

DMP-11,
DMV-11

DMP/V11 FCTNL TST#1
CZDMTDO

AH-E238D-MC
FICHE 1 OF 2

JUL 1982
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A large grid of approximately 15 columns and 25 rows of data. Each cell contains a small table or set of data points, likely representing test results or system parameters. The text is very small and difficult to read, but the layout is consistent across the entire page.

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DMV - 11

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.TITLE CZDMTDO DMP/V-11 FCTNL TST #1
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IDENTIFICATION

PRODUCT CODE: AC-E237D-MC
PRODUCT NAME: CZDMTDO DMP/V-11 FUNCTIONAL TEST 1
PRODUCT DATE: MARCH 1982
MAINTAINER: DIAGNOSTICS MERRIMACK CC: 38P

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HISTORY

| REV | DATE | REASON |
|-----|-----------|----------------------------------|
| --- | ---- | ----- |
| A | 18-AUG-80 | INITIAL RELEASE DMP ONLY |
| B | 14-JAN-81 | DMP11 BUGS FIXED |
| C | 1-APR-81 | DMV11 SUPPORT ADDED |
| D | 15-FEB-82 | DMP11 BUGS FIXED (11/24 RELATED) |

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1.0 INTRODUCTION

THE DMP AND DMV OPTIONS ARE COMMUNICATION OPTIONS THAT IMPLEMENT THE DDCMP PROTOCOL IN A MULTIDROP ENVIRONMENT. THE DMP IS USED WITH UNIBUS SYSTEMS WHILE THE DMV IS A Q BUS OPTION. THE PURPOSE OF THIS FUNCTIONAL TEST IS TO VERIFY AND EXERCISE THE MICROCODE USED IN THIS OPTION. THIS IS DONE BY PERFORMING THE FOLLOWING TESTS.

CSR ADDRESSING TESTS, ROM VERIFICATION BY CRC TESTS, RUNNING MICRO DIAGNOSTICS, RUNNING INTERFACE DIAGS. (DMP ONLY), CHECKS FOR RDO AND RDI, CHECKS FOR VARIOUS PROCEDURE ERRORS, MODE DEFINITION CHECKS, TEST FOR ALL CONTROL IN COMMANDS AND TESTS FOR ALL CONTROL AND INFORMATION OUT COMMANDS, TRANSMIT, AND RECEIVE MESSAGE TESTS OF VARIOUS LENGTHS, TO AND FROM VARIOUS BUFFERS.

THE FUNCTIONAL DIAGNOSTIC TEST WILL PROVIDE EXTENSIVE TROUBLESHOOTING CAPABILITIES, SUCH AS TIGHT SCOPE LOOPS, SWITCH OPTIONS, AND ABILITY TO 'LOCK' ONTO INTERMITTENT ERRORS. IN ADDITION TESTS WILL BE DESIGNED AND STRUCTURED TO ACHIEVE MAXIMUM FAULT RESOLUTION AND FACILITATE REPLACEMENT OF THE SMALLEST FIELD REPLACEABLE UNIT.

THIS PROGRAM WILL BE IMPLEMENTED USING THE DIAGNOSTIC SUPERVISOR AND A STRUCTURED PROGRAMMING APPROACH. BECAUSE THE DESIGN WILL CONFORM TO THE SUPERVISOR (STANDALONE VERSION) THE PROGRAM WILL BE COMPATIBLE WITH ACT, APT, XXDP+, AND SLIDE.

THROUGH DIALOGUE WITH OPERATOR, THE PROGRAM WILL ALLOW MODIFICATION OF DEVICE PARAMETERS, SUCH AS UNIBUS ADDRESS, VECTOR ADDRESSES AND DEVICE PRIORITY. IN ADDITION, THE OPERATOR CAN SPECIFY PARTICULAR TESTS TO BE RUN AND A VARIETY OF LOOPING, RUNNING, AND REPORTING MODES

DEVICE ERRORS WILL BE REPORTED AS THEY OCCUR. THE REPORT WILL INCLUDE A TEST NUMBER AND DESCRIPTION OF THE ERROR, GOOD AND BAD TEST DATA, AND APPLICABLE DEVICE REGISTER CONTENTS.

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2.0 HARDWARE REQUIREMENTS

THE FOLLOWING HARDWARE IS REQUIRED TO RUN THE DMP/DMV-11 FUNCTIONAL TESTS:

FOR DMP:
PDP-11/04,05,10,20,30,34,35,40,45,50,60, OR 70
DMP-11

FOR DMV:
LSI-11/03,23,23B
DMV-11

FOR BOTH:
16K MEMORY
CONSOLE TERMINAL

3.0 PRELIMINARY PROGRAM REQUIREMENTS

FOR DMP:
THE M8207 STATIC DIAGNOSTICS AND THE M8203 STATIC DIAGNOSTICS SHOULD BE RUN BEFORE RUNNING THIS FUNCTIONAL DIAG.

FOR DMV:
THE M8053/64 MICROCONTROL AND LINE UNIT STATIC LOGIC TESTS (5 PROGRAMS) SHOULD BE RUN BEFORE RUNNING THIS FUNCTIONAL DIAG.

4.0 GENERAL PROGRAM CONSIDERATIONS

4.1 DIAGNOSTIC SUPERVISOR

THIS PROGRAM IS COMPATIBLE WITH THE STANDALONE DIAGNOSTIC SUPERVISOR, AND MUST BE LOADED TO BE CO-RESIDENT WITH THE SUPERVISOR, OR BE PREVIOUSLY COMBINED WITH THE SUPERVISOR AND LOADED AS A SINGLE FILE. IN EITHER CASE, THE COMBINED PROGRAM WILL NOT EXCEED 16K OF MEMORY.

4.2 EXECUTION TIME

THE TOTAL TIME REQUIRED TO RUN THE DMP-11 FUNCTIONAL TESTS IS ABOUT 120 SECONDS PER PASS (DMP-11) OR ??? SECONDS (DMV-11) FOR EACH UNIT.

4.3 XXDP+

THIS PROGRAM MAY BE LOADED UNDER XXDP+, AND MAY BE RUN IN DUMP MODE OR CHAIN MODE.

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4.4 ACT/SLIDE

THIS PROGRAM MAY BE LOADED UNDER ACT OR SLIDE AND MAY BE RUN IN DUMP MODE OR CHAIN MODE.

4.5 APT

THIS PROGRAM MAY BE LOADED BY THE APT SYSTEM (INCLUDING APT-RD) AND RUN IN PROGRAM MODE OR SCRIPT MODE.

4.6 MEMORY MANAGEMENT

IT IS USED IN TX AND RX TESTS.

4.7 MEMORY PARITY OPTION

IF PARITY MEMORY IS INSTALLED, MEMORY PARITY TRAPS ARE DISABLED BY THE PROGRAM.

4.8 ERROR LOGGING

THE NUMBER OF ERRORS WHICH HAVE OCCURRED ON EACH DEVICE UNDER TEST SINCE THE LAST START OR RESTART COMMAND IS KEPT IN AN ERROR LOG. THIS LOG MAY BE PRINTED BY USING THE 'PRINT' COMMAND (SEE SECTION 6.3.8).

5.0 PROGRAM LOAD MEDIA

THIS PROGRAM CAN BE LOADED FROM PAPER TAPE USING THE ABSOLUTE LOADER OR FROM ACT, SLIDE, OR APT SYSTEMS, OR FROM ANY MEDIA SUPPORTED BY XXDP+. WHEN USING THE PAPER TAPE ABSOLUTE LOADER, THE PROGRAM SHOULD BE LOADED FIRST, FOLLOWED BY THE DIAGNOSTIC SUPERVISOR. WHEN USING XXDP+, THE DIAGNOSTIC SUPERVISOR SHOULD BE LOADED FIRST, FOLLOWED BY THE DIAGNOSTIC PROGRAM.

6.0 OPERATING INSTRUCTIONS

6.1 LOADING AND STARTING PROCEDURES

6.1.1 LOADING PROCEDURES

THIS PROGRAM MAY BE LOADED FROM PAPER TAPE USING THE ABSOLUTE LOADER. IT MAY ALSO BE LOADED FROM ANY XXDP+ LOAD MEDIA. WHEN LOADED UNDER XXDP+ THE DIAGNOSTIC SUPERVISOR WILL BE LOADED AUTOMATICALLY.

6.1.2 STARTING PROCEDURES

THE PROGRAM STARTS AT LOCATION 200. USE STANDARD DEC PROCEDURES TO START THE PROGRAM.

6.1.3 STEPS FOR QUICK AND SIMPLE EXECUTION

THE DIAGNOSTIC CAN BE EXECUTED STAND; ONE WITHOUT READING THE REMAINDER OF THIS DOCUMENT, AS FOLLOWS:

- A) LOAD AND START THE DIAGNOSTIC USING THE RUN COMMAND
- B) RECEIVE DIAGNOSTIC SUPERVISOR IDENTIFICATION PROMPT (DR)
- C) ENTER STA<CR>
- D) ANSWER HARDWARE AND SOFTWARE QUESTIONS
- E) GET END OF PASS MESSAGES OR ERROR MESSAGES
- F) TO END EXECUTION, ENTER CONTROL/C

6.2 INITIAL DIALOGUE

AFTER THE PROGRAM AND THE SUPERVISOR ARE LOADED THE PROGRAM IS STARTED, THE FOLLOWING IDENTIFICATION IS TYPED:

```
DRS LOADED
DIAG. RUN-TIME SERVICES
CZDMT-D-0
DMP/V-11 FUNCTIONAL DIAG.
UNIT IS DMP-11 OR DMV-11
DR>
```

THE OPERATOR THEN PROCEEDS BY TYPING ONE OR MORE OF THE COMMANDS DESCRIBED IN THE FOLLOWING SECTION 6.3. (FOR MORE INFORMATION, REFER TO THE DIAGNOSTIC SUPERVISOR FUNCTIONAL SPECIFICATION).

6.3 PROGRAM OPTIONS

6.3.1 START COMMAND

```
*****
STA(RT)/TESTS:<TEST-LIST>/PASS:<PASS-CNT>/FLAGS:
<FLAG-LIST>/EOP:<INCR>
*****
```

6.3.1.1 TESTS SWITCH (/TESTS:<TEST-LIST>)

<TEST-LIST> IS A SEQUENCE OF DECIMAL NUMBERS (1:2 ETC.) OR RANGES OF DECIMAL NUMBERS (1-5:8-10 ETC.) THAT SPECIFY THE TESTS TO BE EXECUTED. THE NUMBERS ARE SEPARATED BY COLONS.

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THE NUMBERS RANGE FROM 1 TO THE LARGEST TEST NUMBER IN THE DIAGNOSTIC. THEY MAY BE SPECIFIED IN ANY ORDER. TESTS WILL BE EXECUTED IN NUMERICAL ORDER REGARDLESS OF THE ORDER OF SPECIFICATION. THE DEFAULT IS TO EXECUTE ALL TESTS. ON THIS AND ALL SWITCHES, THE ANGLE BRACKETS <> ARE PUNCTUATION USED IN THE DEFINITION ONLY, AND ARE NOT TO BE TYPED BY THE OPERATOR. SEE EXAMPLE AT END OF 6.3.1.5.

6.3.1.2 PASS SWITCH (/PASS:<PASS-CNT>)

<PASS-CNT> IS A DECIMAL NUMBER INDICATING THE DESIRED NUMBER OF PASSES. A PASS IS DEFINED AS THE EXECUTION OF THE FULL DIAGNOSTIC (ALL SELECTED TESTS) AGAINST ALL UNITS SUBMITTED. THE DEFAULT IS NON-ENDING EXECUTION. IN THIS CASE EXIT FROM THE PROGRAM IS ACCOMPLISHED EITHER BY TYPING A CONTROL/C OR BY OCCURRENCE OF AN ERROR WITH THE HALT ON ERROR FLAG BEING SET. THE EXIT IS A RETURN TO COMMAND MODE. SEE EXAMPLE AT END OF 6.3.1.5.

6.3.1.3 FLAGS SWITCH (/FLAGS:<FLAG-LIST>)

<FLAG-LIST> IS A SEQUENCE OF ELEMENTS OF THE FORM <FLAG>, <FLAG=1>, OR <FLAG=0>, SEPARATED BY COLONS, WHERE <FLAG> HAS ONE OF THE FOLLOWING VALUES:

| | |
|-----|---------------------------------------------------------------------------------------------------------------------------------------------------------|
| HOE | HALT ON ERROR, CAUSING COMMAND MODE TO BE ENTERED WHEN AN ERROR IS ENCOUNTERED |
| LOE | LOOP ON ERROR, CAUSING THE DIAGNOSTIC TO LOOP CONTINUOUSLY WITHIN THE SMALLEST DEFINED BLOCK OF CODING (SEGMENT, SUBTEST, OR TEST) CONTAINING THE ERROR |
| IER | INHIBIT ERROR REPORTING |
| IBE | INHIBIT BASIC ERROR REPORTS |
| IXE | INHIBIT EXTENDED ERROR REPORTS |
| PRI | DIRECT ALL MESSAGES TO A LINE PRINTER |
| PNT | PRINT NUMBER OF TEST BEING EXECUTED |
| BOE | BELL ON ERROR |
| UAM | RUN IN UNATTENDED MODE, BYPASSING MANUAL INTERVENTION TESTS |
| ISR | INHIBIT STATISTICAL REPORTS |
| IDU | INHIBIT DROPPING OF UNITS BY DIAGNOSTIC |
| LOT | LOOP ON TEST |

THE FLAGS NAMED OR EQUATED TO 1 ARE SET, THOSE EQUATED TO 0 ARE CLEARED. A FLAG NOT SPECIFIED IS CLEARED. IF THE FLAGS SWITCH IS NOT GIVEN ALL FLAGS ARE CLEARED. SEE EXAMPLE AT END OF 6.3.1.5.

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6.3.1.4 END OF PASS SWITCH (/EOP:<INCR>)

<INCR> IS A DECIMAL NUMBER INDICATING HOW OFTEN (IN TERMS OF PASSES) IT IS DESIRED THAT THE END OF PASS MESSAGE BE PRINTED. THE DEFAULT IS AT THE END OF EVERY PASS. SEE EXAMPLE AT END OF 6.3.1.5.

6.3.1.5 EFFECT OF START COMMAND

THE EFFECT OF THE START COMMAND IS TO INITIATE THE HARDWARE PARAMETER DIALOGUE, THE SOFTWARE PARAMETER DIALOGUE, AND THEN THE DIAGNOSTIC TESTS THEMSELVES.

THE HARDWARE PARAMETER DIALOGUE COMMENCES WITH THE QUESTION "# UNITS?" TO WHICH THE OPERATOR REPLIES WITH A DECIMAL NUMBER N FROM 1 TO 16. THE TERM 'UNIT' REFERS TO THE DEVICE TO WHICH THIS SERIES OF DIAGNOSTICS IS DEDICATED. FOLLOWING THIS ARE THE QUESTIONS WHEREBY THE P-TABLES THEMSELVES WILL BE BUILT. EACH P-TABLE IS A CORE-RESIDENT TABLE CONTAINING ALL THE HARDWARE INFORMATION FOR ONE UNIT. THE OPERATOR MUST SUPPLY N (NUMBER OF UNITS) VALUES FOR EACH QUESTION. HE MAY DO THIS BY GIVING ONE ANSWER TO EACH QUESTION (IN WHICH CASE THE SERIES OF QUESTIONS WILL BE POSED N TIMES) OR BY GIVING N VALUES, SEPARATED BY COMMAS, TO EACH QUESTION (SERIES WILL BE POSED ONCE). EACH QUESTION IS FOLLOWED BY THE RESPONSE RADIX (D FOR DECIMAL, B FOR BINARY, O FOR OCTAL, L FOR YES/NO) IN PARENTHESES AND THE DEFAULT VALUE AFTER THE PARENTHESES.

FOLLOWING THE HARDWARE QUESTIONS ARE THE SOFTWARE QUESTIONS TO BUILD THE SOFTWARE TABLES, WHICH DEFINE THE MODE (QUICK VERIFY ETC.) THAT THE DIAGNOSTIC WILL EXECUTE IN.

WHEN THE QUESTION "# UNITS?" IS ANSWERED, MEMORY STORAGE IS ALLOCATED FOR THE P-TABLES, AND IF THERE IS NOT ENOUGH TO ACCOMMODATE THEM THE MESSAGE "TOO MANY UNITS" IS ISSUED. IN THIS CASE THE DIAGNOSTIC MUST BE EXECUTED MORE THAN ONCE TO TEST ALL UNITS.

EXAMPLE:

STA/TESTS:1:2-4:6:8-10/PASS:3/FLAGS:IER:HOE=1:UAM:LOE

THIS COMMAND WILL CAUSE THREE PASSES TO BE MADE, EACH PASS CONSISTING OF TESTS 1,2,3,4,6,8,9, AND 10 EXECUTED AGAINST ALL UNITS. THERE IS NO DIFFERENCE BETWEEN SAYING <FLAG> AND SAYING <FLAG=1>. THE NOTATION <FLAG=0> IS MEANINGFUL ONLY ON A COMMAND OTHER THAN START TO CLEAR A FLAG THAT WAS PREVIOUSLY SET. NOTE THAT ON ALL COMMANDS ONLY THE FIRST THREE LETTERS ARE SCANNED.

6.3.2 RESTART COMMAND

```

*****
RES(TART)/TESTS:<TEST-LIST>/PASS:<PASS-CNT>/FLAGS:
  <FLAG-LIST>/UNITS:<UNIT-LIST>
*****

```

6.3.2.1 TESTS, PASS, AND FLAGS SWITCHES

<TEST-LIST>, <PASS-CNT>, AND <FLAG-LIST> ARE AS IN THE START COMMAND.

6.3.2.2 UNITS SWITCH (/UNITS:<UNIT-LIST>)

<UNIT-LIST> IS A SEQUENCE OF DECIMAL NUMBERS (0,1 ETC.) OR RANGES OF DECIMAL NUMBERS (0-5, 8-10 ETC.) THAT SPECIFY THE UNITS TO BE TESTED. THE NUMBERS ARE SEPARATED BY COLONS. THE NUMBERS MAY RANGE FROM 0 THRU N-1 (N IS THE NUMBER OF UNITS SPECIFIED IN THE PREVIOUS START COMMAND). THE NUMBER INDICATES THE POSITION OF THE P-TABLE AS THE DATA WAS ENTERED DURING THE HARDWARE DIALOGUE. THE UNITS WHICH ARE SELECTED MUST NOT HAVE BEEN DROPPED BY THE DROP COMMAND. SEE THE DISCUSSION OF ADD AND DROP COMMANDS BELOW. DEFAULT IS TO TEST ALL UNITS WHICH HAVE NOT BEEN DROPPED BY A DROP COMMAND.

6.3.2.3 EFFECT OF RESTART COMMAND

THE RESTART COMMAND DIFFERS FROM THE START COMMAND IN THAT THE P-TABLES FROM THE PREVIOUS START COMMAND (THERE MUST HAVE BEEN ONE) ARE USED, INSTEAD OF NEW ONES BEING BUILT. THE UNITS SWITCH GIVES THE ABILITY TO SELECT A SUBSET OF THESE. THE SOFTWARE DIALOGUE MAY OPTIONALLY BE REEXECUTED (OPERATOR WILL BE ASKED). THE COMMAND CAN BE USED AFTER COMMAND MODE HAS BEEN REENTERED IN ANY OF THE THREE NORMAL WAYS: A) THE REQUESTED NUMBER OF PASSES HAVE BEEN MADE B) AN ERROR WAS ENCOUNTERED WITH THE HALT ON ERROR FLAG SET C) A CONTROL/C WAS ENTERED BY THE OPERATOR.

6.3.3 CONTINUE COMMAND

```

*****
CON(TINUE)/PASS:<PASS-CNT>/FLAGS:<FLAG-LIST>
*****

```

6.3.3.1 PASS SWITCH (/PASS:<PASS-CNT>)

<PASS-CNT> IS SAME AS IN START COMMAND, BUT THE DEFAULT IS THE UNSATISFIED PASS-CNT FROM THE PREVIOUS START OR RESTART. IF NONE REMAINS, THE DEFAULT IS NON-ENDING EXECUTION.

6.3.3.2 FLAG SWITCH (/FLAGS:<FLAG-LIST>)

<FLAG-LIST> IS SAME AS IN START COMMAND, BUT UNSPECIFIED FLAGS RETAIN THEIR CURRENT VALUE.

6.3.3.3 EFFECT OF CONTINUE COMMAND

CONTINUE MUST FOLLOW A START OR RESTART, AND COMMAND MODE MUST HAVE BEEN ENTERED DUE TO A HALT ON ERROR OR A CONTROL/C. THE EFFECT OF THE COMMAND IS TO GO TO THE BEGINNING OF THE TEST THAT WAS BEING EXECUTED WHEN THE HALT OR CONTROL/C TOOK PLACE. SOFTWARE DIALOGUE MAY OPTIONALLY BE REEXECUTED. HARDWARE PARAMETERS MAY NOT BE CHANGED.

6.3.4 PROCEED COMMAND

PRO(CEED)/FLAGS:<FLAG-LIST>

6.3.4.1 FLAGS SWITCH (/FLAGS:<FLAG-LIST>)

<FLAG-LIST> IS AS IN THE START COMMAND, BUT UNSPECIFIED FLAGS RETAIN THEIR CURRENT VALUE.

6.3.4.2 EFFECT OF PROCEED COMMAND

PROCEED MUST FOLLOW A START, RESTART, OR CONTINUE. COMMAND MODE MUST HAVE BEEN ENTERED VIA A HALT ON ERROR. THE EFFECT OF THE COMMAND IS TO BEGIN EXECUTION AT THE LOCATION FOLLOWING THE ERROR CALL. NEITHER HARDWARE NOR SOFTWARE PARAMETERS MAY BE ALTERED.

6.3.5 ADD COMMAND

ADD/UNITS:<UNIT-LIST>

6.3.5.1 UNITS SWITCH (/UNITS:<UNIT-LIST>)

<UNIT-LIST> IS AS IN THE RESTART COMMAND.

6.3.5.2 EFFECT OF ADD COMMAND

THE UNITS SPECIFIED ARE ADDED TO THE TEST SEQUENCE. EACH UNIT MUST HAVE A P-TABLE IN MEMORY DUE TO AN EARLIER HARDWARE DIALOGUE. THIS COMMAND MUST BE FOLLOWED BY A RESTART OR CONTINUE. THE UNITS SWITCH MUST BE SPECIFIED. THE ADD COMMAND IS MEANINGFUL ONLY FOR UNITS THAT WERE PREVIOUSLY DROPPED.

6.3.6 DROP COMMAND

DRO(P)/UNITS:<UNIT-LIST>

6.3.6.1 UNITS SWITCH (/UNITS:<UNIT-LIST>)

<UNIT-LIST> IS AS IN THE RESTART COMMAND.

6.3.6.2 EFFECT OF DROP COMMAND

THE UNITS SPECIFIED WILL BE DROPPED FROM TESTING. THE UNITS WILL BE RESELECTED ONLY BY THE EXECUTION OF AN ADD OR START COMMAND. THE UNITS SWITCH MUST BE ENTERED. THIS COMMAND MUST BE FOLLOWED BY A RESTART OR A CONTINUE COMMAND.

6.3.7 PRINT COMMAND

PRI(NT)

6.3.7.1 EFFECT OF PRINT COMMAND

THE TOTAL NUMBER OF ERRORS FOR EACH UNIT SINCE THE LAST START OR RESTART COMMAND ARE PRINTED. THE ISR (INHIBIT STATISTICAL REPORTING) FLAG IS CLEARED.

6.3.8 DISPLAY COMMAND

DIS(PLAY)/UNITS:<UNIT-LIST>

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6.3.8.1 UNITS SWITCH (/UNITS:<UNIT-LIST>)

<UNIT-LIST> IS AS IN THE RESTART COMMAND.

6.3.8.2 EFFECT OF DISPLAY COMMAND

THE HARDWARE P-TABLES FOR ALL UNITS UNDER TEST ARE PRINTED OUT IN THE FORMAT IN WHICH THEY WERE ENTERED. ANY UNITS THAT WERE DROPPED BY THE OPERATOR 'DROP' COMMAND ARE SO DESIGNATED.

6.3.9 FLAGS COMMAND

FLA(GS)

6.3.9.1 EFFECT OF FLAGS COMMAND

THE CURRENT SETTINGS OF ALL FLAGS ARE PRINTED.

6.3.10 ZFLAGS COMMAND

ZFL(AGS)

6.3.10.1 EFFECT OF ZFLAGS COMMAND

ALL FLAGS ARE CLEARED.

