$PNTF
                            .MCALL  M$GNINS,M$TSTLAB
072572                      M$TSTLAB
                            .MCALL  M$TLABEL,M$INCR
                            .IIF LT T$TSTMAC, .MEXIT
                            .RADIX  10
                            M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                            .RADIX  8
                            M$INCR  T$TSTSEQ
072572                      M$GNINS <TRAP   C$PNTF>
                            .IF LT SVCINS
                            TRAP    C$PNTF
                            .MEXIT
                            .ENDC
                            .IF EQ SVCINS
                            .LIST
```

```
                                        TRAP    C$PNTF
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
      072572  104417                                                            TRAP    C$PNTF
                                                .NLIST
                                .ENDC
                                .IRP    N,<\T$ARGCNT*2+2>
                                M$GNINS <ADD    #N,SP>
                                .ENDM
      072574                    M$GNINS <ADD    #4,SP>
                                .IF LT SVCINS
                                ADD     #4,SP
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        ADD     #4,SP
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
      072574  062706  000004                                                    ADD     #4,SP
                                                .NLIST
                                .ENDC
                                .MEXIT
                                .ENDC
                                .IF B   <>
                                M$PRINT C$PNTF,#INF03,<>
                                .MEXIT
                                .ENDC
                                .IF B   <>
                                M$PRINT C$PNTF,#INF03,<>,<>
                                .MEXIT
                                .ENDC
                                .IF B   <>
                                M$PRINT C$PNTF,#INF03,<>,<>,<>
                                .MEXIT
                                .ENDC
                                .IF B   <>
                                M$PRINT C$PNTF,#INF03,<>,<>,<>,<>
                                .MEXIT
                                .ENDC
                                .IF B   <>
                                M$PRINT C$PNTF,#INF03,<>,<>,<>,<>,<>
                                .MEXIT
                                .ENDC
                                .IF B   <>
                                M$PRINT C$PNTF,#INF03,<>,<>,<>,<>,<>,<>
                                .MEXIT
                                .ENDC
                                .IF B   <>
                                M$PRINT C$PNTF,#INF03,<>,<>,<>,<>,<>,<>,<>
                                .MEXIT
```


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```
                                .ENDC
                                M$PRINT C$PNTF,#INF03,<>,<>,<>,<>,<>,<>,<>,<>
 8240 072600                    2$:     EXIT    TST                     ;EXIT TEST
                                .MCALL  M$SVC,M$EXIT,M$EXSEG,M$EXTJ,M$GETTOP,M$CHECK,M$WORD,XFER
                000041          T$FLAG=F$END
      072600                    M$CHECK TST,T$TEMP,T$FLAG
                                .IF IDN <TST>,<TST>
                010060          T$TEMP=T$$TEST
                000040          T$FLAG=I$TST
                                .MEXIT
                                .ENDC
                                .IF IDN <SUB>,<TST>
                                T$TEMP=T$$SUB
                                T$FLAG=I$SUB
                                .MEXIT
                                .ENDC
                                .IF IDN <SEG>,<TST>
                                T$TEMP=T$$SEG
                                T$FLAG=I$SEG
                                .MEXIT
                                .ENDC
                                .IF IDN <INIT>,<TST>
                                T$TEMP=T$$INIT
                                T$FLAG=I$INIT
                                .MEXIT
                                .ENDC
                                .IF IDN <CLN>,<TST>
                                T$TEMP=T$$CLEAN
                                T$FLAG=I$CLN
                                .MEXIT
                                .ENDC
                                .IF IDN <SRV>,<TST>
                                T$TEMP=T$$SRV
                                T$FLAG=I$SRV
                                .MEXIT
                                .ENDC
                                .IF IDN <MSG>,<TST>
                                T$TEMP=T$$MSG
                                T$FLAG=F$JMP
                                .MEXIT
                                .ENDC
                                .IF IDN <RPT>,<TST>
                                T$TEMP=T$$RPT
                                T$FLAG=F$JMP
                                .MEXIT
                                .ENDC
                                .IF IDN <DU>,<TST>
                                T$TEMP=T$$DU
                                T$FLAG=F$JMP
                                .MEXIT
                                .ENDC
                                .IF IDN <AU>,<TST>
                                T$TEMP=T$$AU
                                T$FLAG=F$JMP
                                .MEXIT
                                .ENDC
                                .IF EQ T$FLAG F$JMP
```

```
                                M$WORD  J$JMP
                                M$EXTJ  \T$TEMP
                                .MEXIT
                                .ENDC
                                .IF EQ  T$FLAG-F$BGN
072600                          M$SVC   C$EXIT
                                .MCALL  M$GNINS,M$TSTLAB
072600                          M$TSTLAB
                                .MCALL  M$TLABEL,M$INCR
                                .IIF LT T$TSTMAC, .MEXIT
                                .RADIX  10
                                M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                .RADIX  8
                                M$INCR  T$TSTSEQ
072600                          M$GNINS <TRAP   C$EXIT>
                                .IF LT SVCINS
                                TRAP    C$EXIT
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        TRAP    C$EXIT
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
072600  104432                                                          TRAP    C$EXIT
                                                .NLIST
                                .ENDC
                                .IF IDN <SEG>,<TST>
                                M$GETTOP T$SEK,T$SEGLEV,T$TEMP
                                M$EXSEG \T$TEMP
                                .IFF
072602                          M$EXIT  \T$TEMP
                                .MCALL  M$GNINS
072602                          M$GNINS <.WORD  L10060 .>
                                .IF LT SVCINS
                                .WORD   L10060-.
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        .WORD   L10060-.
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
072602  002654                                                          .WORD   L10060 .
                                                .NLIST
                                .ENDC
                                .ENDC
                                .MEXIT
                                .ENDC
                                .IF IDN <HRD>,<TST>
                                M$GETTOP        T$NS,T$NESTLEV,T$TEMP
```

K9

K9


```
                                                .IF EQ  F$HARD-T$TEMP
                                                .IRP    N,<\T$$HARD>
                                                XFER    L'N
                                                .ENDM
                                                .MEXIT
                                                .ENDC
                                                .ENDC
                                                .IF IDN <SFT>,<TST>
                                                M$GETTOP        T$NS,T$NESTLEV,T$TEMP
                                                .IF EQ  F$SOFT-T$TEMP
                                                .IRP    N,<\T$$SOFT>
                                                XFER    L'N
                                                .ENDM
                                                .MEXIT
                                                .ENDC
                                                .ENDC
                                                .ERROR  ;ILL. "EXIT TST" STMT.
 8241 072604  012737  000004  002350            3$:     MOV     #4,MASK                 ;
 8242 072612  005737  002324                            TST     PNTF                    ;IS THE PNT FLAG SET
 8243 072616  001410                                    BEQ     7$                      ;IF YES, PRINT THE TEST HEADER
 8244 072620                                            PRINTF  #TSHD27                 ;...
                                                .MCALL  M$PRINT
                                                .IF B   #TSHD27
                                                .ERROR  ;MISSING FORMAT
                                                .MEXIT
                                                .ENDC
                                                .IF B   <>
      072620                                    M$PRINT C$PNTF,#TSHD27
                                                .MCALL  M$COUNT,M$PUT,M$GNINS,M$SVC
              000001                            T$ARGCNT=1
      072620                                    M$COUNT T$ARGCNT,<>,<>,<>,<>,<>,<>,<>,<>
                                                .IF NB <>
                                                M$COUNT T$ARGCNT,<>,<>,<>,<>,<>,<>,<>,<>
                                                .ENDC
                                                .IF NB <>
                                                T$ARGCNT=T$ARGCNT+1
                                                .ENDC
                                                .IRP    N,<\T$ARGCNT>
                                                M$PUT   #N,#TSHD27,<>,<>,<>,<>,<>,<>,<>,<>
                                                .ENDM
      072620                                    M$PUT   #1,#TSHD27,<>,<>,<>,<>,<>,<>,<>,<>
                                                .MCALL  M$PUT1
                                                .IF NB  <#TSHD27>
      072620                                    M$PUT   <#TSHD27>,<>,<>,<>,<>,<>,<>,<>,<>
                                                .MCALL  M$PUT1
                                                .IF NB  <>
                                                M$PUT   <>,<>,<>,<>,<>,<>,<>,<>,<>
                                                .ENDC
                                                .IF NB  <#TSHD27>
      072620                                    M$PUT1  #TSHD27
                                                .MCALL  M$GNINS
                                                .IF B
      072620                                    M$GNINS <MOV    #TSHD27, (SP)>
                                                .IF LT SVCINS
                                                MOV     #TSHD27,-(SP)
                                                .MEXIT
                                                .ENDC
```

L9

```
                                        .IF EQ SVCINS
                                        .LIST
                                                MOV     #TSHD27,-(SP)
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
        072620  012746  075410                                                          MOV     #TSHD27,-(SP)
                                                        .NLIST
                                        .ENDC
                                        .IFF
                                        .IF DIF B,<#TSHD27>
                                        .ERROR  ;ILL. ARG. "#TSHD27" ONLY "B" IS ALLOWED.
                                        .MEXIT
                                        .ENDC
                                        M$GNINS <CLR    -(SP)>
                                        M$GNINS <BISB   ,(SP)>
                                        .ENDC
                                        .ENDC
                                        .ENDC
                                        .IF NB  <#1>
        072624                          M$PUT1  #1
                                        .MCALL  M$GNINS
                                        .IF B
        072624                          M$GNINS <MOV    #1,-(SP)>
                                        .IF LT SVCINS
                                        MOV     #1,-(SP)
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                MOV     #1,-(SP)
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
        072624  012746  000001                                                          MOV     #1,-(SP)
                                                        .NLIST
                                        .ENDC
                                        .IFF
                                        .IF DIF B,<#1>
                                        .ERROR  ;ILL. ARG. "#1" ONLY "B" IS ALLOWED.
                                        .MEXIT
                                        .ENDC
                                        M$GNINS <CLR    -(SP)>
                                        M$GNINS <BISB   ,(SP)>
                                        .ENDC
                                        .ENDC
        072630                          M$GNINS <MOV    SP,R0>
                                        .IF LT SVCINS
                                        MOV     SP,R0
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
```

M9

```
                                        MOV     SP,R0
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
     072630  010600                                                      MOV     SP,R0
                                                .NLIST
                                .ENDC
     072632                     M$SVC   C$PNTF
                                .MCALL  M$GNINS,M$TSTLAB
     072632                     M$TSTLAB
                                .MCALL  M$TLABEL,M$INCR
                                .IIF LT T$TSTMAC, .MEXIT
                                .RADIX  10
                                M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                .RADIX  8
                                M$INCR  T$TSTSEQ
     072632                     M$GNINS <TRAP   C$PNTF>
                                .IF LT SVCINS
                                TRAP    C$PNTF
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        TRAP    C$PNTF
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
     072632  104417                                                      TRAP    C$PNTF
                                                .NLIST
                                .ENDC
                                .IRP    N,<\T$ARGCNT*2+2>
                                M$GNINS <ADD    #N,SP>
                                .ENDM
     072634                     M$GNINS <ADD    #4,SP>
                                .IF LT SVCINS
                                ADD     #4,SP
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        ADD     #4,SP
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
     072634  062706  000004                                              ADD     #4,SP
                                                .NLIST
                                .ENDC
                                .MEXIT
                                .ENDC
                                .IF B   <>
                                M$PRINT C$PNTF,#TSHD27,<>
```

N9

```
                        .MEXIT
                        .ENDC
                        .IF B   <>
                        M$PRINT C$PNTF,#TSHD27,<>,<>
                        .MEXIT
                        .ENDC
                        .IF B   <>
                        M$PRINT C$PNTF,#TSHD27,<>,<>,<>
                        .MEXIT
                        .ENDC
                        .IF B   <>
                        M$PRINT C$PNTF,#TSHD27,<>,<>,<>,<>
                        .MEXIT
                        .ENDC
                        .IF B   <>
                        M$PRINT C$PNTF,#TSHD27,<>,<>,<>,<>,<>
                        .MEXIT
                        .ENDC
                        .IF B   <>
                        M$PRINT C$PNTF,#TSHD27,<>,<>,<>,<>,<>,<>
                        .MEXIT
                        .ENDC
                        .IF B   <>
                        M$PRINT C$PNTF,#TSHD27,<>,<>,<>,<>,<>,<>,<>
                        .MEXIT
                        .ENDC
                        M$PRINT C$PNTF,#TSHD27,<>,<>,<>,<>,<>,<>,<>,<>
8245 072640             7$:     SETVEC  VECC1,#INTSC1,#PRI07    ;SET VECTOR FOR CHANNEL 1
                        .MCALL  M$PUT,M$SVC,M$GNINS
     072640             M$PUT   #3,VECC1,#INTSC1,#PRI07
                        .MCALL  M$PUT1
                        .IF NB  <VECC1>
     072640             M$PUT   <VECC1>,<#INTSC1>,<#PRI07>,<>,<>,<>,<>,<>,<>
                        .MCALL  M$PUT1
                        .IF NB  <#INTSC1>
     072640             M$PUT   <#INTSC1>,<#PRI07>,<>,<>,<>,<>,<>,<>,<>
                        .MCALL  M$PUT1
                        .IF NB  <#PRI07>
     072640             M$PUT   <#PRI07>,<>,<>,<>,<>,<>,<>,<>,<>
                        .MCALL  M$PUT1
                        .IF NB  <>
                        M$PUT   <>,<>,<>,<>,<>,<>,<>,<>,<>
                        .ENDC
                        .IF NB  <#PRI07>
     072640             M$PUT1  #PRI07
                        .MCALL  M$GNINS
                        .IF B
     072640             M$GNINS <MOV    #PRI07,-(SP)>
                        .IF LT SVCINS
                        MOV     #PRI07,-(SP)
                        .MEXIT
                        .ENDC
                        .IF EQ SVCINS
                        .LIST
                                MOV     #PRI07,-(SP)
                                        .NLIST
                        .MEXIT
```

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```
                                    .ENDC
                                    .IF GT SVCINS
                                    .LIST
      072640  012746  000340                                                                    MOV     #PRI07,-(SP)
                                                .NLIST
                                    .ENDC
                                    .IFF
                                    .IF DIF B,<#PRI07>
                                    .ERROR  ;ILL. ARG. "#PRI07" ONLY "B" IS ALLOWED.
                                    .MEXIT
                                    .ENDC
                                    M$GNINS <CLR     -(SP)>
                                    M$GNINS <BISB    ,(SP)>
                                    .ENDC
                                    .ENDC
                                    .ENDC
                                    .IF NB  <#INTSC1>
      072644                        M$PUT1  #INTSC1
                                    .MCALL  M$GNINS
                                    .IF B
      072644                        M$GNINS <MOV     #INTSC1,-(SP)>
                                    .IF LT SVCINS
                                    MOV     #INTSC1,-(SP)
                                    .MEXIT
                                    .ENDC
                                    .IF EQ SVCINS
                                    .LIST
                                            MOV     #INTSC1,-(SP)
                                                    .NLIST
                                    .MEXIT
                                    .ENDC
                                    .IF GT SVCINS
                                    .LIST
      072644  012746  010132                                                                    MOV     #INTSC1,-(SP)
                                                .NLIST
                                    .ENDC
                                    .IFF
                                    .IF DIF B,<#INTSC1>
                                    .ERROR  ;ILL. ARG. "#INTSC1" ONLY "B" IS ALLOWED.
                                    .MEXIT
                                    .ENDC
                                    M$GNINS <CLR     -(SP)>
                                    M$GNINS <BISB    ,(SP)>
                                    .ENDC
                                    .ENDC
                                    .ENDC
                                    .IF NB  <VECC1>
      072650                        M$PUT1  VECC1
                                    .MCALL  M$GNINS
                                    .IF B
      072650                        M$GNINS <MOV     VECC1,-(SP)>
                                    .IF LT SVCINS
                                    MOV     VECC1,-(SP)
                                    .MEXIT
                                    .ENDC
                                    .IF EQ SVCINS
                                    .LIST
```


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```
                                MOV     VECC1,-(SP)
                                        .NLIST
                        .MEXIT
                        .ENDC
                        .IF GT SVCINS
                        .LIST
072650  013746  002244                                                  MOV     VECC1,-(SP)
                                        .NLIST
                        .ENDC
                        .IFF
                        .IF DIF B,<VECC1>
                        .ERROR  ;ILL. ARG. "VECC1" ONLY "B" IS ALLOWED.
                        .MEXIT
                        .ENDC
                        M$GNINS <CLR    -(SP)>
                        M$GNINS <BISB   ,(SP)>
                        .ENDC
                        .ENDC
                        .ENDC
                        .IF NB  <#3>
072654                  M$PUT1  #3
                        .MCALL  M$GNINS
                        .IF B
072654                  M$GNINS <MOV    #3,-(SP)>
                        .IF LT SVCINS
                        MOV     #3,-(SP)
                        .MEXIT
                        .ENDC
                        .IF EQ SVCINS
                        .LIST
                                MOV     #3,-(SP)
                                        .NLIST
                        .MEXIT
                        .ENDC
                        .IF GT SVCINS
                        .LIST
072654  012746  000003                                                  MOV     #3,-(SP)
                                        .NLIST
                        .ENDC
                        .IFF
                        .IF DIF B,<#3>
                        .ERROR  ;ILL. ARG. "#3" ONLY "B" IS ALLOWED.
                        .MEXIT
                        .ENDC
                        M$GNINS <CLR    -(SP)>
                        M$GNINS <BISB   ,(SP)>
                        .ENDC
                        .ENDC
072660                  M$SVC   C$SVEC
                        .MCALL  M$GNINS,M$TSTLAB
072660                  M$TSTLAB
                        .MCALL  M$TLABEL,M$INCR
                        .IIF LT T$TSTMAC, .MEXIT
                        .RADIX  10
                        M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                        .RADIX  8
                        M$INCR  T$TSTSEQ
```

D10

```
     072660                          M$GNINS <TRAP    C$SVEC>
                                     .IF LT SVCINS
                                     TRAP     C$SVEC
                                     .MEXIT
                                     .ENDC
                                     .IF EQ SVCINS
                                     .LIST
                                             TRAP     C$SVEC
                                                      .NLIST
                                     .MEXIT
                                     .ENDC
                                     .IF GT SVCINS
                                     .LIST
     072660  104437                                                                  TRAP     C$SVEC
                                                      .NLIST
                                     .ENDC
     072662                          M$GNINS <ADD     #10,SP>
                                     .IF LT SVCINS
                                     ADD      #10,SP
                                     .MEXIT
                                     .ENDC
                                     .IF EQ SVCINS
                                     .LIST
                                             ADD      #10,SP
                                                      .NLIST
                                     .MEXIT
                                     .ENDC
                                     .IF GT SVCINS
                                     .LIST
     072662  062706  000010                                                          ADD      #10,SP
                                                      .NLIST
                                     .ENDC
8246 072666                                  SETVEC  VECC2,#INTSC2,#PRI07    ;SET VECTOR FOR CHANNEL 2
                                     .MCALL  M$PUT,M$SVC,M$GNINS
     072666                          M$PUT   #3,VECC2,#INTSC2,#PRI07
                                     .MCALL  M$PUT1
                                     .IF NB  <VECC2>
     072666                          M$PUT   <VECC2>,<#INTSC2>,<#PRI07>,<>,<>,<>,<>,<>,<>
                                     .MCALL  M$PUT1
                                     .IF NB  <#INTSC2>
     072666                          M$PUT   <#INTSC2>,<#PRI07>,<>,<>,<>,<>,<>,<>,<>
                                     .MCALL  M$PUT1
                                     .IF NB  <#PRI07>
     072666                          M$PUT   <#PRI07>,<>,<>,<>,<>,<>,<>,<>,<>
                                     .MCALL  M$PUT1
                                     .IF NB  <>
                                     M$PUT   <>,<>,<>,<>,<>,<>,<>,<>,<>
                                     .ENDC
                                     .IF NB  <#PRI07>
     072666                          M$PUT1  #PRI07
                                     .MCALL  M$GNINS
                                     .IF B
     072666                          M$GNINS <MOV     #PRI07,-(SP)>
                                     .IF LT SVCINS
                                     MOV     #PRI07,-(SP)
                                     .MEXIT
                                     .ENDC
```

```
                                .IF EQ SVCINS
                                .LIST
                                         MOV     #PRI07,-(SP)
                                                 .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
072666  012746  000340                                                   MOV     #PRI07,-(SP)
                                                 .NLIST
                                .ENDC
                                .IFF
                                .IF DIF B,<#PRI07>
                                .ERROR  ;ILL. ARG. "#PRI07" ONLY "B" IS ALLOWED.
                                .MEXIT
                                .ENDC
                                M$GNINS <CLR    -(SP)>
                                M$GNINS <BISB   ,(SP)>
                                .ENDC
                                .ENDC
                                .ENDC
                                .IF NB  <#INTSC2>
072672                          M$PUT1  #INTSC2
                                .MCALL  M$GNINS
                                .IF B
072672                          M$GNINS <MOV    #INTSC2,-(SP)>
                                .IF LT SVCINS
                                MOV     #INTSC2,-(SP)
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                         MOV     #INTSC2,-(SP)
                                                 .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
072672  012746  010142                                                   MOV     #INTSC2,-(SP)
                                                 .NLIST
                                .ENDC
                                .IFF
                                .IF DIF B,<#INTSC2>
                                .ERROR  ;ILL. ARG. "#INTSC2" ONLY "B" IS ALLOWED.
                                .MEXIT
                                .ENDC
                                M$GNINS <CLR    -(SP)>
                                M$GNINS <BISB   ,(SP)>
                                .ENDC
                                .ENDC
                                .ENDC
                                .IF NB  <VECC2>
072676                          M$PUT1  VECC2
                                .MCALL  M$GNINS
                                .IF B
072676                          M$GNINS <MOV    VECC2,-(SP)>
                                .IF LT SVCINS
```

```
                                        MOV     VECC2, (SP)
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                MOV     VECC2,-(SP)
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
      072676  013746  002246                                                    MOV     VECC2,-(SP)
                                                        .NLIST
                                        .ENDC
                                        .IFF
                                        .IF DIF B,<VECC2>
                                        .ERROR  ;ILL. ARG. "VECC2" ONLY "B" IS ALLOWED.
                                        .MEXIT
                                        .ENDC
                                        M$GNINS <CLR    -(SP)>
                                        M$GNINS <BISB   ,(SP)>
                                        .ENDC
                                        .ENDC
                                        .ENDC
                                        .IF NB  <#3>
      072702                            M$PUT1  #3
                                        .MCALL  M$GNINS
                                        .IF B
      072702                            M$GNINS <MOV    #3,-(SP)>
                                        .IF LT SVCINS
                                        MOV     #3,-(SP)
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                MOV     #3,-(SP)
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
      072702  012746  000003                                                    MOV     #3,-(SP)
                                                        .NLIST
                                        .ENDC
                                        .IFF
                                        .IF DIF B,<#3>
                                        .ERROR  ;ILL. ARG. "#3" ONLY "B" IS ALLOWED.
                                        .MEXIT
                                        .ENDC
                                        M$GNINS <CLR    -(SP)>
                                        M$GNINS <BISB   ,(SP)>
                                        .ENDC
                                        .ENDC
      072706                            M$SVC   C$SVEC
                                        .MCALL  M$GNINS,M$TSTLAB
      072706                            M$TSTLAB
                                        .MCALL  M$TLABEL,M$INCR
```


G10

G10

TEST 27: EXTENDED ADDRESS BIT (Q22-BUS)TEST

```
                                             .IIF LT T$TSTMAC, .MEXIT
                                             .RADIX  10
                                             M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                             .RADIX  8
                                             M$INCR  T$TSTSEQ
     072706                                  M$GNINS <TRAP    C$SVEC>
                                             .IF LT SVCINS
                                             TRAP    C$SVEC
                                             .MEXIT
                                             .ENDC
                                             .IF EQ SVCINS
                                             .LIST
                                                     TRAP    C$SVEC
                                                             .NLIST
                                             .MEXIT
                                             .ENDC
                                             .IF GT SVCINS
                                             .LIST
     072706  104437                                                                                TRAP    C$SVEC
                                                             .NLIST
                                             .ENDC
     072710                                  M$GNINS <ADD     #10,SP>
                                             .IF LT SVCINS
                                             ADD     #10,SP
                                             .MEXIT
                                             .ENDC
                                             .IF EQ SVCINS
                                             .LIST
                                                     ADD     #10,SP
                                                             .NLIST
                                             .MEXIT
                                             .ENDC
                                             .IF GT SVCINS
                                             .LIST
     072710  062706  000010                                                                        ADD     #10,SP
                                                             .NLIST
                                             .ENDC
     072714  005037  002364                          CLR     CSRMS1                  ;LOAD MASK FOR CSR1
     072720  012737  001000  002366                  MOV     #1000,CSRMS2            ;LOAD EXTENDED ADDR BIT FOR RX CHANNEL
     072726  005037  002376                  ITAC27: CLR     INTFC1                  ;CLEAR INTERRUPT FLAG
     072732  005037  002400                          CLR     INTFC2                  ;CLEAR INTERRUPT FLAG
     072736  023737  002342  002350                  CMP     PHHSIZ,MASK             ;IS THERE MORE THAN 128K
     072744  002404                                  BLT     11$                     ;IF NO SKIP TEST
     072746  003005                                  BGT     13$                     ;
     072750  005737  002344                          TST     PHLSIZ                  ;
     072754  001002                                  BNE     13$                     ;
     072756                                  11$:    EXIT    TST                     ;EXIT TEST
                                             .MCALL  M$SVC,M$EXIT,M$EXSEG,M$EXTJ,M$GETTOP,M$CHECK,M$WORD,XFER
             000041                          T$FLAG=F$END
     072756                                  M$CHECK TST,T$TEMP,T$FLAG
                                             .IF IDN <TST>,<TST>
             010060                          T$TEMP=T$$TEST
             000040                          T$FLAG=I$TST
                                             .MEXIT
                                             .ENDC
                                             .IF IDN <SUB>,<TST>
                                             T$TEMP=T$$SUB
```

H10

```
                                        T$FLAG=I$SUB
                                        .MEXIT
                                        .ENDC
                                        .IF IDN <SEG>,<TST>
                                        T$TEMP=T$$SEG
                                        T$FLAG=I$SEG
                                        .MEXIT
                                        .ENDC
                                        .IF IDN <INIT>,<TST>
                                        T$TEMP=T$$INIT
                                        T$FLAG=I$INIT
                                        .MEXIT
                                        .ENDC
                                        .IF IDN <CLN>,<TST>
                                        T$TEMP=T$$CLEAN
                                        T$FLAG=I$CLN
                                        .MEXIT
                                        .ENDC
                                        .IF IDN <SRV>,<TST>
                                        T$TEMP=T$$SRV
                                        T$FLAG=I$SRV
                                        .MEXIT
                                        .ENDC
                                        .IF IDN <MSG>,<TST>
                                        T$TEMP=T$$MSG
                                        T$FLAG=F$JMP
                                        .MEXIT
                                        .ENDC
                                        .IF IDN <RPT>,<TST>
                                        T$TEMP=T$$RPT
                                        T$FLAG=F$JMP
                                        .MEXIT
                                        .ENDC
                                        .IF IDN <DU>,<TST>
                                        T$TEMP=T$$DU
                                        T$FLAG=F$JMP
                                        .MEXIT
                                        .ENDC
                                        .IF IDN <AU>,<TST>
                                        T$TEMP=T$$AU
                                        T$FLAG=F$JMP
                                        .MEXIT
                                        .ENDC
                                        .IF EQ T$FLAG-F$JMP
                                        M$WORD  J$JMP
                                        M$EXTJ  \T$TEMP
                                        .MEXIT
                                        .ENDC
                                        .IF EQ  T$FLAG-F$BGN
        072756                          M$SVC   C$EXIT
                                        .MCALL  M$GNINS,M$TSTLAB
        072756                          M$TSTLAB
                                        .MCALL  M$TLABEL,M$INCR
                                        .IIF LT T$TSTMAC, .MEXIT
                                        .RADIX  10
                                        M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                        .RADIX  8
```

```
                                  M$INCR  T$TSTSEQ
072756                            M$GNINS <TRAP   C$EXIT>
                                  .IF LT SVCINS
                                  TRAP    C$EXIT
                                  .MEXIT
                                  .ENDC
                                  .IF EQ SVCINS
                                  .LIST
                                          TRAP    C$EXIT
                                                  .NLIST
                                  .MEXIT
                                  .ENDC
                                  .IF GT SVCINS
                                  .LIST
072756  104432                                                                TRAP    C$EXIT
                                                  .NLIST
                                  .ENDC
                                  .IF IDN <SEG>,<TST>
                                  M$GETTOP T$SEK,T$SEGLEV,T$TEMP
                                  M$EXSEG \T$TEMP
                                  .IFF
072760                            M$EXIT  \T$TEMP
                                  .MCALL  M$GNINS
072760                            M$GNINS <.WORD  L10060-.>
                                  .IF LT SVCINS
                                  .WORD   L10060-.
                                  .MEXIT
                                  .ENDC
                                  .IF EQ SVCINS
                                  .LIST
                                          .WORD   L10060-.
                                                  .NLIST
                                  .MEXIT
                                  .ENDC
                                  .IF GT SVCINS
                                  .LIST
072760  002476                                                                .WORD   L10060-.
                                                  .NLIST
                                  .ENDC
                                  .ENDC
                                  .MEXIT
                                  .ENDC
                                  .IF IDN <HRD>,<TST>
                                  M$GETTOP        T$NS,T$NESTLEV,T$TEMP
                                  .IF EQ  F$HARD-T$TEMP
                                  .IRP    N,<\T$$HARD>
                                  XFER    L'N
                                  .ENDM
                                  .MEXIT
                                  .ENDC
                                  .ENDC
                                  .IF IDN <SFT>,<TST>
                                  M$GETTOP        T$NS,T$NESTLEV,T$TEMP
                                  .IF EQ  F$SOFT T$TEMP
                                  .IRP    N,<\T$$SOFT>
                                  XFER    L'N
                                  .ENDM
```

J10

```
                                                .MEXIT
                                                .ENDC
                                                .ENDC
                                                .ERROR  ;ILL. "EXIT TST" STMT.
8257 072762  004737  010524                     13$:    JSR     PC,BGIN1                ;
8258 072766  000240                                     NOP
8259 072770  012737  177777  002336                     MOV     #177777,PHLOW           ;LOAD INPUT FOR CONVERSION ROUTINE
8260 072776  013704  002350                             MOV     MASK,R4                 ;...
8261 073002  005304                                     DEC     R4                      ;...
8262 073004  010437  002334                             MOV     R4,PHHIGH               ;...
8263 073010  004737  007714                             JSR     PC,PVCON                ;CREATE VIRTUAL ADDRESS
8264 073014  013700  002340                             MOV     VIADD,R0                ;GET START ADDRESS OF BUFFER A
8265 073020  010037  002356                             MOV     R0,BUFAB                ;LOAD START ADDRESS OF BUFFER A
8266 073024  012701  010000                             MOV     #10000,R1               ;LOAD COUNTER FOR 2K
8267 073030  005003                                     CLR     R3                      ;R3 CONTAINS DATA
8268 073032  012737  000020  172516                     MOV     #20,SR3                 ;**ENABLE 22-BIT MEMORY MANAGEMENT**
8269 073040  012737  000001  177572                     MOV     #1,SR0                  ;**ENABLE MEMORY MANAGEMENT**
8270 073046  110310                                     MOVB    R3,(R0)                 ;LOAD FIRST DATA BYTE
8271 073050  012700  120000                             MOV     #120000,R0              ;SET UP ADDRESS FOR NEXT DATA BYTE
8272 073054  005237  172352                             INC     KPAR5                   ;LOAD NEXT PAGE
8273 073060  005203                             16$:    INC     R3                      ;CREATE NEXT DATA
8274 073062  110320                                     MOVB    R3,(R0)+                ;LOAD BUFFER WITH DATA
8275 073064  005301                                     DEC     R1                      ;
8276 073066  001374                                     BNE     16$                     ;
8277 073070  005300                                     DEC     R0                      ;
8278 073072  012701  010000                             MOV     #10000,R1               ;LOAD 2K
8279 073076  010037  002360                             MOV     R0,BUFBB                ;LOAD START ADDRESS OF BUFFER B
8280 073102  000240                             20$:    NOP
8281 073104  105020                                     CLRB    (R0)+                   ;CLEAR BUFFER B
8282 073106  005301                                     DEC     R1                      ;2K CLEARED
8283 073110  001374                                     BNE     20$                     ;IF YES,DO THE TEST
8284 073112  005037  177572                             CLR     SR0                     ;**DISABLE MEMORY MANAGEMENT**
8285 073116  112777  000212  107144                     MOVB    #212,@ICRHX             ;----LOAD TON INTO ACR 1--------------
8286 073124  013701  002314                             MOV     DPA2,R1                 ;CREATE MLA2
8287 073130  062701  000040                             ADD     #40,R1                  ;...
8288 073134  010137  002412                             MOV     R1,MLA2                 ;STORE MLA2
8289 073140  113777  002412  107130                     MOVB    MLA2,@IDRHX             ;----LOAD MLA2 INTO DOR 1-------------
8290 073146  004737  011050                             JSR     PC,LOOP                 ;WAIT A LITTLE
8291 073152  012777  177777  107122                     MOV     #177777,@BARX           ;---LOAD START ADDRESS OF BUFFER A----
8292 073160  013737  002240  002402                     MOV     BCINP,RSAVE             ;STORE BYTE COUNT INPUT
8293 073166  005437  002402                             NEG     RSAVE                   ;BUILD 2'COMPL FOR BCR
8294 073172  013777  002402  107104                     MOV     RSAVE,@BCRX             ;  - LOAD INPUT INTO BCR 1-----------
8295 073200  012777  000167  107072                     MOV     #167,@CSRX              ;-DMA ENB,DMA DIR,INT ENB,SYS CO,BA16+17
8296 073206  053777  002364  107064                     BIS     CSRMS1,@CSRX            ;--LOAD ADDITIONAL EXTENDET ADDRESS BIT
8297 073214  052777  000010  107056                     BIS     #10,@CSRX               ;SELECT CHANNEL 2
8298 073222  012777  007777  107052                     MOV     #7777,@BARX             ;-- -LOAD START ADDRESS OF BUFFER B---
8299 073230  013777  002402  107046                     MOV     RSAVE,@BCRX             ;----LOAD INPUT INTO BCR 2---
8300 073236  012777  000111  107034                     MOV     #111,@CSRX              ;----SET DMA ENB,INT ENB IN CSR2
8301 073244  053777  002366  107026                     BIS     CSRMS2,@CSRX            ;- -LOAD EXTENDED ADDRESS BITS-------
8302 073252                                             SETPRI  #PRI00                  ;SET PRIORITY TO ZERO
                                                .MCALL  M$LDR0,M$SVC
     073252                                     M$LDR0  #PRI00,SETPRI
                                                .MCALL  M$GNINS
                                                .IF NB #PRI00
                                                .IF DIF R0,#PRI00
     073252                                     M$GNINS <MOV    #PRI00,R0>
                                                .IF LT SVCINS
```

K10

```
                                        MOV     #PRI00,R0
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                MOV     #PRI00,R0
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
      073252  012700  000000                                                    MOV     #PRI00,R0
                                                        .NLIST
                                        .ENDC
                                        .ENDC
                                        .IFF
                                        .ERROR  ;MISSING ARG. ON "SETPRI"
                                        .ENDC
      073256                            M$SVC   C$SPRI
                                        .MCALL  M$GNINS,M$TSTLAB
      073256                            M$TSTLAB
                                        .MCALL  M$TLABEL,M$INCR
                                        .IIF LT T$TSTMAC, .MEXIT
                                        .RADIX  10
                                        M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                        .RADIX  8
                                        M$INCR  T$TSTSEQ
      073256                            M$GNINS <TRAP   C$SPRI>
                                        .IF LT SVCINS
                                        TRAP    C$SPRI
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                TRAP    C$SPRI
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
      073256  104441                                                            TRAP    C$SPRI
                                                        .NLIST
                                        .ENDC
      073260  042777  000010  107012            BIC     #10,@CSRX               ;SELECT CHANNEL 1
      073266  012737  000001  002374            MOV     #1,CHAN                 ;LOAD CHANNEL NUMBER
      073274  112777  000013  106766            MOVB    #13,@ICRHX              ;----LOAD GTS INTO ACR 1----- --- ----
      073302  012701  077777                    MOV     #77777,R1               ;LOAD LOOP COUNTER
      073306  005737  002376            23$:    TST     INTFC1                  ;HAS INTERRUPT IN CHANNEL 1 OCCURED
      073312  001017                            BNE     24$                     ;BRANCH IF YES
      073314  005301                            DEC     R1                      ;DECREMENT COUNTER
      073316  001373                            BNE     23$                     ;IF NO,TEST AGIN
      073320  017737  106754  002502            MOV     @CSRX,BAD               ;GET CSR1 CONTENTS
      073326  012737  100066  002500            MOV     #100066,GOOD            ;BC OF,DMA DIR,SYS CONT
      073334  053737  002364  002500            BIS     CSRMS1,GOOD             ;SET EXTENDED ADDRESS BIT TO CSR CONT.
      073342                                    ERRSOFT 2701,E232,ERR201        ;ERROR HANDLER
                                        .MCALL  M$ERRINS
      073342                            M$ERRINS        2701,E232,ERR201,C$ERSOFT
```

L10

```
                                .MCALL  M$GNINS,M$WORD,M$TSTLAB
073342                          M$SVC   C$ERSOFT
                                .MCALL  M$GNINS,M$TSTLAB
073342                          M$TSTLAB
                                .MCALL  M$TLABEL,M$INCR
                                .IIF LT T$TSTMAC, .MEXIT
                                .RADIX  10
                                M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                .RADIX  8
                                M$INCR  T$TSTSEQ
073342                          M$GNINS <TRAP   C$ERSOFT>
                                .IF LT SVCINS
                                TRAP    C$ERSOFT
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        TRAP    C$ERSOFT
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
073342  104457                                                                          TRAP    C$ERSOFT
                                                .NLIST
                                .ENDC
        000012                  .RADIX  10
                                .IF NB  2701
        005215                  T$ERRNUM=2701
                                .IFF
                                .ERROR  ;MISSING ERROR NR
                                .ENDC
073344                          M$WORD  \T$ERRNUM
                                .MCALL  M$GNINS
                                .IRP    N,<2701>
                                M$GNINS <.WORD  N>
                                .ENDM
073344                          M$GNINS <.WORD  2701>
                                .IF LT SVCINS
                                .WORD   2701
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        .WORD   2701
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
073344  005215                                                                          .WORD   2701
                                                .NLIST
                                .ENDC
        000010                  .RADIX  8
                                .IF NB E232
073346                          M$WORD  E232
                                .MCALL  M$GNINS
```

M10

```
                                                .IRP    N,<E232>
                                                M$GNINS <.WORD  N>
                                                .ENDM
      073346                                    M$GNINS <.WORD  E232>
                                                .IF LT SVCINS
                                                .WORD   E232
                                                .MEXIT
                                                .ENDC
                                                .IF EQ SVCINS
                                                .LIST
                                                        .WORD   E232
                                                                .NLIST
                                                .MEXIT
                                                .ENDC
                                                .IF GT SVCINS
                                                .LIST
      073346  006062                                                                            .WORD   E232
                                                                .NLIST
                                                .ENDC
                                                .IFF
                                                M$WORD  0
                                                .ENDC
                                                .IF NB ERR201
      073350                                    M$WORD  ERR201
                                                .MCALL  M$GNINS
                                                .IRP    N,<ERR201>
                                                M$GNINS <.WORD  N>
                                                .ENDM
      073350                                    M$GNINS <.WORD  ERR201>
                                                .IF LT SVCINS
                                                .WORD   ERR201
                                                .MEXIT
                                                .ENDC
                                                .IF EQ SVCINS
                                                .LIST
                                                        .WORD   ERR201
                                                                .NLIST
                                                .MEXIT
                                                .ENDC
                                                .IF GT SVCINS
                                                .LIST
      073350  003470                                                                            .WORD   ERR201
                                                                .NLIST
                                                .ENDC
                                                .IFF
                                                M$WORD  0
                                                .ENDC
 8315 073352  052777  000010  106720            24$:    BIS     #10,@CSRX               ;SELECT CHANNEL 2
 8316 073360  012737  000002  002374                    MOV     #2,CHAN                 ;LOAD CHANNEL NUMBER
 8317 073366  005737  002400                            TST     INTFC2                  ;HAS AN INTERRUPT IN CHANNEL 2 OCCURED
 8318 073372  001015                                    BNE     25$                     ;BRANCH IF YES
 8319 073374  017737  106700  002502                    MOV     @CSRX,BAD               ;GET CSR2 CONTENTS
 8320 073402  012737  100010  002500                    MOV     #100010,GOOD            ;BC OF,MUX SHOULD BE SET
 8321 073410  053737  002366  002500                    BIS     CSRMS2,GOOD             ;SET EXTENDED ADDRESS BIT TO CSR CONT.
 8322 073416                                            ERRSOFT 2702,E232,ERR201        ;ERROR HANDLER
                                                .MCALL  M$ERRINS
      073416                                    M$ERRINS        2702,E232,ERR201,C$ERSOFT
```

```
                        .MCALL  M$GNINS,M$WORD,M$TSTLAB
073416                  M$SVC   C$ERSOFT
                        .MCALL  M$GNINS,M$TSTLAB
073416                  M$TSTLAB
                        .MCALL  M$TLABEL,M$INCR
                        .IIF LT T$TSTMAC, .MEXIT
                        .RADIX  10
                        M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                        .RADIX  8
                        M$INCR  T$TSTSEQ
073416                  M$GNINS <TRAP   C$ERSOFT>
                        .IF LT SVCINS
                        TRAP    C$ERSOFT
                        .MEXIT
                        .ENDC
                        .IF EQ SVCINS
                        .LIST
                                TRAP    C$ERSOFT
                                        .NLIST
                        .MEXIT
                        .ENDC
                        .IF GT SVCINS
                        .LIST
073416  104457                                                          TRAP    C$ERSOFT
                                        .NLIST
                        .ENDC
        000012          .RADIX  10
                        .IF NB  2702
        005216          T$ERRNUM=2702
                        .IFF
                        .ERROR  ;MISSING ERROR-NR
                        .ENDC
073420                  M$WORD  \T$ERRNUM
                        .MCALL  M$GNINS
                        .IRP    N,<2702>
                        M$GNINS <.WORD  N>
                        .ENDM
073420                  M$GNINS <.WORD  2702>
                        .IF LT SVCINS
                        .WORD   2702
                        .MEXIT
                        .ENDC
                        .IF EQ SVCINS
                        .LIST
                                .WORD   2702
                                        .NLIST
                        .MEXIT
                        .ENDC
                        .IF GT SVCINS
                        .LIST
073420  005216                                                          .WORD   2702
                                        .NLIST
                        .ENDC
        000010          .RADIX  8
                        .IF NB E232
073422                  M$WORD  E232
                        .MCALL  M$GNINS
```

```
                                        .IRP    N,<E232>
                                        M$GNINS <.WORD  N>
                                        .ENDM
       073422                           M$GNINS <.WORD  E232>
                                        .IF LT SVCINS
                                        .WORD   E232
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                .WORD   E232
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
       073422  006062                                                                   .WORD   E232
                                                        .NLIST
                                        .ENDC
                                        .IFF
                                        M$WORD  0
                                        .ENDC
                                        .IF NB ERR201
       073424                           M$WORD  ERR201
                                        .MCALL  M$GNINS
                                        .IRP    N,<ERR201>
                                        M$GNINS <.WORD  N>
                                        .ENDM
       073424                           M$GNINS <.WORD  ERR201>
                                        .IF LT SVCINS
                                        .WORD   ERR201
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                .WORD   ERR201
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
       073424  003470                                                                   .WORD   ERR201
                                                        .NLIST
                                        .ENDC
                                        .IFF
                                        M$WORD  0
                                        .ENDC
  8323 073426                           25$:    SETPRI  #PRI07                  ;NO FURTHER INTERRUPT ALLOWED
                                        .MCALL  M$LDR0,M$SVC
       073426                           M$LDR0  #PRI07,SETPRI
                                        .MCALL  M$GNINS
                                        .IF NB #PRI07
                                        .IF DIF R0,#PRI07
       073426                           M$GNINS <MOV    #PRI07,R0>
                                        .IF LT SVCINS
                                        MOV     #PRI07,R0
                                        .MEXIT
```

C11

```
                                    .ENDC
                                    .IF EQ SVCINS
                                    .LIST
                                          MOV     #PRI07,R0
                                                  .NLIST
                                    .MEXIT
                                    .ENDC
                                    .IF GT SVCINS
                                    .LIST
 073426  012700  000340                                                               MOV     #PRI07,R0
                                                  .NLIST
                                    .ENDC
                                    .ENDC
                                    .IFF
                                    .ERROR  ;MISSING ARG. ON "SETPRI"
                                    .ENDC
 073432                             M$SVC   C$SPRI
                                    .MCALL  M$GNINS,M$TSTLAB
 073432                             M$TSTLAB
                                    .MCALL  M$TLABEL,M$INCR
                                    .IIF LT T$TSTMAC, .MEXIT
                                    .RADIX  10
                                    M$TLABEL      \T$TESTNUN,\T$TSTSEQ
                                    .RADIX  8
                                    M$INCR  T$TSTSEQ
 073432                             M$GNINS <TRAP   C$SPRI>
                                    .IF LT SVCINS
                                    TRAP    C$SPRI
                                    .MEXIT
                                    .ENDC
                                    .IF EQ SVCINS
                                    .LIST
                                          TRAP    C$SPRI
                                                  .NLIST
                                    .MEXIT
                                    .ENDC
                                    .IF GT SVCINS
                                    .LIST
 073432  104441                                                                       TRAP    C$SPRI
                                                  .NLIST
                                    .ENDC
 073434  042777  000010  106636           BIC     #10,@CSRX             ;SELECT CHANNEL 1
 073442  012737  000001  002374           MOV     #1,CHAN               ;LOAD CHANNEL NUMBER
 073450  112777  000014  106612           MOVB    #14,@ICRHX            ;----LOAD TCA INTO ACR 1------- --- --
 073456  013737  002336  002500           MOV     PHLOW,GOOD            ;SET UP COMPARE VALUE
 073464  063737  002240  002500           ADD     BCINP,GOOD            ;...
 073472  017737  106604  002502           MOV     @BARX,BAD             ;GET BAR1 CONTENTS
 073500  023737  002502  002500           CMP     BAD,GOOD              ;HAS BAR1 THE CORRECT ADDRESS
 073506  001404                           BEQ     30$                   ;BRANCH IF YES
 073510                                   ERRSOFT 2703,E234,ERR501      ;ERROR HANDLER
                                    .MCALL  M$ERRINS
 073510                             M$ERRINS      2703,E234,ERR501,C$ERSOFT
                                    .MCALL  M$GNINS,M$WORD,M$TSTLAB
 073510                             M$SVC   C$ERSOFT
                                    .MCALL  M$GNINS,M$TSTLAB
 073510                             M$TSTLAB
                                    .MCALL  M$TLABEL,M$INCR
```

D11

D11


```
                                  .IIF LT T$TSTMAC, .MEXIT
                                  .RADIX  10
                                  M$TLABEL         \T$TESTNUN,\T$TSTSEQ
                                  .RADIX  8
                                  M$INCR  T$TSTSEQ
     073510                       M$GNINS <TRAP   C$ERSOFT>
                                  .IF LT SVCINS
                                  TRAP    C$ERSOFT
                                  .MEXIT
                                  .ENDC
                                  .IF EQ SVCINS
                                  .LIST
                                          TRAP    C$ERSOFT
                                                  .NLIST
                                  .MEXIT
                                  .ENDC
                                  .IF GT SVCINS
                                  .LIST
     073510  104457                                                              TRAP    C$ERSOFT
                                                  .NLIST
                                  .ENDC
             000012               .RADIX  10
                                  .IF NB  2703
             005217               T$ERRNUM=2703
                                  .IFF
                                  .ERROR  ;MISSING ERROR-NR
                                  .ENDC
     073512                       M$WORD  \T$ERRNUM
                                  .MCALL  M$GNINS
                                  .IRP    N,<2703>
                                  M$GNINS <.WORD  N>
                                  .ENDM
     073512                       M$GNINS <.WORD  2703>
                                  .IF LT SVCINS
                                  .WORD   2703
                                  .MEXIT
                                  .ENDC
                                  .IF EQ SVCINS
                                  .LIST
                                          .WORD   2703
                                                  .NLIST
                                  .MEXIT
                                  .ENDC
                                  .IF GT SVCINS
                                  .LIST
     073512  005217                                                              .WORD   2703
                                                  .NLIST
                                  .ENDC
             000010               .RADIX  8
                                  .IF NB E234
     073514                       M$WORD  E234
                                  .MCALL  M$GNINS
                                  .IRP    N,<E234>
                                  M$GNINS <.WORD  N>
                                  .ENDM
     073514                       M$GNINS <.WORD  E234>
                                  .IF LT SVCINS
```


E11

```
                                        .WORD   E234
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                .WORD   E234
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
      073514  006170                                                                          .WORD   E234
                                                        .NLIST
                                        .ENDC
                                        .IFF
                                        M$WORD  0
                                        .ENDC
                                        .IF NB ERR501
      073516                            M$WORD  ERR501
                                        .MCALL  M$GNINS
                                        .IRP    N,<ERR501>
                                        M$GNINS <.WORD  N>
                                        .ENDM
      073516                            M$GNINS <.WORD  ERR501>
                                        .IF LT SVCINS
                                        .WORD   ERR501
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                .WORD   ERR501
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
      073516  003672                                                                          .WORD   ERR501
                                                        .NLIST
                                        .ENDC
                                        .IFF
                                        M$WORD  0
                                        .ENDC
 8333 073520  017737  106560  002502    30$:    MOV     @BCRX,BAD               ;GET BCR1 CONTENTS
 8334 073526  005037  002500                    CLR     GOOD                    ;
 8335 073532  023737  002502  002500            CMP     BAD,GOOD                ;IS BCR1 ZERO
 8336 073540  001404                            BEQ     31$                     ;BRANCH IF YES
 8337 073542                                    ERRSOFT 2704,E235,ERR501        ;ERROR HANDLER
                                        .MCALL  M$ERRINS
      073542                            M$ERRINS        2704,E235,ERR501,C$ERSOFT
                                        .MCALL  M$GNINS,M$WORD,M$TSTLAB
      073542                            M$SVC   C$ERSOFT
                                        .MCALL  M$GNINS,M$TSTLAB
      073542                            M$TSTLAB
                                        .MCALL  M$TLABEL,M$INCR
                                        .IIF LT T$TSTMAC, .MEXIT
                                        .RADIX  10
                                        M$TLABEL        \T$TESTNUN,\T$TSTSEQ
```

```
                                .RADIX  8
                                M$INCR  T$TSTSEQ
     073542                     M$GNINS <TRAP   C$ERSOFT>
                                .IF LT SVCINS
                                TRAP    C$ERSOFT
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        TRAP    C$ERSOFT
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
     073542  104457                                                         TRAP    C$ERSOFT
                                                .NLIST
                                .ENDC
             000012             .RADIX  10
                                .IF NB  2704
             005220             T$ERRNUM=2704
                                .IFF
                                .ERROR  ;MISSING ERROR-NR
                                .ENDC
     073544                     M$WORD  \T$ERRNUM
                                .MCALL  M$GNINS
                                .IRP    N,<2704>
                                M$GNINS <.WORD  N>
                                .ENDM
     073544                     M$GNINS <.WORD  2704>
                                .IF LT SVCINS
                                .WORD   2704
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        .WORD   2704
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
     073544  005220                                                         .WORD   2704
                                                .NLIST
                                .ENDC
             000010             .RADIX  8
                                .IF NB E235
     073546                     M$WORD  E235
                                .MCALL  M$GNINS
                                .IRP    N,<E235>
                                M$GNINS <.WORD  N>
                                .ENDM
     073546                     M$GNINS <.WORD  E235>
                                .IF LT SVCINS
                                .WORD   E235
                                .MEXIT
                                .ENDC
```

```
                                        .IF EQ SVCINS
                                        .LIST
                                                .WORD   E235
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
       073546  006221                                                                  .WORD   E235
                                                        .NLIST
                                        .ENDC
                                        .IFF
                                        M$WORD  0
                                        .ENDC
                                        .IF NB ERR501
       073550                           M$WORD  ERR501
                                        .MCALL  M$GNINS
                                        .IRP    N,<ERR501>
                                        M$GNINS <.WORD  N>
                                        .ENDM
       073550                           M$GNINS <.WORD  ERR501>
                                        .IF LT SVCINS
                                        .WORD   ERR501
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                .WORD   ERR501
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
       073550  003672                                                                  .WORD   ERR501
                                                        .NLIST
                                        .ENDC
                                        .IFF
                                        M$WORD  0
                                        .ENDC
  8338 073552  052777  000010  106520   31$:    BIS     #10,@CSRX               ;SELECT CHANNEL 2
  8339 073560  012737  000002  002374           MOV     #2,CHAN                 ;LOAD CHANNEL NUMBER
  8340 073566  013737  002360  002500           MOV     BUFBB,GOOD              ;SET UP COMPARE VALUE
  8341 073574  042737  160000  002500           BIC     #160000,GOOD            ;CLEAR BIT 13+14+15
  8342 073602  063737  002240  002500           ADD     BCINP,GOOD              ;...
  8343 073610  017737  106466  002502           MOV     @BARX,BAD               ;GET BAR2 CONTENTS
  8344 073616  023737  002500  002502           CMP     GOOD,BAD                ;HAS BAR2 THE CORRECT ADDRESS
  8345 073624  001404                           BEQ     43$                     ;BRANCH IF YES
  8346 073626                                   ERRSOFT 2705,E234,ERR501        ;ERROR HANDLER
                                        .MCALL  M$ERRINS
       073626                           M$ERRINS        2705,E234,ERR501,C$ERSOFT
                                        .MCALL  M$GNINS,M$WORD,M$TSTLAB
       073626                           M$SVC   C$ERSOFT
                                        .MCALL  M$GNINS,M$TSTLAB
       073626                           M$TSTLAB
                                        .MCALL  M$TLABEL,M$INCR
                                        .IIF LT T$TSTMAC, .MEXIT
                                        .RADIX  10
```

```
                                M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                .RADIX  8
                                M$INCR  T$TSTSEQ
     073626                     M$GNINS <TRAP   C$ERSOFT>
                                .IF LT SVCINS
                                TRAP    C$ERSOFT
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        TRAP    C$ERSOFT
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
     073626  104457                                                     TRAP    C$ERSOFT
                                                .NLIST
                                .ENDC
             000012             .RADIX  10
                                .IF NB  2705
             005221             T$ERRNUM=2705
                                .IFF
                                .ERROR  ;MISSING ERROR-NR
                                .ENDC
     073630                     M$WORD  \T$ERRNUM
                                .MCALL  M$GNINS
                                .IRP    N,<2705>
                                M$GNINS <.WORD  N>
                                .ENDM
     073630                     M$GNINS <.WORD  2705>
                                .IF LT SVCINS
                                .WORD   2705
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        .WORD   2705
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
     073630  005221                                                     .WORD   2705
                                                .NLIST
                                .ENDC
             000010             .RADIX  8
                                .IF NB E234
     073632                     M$WORD  E234
                                .MCALL  M$GNINS
                                .IRP    N,<E234>
                                M$GNINS <.WORD  N>
                                .ENDM
     073632                     M$GNINS <.WORD  E234>
                                .IF LT SVCINS
                                .WORD   E234
                                .MEXIT
```

```
                                                .ENDC
                                                .IF EQ SVCINS
                                                .LIST
                                                        .WORD   E234
                                                                .NLIST
                                                .MEXIT
                                                .ENDC
                                                .IF GT SVCINS
                                                .LIST
        073632  006170                                                                                  .WORD   E234
                                                                .NLIST
                                                .ENDC
                                                .IFF
                                                M$WORD  0
                                                .ENDC
                                                .IF NB ERR501
        073634                                  M$WORD  ERR501
                                                .MCALL  M$GNINS
                                                .IRP    N,<ERR501>
                                                M$GNINS <.WORD  N>
                                                .ENDM
        073634                                  M$GNINS <.WORD  ERR501>
                                                .IF LT SVCINS
                                                .WORD   ERR501
                                                .MEXIT
                                                .ENDC
                                                .IF EQ SVCINS
                                                .LIST
                                                        .WORD   ERR501
                                                                .NLIST
                                                .MEXIT
                                                .ENDC
                                                .IF GT SVCINS
                                                .LIST
        073634  003672                                                                                  .WORD   ERR501
                                                                .NLIST
                                                .ENDC
                                                .IFF
                                                M$WORD  0
                                                .ENDC
   8347 073636  012737  000001  177572  43$:    MOV     #1,SR0                  ;**ENABLE MEMORY MANAGEMENT**
   8348 073644  005337  172352                  DEC     KPAR5                   ;CROSS THE BOUNDERY FOR FIRST BYTE
   8349 073650  013701  002356                  MOV     BUFAB,R1                ;PROVIDE FIRST BYTE OF BUFFER A
   8350 073654  111103                          MOVB    (R1),R3                 ;GET THE FIRST DATA BYTE
   8351 073656  010137  002340                  MOV     R1,VIADD                ;SET UP DATA FOR CONVERSION ROUTINE
   8352 073662  004737  010014                  JSR     PC,VPCON                ;VIRTUAL TO PHYSICAL CONVERSION ROUTINE
   8353 073666  012701  120000                  MOV     #120000,R1              ;POINT TO NEXT LOCATION
   8354 073672  005237  172352                  INC     KPAR5                   ;CROSS THE BOUNDERY FOR NEXT DATA BYTE'S
   8355 073676  013702  002360                  MOV     BUFBB,R2                ;PROVIDE FIRST BYTE OF BUFFER B
   8356 073702  012737  000001  002404          MOV     #1,CNT1                 ;SET UP COUNTER FOR DATA COMPARE
   8357 073710  120322                          CMPB    R3,(R2)+                ;COMPARE THE FIRST DATA BYTE
   8358 073712  000240                          NOP
   8359 073714  001415                          BEQ     44$                     ;BRANCH IF EQUAL TO NEXT COMPARE
   8360 073716  005037  002500                  CLR     GOOD                    ;CLEAR HIGH BYTE OF GOOD
   8361 073722  005037  002502                  CLR     BAD                     ;CLEAR HIGH BYTE OF BAD
   8362 073726  110337  002500                  MOVB    R3,GOOD                 ;LOAD FIRST TX DATA FOR ERROR MESSAGES
   8363 073732  013737  002334  002426          MOV     PHHIGH,TXADRH           ;FIRST TX ADDRESS
```

J11

```
8364 073740  013737  002336  002430          MOV     PHLOW,TXADRL            ;GET ADDRESS OVER 128K
8365 073746  000425                          BR      45$                     ;BRANCH TO ERROR REPORT
8366 073750  005237  002404          44$:    INC     CNT1                    ;
8367 073754  122122                          CMPB    (R1)+,(R2)+             ;BUFFER A EQUAL BUFFER B
8368 073756  001453                          BEQ     46$                     ;IF YES CONTINUE
8369 073760  005037  002500                  CLR     GOOD                    ;CLEAR GOOD
8370 073764  005037  002502                  CLR     BAD                     ;CLEAR BAD
8371 073770  010137  002340                  MOV     R1,VIADD                ;
8372 073774  004737  010014                  JSR     PC,VPCON                ;VIRTUAL TO PHYSICAL CONVERSION ROUTINE
8373 074000  013737  002334  002426          MOV     PHHIGH,TXADRH           ;TX ADDRESS IS OVER 128K
8374 074006  013737  002336  002430          MOV     PHLOW,TXADRL            ;...
8375 074014  116137  177777  002500          MOVB    -1(R1),GOOD             ;LOAD TX DATA FOR ERROR MASSAGE
8376 074022  010237  002340          45$:    MOV     R2,VIADD                ;SET UP DATA FOR CONVERSION ROUTINE
8377 074026  004737  010014                  JSR     PC,VPCON                ;VIRTUAL TO PHYSICAL CONVERSION ROUTINE
8378 074032  013737  002334  002422          MOV     PHHIGH,RXADRH           ;RX ADDRESS IS OVER 128K
8379 074040  013737  002336  002424          MOV     PHLOW,RXADRL            ;GET ADDRESS OVER 128K
8380 074046  005337  002430                  DEC     TXADRL                  ;...
8381 074052  005337  002424                  DEC     RXADRL                  ;
8382 074056  116237  177777  002502          MOVB    -1(R2),BAD              ;LOAD RX DATA FOR ERROR MESSAGE
8383 074064  005037  177572                  CLR     SR0                     ;**DISABLE MEMORY MANAGEMENT**
8384 074070                                  ERRSOFT 2706,E231,ERR231        ;ERROR HANDLER
                                     .MCALL  M$ERRINS
     074070                          M$ERRINS        2706,E231,ERR231,C$ERSOFT
                                     .MCALL  M$GNINS,M$WORD,M$TSTLAB
     074070                          M$SVC   C$ERSOFT
                                     .MCALL  M$GNINS,M$TSTLAB
     074070                          M$TSTLAB
                                     .MCALL  M$TLABEL,M$INCR
                                     .IIF LT T$TSTMAC, .MEXIT
                                     .RADIX  10
                                     M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                     .RADIX  8
                                     M$INCR  T$TSTSEQ
     074070                          M$GNINS <TRAP    C$ERSOFT>
                                     .IF LT SVCINS
                                     TRAP    C$ERSOFT
                                     .MEXIT
                                     .ENDC
                                     .IF EQ SVCINS
                                     .LIST
                                             TRAP    C$ERSOFT
                                                     .NLIST
                                     .MEXIT
                                     .ENDC
                                     .IF GT SVCINS
                                     .LIST
                                                                                     TRAP    C$ERSOFT
     074070  104457
                                                     .NLIST
                                     .ENDC
             000012                  .RADIX  10
                                     .IF NB  2706
             005222                  T$ERRNUM=2706
                                     .IFF
                                     .ERROR  ;MISSING ERROR-NR
                                     .ENDC
     074072                          M$WORD  \T$ERRNUM
                                     .MCALL  M$GNINS
```

```
                                .IRP    N,<2706>
                                M$GNINS <.WORD  N>
                                .ENDM
        074072                  M$GNINS <.WORD  2706>
                                .IF LT SVCINS
                                .WORD   2706
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        .WORD   2706
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
        074072  005222                                                  .WORD   2706
                                                .NLIST
                                .ENDC
                000010          .RADIX  8
                                .IF NB E231
        074074                  M$WORD  E231
                                .MCALL  M$GNINS
                                .IRP    N,<E231>
                                M$GNINS <.WORD  N>
                                .ENDM
        074074                  M$GNINS <.WORD  E231>
                                .IF LT SVCINS
                                .WORD   E231
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        .WORD   E231
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
        074074  006000                                                  .WORD   E231
                                                .NLIST
                                .ENDC
                                .IFF
                                M$WORD  0
                                .ENDC
                                .IF NB ERR231
        074076                  M$WORD  ERR231
                                .MCALL  M$GNINS
                                .IRP    N,<ERR231>
                                M$GNINS <.WORD  N>
                                .ENDM
        074076                  M$GNINS <.WORD  ERR231>
                                .IF LT SVCINS
                                .WORD   ERR231
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
```

```
                                                .LIST
                                                          .WORD     ERR231
                                                                    .NLIST
                                                .MEXIT
                                                .ENDC
                                                .IF GT SVCINS
                                                .LIST
      074076  003734                                                                          .WORD   ERR231
                                                                    .NLIST
                                                .ENDC
                                                .IFF
                                                M$WORD  0
                                                .ENDC
8385 074100  012737  000001  177572                       MOV      #1,SR0            ;**ENABLE MEMORY MANAGEMENT**
8386 074106  023737  002404  002240     46$:              CMP      CNT1,BCINP        ;ALL BYTES COMPARED ?
8387 074114  001315                                       BNE      44$               ;IF NO, GET NEXT ONE
8388 074116  005037  177572                               CLR      SR0               ;**DISABLE MEMORY MANAGEMENT**
8389 074122  005077  106152                               CLR      @CSRX             ;CLEAR CSR2,SELECT CHANNEL 1
8390 074126  017737  106140  002502                       MOV      @IDRX,BAD         ;READ DIR1 FOR CLEAR B0 BIT IN IIR
8391 074134  005077  106140                               CLR      @CSRX             ;CLEAR CSR1
8392                                    ;***-------------------------------------------------------------------
8393                                    ;PART 2 DMA DATA TRANSFER FROM CHANNEL 2 TO 1
8394                                    ;***-------------------------------------------------------------------
8395 074140  005037  002376             PSEU27:  CLR      INTFC1            ;CLEAR INTERRUPT FLAG FOR CHANNFL 1
8396 074144  005037  002400                       CLR      INTFC2            ;CLEAR INTERRUPT FLAG FOR CHANNEL 2
8397 074150  004737  010700                       JSR      PC,BGIN2          ;SET UP PARAMETER
8398 074154  000240                               NOP
8399 074156  012737  177777  002336               MOV      #177777,PHLOW     ;LOAD INPUT FOR CONVERSION ROUTINE
8400 074164  013704  002350                       MOV      MASK,R4           ;...
8401 074170  005304                               DEC      R4                ;...
8402 074172  010437  002334                       MOV      R4,PHHIGH         ;...
8403 074176  004737  007714                       JSR      PC,PVCON          ;CREATE VIRTUAL ADDRESS
8404 074202  013700  002340                       MOV      VIADD,R0          ;GET START ADDRESS OF BUFFER A
8405 074206  010037  002356                       MOV      R0,BUFAB          ;LOAD START ADDRESS OF BUFFER A
8406 074212  012701  010000                       MOV      #10000,R1         ;LOAD COUNTER FOR 2K
8407 074216  005003                               CLR      R3                ;R3 CONTAINS DATA
8408 074220  012737  000020  172516               MOV      #20,SR3           ;**ENABLE 22 BIT MEMORY MANAGEMENT**
8409 074226  012737  000001  177572               MOV      #1,SR0            ;**ENABLE MEMORY MANAGEMENT**
8410 074234  110310                               MOVB     R3,(R0)           ;LOAD FIRST DATA BYTE
8411 074236  012700  120000                       MOV      #120000,R0        ;SET UP ADDRESS FOP NEXT DATA BYTE
8412 074242  005237  172352                       INC      KPAR5             ;LOAD NEXT PAGE
8413 074246  005203                      16$:     INC      R3                ;CREATE NEXT DATA
8414 074250  110320                               MOVB     R3,(R0)+          ;LOAD BUFFER WITH DATA
8415 074252  005301                               DEC      R1                ;
8416 074254  001374                               BNE      16$               ;
8417 074256  005300                               DEC      R0                ;
8418 074260  012701  010000                       MOV      #10000,R1         ;LOAD 2K
8419 074264  010037  002360                       MOV      R0,BUFBB          ;LOAD START ADDRESS OF BUFFER B
8420 074270  000240                      20$:     NOP
8421 074272  105020                               CLRB     (R0)+             ;CLEAR BUFFER B
8422 074274  005301                               DEC      R1                ;2K CLEARED
8423 074276  001374                               BNE      20$               ;IF YES,DO THE TEST
8424 074300  005037  177572                       CLR      SR0               ;**DISABLE MEMORY MANAGEMENT**
8425 074304  112777  000212  105756               MOVB     #212,@ICRHX       ;----LOAD TON INTO ACR 2--------------
8426 074312  013701  002312                       MOV      DPA1,R1           ;CREATE MLA1
8427 074316  062701  000040                       ADD      #40,R1            ;...
8428 074322  010137  002410                       MOV      R1,MLA1           ;STORE MLA1
```

```
8429 074326  113777  002410  105742          MOVB    MLA1,@IDRHX          ;----LOAD MLA1 INTO DOR 2------------
8430 074334  004737  011050                  JSR     PC,LOOP              ;WAIT A LITTLE
8431 074340  012777  177777  105734          MOV     #177777,@BARX        ;---LOAD START ADDRESS OF BUFFER A----
8432 074346  013737  002240  002402          MOV     BCINP,RSAVE          ;STORE BYTE COUNT INPUT
8433 074354  005437  002402                  NEG     RSAVE                ;BUILD 2'COMPL FOR BCR
8434 074360  013777  002402  105716          MOV     RSAVE,@BCRX          ;----LOAD INPUT INTO BCR 1-----------
8435 074366  012777  000177  105704          MOV     #177,@CSRX           ;-DMA ENB,DMA DIR,INT ENB,SYS CO,BA16+17
8436 074374  053777  002364  105676          BIS     CSRMS1,@CSRX         ;--LOAD ADDITIONAL EXTENDET ADDRESS BIT
8437 074402  042777  000010  105670          BIC     #10,@CSRX            ;SELECT CHANNEL 1
8438 074410  012777  007777  105664          MOV     #7777,@BARX          ;----LOAD START ADDRESS OF BUFFER B---
8439 074416  013777  002402  105660          MOV     RSAVE,@BCRX          ;----LOAD INPUT INTO BCR 1---
8440 074424  012777  000101  105646          MOV     #101,@CSRX           ;----SET DMA ENB,INT ENB IN CSR1
8441 074432  053777  002366  105640          BIS     CSRMS2,@CSRX         ;---LOAD EXTENDED ADDRESS BITS-------
8442 074440                                  SETPRI  #PRI00               ;SET PRIORITY TO ZERO
                                     .MCALL  M$LDR0,M$SVC
     074440                          M$LDR0  #PRI00,SETPRI
                                     .MCALL  M$GNINS
                                     .IF NB #PRI00
                                     .IF DIF R0,#PRI00
     074440                          M$GNINS <MOV     #PRI00,R0>
                                     .IF LT SVCINS
                                     MOV     #PRI00,R0
                                     .MEXIT
                                     .ENDC
                                     .IF EQ SVCINS
                                     .LIST
                                             MOV     #PRI00,R0
                                                     .NLIST
                                     .MEXIT
                                     .ENDC
                                     .IF GT SVCINS
                                     .LIST
     074440  012700  000000                                                   MOV     #PRI00,R0
                                                     .NLIST
                                     .ENDC
                                     .ENDC
                                     .IFF
                                     .ERROR  ;MISSING ARG. ON "SETPRI"
                                     .ENDC
     074444                          M$SVC   C$SPRI
                                     .MCALL  M$GNINS,M$TSTLAB
     074444                          M$TSTLAB
                                     .MCALL  M$TLABEL,M$INCR
                                     .IIF LT T$TSTMAC, .MEXIT
                                     .RADIX  10
                                     M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                     .RADIX  8
                                     M$INCR  T$TSTSEQ
     074444                          M$GNINS <TRAP    C$SPRI>
                                     .IF LT SVCINS
                                     TRAP    C$SPRI
                                     .MEXIT
                                     .ENDC
                                     .IF EQ SVCINS
                                     .LIST
                                             TRAP    C$SPRI
                                                     .NLIST
```

```
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
      074444  104441                                                                          TRAP     C$SPRI
                                                              .NLIST
                                        .ENDC
8443  074446  052777  000010  105624            BIS     #10,@CSRX               ;SELECT CHANNEL 2
8444  074454  012737  000002  002374            MOV     #2,CHAN                 ;LOAD CHANNEL NUMBER
8445  074462  112777  000013  105600            MOVB    #13,@ICRHX              ;----LOAD GTS INTO ACR 2--------------
8446  074470  012701  077777                    MOV     #77777,R1               ;LOAD LOOP COUNTER
8447  074474  005737  002400            23$:    TST     INTFC2                  ;HAS INTERRUPT IN CHANNEL 2 OCCURED
8448  074500  001017                            BNE     24$                     ;BRANCH IF YES
8449  074502  005301                            DEC     R1                      ;DECREMENT COUNTER
8450  074504  001373                            BNE     23$                     ;IF NO,TEST AGIN
8451  074506  017737  105566  002502            MOV     @CSRX,BAD               ;GET CSR2 CONTENTS
8452  074514  012737  100016  002500            MOV     #100016,GOOD            ;BC OF,DMA DIR,SYS CONT
8453  074522  053737  002364  002500            BIS     CSRMS1,GOOD             ;SET EXTENDED ADDRESS BIT TO CSR CONT.
8454  074530                                    ERRSOFT 2707,E232,ERR201        ;ERROR HANDLER
                                        .MCALL  M$ERRINS
      074530                            M$ERRINS        2707,E232,ERR201,C$ERSOFT
                                        .MCALL  M$GNINS,M$WORD,M$TSTLAB
      074530                            M$SVC   C$ERSOFT
                                        .MCALL  M$GNINS,M$TSTLAB
      074530                            M$TSTLAB
                                        .MCALL  M$TLABEL,M$INCR
                                        .IIF LT T$TSTMAC, .MEXIT
                                        .RADIX  10
                                        M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                        .RADIX  8
                                        M$INCR  T$TSTSEQ
      074530                            M$GNINS <TRAP   C$ERSOFT>
                                        .IF LT SVCINS
                                        TRAP    C$ERSOFT
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                TRAP    C$ERSOFT
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
      074530  104457                                                                          TRAP     C$ERSOFT
                                                        .NLIST
                                        .ENDC
              000012                    .RADIX  10
                                        .IF NB  2707
              005223                    T$ERRNUM=2707
                                        .IFF
                                        .ERROR  ;MISSING ERROR-NR
                                        .ENDC
      074532                            M$WORD  \T$ERRNUM
                                        .MCALL  M$GNINS
                                        .IRP    N,<2707>
                                        M$GNINS <.WORD  N>
```

```
                                        .ENDM
        074532                          M$GNINS <.WORD  2707>
                                        .IF LT SVCINS
                                        .WORD   2707
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                .WORD   2707
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
        074532  005223                                                                  .WORD   2707
                                                        .NLIST
                                        .ENDC
                000010                  .RADIX  8
                                        .IF NB E232
        074534                          M$WORD  E232
                                        .MCALL  M$GNINS
                                        .IRP    N,<E232>
                                        M$GNINS <.WORD  N>
                                        .ENDM
        074534                          M$GNINS <.WORD  E232>
                                        .IF LT SVCINS
                                        .WORD   E232
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                .WORD   E232
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
        074534  006062                                                                  .WORD   E232
                                                        .NLIST
                                        .ENDC
                                        .IFF
                                        M$WORD  0
                                        .ENDC
                                        .IF NB ERR201
        074536                          M$WORD  ERR201
                                        .MCALL  M$GNINS
                                        .IRP    N,<ERR201>
                                        M$GNINS <.WORD  N>
                                        .ENDM
        074536                          M$GNINS <.WORD  ERR201>
                                        .IF LT SVCINS
                                        .WORD   ERR201
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                .WORD   ERR201
```