6.3.11 CONTROL CHARACTERS

A CONTROL C (C) ENTERED DURING THE EXECUTION OF A DIAGNOSTIC CAUSES A RETURN TO COMMAND MODE.

A CONTROL Z (Z) ENTERED DURING ONE OF THE THREE OPERATOR DIALOGUES- INITIAL DIALOGUE (SEE 6.2), HARDWARE DIALOGUE (SEE 6.3.1.5), OR SOFTWARE DIALOGUE (SEE 6.3.1.5) CAUSES THE DEFAULTS TO BE TAKEN FOR THE REMAINDER OF THAT DIALOGUE.

A CONTROL O (O) ENTERED DURING THE EXECUTION OF A DIAGNOSTIC CAUSES ALL TELETYPE OUTPUT TO BE SUPPRESSED FOR THE REMAINDER OF THE DIAGNOSTIC OR UNTIL ANOTHER O IS TYPED, WHICH RESTORES NORMAL TELETYPE OUTPUT.

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6.3.12 HARDWARE PARAMETERS

THE FOLLOWING QUESTIONS WILL BE ASKED ON A START COMMAND. THE VALUE LOCATED TO THE LEFT OF THE QUESTION MARK IS THE DEFAULT VALUE THAT WILL BE TAKEN ON A CARRIAGE RETURN RESPONSE.

SELECT OPTION TYPE (0=8207'DMP',1=8053'DMV',2=8064'DMV): (0) 0 ?
 DEVICE CSR ADDRESS : (0) 160170 ?
 DEVICE VECTOR ADDRESS : (0) 300 ?
 DEVICE PRIORITY LEVEL : (0) 5 ?
 TURNAROUND TYPE -(0=H3254H3255,1=CABLE,2=MOD LOC,3=MOD REM,4=NONE) (0) 0 ?
 PLEASE SELECT BAUD RATE: TYPE '0' FOR 2, 4K; '1' FOR 4 8K; '2' FOR 9.6K; '3' FOR 19.2K; '4' FOR 56K; '5' FOR 250K; OR '6' FOR 500K BAUDS (0) 4 ?
 SELECT INTERFACE TYPE (1=INTEGRAL,2=EIA,3=V.35,4=422): (0) 2 ?

6.3.13 SOFTWARE PARAMETERS

NO SOFTWARE PARAMETER QUESTIONS ARE ASKED BY THE DMP/V-11 FUNCTIONAL TEST

6.3.14 EXTENDED DISCUSSION OF P-TABLE DIALOGUE

THE FULL CAPABILITY OF THE HARDWARE DIALOGUE IS REVEALED BY THE FOLLOWING DISCUSSION OF WHAT HAPPENS INTERNALLY

AS SOON AS THE QUESTION '# UNITS?' IS ANSWERED (WITH THE NUMBER N, SAY) SPACE IN CORE IS ALLOCATED FOR N P-TABLES. ALL OF THE P-TABLES ARE OF THE SAME FORMAT, AND THERE IS A ONE-TO ONE CORRESPONDENCE BETWEEN THE HARDWARE PARAMETER QUESTIONS AND THE SLOTS IN THE P-TABLE FORMAT.

ON THE FIRST TRIP THRU THE QUESTIONS, ALL OF THE SLOTS IN ALL OF THE P-TABLES ARE FILLED. IF THE OPERATOR TYPES IN LESS THAN N EXPLICIT VALUES IN RESPONSE TO A PARTICULAR QUESTION, THESE VALUES ARE PLACED IN THE P-TABLES (ONE VALUE GOING INTO THE PROPER SLOT OF EACH P-TABLE BEGINNING WITH THE FIRST P-TABLE) UNTIL THE STRING OF VALUES IS EXHAUSTED. THE LAST VALUE IN THE STRING BECOMES THE NEW DEFAULT AND IS USED TO FILL THAT SLOT IN THE REMAINING P-TABLES.

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ON SUBSEQUENT TRIPS THRU THE QUESTIONS, THE SAME PROCESS IS CARRIED OUT, EXCEPT THAT THE EARLIEST P-TABLE NOT TO HAVE RECEIVED AN EXPLICIT VALUE IN ANY OF ITS SLOTS NOW ASSUMES THE ROLE THAT TABLE NUMBER ONE PLAYED IN THE FIRST TRIP.

THE SERIES OF QUESTIONS IS REISSUED UNTIL AT LEAST ONE QUESTION HAS RECEIVED N EXPLICIT VALUES FROM THE OPERATOR.

IN GIVING A STRING OF VALUES, COMMAS WITHOUT INTERVENING VALUES MAY BE USED TO INDICATE A REPETITION OF THE LAST NAMED VALUE.

A STRING OF VALUES MAY BE GIVEN AS A RANGE (6-10 FOR EXAMPLE). IF THE VALUES REPRESENT PURE NUMERICAL DATA, THIS SAMPLE RANGE TRANSLATES TO THE STRING 6,7,8,9,10 (AN INCREMENT OF 1). IF THE VALUES ARE ADDRESSES, THE SAMPLE RANGE TRANSLATES TO THE STRING 6,8,10 (AN INCREMENT OF 2).

NOW LET US SEE HOW WE COULD USE THESE CAPABILITIES TO CONSTRUCT A SET OF P-TABLES. ASSUME THAT WE HAVE 16 UNITS, AND THAT THERE ARE THREE HARDWARE PARAMETERS FOR EACH (THREE SLOTS IN THE P-TABLE, THREE HARDWARE QUESTIONS IN THE DIALOGUE). LET THE DESIRED VALUE FOR THE FIRST PARAMETER BE THE NUMBER 75 FOR ALL 16 TABLES. LET THE DESIRED VALUE FOR THE SECOND PARAMETER BE EQUAL TO THE UNIT NUMBER (0,1,2,...,15) EXCEPT FOR UNIT 12, WHICH SHOULD RECEIVE THE VALUE 11. LET THE DESIRED VALUE FOR THE THIRD PARAMETER BE THE NUMBER 76 FOR THE FIRST 7 UNITS AND THE NUMBER 77 FOR THE LAST 9 UNITS.

THE FOLLOWING DIALOGUE WOULD ACCOMPLISH THIS GOAL:

UNITS (D) ? 16

UNIT 1

<QUESTION 1> ? 75

<QUESTION 2> ? 0-6

<QUESTION 3> ? 76

UNIT 21

<QUESTION 1> ?

<QUESTION 2> ? 7-11,,13-15

<QUESTION 3> ? 77

THE FIRST TIME THE SERIES IS ASKED, SLOT ONE RECEIVES A 75 IN ALL 16 TABLES. SLOT TWO RECEIVES THE VALUES 0,1,2,...,6 IN TABLES 0 THRU 6 AND A CONSTANT 6 IN TABLES 7 THRU 15. SLOT THREE RECEIVES A CONSTANT 76 IN ALL 16 TABLES.

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THE SECOND TIME THRU THE SERIES, TABLES 16 THRU THE END ARE GOING TO BE AFFECTED (NOTE THAT THIS PIECE OF INFORMATION IS PRINTED OUT FOR THE THE OPERATOR IN THE FORM 'UNIT XX' AT THE BEGINNING OF EACH SERIES). QUESTION 1 IS RESPONDED TO BY A <CR>, SO SLOT ONE STAYS AT CONSTANT 75 IN TABLES 7 THRU 15, SINCE NO NEW EXPLICIT VALUES ARE TYPED IN. SLOT TWO GETS THE VALUES 7,8,9,10,11 IN TABLES 7 THRU 11, AND GETS A 11 IN SLOT 12, AND GETS THE VALUES 13,14,15 IN TABLES 13 THRU 15. SLOT THREE GETS THE VALUE 77 IN TABLES 7 THRU 15.

THE DIALOGUE IS TERMINATED WHEN THE SOFTWARE RECOGNIZES THAT 16 EXPLICIT VALUES HAVE BEEN GIVEN FOR AT LEAST ONE QUESTION (NAMELY QUESTION 2).

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TEST DESCRIPTIONS

7.0

7.1 ADDRESS TEST (TEST-1)

VERIFIES THAT ALL ADDRESSES IN THE MCPU RESPOND.
THIS TEST IS USED TO VERIFY THAT THE OPTION
IS AT THE ADDRESS THE USER THINKS IT IS ON.

7.2 ROM VERIFICATION TESTS (TESTS 2-9) (2-7 DMP ONLY+++8-9 DMV ONLY)

THIS SERIES OF TESTS VERIFIES THAT ALL ROMS
ARE IN PLACE AND THAT THE THE CONTENTS ARE
CORRECT BY DOING A CRC CALCULATION ON THE
ROM CONTENTS. THE TEST ALSO PRINTS THE REV AND
ROM NUMBER OF THE ROM ON THE FIRST PASS OF THE
TEST.

7.3 INITIALIZATION TEST (TEST 10)

THIS TEST DOES A MASTER CLEAR TO THE DEVICE
AND WAITS FOR THE MICRO-DIAGNOSTICS TO COMPLETE
IF MICRO DIAGS FAIL TO COMPLETE THEN A TIME
OUT ERROR WILL BE REPORTED.

7.4 INTERFACE DIAGNOSTICS (TEST 11) (DMP ONLY)

THIS TEST RUNS ADDITIONAL MICRODIAGNOSTIC CODE IN THE
DMP THAT CHECKS OUT THE INTERRUPT LOGIC AND THE
NPR LOGIC.

7.5 RDI REMAINS SET TEST (TEST 12)

THIS TEST SETS RDI, WAITS FOR RDI TO SET, ISSUES
A 'NO REQUEST' CONTROL IN AND LOOKS FOR RDI TO
REMAIN SET.

7.6 TEST FOR RDO SETTING (TEST 13)

THIS TEST DOES A CONTROL IN COMMAND OF 'READ MODEM'
AND EXPECTS RDO TO SET WITH AN INFORMATION OUT CODE
OF RETURN MODEM STATUS.

7.7 CHECK FOR PROCEDURE ERROR 100 (TEST 14)

THIS TEST ISSUES A MASTER CLEAR WAITS FOR RUN TO
SET THEN ISSUES A CONTROL IN COMMAND AND EXPECTS
A PROCEDURE ERROR OF 100 'NON MODE DEFINITION COMMAND
AFTER A MASTER CLEAR'. UNLESS MODE HAS BEEN DEFINED
IN THE SWITCHES THEN LOOK FOR INFORMATION OUT.

7.8 CHECK FOR PROCEDURE ERROR 104 (TEST 15)

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THIS TEST ISSUES A MASTER CLEAR , MODE DEFINITION, FOLLOWED BY A MODE DEF. COMMAND DEFINING A DIFFERENT TYPE OF MODE. THE TEST LOOKS FOR A PROCEDURE ERROR OF 104 'ILLEGAL MODE CHANGE'.

7.9 TEST MODE CHANGE OF DUPLEX PORTION OF MODE (TEST 16)

THIS TEST ISSUES A MASTER CLEAR,MODE DEFINITION SEQUENCE(CONTROL STATION/FULL DUPLEX). THE TEST THEN ISSUES A MODE DEF. COMMAND TO CHANGE TO HALF DUPLEX. THEN THE TESTS WAITS AND MAKES SURE NO PROCEDURE ERROR OCCURS.

7.10 TEST FOR MAX TRIBS TO BE ESTABLISHED. (TEST 17)

THIS TEST ESTABLISHES MAX TRIBS THEN ATTEMPTS TO ESTABLISH MAX+1 TRIBS AND CHECKS FOR A PROCEDURE ERROR 114, 'ATTEMPT TO ESTABLISH MORE THEN MAXIMUM NUMBER OF TRIBS'. THE TEST THEN TRIES TO ESTABLISH A TRIB THAT HAS ALREADY BEEN ESTABLISHED AND CHECKS FOR A PROCEDURE ERROR OF 116 'ATTEMPT TO ESTABLISH ALREADY ESTABLISHED TRIB'.

NOTE: MAX TRIBS FOR DMP = 32
MAX TRIBS FOR DMV = 12

7.11 READ/WRITE TRIBUTARY STATUS SLOTS TEST (TEST 18)

THIS TEST WRITES EACH TSS SLOT WITH VARIOUS DATA PATTERNS THEN READS THAT SLOT TO BE SURE THAT THE CORRECT OUTPUT COMMAND AND DATA IS RETURNED. THE SLOTS THAT ARE WRITTEN ARE TRIB STATUS SLOTS 30 THRU 37. THE DATA PATTERNS USED ARE:0,125252,052525,0,-1,377,177400,562:OCTAL.

7.12 TESTS FOR PROCEDURE ERROR 132 (TEST 19-20)

THESE TESTS CHECK THAT A PROCEDURE ERROR OF 132 'ATTEMPT TO WRITE INTO A RESERVED AREA OF THE TRIBUTARY STATUS SLOTS' IS PRODUCED WHEN A WRITE TSS COMMAND IS ISSUED FOR ADDRESS 4. A READ/CLEAR TSS COMMAND IS ISSUED FOR ADDRESS 6.

7.13 TEST FOR READ/CLEAR COMMAND (TEST 21)

THIS TEST ISSUES A READ CLEAR COMMAND TO TRIBUTARY STATUS SLOT 7 AND MAKES SURE THAT NO ERRORS OCCUR.

7.14 TESTS FOR GLOBAL STATUS SLOTS (TEST 22)

THIS TEST READS ALL THE GLOBAL STATUS SLOTS THEN WRITES ALL THE GLOBAL SLOTS USING THE ADDRESSES AS DATA THEN READS THEM BACK AND MAKES SURE THE DATA IS CORRECT. THIS TEST ALSO CHECKS FOR THE LIMITS ON THE WRITE TSS COMMAND BY MAKING SURE A

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PROCEDURE ERROR OCCURS WHEN THE LIMITS ARE EXCEEDED. THIS TEST ALSO CHECKS THE READ/CLEAR COMMAND TO A GLOBAL STATUS SLOT.

7.15 HALT TRIB COMMAND TESTS (TEST 23)

THIS TEST CHECKS THE HALT TRIB COMMAND BY DOING THE FOLLOWING: MASTER CLEAR;MODE DEF;ESTABLISH TRIB;ISTRIB;QUE UP REC BUFFER; ISSUE HALT TRIB COMMAND;CHECK FOR OUTPUT OF REC BUFFER UNUSED;CHECK FOR SECOND OUTPUT OF BUFFER RETURNED COMPLETE. THE TEST THEN ISSUES A SECOND HALT TRIB COMMAND AND CHECKS THAT AFTER A DELAY NO CONTROL OUT OCCURS

7.16 KILL TRIB COMMAND TESTS (TEST 24)

THIS TEST CHECKS THE KILL TRIB COMMAND BY DOING THE FOLLOWING: MASTER CLEAR; MODE DEF.; ESTABLISH TRIB; READ TSS SLOT 1 AND COMPARE FOR GOOD ADDRESS; PUT TRIB IN MAINT STATE;ISSUE KILL TRIB; CHECK FOR PROCEDURE ERROR 112 'KILL TO UNHALTED TRIB'; HALT TRIB; KILL TRIB;READ TSS SLOT 1 AND CHECK FOR PROCEDURE ERROR 106 'NON GLOBAL CONTROL IN COMMAND TO UNESTABLISHED TRIB'.

7.17 CHECK FOR PROCEDURE ERROR 102 (TEST 25)

THIS TEST ISSUES ILLEGAL TYPE CODES OF 7 6 5 AND 3 AND CHECKS THAT EACH ONE PRODUCES A PROCEDURE ERROR 102 'ILLEGAL TYPE CODE USED IN AN INPUT COMMAND'.

7.18 CHECK FOR PROCEDURE ERROR OF 110 (TEST 26)

THIS TEST ISSUES A MASTER CLEAR; MODE DEF; FOLLOWED BY AN ISTRIB TO TRIB ADDRESS OF ZERO. IT THEN CHECKS FOR A PROCEDURE ERROR OF 110 'ATTEMPT TO PERFORM A NON-GLOBAL COMMAND FOR TRIBUTARY ADDRESS OF 0'.

7.19 CHECK FOR PROCEDURE ERROR OF 120 (TEST 27)

THIS TEST ISSUES A CONTROL IN WITH A REQUEST KEY OF 7 AND ALSO A CONTROL IN WITH A REQUEST KEY OF 17 THEN IT CHECKS THAT BOTH CASES GIVE PROCEDURE ERROR 120 'ILLEGAL REQUEST KEY ON CONTROL IN.'

7.20 CHECK FOR PROCEDURE ERROR OF 134 (TEST 28)

THIS TEST ISSUES A MASTER CLEAR, MODE DEF, AND ESTABLISH TRIB SEQUENCE, FOLLOWED BY AN ATTEMPT TO USE A RESERVED BIT IN BSEL 7 THEN CHECKS THAT THIS PRODUCES A PROCEDURE ERROR OF 134 'ATTEMPT TO USE RESERVED BIT IN BSEL 7 ON CONTROL IN ''

7.21 LATCH/UNLATCH POLL CHECK (TEST 29)

THIS TEST CHECKS THE LATCH AND UNLATCH POLL COMMANDS BY DOING THE FOLLOWING SEQUENCE OF COMMANDS:

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MASTER CLEAR; MODE DEF; ESTABLISH TRIB; LATCH POLL
 TO DEAD STATE; READ TSS SLOT 2 AND CHECK THAT DEAD
 BIT IS ON; UNLATCH POLL; READ TSS SLOT 2; CHECK THAT ACTIVE
 BIT IS ON.

7.22 SHORT MESSAGE SENDING TEST (TEST 30)

THIS TEST SENDS A 4 BYTE MESSAGE FROM AN EVEN TRANSMIT
 BUFFER TO AN EVEN REC BUFFER IN DDCMP FORMAT CONFIGURED
 AS A MULTIPOINT CONTROL STATION FULL DUPLEX. THE TEST
 CHECKS THAT REC BUFFERS ARE RETURNED AND DATA IS CORRECT
 AND THAT THE NEXT OUTPUT IS TRANSMIT BUFFER RETURNED.
 THIS TEST IS ALWAYS DONE IN TTL LOOPBACK MODE.

7.23 CHECK FOR PROCEDURE ERROR 122 (TEST 31)

THIS TEST CHECKS FOR A PROCEDURE ERROR OF 122 BY
 PERFORMING THE FOLLOWING: MASTER CLEAR; MODE DEF;
 ESTABLISH BUFFER; CHECK FOR ERROR 122 'ATTEMPT
 TO ASSIGN A BUFFER FOR AN UNESTABLISHED TRIB'.

7.24 CHECK FOR PROCEDURE ERROR 124 (TEST 32)

THIS TEST CHECKS FOR A PROCEDURE ERROR OF 124 BY
 PERFORMING THE FOLLOWING: MASTER CLEAR; MODE DEF;
 ESTABLISH TRIB; ESTABLISH BUFFER; CHECK FOR ERROR
 124 'ATTEMPT TO ASSIGN A BUFFER FOR A HALTED TRIB'.

7.25 CHECK FOR PROCEDURE ERROR 126 (TEST 33)

THIS TEST CHECKS FOR A PROCEDURE ERROR OF 126 BY
 PERFORMING THE FOLLOWING: MASTER CLEAR; MODE DEF
 ESTABLISH TRIB; PUT TRIB IN MAINT STATE; ESTABLISH
 BUFFER WITH 0 BYTE COUNT; LOOK FOR ERROR 126
 'ATTEMPT TO ASSIGN A BUFFER WITH A BYTE COUNT OF 0'.

7.26 CHECK FOR PROCEDURE ERROR 130 (TEST 34)

THIS TEST CHECKS FOR A PROCEDURE ERROR OF 130 BY
 PERFORMING THE FOLLOWING: MASTER CLEAR; MODE DEF;
 ESTABLISH TX BUFFER TO TRIB; CHECK FOR ERROR
 130 'ATTEMPT TO ASSIGN A TRANSMIT BUFFER FOR TRIB
 0'.

7.27 TRANSMIT/RECEIVE 256 BYTES, PTP, DDCMP (TEST 35)

THIS TEST WILL TRANSMIT A BUFFER OF 256 BYTES, STARTING
 ON AN EVEN BYTE BOUNDARY TO A REC BUFFER STARTING ON AN
 EVEN BYTE BOUNDARY. THE MODE DEFINED IS POINT TO POINT
 FULL DUPLEX, DDCMP PROTOCOL. IF THERE IS EXTERNAL LOOP
 BACK THEN THE TEST WILL BE DONE OVER THAT LOOPBACK; ELSE
 THE LOOPBACK WILL BE SET TO INTERNAL (TTL).

7.28 DMV Q22 MODE TX/RX 256 BYTES, DDCMP (TEST 36) * DMV ONLY *

THIS TEST WILL TRANSMIT A BUFFER OF 256 BYTES, STARTING

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ON AN EVEN BYTE BOUNDARY TO A REC BUFFER STARTING ON AN EVEN BOUNDARY. THE MODE DEFINED IS Q22 FORMAT, POINT TO POINT FULL DUPLEX,DDCMP PROTOCOL. IF THERE IS EXTERNAL LOOPBACK THEN THE TEST WILL USE IT, OTHERWISE THE LOOPBACK WILL BE SET TO INTERNAL(TTL).

7.29 TRANSMIT/RECEIVE 255 BYTES,MTP,DDCMP (TEST 37)

THIS TEST WILL TRANSMIT A BUFFER OF 255 BYTES STARTING ON AN EVEN BYTE ADDRESS TO A REC BUFFER STARTING ON AN ODD BYTE ADDRESS. THE MODE IS FULL DUPLEX CONTROL STATION MULTIPOINT,DDCMP PROTOCOL. THE DATA IS COMPARED FOR CORRECTNESS. THE TEST IS DONE WITH INTERNAL LOOPBACK.

7.30 READ/WRITE MODEM REGISTER TESTS (TEST 38) (DMP ONLY)

THIS TEST WRITES THE MODEM REGS OVER THE VARIOUS INTERFACES WITH A PATTERN OF 100. THE MODEM REGS ARE THEN READ AND COMPARED FOR CORRECTNESS.

* N O T E ----- THIS TEST ONLY RUNS IF LOOPBACK CONNECTORS

ARE ATTACHED

7.31 TEST OF MEM EXTENSION BITS. (TESTS 39-41)

THESE THREE TESTS CHECK THE ABILITY OF THE DEVICE TO DO TRANSFERS TO UPPER MEMORY (IF IT EXISTS). THE TRANSFERS ARE DONE BY TRANSMITTING AND RECEIVING A MESSAGE. (TTL LOOPBACK ONLY). THE THREE TESTS ARE DONE FOR BIT 16, BIT 17 AND BITS 16 AND 17 (DMV SET FOR Q18 MODE).

* N O T E ----- THIS TEST USES MEMORY ONLY IF IT EXISTS

7.32 TEST FOR TX/RX 257 BYTES (TEST 42)

THIS TEST TRANSMITS A MESSAGE OF 257 BYTES FROM A TRANSMIT BUFFER STARTING WITH AN ODD BYTE BOUNDARY TO A RECEIVE BUFFER STARTING ON AN ODD BYTE BOUNDARY IN DDCMP MODE,POINT TO POINT. IF THERE IS EXTERNAL LOOPBACK THEN THE TEST WILL BE DONE OVER THAT LOOPBACK;ELSE THE LOOPBACK WILL BE SET TO INTERNAL(TTL).

7.33 TEST FOR TX/RX 1 BYTE (TEST 43)

THIS TEST TX'S AND REC'S A 1 BYTE MESSAGE FROM AN ODD TX BUFFER TO AN EVEN RX BUFFER IN MAINT MODE,MULTIPOINT CONTROL STATION.

7.34 POLLING STATE TESTS (TEST 44)

THIS TEST CHECKS THE DEGRADING OF THE POLLING STATES FROM ACTIVE TO INACTIVE TO POTENTIALLY DEAD TO DEAD THE SEQUENCE THAT IS EXECUTED IS AS FOLLOWS:

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MASTER CLEAR, MODE DEF(FULL DUP CONTROL STATION),
SET POLL DELAY(GSS ADD 37), ESTABLISH TRIB, SET SELECTION
TIMER(TSS ADD 36), SET NUMBER OF NO DATA MESSAGES TO
INACTIVE TO 10 AND THE NUMBER OF TIME OUTS TO POTENTIALLY
DEAD TO 4, ISTRT TRIB, WAIT FOR RUN STATE, READ TSS (ADD 2),
CHECK FOR INACTIVE BIT, LOOP UNTIL INACTIVE OR TIME OUT, READ
THE SELECTION TIMER(TSS 11), COMPARE IT TO 10, CHANGE MODE
TO HALF DUPLEX, WAIT FOR TSS SLOT 2 TO INDICATE POT. DEAD,
READ SELECTION TIMER(TSS 16), COMPARE IT TO 4, WAIT FOR
CONTROL OUT INDICATING DEAD TRIB, READ SELECTION TIMER(TSS 16)
COMPARE IT TO 10.