C12

```
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
      074536  003470                                                                    .WORD   ERR201
                                                .NLIST
                                .ENDC
                                .IFF
                                M$WORD  0
                                .ENDC
 8455 074540  042777  000010  105532  24$:    BIC     #10,@CSRX               ;SELECT CHANNEL 1
 8456 074546  012737  000001  002374          MOV     #1,CHAN                 ;LOAD CHANNEL NUMBER
 8457 074554  005737  002376                  TST     INTFC1                  ;HAS AN INTERRUPT IN CHANNEL 1 OCCURED
 8458 074560  001015                          BNE     25$                     ;BRANCH IF YES
 8459 074562  017737  105512  002502          MOV     @CSRX,BAD               ;GET CSR1 CONTENTS
 8460 074570  012737  100000  002500          MOV     #100000,GOOD            ;BC OF SHOULD BE SET
 8461 074576  053737  002366  002500          BIS     CSRMS2,GOOD             ;SET EXTENDED ADDRESS BIT TO CSR CONT.
 8462 074604                                  ERRSOFT 2708,E232,ERR201        ;ERROR HANDLER
                                .MCALL  M$ERRINS
      074604                    M$ERRINS        2708,E232,ERR201,C$ERSOFT
                                .MCALL  M$GNINS,M$WORD,M$TSTLAB
      074604                    M$SVC   C$ERSOFT
                                .MCALL  M$GNINS,M$TSTLAB
      074604                    M$TSTLAB
                                .MCALL  M$TLABEL,M$INCR
                                .IIF LT T$TSTMAC, .MEXIT
                                .RADIX  10
                                M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                .RADIX  8
                                M$INCR  T$TSTSEQ
      074604                    M$GNINS <TRAP   C$ERSOFT>
                                .IF LT SVCINS
                                TRAP    C$ERSOFT
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        TRAP    C$ERSOFT
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
      074604  104457                                                                    TRAP    C$ERSOFT
                                                .NLIST
                                .ENDC
              000012            .RADIX  10
                                .IF NB  2708
              005224            T$ERRNUM=2708
                                .IFF
                                .ERROR  ;MISSING ERROR NR
                                .ENDC
      074606                    M$WORD  \T$ERRNUM
                                .MCALL  M$GNINS
                                .IRP    N,<2708>
                                M$GNINS <.WORD  N>
```

D12

D12


```
                                        .ENDM
        074606                          M$GNINS <.WORD  2708>
                                        .IF LT SVCINS
                                        .WORD   2708
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                .WORD   2708
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
        074606  005224                                                                  .WORD   2708
                                                        .NLIST
                                        .ENDC
                000010                  .RADIX  8
                                        .IF NB  E232
        074610                          M$WORD  E232
                                        .MCALL  M$GNINS
                                        .IRP    N,<E232>
                                        M$GNINS <.WORD  N>
                                        .ENDM
        074610                          M$GNINS <.WORD  E232>
                                        .IF LT SVCINS
                                        .WORD   E232
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                .WORD   E232
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
        074610  006062                                                                  .WORD   E232
                                                        .NLIST
                                        .ENDC
                                        .IFF
                                        M$WORD  0
                                        .ENDC
                                        .IF NB ERR201
        074612                          M$WORD  ERR201
                                        .MCALL  M$GNINS
                                        .IRP    N,<ERR201>
                                        M$GNINS <.WORD  N>
                                        .ENDM
        074612                          M$GNINS <.WORD  ERR201>
                                        .IF LT SVCINS
                                        .WORD   ERR201
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                .WORD   ERR201
```

E12

```
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
     074612  003470                                                     .WORD   ERR201
                                                .NLIST
                                .ENDC
                                .IFF
                                M$WORD  0
                                .ENDC
8463 074614                     25$:     SETPRI  #PRI07         ;NO FURTHER INTERRUPT ALLOWED
                                .MCALL  M$LDR0,M$SVC
     074614                     M$LDR0  #PRI07,SETPRI
                                .MCALL  M$GNINS
                                .IF NB #PRI07
                                .IF DIF R0,#PRI07
     074614                     M$GNINS <MOV    #PRI07,R0>
                                .IF LT SVCINS
                                MOV     #PRI07,R0
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                         MOV     #PRI07,R0
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
     074614  012700  000340                                             MOV     #PRI07,R0
                                                .NLIST
                                .ENDC
                                .ENDC
                                .IFF
                                .ERROR  ;MISSING ARG. ON "SETPRI"
                                .ENDC
     074620                     M$SVC   C$SPRI
                                .MCALL  M$GNINS,M$TSTLAB
     074620                     M$TSTLAB
                                .MCALL  M$TLABEL,M$INCR
                                .IIF LT T$TSTMAC, .MEXIT
                                .RADIX  10
                                M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                .RADIX  8
                                M$INCR  T$TSTSEQ
     074620                     M$GNINS <TRAP   C$SPRI>
                                .IF LT SVCINS
                                TRAP    C$SPRI
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                         TRAP    C$SPRI
                                                .NLIST
                                .MEXIT
                                .ENDC
```

F12

```
                                        .IF GT SVCINS
                                        .LIST
      074620  104441                                                                        TRAP    C$SPRI
                                                     .NLIST
                                        .ENDC
8464  074622  052777  000010  105450          BIS     #10,@CSRX           ;SELECT CHANNEL 2
8465  074630  012737  000002  002374          MOV     #2,CHAN             ;LOAD CHANNEL NUMBER
8466  074636  112777  000014  105424          MOVB    #14,@ICRHX          ;----LOAD TCA INTO ACR 2--------------
8467  074644  013737  002336  002500          MOV     PHLOW,GOOD          ;SET UP COMPARE VALUE
8468  074652  063737  002240  002500          ADD     BCINP,GOOD          ;...
8469  074660  017737  105416  002502          MOV     @BARX,BAD           ;GET BAR1 CONTENTS
8470  074666  023737  002502  002500          CMP     BAD,GOOD            ;HAS BAR1 THE CORRECT ADDRESS
8471  074674  001404                          BEQ     30$                 ;BRANCH IF YES
8472  074676                                  ERRSOFT 2709,E234,ERR501    ;ERROR HANDLER
                                        .MCALL  M$ERRINS
      074676                            M$ERRINS        2709,E234,ERR501,C$ERSOFT
                                        .MCALL  M$GNINS,M$WORD,M$TSTLAB
      074676                            M$SVC   C$ERSOFT
                                        .MCALL  M$GNINS,M$TSTLAB
      074676                            M$TSTLAB
                                        .MCALL  M$TLABEL,M$INCR
                                        .IIF LT T$TSTMAC, .MEXIT
                                        .RADIX  10
                                        M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                        .RADIX  8
                                        M$INCR  T$TSTSEQ
      074676                            M$GNINS <TRAP   C$ERSOFT>
                                        .IF LT SVCINS
                                        TRAP    C$ERSOFT
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                TRAP    C$ERSOFT
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
      074676  104457                                                                        TRAP    C$ERSOFT
                                                        .NLIST
                                        .ENDC
              000012                    .RADIX  10
                                        .IF NB  2709
              005225                    T$ERRNUM=2709
                                        .IFF
                                        .ERROR  ;MISSING ERROR-NR
                                        .ENDC
      074700                            M$WORD  \T$ERRNUM
                                        .MCALL  M$GNINS
                                        .IRP    N,<2709>
                                        M$GNINS <.WORD  N>
                                        .ENDM
      074700                            M$GNINS <.WORD  2709>
                                        .IF LT SVCINS
                                        .WORD   2709
                                        .MEXIT
```

```
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                              .WORD   2709
                                                    .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
      074700  005225                                                                          .WORD   2709
                                                    .NLIST
                                        .ENDC
              000010                    .RADIX  8
                                        .IF NB E234
      074702                            M$WORD  E234
                                        .MCALL  M$GNINS
                                        .IRP    N,<E234>
                                        M$GNINS <.WORD  N>
                                        .ENDM
      074702                            M$GNINS <.WORD  E234>
                                        .IF LT SVCINS
                                        .WORD   E234
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                              .WORD   E234
                                                    .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
      074702  006170                                                                          .WORD   E234
                                                    .NLIST
                                        .ENDC
                                        .IFF
                                        M$WORD  0
                                        .ENDC
                                        .IF NB ERR501
      074704                            M$WORD  ERR501
                                        .MCALL  M$GNINS
                                        .IRP    N,<ERR501>
                                        M$GNINS <.WORD  N>
                                        .ENDM
      074704                            M$GNINS <.WORD  ERR501>
                                        .IF LT SVCINS
                                        .WORD   ERR501
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                              .WORD   ERR501
                                                    .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
```

```
      074704  003672                                                              .WORD   ERR501
                                                  .NLIST
                                    .ENDC
                                    .IFF
                                    M$WORD  0
                                    .ENDC
 8473 074706  017737  105372  002502  30$:     MOV      @BCRX,BAD          ;GET BCR1 CONTENTS
 8474 074714  005037  002500                   CLR      GOOD               ;
 8475 074720  023737  002502  002500           CMP      BAD,GOOD           ;IS BCR1 ZERO
 8476 074726  00140'                           BEQ      31$                ;BRANCH IF YES
 8477 074730                                   ERRSOFT 2710,E235,ERR501    ;ERROR HANDLER
                                    .MCALL  M$ERRINS
      074730                        M$ERRINS          2710,E235,ERR501,C$ERSOFT
                                    .MCALL  M$GNINS,M$WORD,M$TSTLAB
      074730                        M$SVC   C$ERSOFT
                                    .MCALL  M$GNINS,M$TSTLAB
      074730                        M$TSTLAB
                                    .MCALL  M$TLABEL,M$INCR
                                    .IIF LT T$TSTMAC, .MEXIT
                                    .RADIX  10
                                    M$TLABEL          \T$TESTNUN,\T$TSTSEQ
                                    .RADIX  8
                                    M$INCR  T$TSTSEQ
      074730                        M$GNINS <TRAP   C$ERSOFT>
                                    .IF LT SVCINS
                                    TRAP    C$ERSOFT
                                    .MEXIT
                                    .ENDC
                                    .IF EQ SVCINS
                                    .LIST
                                            TRAP    C$ERSOFT
                                                    .NLIST
                                    .MEXIT
                                    .ENDC
                                    .IF GT SVCINS
                                    .LIST
      074730  104457                                                              TRAP    C$ERSOFT
                                                    .NLIST
                                    .ENDC
              000012                .RADIX  10
                                    .IF NB  2710
              005226                T$ERRNUM=2710
                                    .IFF
                                    .ERROR  ;MISSING ERROR-NR
                                    .ENDC
      074732                        M$WORD  \T$ERRNUM
                                    .MCALL  M$GNINS
                                    .IRP    N,<2710>
                                    M$GNINS <.WORD  N>
                                    .ENDM
      074732                        M$GNINS <.WORD  2710>
                                    .IF LT SVCINS
                                    .WORD   2710
                                    .MEXIT
                                    .ENDC
                                    .IF EQ SVCINS
                                    .LIST
```

I12


```
                                          .WORD   2710
                                                  .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
     074732  005226                                                                    .WORD   2710
                                                  .NLIST
                                .ENDC
             000010             .RADIX  8
                                .IF NB E235
     074734                     M$WORD  E235
                                .MCALL  M$GNINS
                                .IRP    N,<E235>
                                M$GNINS <.WORD  N>
                                .ENDM
     074734                     M$GNINS <.WORD  E235>
                                .IF LT SVCINS
                                .WORD   E235
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                          .WORD   E235
                                                  .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
     074734  006221                                                                    .WORD   E235
                                                  .NLIST
                                .ENDC
                                .IFF
                                M$WORD  0
                                .ENDC
                                .IF NB ERR501
     074736                     M$WORD  ERR501
                                .MCALL  M$GNINS
                                .IRP    N,<ERR501>
                                M$GNINS <.WORD  N>
                                .ENDM
     074736                     M$GNINS <.WORD  ERR501>
                                .IF LT SVCINS
                                .WORD   ERR501
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                          .WORD   ERR501
                                                  .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
     074736  003672                                                                    .WORD   ERR501
                                                  .NLIST
                                .ENDC
```

78 8018 3673-6

J12

```
                                                .IFF
                                                M$WORD  0
                                                .ENDC
 8478 074740  042777  000010  105332    31$:    BIC     #10,@CSRX               ;SELECT CHANNEL 2
 8479 074746  012737  000001  002374            MOV     #1,CHAN                 ;LOAD CHANNEL NUMBER
 8480 074754  013737  002360  002500            MOV     BUFBB,GOOD              ;SET UP COMPARE VALUE
 8481 074762  042737  160000  002500            BIC     #160000,GOOD            ;CLEAR BIT 13+14+15
 8482 074770  063737  002240  002500            ADD     BCINP,GOOD              ;...
 8483 074776  017737  105300  002502            MOV     @BARX,BAD               ;GET BAR2 CONTENTS
 8484 075004  023737  002500  002502            CMP     GOOD,BAD                ;HAS BAR2 THE CORRECT ADDRESS
 8485 075012  001404                            BEQ     43$                     ;BRANCH IF YES
 8486 075014                                    ERRSOFT 2711,E234,ERR501        ;ERROR HANDLER
                                                .MCALL  M$ERRINS
      075014                                    M$ERRINS        2711,E234,ERR501,C$ERSOFT
                                                .MCALL  M$GNINS,M$WORD,M$TSTLAB
      075014                                    M$SVC   C$ERSOFT
                                                .MCALL  M$GNINS,M$TSTLAB
      075014                                    M$TSTLAB
                                                .MCALL  M$TLABEL,M$INCR
                                                .IIF LT T$TSTMAC, .MEXIT
                                                .RADIX  10
                                                M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                                .RADIX  8
                                                M$INCR  T$TSTSEQ
      075014                                    M$GNINS <TRAP   C$ERSOFT>
                                                .IF LT SVCINS
                                                TRAP    C$ERSOFT
                                                .MEXIT
                                                .ENDC
                                                .IF EQ SVCINS
                                                .LIST
                                                        TRAP    C$ERSOFT
                                                                .NLIST
                                                .MEXIT
                                                .ENDC
                                                .IF GT SVCINS
                                                .LIST
      075014  104457                                                                                    TRAP    C$ERSOFT
                                                                .NLIST
                                                .ENDC
              000012                            .RADIX  10
                                                .IF NB  2711
              005227                            T$ERRNUM=2711
                                                .IFF
                                                .ERROR  ;MISSING ERROR-NR
                                                .ENDC
      075016                                    M$WORD  \T$ERRNUM
                                                .MCALL  M$GNINS
                                                .IRP    N,<2711>
                                                M$GNINS <.WORD  N>
                                                .ENDM
      075016                                    M$GNINS <.WORD  2711>
                                                .IF LT SVCINS
                                                .WORD   2711
                                                .MEXIT
                                                .ENDC
                                                .IF EQ SVCINS
```

K12

```
                                .LIST
                                        .WORD   2711
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
      075016  005227                                                            .WORD   2711
                                                .NLIST
                                .ENDC
              000010            .RADIX  8
                                .IF NB E234
      075020                    M$WORD  E234
                                .MCALL  M$GNINS
                                .IRP    N,<E234>
                                M$GNINS <.WORD  N>
                                .ENDM
      075020                    M$GNINS <.WORD  E234>
                                .IF LT SVCINS
                                .WORD   E234
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        .WORD   E234
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
      075020  006170                                                            .WORD   E234
                                                .NLIST
                                .ENDC
                                .IFF
                                M$WORD  0
                                .ENDC
                                .IF NB ERR501
      075022                    M$WORD  ERR501
                                .MCALL  M$GNINS
                                .IRP    N,<ERR501>
                                M$GNINS <.WORD  N>
                                .ENDM
      075022                    M$GNINS <.WORD  ERR501>
                                .IF LT SVCINS
                                .WORD   ERR501
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        .WORD   ERR501
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
      075022  003672                                                            .WORD   ERR501
                                                .NLIST
```

```
                                        .ENDC
                                        .IFF
                                        M$WORD  0
                                        .ENDC
075024  012737  000001  177572  43$:    MOV     #1,SR0                  ;**ENABLE MEMORY MANAGEMENT**
075032  005337  172352                  DEC     KPAR5                   ;CROSS THE BOUNDERY FOR FIRST BYTE
075036  013701  002356                  MOV     BUFAB,R1                ;PROVIDE FIRST BYTE OF BUFFER A
075042  111103                          MOVB    (R1),R3                 ;GET THE FIRST DATA BYTE
075044  010137  002340                  MOV     R1,VIADD                ;SET UP DATA FOR CONVERSION ROUTINE
075050  004737  010014                  JSR     PC,VPCON                ;VIRTUAL TO PHYSICAL CONVERSION ROUTINE
075054  012701  120000                  MOV     #120000,R1              ;POINT TO NEXT LOCATION
075060  005237  172352                  INC     KPAR5                   ;CROSS THE BOUNDERY FOR NEXT DATA BYTE'S
075064  013702  002360                  MOV     BUFBB,R2                ;PROVIDE FIRST BYTE OF BUFFER B
075070  012737  000001  002404          MOV     #1,CNT1                 ;SET UP COUNTER FOR DATA COMPARE
075076  120322                          CMPB    R3,(R2)+                ;COMPARE THE FIRST DATA BYTE
075100  000240                          NOP
075102  001415                          BEQ     44$                     ;BRANCH IF EQUAL TO NEXT COMPARE
075104  005037  002500                  CLR     GOOD                    ;CLEAR HIGH BYTE OF GOOD
075110  005037  002502                  CLR     BAD                     ;CLEAR HIGH BYTE OF BAD
075114  110337  002500                  MOVB    R3,GOOD                 ;LOAD FIRST TX DATA FOR ERROR MESSAGES
075120  013737  002334  002426          MOV     PHHIGH,TXADRH           ;FIRST TX ADDRESS
075126  013737  002336  002430          MOV     PHLOW,TXADRL            ;GET ADDRESS OVER 128K
075134  000425                          BR      45$                     ;BRANCH TO ERROR REPORT
075136  005237  002404          44$:    INC     CNT1                    ;
075142  122122                          CMPB    (R1)+,(R2)+             ;BUFFER A EQUAL BUFFER B
075144  001453                          BEQ     46$                     ;IF YES CONTINUE
075146  005037  002500                  CLR     GOOD                    ;CLEAR GOOD
075152  005037  002502                  CLR     BAD                     ;CLEAR BAD
075156  010137  002340                  MOV     R1,VIADD                ;
075162  004737  010014                  JSR     PC,VPCON                ;VIRTUAL TO PHYSICAL CONVERSION ROUTINE
075166  013737  002334  002426          MOV     PHHIGH,TXADRH           ;TX ADDRESS IS OVER 128K
075174  013737  002336  002430          MOV     PHLOW,TXADRL            ;...
075202  116137  177777  002500          MOVB    -1(R1),GOOD             ;LOAD TX DATA FOR ERROR MASSAGE
075210  010237  002340          45$:    MOV     R2,VIADD                ;SET UP DATA FOR CONVERSION ROUTINE
075214  004737  010014                  JSR     PC,VPCON                ;VIRTUAL TO PHYSICAL CONVERSION ROUTINE
075220  013737  002334  002422          MOV     PHHIGH,RXADRH           ;RX ADDRESS IS OVER 128K
075226  013737  002336  002424          MOV     PHLOW,RXADRL            ;GET ADDRESS OVER 128K
075234  005337  002430                  DEC     TXADRL                  ;...
075240  005337  002424                  DEC     RXADRL                  ;
075244  116237  177777  002502          MOVB    -1(R2),BAD              ;LOAD RX DATA FOR ERROR MESSAGE
075252  005037  177572                  CLR     SR0                     ;**DISABLE MEMORY MANAGEMENT**
075256                                  ERRSOFT 2712,E250,ERR231        ;ERROR HANDLER
                                        .MCALL  M$ERRINS
075256                                  M$ERRINS        2712,E250,ERR231,C$ERSOFT
                                        .MCALL  M$GNINS,M$WORD,M$TSTLAB
075256                                  M$SVC   C$ERSOFT
                                        .MCALL  M$GNINS,M$TSTLAB
075256                                  M$TSTLAB
                                        .MCALL  M$TLABEL,M$INCR
                                        .IIF LT T$TSTMAC, .MEXIT
                                        .RADIX  10
                                        M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                        .RADIX  8
                                        M$INCR  T$TSTSEQ
075256                                  M$GNINS <TRAP   C$ERSOFT>
                                        .IF LT SVCINS
                                        TRAP    C$ERSOFT
```

M12

```
                              .MEXIT
                              .ENDC
                              .IF EQ SVCINS
                              .LIST
                                      TRAP    C$ERSOFT
                                              .NLIST
                              .MEXIT
                              .ENDC
                              .IF GT SVCINS
                              .LIST
      075256  104457                                                              TRAP    C$ERSOFT
                                              .NLIST
                              .ENDC
              000012          .RADIX  10
                              .IF NB  2712
              005230          T$ERRNUM=2712
                              .IFF
                              .ERROR  ;MISSING ERROR-NR
                              .ENDC
      075260                  M$WORD  \T$ERRNUM
                              .MCALL  M$GNINS
                              .IRP    N,<2712>
                              M$GNINS <.WORD  N>
                              .ENDM
      075260                  M$GNINS <.WORD  2712>
                              .IF LT SVCINS
                              .WORD   2712
                              .MEXIT
                              .ENDC
                              .IF EQ SVCINS
                              .LIST
                                      .WORD   2712
                                              .NLIST
                              .MEXIT
                              .ENDC
                              .IF GT SVCINS
                              .LIST
      075260  005230                                                              .WORD   2712
                                              .NLIST
                              .ENDC
              000010          .RADIX  8
                              .IF NB E250
      075262                  M$WORD  E250
                              .MCALL  M$GNINS
                              .IRP    N,<E250>
                              M$GNINS <.WORD  N>
                              .ENDM
      075262                  M$GNINS <.WORD  E250>
                              .IF LT SVCINS
                              .WORD   E250
                              .MEXIT
                              .ENDC
                              .IF EQ SVCINS
                              .LIST
                                      .WORD   E250
                                              .NLIST
                              .MEXIT
```

```
                                          .ENDC
                                          .IF GT SVCINS
                                          .LIST
     075262  005716                                                                                   .WORD   E250
                                                       .NLIST
                                          .ENDC
                                          .IFF
                                          M$WORD  0
                                          .ENDC
                                          .IF NB ERR231
     075264                               M$WORD  ERR231
                                          .MCALL  M$GNINS
                                          .IRP    N,<ERR231>
                                          M$GNINS <.WORD  N>
                                          .ENDM
     075264                               M$GNINS <.WORD  ERR231>
                                          .IF LT SVCINS
                                          .WORD   ERR231
                                          .MEXIT
                                          .ENDC
                                          .IF EQ SVCINS
                                          .LIST
                                                 .WORD   ERR231
                                                         .NLIST
                                          .MEXIT
                                          .ENDC
                                          .IF GT SVCINS
                                          .LIST
     075264  003734                                                                                   .WORD   ERR231
                                                         .NLIST
                                          .ENDC
                                          .IFF
                                          M$WORD  0
                                          .ENDC
     075266  012737  000001  177572              MOV     #1,SR0                  ;**ENABLE MEMORY MANAGEMENT**
     075274  023737  002404  002240       46$:   CMP     CNT1,BCINP              ;ALL BYTES COMPARED ?
     075302  001315                              BNE     44$                     ;IF NO, GET NEXT ONE
     075304  005037  177572                      CLR     SR0                     ;**DISABLE MEMORY MANAGEMENT**
     075310  005077  104764                      CLR     @CSRX                   ;CLEAR CSR2,SELECT CHANNEL 1
     075314  017737  104752  002502              MOV     @IDRX,BAD               ;READ DIR1 FOR CLEAR B0 BIT IN IIR
     075322  005077  104752                      CLR     @CSRX                   ;CLEAR CSR1
     075326  006337  002350                      ASL     MASK                    ;NEXT MEMORY RANGE
     075332  022737  001000  002364              CMP     #1000,CSRMS1            ;WAS BA 18 SET
     075340  003403                              BLE     50$                     ;BRANCH IF EQUAL OR GREATER
     075342  012737  000400  002362              MOV     #400,CSRMSK             ,SET BA 18
     075350  006337  002362               50$:   ASL     CSRMSK
     075354  053737  002362  002364              BIS     CSRMSK,CSRMS1           ;
     075362  006337  002366                      ASL     CSRMS2                  ;SET EXTENDED ADDRESS BIT FOR RX CHANNEL
     075366  000240                              NOP
     075370  022737  020000  002366              CMP     #20000,CSRMS2           ;ALL EXTENDET ADDRESS BIT TESTED
     075376  001402                              BEQ     EXQV27                  ;IF YES, EXIT TEST
     075400  000137  072726                      JMP     ITAC27                  ;
     075404                               EXQV27: EXIT    TST
                                          .MCALL  M$SVC,M$EXIT,M$EXSEG,M$EXTJ,M$GETTOP,M$CHECK,M$WORD,XFER
             000041                       T$FLAG=F$END
     075404                               M$CHECK TST,T$TEMP,T$FLAG
                                          .IF IDN <TST>,<TST>
```

B13


```
            010060              T$TEMP=T$$TEST
            000040              T$FLAG-I$TST
                                .MEXIT
                                .ENDC
                                .IF IDN <SUB>,<TST>
                                T$TEMP=T$$SUB
                                T$FLAG=I$SUB
                                .MEXIT
                                .ENDC
                                .IF IDN <SEG>,<TST>
                                T$TEMP=T$$SEG
                                T$FLAG=I$SEG
                                .MEXIT
                                .ENDC
                                .IF IDN <INIT>,<TST>
                                T$TEMP=T$$INIT
                                T$FLAG=I$INIT
                                .MEXIT
                                .ENDC
                                .IF IDN <CLN>,<TST>
                                T$TEMP=T$$CLEAN
                                T$FLAG=I$CLN
                                .MEXIT
                                .ENDC
                                .IF IDN <SRV>,<TST>
                                T$TEMP=T$$SRV
                                T$FLAG=I$SRV
                                .MEXIT
                                .ENDC
                                .IF IDN <MSG>,<TST>
                                T$TEMP=T$$MSG
                                T$FLAG=F$JMP
                                .MEXIT
                                .ENDC
                                .IF IDN <RPT>,<TST>
                                T$TEMP=T$$RPT
                                T$FLAG=F$JMP
                                .MEXIT
                                .ENDC
                                .IF IDN <DU>,<TST>
                                T$TEMP=T$$DU
                                T$FLAG=F$JMP
                                .MEXIT
                                .ENDC
                                .IF IDN <AU>,<TST>
                                T$TEMP=T$$AU
                                T$FLAG=F$JMP
                                .MEXIT
                                .ENDC
                                .IF EQ T$FLAG-F$JMP
                                M$WORD  J$JMP
                                M$EXTJ  \T$TEMP
                                .MEXIT
                                .ENDC
                                .IF EQ  T$FLAG-F$BGN
       075404                   M$SVC   C$EXIT
                                .MCALL  M$GNINS,M$TSTLAB
```

C13

```
        075404                          M$TSTLAB
                                        .MCALL  M$TLABEL,M$INCR
                                        .IIF LT T$TSTMAC, .MEXIT
                                        .RADIX  10
                                        M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                        .RADIX  8
                                        M$INCR  T$TSTSEQ
        075404                          M$GNINS <TRAP   C$EXIT>
                                        .IF LT SVCINS
                                        TRAP    C$EXIT
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                TRAP    C$EXIT
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
        075404  104432                                                          TRAP    C$EXIT
                                                        .NLIST
                                        .ENDC
                                        .IF IDN <SEG>,<TST>
                                        M$GETTOP T$SEK,T$SEGLEV,T$TEMP
                                        M$EXSEG \T$TEMP
                                        .IFF
        075406                          M$EXIT  \T$TEMP
                                        .MCALL  M$GNINS
        075406                          M$GNINS <.WORD  L10060-.>
                                        .IF LT SVCINS
                                        .WORD   L10060-.
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                .WORD   L10060-.
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
        075406  000050                                                          .WORD   L10060-.
                                                        .NLIST
                                        .ENDC
                                        .ENDC
                                        .MEXIT
                                        .ENDC
                                        .IF IDN <HRD>,<TST>
                                        M$GETTOP        T$NS,T$NESTLEV,T$TEMP
                                        .IF EQ  F$HARD-T$TEMP
                                        .IRP    N,<\T$$HARD>
                                        XFER    L'N
                                        .ENDM
                                        .MEXIT
                                        .ENDC
                                        .ENDC
```

```
                                                  .IF IDN <SFT>,<TST>
                                                  M$GETTOP        T$NS,T$NESTLEV,T$TEMP
                                                  .IF EQ  F$SOFT-T$TEMP
                                                  .IRP    N,<\T$$SOFT>
                                                  XFER    L'N
                                                  .ENDM
                                                  .MEXIT
                                                  .ENDC
                                                  .ENDC
                                                  .ERROR  ;ILL. "EXIT TST" STMT.
8544                                                      .NLIST  BEX
8545 075410     045     123     062               TSHD27: .ASCIZ  /$S2$AQ-22 EXTENDED ADDRESS BIT TEST$N/
8546                                                      .LIST   BEX
8547                                                      .EVEN
8548 075456                                               ENDTST
                                                  .MCALL  M$POP,M$GNTAG,M$SVC,M$ENDERR
                                                  .IF EQ  F$BGN-I$TST
          000041                                  I$TST=F$END
                                                  .IFF
                                                  .ERROR  ;MISSING "BGNTST"
                                                  .MEXIT
                                                  .ENDC
     075456                                       M$POP   T$NS,T$NESTLEV,T$TEMP
                                                  .MCALL  M$GETS,M$DECR
                                                  .IF LT  T$NESTLEV
                                                  .ERROR  T$NESTLEV       ; MACRO T$NS UNDERFLOW
                                                  .MEXIT
                                                  .ENDC
     075456                                       M$GETS  T$NS,\T$NESTLEV,T$TEMP
          000001                                  T$TEMP=T$NS1
     075456                                       M$DECR  T$NESTLEV
          000000                                  T$NESTLEV=T$NESTLEV-1
                                                  .IF EQ F$TEST-T$TEMP
     075456                                       M$GNTAG L,T$$TEST
                                                  .MCALL  M$GEN
     075456                                       M$GEN   L,\T$$TEST,SVCTAG
                                                  .IF LE  SVCTAG
                                                  .IIF EQ SVCTAG,.LIST
                                                  L10060:
                                                  .IIF EQ SVCTAG,.NLIST
                                                  .MEXIT
                                                  .ENDC
                                                  .LIST
     075456                                                                                          L10060:
                                                          .NLIST
          010000                                  S$LSYM=T$LSYM
     075456                                       M$SVC   C$ETST
                                                  .MCALL  M$GNINS,M$TSTLAB
     075456                                       M$TSTLAB
                                                  .MCALL  M$TLABEL,M$INCR
                                                  .IIF LT T$TSTMAC, .MEXIT
                                                  .RADIX  10
                                                  M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                                  .RADIX  8
                                                  M$INCR  T$TSTSEQ
     075456                                       M$GNINS <TRAP   C$ETST>
                                                  .IF LT SVCINS
```