8.0 ERROR INFORMATION

8.1 ERROR REPORTING

ERRORS ARE REPORTED BY THE PROGRAM AS THEY OCCUR (IF NOT INHIBITED). THE REPORT CONFORMS TO THE DIAGNOSTIC SUPERVISOR ERROR REPORT FORMAT, AND CONSISTS OF A DESCRIPTION OF THE ERROR, THE TEST NUMBER, SUBTEST NUMBER, PC OF THE ERROR CALL, DEVICE ADDRESS, AND BASIC AND EXTENDED ERROR INFORMATION.

THE FOLLOWING EXAMPLES PROVIDE TYPICAL ERROR REPORTS:

CZJMT DVC FTL ERR 00024 ON UNIT 00 TST 004 SUB 000 PC: 016170
ERROR IN ROM E04 READ = 177777 ; CALCULATED = 017327

FOR ALL OTHER ERRORS, THE REPORT MAY BE MORE EXTENSIVE AND REQUIRE ADDITIONAL DATA TO BE REPORTED.

&

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```
1095          :
1096          002000          :          .=2000
1097
1098
1099
1100          000200          :          DRUN== 200
1101
1102
1103
1104
1105
1106
1107          000001          $LSTIN= 1
1108          000001          $LSTTAG= 1
1109          000000          SVCINS= 0          : LIST INSTRUCTIONS, SHIFTED RIGHT
1110          000000          SVCTST= 0          : LIST TEST TAGS, SHIFTED RIGHT
1111          000000          SVCSUB= 0          : LIST SUBTEST TAGS, SHIFTED RIGHT
1112          000000          SVCGBL= 0          : LIST GLOBAL TAGS, SHIFTED RIGHT
1113          000000          SVCTAG= 0          : LIST OTHER TAGS, SHIFTED RIGHT
1114
1115          :          CHANGE THE VALUES OF THE SVC... SYMBOLS TO BE ZERO IF YOU WISH
1116          :          TO ALIGN THE MACRO CALLS AND THEIR EXPANSIONS. CHANGE THE
1117          :          SYMBOLS TO BE MINUS-ONE TO NOT LIST THE EXPANSIONS. YOU MAY
1118          :          CHANGE THE SYMBOLS AT ANY POINT IN YOUR PROGRAM.
1119
1120
```

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PROGRAM HEADER

```

1121 .SBTTL PROGRAM HEADER
1122 :++
1123 : THE PROGRAM HEADER IS THE INTERFACE BETWEEN
1124 : THE DIAGNOSTIC PROGRAM AND THE SUPERVISOR.
1125 :--
1126
1127
1128
1129 002000 LSNAME:: ;DIAGNOSTIC NAME
1130 002000 103 .ASCII /C/
1131 002001 132 .ASCII /Z/
1132 002002 104 .ASCII /D/
1133 002003 115 .ASCII /M/
1134 002004 124 .ASCII /T/
1135 002005 000 .BYTE 0
1136 002006 000 .BYTE 0
1137 002007 000 .BYTE 0
1138 002010 LSREV:: ;REVISION LEVEL
1139 002010 104 .ASCII /D/
1140 002011 LSDEPO:: ;0
1141 002011 060 .ASCII /O/
1142 002012 LSUNIT:: ;NUMBER OF UNITS
1143 002012 000000 .WORD 0
1144 002014 L$TIML:: ;LONGEST TEST TIME
1145 002014 003410 .WORD 1800.
1146 002016 L$HPCP:: ;POINTER TO H.W. QUES.
1147 002016 032534 .WORD L$HARD
1148 002020 L$SPCP:: ;POINTER TO S.W. QUES.
1149 002020 000000 .WORD 0
1150 002022 L$HPTP:: ;PTR. TO DEF. H.W. PTABLE
1151 002022 002264 .WORD L$HW
1152 002024 L$SPTP:: ;PTR. TO S.W. PTABLE
1153 002024 000000 .WORD 0
1154 002026 L$LADP:: ;DIAG. END ADDRESS
1155 002026 037652 .WORD L$LAST
1156 002030 L$STA:: ;RESERVED FOR APT STATS
1157 002030 000000 .WORD 0
1158 002032 L$CO::
1159 002032 000000 .WORD 0
1160 002034 L$DTYP:: ;DIAGNOSTIC TYPE
1161 002034 000000 .WORD 0
1162 002036 L$APT:: ;APT EXPANSION
1163 002036 000000 .WORD 0
1164 002040 L$DTP:: ;PTR. TO DISPATCH TABLE
1165 002040 002132 .WORD L$DISPATCH
1166 002042 L$PRIO:: ;DIAGNOSTIC RUN PRIORITY
1167 002042 000340 .WORD #PRI07
1168 002044 L$ENVI:: ;FLAGS DESCRIBE HOW IT WAS SETUP
1169 002044 000000 .WORD 0
1170 002046 L$EXP1:: ;EXPANSION WORD
1171 002046 000000 .WORD 0
1172 002050 L$MREV:: ;SVC REV AND EDIT #
1173 002050 003 .BYTE C$REVISION
1174 002051 003 .BYTE C$EDIT
1175 002052 L$EF:: ;DIAG. EVENT FLAGS
1176 002052 000000 .WORD 0

```

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PROGRAM HEADER

| | | | | | |
|------|--------|--------|-----------|-------|----------------------------------------|
| 1177 | 002054 | 000000 | | | |
| 1178 | 002056 | | L\$SPC:: | .WORD | 0 |
| 1179 | 002056 | 000000 | | | |
| 1180 | 002060 | | L\$DEVP:: | .WORD | 0 |
| 1181 | 002060 | 002564 | | | |
| 1182 | 002062 | | L\$REPP:: | .WORD | L\$DVTYP ; POINTER TO DEVICE TYPE LIST |
| 1183 | 002062 | 000000 | | | |
| 1184 | 002064 | | L\$EXP4:: | .WORD | 0 ;PTR. TO REPORT CODE |
| 1185 | 002064 | 000000 | | | |
| 1186 | 002066 | | L\$EXP5:: | .WORD | 0 |
| 1187 | 002066 | 000000 | | | |
| 1188 | 002070 | | L\$AUT:: | .WORD | 0 ;PTR. TO ADD UNIT CODE |
| 1189 | 002070 | 014502 | | | |
| 1190 | 002072 | | L\$DUT:: | .WORD | L\$AU ;PTR. TO DROP UNIT CODE |
| 1191 | 002072 | 014476 | | | |
| 1192 | 002074 | | L\$LUN:: | .WORD | L\$DU ;LUN FOR EXERCISERS TO FILL |
| 1193 | 002074 | 000000 | | | |
| 1194 | 002076 | | L\$DESP:: | .WORD | 0 ;POINTER TO DIAG. DESCRIPTION |
| 1195 | 002076 | 002606 | | | |
| 1196 | 002100 | | L\$LOAD:: | .WORD | L\$DESC ;GENERATE SPECIAL AUTOLOAD EMT |
| 1197 | 002100 | 104035 | | | |
| 1198 | 002102 | | L\$ETP:: | EMT | ESLOAD ;POINTER TO ERRtbl |
| 1199 | 002102 | 000000 | | | |
| 1200 | 002104 | | L\$IICP:: | .WORD | 0 ;PTR. TO INIT CODE |
| 1201 | 002104 | 013774 | | | |
| 1202 | 002106 | | L\$CCP:: | .WORD | L\$INIT ;PTR. TO CLEAN-UP CODE |
| 1203 | 002106 | 014472 | | | |
| 1204 | 002110 | | L\$ACP:: | .WORD | L\$CLEAN ;PTR. TO AUTO CODE |
| 1205 | 002110 | 014430 | | | |
| 1206 | 002112 | | L\$PRT:: | .WORD | L\$AUTO ;PTR. TO PROTECT TABLE |
| 1207 | 002112 | 002122 | | | |
| 1208 | 002114 | | L\$TEST:: | .WORD | L\$PROT ;TEST NUMBER |
| 1209 | 002114 | 000000 | | | |
| 1210 | 002116 | | L\$DLY:: | .WORD | 0 ;DELAY COUNT |
| 1211 | 002116 | 000000 | | | |
| 1212 | 002120 | | L\$HIME:: | .WORD | 0 ;PTR. TO HIGH MEM |
| 1213 | 002120 | 000000 | | | |
| 1214 | | | | | |
| 1215 | 002122 | | L\$PROT:: | .WORD | -1 |
| 1216 | 002122 | 177777 | | | |
| 1217 | 002124 | 177777 | | | |
| 1218 | 002126 | 177777 | | | |
| 1219 | | | | | |

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DISPATCH TABLE

.SBTTL DISPATCH TABLE

```

:////////////////////
:// THE DISPATCH TABLE CONTAINS THE STARTING ADDRESS OF EACH TEST.
:// IT IS USED BY THE SUPERVISOR TO DISPATCH TO EACH TEST.
:////////////////////

```

```

1220
1221
1222
1223
1224
1225
1226
1227 002130 000054
1228 002132
1229 002132 014504
1230 002134 014664
1231 002136 015216
1232 002140 015550
1233 002142 016102
1234 002144 016434
1235 002146 016766
1236 002150 017320
1237 002152 017460
1238 002154 017620
1239 002156 020004
1240 002160 021136
1241 002162 021250
1242 002164 021460
1243 002166 021724
1244 002170 022134
1245 002172 022366
1246 002174 022620
1247 002176 023104
1248 002200 023212
1249 002202 023320
1250 002204 023434
1251 002206 024162
1252 002210 024610
1253 002212 025236
1254 002214 025352
1255 002216 025436
1256 002220 025664
1257 002222 026112
1258 002224 026440
1259 002226 026534
1260 002230 026654
1261 002232 027022
1262 002234 027210
1263 002236 027326
1264 002240 027450
1265 002242 027612
1266 002244 027706
1267 002246 030334
1268 002250 030576
1269 002252 031040
1270 002254 031302
1271 002256 031420
1272 002260 031516
1273
1274
1275

```

```

.LSDISPATCH:
.WORD 44
.WORD T1
.WORD T2
.WORD T3
.WORD T4
.WORD T5
.WORD T6
.WORD T7
.WORD T8
.WORD T9
.WORD T10
.WORD T11
.WORD T12
.WORD T13
.WORD T14
.WORD T15
.WORD T16
.WORD T17
.WORD T18
.WORD T19
.WORD T20
.WORD T21
.WORD T22
.WORD T23
.WORD T24
.WORD T25
.WORD T26
.WORD T27
.WORD T28
.WORD T29
.WORD T30
.WORD T31
.WORD T32
.WORD T33
.WORD T34
.WORD T35
.WORD T36
.WORD T37
.WORD T38
.WORD T39
.WORD T40
.WORD T41
.WORD T42
.WORD T43
.WORD T44

```

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DISPATCH TABLE

1276
1277
1278

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DEFAULT HARDWARE P-TABLE

.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 RUN-TIME P-TABLE.
://////

```

```

1279
1280
1281
1282
1283
1284
1285
1286
1287 002262 000014
1288 002264
1289 002264
1290
1291 002264 000000
1292 002266 160170
1293 002270 000300
1294 002272 005000
1295 002274 000003
1296 002276 000056
1297 002300 000000
1298 002302 000000
1299 002304 000004
1300
1301
1302 002306 000004
1303
1304
1305 002310 000000
1306 002312 000002
1307
1308 002314
1309
1310
1311
1312
1313

```

```

.LSHW: .WORD L10001-LSHW/2
DFPTBL:

```

```

.WORD 0 ;HARDWARE TYPE
.WORD 160170 ;M8200,4,7 CSR UNIBUS ADDRESS
.WORD 300 ;M8200,4,7 INTERRUPT VECTOR
.WORD 5000 ;M8200,4,7 INTERRUPT PRIORITY LEVEL = 5
.WORD 3 ;LINE UNIT = M8203
.WORD 056 ;SWITCH PACK #1 (REG 11)
.WORD 000 ;SWITCH PACK #2 (REG 15)
.WORD 000 ;SWITCH PACK #3 (REG 16)
.WORD 4 ;H3251&H3252 USED
;0= LOOPBACK CABLE,2= TEST CONNECTOR
;4= NONE
;CONTAINS BAUD RATE 4=56K BAUD DFFAULT
;0=2.4K , 1=4.8K , 2=9.6K , 3=19.2K , 4=56K
;5=250K , 6=500K , 7=1 MEG BAUD
;DUMMY WORD FOR RUN
;1=INTEGRAL ;2=EIA;3=V.35;4=422

```

L10001:

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SOFTWARE P-TABLE

1314
 1315
 1316
 1317
 1318
 1319
 1320
 1321 002314 000000
 1322 002316
 1323 002316
 1324
 1325
 1326 002316
 1327
 1328
 1329
 1330
 1331
 1332

```
.SBTTL SOFTWARE P-TABLE
://////
:/ THE SOFTWARE P-TABLE CONTAINS THE VALUES OF THE PROGRAM
:/ PARAMETERS THAT CAN BE CHANGED BY THE OPERATOR.
://////
        .WORD  L10002-LSSW/2
LSSW::
SFPTBL::

L10002:
```


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SOFTWARE P-TABLE

1333
1334
1335
1336
1337
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.SBTTL GLOBAL EQUATES SECTION

:/
:/ THE GLOBAL EQUATES SECTION CONTAINS PROGRAM EQUATES THAT
:/ ARE USED IN MORE THAN ONE TEST.
:/

:
: BIT DIFINITIONS

BIT15== 100000
BIT14== 40000
BIT13== 20000
BIT12== 10000
BIT11== 4000
BIT10== 2000
BIT09== 1000
BIT08== 400
BIT07== 200
BIT06== 100
BIT05== 40
BIT04== 20
BIT03== 10
BIT02== 4
BIT01== 2
BIT00== 1

BIT9== BIT09
BIT8== BIT08
BIT7== BIT07
BIT6== BIT06
BIT5== BIT05
BIT4== BIT04
BIT3== BIT03
BIT2== BIT02
BIT1== BIT01
BIT0== BIT00

:
: EVENT FLAG DEFINITIONS
: EF32:EF17 RESERVED FOR SUPERVISOR TO PROGRAM COMMUNICATION

EF.START== 32. ; START COMMAND WAS ISSUED
EF.RESTART== 31. ; RESTART COMMAND WAS ISSUED
EF.CONTINUE== 30. ; CONTINUE COMMAND WAS ISSUED
EF.NEW== 29. ; A NEW ASS HAS BEEN STARTED
EF.PWR== 28. ; A POWER-FAIL/POWER-UP OCCURRED

:
: PRIORITY LEVEL DEFINITIONS

PRI07== 340
PRI06== 300
PRI05== 240

100000
040000
020000
010000
004000
002000
001000
000400
000200
000100
000040
000020
000010
000004
000002
000001

001000
000400
000200
000100
000040
000020
000010
000004
000002
000001

000040
000037
000036
000035
000034

000340
000300
000240

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GLOBAL EQUATES SECTION

1389 000200
 1390 000140
 1391 000100
 1392 000040
 1393 000000
 1394
 1395
 1396
 1397 000004
 1398 000010
 1399 000020
 1400 000040
 1401 000100
 1402 000200
 1403 000400
 1404 001000
 1405 002000
 1406 004000
 1407 010000
 1408 020000
 1409 040000
 1410 100000
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 1412
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 1416
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 1418
 1419
 1420 000200
 1421 000100
 1422 000020
 1423 000010
 1424 000004
 1425 000002
 1426 000001
 1427
 1428
 1429
 1430
 1431 000010
 1432 000200
 1433 000020
 1434 000200
 1435
 1436

PRI04== 200
 PRI03== 140
 PRI02== 100
 PRI01== 40
 PRI00== 0
 :
 :OPERATOR FLAG BITS
 :
 EVL== 4
 LOT== 10
 ADR== 20
 IDU== 40
 ISR== 100
 JAM== 200
 BOE== 400
 PNT== 1000
 PRI== 2000
 IXE== 4000
 IBE== 10000
 IER== 20000
 LOE== 40000
 HOE== 100000

:*****
 :* PROGRAM EVENT FLAG DEFINITIONS
 :*****

:*****
 :* MAINTENANCE REGISTER - BSEL1
 :*****

RUN = BIT7
 MCLR = BIT6
 STEPLU = BIT4
 LULoop = BIT3
 ROMO = BIT2
 ROMI = BIT1
 STEPMP = BIT0

:*****
 : OTHER BIT DEFINITIONS
 :*****

Q22BIT =BIT3
 RQI =200
 RDI =020
 RDO =200

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GLOBAL DATA SECTION

```

1437      .SBTTL  GLOBAL DATA SECTION
1438
1439      :///////////////////////////////////////////////////
1440      :/          THE GLOBAL DATA SECTION CONTAINS DATA THAT ARE USED
1441      :/          IN MORE THAN ONE TEST.
1442      :///////////////////////////////////////////////////
1443
1444      :*****
1445      :* MISCELLANEOUS STORAGE
1446      :*****
1447 002316 000000  SAVE4:  .WORD  0          ;SAVE LOC 4 HERE (ERROR TRAP VECTOR)
1448 002320 000000  SAVE6:  .WORD  0
1449 002322 000000  PSTACK: .WORD  0
1450 002324 000000  SUBRPC: .WORD  0
1451 002326 000000  ERROR1: .WORD  0
1452 002330 000000  FRSTIM: .WORD  0
1453 002332 000000  LOGDEV: .WORD  0
1454 002334 000000  IFLAG:  .WORD  0
1455 002336 000000  $GDDAT: .WORD  0          .GOOD AND BAD DATA STORAGE
1456 002340 000000  $BDDAT: .WORD  0
1457 002342 000000  COUNT:  .WORD  0
1458 002344 000000  RFG:    .WORD  0          ;INDICATES PASSES
1459 002346 000000  STARES: .WORD  0
1460 002350 000000  DEVMAP: .WORD  0
1461 002352 000000  DEVPTR: .WORD  0
1462 002354 000000  FRSPAS: .WORD  0
1463 002356 000000  MODINT: .WORD  0          :MODEM INTERFACE SELECTION
1464 002360 000000  TRIBN:  .WORD  0          :POINTS TO CURRENT TRIP NUMBER.
1465 002362 000040  TRIBMX: .WORD  32.       :MAXIMUM NUMBER OF TRIBS
1466 002364 000000  TRIBH:  .WORD  0          :VALUE OF HIGHEST TRIB USED
1467
1468 002366 000000  ROMN:   .WORD  0          :CURRENT ROM AND USED FOR TEST #
1469 002370 000000  ROMN1:  .WORD  0          :CURRENT ROM NUMBER
1470 002372 000000  WORDT:  .WORD  0          :CURRENT ROM CONTENTS.
1471 002374 177777  CWORD:  .WORD -1         :CURRENT CRC CAL.
1472 002376 000000  MODQ22: .WORD  0          :DMV Q22 FORMAT FLAG (Q22 MODE)
1473 002400 000000  EXLOOP: .WORD  0          :DMV EXTERNAL LOOP FLAG
1474 002402 000000  ERRWRD: .WORD  0          :ERROR OCCURRED.
1475 002404 000000  CADDR:  .WORD  0          :CURRENT ROM ADDR.
1476 002406 000000  ERRADD: .WORD  0          :PC OF ERROR
1477 002410 000000  PERR:   .WORD  0          :PROCEDURE ERROR CHECKED
1478 002412 000000  TSSADD: .WORD  0          :WORD FOR TSS ADD
1479 002414 003406  TYLST:  .WORD  3406
1480 002416 002403  .WORD  2403
1481 002420
1482 002420 000000  TXADD:  .WORD  0          :TX BUFF ADDRESS
1483 002422 000000  RXADD:  .WORD  0          :RX BUFF ADDRESS
1484 002424 000000  RXCC:   .WORD  0          :RX CHAR COUNT
1485 002426 000000  TXCC:   .WORD  0          :TX CHAR COUNT
1486 002430 000000  CUDEW:  .WORD  0          :LOCATION FOR ERROR CODES
1487 002432 000000  GENWRD: .WORD  0          :USED FOR MAINT STATE AND EX MEM
1488 002434 000000  CRCCAL: .WORD  0          :TEMP FOR CRC
1489 002436 000000  ROMADD: .WORD  0          :ROM ADDRESS
1490
1491      :***** CURRENT DEVICE PARAMETERS *****
1492 002440  BSELO:

```

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GLOBAL DATA SECTION

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|------|--------|--------|-----------------------------------------------------|-------|--------|-------------------------------------------------|
| 1493 | 002440 | | SELO: | | | |
| 1494 | 002440 | 160170 | MPCSR: | .WORD | 160170 | :POINTER TO M8200,4,7 CSR'S |
| 1495 | 002442 | 160171 | BSEL1: | .WORD | 160171 | :POINTER TO BSEL1 |
| 1496 | 002444 | | SEL2: | | | |
| 1497 | 002444 | 160172 | BSEL2: | .WORD | 160172 | |
| 1498 | 002446 | 160173 | BSEL3: | .WORD | 160173 | |
| 1499 | 002450 | | BSEL4: | | | |
| 1500 | 002450 | 160174 | SEL4: | .WORD | 160174 | :POINTER TO SEL4 |
| 1501 | 002452 | 160175 | BSEL5: | .WORD | 160175 | |
| 1502 | 002454 | | BSEL6: | | | |
| 1503 | 002454 | 160176 | SEL6: | .WORD | 160176 | |
| 1504 | 002456 | 160177 | BSEL7: | .WORD | 160177 | |
| 1505 | 002460 | | BSEL10: | | | |
| 1506 | 002460 | 160200 | SEL10: | .WORD | 160200 | :POINTER TO SEL10 (REQ'D FOR DMV Q22 MODE) |
| 1507 | 002462 | | KMRVEC: | | | |
| 1508 | 002462 | 000300 | MPIVEC: | .WORD | 300 | :M8200,4,7 INPUT INTERRUPT VECTOR |
| 1509 | 002464 | | KMTVEC: | | | |
| 1510 | 002464 | 000304 | MPOVEC: | .WORD | 304 | :M8200,4,7 OUTPUT INTERRUPT VECTOR |
| 1511 | 002466 | 000000 | SPEEDM: | .WORD | 0 | :SPEED OF LINE UNIT |
| 1512 | 002470 | | KMRLVL: | | | |
| 1513 | 002470 | | KMTLYL: | | | |
| 1514 | 002470 | 000240 | MPRIOR: | .WORD | 240 | :M8200,4,7 DEVICE PRIORITY |
| 1515 | 002472 | 000000 | OPTYP: | .WORD | 0 | :OPTION TYPE |
| 1516 | 002474 | 000000 | IFTYP: | .WORD | 0 | :INTERFACE TYPE |
| 1517 | 002476 | 000000 | TSTCON: | .WORD | 0 | :TEST CONNECTOR INDICATOR |
| 1518 | 002500 | 000000 | RETADR: | .WORD | 0 | :SUBR ERRCR RETURN ADDRESS |
| 1519 | 002502 | 000000 | REDBYT: | .WORD | 0 | :LO BYTE CONTAINS BYTE READ FROM LU REG |
| 1520 | 002504 | 000000 | WRIBYT: | .WORD | 0 | :LO BYTE CONTAINS BYTE TO LOAD INTO LU REG |
| 1521 | 002506 | 000000 | AXNUM: | .WORD | 0 | :NUMBER (0-7) OF EXTENDED REG BYTE BEING TESTED |
| 1522 | 002510 | 000000 | DISILO: | .WORD | 0 | :CONTAINS CURRENT STATE OF DISSI IN BITS |
| 1523 | | | | | | |
| 1524 | | | :***** STORAGE FOR DATA READ IN ADDRESS TESTS ***** | | | |
| 1525 | 002512 | 000 | REDDAT: | .BYTE | 0 | |
| 1526 | 002513 | 000 | | .BYTE | 0 | |
| 1527 | 002514 | 000 | | .BYTE | 0 | |
| 1528 | 002515 | 000 | | .BYTE | 0 | |
| 1529 | 002516 | 000 | | .BYTE | 0 | |
| 1530 | 002517 | 000 | | .BYTE | 0 | |
| 1531 | 002520 | 000 | | .BYTE | 0 | |
| 1532 | 002521 | 000 | | .BYTE | 0 | |
| 1533 | | | | | | |
| 1534 | | | :***** GENERAL PURPOSE SCRATCH STORAGE ***** | | | |
| 1535 | 002522 | 000000 | REG0: | .WORD | 0 | |
| 1536 | 002524 | 000000 | REG1: | .WORD | 0 | |
| 1537 | 002526 | 000000 | REG2: | .WORD | 0 | |
| 1538 | 002530 | 000000 | REG3: | .WORD | 0 | |
| 1539 | 002532 | 000000 | REG4: | .WORD | 0 | |
| 1540 | 002534 | 000000 | REG5: | .WORD | 0 | |
| 1541 | 002536 | 000000 | REG6: | .WORD | 0 | |
| 1542 | 002540 | 000000 | REG7: | .WORD | 0 | |
| 1543 | | | | | | |
| 1544 | | | :***** SCRATCH STORAGE FOR MESSAGE REPORTING ***** | | | |
| 1545 | 002542 | 000000 | \$TMP0: | .WORD | 0 | |
| 1546 | 002544 | 000000 | TMP0: | .WORD | 0 | |
| 1547 | 002546 | 000000 | TMP1: | .WORD | 0 | |
| 1548 | 002550 | 000000 | TMP2: | .WORD | 0 | |