E13

```
                              TRAP    C$ETST
                              .MEXIT
                              .ENDC
                              .IF EQ S'CINS
                              .LIST
                                   ~RAP    C$ETST
                                           .NLIST
                              .MEXIT
                              .ENDC
                              .IF GT SVCINS
                              .LIST
     075456  104401                                                              TRAP    C$ETST
                                           .NLIST
                              .ENDC
             000041           I$TST=F$END
                              .IFF
                              M$ENDERR     ENDTST,T$TEMP
                              .ENDC
```

```
                        .SBTTL  TEST 28: ADDITIONAL STANDBY TEST
                        ;***********************************************************************
                        ;                IEX - TEST 28
                        ;THIS TEST MOVES A SLIDING ONE'S BIT PATTERN ACROSS THE
                        ;ADDRESS LINE 16,17,18,19,20,21 IGNORING NXM ERRORS BUT CHECKING
                        ;THE ADDRESS REGISTER LINES TO THE BUS.
                        ;
                        ;THE PATTERN SHOULD BE CHECKED ON A LOGIC ANALYSER .
                        ;THE LOGIC ANALYSER HAS TO BE CONNECT TO ADDRESS LINES 16-21.
                        ;THE TRIGGER HAS TO BE CONNECET TO THE SIGNAL ADREN L (E9,PIN4).
                        ;
                        ;THIS TEST IS ONLY CARRIED OUT IF A Q-BUS IS USED AND IF YOU ANSWER
                        ;THE SOFTWARE QUESTION.
                        ;***********************************************************************
075460                          BGNTST
                        .MCALL  M$INCR,M$GNTEST,M$PUSH,M$INCR
                        .IF NE  F$END-I$SUB
                        .ERROR  ;"BGNTST" IN SUB
                        .MEXIT
                        .ENDC
                        .IF NE  F$END-I$SEG
                        .ERROR  ;"BGNTST" IN SEG
                        .MEXIT
                        .ENDC
                        .IF NE  F$END-I$TST
                        .ERROR  ;"BGNTST" IN TST
                        .MEXIT
                        .IFF
        000040          I$TST=F$BGN
                        .ENDC
                        .IF B
075460                  M$INCR  T$TESTNUM
        000034          T$TESTNUM=T$TESTNUM+1
                        .IFF
                        T$TESTNUM=
                        .ENDC
        000000          T$SUBNUM=0
        000012          .RADIX  10
075460                  M$GNTEST        \T$TESTNUM
                        .MCALL  M$GEN
075460                  M$GEN   T,28:,SVCTST
                        .IF LE  SVCTST
                        .IIF EQ SVCTST,.LIST
                        T28::
                        .IIF EQ SVCTST,.NLIST
                        .MEXIT
                        .ENDC
                        .LIST
075460                                                          T28::
                                .NLIST
        000010          .RADIX  8
075460                  M$PUSH  T$NS,T$NESTLEV,F$TEST
                        .MCALL  M$INCR,M$SETS
075460                  M$INCR  T$NESTLEV
        000001          T$NESTLEV=T$NESTLEV+1
075460                  M$SETS  T$NS,\T$NESTLEV,F$TEST
        000001          T$NS1=F$TEST
```

G13

```
            010061                  T$$TEST=T$TAGNUM
     075460                         M$INCR T$TAGNUM
            010062                  T$TAGNUM=T$TAGNUM+1
            000001                  T$TSTSEQ=1
8565 075460 005737  002242                  TST     MAINB                   ;IS THIS TEST SELECTED
8566 075464 001015                          BNE     3$                      ;EXIT IF NO
8567 075466 005737  002324                  TST     PNTF                    ;IS THE PNT FLAG SET
8568 075472 001410                          BEQ     2$                      ;IF YES ,PRINT INFORMATION
8569 075474                                 PRINTF  #INF02                  ;PRINT MESSAGE FOR USER
                                    .MCALL  M$PRINT
                                    .IF B   #INF02
                                    .ERROR  ;MISSING FORMAT
                                    .MEXIT
                                    .ENDC
                                    .IF B   <>
     075474                         M$PRINT C$PNTF,#INF02
                                    .MCALL  M$COUNT,M$PUT,M$GNINS,M$SVC
            000001                  T$ARGCNT=1
     075474                         M$COUNT T$ARGCNT,<>,<>,<>,<>,<>,<>,<>,<>
                                    .IF NB <>
                                    M$COUNT T$ARGCNT,<>,<>,<>,<>,<>,<>,<>,<>
                                    .ENDC
                                    .IF NB <>
                                    T$ARGCNT=T$ARGCNT+1
                                    .ENDC
                                    .IRP    N,<\T$ARGCNT>
                                    M$PUT   #N,#INF02,<>,<>,<>,<>,<>,<>,<>,<>
                                    .ENDM
     075474                         M$PUT   #1,#INF02,<>,<>,<>,<>,<>,<>,<>,<>
                                    .MCALL  M$PUT1
                                    .IF NB  <#INF02>
     075474                         M$PUT   <#INF02>,<>,<>,<>,<>,<>,<>,<>,<>
                                    .MCALL  M$PUT1
                                    .IF NB  <>
                                    M$PUT   <>,<>,<>,<>,<>,<>,<>,<>,<>
                                    .ENDC
                                    .IF NB  <#INF02>
     075474                         M$PUT1  #INF02
                                    .MCALL  M$GNINS
                                    .IF B
     075474                         M$GNINS <MOV    #INF02, (SP)>
                                    .IF LT SVCINS
                                    MOV     #INF02,-(SP)
                                    .MEXIT
                                    .ENDC
                                    .IF EQ SVCINS
                                    .LIST
                                            MOV     #INF02, (SP)
                                                    .NLIST
                                    .MEXIT
                                    .ENDC
                                    .IF GT SVCINS
                                    .LIST                                               MOV     #INF02, (SP)
     075474 012746  076376
                                                    .NLIST
                                    .ENDC
                                    .IFF
```

```
                                .IF DIF B,<ØINFO2>
                                .ERROR  ;ILL. ARG. "ØINFO2" ONLY "B" IS ALLOWED.
                                .MEXIT
                                .ENDC
                                M$GNINS <CLR    -(SP)>
                                M$GNINS <BISB   ,(SP)>
                                .ENDC
                                .ENDC
                                .ENDC
                                .IF NB  <Ø1>
075500                          M$PUT1  Ø1
                                .MCALL  M$GNINS
                                .IF B
075500                          M$GNINS <MOV    Ø1,-(SP)>
                                .IF LT SVCINS
                                MOV     Ø1,-(SP)
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        MOV     Ø1,-(SP)
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
075500  012746  000001                                                          MOV     Ø1,-(SP)
                                                .NLIST
                                .ENDC
                                .IFF
                                .IF DIF B,<Ø1>
                                .ERROR  ;ILL. ARG. "Ø1" ONLY "B" IS ALLOWED.
                                .MEXIT
                                .ENDC
                                M$GNINS <CLR    -(SP)>
                                M$GNINS <BISB   ,(SP)>
                                .ENDC
                                .ENDC
075504                          M$GNINS <MOV    SP,R0>
                                .IF LT SVCINS
                                MOV     SP,R0
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        MOV     SP,R0
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
075504  010600                                                                  MOV     SP,R0
                                                .NLIST
                                .ENDC
075506                          M$SVC   C$PNTF
                                .MCALL  M$GNINS,M$TSTLAB
075506                          M$TSTLAB
```

```
                                .MCALL  M$TLABEL,M$INCR
                                .IIF LT T$TSTMAC, .MEXIT
                                .RADIX  10
                                M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                .RADIX  8
                                M$INCR  T$TSTSEQ
     075506                     M$GNINS <TRAP   C$PNTF>
                                .IF LT SVCINS
                                TRAP    C$PNTF
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        TRAP    C$PNTF
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
     075506  104417                                                                       TRAP    C$PNTF
                                                .NLIST
                                .ENDC
                                .IRP    N,<\T$ARGCNT*2+2>
                                M$GNINS <ADD    #N,SP>
                                .ENDM
     075510                     M$GNINS <ADD    #4,SP>
                                .IF LT SVCINS
                                ADD     #4,SP
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        ADD     #4,SP
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
     075510  062706  000004                                                               ADD     #4,SP
                                                .NLIST
                                .ENDC
                                .MEXIT
                                .ENDC
                                .IF B   <>
                                M$PRINT C$PNTF,#INF02,<>
                                .MEXIT
                                .ENDC
                                .IF B   <>
                                M$PRINT C$PNTF,#INF02,<>,<>
                                .MEXIT
                                .ENDC
                                .IF B   <>
                                M$PRINT C$PNTF,#INF02,<>,<>,<>
                                .MEXIT
                                .ENDC
                                .IF B   <>
                                M$PRINT C$PNTF,#INF02,<>,<>,<>,<>
```

```
                                        .MEXIT
                                        .ENDC
                                        .IF B   <>
                                        M$PRINT C$PNTF,#INFO2,<>,<>,<>,<>,<>
                                        .MEXIT
                                        .ENDC
                                        .IF B   <>
                                        M$PRINT C$PNTF,#INFO2,<>,<>,<>,<>,<>,<>
                                        .MEXIT
                                        .ENDC
                                        .IF B   <>
                                        M$PRINT C$PNTF,#INFO2,<>,<>,<>,<>,<>,<>,<>
                                        .MEXIT
                                        .ENDC
                                        M$PRINT C$PNTF,#INFO2,<>,<>,<>,<>,<>,<>,<>,<>
   8570 075514                          2$:     EXIT    TST             ;EXIT TEST
                                        .MCALL  M$SVC,M$EXIT,M$EXSEG,M$EXTJ,M$GETTOP,M$CHECK,M$WORD,XFER
                 000041                 T$FLAG=F$END
        075514                          M$CHECK TST,T$TEMP,T$FLAG
                                        .IF IDN <TST>,<TST>
                 010061                 T$TEMP=T$$TEST
                 000040                 T$FLAG=I$TST
                                        .MEXIT
                                        .ENDC
                                        .IF IDN <SUB>,<TST>
                                        T$TEMP=T$$SUB
                                        T$FLAG=I$SUB
                                        .MEXIT
                                        .ENDC
                                        .IF IDN <SEG>,<TST>
                                        T$TEMP=T$$SEG
                                        T$FLAG=I$SEG
                                        .MEXIT
                                        .ENDC
                                        .IF IDN <INIT>,<TST>
                                        T$TEMP=T$$INIT
                                        T$FLAG=I$INIT
                                        .MEXIT
                                        .ENDC
                                        .IF IDN <CLN>,<TST>
                                        T$TEMP=T$$CLEAN
                                        T$FLAG=I$CLN
                                        .MEXIT
                                        .ENDC
                                        .IF IDN <SRV>,<TST>
                                        T$TEMP=T$$SRV
                                        T$FLAG=I$SRV
                                        .MEXIT
                                        .ENDC
                                        .IF IDN <MSG>,<TST>
                                        T$TEMP=T$$MSG
                                        T$FLAG=F$JMP
                                        .MEXIT
                                        .ENDC
                                        .IF IDN <RPT>,<TST>
                                        T$TEMP=T$$RPT
                                        T$FLAG=F$JMP
```

```
                              .MEXIT
                              .ENDC
                              .IF IDN <DU>,<TST>
                              T$TEMP=T$$DU
                              T$FLAG=F$JMP
                              .MEXIT
                              .ENDC
                              .IF IDN <AU>,<TST>
                              T$TEMP=T$$AU
                              T$FLAG=F$JMP
                              .MEXIT
                              .ENDC
                              .IF EQ T$FLAG-F$JMP
                              M$WORD  J$JMP
                              M$EXTJ  \T$TEMP
                              .MEXIT
                              .ENDC
                              .IF EQ  T$FLAG-F$BGN
     075514                   M$SVC   C$EXIT
                              .MCALL  M$GNINS,M$TSTLAB
     075514                   M$TSTLAB
                              .MCALL  M$TLABEL,M$INCR
                              .IIF LT T$TSTMAC, .MEXIT
                              .RADIX  10
                              M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                              .RADIX  8
                              M$INCR  T$TSTSEQ
     075514                   M$GNINS <TRAP    C$EXIT>
                              .IF LT SVCINS
                              TRAP    C$EXIT
                              .MEXIT
                              .ENDC
                              .IF EQ SVCINS
                              .LIST
                                      TRAP    C$EXIT
                                              .NLIST
                              .MEXIT
                              .ENDC
                              .IF GT SVCINS
                              .LIST
     075514  104432                                                               TRAP    C$EXIT
                                              .NLIST
                              .ENDC
                              .IF IDN <SEG>,<TST>
                              M$GETTOP T$SEK,T$SEGLEV,T$TEMP
                              M$EXSEG \T$TEMP
                              .IFF
     075516                   M$EXIT  \T$TEMP
                              .MCALL  M$GNINS
     075516                   M$GNINS <.WORD  L10061-.>
                              .IF LT SVCINS
                              .WORD   L10061-.
                              .MEXIT
                              .ENDC
                              .IF EQ SVCINS
                              .LIST
                                      .WORD   L10061-.
```

```
                                                  .NLIST
                                  .MEXIT
                                  .ENDC
                                  .IF GT SVCINS
                                  .LIST
      075516  001204                                                                             .WORD   L10061-.
                                                  .NLIST
                                  .ENDC
                                  .ENDC
                                  .MEXIT
                                  .ENDC
                                  .IF IDN <HRD>,<TST>
                                  M$GETTOP        T$NS,T$NESTLEV,T$TEMP
                                  .IF EQ  F$HARD-T$TEMP
                                  .IRP    N,<\T$$HARD>
                                  XFER    L'N
                                  .ENDM
                                  .MEXIT
                                  .ENDC
                                  .ENDC
                                  .IF IDN <SFT>,<TST>
                                  M$GETTOP        T$NS,T$NESTLEV,T$TEMP
                                  .IF EQ  F$SOFT-T$TEMP
                                  .IRP    N,<\T$$SOFT>
                                  XFER    L'N
                                  .ENDM
                                  .MEXIT
                                  .ENDC
                                  .ENDC
                                  .ERROR  ;ILL. "EXIT TST" STMT.
   8571 075520                    3$:     READBUS                         ;ARE YOU ON A Q-BUS
                                  .MCALL  M$SVC
        075520                    M$SVC   C$RDBU
                                  .MCALL  M$GNINS,M$TSTLAB
        075520                    M$TSTLAB
                                  .MCALL  M$TLABEL,M$INCR
                                  .IIF LT T$TSTMAC, .MEXIT
                                  .RADIX  10
                                  M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                  .RADIX  8
                                  M$INCR  T$TSTSEQ
        075520                    M$GNINS <TRAP   C$RDBU>
                                  .IF LT SVCINS
                                  TRAP    C$RDBU
                                  .MEXIT
                                  .ENDC
                                  .IF EQ SVCINS
                                  .LIST
                                          TRAP    C$RDBU
                                                  .NLIST
                                  .MEXIT
                                  .ENDC
                                  .IF GT SVCINS
                                  .LIST
        075520  104407                                                                           TRAP    C$RDBU
                                                  .NLIST
                                  .ENDC
```

```
 8572 075522                                  BCOMPLETE 5$                          ;BRANCH IF Q-BUS
                                       .MCALL  M$GNINS
      075522                           M$GNINS <BCS    5$>
                                       .IF LT SVCINS
                                       BCS     5$
                                       .MEXIT
                                       .ENDC
                                       .IF EQ SVCINS
                                       .LIST
                                               BCS     5$
                                                       .NLIST
                                       .MEXIT
                                       .ENDC
                                       .IF GT SVCINS
                                       .LIST
      075522  103415                                                                                    BCS     5$
                                                       .NLIST
                                       .ENDC
 8573 075524  005737  002324                   TST     PNTF                          ;IS THE PNT FLAG SET
 8574 075530  001410                           BEQ     11$                           ;IF YES,PRINT INFORMATION
 8575 075532                                   PRINTF  #INF03                        ;PRINT MESSAGE FOR USER
                                       .MCALL  M$PRINT
                                       .IF B   #INF03
                                       .ERROR  ;MISSING FORMAT
                                       .MEXIT
                                       .ENDC
                                       .IF B   <>
      075532                           M$PRINT C$PNTF,#INF03
                                       .MCALL  M$COUNT,M$PUT,M$GNINS,M$SVC
              000001                   T$ARGCNT=1
      075532                           M$COUNT T$ARGCNT,<>,<>,<>,<>,<>,<>,<>,<>
                                       .IF NB <>
                                       M$COUNT T$ARGCNT,<>,<>,<>,<>,<>,<>,<>,<>
                                       .ENDC
                                       .IF NB <>
                                       T$ARGCNT=T$ARGCNT+1
                                       .ENDC
                                       .IRP    N,<\T$ARGCNT>
                                       M$PUT   #N,#INF03,<>,<>,<>,<>,<>,<>,<>,<>
                                       .ENDM
      075532                           M$PUT   #1,#INF03,<>,<>,<>,<>,<>,<>,<>,<>
                                       .MCALL  M$PUT1
                                       .IF NB  <#INF03>
      075532                           M$PUT   <#INF03>,<>,<>,<>,<>,<>,<>,<>,<>
                                       .MCALL  M$PUT1
                                       .IF NB  <>
                                       M$PUT   <>,<>,<>,<>,<>,<>,<>,<>,<>
                                       .ENDC
                                       .IF NB  <#INF03>
      075532                           M$PUT1  #INF03
                                       .MCALL  M$GNINS
                                       .IF B
      075532                           M$GNINS <MOV    #INF03, (SP)>
                                       .IF LT SVCINS
                                       MOV     #INF03,-(SP)
                                       .MEXIT
                                       .ENDC
```

```
                                .IF EQ SVCINS
                                .LIST
                                        MOV     #INF03,-(SP)
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
075532  012746  076504                                                  MOV     #INF03,-(SP)
                                                .NLIST
                                .ENDC
                                .IFF
                                .IF DIF B,<#INF03>
                                .ERROR  ;ILL. ARG. "#INF03" ONLY "B" IS ALLOWED.
                                .MEXIT
                                .ENDC
                                M$GNINS <CLR    -(SP)>
                                M$GNINS <BISB   ,(SP)>
                                .ENDC
                                .ENDC
                                .ENDC
                                .IF NB  <#1>
075536                          M$PUT1  #1
                                .MCALL  M$GNINS
                                .IF B
075536                          M$GNINS <MOV    #1,-(SP)>
                                .IF LT SVCINS
                                MOV     #1,-(SP)
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        MOV     #1,-(SP)
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
075536  012746  000001                                                  MOV     #1,-(SP)
                                                .NLIST
                                .ENDC
                                .IFF
                                .IF DIF B,<#1>
                                .ERROR  ;ILL. ARG. "#1" ONLY "B" IS ALLOWED.
                                .MEXIT
                                .ENDC
                                M$GNINS <CLR    -(SP)>
                                M$GNINS <BISB   ,(SP)>
                                .ENDC
                                .ENDC
075542                          M$GNINS <MOV    SP,R0>
                                .IF LT SVCINS
                                MOV     SP,R0
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
```

```
                                          MOV     SP,R0
                                                  .NLIST
                                  .MEXIT
                                  .ENDC
                                  .IF GT SVCINS
                                  .LIST
075542  010600                                                                  MOV     SP,R0
                                                  .NLIST
                                  .ENDC
075544                            M$SVC   C$PNTF
                                  .MCALL  M$GNINS,M$TSTLAB
075544                            M$TSTLAB
                                  .MCALL  M$TLABEL,M$INCR
                                  .IIF LT T$TSTMAC, .MEXIT
                                  .RADIX  10
                                  M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                  .RADIX  8
                                  M$INCR  T$TSTSEQ
075544                            M$GNINS <TRAP   C$PNTF>
                                  .IF LT SVCINS
                                  TRAP    C$PNTF
                                  .MEXIT
                                  .ENDC
                                  .IF EQ SVCINS
                                  .LIST
                                          TRAP    C$PNTF
                                                  .NLIST
                                  .MEXIT
                                  .ENDC
                                  .IF GT SVCINS
                                  .LIST
075544  104417                                                                  TRAP    C$PNTF
                                                  .NLIST
                                  .ENDC
                                  .IRP    N,<\T$ARGCNT*2+2>
                                  M$GNINS <ADD    #N,SP>
                                  .ENDM
075546                            M$GNINS <ADD    #4,SP>
                                  .IF LT SVCINS
                                  ADD     #4,SP
                                  .MEXIT
                                  .ENDC
                                  .IF EQ SVCINS
                                  .LIST
                                          ADD     #4,SP
                                                  .NLIST
                                  .MEXIT
                                  .ENDC
                                  .IF GT SVCINS
                                  .LIST
075546  062706  000004                                                          ADD     #4,SP
                                                  .NLIST
                                  .ENDC
                                  .MEXIT
                                  .ENDC
                                  .IF B   <>
                                  M$PRINT C$PNTF,#INF03,<>
```

```
                                        .MEXIT
                                        .ENDC
                                        .IF B   <>
                                        M$PRINT C$PNTF,ØINF03,<>,<>
                                        .MEXIT
                                        .ENDC
                                        .IF B   <>
                                        M$PRINT C$PNTF,ØINF03,<>,<>,<>
                                        .MEXIT
                                        .ENDC
                                        .IF B   <>
                                        M$PRINT C$PNTF,ØINF03,<>,<>,<>,<>
                                        .MEXIT
                                        .ENDC
                                        .IF B   <>
                                        M$PRINT C$PNTF,ØINF03,<>,<>,<>,<>,<>
                                        .MEXIT
                                        .ENDC
                                        .IF B   <>
                                        M$PRINT C$PNTF,ØINF03,<>,<>,<>,<>,<>,<>
                                        .MEXIT
                                        .ENDC
                                        .IF B   <>
                                        M$PRINT C$PNTF,ØINF03,<>,<>,<>,<>,<>,<>,<>
                                        .MEXIT
                                        .ENDC
                                        M$PRINT C$PNTF,ØINF03,<>,<>,<>,<>,<>,<>,<>,<>
8576 075552                             11$:    EXIT    TST             ;IF UNI-BUS EXIT TEST
                                        .MCALL  M$SVC,M$EXIT,M$EXSEG,M$EXTJ,M$GETTOP,M$CHECK,M$WORD,XFER
                 000041                 T$FLAG=F$END
     075552                             M$CHECK TST,T$TEMP,T$FLAG
                                        .IF IDN <TST>,<TST>
                 010061                 T$TEMP=T$$TEST
                 000040                 T$FLAG=I$TST
                                        .MEXIT
                                        .ENDC
                                        .IF IDN <SUB>,<TST>
                                        T$TEMP=T$$SUB
                                        T$FLAG=I$SUB
                                        .MEXIT
                                        .ENDC
                                        .IF IDN <SEG>,<TST>
                                        T$TEMP=T$$SEG
                                        T$FLAG=I$SEG
                                        .MEXIT
                                        .ENDC
                                        .IF IDN <INIT>,<TST>
                                        T$TEMP=T$$INIT
                                        T$FLAG=I$INIT
                                        .MEXIT
                                        .ENDC
                                        .IF IDN <CLN>,<TST>
                                        T$TEMP=T$$CLEAN
                                        T$FLAG=I$CLN
                                        .MEXIT
                                        .ENDC
                                        .IF IDN <SRV>,<TST>
```

```
                                T$TEMP=T$$SRV
                                T$FLAG=I$SRV
                                .MEXIT
                                .ENDC
                                .IF IDN <MSG>,<TST>
                                T$TEMP=T$$MSG
                                T$FLAG=F$JMP
                                .MEXIT
                                .ENDC
                                .IF IDN <RPT>,<TST>
                                T$TEMP=T$$RPT
                                T$FLAG=F$JMP
                                .MEXIT
                                .ENDC
                                .IF IDN <DU>,<TST>
                                T$TEMP=T$$DU
                                T$FLAG=F$JMP
                                .MEXIT
                                .ENDC
                                .IF IDN <AU>,<TST>
                                T$TEMP=T$$AU
                                T$FLAG=F$JMP
                                .MEXIT
                                .ENDC
                                .IF EQ T$FLAG F$JMP
                                M$WORD  J$JMP
                                M$EXTJ  \T$TEMP
                                .MEXIT
                                .ENDC
                                .IF EQ  T$FLAG-F$BGN
075552                          M$SVC   C$EXIT
                                .MCALL  M$GNINS,M$TSTLAB
075552                          M$TSTLAB
                                .MCALL  M$TLABEL,M$INCR
                                .IIF LT T$TSTMAC, .MEXIT
                                .RADIX  10
                                M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                .RADIX  8
                                M$INCR  T$TSTSEQ
075552                          M$GNINS <TRAP   C$EXIT>
                                .IF LT SVCINS
                                TRAP    C$EXIT
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        TRAP    C$EXIT
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
075552  104432                                                                  TRAP    C$EXIT
                                                .NLIST
                                .ENDC
                                .IF IDN <SEG>,<TST>
                                M$GETTOP T$SEK,T$SEGLEV,T$TEMP
```

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```
                                        M$EXSEG \T$TEMP
                                        .IFF
      075554                            M$EXIT  \T$TEMP
                                        .MCALL  M$GNINS
      075554                            M$GNINS <.WORD  L10061-.>
                                        .IF LT SVCINS
                                        .WORD   L10061-.
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                .WORD   L10061-.
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
      075554  001146                                                                         .WORD   L10061-.
                                                        .NLIST
                                        .ENDC
                                        .ENDC
                                        .MEXIT
                                        .ENDC
                                        .IF IDN <HRD>,<TST>
                                        M$GETTOP        T$NS,T$NESTLEV,T$TEMP
                                        .IF EQ  F$HARD-T$TEMP
                                        .IRP    N,<\T$$HARD>
                                        XFER    L'N
                                        .ENDM
                                        .MEXIT
                                        .ENDC
                                        .ENDC
                                        .IF IDN <SFT>,<TST>
                                        M$GETTOP        T$NS,T$NESTLEV,T$TEMP
                                        .IF EQ  F$SOFT-T$TEMP
                                        .IRP    N,<\T$$SOFT>
                                        XFER    L'N
                                        .ENDM
                                        .MEXIT
                                        .ENDC
                                        .ENDC
                                        .ERROR  ;ILL. "EXIT TST" STMT.
 8577 075556  005737  002324            5$:     TST     PNTF                    ;IS THE PNT FLAG SET
 8578 075562  001410                            BEQ     7$                      ;IF YES, PRINT THE TEST HEADER
 8579 075564                                    PRINTF  #TSHD28                 ;...
                                        .MCALL  M$PRINT
                                        .IF B   #TSHD28
                                        .ERROR  ;MISSING FORMAT
                                        .MEXIT
                                        .ENDC
                                        .IF B   <>
      075564                            M$PRINT C$PNTF,#TSHD28
                                        .MCALL  M$COUNT,M$PUT,M$GNINS,M$SVC
              000001                    T$ARGCNT=1
      075564                            M$COUNT T$ARGCNT,<>,<>,<>,<>,<>,<>,<>,<>
                                        .IF NB <>
                                        M$COUNT T$ARGCNT,<>,<>,<>,<>,<>,<>,<>,<>
```

```
                                        .ENDC
                                        .IF NB <>
                                        T$ARGCNT=T$ARGCNT+1
                                        .ENDC
                                        .IRP    N,<\T$ARGCNT>
                                        M$PUT   #N,#TSHD28,<>,<>,<>,<>,<>,<>,<>,<>
                                        .ENDM
      075564                            M$PUT   #1,#TSHD28,<>,<>,<>,<>,<>,<>,<>,<>
                                        .MCALL  M$PUT1
                                        .IF NB  <#TSHD28>
      075564                            M$PUT   <#TSHD28>,<>,<>,<>,<>,<>,<>,<>,<>
                                        .MCALL  M$PUT1
                                        .IF NB  <>
                                        M$PUT   <>,<>,<>,<>,<>,<>,<>,<>,<>
                                        .ENDC
                                        .IF NB  <#TSHD28>
      075564                            M$PUT1  #TSHD28
                                        .MCALL  M$GNINS
                                        .IF B
      075564                            M$GNINS <MOV    #TSHD28,-(SP)>
                                        .IF LT SVCINS
                                        MOV     #TSHD28,-(SP)
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                MOV     #TSHD28,-(SP)
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
      075564  012746  076222                                                  MOV     #TSHD28,-(SP)
                                                        .NLIST
                                        .ENDC
                                        .IFF
                                        .IF DIF B,<#TSHD28>
                                        .ERROR  ;ILL. ARG. "#TSHD28" ONLY "B" IS ALLOWED.
                                        .MEXIT
                                        .ENDC
                                        M$GNINS <CLR    -(SP)>
                                        M$GNINS <BISB   ,(SP)>
                                        .ENDC
                                        .ENDC
                                        .ENDC
                                        .IF NB  <#1>
      075570                            M$PUT1  #1
                                        .MCALL  M$GNINS
                                        .IF B
      075570                            M$GNINS <MOV    #1,-(SP)>
                                        .IF LT SVCINS
                                        MOV     #1,-(SP)
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                MOV     #1, (SP)
```

```
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
      075570  012746  000001                                                                   MOV     #1,-(SP)
                                                        .NLIST
                                        .ENDC
                                        .IFF
                                        .IF DIF B,<#1>
                                        .ERROR  ;ILL. ARG. "#1" ONLY "B" IS ALLOWED.
                                        .MEXIT
                                        .ENDC
                                        M$GNINS <CLR    -(SP)>
                                        M$GNINS <BISB   ,(SP)>
                                        .ENDC
                                        .ENDC
      075574                            M$GNINS <MOV    SP,R0>
                                        .IF LT SVCINS
                                        MOV     SP,R0
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                MOV     SP,R0
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
      075574  010600                                                                           MOV     SP,R0
                                                        .NLIST
                                        .ENDC
      075576                            M$SVC   C$PNTF
                                        .MCALL  M$GNINS,M$TSTLAB
      075576                            M$TSTLAB
                                        .MCALL  M$TLABEL,M$INCR
                                        .IIF LT T$TSTMAC, .MEXIT
                                        .RADIX  10
                                        M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                        .RADIX  8
                                        M$INCR  T$TSTSEQ
      075576                            M$GNINS <TRAP   C$PNTF>
                                        .IF LT SVCINS
                                        TRAP    C$PNTF
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                TRAP    C$PNTF
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
      075576  104417                                                                           TRAP    C$PNTF
                                                        .NLIST
```

```
                                        .ENDC
                                        .IRP    N,<\T$ARGCNT*2+2>
                                        M$GNINS <ADD    #N,SP>
                                        .ENDM
      075600                            M$GNINS <ADD    #4,SP>
                                        .IF LT SVCINS
                                        ADD     #4,SP
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                ADD     #4,SP
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
      075600  062706  000004                                                    ADD     #4,SP
                                                        .NLIST
                                        .ENDC
                                        .MEXIT
                                        .ENDC
                                        .IF B   <>
                                        M$PRINT C$PNTF,#TSHD28,<>
                                        .MEXIT
                                        .ENDC
                                        .IF B   <>
                                        M$PRINT C$PNTF,#TSHD28,<>,<>
                                        .MEXIT
                                        .ENDC
                                        .IF B   <>
                                        M$PRINT C$PNTF,#TSHD28,<>,<>,<>
                                        .MEXIT
                                        .ENDC
                                        .IF B   <>
                                        M$PRINT C$PNTF,#TSHD28,<>,<>,<>,<>
                                        .MEXIT
                                        .ENDC
                                        .IF B   <>
                                        M$PRINT C$PNTF,#TSHD28,<>,<>,<>,<>,<>
                                        .MEXIT
                                        .ENDC
                                        .IF B   <>
                                        M$PRINT C$PNTF,#TSHD28,<>,<>,<>,<>,<>,<>
                                        .MEXIT
                                        .ENDC
                                        .IF B   <>
                                        M$PRINT C$PNTF,#TSHD28,<>,<>,<>,<>,<>,<>,<>
                                        .MEXIT
                                        .ENDC
                                        M$PRINT C$PNTF,#TSHD28,<>,<>,<>,<>,<>,<>,<>,<>
  8580 075604                           7$:     PRINTF  #INF01                  ;PRINT MESSAGE FOR USER
                                        .MCALL  M$PRINT
                                        .IF B   #INF01
                                        .ERROR  ;MISSING FORMAT
                                        .MEXIT
                                        .ENDC
```

```
                                .IF B    <>
075604                          M$PRINT C$PNTF,#INF01
                                .MCALL  M$COUNT,M$PUT,M$GNINS,M$SVC
        000001                  T$ARGC  =1
075604                          M$COUNT T$ARGCNT,<>,<>,<>,<>,<>,<>,<>,<>
                                .IF NB <>
                                M$COUNT T$ARGCNT,<>,<>,<>,<>,<>,<>,<>,<>
                                .ENDC
                                .IF NB <>
                                T$ARGCNT=T$ARGCNT+1
                                .ENDC
                                .IRP    N,<\T$ARGCNT>
                                M$PUT   #N,#INF01,<>,<>,<>,<>,<>,<>,<>,<>
                                .ENDM
075604                          M$PUT   #1,#INF01,<>,<>,<>,<>,<>,<>,<>,<>
                                .MCALL  M$PUT1
                                .IF NB  <#INF01>
075604                          M$PUT   <#INF01>,<>,<>,<>,<>,<>,<>,<>,<>
                                .MCALL  M$PUT1
                                .IF NB  <>
                                M$PUT   <>,<>,<>,<>,<>,<>,<>,<>,<>
                                .ENDC
                                .IF NB  <#INF01>
075604                          M$PUT1  #INF01
                                .MCALL  M$GNINS
                                .IF B
075604                          M$GNINS <MOV    #INF01,-(SP)>
                                .IF LT SVCINS
                                MOV     #INF01,-(SP)
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        MOV     #INF01,-(SP)
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
075604  012746  076246                                                          MOV     #INF01,(SP)
                                                .NLIST
                                .ENDC
                                .IFF
                                .IF DIF  ,<#INF01>
                                .ERROR  ;ILL. ARG. "#INF01" ONLY "B" IS ALLOWED.
                                .MEXIT
                                .ENDC
                                M$GNINS <CLR    -(SP)>
                                M$GNINS <BISB   ,(SP)>
                                .ENDC
                                .ENDC
                                .ENDC
                                .IF NB  <#1>
075610                          M$PUT1  #1
                                .MCALL  M$GNINS
                                .IF B
075610                          M$GNINS <MOV    #1,-(SP)>
```