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GLOBAL DATA SECTION

1549 002552 000000
1550 002554 000000
1551 002556 000000
1552 002560 000000
1553 002562 000000
1554

TMP3: .WORD 0
TMP4: .WORD 0
TMP5: .WORD 0
TMP6: .WORD 0
TMP7: .WORD 0

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GLOBAL DATA SECTION

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.SBTTL GLOBAL TEXT SECTION

:XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
:X THE GLOBAL TEXT SECTION CONTAINS FORMAT STATEMENTS,
:X MESSAGES, AND ASCII INFORMATION THAT ARE USED IN
:X MORE THAN ONE TEST.
:XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX

:*****
:* NAMES OF DEVICES SUPPORTED BY PROGRAM
:*****

LSDVTP::
.ASCIZ /DMP-11 OR DMV-11/

.EVEN

LSDESC::
.ASCIZ /DMP OR DMV-11 FUNCTIONAL DIAG./

.EVEN

:
: FORMAT STATEMENTS USED IN PRINT CALLS
:

002564
002564 046504 026520 030461
002572 047440 020122 046504
002600 026526 030461 000
002606
002606 046504 020120 051117
002614 042040 053115 030455
002622 020061 052506 041516
002630 044524 047117 046101
002636 042040 040511 027107
002644 000
002646

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GLOBAL SUBROUTINES

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```
.SBTTL GLOBAL SUBROUTINES
://////
: THE GLOBAL SUBROUTINES ARE CALLED BY MORE THAN ONE TEST
://////
```

```
:
:*****
: FUNCTIONAL DESCRIPTION: WRDO.. WAITS FOR READY OUT
: FIRST SAVE THE CALLING ADDRESS
: IN ERRADD. THEN SEE IF TIME OUT OCCURED
: IF TIME OUT EXIT ROUTINE..ELSE SEE IF
: READY OUT SET IF READY OUT SET EXIT
: ROUTINE. IF NOT THEN WAIT A WHILE
: THEN SEE IF READY IN SET. IF READY IN
: IS SET REPORT ERROR AND EXIT ROUTINE.
: IF NOT READY IN THEN GO BACK AND CHECK
: FOR TIME OUT.
: NOTE: CAN BE ENTERED AT WRD01 IF CALLING
: ADDRESS FROM R5 DOES NOT NEED TO BE SAVED.
:
: INPUTS: R5=ADDRESS FROM WHERE ROUTINE WAS CALLED
:
: OUTPUTS: ERRWRD= -1 IF ERROR OCCURED IN ROUTINE.
:
: SUBORDINATE ROUTINES USED:
: TOUT - TIME OUT ROUTINE
: WAIT50 - SHORT DELAY ROUTINE
:
: CALLING SEQUENCE:
: JSR R5,WRDO
:-----*****
```

```
WRDO: MOV R5,ERRADD ;STORE ERROR ADD. AWAY
WRD01: JSR R5,TOUT ; GO TO TIME OUT ROUTINE
TST ERRWRD ;CHECK IF ERROR
BMI WRDOE ;EXIT NOW
BIT #RDO,@BSEL2 ;RDO SET?
BNE WRDOE ;EXIT IF RDO IS SET
JSR PC,WAIT50 ;ELSE DELAY A LITTLE
BIT #RDI,@BSEL2 ;THEN SEE IF RDI IS SET
BEQ WRD01 ;IF NOT THEN GO BACK TO START

; ERROR -UNEXPECTED RDI SET

TRAP CSERDF
.WORD 1
.WORD MEF14
.WORD ERR26
DEC ERRWRD
CLRB @BSEL2 ;CLEAR RDO
WRDOE: RTS R5 ;EXIT
```

```
002646 010537 002406
002652 004537 005070
002656 005737 002402
002662 100422
002664 032777 000200 177552
002672 001016
002674 004737 004244
002700 032777 000020 177536
002706 001761
002710 104455
002712 000001
002714 012021
002716 010266
002720 005337 002402
002724 105077 177514
002730 000205
```

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GLOBAL SUBROUTINES

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*****
: FUNCTIONAL DESCRIPTION: WRDI - WAIT FOR READY IN
: THIS ROUTINE FIRST SAVES THE CALLING ADDRESS
: IN ERRADD, UNLESS ENTERED AT WRDI1.
: THEN CHECK FOR TIME OUT IF TIME OUT REPORT
: ERROR AND EXIT. IF NOT TIME OUT CHECK FOR
: READY IN. IF READY IN EXIT IF NOT READY IN
: DELAY A LITTLE AND CHECK FOR READY OUT. IF
: READY OUT REPORT ERROR AND EXIT ROUTINE.
: IF NOT READY OUT GO BACK AND CHECK FOR TIME OUT.
:
: INPUTS:      R5= CALLING ADDRESS
: OUTPUTS:    ERRWRD= -1 IF ERROR OCCURED IN ROUTINE
: SUBORDINATE ROUTINES USED:
:             TOUT- TIME OUT
:             WAIT50- DELAY A LITTLE
: CALLING SEQUENCE:
:             JSR      R5,WRDI      ;OR
:             JSR      R5,WRDI1
:-----*****

```

```

WRDI:  MOV      R5,ERRADD      ;STORE AWAY ERROR ADD.
WRDI1: JSR      R5,TOUT        ;GO TO TIME OUT
      TST      ERRWRD        ;IF ERROR EXIT
      BMI     WRDIE          ;
      BIT     #20,@BSEL2     ;RDI SET?
      BNE     WRDIE          ;YES-EXIT
      JSR     PC,WAIT50      ;SHORT DELAY
      BIT     #200,@BSEL2   ;RDYO SET?
      BEQ     WRDI1         ;NO-LOOP.
      ;RDO INSTEAD OF RDI
      TRAP    C$ERDF
      .WORD   2
      .WORD   MEF15
      .WORD   ERR26
      DEC     ERRWRD        ;SET ERROR OCCURRED
      CLRB   @BSEL2        ;CLEAR RDYO
WRDIE: RTS      R5          ;EXIT.

```

```

002732 010537 002406
002736 004537 C05070
002742 005737 002402
002746 100422
002750 032777 000020 177466
002756 001016
002760 004737 004244
002764 032777 000200 177452
002772 001761
002774 104455
002776 000002
003000 012066
003002 010266
003004 005337 002402
003010 105077 177430
003014 000205

```


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GLOBAL SUBROUTINES

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003016 010537 002406
00302c 004537 002652
003026 005737 002402
003032 100452
003034 117737 177404 002340
003042 042737 177770 002340
003050 122737 000001 002340
003056 001415
003060 012737 000001 002336
0030c6 012737 012000 002430
003074 104455
003076 000003
003100 011506
003102 010324
003104 005337 002402
003110 000423
003112 117737 177336 002340
003120 123737 002410 002340
003126 001414
003130 013737 002410 002336
003136 012737 011762 002430
003144 104455
003146 000004
003150 011506
003152 010324
003154 005337 002402
003160
003160 000205

```
*****
: FUNCTIONAL DESCRIPTION: WFPE - WAIT FOR PROCEDURE ERROR
: FIRST SAVE CALLING ADDRESS IN ERRADD.
: THEN WAIT FOR READY OUT, IF ERROR FROM
: WRDO ROUTINE EXIT THIS ROUTINE. ELSE
: GET CONTROL KEY FROM BSEL2 IF NOT CONTROL
: OUT REPORT ERROR AND EXIT. ELSE CHECK THAT
: CONTROL OUT CODE IS SAME AS IN PERR. IF
: EQUAL THEN EXIT ELSE REPORT ERROR AND EXIT.
:
: INPUTS:      R5= CALLING ADDRESS
:              PERR = PROCEDURE ERROR EXPECTED.
: OUTPUTS:     ERRWRD= -1 IF ERROR OCCURED IN ROUTINE
: SUBORDINATE ROUTINES USED:
:              WRDO1 - WAIT FOR READY OUT
: CALLING SEQUENCE:
:              JSR      R5,WFPE
:*****
```

```
WFPE:  MOV      R5,ERRADD      ;STORE OFF ERROR ADDRESS
       JSR      R5,WRDO1     ;WAIT FOR READY OUT
       TST     ERRWRD
       BMI     20$           ;IF ERROR OCCURRED IN SR
                               ;EXIT THIS SR.
       MOVB   @BSEL2,$BDDAT
       BIC   #'C<7>,$BDDAT  ;STRIP DATA TO CONTROL KEY
       CMPB   #01,$BDDAT
       BEQ    10$           ;GO TO 10 IF CONTROL OUT
                               ;ELSE REPORT ERROR
       MOV    #01,$GDDAT    ;SET GOOD DATA TO 01
       MOV    #M18F,CODEW   ;SET UP CODE WORD
                               ;ERROR NOT CONTROL OUT
       TRAP   C$ERDF
       .WORD  3
       .WORD  EROIC
       .WORD  ERR27
       DEC   ERRWRD        ;SET ERROR OCCURRED
       BR    20$          ;AND EXIT SUBROUTINE
10$:  MOVB   @BSEL6,$BDDAT  ;MOVE ERROR CODE TO BDDAT
       CMPB   PERR,$BDDAT  ;IS IT WHAT IT SHOULD BE
       BEQ    20$          ;IF SO GO TO 20
       MOV    PERR,$GDDAT  ;PUT EXPECTED IN GOOD DATA
       MOV    #M13F,CODEW  ;SET UP ERROR WORD
                               ;ERROR BAD ERROR CODE RETURNED
       TRAP   C$ERDF
       .WORD  4
       .WORD  EROIC
       .WORD  ERR27
20$:  DEC   ERRWRD        ;SET ERROR INDICATOR
       RTS   R5           ;RETURN TO CALLER
```

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GLOBAL SUBROUTINES

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*****
: FUNCTIONAL DESCRIPTION: CONTIN - CONTROL IN ROUTINE
: THIS ROUTINE SAVES THE CALLING ADDRESS IN R5.
: THEN SETS RQI AND WAITS FOR RDI TO BE RETURNED BY
: THE DMP/V-11. IF WRDI REPORTS ERROR EXIT TEST. ELSE
: LOAD BSEL 3 WITH TRIB NUMBER FROM TRIBN,CLEAR THE RQI
: BIT,MOV DATA FROM R4 TO SEL4,DATA FROM R3 TO SEL6, AND
: THEN ISSURE CONTROL IN AND EXIT ROUTINE.
:
: INPUTS: R4 = SEL4 DATA
: R3 = SEL6 DATA
: TRIBN = TRIBUTARY NUMBER.
: R5 = CALLING ADDRESS
:
: OUTPUTS: ERRWRD = -1 IF ERROR REPORTED IN THIS OR ANY SUBODINATE
: SUB ROUTINE.
: SUBORDINATE ROUTINES USED:
: WRDI1 - WAIT FOR READY IN.
: CALLING SEQUENCE:
: JSR R5,CONTIN
:-----*****

```

```

003162 010537 002406
003166 052777 000200 177244
003174 004537 002736
003200 005737 002402
003204 100415
003206 113777 002360 177232
003214 042777 000200 177216
003222 010477 177222
003226 010377 177222
003232 112777 000001 177204
003240 000205

```

```

CONTIN: MOV R5,ERRADD ;SET UP ERROR ADDRESS
        BIS #RQI,@BSELO ;SET REQUEST
        JSR R5,WRDI1 ;GO WAIT FOR RDI
        TST ERRWRD
        BMI 43$ ;EXIT IF ERROR OCCURRED
        MOVB TRIBN,@BSEL3 ;SET TRIBN
        BIC #RQI,@BSELO ;CLEAR REQUEST
        MOV R4,@BSEL4 ;SET DATA
        MOV R3,@BSEL6 ;SET REQUEST TYPE
        MOVB #01,@BSEL2 ;DO CONTROL IN
43$: RTS R5 ;RETURN TO CALLER

```

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GLOBAL SUBROUTINES

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003242 010537 002406
003246 004537 002652
003252 005737 002402
003256 100444
003260 117737 177160 002340
003266 042737 177770 002340
003274 023737 002340 002336
003302 001412
003304 012737 012007 002430
003312 104455
003314 000005
003316 011506
003320 010324
003322 005337 002402
003326 000420
003330 013737 002360 002336
003336 117737 177104 002340
003344 023737 002340 002336
003352 001406
003354 104455
003356 000006
003360 012242
003362 007600
003364 005337 002402
003370 000205

: FUNCTIONAL DESCRIPTION: GETOUT - GET OUTPUT CODE
: THIS SUB-ROUTINE WAITS FOR RDO(REPORTS ERROR IF
: RDI OR TIME OUT);CHECKS THAT OUTPUT COMMAND TYPE
: IS THE SAME AS THE VALUE IN \$GDDAT(REPORTS ERROR
: IF NOT);THEN CHECKS THAT TRIB NUMBER IN BSEL3 IS
: EQUAL TO THE VALUE IN TRIBN(REPORTS ERROR IF NOT
: THEN RETURNS TO CALLER.
: INPUTS: \$GDDAT = OUTPUT COMMAND TYPE EXPECTED
: TRIBN = TRIBUTARY ADDRESS EXPECTED
: R5 = ADDRESS OF CALLING ROUTINE
: OUTPUTS: ERRWRD = -1 IF ERROR OCCURED
: SUBORDINATE ROUTINES USED:
: WRD01 - WAIT FOR READY OUT
: CALLING SEQUENCE:
: JSR R5,GETOUT
:-----*****

GETOUT: MOV R5,ERRADD ;STORE OFF ERROR ADD.
JSR R5,WRD01 ; GO WAIT FOR READY OUT
TST ERRWRD
BMI 20\$;EXIT IF ERROR OCCURRED
MOVB @BSEL2,\$BDDAT ;GET COMMAND TYPE TO BDDAT
BIC #^C<?>,\$BDDAT ;STRIP IT TO JUST COMMAND TYPE
CMP \$BDDAT,\$GDDAT ;IS IT THE RIGHT VALUE??
BEQ 10\$;IF YES GO TO 10
;ELSE REPORT ERROR
MOV #M28F, CODEW
TRAP C\$ERDF
.WORD 5
.WORD EROIC
.WORD ERR27
DEC ERRWRD
BR 20\$;AND EXIT ON ERROR
10\$: MOV TRIBN,\$GDDAT ;SET UP GDDAT FOR GOOD TRIBN
MOVB @BSEL3,\$BDDAT ;GET TRIB NUMBER RETURNED
CMP \$BDDAT,\$GDDAT ;ARE THEY THE SAME???
BEQ 20\$;IF YES GO TO 20
;ELSE REPORT ERROR
TRAP C\$ERDF
.WORD 6
.WORD MEF18A
.WORD ERR18
DEC ERRWRD
20\$: RTS R5 ;RETURN TO CALLER

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GLOBAL SUBROUTINES

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003372 010537 002406
003376 017737 177052 002340
003404 042737 177600 002340
003412 023737 002340 002336
003420 001411

003422 012737 011747 002430
003430 104455
003432 000007
003434 011506
003436 010324
003440 005337 002402
003444 000205

```

:*****
: FUNCTIONAL DESCRIPTION:   GETRKY - GET RETURN KEY VALUE
: THIS ROUTINE GETS THE VALUE OF THE RETURN KEY
: FROM BSEL6 ADN COMPARES IT TO THE VALUE IN
: $GDDAT. IF EQUAL EXIT IF NOT EQUAL REPORT
: ERROR AND EXIT.
:
: INPUTS:      R5      = ADDRESS OF CALLER
:              $GDDAT = VALUE OF EXPECTED RETURN KEY
:
: OUTPUTS:    ERRWRD = -1 IF ERROR OCCURS
: CALLING SEQUENCE:
:              JSR     R5,GETRKY
:*****
GETRKY: MOV     R5,ERRADD      ; STORE OFF ERROR ADDRESS
        MOV     @BSEL6,$BDDAT ; GET RETURN KEY FROM BSEL6
        BIC     #'C<177>,$BDDAT ; STRIP TO VALID BITS
        CMP     $BDDAT,$GDDAT ; ARE THE VALUES EQUAL
        BEQ     10$          ; IF YES GO TO 10
                          ; ELSE ERROR.....
        MOV     #M12F,COEW    ; SET UP CODE WORD
        TRAP   C$ERDF
        .WORD  7
        .WORD  EROIC
        .WORD  ERR27
        DEC    ERRWRD        ; SET ERROR OCCURRED
10$:    RTS     R5           ; RETURN TO CALLER

```

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GLOBAL SUBROUTINES

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003446 010537 002406
003452 017737 176772 002340
003460 023737 002340 002336
003466 001411

003470 012737 012014 002430
003476 104455
003500 000010
003502 011506
003504 010324
003506 005337 002402
003512 000205

: FUNCTIONAL DESCRIPTION: GETDAT - GET DATA CODE
: THIS ROUTINE GETS THE DATA CODE FROM BSEL4
: AND COMPARES IIT TO THE VALUE IN \$GDDAT
: IF EQUAL EXIT ELSE REPORT ERROR AND EXIT
:
: INPUTS: R5 = ADDRESS OF CALLER
: \$GDDAT = VALUE OF EXPECTED DATA
:
: OUTPUTS: ERRWRD = -1 IF ERROR OCCURED
: CALLING SEQUENCE:
: JSR R5,GETDAT
:-----

GETDAT: MOV R5,ERRADD ;STORE OFF ERROR ADDRESS
MOV @BSEL4,\$BDDAT ;GET DATA
CMP \$BDDAT,\$GDDAT ;COMPARE GOOD AND BAD
BEQ 10\$;IF OK GO TO 10
;ELSE ERROR
;ERROR BAD DATA CODE
MOV #M30F,CODEW
TRAP C\$ERDF
.WORD 8
.WORD EROIC
.WORD ERR27
DEC ERRWRD ;SET ERROR OCCURRED
10\$: RTS R5 ;RETURN TO CALLER

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GLOBAL SUBROUTINES

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003514 010537 002406
003520 017737 176730 002340
003526 005737 002376
003532 001403
003534 017737 176720 002340
003542 042737 140000 002340
003550 023737 002340 002336
003556 001406

003560 104455
003562 000011
003564 012133
003566 010114
003570 005337 002402
003574 000205

```

*****
: FUNCTIONAL DESCRIPTION: GETCC - GET CHARACTER COUNT
: THIS ROUTINE GETS THE CHAR. COUNT FROM EITHER:
: (1) CSR6 IF DMP OR DMV IN Q18 MODE
: (2) CSR10 IF DMV IN Q22 MODE
: AND THEN COMPARES IT TO THE VALUE IN $GDDAT.
: IF EQUAL EXIT, ELSE REPORT ERROR AND EXIT
:
: INPUTS: R5 = ADDRESS OF CALLER
: $GDDAT = VALUE OF EXPECTED DATA
:
: OUTPUTS: ERRWRD = -1 IF ERROR OCCURED
: CALLING SEQUENCE: JSR R5,GETCC
*****
GETCC: MOV R5,ERRADD ;STORE OFF RETURN ADDRESS
      MOV @SEL6,$BDDAT ;GET CSR6 TO BDDAT
      TST MODQ22 ;IS THIS DMV W/Q22 ?
      BEQ 1$
      MOV @SEL10,$BDDAT ;IF YES: GET CSR10 INSTEAD
1$: BIC #140000,$BDDAT ;STRIP TO CHAR COUNT
    CMP $BDDAT,$GDDAT ;COMPARE
    BEQ 10$ ;IF OK GO TO 10
;ELSE REPORT ERROR : BAD CHAR COUNT
      TRAP C$ERDF
      .WORD 9
      .WORD MEF16A
      .WORD ERR23
10$: DEC ERRWRD ;SET ERROR OCCURRED
     RTS R5 ;RETURN TO CALLER

```

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GLOBAL SUBROUTINES

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| 003576 | 010537 | 002406 | |
| 003602 | 017737 | 176642 | 002340 |
| 003610 | 023737 | 002340 | 002336 |
| 003616 | 001015 | | |
| 003620 | 005737 | 002376 | |
| 003624 | 001420 | | |
| 003626 | 012737 | 000000 | 002340 |
| 003634 | 017737 | 176614 | 002336 |
| 003642 | 023737 | 002340 | 002336 |
| 003650 | 001406 | | |
| 003652 | | | |
| 003652 | 104455 | | |
| 003654 | 000012 | | |
| 003656 | 012176 | | |
| 003660 | 010114 | | |
| 003662 | 005337 | 002402 | |
| 003666 | 000205 | | |

```

*****
: FUNCTIONAL DESCRIPTION:      GETBA - GET BUFFER ADDRESS
: THIS ROUTINE GETS THE BUFFER ADDRESS FROM SEL4
: AND THEN COMPARES IT TO THE VALUE IN $GDDAT
: IF EQUAL EXIT ELSE REPORT ERROR AND EXIT
: (IF DMV IN Q22 MODE: SEL6 IS CHECKED FOR 0).
:
: INPUTS:      R5      = ADDRESS OF CALLER
:              $GDDAT = VALUE OF EXPECTED BUFFER ADDRESS
:
: OUTPUTS:     ERRWRD = -1 IF ERROR OCCURED
: CALLING SEQUENCE:
:              JSR     R5,GETBA
*****
GETBA:  MOV     R5,ERRADD      ;STORE OFF ERROR ADDRESS
        MOV     @SEL4,$BDDAT  ;GET ADDRESS OUTPUT
        CMP     $BDDAT,$GDDAT ;ARE THEY EQUAL ?
        BNE    1$           ;IF NOT: REPORT IN
        TST    MODQ22        ;* IS THIS Q22 MODE ?
        BEQ    10$          ;* IF NOT: EXIT
        MOV     #0,$BDDAT     ;* GET EXPECTED EXTENDED ADDRESS
        MOV     @SEL6,$GDDAT  ;* GET ACTUAL EXTENDED ADDRESS
        CMP     $BDDAT,$GDDAT ;* ARE THEY EQUAL ?
        BEQ    10$          ;IF YES: EXIT
                               ;ELSE ERROR
1$:
        TRAP   C$ERDF
        .WORD  10
        .WORD  MEF17A
        .WORD  ERR23
10$:   DEC     ERRWRD        ;SET ERROR OCCURRED
        RTS    R5           ;RETURN TO CALLER

```

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GLOBAL SUBROUTINES

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:*****
: FUNCTIONAL DESCRIPTION:   GETOC - GET OUTPUT CODE
: THIS ROUTINE GETS THE OUTPUT CODE FROM
: BSEL6 AND THEN COMPARES IT TO
: THE VALUE IN $GDDAT
: IF EQUAL EXIT ELSE REPORT ERROR AND EXIT
:
: INPUTS:   R5      = ADDRESS OF CALLER
:           $GDDAT = VALUE OF EXPECTED OUTPUT CODE
:
: OUTPUTS:  ERRWRD = -1 IF ERROR OCCURED
: CALLING SEQUENCE:
:           JSR     R5,GETOC
:*****

```

```

003670 010537 002406
003674 017737 176554 002340
003702 042737 177400 002340
003710 023737 002340 002336
003716 001411
003720 012737 012000 002430
003726 104455
003730 000013
003732 011506
003734 010324
003736 005337 002402
003742 000205

```

```

GETOC:  MOV     R5,ERRADD      ;STORE OFF ERROR ADDRESS
        MOV     @BSEL6,$BDDAT ;GET OUTPUT FROM BSEL6
        BIC     #'C<377>,$BDDAT ;STRIP TO VALID BITS
        CMP     $BDDAT,$GDDAT ;ARE THEY EQUAL
        BEQ     10$          ;IF SO GO TO 10
                               ;ELSE ERROR
        MOV     #M18F,CODEW
        TRAP   C$ERDF
        .WORD  11
        .WORD  EROIC
        .WORD  ERR27
10$:    DEC     ERRWRD        ;SET ERROR OCCURRED
        RTS     R5           ;RETURN TO CALLER

```


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GLOBAL SUBROUTINES

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003744
003744 004537 002646
003750 005737 002402
003754 100524
003756 117737 176462 002340
003764 042737 177770 002340
003772 122737 000000 002340
004000 001450
004002 122737 000001 002340
004010 001012
004012 012737 000302 002336
004020 117737 176430 002340
004026 123737 002336 002340
004034 001412
004036 012737 011762 002430
004044 104455
004046 000014
004050 011506
004052 010324
004054 005337 002402
004060 000462
004062
004062 005237 177572
004066 012737 004216 000004
004074 005737 120000
004100 005037 177572
004104 104455
004106 000015
004110 000000
004112 007706
004114 005337 002402
004120 000442

```
*****
: FUNCTIONAL DESCRIPTION: MEMEX - MEMORY EXTENSION CODE
: THIS ROUTINE IS USED WITH THE
: MEMORY EXTENSION TESTS. THE ROUTINE FIRST
: CHECKS FOR A CONTROL OUT.. IF THE CONTROL
: OUT IS A REC COMPLETE IT COMPARES THE FIRST
: DATA WORD ON THE EXTENSIONS PAGE IF GOOD
: THEN EXIT IF BAD REPORT ERROR AND EXIT.
: IF CONTROL OUT IS NON EXISTENT MEMORY THEN
: CHECK TO BE SURE MEMORY IS NON-EXISTENT
: IF MEMORY EXIST THEN PRINT ERROR AND
: EXIT ROUTINE.
:
: INPUTS:      R5      = CALLING ADDRESS
:
: OUTPUTS:     ERRWRD = -1 IF ERROR OCCURED
: SUBORDINATE ROUTINES USED:
:              WRDO   = WAIT FOR READY OUT
:
: CALLING SEQUENCE:
:              JSR    R4, MEMEX
:*****
```

```
MEMEX:
EXMEM:  JSR      R5, WRDO          ;WAIT FOR READY OUT
        TST     ERRWRD
        BMI     EXMEMX
        MOVB   @BSEL2, $BDDAT
        BIC    #'C<7>, $BDDAT    ;STRIP TO TYPE CODE
        CPB    #0, $BDDAT        ;IS IT REC COMP
        BEQ    EXMEMA            ; IF YES THEN GO TO A
        CPB    #1, $BDDAT        ;IF NOT IS IT CONTROL OUT
        BNE    EXMEMB            ;IF NOT GO TO B
        MOV    #302, $GDDAT
        MOVB   @BSEL6, $BDDAT
        CPB    $GDDAT, $BDDAT    ;IS IT NON EXISTENT MEM?
        BEQ    EXMEMC            ;IF YES GO TO C
EXMEMB: MOV    #M13F, CODEW
        TRAP   C$ERDF
        .WORD  12
        .WORD  EROIC
        .WORD  ERR27
        DEC    ERRWRD            ;SET ERROR FLAG
        BR     EXMEMX            ;PRINT ERROR AND EXIT
EXMEMC: ;IF ERROR IS NON EXISTENT
        INC    177572            ;INCREMENT MM
        MOV    #METB, 4          ;SET UP TRAP
        TST   @#120000          ;TEST THE NON EXISTENT
        CLR   177572            ;CLEAR MM
        TRAP   C$ERDF
        .WORD  13
        .WORD  0
        .WORD  ERR20
        DEC    ERRWRD
        BR     EXMEMX            ;PRINT ERROR AND EXIT TEST
```

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GLOBAL SUBROUTINES

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2055
2056           ; GET HERE IF BUFFER RETURNED OK
2057
2058 004122 005237 177572      EXMEMA: INC      ;77572           ;ENABLE MM
2059 004126 012737 004202 000004  MOV      #METC,4       ;SET UP TRAP
2060 004134 013737 033450 002336  MOV      MR1+2,$GDDAT  ;GET FIRST WORD FROM NEW PAGE
2061 004142 013737 120000 002340  MOV      120000,$BDDAT ;AND FIRST RX WORD
2062 004150 005037 177572      CLR      177572        ;DISABLE MM
2063 004154 023737 002336 002340  CMP      $GDDAT,$BDDAT ;COMPARE DATA
2064 004162 001421      BEQ      EXMEMX        ;EXIT IF GOOD
2065 004164 104455      TRAP     C$ERDF
2066 004166 000016      .WORD    14
2067 004170 000000      .WORD    0
2068 004172 000740      .WORD    ERR21
2069 004174 005337 002402      DEC      ERRWRD
2070 004200 000412      BR       EXMEMX        ;AND EXIT
2071 004202 005037 177572      METC:  CLR      177572  ;DISABLE MM
2072 004206 104455      TRAP     C$ERDF
2073 004210 000017      .WORD    15
2074 004212 000000      .WORD    0
2075 004214 010022      .WORD    ERR22
2076 004216 005037 177572      METB:  CLR      177572  ;DISABLE MM
2077 004222 062706 000004      META:  ADD      #4,SP  ;:(SP)
2078 004226 013737 002316 000004  EXMEMX: MOV      SAVE4,4
2079 004234 013737 002320 000006  MOV      SAVE6,6
2080 004242 000205      RTS       R5           ;RESTORE TRAPS
2081

```

VRG021882

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GLOBAL SUBROUTINES

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 2092 004244 01014C
 2093 004246 012701 000310
 2094 004252 C55737 002472
 2095 004256 001402
 2096 004260 062701 000620
 2097 004264 005301
 2098 004266 001376
 2099 004270 012601
 2100 004272 000207
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 2110
 2111
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 2114
 2115 004274 005077 176140
 2116 004300 113777 002405 176136
 2117 004306 004537 004346
 2118 004312 121053
 2119 004314 042737 000377 004334
 2120 004322 153737 002404 004334
 2121 004330 004537 004346
 2122 004334 100000
 2123 004336 052777 002000 176074
 2124 004344 000207

```

:*****
: FUNCTIONAL DESCRIPTION:      WAIT50 - WAIT 50 MICRO SECONDS
: THIS ROUTINE COUNTS DOWN R1 FROM 200 TO 0
: IF DMP AND FROM 600 TO 0 IF DMV. THIS
: IS USED AS A DELAY ROUTINE
:
: CALLING SEQUENCE:
: JSR      PC,WAIT50
:-----
    
```

```

WAIT50: MOV      R1,-(SP)      ;SAVE R1
        MOV      #200.,R1    ;INIT COUNTER
        TST      OPTYP
        BEQ      3$          ;IF DMP GO TO 3
        ADD      #400.,R1    ;ELSE TRIPLE UP TIMER FOR DMV
3$:     DEC      R1          ;DECREMENT COUNTER
        BNE      3$          ;BR IF NOT DONE YET
        MOV      (SP)+,R1    ;RESTORE R1
        RTS      PC         ;RETURN
    
```

```

:*****
: FUNCTIONAL DESCRIPTION:      GWORD - GET WORD
: THIS ROUTINE READS A WORD FROM THE M8207 ROM.
:
: INPUTS:      CADDR = ADDRESS TO BE READ
:
: OUTPUTS:     SEL6 = DATA READ
: SUBORDINATE ROUTINES USED:
: ROMCLK - ROUTINE TO ISSUE CLOCKS TO ROM CIRCUIT
: CALLING SEQUENCE:
: JSR      PC,GWORD
:-----
    
```

```

GWORD: CLR      @SELO        ;INIT
        MOVB     CADDR+1,@SEL2 ;NOW HIGH BYTE OF ADDRESS
        JSR      R5,ROMCLK
        .WORD    121053      ;MOV IBUS* 2 TO OBUS* 13
        BIC      #377,1$     ;STRIP ADDR FLIED.
        BISB     CADDR,1$    ;ADD IN IMM ADDR.
        JSR      R5,ROMCLK    ;GO DO BRANCH.
1$:     .WORD    100000      ;BRANCH EXT PUTS ADDR. IN PCREG.
        BIS      #2000,@SELO ;SET READ ENABLE.
        RTS     PC         ;EXIT.
    
```

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GLOBAL SUBROUTINES

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2139 004346
2140 004346 152777 000002 176066
2141 004354 012577 176074
2142 004360 152777 000003 176054
2143 004366 142777 000007 176046
2144 004374 000205
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2161 004376 010146
2162 004400 010246
2163 004402 012702 000020
2164 004406 000241
2165 004410 006037 002374
2166 004414 006037 002372
2167 004420 102011
2168 004422 012701 102010
2169 004426 043701 002374
2170 004432 042737 102010 002374
2171 004440 050137 002374
2172 004444 005302
2173 004446 003357
2174 004450 012602
2175 004452 012601
2176 004454 000207
2177

```

```

:*****
:FUNCTIONAL DESCRIPTION: ROMCLK - ROM CLOCK ROUTINE
:THIS ROUTINE ISSUES A SINGE STEP TO THE
: M8207.
:INPUTS: R5 - POINTS TO INSTRUCTION TO BE STEPPED
:RETURN: RETURN IS TO WORD FOLLWOING INSTRUCTION
:CALLING SEQUENCE:
: JSR R5,ROMCLK
: .WORD INSTR ;INSTURCITON TO EXECUTE
:*****

```

```

ROMCLK:
BISB #2,@BSEL1 ;SET ROMI
MOV (R5)+,@BSEL6 ;SET INSTRUCTION.
BISB #3,@BSEL1 ;CLOCK INSTR.
BICB #7,@BSEL1 ;CLEAR.
RTS R5

```

```

:*****
:FUNCTIONAL DESCRIPTION: CRCR - CRC CALCULATE ROUTINE
:THIS ROUTINE TAKES 16 BITS OF DATA FROM WORDT
:AND CONVERTS THEM INTO PART OF THE SERIAL STREAM
:THAT IS BEING USED TO CALCULATE A CRC-CCITT WORD.
:INPUTS: WORDT - WORD TO CALCULATE ON
:IMPLICIT INPUTS:
: CWORD - MUST BE A -1 FIRST TIME CALLED
:OUTPUTS: CWORD - 16 BIT CALCULATED WORD
:CALLING SEQUENCE:
: JSR PC,CRCR
:*****

```

```

CRCR: MOV R1,-(SP)
MOV R2,-(SP)
MOV #16.,R2
10$: CLC
ROR CWORD
ROR WORDT
BVC 20$
MOV #102010,R1
BIC CWORD,R1
BIC #102010,CWORD
BIS R1,CWORD
20$: DEC R2
BGT 10$
MOV (SP)+,R2
MOV (SP)+,R1
RTS PC

```

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GLOBAL SUBROUTINES

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2190 004456 112777 000100 175756 MINITR: MOVB #100,@BSEL1 ;SET MASTER CLEAR.
2191 004464 022737 000004 002472      CMP #04,OPTYP ;IS THIS 8206
2192 004472 001003          BNE MIN1R ;BRANCH IF NOT
2193 004474 112777 000200 175740      MOVB #200,@BSEL1 ;SET RUN
2194 004502 000240          MIN1R: NOP
2195 004504 004737 004244      1$: JSR PC,WAIT50 ;SHORT DELAY.
2196 004510 000207          RTS PC ;RETURN.
2197
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2219
2220 004512 012737 000003 002506 MINIT1: MOV #03,AXNUM
2221 004520 000403          BR MINTR
2222 004522 012737 000005 002506 MINITS: MOV #05,AXNUM
2223 004530 112777 000100 175704 MINTR: MOVB #100,@BSEL1 ;SET MASTER CLEAR.
2224 004536 022737 000004 002472      CMP #4,OPTYP ;IS THIS 8206
2225 004544 001003          BNE MIN2R ;SKIP IF NOT
2226 004546 112777 000200 175666      MOVB #200,@BSEL1 ;SET RUN BIT
2227 004554 000240          MIN2R: NOP
2228 004556 000240          NOP
2229 004560 012737 004600 002406      MOV #ERLB7,ERRADD ;SET ERROR ADDRESS
2230 004566 004537 005070      TLB7: JSR R5,TOUT
2231 004572 005737 002402      TST ERRWRD
2232 004576 100533          BMI MINTC ;EXIT IF ERROR
2233 004600

```

```

*****
: FUNCTIONAL DESCRIPTION: MINITR - MASTER CLEAR ROUTINE
: THIS ROUTINE ISSUES A MASTER CLEAR TO THE DEVICE
: IF OPTION IS AN 8206 IT ALSO SETS THE RUN BIT.
:
: SUBORDINATE ROUTINES USED:
: WAIT50 - SHORT DELAY ROUTINE
:
: CALLING SEQUENCE:
: JSR PC,MINITR
:-----

```

```

*****
: FUNCTIONAL DESCRIPTION: MINITS - MASTER CLEAR AND INIT
: THIS ROUTINE ISSUES A MASTER CLEAR, WAITS FOR THE
: RUN BIT TO SET, CHECKS FOR GOOD COMPLETION OF MICRO
: DIAGNOSTICS AND ISSUES THE MODE DEFINITION.
: IF ENTERED AT MINIT1 - SET MODE TO FULL DUPLEX POINT
: TO POINT
: IF ENTERED AT MINITS - SET MODE TO FULL DUPLEX CONTROL
: IF ENTERED AT MINTR - SET MODE TO VALUE IN AXNUM
:
: OUTPUTS: ERRWRD = -1 IF ERROR OCCURS.
:
: IMPLICIT OUTPUTS:
: DMP EXITS WITH MODE DEFINED
:
: SUBORDINATE ROUTINES USED:
: TOUT - TIME OUT ROUTINE
: WAIT50 - SHORT DELAY ROUTINE
: WRDO - WAIT FOR READY OUT
:
: CALLING SEQUENCE:
: JSR PC,MINITS ;OR MINIT1 OR MINTR
:-----

```

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GLOBAL SUBROUTINES

```

2234 004600 004737 004244      4$: JSR    PC, WAIT50
2235 004604 005777 175630      TST    @BSEL0                ;NOW WAIT FOR RUN TO ACTUALLY SET.
2236 004610 100366                BPL    TLB7
2237 004612 012737 004632 002406  MOV    #ERLB8, ERRADD        ;SET ERROR ADDRESS
2238 004620 004537 005070      TLB8: JSR    R5, TOUT           ;CHECK TIME OUT
2239 004624 005737 002402      TST    ERRWRD
2240 004630 100516                BMI    MINTE                  ;EXIT IF ERROR
2241 004632
2242 004632 122777 000305 175614  ERLB8: 5$: CMPB   #305, @BSEL6        ;GOOD END TO MICRO DIAG?
2243 004640 001404                BEQ    2$
2244 004642 122777 000264 175604  CMPB   #264, @BSEL6
2245 004650 001363                BNE    TLB8                  ;LINE UNIT FAILURE.?
2246                                ;NO-STAY IN LOOP.
2247 004652 012737 000077 002336  2$:  MOV    #77, $GDDAT          ;YES, CATCH THE PROBLEM LATER.
2248 004660 032737 000003 002472  BIT    #3, OPTYP
2249 004666 001403                BEQ    3$
2250 004670 012737 000033 002336  MOV    #33, $GDDAT
2251 004676 023777 002336 175544  3$:  CMP    $GDDAT, @BSEL4
2252 004704 001407                BEQ    4$
2253 004706 104457                TRAP   C$ERSOFT
2254 004710 000025                .WORD 21
2255 004712 012566                .WORD MEF32
2256 004714 010422                .WORD ERR32
2257 004716 005337 002402      DEC    ERRWRD
2258 004722 000461                BR     MINTE
2259 004724 032737 000003 002472  4$:  BIT    #3, OPTYP
2260 004732 001423                BEQ    6$
2261 004734 005737 002400      TST    F$LOOP
2262 004740 001020                BNE    6$
2263 004742 112777 000301 175472  MOVB   #301, @BSEL1
2264 004750 004537 002646      JSR    R5, WRDO
2265 004754 012777 000006 175462  MOV    #06, @BSEL2
2266 004762 004537 005070      60$: JSR    R5, TOUT
2267 004766 005737 002402      TST    ERRWRD
2268 004772 100435                BMI    MINTE
2269 004774 005777 175440      TST    @SELO
2270 005000 100370                BPL    60$
2271 005002 152777 000010 175432  6$:  BISB   #BIT3, @BSEL1
2272                                ;SET LINE UNIT LOOP.-
2273 005010 052777 000200 175422                                ;THIS ALLOWS US TO SET THE MODE.
2274 005016 012737 005036 002406      MOV    #RQ1, @BSEL0
2275 005024 004537 005070      TLB9: JSR    R5, TOUT
2276 005030 005737 002402      TST    ERRWRD
2277 005034 100414                BMI    MINTE
2278 005036 032777 000020 175400  ERLB9: BIT    #20, @BSEL2
2279 005044 001767                BEQ    TLB9
2280 005046 013777 002506 175400      MOV    AXNUM, @BSEL6
2281 005054 105077 175360      CLRB  @BSEL0
2282 005060 012777 000002 175356  MOV    #2, @BSEL2
2283 005066 000207      MINTE: RTS    PC
2284

```

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GLOBAL SUBROUTINES

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 2292
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 2294 005070 020537 005136
 2295 005074 001011
 2296 005076 005237 005134
 2297 005102 001012
 2298 005104 104455
 2299 005106 000020
 2300 005110 011414
 2301 005112 010266
 2302 005114 005337 002402
 2303 005120 005037 005134
 2304 005124 010537 005136
 2305 005130
 2306 005130 104422
 2307 005132 000205
 2308
 2309 005134 000000
 2310
 2311 005136 000000
 2312

```

:*****
: FUNCTIONAL DESCRIPTION:      TOUT  - TIME OUT ROUTINE
:                             THIS ROUTINE INC COUNTT LOCATION EVERY
:                             TIME IT IS CALLED IF COUNTT OVERFLOWS THEN
:                             TIME OUT IS REPORTED AND THE ROUTINE IS EXITED.
: CALLING SEQUENCE:
:                             JSR    R5,TOUT
:*****
TOUT:  CMP    R5,LA5TR5
       BNE    TOUTE
       INC    COUNTT
       BNE    TOUTEX
       TRAP   C$ERDF
       .WORD  16
       .WORD  MEF7
       .WORD  ERR26
TOUTE: DEC    ERRWRD
       CLR    COUNTT
       MOV    R5,LA5TR5      ;SAVE CURRENT PC.
TOUTEX: TRAP   C$BRK
       RTS    R5            ;EXIT

COUNTT: 0                ;NUMBERS OF TIMES IN THIS ROUTINE FROM
LASTP5: 0                  ;SAME CALLING LOCATION.
                           ;LAST CALLING LOCATION.

```

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GLOBAL SUBROUTINES

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2321
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2323
2324
2325
2326
2327 005140
2328 005140 013746 002440
2329 005144 013746 002332
2330 005150 012746 005306
2331 005154 012746 000003
2332 005160 010600
2333 005162 104415
2334 005164 062706 000010
2335 005170 017746 175260
2336 005174 017746 175250
2337 005200 017746 175240
2338 005204 017746 175230
2339 005210 012746 005373
2340 005214 012746 000005
2341 005220 010600
2342 005222 104415
2343 005224 062706 000014
2344 005230 032737 000003 002472
2345 005236 001412
2346 005240 017746 175214
2347 005244 012746 005451
2348 005250 012746 000002
2349 005254 010600
2350 005256 104415
2351 005260 062706 000006
2352 005264
2353 005264 012746 005466
2354 005270 012746 000001
2355 005274 010600
2356 005276 104415
2357 005300 062706 000004
2358 005304 000207
2359 005306 047045 040445 040506
2360 005314 046111 047111 020107
2361 005322 041515 052520 044440
2362 005330 020123 047125 052111
2363 005336 021440 047445 022462
2364 005344 020101 044127 051517
2365 005352 020105 042101 051104
2366 005360 051505 020123 051511
2367 005366 022440 033117 000
2368 005373 045 022516 051501

```

```

:*****
: FUNCTIONAL DESCRIPTION: STAND - PRINT STANDARD REGS
: THIS ROUTINE PRINTS THE UNIT NUMBER AND
: CSR ADDRESS OF THE FAILING UNIT AS WELL AS THE
: CONTENTS OF ALL THE CSR REGS.
: THE ERROR MMSG ROUTINES USE THIS SUBROUTNE
: IMPLICIT INPUTS:
: CSRS' - THE CSR ARE EXPECTED TO CONTAIN USEFUL DATA
: LOGDEV - THE LOGICAL DEVICE NUMBER
: SELO - ADDRESS OF THIS UNIT
: CALLING SEQUENCE:
: JSR PC,STAND
:-----*****

```

```

STAND:
MOV SELO,-(SP)
MOV LOGDEV,-(SP)
MOV #CFM1,-(SP)
MOV #3,-(SP)
MOV SP,R0
TRAP CSPNTX
ADD #10,SP
MOV @SEL6,-(SP)
MOV @SEL4,-(SP)
MOV @SEL2,-(SP)
MOV @SELO,-(SP)
MOV #CFM2,-(SP)
MOV #5,-(SP)
MOV SP,R0
TRAP CSPNTX
ADD #14,SP
BIT #3,OPTYP ;IS THIS A DMV-11 ?
BEQ 1$ ;IF NOT: SKIP SEL10 PRINTOUT
MOV @SEL10,-(SP)
MOV #CFM3,-(SP)
MOV #2,-(SP)
MOV SP,R0
TRAP CSPNTX
ADD #6,SP

1$:
MOV #CFM4,-(SP)
MOV #1,-(SP)
MOV SP,R0
TRAP CSPNTX
ADD #4,SP
RTS PC
CFM1: .ASCIZ '%N%AFAILING MCPU IS UNIT #%02XA WHOSE ADDRESS IS %06%'

CFM2: .ASCIZ '%N%ASELO=%06XA SEL2=%06XA SEL4=%06XA SEL6=%06%'

```


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GLOBAL SUBROUTINES

| | | | | |
|------|--------|--------|--------|--------|
| 2369 | 005400 | 046105 | 036460 | 047445 |
| 2370 | 005406 | 022466 | 020101 | 042523 |
| 2371 | 005414 | 031114 | 022475 | 033117 |
| 2372 | 005422 | 040445 | 051440 | 046105 |
| 2373 | 005430 | 036464 | 047445 | 022466 |
| 2374 | 005436 | 020101 | 042523 | 033114 |
| 2375 | 005444 | 022475 | 033117 | 000 |
| 2376 | 005451 | 045 | 020101 | 042523 |
| 2377 | 005456 | 030514 | 036460 | 047445 |
| 2378 | 005464 | 000066 | | |
| 2379 | 005466 | 047045 | 000 | |
| 2380 | | 005472 | | |
| 2381 | | | | |
| 2382 | | | | |

CFM3: .ASCIZ '%A SEL10=%06'