```
                                        .IF LT SVCINS
                                        MOV     Ø1,-(SP)
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                MOV     Ø1,-(SP)
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
       075610  012746  000001                                                                   MOV     Ø1,-(SP)
                                                        .NLIST
                                        .ENDC
                                        .IFF
                                        .IF DIF B,<Ø1>
                                        .ERROR  ;ILL. ARG. "Ø1" ONLY "B" IS ALLOWED.
                                        .MEXIT
                                        .ENDC
                                        M$GNINS <CLR    -(SP)>
                                        M$GNINS <BISB   ,(SP)>
                                        .ENDC
                                        .ENDC
       075614                           M$GNINS <MOV    SP,R0>
                                        .IF LT SVCINS
                                        MOV     SP,R0
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                MOV     SP,R0
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
       075614  010600                                                                           MOV     SP,R0
                                                        .NLIST
                                        .ENDC
       075616                           M$SVC   C$PNTF
                                        .MCALL  M$GNINS,M$TSTLAB
       075616                           M$TSTLAB
                                        .MCALL  M$TLABEL,M$INCR
                                        .IIF LT T$TSTMAC, .MEXIT
                                        .RADIX  10
                                        M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                        .RADIX  8
                                        M$INCR  T$TSTSEQ
       075616                           M$GNINS <TRAP   C$PNTF>
                                        .IF LT SVCINS
                                        TRAP    C$PNTF
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                TRAP    C$PNTF
```

```
                                                            .NLIST
                                              .MEXIT
                                              .ENDC
                                              .IF GT SVCINS
                                              .LIST
        075616  104417                                                                      TRAP    C$PNTF
                                                            .NLIST
                                              .ENDC
                                              .IRP    N,<\T$ARGCNT*2+2>
                                              M$GNINS <ADD     #N,SP>
                                              .ENDM
        075620                                M$GNINS <ADD     #4,SP>
                                              .IF LT SVCINS
                                              ADD     #4,SP
                                              .MEXIT
                                              .ENDC
                                              .IF EQ SVCINS
                                              .LIST
                                                      ADD     #4,SP
                                                            .NLIST
                                              .MEXIT
                                              .ENDC
                                              .IF GT SVCINS
                                              .LIST
        075620  062706  000004                                                              ADD     #4,SP
                                                            .NLIST
                                              .ENDC
                                              .MEXIT
                                              .ENDC
                                              .IF B   <>
                                              M$PRINT C$PNTF,#INF01,<>
                                              .MEXIT
                                              .ENDC
                                              .IF B   <>
                                              M$PRINT C$PNTF,#INF01,<>,<>
                                              .MEXIT
                                              .ENDC
                                              .IF B   <>
                                              M$PRINT C$PNTF,#INF01,<>,<>,<>
                                              .MEXIT
                                              .ENDC
                                              .IF B   <>
                                              M$PRINT C$PNTF,#INF01,<>,<>,<>,<>
                                              .MEXIT
                                              .ENDC
                                              .IF B   <>
                                              M$PRINT C$PNTF,#INF01,<>,<>,<>,<>,<>
                                              .MEXIT
                                              .ENDC
                                              .IF B   <>
                                              M$PRINT C$PNTF,#INF01,<>,<>,<>,<>,<>,<>
                                              .MEXIT
                                              .ENDC
                                              .IF B   <>
                                              M$PRINT C$PNTF,#INF01,<>,<>,<>,<>,<>,<>,<>
                                              .MEXIT
                                              .ENDC
```

```
                                        M$PRINT C$PNTF,#INFO1,<>,<>,<>,<>,<>,<>,<>,<>
  8581 075624                                   SETVEC  #4,#NXM,#340            ;SET UP NON-EXISTENT MEMORY TRAP VECTOR
                                        .MCALL  M$PUT,M$SVC,M$GNINS
       075624                           M$PUT   #3,#4,#NXM,#340
                                        .MCALL  M$PUT1
                                        .IF NB  <#4>
       075624                           M$PUT   <#4>,<#NXM>,<#340>,<>,<>,<>,<>,<>,<>
                                        .MCALL  M$PUT1
                                        .IF NB  <#NXM>
       075624                           M$PUT   <#NXM>,<#340>,<>,<>,<>,<>,<>,<>,<>
                                        .MCALL  M$PUT1
                                        .IF NB  <#340>
       075624                           M$PUT   <#340>,<>,<>,<>,<>,<>,<>,<>,<>
                                        .MCALL  M$PUT1
                                        .IF NB  <>
                                        M$PUT   <>,<>,<>,<>,<>,<>,<>,<>,<>
                                        .ENDC
                                        .IF NB  <#340>
       075624                           M$PUT1  #340
                                        .MCALL  M$GNINS
                                        .IF B
       075624                           M$GNINS <MOV    #340,-(SP)>
                                        .IF LT SVCINS
                                        MOV     #340,-(SP)
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                MOV     #340,-(SP)
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
       075624  012746  000340                                                                   MOV     #340,-(SP)
                                                        .NLIST
                                        .ENDC
                                        .IFF
                                        .IF DIF B,<#340>
                                        .ERROR  ;ILL. ARG. "#340" ONLY "B" IS ALLOWED.
                                        .MEXIT
                                        .ENDC
                                        M$GNINS <CLR    -(SP)>
                                        M$GNINS <BISB   ,(SP)>
                                        .ENDC
                                        .ENDC
                                        .ENDC
                                        .IF NB  <#NXM>
       075630                           M$PUT1  #NXM
                                        .MCALL  M$GNINS
                                        .IF B
       075630                           M$GNINS <MOV    #NXM,-(SP)>
                                        .IF LT SVCINS
                                        MOV     #NXM,-(SP)
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
```

M14


```
                                .LIST
                                        MOV     #NXM,-(SP)
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
        075630  012746  010122                                          MOV     #NXM,-(SP)
                                                .NLIST
                                .ENDC
                                .IFF
                                .IF DIF B,<#NXM>
                                .ERROR  ;ILL. ARG. "#NXM" ONLY "B" IS ALLOWED.
                                .MEXIT
                                .ENDC
                                M$GNINS <CLR    -(SP)>
                                M$GNINS <BISB   ,(SP)>
                                .ENDC
                                .ENDC
                                .ENDC
                                .IF NB  <#4>
        075634                  M$PUT1  #4
                                .MCALL  M$GNINS
                                .IF B
        075634                  M$GNINS <MOV    #4,-(SP)>
                                .IF LT SVCINS
                                MOV     #4,-(SP)
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        MOV     #4,-(SP)
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
        075634  012746  000004                                          MOV     #4, (SP)
                                                .NLIST
                                .ENDC
                                .IFF
                                .IF DIF B,<#4>
                                .ERROR  ;ILL. ARG. "#4" ONLY "B" IS ALLOWED.
                                .MEXIT
                                .ENDC
                                M$GNINS <CLR    -(SP)>
                                M$GNINS <BISB   ,(SP)>
                                .ENDC
                                .ENDC
                                .ENDC
                                .IF NB  <#3>
        075640                  M$PUT1  #3
                                .MCALL  M$GNINS
                                .IF B
        075640                  M$GNINS <MOV    #3,-(SP)>
                                .IF LT SVCINS
                                MOV     #3,-(SP)
```

```
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                MOV     #3,-(SP)
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
075640  012746  000003                                                          MOV     #3,-(SP)
                                                        .NLIST
                                        .ENDC
                                        .IFF
                                        .IF DIF B,<#3>
                                        .ERROR  ;ILL. ARG. "#3" ONLY "B" IS ALLOWED.
                                        .MEXIT
                                        .ENDC
                                        M$GNINS <CLR    -(SP)>
                                        M$GNINS <BISB   ,(SP)>
                                        .ENDC
                                        .ENDC
075644                                  M$SVC   C$SVEC
                                        .MCALL  M$GNINS,M$TSTLAB
075644                                  M$TSTLAB
                                        .MCALL  M$TLABEL,M$INCR
                                        .IIF LT T$TSTMAC, .MEXIT
                                        .RADIX  10
                                        M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                        .RADIX  8
                                        M$INCR  T$TSTSEQ
075644                                  M$GNINS <TRAP   C$SVEC>
                                        .IF LT SVCINS
                                        TRAP    C$SVEC
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                TRAP    C$SVEC
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
075644  104437                                                                  TRAP    C$SVEC
                                                        .NLIST
                                        .ENDC
075646                                  M$GNINS <ADD    #10,SP>
                                        .IF LT SVCINS
                                        ADD     #10,SP
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                ADD     #10,SP
                                                        .NLIST
                                        .MEXIT
```

```
                                .ENDC
                                .IF GT SVCINS
                                .LIST
     075646  062706  000010                                                       ADD     #10,SP
                                           .NLIST
                                .ENDC
8582 075652                             SETVEC  VECC1,#INTSC1,#PRI07    ;SET UP INTERRUPT VECTOR
                                .MCALL  M$PUT,M$SVC,M$GNINS
     075652                     M$PUT   #3,VECC1,#INTSC1,#PRI07
                                .MCALL  M$PUT1
                                .IF NB  <VECC1>
     075652                     M$PUT   <VECC1>,<#INTSC1>,<#PRI07>,<>,<>,<>,<>,<>,<>
                                .MCALL  M$PUT1
                                .IF NB  <#INTSC1>
     075652                     M$PUT   <#INTSC1>,<#PRI07>,<>,<>,<>,<>,<>,<>,<>
                                .MCALL  M$PUT1
                                .IF NB  <#PRI07>
     075652                     M$PUT   <#PRI07>,<>,<>,<>,<>,<>,<>,<>,<>
                                .MCALL  M$PUT1
                                .IF NB  <>
                                M$PUT   <>,<>,<>,<>,<>,<>,<>,<>,<>
                                .ENDC
                                .IF NB  <#PRI07>
     075652                     M$PUT1  #PRI07
                                .MCALL  M$GNINS
                                .IF B
     075652                     M$GNINS <MOV    #PRI07,-(SP)>
                                .IF LT SVCINS
                                MOV     #PRI07,-(SP)
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        MOV     #PRI07,-(SP)
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
     075652  012746  000340                                                       MOV     #PRI07,-(SP)
                                           .NLIST
                                .ENDC
                                .IFF
                                .IF DIF B,<#PRI07>
                                .ERROR  ;ILL. ARG. "#PRI07" ONLY "B" IS ALLOWED.
                                .MEXIT
                                .ENDC
                                M$GNINS <CLR    -(SP)>
                                M$GNINS <BISB   ,(SP)>
                                .ENDC
                                .ENDC
                                .ENDC
                                .IF NB  <#INTSC1>
     075656                     M$PUT1  #INTSC1
                                .MCALL  M$GNINS
                                .IF B
     075656                     M$GNINS <MOV    #INTSC1,-(SP)>
```

C15

```
                                        .IF LT SVCINS
                                        MOV     #INTSC1,-(SP)
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                MOV     #INTSC1,-(SP)
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
      075656  012746  010132                                                    MOV     #INTSC1,-(SP)
                                                        .NLIST
                                        .ENDC
                                        .IFF
                                        .IF DIF B,<#INTSC1>
                                        .ERROR  ;ILL. ARG. "#INTSC1" ONLY "B" IS ALLOWED.
                                        .MEXIT
                                        .ENDC
                                        M$GNINS <CLR    -(SP)>
                                        M$GNINS <BISB   ,(SP)>
                                        .ENDC
                                        .ENDC
                                        .ENDC
                                        .IF NB  <VECC1>
      075662                            M$PUT1  VECC1
                                        .MCALL  M$GNINS
                                        .IF B
      075662                            M$GNINS <MOV    VECC1,-(SP)>
                                        .IF LT SVCINS
                                        MOV     VECC1,-(SP)
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                MOV     VECC1,-(SP)
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
      075662  013746  002244                                                    MOV     VECC1,-(SP)
                                                        .NLIST
                                        .ENDC
                                        .IFF
                                        .IF DIF B,<VECC1>
                                        .ERROR  ;ILL. ARG. "VECC1" ONLY "B" IS ALLOWED.
                                        .MEXIT
                                        .ENDC
                                        M$GNINS <CLR    -(SP)>
                                        M$GNINS <BISB   ,(SP)>
                                        .ENDC
                                        .ENDC
                                        .ENDC
                                        .IF NB  <#3>
      075666                            M$PUT1  #3
```

D15


```
                                        .MCALL  M$GNINS
                                        .IF B
      075666                            M$GNINS <MOV    #3,-(SP)>
                                        .IF LT SVCINS
                                        MOV     #3,-(SP)
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                MOV     #3,-(SP)
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
      075666  012746  000003                                                            MOV     #3,-(SP)
                                                        .NLIST
                                        .ENDC
                                        .IFF
                                        .IF DIF B,<#3>
                                        .ERROR  ;ILL. ARG. "#3" ONLY "B" IS ALLOWED.
                                        .MEXIT
                                        .ENDC
                                        M$GNINS <CLR    -(SP)>
                                        M$GNINS <BISB   ,(SP)>
                                        .ENDC
                                        .ENDC
      075672                            M$SVC   C$SVEC
                                        .MCALL  M$GNINS,M$TSTLAB
      075672                            M$TSTLAB
                                        .MCALL  M$TLABEL,M$INCR
                                        .IIF LT T$TSTMAC, .MEXIT
                                        .RADIX  10
                                        M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                        .RADIX  8
                                        M$INCR  T$TSTSEQ
      075672                            M$GNINS <TRAP   C$SVEC>
                                        .IF LT SVCINS
                                        TRAP    C$SVEC
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                TRAP    C$SVEC
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
      075672  104437                                                                    TRAP    C$SVEC
                                                        .NLIST
                                        .ENDC
      075674                            M$GNINS <ADD    #10,SP>
                                        .IF LT SVCINS
                                        ADD     #10,SP
                                        .MEXIT
                                        .ENDC
```

```
                                        .IF EQ SVCINS
                                        .LIST
                                                ADD     #10,SP
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
     075674  062706  000010                                                                     ADD     #10,SP
                                                        .NLIST
                                        .ENDC
8583 075700  004737  010524                     JSR     PC,BGIN1                ;SET UP PARAMETER
8584 075704  112777  000212  104356             MOVB    #212,@ICRHX             ;--SELECT CHANNEL 1 AS TALKER------
8585 075712  013701  002314                     MOV     DPA2,R1                 ;CREATE MLA2
8586 075716  062701  000040                     ADD     #40,R1                  ;...
8587 075722  010137  002412                     MOV     R1,MLA2                 ;STORE MLA2
8588 075726  113777  002412  104342             MOVB    MLA2,@IDRHX             ;----LOAD MLA2 INTO DOR 1------------
8589 075734  004737  011050                     JSR     PC,LOOP                 ;WAIT A LITTLE
8590 075740  000240                 ITAC28:     NOP
8591 075742  005037  002370                     CLR     ANS                     ;CLEAR ANSWER LOCATION
8592 075746                                     GMANIL  TRIMSG,ANS,-1,NO        ;ASK ,READY FOR TRIGGER
                                        .MCALL  M$SVC,M$GENBR,M$WORD,M$GNLS,M$INCR,GPRML
     075746                             M$SVC   C$GMAN
                                        .MCALL  M$GNINS,M$TSTLAB
     075746                             M$TSTLAB
                                        .MCALL  M$TLABEL,M$INCR
                                        .IIF LT T$TSTMAC, .MEXIT
                                        .RADIX  10
                                        M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                        .RADIX  8
                                        M$INCR  T$TSTSEQ
     075746                             M$GNINS <TRAP   C$GMAN>
                                        .IF LT SVCINS
                                        TRAP    C$GMAN
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                TRAP    C$GMAN
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
     075746  104443                                                                             TRAP    C$GMAN
                                                        .NLIST
                                        .ENDC
     075750                             M$GENBR BR,\S$LSYM,$
                                        .MCALL  M$GNINS
     075750                             M$GNINS <BR     10000$>
                                        .IF LT SVCINS
                                        BR      10000$
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                BR      10000$
```

```
                                        .NLIST
                              .MEXIT
                              .ENDC
                              .IF GT SVCINS
                              .LIST
  075750  000404                                                          BR      10000$
                                        .NLIST
                              .ENDC
  075752                      M$WORD  ANS
                              .MCALL  M$GNINS
                              .IRP    N,<ANS>
                              M$GNINS <.WORD  N>
                              .ENDM
  075752                      M$GNINS <.WORD  ANS>
                              .IF LT SVCINS
                              .WORD   ANS
                              .MEXIT
                              .ENDC
                              .IF EQ SVCINS
                              .LIST
                                   .WORD   ANS
                                        .NLIST
                              .MEXIT
                              .ENDC
                              .IF GT SVCINS
                              .LIST
  075752  002370                                                          .WORD   ANS
                                        .NLIST
                              .ENDC
  075754                      GPRML   TRIMSG,0,-1,NO
                              .MCALL  M$RADIX,M$DEFAULT,M$WORD,M$CNTOP
          000000              T$TEMP=0&1
                              .IF NE  T$TEMP & 1
                              .ERROR  ;ODD OFFSET
                              .ENDC
                              .IF LT  G$OFSIZE-0
                              .ERROR  ;OFFSET TOO BIG
                              .ENDC
          000000              T$CODE=G$PRML + <0 * G$OFFSET>
  075754                      M$RADIX L,T$TEMP
                              .IF IDN B,L
                              T$TEMP=G$RADB
                              .MEXIT
                              .ENDC
                              .IF IDN O,L
                              T$TEMP=G$RADO
                              .MEXIT
                              .ENDC
                              .IF IDN D,L
                              T$TEMP=G$RADD
                              .MEXIT
                              .ENDC
                              .IF IDN L,L
          000120              T$TEMP=G$RADL
                              .MEXIT
                              .ENDC
                              .IF IDN A,L
```

```
                                T$TEMP=G$RADA
                                .MEXIT
                                .ENDC
                                T$TEMP=-1
                                .ERROR  ;ILL. RADIX "L"
                000120          T$CODE=T$CODE ! T$TEMP
        075754                  M$DEFAULT       NO,T$TEMP
                                .IF IDN YES,NO
                                T$TEMP=G$YES
                                .MEXIT
                                .ENDC
                                .IF IDN NO,NO
                000000          T$TEMP=G$NO
                                .MEXIT
                                .ENDC
                                T$TEMP=-1
                                .ERROR  ;DEFAULT "NO" MUST BE "YES" OR "NO"
                000120          T$CODE=T$CODE ! T$TEMP
        075754                  M$CNTOP <>,<T$CODE>
                                .IF NB
                                .IF NE  I$SFT - F$BGN
                                .ERROR  ; "COUNT" OPTION VALID ONLY IN S.W. QUES.
                                .MEXIT
                                .ENDC
                                T$CODE=T$CODE ! G$CNTOP
                                .ENDC
        075754                  M$WORD  <T$CODE,TRIMSG,-1>
                                .MCALL  M$GNINS
                                .IRP    N,<T$CODE,TRIMSG,-1>
                                M$GNINS <.WORD  N>
                                .ENDM
        075754                  M$GNINS <.WORD  T$CODE>
                                .IF LT SVCINS
                                .WORD   T$CODE
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        .WORD   T$CODE
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
        075754  000120                                                          .WORD   T$CODE
                                                .NLIST
                                .ENDC
        075756                  M$GNINS <.WORD  TRIMSG>
                                .IF LT SVCINS
                                .WORD   TRIMSG
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        .WORD   TRIMSG
                                                .NLIST
                                .MEXIT
```

```
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
075756  076565                                                                                  .WORD   TRIMSG
                                                     .NLIST
                                        .ENDC
075760                                  M$GNINS <.WORD  -1>
                                        .IF LT SVCINS
                                        .WORD   -1
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                              .WORD    -1
                                                     .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
075760  177777                                                                                  .WORD   -1
                                                     .NLIST
                                        .ENDC
                                        .IF NB
                                        M$WORD  </2>
                                        .ENDC
075762                                  M$GNLS
                                        .MCALL  M$GEN
                                        .IF NB
                                        M$GEN   \,$,SVCTAG
                                        .IFF
075762                                  M$GEN   \S$LSYM,$,SVCTAG
                                        .IF LE  SVCTAG
                                        .IIF EQ SVCTAG,.LIST
                                        10000$:
                                        .IIF EQ SVCTAG,.NLIST
                                        .MEXIT
                                        .ENDC
                                        .LIST
075762                                                                                    10000$:
                                              .NLIST
                                        .ENDC
075762                                  M$INCR  S$LSYM
        010001                          S$LSYM=S$LSYM+1
075762  005737  002370                        TST      ANS                  ;TEST ANSWER
075766  001764                                BEQ      ITAC28               ;IF ANSWER WAS YES, DO THE TEST
075770  012737  000020  002350                MOV      #20,MASK             ;SET UP MASK FOR LOADING BA BIT IN CSR
075776  005037  002376          NEXTBA:       CLR      INTFC1               ;CLEAR INTERRUPT FLAG
076002  000240                                NOP
076004  005077  104272                        CLR      @BARX                ;LOAD BAR READ LOCATION
076010  012737  000001  002402                MOV      #1,RSAVE             ;GET BYTE COUNT
076016  005437  002402                        NEG      RSAVE                ;BILD 2'COMPL FOR BCR
076022  013777  002402  104254                MOV      RSAVE,@BCRX          ;LOAD READ ADDRESS
076030  013777  002350  104242                MOV      MASK,@CSRX           ;LOAD EXTENDED ADDRESS BIT INTO CSR
076036  052777  000107  104234                BIS      #107,@CSRX           ;SET DMA ENB, INT ENB, DMA DIR INTO CSR
076044                                        SETPRI   #PRI00               ;ALLOW INTERRUPT
                                        .MCALL  M$LDR0,M$SVC
076044                                  M$LDR0  #PRI00,SETPRI
```

```
                                        .MCALL  M$GNINS
                                        .IF NB #PRI00
                                        .IF DIF R0,#PRI00
      076044                            M$GNINS <MOV     #PRI00,R0>
                                        .IF LT SVCINS
                                        MOV      #PRI00,R0
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                MOV      #PRI00,R0
                                                         .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
      076044  012700  000000                                                              MOV      #PRI00,R0
                                                         .NLIST
                                        .ENDC
                                        .ENDC
                                        .IFF
                                        .ERROR  ;MISSING ARG. ON "SETPRI"
                                        .ENDC
      076050                            M$SVC   C$SPRI
                                        .MCALL  M$GNINS,M$TSTLAB
      076050                            M$TSTLAB
                                        .MCALL  M$TLABEL,M$INCR
                                        .IIF LT T$TSTMAC, .MEXIT
                                        .RADIX  10
                                        M$TLABEL         \T$TESTNUN,\T$TSTSEQ
                                        .RADIX  8
                                        M$INCR  T$TSTSEQ
      076050                            M$GNINS <TRAP    C$SPRI>
                                        .IF LT SVCINS
                                        TRAP     C$SPRI
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                TRAP     C$SPRI
                                                         .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
      076050  104441                                                                      TRAP     C$SPRI
                                                         .NLIST
                                        .ENDC
 8605 076052  112777  000013  104210            MOVB     #13,@ICRHX             ;--LOAD GTS INTO ACR 1, START DMA ----
 8606 076060  012701  077777                    MOV      #77777,R1              ;LOAD LOOP COUNTER
 8607 076064  005737  002376            13$:    TST      INTFC1                 ;HAS INTERRUPT OCCURRED
 8608 076070  001013                            BNE      10$                    ;BRANCH IF YES
 8609 076072  005301                            DEC      R1                     ;DECREMENT COUNTER
 8610 076074  001373                            BNE      13$                    ;TEST AGAIN
 8611 076076                                    ERRSOFT 2801,E271
                                        .MCALL  M$ERRINS
      076076                            M$ERRINS         2801,E271,,C$ERSOFT
```

```
                                .MCALL  M$GNINS,M$WORD,M$TSTLAB
076076                          M$SVC   C$ERSOFT
                                .MCALL  M$GNINS,M$TSTLAB
076076                          M$TSTLAB
                                .MCALL  M$TLABEL,M$INCR
                                .IIF LT T$TSTMAC, .MEXIT
                                .RADIX  10
                                M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                .RADIX  8
                                M$INCR  T$TSTSEQ
076076                          M$GNINS <TRAP   C$ERSOFT>
                                .IF LT SVCINS
                                TRAP    C$ERSOFT
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        TRAP    C$ERSOFT
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
076076  104457                                                          TRAP    C$ERSOFT
                                                .NLIST
                                .ENDC
        000012                  .RADIX  10
                                .IF NB  2801
        005361                  T$ERRNUM=2801
                                .IFF
                                .ERROR  ;MISSING ERROR-NR
                                .ENDC
076100                          M$WORD  \T$ERRNUM
                                .MCALL  M$GNINS
                                .IRP    N,<2801>
                                M$GNINS <.WORD  N>
                                .ENDM
076100                          M$GNINS <.WORD  2801>
                                .IF LT SVCINS
                                .WORD   2801
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        .WORD   2801
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
076100  005361                                                          .WORD   2801
                                                .NLIST
                                .ENDC
        000010                  .RADIX  8
                                .IF NB E271
076102                          M$WORD  E271
                                .MCALL  M$GNINS
```

K15


```
                                    .IRP    N,<E271>
                                    M$GNINS <.WORD  N>
                                    .ENDM
      076102                        M$GNINS <.WORD  E271>
                                    .IF LT SVCINS
                                    .WORD   E271
                                    .MEXIT
                                    .ENDC
                                    .IF EQ SVCINS
                                    .LIST
                                            .WORD   E271
                                                    .NLIST
                                    .MEXIT
                                    .ENDC
                                    .IF GT SVCINS
                                    .LIST
      076102  076636                                                                    .WORD   E271
                                                    .NLIST
                                    .ENDC
                                    .IFF
                                    M$WORD  0
                                    .ENDC
                                    .IF NB
                                    M$WORD
                                    .IFF
      076104                        M$WORD  0
                                    .MCALL  M$GNINS
                                    .IRP    N,<0>
                                    M$GNINS <.WORD  N>
                                    .ENDM
      076104                        M$GNINS <.WORD  0>
                                    .IF LT SVCINS
                                    .WORD   0
                                    .MEXIT
                                    .ENDC
                                    .IF EQ SVCINS
                                    .LIST
                                            .WORD   0
                                                    .NLIST
                                    .MEXIT
                                    .ENDC
                                    .IF GT SVCINS
                                    .LIST
      076104  000000                                                                    .WORD   0
                                                    .NLIST
                                    .ENDC
                                    .ENDC
 8612 076106                                SETPRI  #PRI07              ;DISABLE INTERRUPT
                                    .MCALL  M$LDR0,M$SVC
      076106                        M$LDR0  #PRI07,SETPRI
                                    .MCALL  M$GNINS
                                    .IF NB #PRI07
                                    .IF DIF R0,#PRI07
      076106                        M$GNINS <MOV    #PRI07,R0>
                                    .IF LT SVCINS
                                    MOV     #PRI07,R0
                                    .MEXIT
```

```
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                MOV     #PRI07,R0
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
      076106  012700  000340                                                        MOV     #PRI07,R0
                                                        .NLIST
                                        .ENDC
                                        .ENDC
                                        .IFF
                                        .ERROR  ;MISSING ARG. ON "SETPRI"
                                        .ENDC
      076112                            M$SVC   C$SPRI
                                        .MCALL  M$GNINS,M$TSTLAB
      076112                            M$TSTLAB
                                        .MCALL  M$TLABEL,M$INCR
                                        .IIF LT T$TSTMAC, .MEXIT
                                        .RADIX  10
                                        M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                        .RADIX  8
                                        M$INCR  T$TSTSEQ
      076112                            M$GNINS <T?AP   C$SPRI>
                                        .IF LT SVCINS
                                        TRAP    C$SPRI
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                TRAP    C$SPRI
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
      076112  104441                                                                TRAP    C$SPRI
                                                        .NLIST
                                        .ENDC
 8613 076114                                    EXIT    TST
                                        .MCALL  M$SVC,M$EXIT,M$EXSEG,M$EXTJ,M$GETTOP,M$CHECK,M$WORD,XFER
              000041                    T$FLAG=F$END
      076114                            M$CHECK TST,T$TEMP,T$FLAG
                                        .IF IDN <TST>,<TST>
              010061                    T$TEMP=T$$TEST
              000040                    T$FLAG=I$TST
                                        .MEXIT
                                        .ENDC
                                        .IF IDN <SUB>,<TST>
                                        T$TEMP=T$$SUB
                                        T$FLAG=I$SUB
                                        .MEXIT
                                        .ENDC
                                        .IF IDN <SEG>,<TST>
                                        T$TEMP=T$$SEG
```

```
                              T$FLAG=I$SEG
                              .MEXIT
                              .ENDC
                              .IF IDN <INIT>,<TST>
                              T$TEMP=T$$INIT
                              T$FLAG=I$INIT
                              .MEXIT
                              .ENDC
                              .IF IDN <CLN>,<TST>
                              T$TEMP=T$$CLEAN
                              T$FLAG=I$CLN
                              .MEXIT
                              .ENDC
                              .IF IDN <SRV>,<TST>
                              T$TEMP=T$$SRV
                              T$FLAG=I$SRV
                              .MEXIT
                              .ENDC
                              .IF IDN <MSG>,<TST>
                              T$TEMP=T$$MSG
                              T$FLAG=F$JMP
                              .MEXIT
                              .ENDC
                              .IF IDN <RPT>,<TST>
                              T$TEMP=T$$RPT
                              T$FLAG=F$JMP
                              .MEXIT
                              .ENDC
                              .IF IDN <DU>,<TST>
                              T$TEMP=T$$DU
                              T$FLAG=F$JMP
                              .MEXIT
                              .ENDC
                              .IF IDN <AU>,<TST>
                              T$TEMP=T$$AU
                              T$FLAG=F$JMP
                              .MEXIT
                              .ENDC
                              .IF EQ T$FLAG-F$JMP
                              M$WORD  J$JMP
                              M$EXTJ  \T$TEMP
                              .MEXIT
                              .ENDC
                              .IF EQ  T$FLAG F$BGN
      076114                  M$SVC   C$EXIT
                              .MCALL  M$GNINS,M$TSTLAB
      076114                  M$TST AB
                              .MCALL  M$TLABEL,M$INCR
                              .IIF LT T$TSTMAC, .MEXIT
                              .RADIX  10
                              M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                              .RADIX  8
                              M$INCR  T$TSTSEQ
      076114                  M$GNINS <TRAP   C$EXIT>
                              .IF LT SVCINS
                              TRAP    C$EXIT
                              .MEXIT
```

```
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        TRAP    C$EXIT
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
     076114  104432                                                                     TRAP    C$EXIT
                                                .NLIST
                                .ENDC
                                .IF IDN <SEG>,<TST>
                                M$GETTOP T$SEK,T$SEGLEV,T$TEMP
                                M$EXSEG \T$TEMP
                                .IFF
     076116                     M$EXIT  \T$TEMP
                                .MCALL  M$GNINS
     076116                     M$GNINS <.WORD  L10061-.>
                                .IF LT SVCINS
                                .WORD   L10061-.
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        .WORD   L10061-.
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
     076116  000604                                                                     .WORD   L10061-.
                                                .NLIST
                                .ENDC
                                .ENDC
                                .MEXIT
                                .ENDC
                                .IF IDN <HRD>,<TST>
                                M$GETTOP        T$NS,T$NESTLEV,T$TEMP
                                .IF EQ  F$HARD-T$TEMP
                                .IRP    N,<\T$$HARD>
                                XFER    L'N
                                .ENDM
                                .MEXIT
                                .ENDC
                                .ENDC
                                .IF IDN <SFT>,<TST>
                                M$GETTOP        T$NS,T$NESTLEV,T$TEMP
                                .IF EQ  F$SOFT T$TEMP
                                .IRP    N,<\T$$SOFT>
                                XFER    L'N
                                .ENDM
                                .MEXIT
                                .ENDC
                                .ENDC
                                .ERROR  ;ILL. "EXIT TST" STMT.
   8614 076120                  10$:    SETPRI  #PRI07                  ;DISABLE INTERRUPT
```

B16

TEST 28: ADDITIONAL STANDBY TEST

```
                                        .MCALL  M$LDRO,M$SVC
      076120                            M$LDRO  #PRI07,SETPRI
                                        .MCALL  M$GNINS
                                        .IF NB #PRI07
                                        .IF DIF R0,#PRI07
      076120                            M$GNINS <MOV    #PRI07,R0>
                                        .IF LT SVCINS
                                        MOV     #PRI07,R0
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                MOV     #PRI07,R0
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
      076120  012700  000340                                                            MOV     #PRI07,R0
                                                        .NLIST
                                        .ENDC
                                        .ENDC
                                        .IFF
                                        .ERROR  ;MISSING ARG. ON "SETPRI"
                                        .ENDC
      076124                            M$SVC   C$SPRI
                                        .MCALL  M$GNINS,M$TSTLAB
      076124                            M$TSTLAB
                                        .MCALL  M$TLABEL,M$INCR
                                        .IIF LT T$TSTMAC, .MEXIT
                                        .RADIX  10
                                        M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                                        .RADIX  8
                                        M$INCR  T$TSTSEQ
      076124                            M$GNINS <TRAP   C$SPRI>
                                        .IF LT SVCINS
                                        TRAP    C$SPRI
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                TRAP    C$SPRI
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
      076124  104441                                                                    TRAP    C$SPRI
                                                        .NLIST
                                        .ENDC
 8615 076126  022737  001000  002350            CMP     #1000,MASK              ;IS BA 19 SET
 8616 076134  003411                            BLE     20$                     ;BRANCH IF YES
 8617 076136  006337  002350                    ASL     MASK                    ;
 8618 076142  023727  002350  000100            CMP     MASK,#100               ;WAS BA 17 SET
 8619 076150  001312                            BNE     NEXTBA                  ;BRANCH IF NO
 8620 076152  012737  000400  002350            MOV     #400,MASK               ;LOAD BA 19 INTO MASK
 8621 076160  006337  002350            20$:    ASL     MASK                    ;GENERATE NEXT EXTENDED ADDRESS BIT
```

```
 8622 076164  000240                         NOP
 8623 076166  000240                         NOP
 8624 076170  000240                         NOP
 8625 076172  112777  000014  104070         MOVB    #14,@ICRHX          ;---LOAD TCA INTO ACR 1----------
 8626 076200  017737  104066  002502         MOV     @IDRX,BAD           ;READ DIR FOR CLEAR THE B0 BIT
 8627 076206  022737  020000  002350         CMP     #20000,MASK         ;ALL EXTENDED ADDRESS BIT SHIFTED
 8628 076214  001270                         BNE     NEXTBA              ;BRANCH IF NO
 8629 076216                                 EXIT    TST                 ;
                                     .MCALL  M$SVC,M$EXIT,M$EXSEG,M$EXTJ,M$GETTOP,M$CHECK,M$WORD,XFER
              000041                 T$FLAG=F$END
        076216                       M$CHECK TST,T$TEMP,T$FLAG
                                     .IF IDN <TST>,<TST>
              010061                 T$TEMP=T$$TEST
              000040                 T$FLAG=I$TST
                                     .MEXIT
                                     .ENDC
                                     .IF IDN <SUB>,<TST>
                                     T$TEMP=T$$SUB
                                     T$FLAG=I$SUB
                                     .MEXIT
                                     .ENDC
                                     .IF IDN <SEG>,<TST>
                                     T$TEMP=T$$SEG
                                     T$FLAG=I$SEG
                                     .MEXIT
                                     .ENDC
                                     .IF IDN <INIT>,<TST>
                                     T$TEMP=T$$INIT
                                     T$FLAG=I$INIT
                                     .MEXIT
                                     .ENDC
                                     .IF IDN <CLN>,<TST>
                                     T$TEMP=T$$CLEAN
                                     T$FLAG=I$CLN
                                     .MEXIT
                                     .ENDC
                                     .IF IDN <SRV>,<TST>
                                     T$TEMP=T$$SRV
                                     T$FLAG=I$SRV
                                     .MEXIT
                                     .ENDC
                                     .IF IDN <MSG>,<TST>
                                     T$TEMP=T$$MSG
                                     T$FLAG=F$JMP
                                     .MEXIT
                                     .ENDC
                                     .IF IDN <RPT>,<TST>
                                     T$TEMP=T$$RPT
                                     T$FLAG=F$JMP
                                     .MEXIT
                                     .ENDC
                                     .IF IDN <DU>,<TST>
                                     T$TEMP=T$$DU
                                     T$FLAG=F$JMP
                                     .MEXIT
                                     .ENDC
                                     .IF IDN <AU>,<TST>
```

D16

TEST 28: ADDITIONAL STANDBY TEST

```
                              T$TEMP=T$$AU
                              T$FLAG=F$JMP
                              .MEXIT
                              .ENDC
                              .IF EQ T$FLAG-F$JMP
                              M$WORD  J$JMP
                              M$EXTJ  \T$TEMP
                              .MEXIT
                              .ENDC
                              .IF EQ  T$FLAG-F$BGN
076216                        M$SVC   C$EXIT
                              .MCALL  M$GNINS,M$TSTLAB
076216                        M$TSTLAB
                              .MCALL  M$TLABEL,M$INCR
                              .IIF LT T$TSTMAC, .MEXIT
                              .RADIX  10
                              M$TLABEL        \T$TESTNUN,\T$TSTSEQ
                              .RADIX  8
                              M$INCR  T$TSTSEQ
076216                        M$GNINS <TRAP   C$EXIT>
                              .IF LT SVCINS
                              TRAP    C$EXIT
                              .MEXIT
                              .ENDC
                              .IF EQ SVCINS
                              .LIST
                                      TRAP    C$EXIT
                                              .NLIST
                              .MEXIT
                              .ENDC
                              .IF GT SVCINS
                              .LIST
076216  104432                                                                    TRAP    C$EXIT
                                              .NLIST
                              .ENDC
                              .IF IDN <SEG>,<TST>
                              M$GETTOP T$SEK,T$SEGLEV,T$TEMP
                              M$EXSEG \T$TEMP
                              .IFF
076220                        M$EXIT  \T$TEMP
                              .MCALL  M$GNINS
076220                        M$GNINS <.WORD  L10061 .>
                              .IF LT SVCINS
                              .WORD   L10061-.
                              .MEXIT
                              .ENDC
                              .IF EQ SVCINS
                              .LIST
                                      .WORD   L10061-.
                                              .NLIST
                              .MEXIT
                              .ENDC
                              .IF GT SVCINS
                              .LIST
076220  000502                                                                    .WORD   L10061-.
                                              .NLIST
                              .ENDC
```

```
                                                  .ENDC
                                                  .MEXIT
                                                  .ENDC
                                                  .IF IDN <HRD>,<TST>
                                                  M$GETTOP        T$NS,T$NESTLEV,T$TEMP
                                                  .IF EQ  F$HARD-T$TEMP
                                                  .IRP    N,<\T$$HARD>
                                                  XFER    L'N
                                                  .ENDM
                                                  .MEXIT
                                                  .ENDC
                                                  .ENDC
                                                  .IF IDN <SFT>,<TST>
                                                  M$GETTOP        T$NS,T$NESTLEV,T$TEMP
                                                  .IF EQ  F$SOFT-T$TEMP
                                                  .IRP    N,<\T$$SOFT>
                                                  XFER    L'N
                                                  .ENDM
                                                  .MEXIT
                                                  .ENDC
                                                  .ENDC
                                                  .ERROR  ;ILL. "EXIT TST" STMT.
8630
8631                                                      .NLIST  BEX
8632 076222     045     123     062     TSHD28:   .ASCIZ  /*S2*ASTANDBY TEST*N/
8633 076246     045     116     045     INF01:    .ASCII  /*N*ACONNECT YOUR LOCIG ANALYZER TO BDAL 16-21*N/
8634 076325     045     101     101               .ASCIZ  /*AAND THE TRIGGER TO ADREN L (E9,PIN4)*N/
8635 076376     045     123     062     INF02:    .ASCII  /*S2*AFOR SELECT THIS TEST PLEASE ANSWER*N/
8636 076447     045     123     071               .ASCIZ  /*S9*ATHE SOFTWARE QUESTION*N/
8637 076504     045     123     062     INF03:    .ASCIZ  /*S2*ATHIS TEST IS ONLY FOR THE Q-BUS INTERFACE*N/
8638 076565     111     123     040     TRIMSG:   .ASCIZ  /IS THE LOGIC ANALYZER READY FOR TRIGGER?/
8639 076636     116     117     040     E271:     .ASCIZ  /NO INTERRRUPT WHEN EXPECTED, RUN TEST 0-26 AT FIRST/
8640                                                      .LIST   BEX
8641                                                      .EVEN
8642 076722                                               ENDTST
                                                  .MCALL  M$POP,M$GNTAG,M$SVC,M$ENDERR
                                                  .IF EQ  F$BGN-I$TST
                000041                            I$TST=F$END
                                                  .IFF
                                                  .ERROR  ;MISSING "BGNTST"
                                                  .MEXIT
                                                  .ENDC
     076722                                       M$POP   T$NS,T$NESTLEV,T$TEMP
                                                  .MCALL  M$GETS,M$DECR
                                                  .IF LT  T$NESTLEV
                                                  .ERROR  T$NESTLEV       ; MACRO T$NS UNDERFLOW
                                                  .MEXIT
                                                  .ENDC
     076722                                       M$GETS  T$NS,\T$NESTLEV,T$TEMP
                000001                            T$TEMP=T$NS1
     076722                                       M$DECR  T$NESTLEV
                000000                            T$NESTLEV=T$NESTLEV-1
                                                  .IF EQ F$TEST-T$TEMP
     076722                                       M$GNTAG L,T$$TEST
                                                  .MCALL  M$GEN
     076722                                       M$GEN   L,\T$$TEST,SVCTAG
                                                  .IF LE  SVCTAG
```

```
                              .IIF EQ SVCTAG,..LIST
                              L10061:
                              .IIF EQ SVCTAG,..NLIST
                              .MEXIT
                              .ENDC
                              .LIST
     076722                                                              L10061:
                                       .NLIST
             010000           S$LSYM=T$LSYM
     076722                   M$SVC    C$ETST
                              .MCALL   M$GNINS,M$TSTLAB
     076722                   M$TSTLAB
                              .MCALL   M$TLABEL,M$INCR
                              .IIF LT T$TSTMAC, .MEXIT
                              .RADIX  10
                              M$TLABEL         \T$TESTNUN,\T$TSTSEQ
                              .RADIX  8
                              M$INCR   T$TSTSEQ
     076722                   M$GNINS <TRAP    C$ETST>
                              .IF LT SVCINS
                              TRAP     C$ETST
                              .MEXIT
                              .ENDC
                              .IF EQ SVCINS
                              .LIST
                                       TRAP     C$ETST
                                                .NLIST
                              .MEXIT
                              .ENDC
                              .IF GT SVCINS
                              .LIST
     076722  104401                                                          TRAP     C$ETST
                                                .NLIST
                              .ENDC
             000041           I$TST=F$END
                              .IFF
                              M$ENDERR         ENDTST,T$TEMP
                              .ENDC
8643
8644 076724                            ENDMOD
                              .MCALL   M$POP,M$ENDERR
                              .IF EQ   F$BGN I$MOD
             000041           I$MOD=F$END
                              .IFF
                              .ERROR   ; MISSING "BGNMOD"
                              .MEXIT
                              .ENDC
     076724                   M$POP    T$NS,T$NESTLEV,T$TEMP
                              .MCALL   M$GETS,M$DECR
                              .IF LT   T$NESTLEV
                              .ERROR   T$NESTLEV       ; MACRO T$NS UNDERFLOW
                              .MEXIT
                              .ENDC
     076724                   M$GETS   T$NS,\T$NESTLEV,T$TEMP
             000000           T$TEMP=T$NS0
     076724                   M$DECR   T$NESTLEV
             177777           T$NESTLEV=T$NESTLEV 1
```

G16

TEST 28: ADDITIONAL STANDBY TEST

```
                                .IF NE F$MOD-T$TEMP
                                M$ENDERR        ENDMOD,T$TEMP
                                .ENDC
  8645
```

```
                                .IIF NDF ONEFILE,.END






                                .TITLE PARAMETER CODING
                                .NLIST
                                .NLIST  CND
         000000                 HELP=0          ; CONTROL LISTING OF HELP INFORMATION
                                                ; HELP=0   NO LIST
                                                ; HELP=1   LIST

         000001                 ONEFILE=1       ; CONTROL USE OF SOURCE FILES
                                                ; ONEFILE IS NOT DEFINED   ASSEMBLE EACH SOURCE FILE SEPARATELY
                                                ; ONEFILE=ANYTHING   ASSEMBLE ALL SOURCE FILES TOGETHER
                                .LIST

                                .SBTTL  HARDWARE PARAMETER CODING SECTION
                                .IF NDF ONEFILE
                                        .GLOBL  T$PTHV
                                .IF EQ HELP
                                .NLIST
                                .ENDC

                                        .MCALL  SVC
                                        SVC                             ; INITIALIZE SUPERVISOR MACROS

                                ;****************************************************************************
                                ;     IF STRUCTURED MACROS ARE TO BE USED, ADD ".MCALL STRUCT" AND "STRUCT"
                                ;     TO INITIALIZE THE STRUCTURED MACROS.

                                SVCINS= 1       ; LIST INSTRUCTIONS, SHIFTED RIGHT
                                SVCTST= 1       ; LIST TEST TAGS, SHIFTED RIGHT
                                SVCSUB= 1       ; LIST SUBTEST TAGS, SHIFTED RIGHT
                                SVCGBL= 1       ; LIST GLOBAL TAGS, SHIFTED RIGHT
                                SVCTAG= 1       ; LIST OTHER TAGS, SHIFTED RIGHT

                                ;     CHANGE THE VALUES OF THE SVC... SYMBOLS TO BE ZERO IF YOU WISH
                                ;     TO ALIGN THE MACRO CALLS AND THEIR EXPANSIONS.  CHANGE THE
                                ;     SYMBOLS TO BE MINUS-ONE TO NOT LIST THE EXPANSIONS.  YOU MAY
                                ;     CHANGE THE SYMBOLS AT ANY POINT IN YOUR PROGRAM.
                                ;****************************************************************************
                                .IF EQ HELP
                                .LIST
                                .ENDC
                                .ENDC

 076724                                 BGNMOD
                                .MCALL  M$GNGBL,M$PUSH
                                .IF NE  F$END-I$MOD
                                .ERROR  ;"BGNMOD" IN MOD
                                .MEXIT
                                .IFF
         000040                 I$MOD=F$BGN
                                .ENDC
```

```
                              .IF NB
                              M$GNGBL
                              .ENDC
     076724                   M$PUSH  T$NS,T$NESTLEV,F$MOD
                              .MCALL  M$INCR,M$SETS
     076724                   M$INCR  T$NESTLEV
             000000           T$NESTLEV=T$NESTLEV+1
     076724                   M$SETS  T$NS,\T$NESTLEV,F$MOD
             000000           T$NS0=F$MOD

                              ;++
                              ; THE HARDWARE PARAMETER CODING SECTION CONTAINS MACROS
                              ; THAT ARE USED BY THE SUPERVISOR TO BUILD P-TABLES.  THE
                              ; MACROS ARE NOT EXECUTED AS MACHINE INSTRUCTIONS BUT ARE
                              ; INTERPRETED BY THE SUPERVISOR AS DATA STRUCTURES.  THE
                              ; MACROS ALLOW THE SUPERVISOR TO ESTABLISH COMMUNICATIONS
                              ; WITH THE OPERATOR.
                              ;--

     076724                           BGNHRD
                              .MCALL  M$PUSH,M$INCR,M$GNINS,M$GNGBL
             000040           I$HRD=F$BGN
     076724                   M$PUSH  T$NS,T$NESTLEV,F$HARD
                              .MCALL  M$INCR,M$SETS
     076724                   M$INCR  T$NESTLEV
             000001           T$NESTLEV=T$NESTLEV+1
     076724                   M$SETS  T$NS,\T$NESTLEV,F$HARD
             000004           T$NS1=F$HARD
             010062           T$$HARD=T$TAGNUM
     076724                   M$INCR   T$TAGNUM
             010063           T$TAGNUM=T$TAGNUM+1
                              .IRP    TAG,<\T$$HARD>
                              M$GNINS <.WORD L'TAG'-L$HARD/2>
                              .ENDM
     076724                   M$GNINS <.WORD L10062-L$HARD/2>
                              .IF LT SVCINS
                              .WORD L10062-L$HARD/2
                              .MEXIT
                              .ENDC
                              .IF EQ SVCINS
                              .LIST
                                      .WORD L10062 L$HARD/2
                                              .NLIST
                              .MEXIT
                              .ENDC
                              .IF GT SVCINS
                              .LIST
     076724  000032                                                         .WORD L10062 L$HARD/2
                                              .NLIST
                              .ENDC
     076726                   M$GNGBL L$HARD
                              .MCALL  M$GEN
                              .IF NB,L$HARD
                              .IF NB,
                              M$GEN   L$HARD,:,SVCGBL,
                              .ENDC
                              .IF B,
```

```
     076726                  M$GEN   L$HARD,:,SVCGBL,< >
                             .IF LE  SVCGBL
                             .IIF EQ SVCGBL,.LIST
                             L$HARD::
                             .IIF EQ SVCGBL,.NLIST
                             .MEXIT
                             .ENDC
                             .LIST
     076726                                                          L$HARD::
                                     .NLIST
                             .ENDC
                             .ENDC

                             .IF NE HELP
                             ;*************************************************************
                             ;       INSERT HARDWARE PARAMETER INTERPRETIVE CODE HERE.  THIS CODE
                             ;       IS USED BY THE SUPERVISOR TO INTERROGATE THE OPERATOR FOR
                             ;       DEVICE INFORMATION TO PUT IN THE P-TABLE.  THIS CODE IS USED
                             ;       IN CONJUNCTION WITH THE DEFAULT P-TABLE TEMPLATE.  THE MACROS
                             ;       USED IN THIS SECTION ARE "GPRMD", "GPRMA" AND "GPRML".
                             ;*************************************************************
                             .ENDC
     076726                          GPRMA HPM1,0,0,160000,177776,YES
                             .MCALL  M$RADIX,M$DEFAULT,M$EXCP,M$WORD,M$CNTOP
                             .IF IDN A,0
                             .ERROR  ;INVALID RADIX
                             .ENDC
               000000        T$TEMP=0&1
                             .IF NE  T$TEMP & 1
                             .ERROR  ;ODD OFFSET
                             .ENDC
                             .IF LT  G$OFSIZE-0
                             .ERROR  ;OFFSET TOO BIG
                             .ENDC
               000001        T$CODE=G$PRMA . <0 * G$OFFSET>
     076726                  M$RADIX 0,T$TEMP
                             .IF IDN B,0
                             T$TEMP=G$RADB
                             .MEXIT
                             .ENDC
                             .IF IDN 0,0
               000020        T$TEMP=G$RADO
                             .MEXIT
                             .ENDC
                             .IF IDN D,0
                             T$TEMP=G$RADD
                             .MEXIT
                             .ENDC
                             .IF IDN L,0
                             T$TEMP=G$RADL
                             .MEXIT
                             .ENDC
                             .IF IDN A,0
                             T$TEMP=G$RADA
                             .MEXIT
                             .ENDC
                             T$TEMP=-1
```

```
                                .ERROR  ;ILL. RADIX "O"
             000021             T$CODE=T$CODE ! T$TEMP
      076726                    M$DEFAULT       YES,T$TEMP
                                .IF IDN YES,YES
             000010             T$TEMP=G$YES
                                .MEXIT
                                .ENDC
                                .IF IDN NO,YES
                                T$TEMP=G$NO
                                .MEXIT
                                .ENDC
                                T$TEMP=-1
                                .ERROR  ;DEF ULT "Y S" MUST BE "YES" OR "NO"
             000031             T$CODE=T$CODE ! T$TEMP
             000000             T$EXCP=0
      076726                    M$EXCP  T$CODE,T$EXCP,G$LOLIM,T$LOLIM,160000
                                .IF IDN <@>,<160000>
                                .IF LT G$OFSIZE-
                                .ERROR  ;INDIRECT PAR. TOO BIG
                                .MEXIT
                                .ENDC
                                T$LOLIM=/2
                                T$CODE=T$CODE ! G$EXCP
                                T$EXCP=T$EXCP ! G$LOLIM
                                .IFF
                                .IF B,
             160000             T$LOLIM=160000
                                .IFF
                                .ERROR  ;ILL. DEFERRED MODE
                                .ENDC
                                .ENDC
      076726                    M$EXCP  T$CODE,T$EXCP,G$HILIM,T$HILIM,177776
                                .IF IDN <@>,<177776>
                                .IF LT G$OFSIZE-
                                .ERROR  ;INDIRECT PAR. TOO BIG
                                .MEXIT
                                .ENDC
                                T$HILIM=/2
                                T$CODE=T$CODE ! G$EXCP
                                T$EXCP=T$EXCP ! G$HILIM
                                .IFF
                                .IF B,
             177776             T$HILIM=177776
                                .IFF
                                .ERROR  ;ILL. DEFERRED MODE
                                .ENDC
                                .ENDC
      076726                    M$CNTOP <>,<T$CODE>
                                .IF NB
                                .IF NE  I$SFT   F$BGN
                                .ERROR  ; "COUNT" OPTION VALID ONLY IN S.W. QUES.
                                .MEXIT
                                .ENDC
                                T$CODE=T$CODE ! G$CNTOP
                                .ENDC
      076726                    M$WORD  <T$CODE,HPM1,T$LOLIM,T$HILIM>
                                .MCALL  M$GNINS
```

L16


```
                                        .IRP    N,<T$CODE,HPM1,T$LOLIM,T$HILIM>
                                        M$GNINS <.WORD  N>
                                        .ENDM
      076726                            M$GNINS <.WORD  T$CODE>
                                        .IF LT SVCINS
                                        .WORD   T$CODE
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                .WORD   T$CODE
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
      076726  000031                                                                    .WORD   T$CODE
                                                        .NLIST
                                        .ENDC
      076730                            M$GNINS <.WORD  HPM1>
                                        .IF LT SVCINS
                                        .WORD   HPM1
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                .WORD   HPM1
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
      076730  077012                                                                    .WORD   HPM1
                                                        .NLIST
                                        .ENDC
      076732                            M$GNINS <.WORD  T$LOLIM>
                                        .IF LT SVCINS
                                        .WORD   T$LOLIM
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                .WORD   T$LOLIM
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
      076732  160000                                                                    .WORD   T$LOLIM
                                                        .NLIST
                                        .ENDC
      076734                            M$GNINS <.WORD  T$HILIM>
                                        .IF LT SVCINS
                                        .WORD   T$HILIM
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
```

```
                                .LIST
                                        .WORD   T$HILIM
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
     076734  177776                                                                       .WORD   T$HILIM
                                                .NLIST
                                .ENDC
                                .IF NE  T$EXCP
                                M$WORD  T$EXCP
                                .ENDC
                                .IF NB
                                M$WORD </2>
                                .ENDC
8719 076736                             GPRMA HPM2,2,0,200,770,YES
                                .MCALL  M$RADIX,M$DEFAULT,M$EXCP,M$WORD,M$CNTOP
                                .IF IDN A,0
                                .ERROR  ;INVALID RADIX
                                .ENDC
             000000             T$TEMP=2&1
                                .IF NE  T$TEMP & 1
                                .ERROR  ;ODD OFFSET
                                .ENDC
                                .IF LT  G$OFSIZE-2
                                .ERROR  ;OFFSET TOO BIG
                                .ENDC
             001001             T$CODE=G$PRMA + <2 * G$OFFSET>
     076736                     M$RADIX 0,T$TEMP
                                .IF IDN B,0
                                T$TEMP=G$RADB
                                .MEXIT
                                .ENDC
                                .IF IDN O,0
             000020             T$TEMP=G$RADO
                                .MEXIT
                                .ENDC
                                .IF IDN D,0
                                T$TEMP=G$RADD
                                .MEXIT
                                .ENDC
                                .IF IDN L,0
                                T$TEMP=G$RADL
                                .MEXIT
                                .ENDC
                                .IF IDN A,0
                                T$TEMP=G$RADA
                                .MEXIT
                                .ENDC
                                T$TEMP=-1
                                .ERROR  ;ILL. RADIX "0"
             001021             T$CODE=T$CODE ! T$TEMP
     076736                     M$DEFAULT       YES,T$TEMP
                                .IF IDN YES,YES
             000010             T$TEMP=G$YES
                                .MEXIT
```

```
                                        .ENDC
                                        .IF IDN NO,YES
                                        T$TEMP=G$NO
                                        .MEXIT
                                        .ENDC
                                        T$TEMP=-1
                                        .ERROR  ;DEFAULT "YES" MUST BE "YES" OR "NO"
                 001031                 T$CODE=T$CODE ! T$TEMP
                 000000                 T$EXCP=0
 076736                                 M$EXCP  T$CODE,T$EXCP,G$LOLIM,T$LOLIM,200
                                        .IF IDN <@>,<200>
                                        .IF LT G$OFSIZE-
                                        .ERROR  ;INDIRECT PAR. TOO BIG
                                        .MEXIT
                                        .ENDC
                                        T$LOLIM=/2
                                        T$CODE=T$CODE ! G$EXCP
                                        T$EXCP=T$EXCP ! G$LOLIM
                                        .IFF
                                        .IF B,
                 000200                 T$LOLIM=200
                                        .IFF
                                        .ERROR  ;ILL. DEFERRED MODE
                                        .ENDC
                                        .ENDC
 076736                                 M$EXCP  T$CODE,T$EXCP,G$HILIM,T$HILIM,770
                                        .IF IDN <@>,<770>
                                        .IF LT G$OFSIZE-
                                        .ERROR  ;INDIRECT PAR. TOO BIG
                                        .MEXIT
                                        .ENDC
                                        T$HILIM=/2
                                        T$CODE=T$CODE ! G$EXCP
                                        T$EXCP=T$EXCP ! G$HILIM
                                        .IFF
                                        .IF B,
                 000770                 T$HILIM=770
                                        .IFF
                                        .ERROR  ;ILL. DEFERRED MODE
                                        .ENDC
                                        .ENDC
 076736                                 M$CNTOP <>,<T$CODE>
                                        .IF NB
                                        .IF NE  I$SFT - F$BGN
                                        .ERROR  ; "COUNT" OPTION VALID ONLY IN S.W. QUES.
                                        .MEXIT
                                        .ENDC
                                        T$CODE=T$CODE ! G$CNTOP
                                        .ENDC
 076736                                 M$WORD  <T$CODE,HPM2,T$LOLIM,T$HILIM>
                                        .MCALL  M$GNINS
                                        .IRP    N,<T$CODE,HPM2,T$LOLIM,T$HILIM>
                                        M$GNINS <.WORD  N>
                                        .ENDM
 076736                                 M$GNINS <.WORD  T$CODE>
                                        .IF LT SVCINS
                                        .WORD   T$CODE
```

C1


```
                                   .MEXIT
                                   .ENDC
                                   .IF EQ SVCINS
                                   .LIST
                                            .WORD    T$CODE
                                                     .NLIST
                                   .MEXIT
                                   .ENDC
                                   .IF GT SVCINS
                                   .LIST
      076736  001031                                                                   .WORD    T$CODE
                                                     .NLIST
                                   .ENDC
      076740                       M$GNINS <.WORD  HPM2>
                                   .IF LT SVCINS
                                   .WORD    HPM2
                                   .MEXIT
                                   .ENDC
                                   .IF EQ SVCINS
                                   .LIST
                                            .WORD    HPM2
                                                     .NLIST
                                   .MEXIT
                                   .ENDC
                                   .IF GT SVCINS
                                   .LIST
      076740  077050                                                                   .WORD    HPM2
                                                     .NLIST
                                   .ENDC
      076742                       M$GNINS <.WORD  T$LOLIM>
                                   .IF LT SVCINS
                                   .WORD    T$LOLIM
                                   .MEXIT
                                   .ENDC
                                   .IF EQ SVCINS
                                   .LIST
                                            .WORD    T$LOLIM
                                                     .NLIST
                                   .MEXIT
                                   .ENDC
                                   .IF GT SVCINS
                                   .LIST
      076742  000200                                                                   .WORD    T$LOLIM
                                                     .NLIST
                                   .ENDC
      076744                       M$GNINS <.WORD  T$HILIM>
                                   .IF LT SVCINS
                                   .WORD    T$HILIM
                                   .MEXIT
                                   .ENDC
                                   .IF EQ SVCINS
                                   .LIST
                                            .WORD    T$HILIM
                                                     .NLIST
                                   .MEXIT
                                   .ENDC
                                   .IF GT SVCINS
```

D1

```
                                .LIST
       076744  000770                                                          .WORD   T$HILIM
                                          .NLIST
                                .ENDC
                                .IF NE  T$EXCP
                                M$WORD  T$EXCP
                                .ENDC
                                .IF NB
                                M$WORD </2>
                                .ENDC
    8720 076746                         GPRMD HPM3,4,0,340,4,6,YES
                                .MCALL  M$RADIX,M$DEFAULT,M$EXCP,M$WORD,M$CNTOP
                                .IF IDN A,0
                                .IF EQ T$GMANID
                                .ERROR  ;ASCII RADIX VALID ONLY ON "GMANID"
                                .ENDC
                                .ENDC
               000000           T$TEMP=4&1
                                .IF NE  T$TEMP & 1
                                .ERROR  ;ODD OFFSET
                                .ENDC
                                .IF LT  G$OFSIZE-4
                                .ERROR  ;OFFSET TOO BIG
                                .ENDC
               002002           T$CODE=G$PRMD + <4 * G$OFFSET>
       076746                   M$RADIX O,T$TEMP
                                .IF IDN B,O
                                T$TEMP=G$RADB
                                .MEXIT
                                .ENDC
                                .IF IDN O,O
               000020           T$TEMP=G$RADO
                                .MEXIT
                                .ENDC
                                .IF IDN D,O
                                T$TEMP=G$RADD
                                .MEXIT
                                .ENDC
                                .IF IDN L,O
                                T$TEMP=G$RADL
                                .MEXIT
                                .ENDC
                                .IF IDN A,O
                                T$TEMP=G$RADA
                                .MEXIT
                                .ENDC
                                T$TEMP=-1
                                .ERROR  ;ILL. RADIX "O"
               002022           T$CODE=T$CODE ! T$TEMP
       076746                   M$DEFAULT       YES,T$TEMP
                                .IF IDN YES,YES
               000010           T$TEMP=G$YES
                                .MEXIT
                                .ENDC
                                .IF IDN NO,YES
                                T$TEMP=G$NO
                                .MEXIT
```

E1


```
                                  .ENDC
                                  T$TEMP=-1
                                  .ERROR  ;DEFAULT "YES" MUST BE "YES" OR "NO"
             002032               T$CODE=T$CODE ! T$TEMP
             000000               T$EXCP=0
      076746                      M$EXCP  T$CODE,T$EXCP,G$LOLIM,T$LOLIM,4
                                  .IF IDN <@>,<4>
                                  .IF LT G$OFSIZE-
                                  .ERROR  ;INDIRECT PAR. TOO BIG
                                  .MEXIT
                                  .ENDC
                                  T$LOLIM=/2
                                  T$CODE=T$CODE ! G$EXCP
                                  T$EXCP=T$EXCP ! G$LOLIM
                                  .IFF
                                  .IF B,
             000004               T$LOLIM=4
                                  .IFF
                                  .ERROR  ;ILL. DEFERRED MODE
                                  .ENDC
                                  .ENDC
      076746                      M$EXCP  T$CODE,T$EXCP,G$HILIM,T$HILIM,6
                                  .IF IDN <@>,<6>
                                  .IF LT G$OFSIZE
                                  .ERROR  ;INDIRECT PAR. TOO BIG
                                  .MEXIT
                                  .ENDC
                                  T$HILIM=/2
                                  T$CODE=T$CODE ! G$EXCP
                                  T$EXCP=T$EXCP ! G$HILIM
                                  .IFF
                                  .IF B,
             000006               T$HILIM=6
                                  .IFF
                                  .ERROR  ;ILL. DEFERRED MODE
                                  .ENDC
                                  .ENDC
      076746                      M$CNTOP <>,<T$CODE>
                                  .IF NB
                                  .IF NE  I$SFT - F$BGN
                                  .ERROR  ; "COUNT" OPTION VALID ONLY IN S.W. QUES.
                                  .MEXIT
                                  .ENDC
                                  T$CODE=T$CODE ! G$CNTOP
                                  .ENDC
      076746                      M$WORD  <T$CODE,HPM3,340,T$LOLIM,T$HILIM>
                                  .MCALL  M$GNINS
                                  .IRP    N,<T$CODE,HPM3,340,T$LOLIM,T$HILIM>
                                  M$GNINS <.WORD  N>
                                  .ENDM
      076746                      M$GNINS <.WORD  T$CODE>
                                  .IF LT SVCINS
                                  .WORD   T$CODE
                                  .MEXIT
                                  .ENDC
                                  .IF EQ SVCINS
                                  .LIST
```

```
                                .WORD   T$CODE
                                        .NLIST
                        .MEXIT
                        .ENDC
                        .IF GT SVCINS
                        .LIST
    076746  002032                                              .WORD   T$CODE
                                        .NLIST
                        .ENDC
    076750              M$GNINS <.WORD  HPM3>
                        .IF LT SVCINS
                        .WORD   HPM3
                        .MEXIT
                        .ENDC
                        .IF EQ SVCINS
                        .LIST
                                .WORD   HPM3
                                        .NLIST
                        .MEXIT
                        .ENDC
                        .IF GT SVCINS
                        .LIST
    076750  077106                                              .WORD   HPM3
                                        .NLIST
                        .ENDC
    076752              M$GNINS <.WORD  340>
                        .IF LT SVCINS
                        .WORD   340
                        .MEXIT
                        .ENDC
                        .IF EQ SVCINS
                        .LIST
                                .WORD   340
                                        .NLIST
                        .MEXIT
                        .ENDC
                        .IF GT SVCINS
                        .LIST
    076752  000340                                              .WORD   340
                                        .NLIST
                        .ENDC
    076754              M$GNINS <.WORD  T$LOLIM>
                        .IF LT SVCINS
                        .WORD   T$LOLIM
                        .MEXIT
                        .ENDC
                        .IF EQ SVCINS
                        .LIST
                                .WORD   T$LOLIM
                                        .NLIST
                        .MEXIT
                        .ENDC
                        .IF GT SVCINS
                        .LIST
    076754  000004                                              .WORD   T$LOLIM
                                        .NLIST
                        .ENDC
```

```
     076756                       M$GNINS <.WORD  T$HILIM>
                                  .IF LT SVCINS
                                  .WORD   T$HILIM
                                  .MEXIT
                                  .ENDC
                                  .IF EQ SVCINS
                                  .LIST
                                          .WORD   T$HILIM
                                                  .NLIST
                                  .MEXIT
                                  .ENDC
                                  .IF GT SVCINS
                                  .LIST
     076756  000006                                                                          .WORD   T$HILIM
                                                  .NLIST
                                  .ENDC
                                  .IF NE  T$EXCP
                                  M$WORD  T$EXCP
                                  .ENDC
                                  .IF NB
                                  M$WORD </2>
                                  .ENDC
8721 076760                               GPRMD HPM4,6,0,-1,0,36,YES
                                  .MCALL  M$RADIX,M$DEFAULT,M$EXCP,M$WORD,M$CNTOP
                                  .IF IDN A,0
                                  .IF EQ T$GMANID
                                  .ERROR  ;ASCII RADIX VALID ONLY ON "GMANID"
                                  .ENDC
                                  .ENDC
             000000               T$TEMP=6&1
                                  .IF NE  T$TEMP & 1
                                  .ERROR  ;ODD OFFSET
                                  .ENDC
                                  .IF LT  G$OFSIZE 6
                                  .ERROR  ;OFFSET TOO BIG
                                  .ENDC
             003002               T$CODE=G$PRMD + <6 * G$OFFSET>
     076760                       M$RADIX O,T$TEMP
                                  .IF IDN B,O
                                  T$TEMP=G$RADB
                                  .MEXIT
                                  .ENDC
                                  .IF IDN O,O
             000020               T$TEMP=G$RADO
                                  .MEXIT
                                  .ENDC
                                  .IF IDN D,O
                                  T$TEMP=G$RADD
                                  .MEXIT
                                  .ENDC
                                  .IF IDN L,O
                                  T$TEMP=G$RADL
                                  .MEXIT
                                  .ENDC
                                  .IF IDN A,O
                                  T$TEMP=G$RADA
                                  .MEXIT
```

H1


```
                                        .ENDC
                                        T$TEMP=-1
                                        .ERROR  ;ILL. RADIX "O"
                003022                  T$CODE=T$CODE ! T$TEMP
        076760                          M$DEFAULT       YES,T$TEMP
                                        .IF IDN YES,YES
                000010                  T$TEMP=G$YES
                                        .MEXIT
                                        .ENDC
                                        .IF IDN NO,YES
                                        T$TEMP=G$NO
                                        .MEXIT
                                        .ENDC
                                        T$TEMP=-1
                                        .ERROR  ;DEFAULT "YES" MUST BE "YES" OR "NO"
                003032                  T$CODE=T$CODE ! T$TEMP
                000000                  T$EXCP=0
        076760                          M$EXCP  T$CODE,T$EXCP,G$LOLIM,T$LOLIM,0
                                        .IF IDN <@>,<0>
                                        .IF LT G$OFSIZE-
                                        .ERROR  ;INDIRECT PAR. TOO BIG
                                        .MEXIT
                                        .ENDC
                                        T$LOLIM=/2
                                        T$CODE=T$CODE ! G$EXCP
                                        T$EXCP=T$EXCP ! G$LOLIM
                                        .IFF
                                        .IF B,
                000000                  T$LOLIM=0
                                        .IFF
                                        .ERROR  ;ILL. DEFERRED MODE
                                        .ENDC
                                        .ENDC
        076760                          M$EXCP  T$CODE,T$EXCP,G$HILIM,T$HILIM,36
                                        .IF IDN <@>,<36>
                                        .IF LT G$OFSIZE-
                                        .ERROR  ;INDIRECT PAR. TOO BIG
                                        .MEXIT
                                        .ENDC
                                        T$HILIM=/2
                                        T$CODE=T$CODE ! G$EXCP
                                        T$EXCP=T$EXCP ! G$HILIM
                                        .IFF
                                        .IF B,
                000036                  T$HILIM=36
                                        .IFF
                                        .ERROR  ;ILL. DEFERRED MODE
                                        .ENDC
                                        .ENDC
        076760                          M$CNTOP <>,<T$CODE>
                                        .IF NB
                                        .IF NE  I$SFT - F$BGN
                                        .ERROR  ; "COUNT" OPTION VALID ONLY IN S.W. QUES.
                                        .MEXIT
                                        .ENDC
                                        T$CODE=T$CODE ! G$CNTOP
                                        .ENDC
```