CFM4: .ASCIZ '%N'
.EVEN

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GLOBAL SUBROUTINES

```

2383 :*****
2384 : FUNCTIONAL DESCRIPTION:      RMVRT - VERIFY ROM CONTENTS
2385 : THIS ROUTINE READS DMV ROMS USING 256 BYTE READS
2386 : AND CALCULATES/CHECKS THE CRC.
2387 : SUBORDINATE ROUTINES:
2388 :   WRDO - WAIT FOR READY OUT (MRDY)
2389 :   CRCR - CALCULATE CRC
2390 : IMPLICIT INPUTS:
2391 :   ROMADD - STARTING ADDRESS OF PARTICULAR ROM
2392 : CALLING SEQUENCE:
2393 :   JSR      R5,RMVRT
2394 :-----*****
2395
2396 005472 012737 177777 002374 RMVRT: MOV      #-1,CWORD      ;INIT CRC WORD
2397 005500 112777 000301 174734      MOVB     #301,@BSEL1    ;*ENTER MAINTENANCE LOOP
2398 005506 004537 002646          JSR      R5,WRDO       ;*
2399 005512 005737 002402          TST     ERRWRD        ;*
2400 005516 100477          BMI     RMVEX         ;*EXIT IF ERROR
2401 005520 005003          CLR     R3           ;CLEAR BLOCK_NUMBER
2402
2403 005522 012777 033726 174724 RMVXX: MOV      #RECBU1,@SEL6 ;READ 256 BYTES USING M-LOOP
2404 005530 105077 174724          CLRB   @BSEL10       ;RCV BUFFER ADDR => BSR10:CSR6
2405 005534 013777 002436 174706          MOV     ROMADD,@SEL4  ;ROM ADDRESS => CSR4
2406 005542 112777 000003 174674          MOVB   #03,@BSEL2    ;*DO BLOCK READ OF 256 BYTES
2407 005550 004537 002646          JSR      R5,WRDO       ;*WAIT FOR MRDY BIT (RDO)
2408 005554 005737 002402          TST     ERRWRD        ;*
2409 005560 100456          BMI     RMVEX         ;*EXIT IF ERROR
2410
2411 005562 005002          CLR     R2           ;CLEAR WORD INDEX
2412 005564 005703          TST     R3           ;IS THIS THE 1ST BLOCK?
2413 005566 001014          BNE     RMVYY        ;
2414 005570 013737 033726 002434          MOV     RECBU1,CRCAL  ;YES: SAVE 1ST WORD OF 1ST BLOCK
2415 005576 005722          TST     (R2)+        ; (CRC CHARACTER)
2416 005600 116237 033726 013762          MOVB   RECBU1(R2),ROMNO ;SAVE ROM #
2417 005606 005202          INC     R2           ;
2418 005610 116237 033726 013764          MOVB   RECBU1(R2),REVNO ;SAVE REVISION #
2419 005616 005302          DEC     R2           ;ADJUST INDEX FOR ROM#
2420
2421 005620 016237 033726 002372 RMVYY: MOV     RECBU1(R2),WORDT ;GET INDEXED WORD FROM BUFFER
2422 005626 004737 004376          JSR     PC,CRCR       ;CALCULATE CRC WORD
2423 005632 062702 000002          ADD     #2,R2         ;(BUMP INDEX)
2424 005636 022702 000400          CMP     #256.,R2      ;IS THIS THE LAST WORD ?
2425 005642 001366          BNE     RMVYY        ;IF NOT: GET NEXT WORD.
2426
2427 005644 020327 000037          CMP     R3,#31.      ;IS THIS THE LAST 256 WORD BLOCK?
2428 005650 001405          BEQ     RMVBB        ;
2429 005652 062737 000400 002436          ADD     #256.,ROMADD ;NO: ADD 256 TO ADDRESS
2430 005660 005203          INC     R3           ; AND BUMP BLOCK NUMBER
2431 005662 000717          BR     RMVXX         ; AND GO GET SOME MORE
2432
2433 005664 000240          NOP                    ;(COM CWORD=5137 2374)
2434 005666 000240          NOP                    ;YES:
2435 005670 013737 002434 002372          MOV     CRCCAL,WORDT ;
2436 005676 023737 002374 002372          CMP     CWORD,WORDT  ; COMPARE CRC WORDS...
2437 005704 001404          BEQ     RMVEX         ; AND REPORT ERROR IF NO MATCH.
2438 005706 104455          TRAP   CSERDF

```

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GLOBAL SUBROUTINES

2439 005710 000021
2440 005712 000000
2441 005714 010162
2442
2443 005716 000205
2444

.WORD 17
.WORD 0
.WORD ERR24

RMVEX: RTS R5

;RETURN TO CALLER

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GLOBAL SUBROUTINES

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2499
2500

```

*****
: FUNCTIONAL DESCRIPTION:   TXRXSR - TRANSMIT RECEIVE SUBROUTINE
: THIS ROUTINE IS USED BY ALL TESTS THAT TRANSMIT
: AND RECIEVE DATA. THE FIRST PART OF THE ROUTINE VERIFIES
: THE OPERATOR INPUTS AND MAKES SURE THAT INTERFACE
: SELECTION CORRESPOND TO SELECTED BAUD RATES.
: THE SECOND PART OF THE ROUTINE FORMS 'TXRX3' AND DOES THE
: FOLLOWING. ESTABLISH TRIBUTARY. THEN EITHER DO ISTRT OR
: MAINT STATE DEPENDING ON FLAG. IF ISTRT THEN CHECK FOR
: RUN STATE IF MAINT STATE THEN GO TO NEXT STEP. NEXT QUE
: REC AND TRANSMIT BUFFERS THEN WAIT FOR OUTPUT. IF MEMORY
: MANAGEMENT EXIT TEST. IF ISTRT LOOK FOR REC COMPLETED
: FOLLOWED BY TX COMPLETED. IF MAINT LOOK FOR TRANSMIT FIRST.
:
: INPUTS:
: TXADD - ADDRESS OF TRANSMIT BUFFER
: TXCC  - CHAR COUNT OF TX
: RXADD - ADDRESS OF REC BUFFER
: RXCC  - CHAR COUNT OF REC BUFFER
: GENWRD - FLAG WORD IF BIT 15 SET-MAINT MODE
:         IF BIT 14 SET THEN MEMORY MGT.
:
: SUBORDINATE ROUTINES USED:
: WAIT50 - SHORT DELAY
: CONTIN - CONTROL IN ROUTINE
: GETOUT - GET CONTROL OUT CODE
: GETOC  - GET OUTPUT CODE
: WRDI   - WAIT FOR READY IN
: GETCC  - GET CHAR COUNT
: GETBA  - GET BUFFER ADDRESS
:
: CALLING SEQUENCE:
: JSR    R5,TXRXSR          ;IF NOT INTERFACE CHECK
:                               ;CALL AT JSR    R5,TXRX3
*****

```

```

005720 022737 000004 002476 TXRXSR: CMP    #4,TSTCON
005726 001002          BNE    10$          ;IF INTERNAL LOOP
005730 000137 006346          JMP    TXRX3        ;GO TO 3
;JUMP TO TXRX 3 IF INTERNAL LOOP
005734 013737 002360 002506 10$:  MOV    TRIBN,AXNUM ;SAVE TRIBN.
005742 005037 002360          CLR    TRIBN       ;MAKE TRIBN 0
;DMV-11 WILL ICNORE THE FOLLOWING...
005746 032737 000002 002476 TXRX1: BIT    #BIT1,TSTCON ;IS IT MODEM LOOP BACK?
005754 001571          BEQ    TXRX2        ;IF NOT THEN GO TO 2
005756 012704 000110          MOV    #110,R4
00,762 032737 000001 002476          BIT    #BIT0,TSTCON ;IS IT REMOTE MODEM
005770 001402          BEQ    TXRX1A       ;IF NOT THEN GO TO 1A
005772 012704 000104          MOV    #104,R4
005776 012703 000021 TXRX1A: MOV    #21,R3
006002 004537 003162          JSR    R5,CONTIN   ; WRITE MODEM WITH CORRECT
; TYPE OF LOOP CODE
006006 005737 002402          TST    ERRWRD
006012 100J02          BPL    15$

```

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GLOBAL SUBROUTINES

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2501 006014 000137 006476      JMP      TXRXA
2502
2503 006020 004737 004244      15$: JSR      PC, WAIT50      ; WAIT FOR A WHILE      ...
2504 006024 142777 000010 174410 BICB     #BIT3, @BSEL1    ; CLEAR LU LOOP IF NOT INTERNAL
2505
2506      ; IF INTEGRAL MODEM MAKE SURE OPTION
2507      ; IS NOT 8053 AND SPEED IS 56K OR HIGHER
2508      ; IF NOT INTEGRAL MODEM GO TO NEXT CHECK IF EIA
2509
2510 006032 022737 000001 002474      CMP      #1, IFTYP      ; IS THIS INTEGRAL MODEM
2511 006040 001014      BNE      XYZTC          ; IF NOT THEN GO CHECK FOR EIA
2512 006042 022737 000001 002472      CMP      #1, OPTYP      ; IS THIS 8053 (DMV NO INTEGRAL)
2513 006050 001453      BEQ      BADIF          ; IF SO PRINT BAD INTERFACE MESSG.
2514 006052 023727 002466 000004      CMP      SPEEDM, #4     ; IS THIS 56 K OR HIGHER
2515 006060 103464      BLO      BADBR          ; IF NOT PRINT BAD BAUD RATE
2516
2517      ; GET HERE IF EVERYTHING OK FOR INTEGRAL
2518
2519 006062 012704 000323      MOV      #323, R4       ; LOAD R4 WITH INTEFFACE TYPE
2520 006066 000137 006312      JMP      SETIF          ; AND GO SET IT
2521
2522      ; IF THIS IS EIA THEN CHECK THAT OPTION IS NOT
2523      ; M8054 AND THAT SPEED IS 56K OR LOWER
2524      ; IF NOT EIA CHECK IF V.35
2525
2526 006072 022737 000002 002474 XYZTC:  CMP      #2, IFTYP      ; IS THIS EIA INTERFACE
2527 006100 001014      BNE      V35TC          ; IF NOT GO CHECK FOR V.35 TYPE
2528 006102 022737 000002 002472      CMP      #2, OPTYP      ; IS THIS 8054 (DMV INTEGRAL MODEM)
2529 006110 001433      BEQ      BADIF          ; IF SO PRINT BAD INTERFACE
2530 006112 023727 002466 000004      CMP      SPEEDM, #4     ; IS THIS HIGHER THAN 56K
2531 006120 101044      BHI      BADBR          ; IF SO PRINT BAD BAUD RATE
2532
2533      ; GET HERE IF EVERYTHING OK FOR EIA
2534
2535 006122 012704 000233      MOV      #233, R4       ; LOAD R4 WITH INTERFACE TYPE
2536 006126 000137 006312      JMP      SETIF          ; AND GO SET IT.
2537
2538      ; IF V.35 CHECK THAT OPTION IS NOT 8064
2539      ; IF NOT V.35 MUST BE 422
2540
2541 006132 022737 000003 002474 V35TC:  CMP      #3, IFTYP      ; IS THIS V.35 INTERFACE
2542 006140 001010      BNE      T422C          ; IF NOT IT MUST BE 422
2543 006142 022737 000002 002472      CMP      #2, OPTYP      ; IS THIS 8064 (DMV INTEGRAL)
2544 006150 001413      BEQ      BADIF          ; IF SO PRINT BAD INTERFACE
2545
2546      ; GET HERE IF EVERYTHING OK FOR V.35
2547
2548 006152 012704 000313      MOV      #313, R4       ; LOAD R4 WITH INTERFACE TYPE AND
2549 006156 000137 006312      JMP      SETIF          ; GO SET IT
2550
2551      ; IF OPTION TYPE IS DMV THEN ERROR ELSE OK FOR 422
2552
2553 006162 032737 000003 002472 T422C:  BIT      #3, OPTYP      ; IS THIS DMV
2554 006170 001003      BNE      BADIF          ; IF SO PRINT BAD INTERFACE
2555
2556      ; GET HERE IF EVERYTHING OK FOR 422

```


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GLOBAL SUBROUTINES

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2613
2614 006374 012703 000003      MOV    #03,R3      ;ELSE:
2615 006400 004537 003162      JSR    R5,CONTIN  ;ISTRIB THE TRIB
2616                                     ; TIME OUT OR READY ERRORS REPORT THIS PC
2617 006404 005737 002402      TST    ERRWRD
2618 006410 100432              BMI    TXRXA      ;EXIT IF ERROR OCCURRED
2619
2620                                     ;CHECK FOR RUN STATE
2621
2622 006412 012737 000001 002336  MOV    #01,$GDDAT ;CHECK FOR CONTROL OUT
2623 006420 004537 003242      JSR    R5,GETOUT  ; AND CORRECT TRIBN
2624 006424 005737 002402      TST    ERRWRD
2625 006430 100422              BMI    TXRXA      ;EXIT IF ERROR OCCURRED
2626 006432 012737 000024 002336  MOV    #24,$GDDAT ;CHECK FOR RUN STATE
2627 006440 004537 003670      JSR    R5,GETOC  ; IN OUTPUT CODE
2628 006444 005737 002402      TST    ERRWRD
2629 006450 100412              BMI    TXRXA      ;EXIT IF ERROR OCCURRED
2630 006452 042777 000200 173764  BIC    #RDO,@BSEL2 ;CLEAR OUTPUT
2631 006460 000411              BR     TXRXC      ;AND GO TO 20
2632
2633                                     ; PUT TRIB IN MAINT STATE
2634
2635 006462 012703 000004      TXRXB: MOV    #04,R3      ;PUT TRIB IN MAINT STATE
2636 006466 004537 003162      JSR    R5,CONTIN ;
2637                                     ; TIME OUT OR READY ERRORS REPORT THIS PC
2638 006472 005737 002402      TXRXA: TST    ERRWRD
2639 006476 100002              BPL    TXRXC
2640 006500 000137 007344      JMP    TXRXEN     ;EXIT IF ERROR OCCURRED
2641
2642                                     ;QUEUE RECEIVE BUFFER
2643
2644 006504 052777 000200 173726  TXRXC: BIS    #RQI,@BSEL0 ;SET REQUEST
2645 006512 004537 002732      JSR    R5,WRDI
2646                                     ; TIME OUT OR READY ERROR REPORT THIS PC
2647 006516 005737 002402      TST    ERRWRD
2648 006522 100002              BPL    5$
2649 006524 000137 007344      JMP    TXRXEN     ;EXIT IF ERROR OCCURRED
2650 006530 013777 002422 173712  5$:  MOV    RXADD,@BSEL4 ;SET ADDRESS
2651 006536 113777 002360 173702  MOVB   TRIBN,@BSEL3 ;SET TRIBN
2652
2653 006544 005737 002376      TST    MODQ22     ;*IS THIS 'Q22 MODE' ?
2654 006550 001411              BEQ    1$         ;*
2655
2656 006552 013777 002424 173700  MOV    RXCC,@BSEL10 ;*YES: SET CHARACTER COUNT
2657 006560 005077 173670      CLR    @BSEL6     ;* CLEAR EXTENDED ADDR BITS
2658 006564 112777 000010 173652  MOVB   #10,@BSEL2 ;* SET RX BUFFER IN (+Q22 BIT)
2659 006572 000406              BR     2$         ;* AND CONTINUE...
2660
2661 006574 013777 002424 173652  1$:  MOV    RXCC, @BSEL6 ;*NO: SET CHAR COUNT [+BA16/17]
2662 006602 112777 000000 173634  MOVB   #0, @BSEL2 ; SET RX BUFFER IN
2663
2664                                     ;QUEUE TX BUFFER
2665
2666 006610 004537 002732      2$:  JSR    R5,WRDI    ;WAIT FOR READY
2667                                     ; TIME OUT OR READY ERROR REPORT THIS PC
2668 006614 005737 002402      TST    ERRWRD

```

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GLOBAL SUBROUTINES

```

2669 006620 100002          BPL      35$          ;*
2670 006622 000137 007344  JMP      TXRXEN      ;*EXIT IF ERROR OCCURRED
2671 006626 013777 002420 173614 35$:  MOV     TXADD,@BSEL4 ;SET TX ADD
2672 006634 113777 002360 173604  MOVB   TRIBN,@BSEL3 ;SET TRIBN
2673
2674 006642 005737 002376          TST     MODQ22      ;*IS THIS 'Q22 MODE' ?
2675 006646 001414          BEQ     3$          ;*
2676
2677 006650 013777 002426 173602  MOV     TXCC,@BSEL10 ;*YES: SET CHARACTER COUNT
2678 006656 005077 173572          CLR     @BSEL6      ;* CLEAR EXTENDED ADDR BITS
2679 006662 042777 000200 173550  BIC     #RQI,@BSEL0 ;* CLEAR REQUEST
2680 006670 112777 000014 173546  MOVB   #14,@BSEL2   ;* SET UP TX BUFFER (+Q22 BIT)
2681 006676 000411          BR      4$          ;* AND CONTINUE...
2682
2683 006700 013777 002426 173546 3$:  MOV     TXCC, @BSEL6 ;*NO: SET CHAR COUNT [+BA16/17]
2684 006706 042777 000200 173524          BIC     #RQI,@BSEL0 ;* CLEAR REQUEST
2685 006714 112777 000004 173522          MOVB   #04, @BSEL2 ;* SET UP TX BUFFER
2686
2687 006722 032737 040000 002432 4$:  BIT     #BIT14,GENWRD
2688 006730 001402          BEQ     20$         ;IF MM GO TO RETURN
2689 006732 000137 007344          JMP     TXRXEN      ;* CLEAR LOCAL_MAINT_FLAG
2690 006736 005037 007346 20$:  CLR     MTLG
2691 006742 005737 002432          TST     GENWRD
2692 006746 100052          BPL     TXRXG      ;GO AHEAD IF NOT MAINT STATE
2693
2694          ;CHECK FOR RX COMPLETED
2695
2696          ; NOTE: IF MAINT STATE THEN CHECK FOR RX AND TX BUFFERS
2697          ; RETURNED (ORDER NOT IMPORTANT).
2698          ; BUT: IF NOT MAINT STATE THEN RX BUFFER MUST BE RETURNED
2699          ; FIRST AND TX BUFFER SECOND (OR ERROR REPORTED).
2700
2701 006750 004537 002646          JSR     R5,WRDO     ;* IF WE ARE IN MAINT STATE ....
2702 006754 005737 002402          TST     ERRWRD     ;* WAIT FOR READY_OUT
2703 006760 100571          BMI     TXRXEN      ;*
2704 006762 117704 173456          MOVB   @BSEL2,R4   ;* EXIT IF ERROR
2705 006766 042704 177770          BIC     #177770,R4 ;* GET COMMAND TYPE
2706 006772 022704 000004          CMP     #4,R4      ;* STRIP EXCESS BITS
2707 006776 001403          BEQ     40$        ;* CHECK FOR TX BUFFER RETURNED
2708 007000 005337 007346          DEC     MTLG
2709 007004 000433          BR      TXRXG      ;* IF YES: GO CHECK IT
2710
2711 007006 012737 000004 002336 40$:  MOV     #04,$GDDAT ;* NO: MTLG=(-1) TO INDICATE TXBUF
2712 007014 004537 003242          JSR     R5,GETOUT  ;* RETURNED FIRST
2713 007020 005737 002402          TST     ERRWRD     ;GET OUTPUT CODE
2714 007024 100547          BMI     TXRXEN      ;EXIT IF ERROR
2715 007026 013737 002426 002336  MOV     TXCC,$GDDAT ;*
2716 007034 004537 003514          JSR     R5,GETCC   ;*ELSE CHECK TX CHAR COUNT
2717 007040 005737 002402          TST     ERRWRD     ;*
2718 007044 100537          BMI     TXRXEN      ;*EXIT IF ERROR
2719 007046 013737 002420 002336  MOV     TXADD,$GDDAT
2720 007054 004537 003576          JSR     R5,GETBA   ;IS THE TX BUFFER ADDR RIGHT ?
2721 007060 005737 002402          TST     ERRWRD
2722 007064 100527          BMI     TXRXEN      ;EXIT IF ERROR OCCURED
2723
2724 007066 042777 000200 173350  BIC     #RDO,@BSEL2 ;CLEAR READY OUT

```


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GLOBAL SUBROUTINES

```

2725 007074 012737 000000 002336 TXRXG: MOV #0, $GDDAT ;
2726 007102 004537 003242 JSR R5,GETOUT ;CHECK FOR RX RETURNED
2727 007106 005737 002402 TST ERRWRD ;
2728 007112 100514 BMI TXRXEN ;EXIT IF ERROR OCCURRED
2729 007114 013737 002426 002336 MOV TXCC,$GDDAT ;
2730 007122 004537 003514 JSR R5,GETCC ;IS THE CHAR COUNT CORRECT
2731 007126 005737 002402 TST ERRWRD ;
2732 007132 100504 BMI TXRXEN ;EXIT IF ERROR OCCURRED
2733 007134 013737 002422 002336 MOV RXADD,$GDDATT ;
2734 007142 004537 003576 JSR R5,GETBA ;IS THE BUFFER ADD RIGHT
2735 007146 005737 002402 TST ERRWRD ;
2736 007152 100474 BMI TXRXEN ;EXIT IF ERROR OCCURRED
2737 ;*****
2738 ;DATA CHECK....
2739 007154 013703 002422 MOV RXADD,R3
2740 007160 013701 002420 MOV TXADD,R1 ;SET UP ADDRESS
2741 007164 005004 CLR R4 ;CLEAR R4
2742 C07166
2743 007166 112337 002340 25$: MOVB (R3)+,$BDDAT ;GET BYTE OF RX
2744 007172 112137 002336 26$: MOVB (R1)+,$GDDAT ;GET BYTE OF TX
2745 007176 123737 002340 002336 28$: CMPB $BDDAT,$GDDAT ;ARE THEY THE SAME
2746 007204 001411 BEQ 30$ ;IF SO GO TO 30
2747 007206 005204 INC R4 ;MAKE COUNT RIGHT
2748 007210 104455 TRAP C$ERDF
2749 007212 000022 .WORD 18
2750 007214 012337 .WORD MEF19A
2751 007216 007646 .WORD ERR19
2752 007220 005337 002402 DEC ERRWRD
2753 007224 005304 DEC R4 ;MAKE COUNT RIGHT
2754 007226 000446 BR TXRXEN ;EXIT IF ERROR
2755 007230 005204 30$: INC R4 ;BUMP TO NEXT BYTE
2756 007232 020437 002426 CMP R4,TXCC ;ARE WE DONE?
2757 007236 103753 BLO 25$ ;IF NOT GO BACK
2758 ;*****
2759 007240 005737 007346 TST MFLG ;* CHECK LOCAL_MAINT_FLAG
2760 007244 001401 BEQ 31$ ;* IF CLEARED: GOTO 31$
2761 007246 000403 BR 32$ ;* SET: CHECK EXPECTED TXBUFF RETURN
2762
2763 007250 005737 002432 31$: TST GENWRD ;TEST FOR MAINT STATE
2764 007254 100433 BMI TXRXEN ;RETURN TO CALLER IF MAINT STATE
2765 007256 042777 000200 173160 32$: BIC #RDO,@BSEL2 ;CLEAR OUTPUT
2766 007264 012737 000004 002336 MOV #4,$GDDAT
2767 007272 004537 003242 JSR R5,GETOUT ;CHECK FOR TX BUFF COMP
2768 007276 005737 002402 TST ERRWRD ;
2769 007302 100420 BMI TXRXEN ;*IF ERROR: THEN EXIT
2770 007304 013737 002426 002336 MOV TXCC,$GDDAT ;
2771 007312 004537 003514 JSR R5,GETCC ;*ELSE CHECK TX CHAR COUNT
2772 007316 005737 002402 TST ERRWRD ;
2773 007322 100410 BMI TXRXEN ;*EXIT IF ERROR
2774 007324 013737 002420 002336 MOV TXADD,$GDDAT
2775 007332 004537 003576 JSR R5,GETBA ;IS THE TX BUFFER ADDR RIGHT ?
2776 007336 005737 002402 TST ERRWRD ;
2777 007342 100400 BMI TXRXEN ;EXIT IF ERROR OCCURED
2778 007344 000205 TXRXEN: RTS R5
2779
2780 007346 000000 MFLG: 0 ;* LOCAL_MAINT_FLAG

```

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GLOBAL SUBROUTINES

2781
2782

;* (IF MAINT MODE + MTFLG SET THEN TXBUF
;* RETURN EXPECTED AFTER RXBUF RETURN)

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GLOBAL ERROR REPORT SECTION

.SBTTL GLOBAL ERROR REPORT SECTION

:/ THE GLOBAL ERROR REPORT SECTION CONTAINS ERROR MESSAGES
:/ THAT ARE USED IN MORE THAN ONE TEST.