```
        076760                          M$WORD  <T$CODE,HPM4,-1,T$LOLIM,T$HILIM>
                                        .MCALL  M$GNINS
                                        .IRP    N,<T$CODE,HPM4,-1,T$LOLIM,T$HILIM>
                                        M$GNINS <.WORD  N>
                                        .ENDM
        076760                          M$GNINS <.WORD  T$CODE>
                                        .IF LT SVCINS
                                        .WORD   T$CODE
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                .WORD   T$CODE
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
        076760  003032                                                                  .WORD   T$CODE
                                                        .NLIST
                                        .ENDC
        076762                          M$GNINS <.WORD  HPM4>
                                        .IF LT SVCINS
                                        .WORD   HPM4
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                .WORD   HPM4
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
        076762  077166                                                                  .WORD   HPM4
                                                        .NLIST
                                        .ENDC
        076764                          M$GNINS <.WORD  -1>
                                        .IF LT SVCINS
                                        .WORD   -1
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                .WORD   -1
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
        076764  177777                                                                  .WORD    1
                                                        .NLIST
                                        .ENDC
        076766                          M$GNINS <.WORD  T$LOLIM>
                                        .IF LT SVCINS
                                        .WORD   T$LOLIM
                                        .MEXIT
```

J1


```
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                .WORD   T$LOLIM
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
      076766  000000                                                                    .WORD   T$LOLIM
                                                        .NLIST
                                        .ENDC
      076770                            M$GNINS <.WORD  T$HILIM>
                                        .IF LT SVCINS
                                        .WORD   T$HILIM
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                .WORD   T$HILIM
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
      076770  000036                                                                    .WORD   T$HILIM
                                                        .NLIST
                                        .ENDC
                                        .IF NE  T$EXCP
                                        M$WORD  T$EXCP
                                        .ENDC
                                        .IF NB
                                        M$WORD </2>
                                        .ENDC
 8722 076772                                    GPRMD HPM5,10,0, 1,0,36,YES
                                        .MCALL  M$RADIX,M$DEFAULT,M$EXCP,M$WORD,M$CNTOP
                                        .IF IDN A,0
                                        .IF EQ T$GMANID
                                        .ERROR  ;ASCII RADIX VALID ONLY ON "GMANID"
                                        .ENDC
                                        .ENDC
              000000                    T$TEMP=10&1
                                        .IF NE  T$TEMP & 1
                                        .ERROR  ;ODD OFFSET
                                        .ENDC
                                        .IF LT  G$OFSIZE-10
                                        .ERROR  ;OFFSET TOO BIG
                                        .ENDC
              004002                    T$CODE=G$PRMD + <10 * G$OFFSET>
      076772                            M$RADIX O,T$TEMP
                                        .IF IDN B,O
                                        T$TEMP=G$RADB
                                        .MEXIT
                                        .ENDC
                                        .IF IDN O,O
              000020                    T$TEMP=G$RADO
                                        .MEXIT
```

```
                                .ENDC
                                .IF IDN D,O
                                T$TEMP=G$RADD
                                .MEXIT
                                .ENDC
                                .IF IDN L,O
                                T$TEMP=G$RADL
                                .MEXIT
                                .ENDC
                                .IF IDN A,O
                                T$TEMP=G$RADA
                                .MEXIT
                                .ENDC
                                T$TEMP=-1
                                .ERROR  ;ILL. RADIX "O"
             004022             T$CODE=T$CODE ! T$TEMP
      076772                    M$DEFAULT       YES,T$TEMP
                                .IF IDN YES,YES
             000010             T$TEMP=G$YES
                                .MEXIT
                                .ENDC
                                .IF IDN NO,YES
                                T$TEMP=G$NO
                                .MEXIT
                                .ENDC
                                T$TEMP=-1
                                .ERROR  ;DEFAULT "YES" MUST BE "YES" OR "NO"
             004032             T$CODE=T$CODE ! T$TEMP
             000000             T$EXCP=0
      076772                    M$EXCP  T$CODE,T$EXCP,G$LOLIM,T$LOLIM,0
                                .IF IDN <@>,<0>
                                .IF LT G$OFSIZE-
                                .ERROR  ;INDIRECT PAR. TOO BIG
                                .MEXIT
                                .ENDC
                                T$LOLIM=/2
                                T$CODE=T$CODE ! G$EXCP
                                T$EXCP=T$EXCP ! G$LOLIM
                                .IFF
                                .IF B,
             000000             T$LOLIM=0
                                .IFF
                                .ERROR  ;ILL. DEFERRED MODE
                                .ENDC
                                .ENDC
      076772                    M$EXCP  T$CODE,T$EXCP,G$HILIM,T$HILIM,36
                                .IF IDN <@>,<36>
                                .IF LT G$OFSIZE-
                                .ERROR  ;INDIRECT PAR. TOO BIG
                                .MEXIT
                                .ENDC
                                T$HILIM=/2
                                T$CODE=T$CODE ! G$EXCP
                                T$EXCP=T$EXCP ! G$HILIM
                                .IFF
                                .IF B,
             000036             T$HILIM-36
```

```
                                        .IFF
                                        .ERROR  ;ILL. DEFERRED MODE
                                        .ENDC
                                        .ENDC
        076772                          M$CNTOP <>,<T$CODE>
                                        .IF NB
                                        .IF NE  I$SFT - F$BGN
                                        .ERROR  ; "COUNT" OPTION VALID ONLY IN S.W. QUES.
                                        .MEXIT
                                        .ENDC
                                        T$CODE=T$CODE ! G$CNTOP
                                        .ENDC
        076772                          M$WORD  <T$CODE,HPM5,-1,T$LOLIM,T$HILIM>
                                        .MCALL  M$GNINS
                                        .IRP    N,<T$CODE,HPM5, 1,T$LOLIM,T$HILIM>
                                        M$GNINS <.WORD  N>
                                        .ENDM
        076772                          M$GNINS <.WORD  T$CODE>
                                        .IF LT SVCINS
                                        .WORD   T$CODE
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                .WORD   T$CODE
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
        076772  004032                                                                  .WORD   T$CODE
                                                        .NLIST
                                        .ENDC
        076774                          M$GNINS <.WORD  HPM5>
                                        .IF LT SVCINS
                                        .WORD   HPM5
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                .WORD   HPM5
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
        076774  077230                                                                  .WORD   HPM5
                                                        .NLIST
                                        .ENDC
        076776                          M$GNINS <.WORD  -1>
                                        .IF LT SVCINS
                                        .WORD   -1
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                .WORD   -1
```

```
                                                   .NLIST
                                   .MEXIT
                                   .ENDC
                                   .IF GT SVCINS
                                   .LIST
      076776  177777                                                                        .WORD   -1
                                                   .NLIST
                                   .ENDC
      077000                       M$GNINS <.WORD  T$LOLIM>
                                   .IF LT SVCINS
                                   .WORD   T$LOLIM
                                   .MEXIT
                                   .ENDC
                                   .IF EQ SVCINS
                                   .LIST
                                         .WORD   T$LOLIM
                                                   .NLIST
                                   .MEXIT
                                   .ENDC
                                   .IF GT SVCINS
                                   .LIST
      077000  000000                                                                        .WORD   T$LOLIM
                                                   .NLIST
                                   .ENDC
      077002                       M$GNINS <.WORD  T$HILIM>
                                   .IF LT SVCINS
                                   .WORD   T$HILIM
                                   .MEXIT
                                   .ENDC
                                   .IF EQ SVCINS
                                   .LIST
                                         .WORD   T$HILIM
                                                   .NLIST
                                   .MEXIT
                                   .ENDC
                                   .IF GT SVCINS
                                   .LIST
      077002  000036                                                                        .WORD   T$HILIM
                                                   .NLIST
                                   .ENDC
                                   .IF NE  T$EXCP
                                   M$WORD  T$EXCP
                                   .ENDC
                                   .IF NB
                                   M$WORD </2>
                                   .ENDC
 8723 077004                             GPRML HPM6,12,-1,NO
                                   .MCALL  M$RADIX,M$DEFAULT,M$WORD,M$CNTOP
              000000               T$TEMP=12&1
                                   .IF NE  T$TEMP & 1
                                   .ERROR  ;ODD OFFSET
                                   .ENDC
                                   .IF LT  G$OFSIZE-12
                                   .ERROR  ;OFFSET TOO BIG
                                   .ENDC
              005000               T$CODE=G$PRML + <12 * G$OFFSET>
      077004                       M$RADIX L,T$TEMP
```

```
                        .IF IDN B,L
                        T$TEMP=G$RADB
                        .MEXIT
                        .ENDC
                        .IF IDN O,L
                        T$TEMP=G$RADO
                        .MEXIT
                        .ENDC
                        .IF IDN D,L
                        T$TEMP=G$RADD
                        .MEXIT
                        .ENDC
                        .IF IDN L,L
        000120          T$TEMP=G$RADL
                        .MEXIT
                        .ENDC
                        .IF IDN A,L
                        T$TEMP=G$RADA
                        .MEXIT
                        .ENDC
                        T$TEMP=-1
                        .ERROR  ;ILL. RADIX "L"
        005120          T$CODE=T$CODE ! T$TEMP
077004                  M$DEFAULT       NO,T$TEMP
                        .IF IDN YES,NO
                        T$TEMP=G$YES
                        .MEXIT
                        .ENDC
                        .IF IDN NO,NO
        000000          T$TEMP=G$NO
                        .MEXIT
                        .ENDC
                        T$TEMP=-1
                        .ERROR  ;DEFAULT "NO" MUST BE "YES" OR "NO"
        005120          T$CODE=T$CODE ! T$TEMP
077004                  M$CNTOP <>,<T$CODE>
                        .IF NB
                        .IF NE  I$SFT - F$BGN
                        .ERROR  ; "COUNT" OPTION VALID ONLY IN S.W. QUES.
                        .MEXIT
                        .ENDC
                        T$CODE=T$CODE ! G$CNTOP
                        .ENDC
077004                  M$WORD  <T$CODE,HPM6,-1>
                        .MCALL  M$GNINS
                        .IRP    N,<T$CODE,HPM6,-1>
                        M$GNINS <.WORD  N>
                        .ENDM
077004                  M$GNINS <.WORD  T$CODE>
                        .IF LT SVCINS
                        .WORD   T$CODE
                        .MEXIT
                        .ENDC
                        .IF EQ SVCINS
                        .LIST
                                .WORD   T$CODE
                                        .NLIST
```

```
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
      077004  005120                                                        .WORD   T$CODE
                                          .NLIST
                                .ENDC
      077006                    M$GNINS <.WORD  HPM6>
                                .IF LT SVCINS
                                .WORD   HPM6
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                     .WORD    HPM6
                                          .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
      077006  077273                                                        .WORD   HPM6
                                          .NLIST
                                .ENDC
      077010                    M$GNINS <.WORD  -1>
                                .IF LT SVCINS
                                .WORD   -1
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                     .WORD    -1
                                          .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
      077010  177777                                                        .WORD   -1
                                          .NLIST
                                .ENDC
                                .IF NB
                                M$WORD  </2>
                                .ENDC
   8724
   8725
   8726 077012                       ENDHRD
                                .MCALL  M$POP,M$GNINS,M$GNTAG,M$ENDERR
      077012                    M$POP   T$NS,T$NESTLEV,T$TEMP
                                .MCALL  M$GETS,M$DECR
                                .IF LT  T$NESTLEV
                                .ERROR  T$NESTLEV        ; MACRO T$NS UNDERFLOW
                                .MEXIT
                                .ENDC
      077012                    M$GETS  T$NS,\T$NESTLEV,T$TEMP
              000004            T$TEMP=T$NS1
      077012                    M$DECR  T$NESTLEV
              000000            T$NESTLEV=T$NESTLEV 1
                                .IF EQ F$HARD-T$TEMP
```

```
     077012                                    M$GNINS .EVEN
                                               .IF LT SVCINS
                                               .EVEN
                                               .MEXIT
                                               .ENDC
                                               .IF EQ SVCINS
                                               .LIST
                                                       .EVEN
                                                               .NLIST
                                               .MEXIT
                                               .ENDC
                                               .IF GT SVCINS
                                               .LIST
                                                                                                          .EVEN
                                                               .NLIST
                                               .ENDC
     077012                                    M$GNTAG L,T$$HARD
                                               .MCALL  M$GEN
     077012                                    M$GEN   L,\T$$HARD,SVCTAG
                                               .IF LE  SVCTAG
                                               .IIF EQ SVCTAG,.LIST
                                               L10062:
                                               .IIF EQ SVCTAG,.NLIST
                                               .MEXIT
                                               .ENDC
                                               .LIST
     077012                                                                                        L10062:
                                                       .NLIST
             010000                            S$LSYM=T$LSYM
             000041                            I$HRD=F$END
                                               .IFF
                                               M$ENDERR        ENDHRD,T$TEMP
                                               .ENDC

                                               .IF NE HELP
                                               ;*****************************************************************
                                               ;     INSERT MESSAGES THAT ARE USED ONLY
                                               ;     DURING THE HARDWARE PARAME'ER CODING SECTION.
                                               ;*****************************************************************
                                               .ENDC
                                                       .NLIST BEX
     077012     104     105     126   HPM1:    .ASCIZ  /DEVICE ADDRESS                          /
     077050     126     105     103   HPM2:    .ASCIZ  /VECTOR ADDRESS                          /
     077106     120     122     111   HPM3:    .ASCIZ  /PRIORITY LEVEL (FOR LSI WITH FIXED PRI. TYPE 4)/
     077166     104     105     126   HPM4:    .ASCIZ  /DEVICE PRIMARY ADDRESS CH.1             /
     077230     104     105     126   HPM5:    .ASCIZ  /DEVICE PRIMARY ADDRESS CH.2             /
     077273     111     123     040   HPM6:    .ASCIZ  /IS TESTCABLE IN ?                       /
                                                       .EVEN
                                                       .LIST BEX
```

```
8746                            .SBTTL  SOFTWARE PARAMETER CODING SECTION
8747
8748                            ;++
8749                            ; THE SOFTWARE PARAMETER CODING SECTION CONTAINS MACROS
8750                            ; THAT ARE USED BY THE SUPERVISOR TO BUILD P-TABLES.  THE
8751                            ; MACROS ARE NOT EXECUTED AS MACHINE INSTRUCTIONS BUT ARE
8752                            ; INTERPRETED BY THE SUPERVISOR AS DATA STRUCTURES.  THE
8753                            ; MACROS ALLOW THE SUPERVISOR TO ESTABLISH COMMUNICATIONS
8754                            ; WITH THE OPERATOR.
8755                            ;--
8756
8757 077336                             BGNSFT
                                .MCALL  M$PUSH,M$INCR,M$GNINS,M$GNGBL
              000040            I$SFT=F$BGN
     077336                     M$PUSH  T$NS,T$NESTLEV,F$SOFT
                                .MCALL  M$INCR,M$SETS
     077336                     M$INCR  T$NESTLEV
              000001            T$NESTLEV=T$NESTLEV+1
     077336                     M$SETS  T$NS,\T$NESTLEV,F$SOFT
              000005            T$NS1=F$SOFT
              010063            T$$SOFT=T$TAGNUM
     077336                     M$INCR T$TAGNUM
              010064            T$TAGNUM=T$TAGNUM+1
                                .IRP    TAG,<\T$$SOFT>
                                M$GNINS <.WORD L'TAG'-L$SOFT/2>
                                .ENDM
     077336                     M$GNINS <.WORD L10063-L$SOFT/2>
                                .IF LT SVCINS
                                .WORD L10063-L$SOFT/2
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        .WORD L10063-L$SOFT/2
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
     077336   000115                                                                    .WORD L10063 L$SOFT/2
                                                .NLIST
                                .ENDC
     077340                     M$GNGBL L$SOFT
                                .MCALL  M$GEN
                                .IF NB,L$SOFT
                                .IF NB,
                                M$GEN   L$SOFT,:,SVCGBL,
                                .ENDC
                                .IF B,
     077340                     M$GEN   L$SOFT,:,SVCGBL,< >
                                .IF LE  SVCGBL
                                .IIF EQ SVCGBI ,.LIST
                                L$SOFT::
                                .IIF EQ SVCGBL,.NLIST
                                .MEXIT
                                .ENDC
                                .LIST
```

```
     077340                                                                  L$SOFT::
                                          .NLIST
                                  .ENDC
                                  .ENDC

                                  .IF NE HELP
                                  ;*******************************************************************
                                  ;       INSERT SOFTWARE PARAMETER INTERPRETIVE CODING HERE.  THIS CODE
                                  ;       IS USED BY THE SUPERVISOR TO INTERROGATE THE OPERATOR FOR
                                  ;       SOFTWARE INFORMATION WHTCH WILL BE PLACED IN THE SOFTWARE
                                  ;       TABLE.  THIS SECTION IS OPTIONAL.
                                  ;*******************************************************************
                                  .ENDC

     077340                               GPRML   PMQVP,0,-1,YES
                                  .MCALL  M$RADIX,M$DEFAULT,M$WORD,M$CNTOP
             000000               T$TEMP=0&1
                                  .IF NE  T$TEMP & 1
                                  .ERROR  ;ODD OFFSET
                                  .ENDC
                                  .IF LT  G$OFSIZE-0
                                  .ERROR  ;OFFSET TOO BIG
                                  .ENDC
             000000               T$CODE=G$PRML + <0 * G$OFFSET>
     077340                       M$RADIX L,T$TEMP
                                  .IF IDN B,L
                                  T$TEMP=G$RADB
                                  .MEXIT
                                  .ENDC
                                  .IF IDN O,L
                                  T$TEMP=G$RADO
                                  .MEXIT
                                  .ENDC
                                  .IF IDN D,L
                                  T$TEMP=G$RADD
                                  .MEXIT
                                  .ENDC
                                  .IF IDN L,L
             000120               T$TEMP=G$RADL
                                  .MEXIT
                                  .ENDC
                                  .IF IDN A,L
                                  T$TEMP=G$RADA
                                  .MEXIT
                                  .ENDC
                                  T$TEMP=-1
                                  .ERROR  ;ILL. RADIX "L"
             000120               T$CODE=T$CODE ! T$TEMP
     077340                       M$DEFAULT       YES,T$TEMP
                                  .IF IDN YES,YES
             000010               T$TEMP=G$YES
                                  .MEXIT
                                  .ENDC
                                  .IF IDN NO,YES
                                  T$TEMP=G$NO
                                  .MEXIT
                                  .ENDC
```

```
                                T$TEMP=-1
                                .ERROR  ;DEFAULT "YES" MUST BE "YES" OR "NO"
              000130            T$CODE=T$CODE ! T$TEMP
     077340                     M$CNTOP <>,<T$CODE>
                                .IF NB
                                .IF NE  I$SFT - F$BGN
                                .ERROR  ; "COUNT" OPTION VALID ONLY IN S.W. QUES.
                                .MEXIT
                                .ENDC
                                T$CODE=T$CODE ! G$CNTOP
                                .ENDC
     077340                     M$WORD  <T$CODE,PMQVP,-1>
                                .MCALL  M$GNINS
                                .IRP    N,<T$CODE,PMQVP,-1>
                                M$GNINS <.WORD  N>
                                .ENDM
     077340                     M$GNINS <.WORD  T$CODE>
                                .IF LT SVCINS
                                .WORD   T$CODE
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        .WORD   T$CODE
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
     077340  000130                                                     .WORD   T$CODE
                                                .NLIST
                                .ENDC
     077342                     M$GNINS <.WORD  PMQVP>
                                .IF LT SVCINS
                                .WORD   PMQVP
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        .WORD   PMQVP
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
     077342  077402                                                     .WORD   PMQVP
                                                .NLIST
                                .ENDC
     077344                     M$GNINS <.WORD  -1>
                                .IF LT SVCINS
                                .WORD   -1
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        .WORD   -1
                                                .NLIST
```

G2


```
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
      077344  177777                                                                  .WORD   -1
                                          .NLIST
                                .ENDC
                                .IF NB
                                M$WORD  </2>
                                .ENDC
 8769 077346                         GPRMD   SPRM2,2,D,-1,3,77,YES
                                .MCALL  M$RADIX,M$DEFAULT,M$EXCP,M$WORD,M$CNTOP
                                .IF IDN A,D
                                .IF EQ T$GMANID
                                .ERROR  ;ASCII RADIX VALID ONLY ON "GMANID"
                                .ENDC
                                .ENDC
              000000            T$TEMP=2&1
                                .IF NE  T$TEMP & 1
                                .ERROR  ;ODD OFFSET
                                .ENDC
                                .IF LT  G$OFSIZE-2
                                .ERROR  ;OFFSET TOO BIG
                                .ENDC
              001002            T$CODE=G$PRMD + <2 * G$OFFSET>
      077346                    M$RADIX D,T$TEMP
                                .IF IDN B,D
                                T$TEMP=G$RADB
                                .MEXIT
                                .ENDC
                                .IF IDN O,D
                                T$TEMP=G$RADO
                                .MEXIT
                                .ENDC
                                .IF IDN D,D
              000040            T$TEMP=G$RADD
                                .MEXIT
                                .ENDC
                                .IF IDN L,D
                                T$TEMP=G$RADL
                                .MEXIT
                                .ENDC
                                .IF IDN A,D
                                T$TEMP=G$RADA
                                .MEXIT
                                .ENDC
                                T$TEMP=-1
                                .ERROR  ;ILL. RADIX "D"
              001042            T$CODE=T$CODE ! T$TEMP
      077346                    M$DEFAULT       YES,T$TEMP
                                .IF IDN YES,YES
              000010            T$TEMP=G$YES
                                .MEXIT
                                .ENDC
                                .IF IDN NO,YES
                                T$TEMP=G$NO
                                .MEXIT
```

```
                                        .ENDC
                                        T$TEMP=-1
                                        .ERROR  ;DEFAULT "YES" MUST BE "YES" OR "NO"
                001052                  T$CODE=T$CODE ! T$TEMP
                000000                  T$EXCP=0
        077346                          M$EXCP  T$CODE,T$EXCP,G$LOLIM,T$LOLIM,3
                                        .IF IDN <@>,<3>
                                        .IF LT G$OFSIZE-
                                        .ERROR  ;INDIRECT PAR. TOO BIG
                                        .MEXIT
                                        .ENDC
                                        T$LOLIM=/2
                                        T$CODE=T$CODE ! G$EXCP
                                        T$EXCP=T$EXCP ! G$LOLIM
                                        .IFF
                                        .IF B,
                000003                  T$LOLIM=3
                                        .IFF
                                        .ERROR  ;ILL. DEFERRED MODE
                                        .ENDC
                                        .ENDC
        077346                          M$EXCP  T$CODE,T$EXCP,G$HILIM,T$HILIM,77
                                        .IF IDN <@>,<77>
                                        .IF LT G$OFSIZE-
                                        .ERROR  ;INDIRECT PAR. TOO BIG
                                        .MEXIT
                                        .ENDC
                                        T$HILIM=/2
                                        T$CODE=T$CODE ! G$EXCP
                                        T$EXCP=T$EXCP ! G$HILIM
                                        .IFF
                                        .IF B,
                000077                  T$HILIM=77
                                        .IFF
                                        .ERROR  ;ILL. DEFERRED MODE
                                        .ENDC
                                        .ENDC
        077346                          M$CNTOP <>,<T$CODE>
                                        .IF NB
                                        .IF NE  I$SFT - F$BGN
                                        .ERROR  ; "COUNT" OPTION VALID ONLY IN S.W. QUES.
                                         MEXIT
                                        .ENDC
                                        T$CODE=T$CODE ! G$CNTOP
                                        .ENDC
        077346                          M$WORD  <T$CODE,SPRM2,-1,T$LOLIM,T$HILIM>
                                        .MCALL  M$GNINS
                                        .IRP    N,<T$CODE,SPRM2,-1,T$LOLIM,T$HILIM>
                                        M$GNINS <.WORD  N>
                                        .ENDM
        077346                          M$GNINS <.WORD  T$CODE>
                                        .IF LT SVCINS
                                        .WORD   T$CODE
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
```

```
                                   .WORD   T$CODE
                                           .NLIST
                          .MEXIT
                          .ENDC
                          .IF GT SVCINS
                          .LIST
      077346  001052                                                              .WORD   T$CODE
                                           .NLIST
                          .ENDC
      077350              M$GNINS <.WORD   SPRM2>
                          .IF LT SVCINS
                          .WORD   SPRM2
                          .MEXIT
                          .ENDC
                          .IF EQ SVCINS
                          .LIST
                                   .WORD   SPRM2
                                           .NLIST
                          .MEXIT
                          .ENDC
                          .IF GT SVCINS
                          .LIST
      077350  077431                                                              .WORD   SPRM2
                                           .NLIST
                          .ENDC
      077352              M$GNINS <.WORD   -1>
                          .IF LT SVCINS
                          .WORD   -1
                          .MEXIT
                          .ENDC
                          .IF EQ SVCINS
                          .LIST
                                   .WORD   -1
                                           .NLIST
                          .MEXIT
                          .ENDC
                          .IF GT SVCINS
                          .LIST
      077352  177777                                                              .WORD   -1
                                           .NLIST
                          .ENDC
      077354              M$GNINS <.WORD   T$LOLIM>
                          .IF LT SVCINS
                          .WORD   T$LOLIM
                          .MEXIT
                          .ENDC
                          .IF EQ SVCINS
                          .LIST
                                   .WORD   T$LOLIM
                                           .NLIST
                          .MEXIT
                          .ENDC
                          .IF GT SVCINS
                          .LIST
      077354  000003                                                              .WORD   T$LOLIM
                                           .NLIST
                          .ENDC
```

```
      077356                          M$GNINS <.WORD  T$HILIM>
                                      .IF LT SVCINS
                                      .WORD   T$HILIM
                                      .MEXIT
                                      .ENDC
                                      .IF EQ SVCINS
                                      .LIST
                                              .WORD   T$HILIM
                                                      .NLIST
                                      .MEXIT
                                      .ENDC
                                      .IF GT SVCINS
                                      .LIST
      077356  000077                                                                  .WORD   T$HILIM
                                                      .NLIST
                                      .ENDC
                                      .IF NE  T$EXCP
                                      M$WORD  T$EXCP
                                      .ENDC
                                      .IF NB
                                      M$WORD </2>
                                      .ENDC
 8770 077360                                  GPRMD   SPRM4,4,D,-1,1,3777,YES
                                      .MCALL  M$RADIX,M$DEFAULT,M$EXCP,M$WORD,M$CNTOP
                                      .IF IDN A,D
                                      .IF EQ T$GMANID
                                      .ERROR  ;ASCII RADIX VALID ONLY ON "GMANID"
                                      .ENDC
                                      .ENDC
              000000                  T$TEMP=4&1
                                      .IF NE  T$TEMP & 1
                                      .ERROR  ;ODD OFFSET
                                      .ENDC
                                      .IF LT  G$OFSIZE-4
                                      .ERROR  ;OFFSET TOO BIG
                                      .ENDC
              002002                  T$CODE=G$PRMD + <4 * G$OFFSET>
      077360                          M$RADIX D,T$TEMP
                                      .IF IDN B,D
                                      T$TEMP=G$RADB
                                      .MEXIT
                                      .ENDC
                                      .IF IDN O,D
                                      T$TEMP=G$RADO
                                      .MEXIT
                                      .ENDC
                                      .IF IDN D,D
              000040                  T$TEMP=G$RADD
                                      .MEXIT
                                      .ENDC
                                      .IF IDN L,D
                                      T$TEMP=G$RADL
                                      .MEXIT
                                      .ENDC
                                      .IF IDN A,D
                                      T$TEMP=G$RADA
                                      .MEXIT
```

```
                                        .ENDC
                                        T$TEMP=-1
                                        .ERROR  ;ILL. RADIX "D"
                002042                  T$CODE=T$CODE ! T$TEMP
        077360                          M$DEFAULT       YES,T$TEMP
                                        .IF IDN YES,YES
                000010                  T$TEMP=G$YES
                                        .MEXIT
                                        .ENDC
                                        .IF IDN NO,YES
                                        T$TEMP=G$NO
                                        .MEXIT
                                        .ENDC
                                        T$TEMP=-1
                                        .ERROR  ;DEFAULT "YES" MUST BE "YES' OR "NO"
                002052                  T$CODE=T$CODE ! T$TEMP
                000000                  T$EXCP=0
        077360                          M$EXCP  T$CODE,T$EXCP,G$LOLIM,T$LOLIM,1
                                        .IF IDN <@>,<1>
                                        .IF LT G$OFSIZE-
                                        .ERROR  ;INDIRECT PAR. TOO BIG
                                        .MEXIT
                                        .ENDC
                                        T$LOLIM=/2
                                        T$CODE=T$CODE ! G$EXCP
                                        T$EXCP=T$EXCP ! G$LOLIM
                                        .IFF
                                        .IF B,
                000001                  T$LOLIM=1
                                        .IFF
                                        .ERROR  ;ILL. DEFERRED MODE
                                        .ENDC
                                        .ENDC
        077360                          M$EXCP  T$CODE,T$EXCP,G$HILIM,T$HILIM,3777
                                        .IF IDN <@>,<3777>
                                        .IF LT G$OFSIZE-
                                        .ERROR  ;INDIRECT PAR. TOO BIG
                                        .MEXIT
                                        .ENDC
                                        T$HILIM=/2
                                        T$CODE=T$CODE ! G$EXCP
                                        T$EXCP=T$EXCP ! G$HILIM
                                        .IFF
                                        .IF B,
                003777                  T$HILIM=3777
                                        .IFF
                                        .ERROR  ;ILL. DEFERRED MODE
                                        .ENDC
                                        .ENDC
        077360                          M$CNTOP <>,<T$CODE>
                                        .IF NB
                                        .IF NE  I$SFT - F$BGN
                                        .ERROR  ; "COUNT" OPTION VALID ONLY IN S.W. QUES.
                                        .MEXIT
                                        .ENDC
                                        T$CODE=T$CODE ! G$CNTOP
                                        .ENDC
```

```
077360                  M$WORD  <T$CODE,SPRM4,-1,T$LOLIM,T$HILIM>
                        .MCALL  M$GNINS
                        .IRP    N,<T$CODE,SPRM4,-1,T$LOLIM,T$HILIM>
                        M$GNINS <.WORD  N>
                        .ENDM
077360                  M$GNINS <.WORD  T$CODE>
                        .IF LT SVCINS
                        .WORD   T$CODE
                        .MEXIT
                        .ENDC
                        .IF EQ SVCINS
                        .LIST
                                .WORD   T$CODE
                                        .NLIST
                        .MEXIT
                        .ENDC
                        .IF GT SVCINS
                        .LIST
077360  002052                                                          .WORD   T$CODE
                                        .NLIST
                        .ENDC
077362                  M$GNINS <.WORD  SPRM4>
                        .IF LT SVCINS
                        .WORD   SPRM4
                        .MEXIT
                        .ENDC
                        .IF EQ SVCINS
                        .LIST
                                .WORD   SPRM4
                                        .NLIST
                        .MEXIT
                        .ENDC
                        .IF GT SVCINS
                        .LIST
077362  077473                                                          .WORD   SPRM4
                                        .NLIST
                        .ENDC
077364                  M$GNINS <.WORD  -1>
                        .IF LT SVCINS
                        .WORD   -1
                        .MEXIT
                        .ENDC
                        .IF EQ SVCINS
                        .LIST
                                .WORD   -1
                                        .NLIST
                        .MEXIT
                        .ENDC
                        .IF GT SVCINS
                        .LIST
077364  177777                                                          .WORD   -1
                                        .NLIST
                        .ENDC
077366                  M$GNINS <.WORD  T$LOLIM>
                        .IF LT SVCINS
                        .WORD   T$LOLIM
                        .MEXIT
```

```
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        .WORD   T$LOLIM
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
      077366  000001                                                                    .WORD   T$LOLIM
                                                .NLIST
                                .ENDC
      077370                    M$GNINS <.WORD  T$HILIM>
                                .IF LT SVCINS
                                .WORD   T$HILIM
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        .WORD   T$HILIM
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
      077370  003777                                                                    .WORD   T$HILIM
                                                .NLIST
                                .ENDC
                                .IF NE  T$EXCP
                                M$WORD  T$EXCP
                                .ENDC
                                .IF NB
                                M$WORD </2>
                                .ENDC
 8771 077372                            GPRML   SPRM5,6,-1,YES
                                .MCALL  M$RADIX,M$DEFAULT,M$WORD,M$CNTOP
              000000            T$TEMP=6&1
                                .IF NE  T$TEMP & 1
                                .ERROR  ;ODD OFFSET
                                .ENDC
                                .IF LT  G$OFSIZE-6
                                .ERROR  ;OFFSET TOO BIG
                                .ENDC
              003000            T$CODE=G$PRML + <6 * G$OFFSET>
      077372                    M$RADIX L,T$TEMP
                                .IF IDN B,L
                                T$TEMP=G$RADB
                                .MEXIT
                                .ENDC
                                .IF IDN O,L
                                T$TEMP=G$RADO
                                .MEXIT
                                .ENDC
                                .IF IDN D,L
                                T$TEMP=G$RADD
                                .MEXIT
                                .ENDC
```

```
                        .IF IDN L,L
         000120         T$TEMP=G$RADL
                        .MEXIT
                        .ENDC
                        .IF IDN A,L
                        T$TEMP=G$RADA
                        .MEXIT
                        .ENDC
                        T$TEMP=-1
                        .ERROR  ;ILL. RADIX "L"
         003120         T$CODE=T$CODE ! T$TEMP
077372                  M$DEFAULT       YES,T$TEMP
                        .IF IDN YES,YES
         000010         T$TEMP=G$YES
                        .MEXIT
                        .ENDC
                        .IF IDN NO,YES
                        T$TEMP=G$NO
                        .MEXIT
                        .ENDC
                        T$TEMP=-1
                        .ERROR  ;DEFAULT "YES" MUST BE "YES" OR "NO"
         003130         T$CODE=T$CODE ! T$TEMP
077372                  M$CNTOP <>,<T$CODE>
                        .IF NB
                        .IF NE  I$SFT - F$BGN
                        .ERROR  ; "COUNT" OPTION VALID ONLY IN S.W. QUES.
                        .MEXIT
                        .ENDC
                        T$CODE=T$CODE ! G$CNTOP
                        .ENDC
077372                  M$WORD  <T$CODE,SPRM5,-1>
                        .MCALL  M$GNINS
                        .IRP    N,<T$CODE,SPRM5,-1>
                        M$GNINS <.WORD  N>
                        .ENDM
077372                  M$GNINS <.WORD  T$CODE>
                        .IF LT SVCINS
                        .WORD   T$CODE
                        .MEXIT
                        .ENDC
                        .IF EQ SVCINS
                        .LIST
                                .WORD   T$CODE
                                        .NLIST
                        .MEXIT
                        .ENDC
                        .IF GT SVCINS
                        .LIST
077372  003130                                                          .WORD   T$CODE
                                        .NLIST
                        .ENDC
077374                  M$GNINS <.WORD  SPRM5>
                        .IF LT SVCINS
                        .WORD   SPRM5
                        .MEXIT
                        .ENDC
```

```
                                          .IF EQ SVCINS
                                          .LIST
                                                .WORD   SPRM5
                                                        .NLIST
                                          .MEXIT
                                          .ENDC
                                          .IF GT SVCINS
                                          .LIST
        077374  077522                                                                          .WORD   SPRM5
                                                        .NLIST
                                          .ENDC
        077376                            M$GNINS <.WORD  -1>
                                          .IF LT SVCINS
                                          .WORD   -1
                                          .MEXIT
                                          .ENDC
                                          .IF EQ SVCINS
                                          .LIST
                                                .WORD   -1
                                                        .NLIST
                                          .MEXIT
                                          .ENDC
                                          .IF GT SVCINS
                                          .LIST
        077376  177777                                                                          .WORD   -1
                                                        .NLIST
                                          .ENDC
                                          .IF NB
                                          M$WORD  </2>
                                          .ENDC
   8772 077400                                  EXIT    SFT
                                          .MCALL  M$SVC,M$EXIT,M$EXSEG,M$EXTJ,M$GETTOP,M$CHECK,M$WORD,XFER
                000041                    T$FLAG=F$END
        077400                            M$CHECK SFT,T$TEMP,T$FLAG
                                          .IF IDN <TST>,<SFT>
                                          T$TEMP=T$$TEST
                                          T$FLAG=I$TST
                                          .MEXIT
                                          .ENDC
                                          .IF IDN <SUB>,<SFT>
                                          T$TEMP=T$$SUB
                                          T$FLAG=I$SUB
                                          .MEXIT
                                          .ENDC
                                          .IF IDN <SEG>,<SFT>
                                          T$TEMP=T$$SEG
                                          T$FLAG=I$SEG
                                          .MEXIT
                                          .ENDC
                                          .IF IDN <INIT>,<SFT>
                                          T$TEMP=T$$INIT
                                          T$FLAG=I$INIT
                                          .MEXIT
                                          .ENDC
                                          .IF IDN <CLN>,<SFT>
                                          T$TEMP=T$$CLEAN
                                          T$FLAG=I$CLN
```

```
                                        .MEXIT
                                        .ENDC
                                        .IF IDN <SRV>,<SFT>
                                        T$TEMP=T$$SRV
                                        T$FLAG=I$SRV
                                        .MEXIT
                                        .ENDC
                                        .IF IDN <MSG>,<SFT>
                                        T$TEMP=T$$MSG
                                        T$FLAG=F$JMP
                                        .MEXIT
                                        .ENDC
                                        .IF IDN <RPT>,<SFT>
                                        T$TEMP=T$$RPT
                                        T$FLAG=F$JMP
                                        .MEXIT
                                        .ENDC
                                        .IF IDN <DU>,<SFT>
                                        T$TEMP=T$$DU
                                        T$FLAG=F$JMP
                                        .MEXIT
                                        .ENDC
                                        .IF IDN <AU>,<SFT>
                                        T$TEMP=T$$AU
                                        T$FLAG=F$JMP
                                        .MEXIT
                                        .ENDC
                                        .IF EQ T$FLAG-F$JMP
                                        M$WORD  J$JM
                                        M$EXTJ  \T$TEMP
                                        .MEXIT
                                        .ENDC
                                        .IF EQ  T$FLAG-F$BGN
                                        M$SVC   C$EXIT
                                        .IF IDN <SEG>,<SFT>
                                        M$GETTOP T$SEK,T$SEGLEV,T$TEMP
                                        M$EXSEG \T$TEMP
                                        .IFF
                                        M$EXIT  \T$TEMP
                                        .ENDC
                                        .MEXIT
                                        .ENDC
                                        .IF IDN <HRD>,<SFT>
                                        M$GETTOP        T$NS,T$NESTLEV,T$TEMP
                                        .IF EQ  F$HARD-T$TEMP
                                        .IRP    N,<\T$$HARD>
                                        XFER    L'N
                                        .ENDM
                                        .MEXIT
                                        .ENDC
                                        .ENDC
                                        .IF IDN <SFT>,<SFT>
        077400                          M$GETTOP        T$NS,T$NESTLEV,T$TEMP
                                        .MCALL  M$GETS
        077400                          M$GETS  T$NS,\T$NESTLEV,T$TEMP
                000005                  T$TEMP=T$NS1
                                        .IF EQ  F$SOFT T$TEMP
```

```
                                .IRP    N,<\T$$SOFT>
                                XFER    L'N
                                .ENDM
     077400                     XFER    L10063
                                .MCALL  M$XFER
     077400                     M$XFER  X$ALWAYS,L10063
                                .MCALL  M$GETTOP,M$WORD
     077400                     M$GETTOP        T$NS,T$NESTLEV,T$CODE
                                .MCALL  M$GETS
     077400                     M$GETS  T$NS,\T$NESTLEV,T$CODE
            000005              T$CODE=T$NS1
                                .IF NE F$HARD - T$CODE
                                .IF NE F$SOFT - T$CODE
                                .ERROR  ;"XFER'S" MUST BE IN GPRM CODING.
                                .MEXIT
                                .ENDC
                                .ENDC
            000172              T$CODE=L10063 - .
                                .IF GT T$CODE-376
                                .ERROR  ;"XFER" RANGE TOO BIG
                                .MEXIT
                                .ENDC
            075000              T$CODE=T$CODE * X$OFFSET
            075004              T$CODE=T$CODE + G$XFER + X$ALWAYS
     077400                     M$WORD  T$CODE
                                .MCALL  M$GNINS
                                .IRP    N,<T$CODE>
                                M$GNINS <.WORD  N>
                                .ENDM
     077400                     M$GNINS <.WORD  T$CODE>
                                .IF LT SVCINS
                                .WORD   T$CODE
                                .MEXIT
                                .ENDC
                                .IF EQ SVCINS
                                .LIST
                                        .WORD   T$CODE
                                                .NLIST
                                .MEXIT
                                .ENDC
                                .IF GT SVCINS
                                .LIST
     077400 075004                                                              .WORD   T$CODE
                                                .NLIST
                                .ENDC
                                .MEXIT
                                .ENDC
                                .ENDC
                                .ERROR  ;ILL. "EXIT SFT" STMT.
8773                                    .NLIST BEX
8774 077402    121     125     111 PMQVP:  .ASCIZ  /QUICK VERIFY TEST     /
8775 077431    116     125     115 SPRM2:  .ASCIZ  /NUMBER OF MATCH CHARACTER COUNTS /
8776 077473    116     125     115 SPRM4:  .ASCIZ  /NUMBER OF BYTE COUNTS /
8777 077522    104     117     040 SPRM5:  .ASCIZ  /DO YOU WANT THE ADDITIONAL STANDBY TEST/
8778                                    .LIST BEX
8779                                    .EVEN
8780
```

E3


```
  8781 077572                             ENDSFT
                                  .MCALL  M$POP,M$GNINS,M$GNTAG,M$ENDERR
       077572                     M$POP   T$NS,T$NESTLEV,T$TEMP
                                  .MCALL  M$GETS,M$DECR
                                  .IF LT  T$NESTLEV
                                  .ERROR  T$NESTLEV       ; MACRO T$NS UNDERFLOW
                                  .MEXIT
                                  .ENDC
       077572                     M$GETS  T$NS,\T$NESTLEV,T$TEMP
               000005             T$TEMP=T$NS1
       077572                     M$DECR  T$NESTLEV
               000000             T$NESTLEV=T$NESTLEV-1
                                  .IF EQ F$SOFT-T$TEMP
       077572                     M$GNINS .EVEN
                                  .IF LT SVCINS
                                  .EVEN
                                  .MEXIT
                                  .ENDC
                                  .IF EQ SVCINS
                                  .LIST
                                          .EVEN
                                                  .NLIST
                                  .MEXIT
                                  .ENDC
                                  .IF GT SVCINS
                                  .LIST
                                                                                    .EVEN
                                                  .NLIST
                                  .ENDC
       077572                     M$GNTAG L,T$$SOFT
                                  .MCALL  M$GEN
       077572                     M$GEN   L,\T$$SOFT,SVCTAG
                                  .IF LE  SVCTAG
                                  .IIF EQ SVCTAG,.LIST
                                  L10063:
                                  .IIF EQ SVCTAG,.NLIST
                                  .MEXIT
                                  .ENDC
                                  .LIST
       077572                                                                L10063:
                                          .NLIST
               010000             S$LSYM=T$LSYM
               000041             I$SFT=F$END
                                  .IFF
                                  M$ENDERR        ENDSFT,T$TEMP
                                  .ENDC
  8782
  8783
  8784                            .IF NE HELP
  8785                            ;*****************************************************************
  8786                            ;      INSERT MESSAGES THAT ARE USED ONLY
  8787                            ;      DURING THE SOFTWARE PARAMETER CODING SECTION.
  8788                            ;*****************************************************************
  8789                            .ENDC
  8790
  8791 077572                     $PATCH::
  8792 077572                             .BLKW   50              ; PATCH AREA
```

```
     077712                            .BLKB   400-<.&377>      ; LASTAD SHIFT FOR LSI BUG


                               .IF NE HELP
                               ;*************************************************************************
                               ;       THIS IS A PATCH AREA THAT SHOULD BE INCLUDED IN ALL DIAGNOSTICS.
                               ;       ADJUST THE SIZE TO FIT YOUR OWN PREFERENCES.
                               ;*************************************************************************
                               .ENDC

     100000                            LASTAD
                               .MCALL  M$GNINS,M$GNGBL
     100000                    M$GNINS .EVEN
                               .IF LT SVCINS
                               .EVEN
                               .MEXIT
                               .ENDC
                               .IF EQ SVCINS
                               .LIST
                                       .EVEN
                                               .NLIST
                               .MEXIT
                               .ENDC
                               .IF GT SVCINS
                               .LIST
                                                                                       .EVEN
                                               .NLIST
                               .ENDC
             000001            T$LAST=1
                               .IF EQ O$SETUP
                               M$WORD  <0>
                               M$WORD  <0>
                               .IFF
     100000                    M$GNINS <.WORD T$FREE>
                               .IF LT SVCINS
                               .WORD T$FREE
                               .MEXIT
                               .ENDC
                               .IF EQ SVCINS
                               .LIST
                                       .WORD T$FREE
                                               .NLIST
                               .MEXIT
                               .ENDC
                               .IF GT SVCINS
                               .LIST
     100000  100024                                                                    .WORD T$FREE
                                               .NLIST
                               .ENDC
     100002                    M$GNINS <.WORD T$SIZE>
                               .IF LT SVCINS
                               .WORD T$SIZE
                               .MEXIT
                               .ENDC
                               .IF EQ SVCINS
                               .LIST
                                       .WORD T$SIZE
```

```
                                                .NLIST
                              .MEXIT
                              .ENDC
                              .IF GT SVCINS
                              .LIST
      100002  000010                                                                .WORD T$SIZE
                                                .NLIST
                              .ENDC
                              .ENDC
              000000          SVCGBL=0
      100004                  M$GNGBL L$LAST
                              .MCALL  M$GEN
                              .IF NB,L$LAST
                              .IF NB,
                              M$GEN   L$LAST,:,SVCGBL,
                              .ENDC
                              .IF B,
      100004                  M$GEN   L$LAST,:,SVCGBL,< >
                              .IF LE  SVCGBL
                              .IIF EQ SVCGBL,.LIST
      100004                  L$LAST::
                              .IIF EQ SVCGBL,.NLIST
                              .MEXIT
                              .ENDC
                              .LIST
                                                                          L$LAST::
                                       .NLIST
                              .ENDC
                              .ENDC
              000034          T$LTNO=T$TESTNUM
 8804 100004                          ENDMOD
                              .MCALL  M$POP,M$ENDERR
                              .IF EQ  F$BGN-I$MOD
              000041          I$MOD=F$END
                              .IFF
                              .ERROR  ; MISSING "BGNMOD"
                              .MEXIT
                              .ENDC
      100004                  M$POP   T$NS,T$NESTLEV,T$TEMP
                              .MCALL  M$GETS,M$DECR
                              .IF LT  T$NESTLEV
                              .ERROR  T$NESTLEV        ; MACRO T$NS UNDERFLOW
                              .MEXIT
                              .ENDC
      100004                  M$GETS  T$NS,\T$NESTLEV,T$TEMP
              000000          T$TEMP=T$NS0
      100004                  M$DECR  T$NESTLEV
              177777          T$NESTLEV=T$NESTLEV 1
                              .IF NE F$MOD T$TEMP
                              M$ENDERR        ENDMOD,T$TEMP
                              .ENDC
```

```
                              .IF NE HELP
                              ;*******************************************************************
                              ;       HARDCODED P-TABLES MAY BE PLACED HERE BY USING THE SETUP MACROS.
                              ;       THIS SECTION IS OPTIONAL AND SHOULD BE REMOVED IF IT IS NOT BEING
                              ;       USED.  CHANGE THE POINTER MACRO ARGUMENT TO REFLECT THE REMOVAL.
                              ;
                              ;       THE P-TABLES ARE DELIMITED BY THE "BGNSETUP" AND "ENDSETUP" MACROS.
                              ;       THE "BGNSETUP" MACRO HAS ONE ARGUMENT WHICH IS THE NUMBER OF
                              ;       P-TABLE ENTRIES.   EACH ENTRY IS DELIMITED BY THE "BGNPTAB" AND
                              ;       "ENDPTAB" MACROS.  NEITHER OF THESE MACROS REQUIRE AN ARGUMENT.
                              ;*******************************************************************
                              .ENDC

 100004                               BGNSETUP        1
                              .MCALL  M$INCR
                              .IF NE  F$END - I$SETUP
                              .ERROR  ; ONLY 1 SETUP!
                              .MEXIT
                              .ENDC
                              .IF NE  T$LAST-1
                              .ERROR  ; "LASTAD" MUST PRECEDE "BGNSETUP"
                              .MEXIT
                              .ENDC
          000040              I$SETUP=F$BGN
          010064              T$$PTAB=T$TAGNUM
 100004                       M$INCR   T$TAGNUM
          010065              T$TAGNUM=T$TAGNUM+1
                              .IF NB 1
          000001              T$PCNT=1
          000001              T$$PC=1
                              .IFF
                              .ERROR  ; MISSING # OF PTABLES
                              T$PCNT=1
                              .ENDC
 100004                               BGNPTAB
                              .MCALL M$INCR,M$DECR,M$WORD,M$GNINS,M$GNTAG
                              .IF NE F$BGN-I$SETUP
                              .ERROR  ; MISSING "BGNSETUP"
                              .MEXIT
                              .ENDC
                              .IF NE F$END-I$PTAB
                              .ERROR  ; MISSING "ENDPTAB"
                              .MEXIT
                              .ENDC
          000040              I$PTAB=F$BGN
          010065              T$PTAB=T$TAGNUM
 100004                       M$INCR   T$TAGNUM
          010066              T$TAGNUM=T$TAGNUM+1
 100004                       M$DECR   T$PCNT
          000000              T$PCNT=T$PCNT-1
                              .IF LE T$PCNT
 100004                       M$WORD <0>
                              .MCALL  M$GNINS
                              .IRP    N,<0>
                              M$GNINS <.WORD  N>
```

```
                                        .ENDM
        100004                          M$GNINS <.WORD  0>
                                        .IF LT SVCINS
                                        .WORD   0
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                .WORD   0
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
        100004  000000                                                                          .WORD   C
                                                        .NLIST
                                        .ENDC
                                        .IFF
                                        .IRP N,<\T$PTAB>
                                        M$GNINS <.WORD  L'N>
                                        .ENDM
                                        .ENDC
                010066                  T$$DAT=T$TAGNUM
        100006                          M$INCR   T$TAGNUM
                010067                  T$TAGNUM=T$TAGNUM+1
                                        .IRP    N,<\T$$DAT>
                                        M$GNINS <.WORD  L'N-./2-1>
                                        .ENDM
        100006                          M$GNINS <.WORD  L10066-./2-1>
                                        .IF LT SVCINS
                                        .WORD   L10066-./2-1
                                        .MEXIT
                                        .ENDC
                                        .IF EQ SVCINS
                                        .LIST
                                                .WORD   L10066-./2-1
                                                        .NLIST
                                        .MEXIT
                                        .ENDC
                                        .IF GT SVCINS
                                        .LIST
        100006  000006                                                                          .WORD   L10066-./2-1
                                                        .NLIST
                                        .ENDC
        100010                          M$GNTAG L,T$$PTAB
                                        .MCALL  M$GEN
        100010                          M$GEN   L,\T$$PTAB,SVCTAG
                                        .IF LE  SVCTAG
                                        .IIF EQ SVCTAG,.LIST
                                        L10064:
                                        .IIF EQ SVCTAG,.NLIST
                                        .MEXIT
                                        .ENDC
                                        .LIST
        100010                                                                          L10064:
                                                .NLIST
                010065                  T$$PTAB=T$PTAB
```

```
     100010                              M$INCR  T$PTNUM
             000001                      T$PTNUM=T$PTNUM+1
     100010  164100                              .WORD   164100          ;1ST (OF 8) REGISTER ADDRESS      *C*
     100012  000270                              .WORD      270          ;1ST (OF 2) VECTOR ADDRESS        *C*
     100014  000300                              .WORD    PRI06          ;INTERRUPT PRIORITY
     100016  000000                              .WORD        0          ;DEVICE PRIMARY ADDRESS FOR CH.1
     100020  000001                              .WORD        1          ;DEVICE PRIMARY ADDRESS FOR CH.2
     100022  000000                              .WORD        0          ;DEFAULT VALUE FOR TESTCABLE

     100024                                      ENDPTAB
                                         .MCALL  M$GNTAG
                                         .IF NE  F$BGN - I$PTAB
                                         .ERROR  ; MISSING "BGNPTAB"
                                         .MEXIT
                                         .ENDC
             000041                      I$PTAB=F$END
     100024                              M$GNTAG L,T$$DAT
                                         .MCALL  M$GEN
     100024                              M$GEN   L,\T$$DAT,SVCTAG
                                         .IF LE  SVCTAG
                                         .IIF EQ SVCTAG,.LIST
                                         L10066:
                                         .IIF EQ SVCTAG,.NLIST
                                         .MEXIT
                                         .ENDC
                                         .LIST
     100024                                                                    L10066:
                                                 .NLIST
     100024                                      ENDSETUP
                                         .IF NE  F$BGN - I$SETUP
                                         .ERROR  ; MISSING "BGNSETUP"
                                         .MEXIT
                                         .ENDC
             000041                      I$SETUP=F$END
                                         .IF NE  T$$PC - T$PTNUM
                                         .ERROR  ; PTABLE COUNT INCORRECT
                                         .ENDC
             100024                      T$FREE=.
             000010                      T$SIZE=.-L$LAST / 2
             000001                      T$PTHV=T$PTNUM
             000001                      .END
```

K3

Symbol table

```
ADR   = 000020 G
ANS     002370 G
ASSEMB= 000010
A1      017026
A10     033614
A11     035362
A12     037132
A2      023126
A81     030062
A82     031244
A9      032030
BAD     002502 G
BARX    002302 G
BCINP   002240 G
BCRX    002304 G
BGIN1   010524 G
BGIN2   010700 G
BIT0  = 000001 G
BIT00 = 000001 G
BIT01 = 000002 G
BIT02 = 000004 G
BIT03 = 000010 G
BIT04 = 000020 G
BIT05 = 000040 G
BIT06 = 000100 G
BIT07 = 000200 G
BIT08 = 000400 G
BIT09 = 001000 G
BIT1  = 000002 G
BIT10 = 002000 G
BIT11 = 004000 G
BIT12 = 010000 G
BIT13 = 020000 G
BIT14 = 040000 G
BIT15 = 100000 G
BIT2  = 000004 G
BIT3  = 000010 G
BIT4  = 000020 G
BIT5  = 000040 G
BIT6  = 000100 G
BIT7  = 000200 G
BIT8  = 000400 G
BIT9  = 001000 G
BOE   = 000400 G
BUFAB   002356 G
BUFBB   002360 G
CDAT1   002434 G
CDAT10  002456 G
CDAT11  002460 G
CDAT12  002462 G
CDAT13  002464 G
CDAT14  002466 G
CDAT15  002470 G
CDAT16  002472 G
CDAT17  002474 G
CDAT18  002476 G
CDAT2   002436 G
CDAT3   002440 G
CDAT4   002442 G
CDAT5   002444 G
CDAT6   002446 G
CDAT7   002450 G
CDAT8   002452 G
CDAT9   002454 G
CHAN    002374 G
CNT1    002404 G
COPA1   020404
COPA10  034550
COPA11  036316
COPA12  040154
COPA2   024622
COPA9   033000
COPB1   021266
COPB2   025564
COPC1   021620
COPC2   026124
COPD1   022462
COPD2   027002
CSRMSK  002362 G
CSRMS1  002364 G
CSRMS2  002366 G
CSRNAM  014044
CSRX    002300 G
CULPA   010210 G
C$AU  = 000052
C$AUTO= 000061
C$BRK = 000022
C$BSEG= 000004
C$BSUB= 000002
C$CEFG= 000045
C$CLCK= 000062
C$CLEA= 000012
C$CLOS= 000035
C$CLP1= 000006
C$CVEC= 000036
C$DCLN= 000044
C$DODU= 000051
C$DRPT= 000024
C$DU  = 000053
C$EDIT= 000003
C$ERDF= 000055
C$ERHR= 000056
C$ERRO= 000060
C$ERSF= 000054
C$ERSO= 000057
C$ESCA= 000010
C$ESEG= 000005
C$ESUB= 000003
C$ETST= 000001
C$EXIT= 000032
C$GETB= 000026
C$GETW= 000027
C$GMAN= 000043
C$GPHR= 000042
C$GPLO= 000030
C$GPRI= 000040
C$INIT= 000011
C$INLP= 000020
C$MANI= 000050
C$MEM = 000031
C$MSG = 000023
C$OPEN= 000034
C$PNTB= 000014
C$PNTF= 000017
C$PNTS= 000016
C$PNTX= 000015
C$QIO = 000377
C$RDBU= 000007
C$REFG= 000047
C$RESE= 000033
C$REVI= 000003
C$RFLA= 000021
C$RPT = 000025
C$SEFG= 000046
C$SPRI= 000041
C$SVEC= 000037
C$TPRI= 000013
DFPTBL  002216 G
DIAGMC= 000000
DMAHAD  004705
DPA1    002312 G
DPA2    002314 G
EF.CON= 000036 G
EF.NEW= 000035 G
EF.PWR= 000034 G
EF.RES= 000037 G
EF.STA= 000040 G
EMG101  004106
EMG201  004160
EMG202  004320
EMG203  004255
EMG231  004641
EMG401  004415
EMG402  004511
EMG501  004550
ERNU    002432 G
ERRBLK  002512 G
ERRMSG  002510 G
ERRNBR  002506 G
ERRTYP  002504 G
ERR101  003444 G
ERR201  003470 G
ERR202  003546 G
ERR231  003734 G
ERR401  003606 G
ERR402  003644 G
ERR501  003672 G
EVL   = 000004 G
EXINI   011210
EXQV1   012612
EXQV10  035222
EXQV11  036770
EXQV12  040650
EXQV13  043036
EXQV14  043740
EXQV15  044722
EXQV16  046260
EXQV17  050642
EXQV18  051732
EXQV19  053042
EXQV2   013326
EXQV20  054114
EXQV21  055164
EXQV22  057200
EXQV23  063202
EXQV24  067202
EXQV25  070740
EXQV26  072472
EXQV27  075404
EXQV3   014040
EXQV4   015520
EXQV5   016730
EXQV6   022776
EXQV7   027332
EXQV9   033452
E$END = 002100
E$LOAD= 000035
E101    005002 G
E200    005047 G
E222    005665 G
E231    006000 G
E232    006062 G
E233    006113 G
E234    006170 G
E235    006221 G
E250    005716 G
E271    076636
E301    005114 G
E302    005152 G
E303    005220 G
E400    010162
E401    005255 G
E402    005306 G
E403    005343 G
E501    005376 G
E502    005437 G
E801    005500 G
E802    005556 G
E901    005634 G
FINIT1  012036
FINIT2  012126
FMDROP  012356
F$AU  = 000015
F$AUTO= 000020
F$BGN = 000040
F$CLEA= 000007
F$DU  = 000016
F$END = 000041
F$HARD= 000004
F$HW  = 000013
F$INIT= 000006
F$JMP = 000050
F$MOD = 000000
F$MSG = 000011
F$PROT= 000021
F$PWR = 000017
F$RPT = 000012
F$SEG = 000003
F$SOFT= 000005
F$SRV = 000010
F$SUB = 000002
F$SW  = 000014
F$TEST= 000001
GETPRM  011234
GOOD    002500 G
G$CNTO= 000200
G$DELM= 000372
G$DISP= 000003
G$EXCP= 000400
G$HILI= 000002
G$LOLI= 000001
G$NO  = 000000
G$OFFS= 000400
G$OFSI= 000376
G$PRMA= 000001
G$PRMD= 000002
G$PRML= 000000
G$RADA= 000140
G$RADB= 000000
G$RADD= 000040
G$RADL= 000120
G$RADO= 000020
G$XFER= 000004
G$YES = 000010
HELP  = 000000
HOE   = 100000 G
HPM1    077012
HPM2    077050
HPM3    077106
HPM4    077166
HPM5    077230
HPM6    077273
IBE   = 010000 G
ICRHX   002270 G
ICRLX   002266 G
ICRNAM  013344
ICRX    002264 G
IDRHX   002276 G
IDRLX   002274 G
IDRNAM  013351
IDRX    002272 G
IDU   = 000040 G
IER   = 020000 G
IIRHX   002254 G
IIRLX   002252 G
```

L3

Symbol table

```
IIRNAM  013332
IIRX    002250 G
INFO1   076246
INFO2   076376
INFO3   076504
INTERR  010152 G
INTFC1  002376 G
INTFC2  002400 G
INTSC1  010132 G
INTSC2  010142 G
ISR   = 000100 G
ISRHX   002262 G
ISRLX   002260 G
ISRNAM  013337
ISRX    002256 G
ITAC13  041004
ITAC14  043152
ITAC15  044056
ITAC16  045032
ITAC17  046400
ITAC18  050760
ITAC19  052070
ITAC20  053206
ITAC21  054256
ITAC22  055322
ITAC23  057310
ITAC24  063324
ITAC25  067330
ITAC26  071052
ITAC27  072726
ITAC28  075740
ITRAC1  012476
ITRAC2  012724
ITRAC3  013460
ITRAC4  014132
ITRAC5  015630
ITRCNT  002322 G
ITRDEF  002320 G
IXE   = 004000 G
I$AU  = 000041
I$AUTO= 000041
I$CLN = 000041
I$DU  = 000041
I$HRD = 000041
I$INIT= 000041
I$MOD = 000041
I$MSG = 000041
I$PRO1= 000040
I$PTAB= 000041
I$PWR = 000041
I$RPT = 000041
I$SEG = 000041
I$SETU= 000041
I$SFT = 000041
I$SRV = 000041
I$SUB = 000041
I$TST = 000041

J$JMP = 000167
KPAR0 = 172340
KPAR1 = 172342
KPAR2 = 172344
KPAR3 = 172346
KPAR4 = 172350
KPAR5 = 172352
KPAR6 = 172354
KPAR7 = 172356
KPDR0 = 172300
KPDR1 = 172302
KPDR2 = 172304
KPDR3 = 172306
KPDR4 = 172310
KPDR5 = 172312
KPDR6 = 172314
KPDR7 = 172316
LOCATE  012624 G
LOE   = 040000 G
LOGDEV  002372 G
LOOP    011050
LOT   = 000010 G
L$ACP   002110 G
L$APT   002036 G
L$AU    012410 G
L$AUT   002070 G
L$AUTO  012220 G
L$CCP   002106 G
L$CLEA  012304 G
L$CO    002032 G
L$DEPO  002011 G
L$DESC  003414 G
L$DESP  002076 G
L$DEVP  002060 G
L$DISP  002124 G
L$DLY   002116 G
L$DTP   002040 G
L$DTYP  002034 G
L$DU    012330 G
L$DUT   002072 G
L$DVTY  003352 G
L$EF    002052 G
L$ENVI  002044 G
L$ERRT  002504 G
L$ETP   002102 G
L$EXP1  002046 G
L$EXP4  002064 G
L$EXP5  002066 G
L$HARD  076726 G
L$HIME  002120 G
L$HPCP  002016 G
L$HPTP  002022 G
L$HW    002216 G
L$ICP   002104 G
L$INIT  011110 G
L$LADP  002026 G
L$LAST  100004 G

L$LOAD  002100 G
L$LUN   002074 G
L$MREV  002050 G
L$NAME  002000 G
L$PRIO  002042 G
L$PROT  011102 G
L$PRT   002112 G
L$REPP  002062 G
L$REV   002010 G
L$RPT   011074 G
L$SOFT  077340 G
L$SPC   002056 G
L$SPCP  002020 G
L$SPTP  002024 G
L$STA   002030 G
L$SW    002234 G
L$TEST  002114 G
L$TIML  002014 G
L$UNIT  002012 G
L10000  002232
L10001  002244
L10002  003466
L10003  003544
L10004  003604
L10005  003642
L10006  003670
L10007  003732
L10010  004100
L10011  006646
L10012  010130
L10013  010140
L10014  010150
L10015  010206
L10016  011100
L10020  012216
L10021  012302
L10022  012326
L10023  012406
L10024  012414
L10025  012670
L10026  012626
L10027  013416
L10030  014076
L10031  015574
L10032  016762
L10033  023062
L10034  027416
L10035  031764
L10036  033550
L10037  035316
L10040  037066
L10041  040744
L10042  043116
L10043  044022
L10044  044776
L10045  046344
L10046  050722

L10047  052032
L10050  053142
L10051  054212
L10052  055262
L10053  057250
L10054  063270
L10055  067270
L10056  071012
L10057  072544
L10060  075456
L10061  076722
L10062  077012
L10063  077572
L10064  100010
L10066  100024
MAINB   002242 G
MASCOM  002352 G
MASK    002350 G
MCINP   002236 G
MCRHX   002310 G
MCRNAM  013356
MCRX    002306 G
MEMINI  007166 G
MLA1    002410 G
MLA2    002412 G
MMFLG   002332 G
MM22    002330 G
MSA1    002420 G
MSIZE   007662
MTA1    002414 G
MTA2    002416 G
NEWST   011226
NEXTBA  075776
NXM     010122 G
NXMFLG  002326 G
ONEFIL= 000001
O$APTS= 000000
O$AU  = 000001
O$BGNR= 000000
O$BGNS= 000001
O$DU  = 000001
O$ERRT= 000001
O$GNSW= 000001
O$POIN= 000001
O$SETU= 000001
PHHIGH  002334 G
PHHSIZ  002342 G
PHLOW   002336 G
PHLSIZ  002344 G
PLEV    002316 G
PMQVP   077402
PNT   = 001000 G
PNTF    002324 G
PRI   = 002000 G
PRI00 = 000000 G
PRI01 = 000040 G
PRI02 = 000100 G

PRI03 = 000140 G
PRI04 = 000200 G
PRI05 = 000240 G
PRI06 = 000300 G
PRI07 = 000340 G
PSEU1   042024
PSEU16  045532
PSEU17  047506
PSEU18  056224
PSEU23  060346
PSEU24  064374
PSEU27  074140
PSEU33  062030
PSEU34  066116
PSEU5   044400
PVCON   007714 G
QVP     002234 G
QVT3    014012
REGADD  002354 G
REGERR  006602 G
REGMSG  007067
REGTST  006252 G
REGTS1  006310 G
RERR1   006650
RERR2   006722
RERR3   007000
RSAVE   002402 G
RXADRH  002422 G
RXADRL  002424 G
SDPA    002406 G
SFPTBL  002234 G
SIZEPA  002346 G
SPRM2   077431
SPRM4   077473
SPRM5   077522
SR0   = 177572
SR1   = 177574
SR2   = 177576
SR3   = 172516
STARST  011214
SVCGBL= 000000
SVCINS= 000001
SVCSUB= 000001
SVCTAG= 000001
SVCTST= 000001
S$LSYM= 010000
TABD    002514 G
TABE    002624 G
TABF    002734 G
TABG    003044 G
TABH    003146 G
TABK    003250 G
TQVP6   022640
TQVP7   027174
TRIMSG  076565
TSHD1   012630
TSHD10  035226
```

Symbol table

```
TSHD11  036774      TSHD8   031732      T$SAVL= 177777      T$$SEG= 010001      T27     072546 G
TSHD12  040654      TSHD9   033456      T$SEGL= 177777      T$$SOF= 010063      T28     075460 G
TSHD13  043042      TXADRH  002426 G    T$SEKO= 010001      T$$SRV= 010026      T3      013420 G
TSHD14  043744      TXADRL  002430 G    T$SIZE= 000010      T$$SW = 010001      T3SEC   013474
TSHD15  044726      T$ARGC= 000001      T$SUBN= 000000      T$$TES= 010061      T4      014100 G
TSHD16  046264      T$CODE= 075004      T$TAGL= 177777      T1      012416 G    T5      015576 G
TSHD17  050646      T$ERRN= 005361      T$TAGN= 010067      T10     033552 G    T6      016764 G
TSHD18  051736      T$EXCP= 000000      T$TEMP= 000000      T11     035320 G    T7      023064 G
TSHD19  053046      T$FLAG= 000041      T$TEST= 000034      T12     037070 G    T8      027420 G
TSHD2   013363      T$FREE= 100024      T$TSTM= 177777      T13     040746 G    T9      031766 G
TSHD20  054120      T$GMAN= 000000      T$TSTS= 000001      T14     043120 G    UAM   = 000200 G
TSHD21  055170      T$HILI= 003777      T$$AU = 010024      T15     044024 G    UNIMSK  013510
TSHD22  057204      T$LAST= 000001      T$$AUT= 010021      T16     045000 G    VECC1   002244 G
TSHD23  063206      T$LOLI= 000001      T$$CLE= 010022      T17     046346 G    VECC2   002246 G
TSHD24  067206      T$LSYM= 010000      T$$DAT= 010066      T18     050724 G    VIADD   002340 G
TSHD25  070744      T$LTNO= 000034      T$$DU = 010023      T19     052034 G    VPCON   010014 G
TSHD26  072476      T$NEST= 177777      T$$HAR= 010062      T2      012672 G    WAIT    011062 G
TSHD27  075410      T$NS0 = 000000      T$$HW = 010000      T20     053144 G    X$ALWA= 000000
TSHD28  076222      T$NS1 = 000005      T$$INI= 010020      T21     054214 G    X$FALS= 000040
TSHD3   014051      T$NS2 = 000003      T$$MSG= 010011      T22     055264 G    X$OFFS= 000400
TSHD4   015524      T$PCNT= 000000      T$$PC = 000001      T23     057252 G    X$TRUE= 000020
TSHD5   016734      T$PTAB= 010065      T$$PRO= 010017      T24     063272 G    $PATCH  077572 G
TSHD6   023002      T$PTHV= 000001      T$$PTA= 010065      T25     067272 G    $SVPC = 002000
TSHD7   027336      T$PTNU= 000001      T$$RPT= 010016      T26     071014 G

. ABS.  100024    000   (RW,I,GBL,ABS,OVR)
        000000    001   (RW,I,LCL,REL,CON)
Errors detected:  0

*** Assembler statistics


Work  file  reads: 282
Work  file writes: 296
Size of work file: 28645 Words  ( 112 Pages)
Size of core pool: 19136 Words  ( 73 Pages)
Operating  system: RSX-11M/M-PLUS (Under VAX/VMS)

Elapsed time: 00:24:43.04
ZIEADO.BIN,ZIEADO.SEQ/LIST/-SP=LIBA/ML,ZIEADO.SRC
```