2783
2784
2785
2786
2787
2788
2789
2790 007350
2791 007350 013746 002440
2792 007354 012746 010675
2793 007360 012746 000002
2794 007364 010600
2795 007366 104414
2796 007370 062706 000006
2797 007374
2798 007374 104423
2799
2800
2801
2802
2803 007376
2804 007376 017746 173052
2805 007402 012746 011105
2806 007406 012746 000002
2807 007412 010600
2808 007414 104414
2809 007416 062706 000006
2810 007422 004737 005140
2811 007426
2812 007426 104423
2813
2814 007430
2815 007430 017746 002340
2816 007434 013746 002336
2817 007440 012746 011243
2818 007444 012746 000003
2819 007450 010600
2820 007452 104414
2821 007454 062706 000010
2822 007460 004737 005140
2823 007464
2824 007464 104423
2825
2826 007466
2827 007466 013746 002340
2828 007472 013746 002336
2829 007476 012746 011336
2830 007502 012746 000003
2831 007506 010600
2832 007510 104414
2833 007512 062706 000010
2834 007516 004737 005140
2835 007522
2836 007522 104423
2837
2838

ERR1::
MOV SELO,-(SP)
MOV #MEF1,-(SP)
MOV #2,-(SP)
MOV SP,R0
TRAP C\$PNTB
ADD #6,SP
L10003: TRAP C\$MSG

:FAILING CODE

ERR3::
MOV @BSEL6,-(SP)
MOV #MEF3,-(SP)
MOV #2,-(SP)
MOV SP,R0
TRAP C\$PNTB
ADD #6,SP
JSR PC,STAND
L10004: TRAP C\$MSG

ERR5::
MOV \$BDDAT,-(SP)
MOV \$GDDAT,-(SP)
MOV #MEF5,-(SP)
MOV #3,-(SP)
MOV SP,R0
TRAP C\$PNTB
ADD #10,SP
JSR PC,STAND
L10005: TRAP C\$MSG

ERR6::
MOV \$BDDAT,-(SP)
MOV \$GDDAT,-(SP)
MOV #MEF6,-(SP)
MOV #3,-(SP)
MOV SP,R0
TRAP C\$PN.B
ADD #10,SP
JSR PC,STAND
L10006: TRAP C\$MSG

:PRINT FAILED TO SET RDI

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GLOBAL ERROR REPORT SECTION

```

2839
2840 007524
2841 007524 012746 011660
2842 007530 012746 000001
2843 007534 010600
2844 007536 104414
2845 007540 062706 000004
2846 007544 004737 005140
2847 007550
2848 007550 104423
2849
2850
2851
2852 007552
2853 007552 012746 011704
2854 007556 012746 000001
2855 007562 010600
2856 007564 104414
2857 007566 062706 000004
2858 007572 004737 005140
2859 007576
2860 007576 104423
2861
2862
2863
2864
2865
2866 007600
2867 007600 013746 002406
2868 007604 012746 011611
2869 007610 013746 002340
2870 007614 013746 002336
2871 007620 012746 012301
2872 007624 012746 000005
2873 007630 010600
2874 007632 104414
2875 007634 062706 000014
2876 007640 004737 005140
2877 007644
2878 007644 104423
2879
2880
2881
2882 007646
2883 007646 013746 002340
2884 007652 013746 002336
2885 007656 010446
2886 007660 012746 012372
2887 007664 012746 000004
2888 007670 010600
2889 007672 104414
2890 007674 062706 000012
2891 007700 004737 005140
2892 007704
2893 007704 104423
2894

```

```

ERR9::
MOV #MRDI,-(SP)
MOV #1,-(SP)
MOV SP,R0
TRAP C$PNTB
ADD #4,SP
JSR PC,STAND
L10007:
TRAP C$MSG
;PRINT FAILED TO SET RDO

```

```

ERR10::
MOV #MRDO,-(SP)
MOV #1,-(SP)
MOV SP,R0
TRAP C$PNTB
ADD #4,SP
JSR PC,STAND
L10010:
TRAP C$MSG
;PRINTS GOOD AND BAD DATA (BYTES) AND
;FAILING PC ADDRS AND STANDARD REGS

```

```

ERR18::
MOV ERRADD,-(SP)
MOV #MFPC,-(SP)
MOV $BDDAT,-(SP)
MOV $GDDAT,-(SP)
MOV #MEF18,-(SP)
MOV #5,-(SP)
MOV SP,R0
TRAP C$PNTB
ADD #14,SP
JSR PC,STAND
L10011:
TRAP C$MSG
;DATA COMPARE ERROR

```

```

ERR19::
MOV $BDDAT,-(SP)
MOV $GDDAT,-(SP)
MOV R4,-(SP)
MOV #MEF19,-(SP)
MOV #4,-(SP)
MOV SP,R0
TRAP C$PNTB
ADD #12,SP
JSR PC,STAND
L10012:
TRAP C$MSG

```

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GLOBAL ERROR REPORT SECTION

2895
 2896
 2897 007706
 2898 007706 013746 002542
 2899 007712 012746 012633
 2900 007716 012746 000002
 2901 007722 010600
 2902 007724 104414
 2903 007726 062706 000006
 2904 007732 004737 005140
 2905 007736
 2906 007736 104423
 2907
 2908 007740
 2909 007740 012746 012756
 2910 007744 012746 000001
 2911 007750 010600
 2912 007752 104414
 2913 007754 062706 000004
 2914 007760 013746 002340
 2915 007764 013746 002336
 2916 007770 013746 002542
 2917 007774 012746 013045
 2918 010000 012746 000004
 2919 010004 010600
 2920 010006 104414
 2921 010010 062706 000012
 2922 010014 004737 005140
 2923 010020
 2924 010020 104423
 2925
 2926 010022
 2927 010022 012746 013126
 2928 010026 012746 000001
 2929 010032 010600
 2930 010034 104414
 2931 010036 062706 000004
 2932 010042 013746 002542
 2933 010046 012746 013214
 2934 010052 012746 000002
 2935 010056 010600
 2936 010060 104414
 2937 010062 062706 000006
 2938 010066 012746 013303
 2939 010072 012746 000001
 2940 010076 010600
 2941 010100 104414
 2942 010102 062706 000004
 2943 010106 004737 005140
 2944 010112
 2945 010112 104423
 2946
 2947
 2948
 2949
 2950

;NON-EXISTENT MEMORY ERROR

ERR20::
 MOV \$TMP0,-(SP)
 MOV #TFM20,-(SP)
 MOV #2,-(SP)
 MOV SP,R0
 TRAP C\$PNTB
 ADD #6,SP
 JSR PC,STAND

L10013:
 TRAP C\$MSG

ERR21::
 MOV #TFM21,-(SP)
 MOV #1,-(SP)
 MOV SP,R0
 TRAP C\$PNTB
 ADD #4,SP
 MOV \$BDDAT,-(SP)
 MOV \$GDDAT,-(SP)
 MOV \$TMP0,-(SP)
 MOV #TFM2A,-(SP)
 MOV #4,-(SP)
 MOV SP,R0
 TRAP C\$PNTB
 ADD #12,SP
 JSR PC,STAND

L10014:
 TRAP C\$MSG

ERR22::
 MOV #TFM22,-(SP)
 MOV #1,-(SP)
 MOV SP,R0
 TRAP C\$PNTB
 ADD #4,SP
 MOV \$TMP0,-(SP)
 MOV #TFM22A,-(SP)
 MOV #2,-(SP)
 MOV SP,R0
 TRAP C\$PNTB
 ADD #6,SP
 MOV #TFM22B,-(SP)
 MOV #1,-(SP)
 MOV SP,R0
 TRAP C\$PNTB
 ADD #4,SP
 JSR PC,STAND

L10015:
 TRAP C\$MSG

;PRINTS GOOD AND BAD DATA (WORDS) AND
 ;FAILING PC ADDRS AND STANDARD REGS

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GLOBAL ERROR REPORT SECTION

```

2951 010114
2952 010114 013746 002406
2953 010120 012746 011611
2954 010124 013746 002340
2955 010130 013746 002336
2956 010134 012746 012460
2957 010140 012746 000005
2958 010144 010600
2959 010146 104414
2960 010150 062706 000014
2961 010154 004737 005140
2962 010160
2963 010160 104423
2964
2965 010162
2966 010162 013746 002374
2967 010166 013746 002372
2968 010172 013746 002366
2969 010176 012746 013367
2970 010202 012746 000004
2971 010206 010600
2972 010210 104414
2973 010212 062706 000012
2974 010216 004737 005140
2975 010222
2976 010222 104423
2977
2978 010224
2979 010224 013746 002372
2980 010230 013746 002370
2981 010234 013746 002366
2982 010240 012746 013461
2983 010244 012746 000004
2984 010250 010600
2985 010252 104414
2986 010254 062706 000012
2987 010260 004737 005140
2988 010264
2989 010264 104423
2990
2991
2992
2993 010266
2994 010266 013746 002406
2995 010272 012746 011611
2996 010276 012746 011603
2997 010302 012746 000003
2998 010306 010600
2999 010310 104414
3000 010312 062706 000010
3001 010316 004737 005140
3002 010322
3003 010322 104423
3004
3005
3006

```

ERR23::

```

MOV ERRADD,-(SP)
MOV #MFPC,-(SP)
MOV $BDDAT,-(SP)
MOV $GDDAT,-(SP)
MOV #MEF23,-(SP)
MOV #5,-(SP)
MOV SP,R0
TRAP CSPNTB
ADD #14,SP
JSR PC,STAND

```

L10016:

TRAP CSMSG

ERR24::

```

MOV CWORD,-(SP)
MOV WORDT,-(SP)
MOV ROMN,-(SP)
MOV #TFM24,-(SP)
MOV #4,-(SP)
MOV SP,R0
TRAP CSPNTB
ADD #12,SP
JSR PC,STAND

```

L10017:

TRAP CSMSG

ERR25::

```

MOV WORDT,-(SP)
MOV ROMN1,-(SP)
MOV ROMN,-(SP)
MOV #TFM25,-(SP)
MOV #4,-(SP)
MOV SP,R0
TRAP CSPNTB
ADD #12,SP
JSR PC,STAND

```

L10020:

TRAP CSMSG

:PRINTS FAILING PC ADDRESS AND STANARD REGS

ERR26::

```

MOV ERRADD,-(SP)
MOV #MFPC,-(SP)
MOV #MEF1A,-(SP)
MOV #3,-(SP)
MOV SP,R0
TRAP CSPNTB
ADD #10,SP
JSR PC,STAND

```

L10021:

TRAP CSMSG

:PRINTS FAILING PC ADDRESS AND
:CODE IN ERROR FROM CODEW AND

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GLOBAL ERROR REPORT SECTION

```

3007
3008
3009 010324
3010 010324 013746 002406
3011 010330 012746 011611
3012 010334 012746 011603
3013 010340 012746 000003
3014 010344 010600
3015 010346 104414
3016 010350 062706 000010
3017 010354 013746 002340
3018 010360 013746 002336
3019 010364 012746 011730
3020 010370 013746 002430
3021 010374 012746 011536
3022 010400 012746 000005
3023 010404 010600
3024 010406 104414
3025 010410 062706 000014
3026 010414 004737 005140
3027 010420
3028 010420 104423
3029
3030
3031
3032 010422
3033 010422 012746 010450
3034 010426 012746 000001
3035 010432 010600
3036 010434 104414
3037 010436 062706 000004
3038 010442 004737 005140
3039 010446
3040 010446 104423
3041
3042 010450 040445 040502 044523
3043 010456 020103 051105 047522
3044 010464 000122
3045 010466 047045 040445 044440
3046 010474 041516 051117 042522
3047 010502 052103 044440 052116
3048 010510 051105 040506 042503
3049 010516 043040 051117 047440
3050 010524 052120 047511 020116
3051 010532 042523 042514 052103
3052 010540 042105 000040
3053 010544 047045 040445 044440
3054 010552 041516 051117 042522
3055 010560 052103 041040 052501
3056 010566 020104 040522 042524
3057 010574 043040 051117 044440
3058 010602 052116 051105 040506
3059 010610 042503 051440 046105
3060 010616 041505 042524 000104
3061 010624 047045 040445 025040
3062 010632 025052 025052 020052

```

:STANDARD REGISTERS

```

ERR27::
MOV ERRADD,-(SP)
MOV #MFPC,-(SP)
MOV #MEF1A,-(SP)
MOV #3,-(SP)
MOV SP,R0
TRAP CSPNTB
ADD #10,SP
MOV $BDDAT,-(SP)
MOV $GDDAT,-(SP)
MOV #MGB,-(SP)
MOV CODEW,-(SP)
MOV #MEF11,-(SP)
MOV #5,-(SP)
MOV SP,R0
TRAP CSPNTB
ADD #14,SP
JSR PC,STAND

```

L10022: TRAP C\$MSG

:PRINTS THE STANDARD REGS

```

ERR32::
MOV #BASER,-(SP)
MOV #1,-(SP)
MOV SP,R0
TRAP CSPNTB
ADD #4,SP
JSR PC,STAND

```

L10023: TRAP C\$MSG

BASER: .ASCIZ '%ABASIC ERROR''

BADIFM: .ASCIZ '%NZA INCORRECT INTERFACE FOR OPTION SELECTED ''

BADBRM: .ASCIZ '%NZA INCORRECT BAUD RATE FOR INTERFACE SELECTED''

TESTAB: .ASCIZ '%NZA ***** SUBTEST %02ZA ABORTED ***** ''

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GLOBAL ERROR REPORT SECTION

| | | | | | |
|------|--------|--------|--------|--------|----------------------------------------------------------|
| 3063 | 010640 | 052523 | 052102 | 051505 | |
| 3064 | 010646 | 020124 | 047445 | 022462 | |
| 3065 | 010654 | 020101 | 041101 | 051117 | |
| 3066 | 010662 | 042524 | 020104 | 025052 | |
| 3067 | 010670 | 025052 | 020052 | 000 | |
| 3068 | | | | | |
| 3069 | 010675 | 045 | 020101 | 042101 | MEF1: .ASCIZ '%A ADDRESSING PROBLEM UNIT ADDRESS %06%N' |
| 3070 | 010702 | 051104 | 051505 | 044523 | |
| 3071 | 010710 | 043516 | 050040 | 047522 | |
| 3072 | 010716 | 046102 | 046505 | 052440 | |
| 3073 | 010724 | 044516 | 020124 | 042101 | |
| 3074 | 010732 | 051104 | 051505 | 020123 | |
| 3075 | 010740 | 047445 | 022466 | 000116 | |
| 3076 | 010746 | 042101 | 051104 | 051505 | EMT0: .ASCIZ /ADDRESS ERROR -TRAP 4/ |
| 3077 | 010754 | 020123 | 051105 | 047522 | |
| 3078 | 010762 | 020122 | 052055 | 040522 | |
| 3079 | 010770 | 020120 | 000064 | | |
| 3080 | 010774 | 051445 | 022463 | 041501 | FMT0: .ASCIZ /%S3%ACSR (SEL%01%A) DOES NOT RESPOND%N/ |
| 3081 | 011002 | 051123 | 024040 | 042523 | |
| 3082 | 011010 | 022514 | 030504 | 040445 | |
| 3083 | 011016 | 020051 | 047504 | 051505 | |
| 3084 | 011024 | 047040 | 052117 | 051040 | |
| 3085 | 011032 | 051505 | 047520 | 042116 | |
| 3086 | 011040 | 047045 | 000 | | |
| 3087 | 011043 | 111 | 052116 | 051105 | MEF3A: .ASCIZ /INTERNAL DMP-11 DIAGNOSTIC FAILED/ |
| 3088 | 011050 | 040516 | 020114 | 046504 | |
| 3089 | 011056 | 026520 | 030461 | 042040 | |
| 3090 | 011064 | 040511 | 047107 | 051517 | |
| 3091 | 011072 | 044524 | 020103 | 040506 | |
| 3092 | 011100 | 046111 | 042105 | 000 | |
| 3093 | 011105 | 045 | 052101 | 051505 | MEF3: .ASCII '%ATEST CODE- %03' |
| 3094 | 011112 | 020124 | 047503 | 042504 | |
| 3095 | 011120 | 020055 | 047445 | 063 | |
| 3096 | 011125 | 045 | 022516 | 044501 | MEF4: .ASCIZ /%N%INTERNAL DMP-11-LINE UNIT TEST FAILURE/ |
| 3097 | 011132 | 052116 | 051105 | 040516 | |
| 3098 | 011140 | 020114 | 046504 | 026520 | |
| 3099 | 011146 | 030461 | 046055 | 047111 | |
| 3100 | 011154 | 020105 | 047125 | 052111 | |
| 3101 | 011162 | 052040 | 051505 | 020124 | |
| 3102 | 011170 | 040506 | 046111 | 051125 | |
| 3103 | 011176 | 000105 | | | |
| 3104 | 011200 | 047111 | 042524 | 043122 | MEFC: .ASCIZ /INTERFACE MICRO-DIAGNOSTIC FAILURE/ |
| 3105 | 011206 | 041501 | 020105 | 044515 | |
| 3106 | 011214 | 051103 | 026517 | 044504 | |
| 3107 | 011222 | 043501 | 047516 | 052123 | |
| 3108 | 011230 | 041511 | 043040 | 044501 | |
| 3109 | 011236 | 052514 | 042522 | 000 | |
| 3110 | 011243 | 045 | 020101 | 052515 | MEF5: .ASCII '%A MULTIPOINT RAM WRITE/READ ERROR%N' |
| 3111 | 011250 | 052114 | 050111 | 051117 | |
| 3112 | 011256 | 020124 | 040522 | 020115 | |
| 3113 | 011264 | 051127 | 052111 | 027505 | |
| 3114 | 011272 | 042522 | 042101 | 042440 | |
| 3115 | 011300 | 051122 | 051117 | 047045 | |
| 3116 | 011306 | 040445 | 043440 | 047517 | .ASCIZ '%A GOOD= %03%A BAD= %03' |
| 3117 | 011314 | 036504 | 022440 | 031517 | |
| 3118 | 011322 | 040445 | 041040 | 042101 | |

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GLOBAL ERROR REPORT SECTION

| | | | | | | |
|------|--------|--------|--------|--------|--------|-----------------------------------------------|
| 3119 | 011330 | 020075 | 047445 | 000063 | | |
| 3120 | | | | | | |
| 3121 | 011336 | 040445 | 047040 | 051120 | MEF6: | .ASCII 'XA NPR TRANSFER TEST' |
| 3122 | 011344 | 052040 | 040522 | 051516 | | |
| 3123 | 011352 | 042506 | 020122 | 042524 | | |
| 3124 | 011360 | 052123 | | | | |
| 3125 | 011362 | 047045 | 040445 | 043440 | | .ASCIZ 'XNXA GOOD= X06XA BAD= X06' |
| 3126 | 011370 | 047517 | 036504 | 022440 | | |
| 3127 | 011376 | 033117 | 040445 | 041040 | | |
| 3128 | 011404 | 042101 | 020075 | 047445 | | |
| 3129 | 011412 | 000066 | | | | |
| 3130 | | | | | | |
| 3131 | 011414 | 047125 | 054105 | 042520 | MEF7: | .ASCIZ /UNEXPECTED TEST LOOP HANG/ |
| 3132 | 011422 | 052103 | 042105 | 052040 | | |
| 3133 | 011430 | 051505 | 020124 | 047514 | | |
| 3134 | 011436 | 050117 | 044040 | 047101 | | |
| 3135 | 011444 | 000107 | | | | |
| 3136 | 011446 | 046504 | 020120 | 047111 | MEF8: | .ASCIZ /DMP INTERRUPTED TO WRONG VECTOR/ |
| 3137 | 011454 | 042524 | 051122 | 050125 | | |
| 3138 | 011462 | 042524 | 020104 | 047524 | | |
| 3139 | 011470 | 053440 | 047522 | 043516 | | |
| 3140 | 011476 | 053040 | 041505 | 047524 | | |
| 3141 | 011504 | 000122 | | | | |
| 3142 | 011506 | 047111 | 047503 | 051122 | EROIC: | .ASCIZ /INCORRECT CODE RETURNED/ |
| 3143 | 011514 | 041505 | 020124 | 047503 | | |
| 3144 | 011522 | 042504 | 051040 | 052105 | | |
| 3145 | 011530 | 051125 | 042516 | 000104 | | |
| 3146 | 011536 | 047045 | 052045 | 040445 | MEF11: | .ASCIZ 'XNXTXA CODE INCORRECTXNXTXN%06XS3X06' |
| 3147 | 011544 | 041440 | 042117 | 020105 | | |
| 3148 | 011552 | 047111 | 047503 | 051122 | | |
| 3149 | 011560 | 041505 | 022524 | 022516 | | |
| 3150 | 011566 | 022524 | 022516 | 033117 | | |
| 3151 | 011574 | 051445 | 022463 | 033117 | | |
| 3152 | 011602 | 000 | | | | |
| 3153 | 011603 | 045 | 022524 | 033117 | MEF1A: | .ASCIZ 'XTX06' |
| 3154 | 011610 | 000 | | | | |
| 3155 | 011611 | 106 | 044501 | 052514 | MFPC: | .ASCIZ 'FAILURE AT PC ' |
| 3156 | 011616 | 042522 | 040440 | 020124 | | |
| 3157 | 011624 | 041520 | 000040 | | | |
| 3158 | | | | | | |
| 3159 | 011630 | 047522 | 020115 | 052506 | MRFT: | .ASCIZ 'ROM FUNCTION TEST ERROR' |
| 3160 | 011636 | 041516 | 044524 | 047117 | | |
| 3161 | 011644 | 052040 | 051505 | 020124 | | |
| 3162 | 011652 | 051105 | 047522 | 000122 | | |
| 3163 | 011660 | 040445 | 042122 | 020111 | MRDI: | .ASCIZ 'XARDI FAILED TO SET' |
| 3164 | 011666 | 040506 | 046111 | 042105 | | |
| 3165 | 011674 | 052040 | 020117 | 042523 | | |
| 3166 | 011702 | 000124 | | | | |
| 3167 | 011704 | 040445 | 042122 | 020117 | MRDO: | .ASCIZ 'XARDO FAILED TO SET' |
| 3168 | 011712 | 040506 | 046111 | 042105 | | |
| 3169 | 011720 | 052040 | 020117 | 042523 | | |
| 3170 | 011726 | 000124 | | | | |
| 3171 | 011730 | 047507 | 042117 | 020040 | MGB: | .ASCIZ 'GOOD BAD' |
| 3172 | 011736 | 020040 | 020040 | 041040 | | |
| 3173 | 011744 | 042101 | 000 | | | |
| 3174 | 011747 | 122 | 052105 | 051125 | M12F: | .ASCIZ 'RETURN KEY' |

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| | | | | | | | |
|------|--------|--------|--------|--------|---------|--------|-----------------------------------------|
| 3175 | 011754 | 020116 | 042513 | 000131 | | | |
| 3176 | 011762 | 051105 | 047522 | 000122 | M13F: | .ASCIZ | 'ERROR' |
| 3177 | 011770 | 042122 | 000117 | | MFRO: | .ASCIZ | 'RDO' |
| 3178 | 011774 | 042122 | 000111 | | MFRI: | .ASCIZ | 'RDI' |
| 3179 | 012000 | 052517 | 050124 | 052125 | M18F: | .ASCIZ | 'OUTPUT' |
| 3180 | 012006 | 000 | | | | | |
| 3181 | 012007 | 124 | 050131 | 000105 | M28F: | .ASCIZ | 'TYPE' |
| 3182 | 012014 | 040504 | 040524 | 000 | M30F: | .ASCIZ | 'DATA' |
| 3183 | 012021 | 122 | 044504 | 051440 | MEF14: | .ASCIZ | 'RDI SET WHEN EXPECTING RDO TO BE SET'' |
| 3184 | 012026 | 052105 | 053440 | 042510 | | | |
| 3185 | 012034 | 020116 | 054105 | 042520 | | | |
| 3186 | 012042 | 052103 | 047111 | 020107 | | | |
| 3187 | 012050 | 042122 | 020117 | 047524 | | | |
| 3188 | 012056 | 041040 | 020105 | 042523 | | | |
| 3189 | 012064 | 000124 | | | | | |
| 3190 | 012066 | 042122 | 020117 | 042523 | MEF15: | .ASCIZ | 'RDO SET WHEN EXPECTING RDI TO BE SET'' |
| 3191 | 012074 | 020124 | 044127 | 047105 | | | |
| 3192 | 012102 | 042440 | 050130 | 041505 | | | |
| 3193 | 012110 | 044524 | 043516 | 051040 | | | |
| 3194 | 012116 | 044504 | 052040 | 020117 | | | |
| 3195 | 012124 | 042502 | 051440 | 052105 | | | |
| 3196 | 012132 | 000 | | | | | |
| 3197 | 012133 | 111 | 041516 | 051117 | MEF16A: | .ASCIZ | /INCORRECT CHARACTER COUNT RETURNED/ |
| 3198 | 012140 | 042522 | 052103 | 041440 | | | |
| 3199 | 012146 | 040510 | 040522 | 052103 | | | |
| 3200 | 012154 | 051105 | 041440 | 052517 | | | |
| 3201 | 012162 | 052116 | 051040 | 052105 | | | |
| 3202 | 012170 | 051125 | 042516 | 000104 | | | |
| 3203 | 012176 | 047111 | 047503 | 051122 | MEF17A: | .ASCIZ | /INCORRECT REC BUFFER ADDR. RETURNED/ |
| 3204 | 012204 | 041505 | 020124 | 042522 | | | |
| 3205 | 012212 | 020103 | 052502 | 043106 | | | |
| 3206 | 012220 | 051105 | 040440 | 042104 | | | |
| 3207 | 012226 | 027122 | 051040 | 052105 | | | |
| 3208 | 012234 | 051125 | 042516 | 000104 | | | |
| 3209 | 012242 | 047111 | 047503 | 051122 | MEF18A: | .ASCIZ | /INCORRECT TRIB NUMBER RETURNED/ |
| 3210 | 012250 | 041505 | 020124 | 051124 | | | |
| 3211 | 012256 | 041111 | 047040 | 046525 | | | |
| 3212 | 012264 | 042502 | 020122 | 042522 | | | |
| 3213 | 012272 | 052524 | 047122 | 042105 | | | |
| 3214 | 012300 | 000 | | | | | |
| 3215 | 012301 | 045 | 043501 | 047517 | MEF18: | .ASCII | '%AGOOD= %03%A BAD= %03'' |
| 3216 | 012306 | 036504 | 022440 | 031517 | | | |
| 3217 | 012314 | 040445 | 041040 | 042101 | | | |
| 3218 | 012322 | 020075 | 047445 | 063 | | | |
| 3219 | 012327 | 045 | 022516 | 022524 | | .ASCIZ | '%NXT%06'' |
| 3220 | 012334 | 033117 | 000 | | | | |
| 3221 | 012337 | 115 | 051505 | 040523 | MEF19A: | .ASCIZ | /MESSAGE DATA COMPARE ERROR/ |
| 3222 | 012344 | 042507 | 042040 | 052101 | | | |
| 3223 | 012352 | 020101 | 047503 | 050115 | | | |
| 3224 | 012360 | 051101 | 020105 | 051105 | | | |
| 3225 | 012366 | 047522 | 000122 | | | | |
| 3226 | 012372 | 040445 | 044103 | 051101 | MEF19: | .ASCII | '%A CHARACTER# %03%A SENT CODE'' |
| 3227 | 012400 | 041501 | 042524 | 021522 | | | |
| 3228 | 012406 | 022440 | 031517 | 040445 | | | |
| 3229 | 012414 | 051440 | 047105 | 020124 | | | |
| 3230 | 012422 | 047503 | 042504 | | | | |

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GLOBAL ERROR REPORT SECTION

| | | | | | | | |
|------|--------|--------|--------|--------|--------|--------|----------------------------------------------------------|
| 3231 | 012426 | 022440 | 031517 | 040445 | | .ASCIZ | " %03%A RECEIVED CODES %03" |
| 3232 | 012434 | 051040 | 041505 | 044505 | | | |
| 3233 | 012442 | 042526 | 020104 | 047503 | | | |
| 3234 | 012450 | 042504 | 020123 | 047445 | | | |
| 3235 | 012456 | 000063 | | | | | |
| 3236 | 012460 | 040445 | 047507 | 042117 | MEF23: | .ASC'I | '%AGOOD= %06%A BAD= %06'' |
| 3237 | 012466 | 020075 | 047445 | 022466 | | | |
| 3238 | 012474 | 020101 | 040502 | 036504 | | | |
| 3239 | 012502 | 022440 | 033117 | | | | |
| 3240 | 012506 | 047045 | 052045 | 047445 | | .ASCIZ | '%N%T%06'' |
| 3241 | 012514 | 000066 | | | | | |
| 3242 | 012516 | 042122 | 020117 | 046111 | MEF30: | .ASCIZ | /RDO ILLEGALLY SET/ |
| 3243 | 012524 | 042514 | 040507 | 046114 | | | |
| 3244 | 012532 | 020131 | 042523 | 000124 | | | |
| 3245 | 012540 | 047522 | 020115 | 042526 | MEF31: | .ASCIZ | /ROM VERSION INCORRECT/ |
| 3246 | 012546 | 051522 | 047511 | 020116 | | | |
| 3247 | 012554 | 047111 | 047503 | 051122 | | | |
| 3248 | 012562 | 041505 | 000124 | | | | |
| 3249 | 012566 | 053440 | 047522 | 043516 | MEF32: | .ASCIZ | / WRONG OPTION TYPE SELECTED IN TABLE/ |
| 3250 | 012574 | 047440 | 052120 | 047511 | | | |
| 3251 | 012602 | 020116 | 054524 | 042520 | | | |
| 3252 | 012610 | 051440 | 046105 | 041505 | | | |
| 3253 | 012616 | 042524 | 020104 | 047111 | | | |
| 3254 | 012624 | 052040 | 041101 | 042514 | | | |
| 3255 | 012632 | 000 | | | | | |
| 3256 | 012633 | 045 | 052501 | 044516 | TFM20: | .ASCII | '%AUNIT RETURNED NON-EXISTENT MEM ERR FOR ADD' |
| 3257 | 012640 | 020124 | 042522 | 052524 | | | |
| 3258 | 012646 | 047122 | 042105 | 047040 | | | |
| 3259 | 012654 | 047117 | 042455 | 044530 | | | |
| 3260 | 012662 | 052123 | 047105 | 020124 | | | |
| 3261 | 012670 | 042515 | 020115 | 051105 | | | |
| 3262 | 012676 | 020122 | 047506 | 020122 | | | |
| 3263 | 012704 | 042101 | 104 | | | | |
| 3264 | 012707 | 040 | 047445 | 022462 | | .ASCIZ | ' %02%A00000%N%A-MEMORY DOES NOT EXIST!' |
| 3265 | 012714 | 030101 | 030060 | 030060 | | | |
| 3266 | 012722 | 047045 | 040445 | 046455 | | | |
| 3267 | 012730 | 046505 | 051117 | 020131 | | | |
| 3268 | 012736 | 047504 | 051505 | 047040 | | | |
| 3269 | 012744 | 052117 | 042440 | 044530 | | | |
| 3270 | 012752 | 052123 | 000041 | | | | |
| 3271 | 012756 | 040445 | 040504 | 040524 | TFM21: | .ASCIZ | '%ADATA ERROR IN TRANSFER TO RECEIVE BUFFER AT ADDRESS ' |
| 3272 | 012764 | 042440 | 051122 | 051117 | | | |
| 3273 | 012772 | 044440 | 020116 | 051124 | | | |
| 3274 | 013000 | 047101 | 043123 | 051105 | | | |
| 3275 | 013006 | 052040 | 020117 | 042522 | | | |
| 3276 | 013014 | 042503 | 053111 | 020105 | | | |
| 3277 | 013022 | 052502 | 043106 | 051105 | | | |
| 3278 | 013030 | 040440 | 020124 | 042101 | | | |
| 3279 | 013036 | 051104 | 051505 | 020123 | | | |
| 3280 | 013044 | 000 | | | | | |
| 3281 | 013045 | 045 | 031117 | 040445 | TFM2A: | .ASCII | '%02%A00000%N%ADATA SENT = %06' |
| 3282 | 013052 | 030060 | 030060 | 022460 | | | |
| 3283 | 013060 | 022516 | 042101 | 052101 | | | |
| 3284 | 013066 | 020101 | 042523 | 052116 | | | |
| 3285 | 013074 | 036440 | 022440 | 033117 | | | |
| 3286 | 013102 | 040445 | 020054 | 040504 | | .ASCIZ | '%A, DATA RECD = %06' |

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GLOBAL ERROR REPORT SECTION

| | | | | |
|------|--------|--------|--------|--------|
| 3287 | 013110 | 040524 | 051040 | 041505 |
| 3288 | 013116 | 020104 | 020075 | 047445 |
| 3289 | 013124 | 000066 | | |
| 3290 | 013126 | 040445 | 047125 | 052111 |
| 3291 | 013134 | 043040 | 044501 | 042514 |
| 3292 | 013142 | 020104 | 047524 | 042040 |
| 3293 | 013150 | 052105 | 041505 | 020124 |
| 3294 | 013156 | 047516 | 026516 | 054105 |
| 3295 | 013164 | 051511 | 042524 | 052116 |
| 3296 | 013172 | 046440 | 046505 | 051117 |
| 3297 | 013200 | 026131 | 040440 | 042104 |
| 3298 | 013206 | 042522 | 051523 | 000040 |
| 3299 | 013214 | 047445 | 022462 | 030101 |
| 3300 | 013222 | 030060 | 030060 | 047045 |
| 3301 | 013230 | 040445 | 053440 | 040440 |
| 3302 | 013236 | 051040 | 047040 | 044440 |
| 3303 | 013244 | 047040 | 043440 | 020040 |
| 3304 | 013252 | 040520 | 052122 | 020123 |
| 3305 | 013260 | 043117 | 052040 | 044510 |
| 3306 | 013266 | 020123 | 044504 | 043501 |
| 3307 | 013274 | 047516 | 052123 | 041511 |
| 3308 | 013302 | 000 | | |
| 3309 | 013303 | 045 | 020101 | 040515 |
| 3310 | 013310 | 020131 | 040510 | 042526 |
| 3311 | 013316 | 041040 | 042505 | 020116 |
| 3312 | 013324 | 047045 | 040445 | 042504 |
| 3313 | 013332 | 052123 | 047522 | 042531 |
| 3314 | 013340 | 020104 | 054502 | 052040 |
| 3315 | 013346 | 042510 | 047040 | 051120 |
| 3316 | 013354 | 052040 | 040522 | 051516 |
| 3317 | 013362 | 042506 | 020522 | 000 |
| 3318 | 013367 | 045 | 041501 | 041522 |
| 3319 | 013374 | 042440 | 051122 | 051117 |
| 3320 | 013402 | 044440 | 020116 | 047522 |
| 3321 | 013410 | 020115 | 022505 | 031117 |
| 3322 | 013416 | 040445 | 051040 | 040505 |
| 3323 | 013424 | 020104 | 020075 | 047445 |
| 3324 | 013432 | 022466 | 020101 | 020073 |
| 3325 | 013440 | 040503 | 041514 | 046125 |
| 3326 | 013446 | 052101 | 042105 | 036440 |
| 3327 | 013454 | 022440 | 033117 | 000 |
| 3328 | 013461 | 045 | 042501 | 051122 |
| 3329 | 013466 | 051117 | 044440 | 020116 |
| 3330 | 013474 | 047522 | 020115 | 022505 |
| 3331 | 013502 | 031117 | 040445 | 020054 |
| 3332 | 013510 | 044123 | 052517 | 042114 |
| 3333 | 013516 | 041040 | 020105 | 047522 |
| 3334 | 013524 | 020115 | 047516 | 035056 |
| 3335 | 013532 | 020040 | 052045 | 040445 |
| 3336 | 013540 | 020054 | 047516 | 020056 |
| 3337 | 013546 | 042522 | 042101 | 044440 |
| 3338 | 013554 | 035123 | 022440 | 000124 |
| 3339 | 013562 | 047045 | 052045 | 047045 |
| 3340 | 013570 | 052045 | 047045 | 000 |
| 3341 | 013575 | 045 | 031517 | 051445 |
| 3342 | 013602 | 022465 | 031517 | 051445 |

TFM22: .ASCIZ '%AUNIT FAILED TO DETECT NON-EXISTENT MEMORY, ADDRESS '

TFM22A: .ASCIZ '%02%A00000%N%A W A R N I N G PARTS OF THIS DIAGNOSTIC'

TFM22B: .ASCIZ '%A MAY HAVE BEEN %N%DESTROYED BY THE NPR TRANSFER!'

TFM24: .ASCIZ '%ACRC ERROR IN ROM E%02%A READ = %06%A ; CALCULATED = %06''

TFM25: .ASCII '%AERROR IN ROM E%02%A, ''

.ASCIZ ''SHOULD BE ROM NO.: %T%A, NO. READ IS: %T''

DFMT4: .ASCIZ '/%N%T%N%T%N/'

DFMT5: .ASCIZ '/%03%S5%03%S5%03%S5%03%N/'

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GLOBAL ERROR REPORT SECTION

| | | | | |
|------|--------|--------|--------|--------|
| 3343 | 013610 | 022465 | 031517 | 051445 |
| 3344 | 013616 | 022465 | 031517 | 047045 |
| 3345 | 013624 | 000 | | |
| 3346 | 013625 | 045 | 032123 | 047445 |
| 3347 | 013632 | 022463 | 032523 | 047445 |
| 3348 | 013640 | 022463 | 032523 | 047445 |
| 3349 | 013646 | 022463 | 032523 | 047445 |
| 3350 | 013654 | 022463 | 000116 | |
| 3351 | 013660 | 052045 | 047045 | 000 |
| 3352 | 013665 | 045 | 022516 | 020101 |
| 3353 | 013672 | 047125 | 052111 | 047040 |
| 3354 | 013700 | 046525 | 042502 | 035122 |
| 3355 | 013706 | 022440 | 032504 | 040445 |
| 3356 | 013714 | 051040 | 046517 | 047040 |
| 3357 | 013722 | 046525 | 042502 | 020122 |
| 3358 | 013730 | 051511 | 020072 | 052045 |
| 3359 | 013736 | 040445 | 020040 | 042522 |
| 3360 | 013744 | 027126 | 047040 | 027117 |
| 3361 | 013752 | 044440 | 035123 | 022440 |
| 3362 | 013760 | 000124 | | |
| 3363 | | | | |
| 3364 | 013762 | 000 | 000 | |
| 3365 | 013764 | 000 | 000 | |
| 3366 | | | | |

DFMT6: .ASCIZ /%S4%03%S5%03%S5%03%S5%03%N/

DFMT9: .ASCIZ /%T%N/
ROMMSG: .ASCIZ '%N% UNIT NUMBER: %D5% ROM NUMBER IS: %T% REV. NO. IS: %T''

.EVEN
ROMNO: .BYTE 0.0
REVNO: .BYTE 0.0
.EVEN

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REPORT CODING SECTION

.SBTTL REPORT CODING SECTION

3367
3368
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3374
3375
3376
3377
3378
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3384
3385
3386
3387
3388

:+*****
: THE REPORT CODING SECTION CONTAINS THE
: 'PRINTS' CALLS THAT GENERATE STATISTICAL REPORTS.
:--

013766

LSRPT::

013766 000167
013770 000000

.WORD JSJMP
.WORD L10024-2-

013772
013772 104425

L10024:
TRAP CSRPT

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INITIALIZE SECTION

```

3389
3390
3391
3392
3393
3394
3395
3396 013774
3397
3398 013774 010637 002322
3399 014000 005037 002324
3400 014004 005037 002326
3401 014010 005037 002376
3402 014014 005037 002400
3403 014020 005737 002330
3404 014024 001007
3405 014026 013737 000004 002316
3406 014034 013737 000006 002320
3407 014042 000406
3408 014044 013737 002316 000004 6$:
3409 014052 013737 002320 000006
3410 014060 012737 000001 002330 9$:
3411
3412 014066 012700 000040
3413 014072 104447
3414 014074 103415
3415
3416 014076 012700 000037
3417 014102 104447
3418 014104 103411
3419
3420 014106 012700 000035
3421 014112 104447
3422 014114 103411
3423
3424 014116 012700 000036
3425 014122 104447
3426 014124 103540
3427 014126 000416
3428 014130
3429 014130 005037 002346
3430
3431 014134 005037 002350
3432 014140
3433 014140 012737 177777 002332
3434 014146 005237 002354
3435 014152 005237 002346
3436 014156 012737 000001 002352
3437
3438
3439 014164
3440 014164 005237 002332
3441 014170 023737 002332 002012
3442 014176 002360
3443 014200 013700 002332
3444 014204 104442

.SBTTL INITIALIZE SECTION
://////
:/ THE INITIALIZE SECTION CONTAINS THE CODING THAT IS PERFORMED
:/ AT THE BEGINNING OF THE TEST SEQUENCE ON THE NEXT UNIT.
://////

L$INIT::

MOV SP,PSTACK ;SAVE BASE-LEVEL STACK POINTER
CLR SUBRPC ;CLEAR SUBR CALL PC
CLR ERROR1 ;CLEAR ERROR FLAGS
CLR MODQ22 ;CLEAR DMV Q22 FORMAT FLAG.
CLR EXLOOP ;CLEAR DMV EXTERNAL LOOP FLAG
TST FRSTIM ;SEE IF FIRST TIME THROUGH AFTER LOAD
BNE 6$ ;BR IF NOT
MOV @#4,SAVE4 ;SAVE ERROR TRAP VECTOR
MOV @#6,SAVE6
BR 9$
6$: MOV SAVE4,@#4 ;RESTORE ERROR TRAP VECTOR
MOV SAVE6,@#6
9$: MOV #1,FRSTIM ;MARK FLAG FOR NEXT TIME THROUGH
:SEE IF PROGRAM JUST STARTED, BR IF YES
MOV #EF.START,RO
TRAP CSREFG
BCS STARST
:SEE IF PROGRAM JUST RESTARTED, BR IF YES
MOV #EF.RESTART,RO
TRAP CSREFG
BCS STARST
:SEE IF THIS IS A NEW PASS, BR IF YES
MOV #EF.NEW,RO
TRAP CSREFG
BCS NEWST
:SEE IF PROGRAM WAS JUST CONTINUED
MOV #EF.CONTINUE,RO
TRAP CSREFG
BCS ENDIT
BR GETPRM

STARST:
CLR STARES ;CLEAR FLAG TO SHOW JUST HAD STA OR RES
:CLEAR DEVICE MAP
CLR DEVMAP

NEWST:
MOV #-1,LOGDEV ;RESET LOGICAL DEVICE TO -1
INC FRSPAS ;INCREMENT NO. OF PASSES AFTER LOAD
INC STARES ;INCREMENT NO. OF PASSES SINCE STA OR RES
MOV #BIT0,DEVPTR ;INIT DEVICE MAP BIT POINTER
: GET UNIBUS ADDRESS, VECTOR, PRIORITY LEVEL, SWITCH PACKS, TEST
: CONNECTOR INFORMATION FOR THIS LOGICAL DEVICE
GETPRM:
INC LOGDEV ;INCREMENT LOGICAL DEVICE NUMBER
CMP LOGDEV,L$UNIT ;SEE IF MAXIMUM UNIT NO. EXCEEDED
BGE NEWST ;BR IF YES....
MOV LOGDEV,RO
TRAP C$GPHRD
    
```

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INITIALIZE SECTION

```

3445 014206 010001          MOV    R0,R1
3446 014210 103403          BCS    10$
3447 014212 006337 002352  ASL    DEVPTR      ;SHIFT DEVICE MAP BIT POINTER
3448 014216 000762          BR     GETPRM      ;SKIP THIS DEVICE
3449 014220
3450 014220 053737 002352 002350 10$:  BIS    DEVPTR,DEVMAP ;SHIFT DEVICE MAP BIT POINTER
3451 014226 006337 002352          ASL    DEVPTR      ;
3452 014232 012137 002472          MOV    (R1)+,OPTYP ;SET THE OPTION TYPE
3453 014236 011137 002440          MOV    (R1),MPCSR  ;STORE POINTER TO M8200,4,7 CSR'S
3454 014242 011137 002442          MOV    (R1),BSEL1
3455 014246 005237 002442          INC    BSEL1      ;GET POINTER TO BSEL1 (MAINTENANCE REGISTER)
3456 014252 011137 002450          MOV    (R1),SEL4
3457 014256 062737 000004 002450  ADD    #4,SEL4     ;GET POINTER TO SEL4
3458 014264 011137 002444          MOV    (R1),SEL2
3459 014270 062737 000002 002444  ADD    #2,SEL2
3460 014276 011137 002446          MOV    (R1),BSEL3
3461 014302 062737 000003 002446  ADD    #3,BSEL3
3462 014310 011137 002452          MOV    (R1),BSEL5
3463 014314 062737 000005 002452  ADD    #5,BSEL5
3464 014322 011137 002456          MOV    (R1),BSEL7
3465 014326 062737 000007 002456  ADD    #7,BSEL7
3466 014334 011137 002460          MOV    (R1),BSEL10 ;FOR DMV
3467 014340 062737 000010 002460  ADD    #10,BSEL10
3468 014346 012137 002454          MOV    (R1)+,SEL6
3469 014352 062737 000006 002454  ADD    #6,SEL6     ;STORE POINTER TO SEL6
3470 014360 011137 002462          MOV    (R1),MPIVEC ;GET M8200,4,7 INPUT INTRPT VECTOR
3471 014364 012137 002464          MOV    (R1)+,MPOVEC
3472 014370 062737 000004 002464  ADD    #4,MPOVEC   ;GET M8200,4,7 OUTPUT INTRPT VECTOR
3473 014376 012137 002470          MOV    (R1)+,MPRIOR ;GET M8200,4,7 DEVICE PRIORITY
3474 014402 062701 000010          ADD    #10,R1     ;POINT TO TEST CON
3475 014406 012137 002476          MOV    (R1)+,TSTCON ;GET TEST CONNECTOR INDICATOR
3476 014412 012137 002466          MOV    (R1)+,SPEEDM ;GET SPEED
3477 014416 012137 002474          MOV    (R1)+,IFTYP
3478 014422 012137 002474          MOV    (R1)+,IFTYP ;FIRST TIME SKIP RUN WORD;THEN LOAD
3479                                ;INTERFACE TYPE
3480 014426
3481 014426
3482 014426 104411
3483
3484
3485 014430
3486 014430 004737 004456  L$AUTO:: JSR    PC,MINITR  ;INITIALIZE
3487 014434 005037 002342          CLR    COUNT      ;+COUNTER
3488
3489 014440 004737 004244  1$:  JSR    PC,WAIT50  ;STALL
3490 014444 005777 165770          TST    @SEL0      ;HAS IT STARTED?
3491 014450 100406          BMI    4$
3492 014452 105337 002342          DECB  COUNT      ;TIME UP?
3493 014456 001370          BNE    1$        ;NO LOOP
3494 014460 013700 002332          MOV    LOGDEV,R0
3495 014464 104451          TRAP  C$DODU
3496
3497 014466
3498 014466 104433  4$:  TRAP  C$RESET
3499 014470
3500 014470 104461  L10026: TRAP  C$AUTO

```


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INITIALIZE SECTION

B 7

SEQ 79

3501

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CLEANUP CODING SECTION

.SBTTL CLEANUP CODING SECTION

3502
3503
3504
3505
3506
3507
3508
3509
3510
3511
3512
3513
3514
3515
3516
3517
3518

:///////////////////////////////////////////////////////////////////
:// THE CLEANUP CODING SECTION CONTAINS THE CODING THAT IS PERFORMED
:// AT THE END OF THE TEST SEQUENCE ON A PARTICULAR UNIT.
:///////////////////////////////////////////////////////////////////

014472
014472 104433

014474
014474 104412

L\$CLEAN::
TRAP CSRESET

L10027:
TRAP C\$CLEAN

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DROP UNIT SECTION

3519
3520
3521
3522
3523
3524
3525
3526
3527
3528
3529
3530
3531
3532
3533
3534
3535

014476
014476 104433
014500
014500 104453

```
.SBTTL DROP UNIT SECTION
://////
:/ THE DROP-UNIT SECTION CONTAINS THE CODING THAT CAUSES A DEVICE
:/ TO NO LONGER BE TESTED.
://////

LSDU::
;ISSUE UNIBUS RESET TO CLEAN UP
      TRAP    CSRESET
L10030:
      TRAP    CSDU
```

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ADD UNIT SECTION

.SBTTL ADD UNIT SECTION

3536
3537
3538
3539
3540
3541
3542
3543
3544
3545
3546
3547

014502
014502
014502 104452

:///////////////////////////////////////////////////////////////////
:// THE ADD-UNIT SECTION CONTAINS THE CODING THAT CAUSES A DEVICE
:// TO BE (A) TESTED FOR THE FIRST TIME, OR (B) RESUMED IN TESTING. IF
:// 'EF.AUNIT' IS SET, THE UNIT WILL BE TESTED AS A NEW UNIT.
:///////////////////////////////////////////////////////////////////

LSAU::
L10031:
TRAP CSAU

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ADD UNIT SECTION

3548
3549
3550
3551
3552

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HARDWARE TESTS

.SdTTL HARDWARE TESTS

```

3553
3554
3555
3556
3557
3558
3559
3560
3561 014504
3562
3563
3564
3565
3566
3567
3568
3569
3570
3571
3572
3573 014504
3574 014504 012746 000340
3575 014510 012746 014616
3576 014514 012746 000004
3577 014520 012746 000003
3578 014524 104437
3579 014526 062706 000010
3580 014532 005037 014614
3581 014536 005001
3582 014540 005777 165674
3583 014544 012701 000002
3584 014550 005777 165670
3585 014554 012701 000004
3586 014560 005777 165664
3587 014564 012701 000006
3588 014570 005777 165660
3589 014574 005737 014614
3590 014600 001401
3591 014602 104444
3592 014604
3593 014604 012700 000004
3594 014610 104436
3595
3596 014612
3597 014612 104401
3598
3599 014614 000000
3600
3601 014616
3602 014616 005737 014614
3603 014622 001006
3604 014624 104455
3605 014626 000023
3606 014630 010746
3607 014632 007350
3608 014634 005237 014614
    
```

```

.SBTTL :***** TEST 1 *****
.SBTTL * ADDRESS TEST-VERIFY THAT ALL MCPU ADDRESSES RESPOND
ZZ
:*ECB
:*
:* THIS IS THE VERY FIRST TEST IN NORMAL SEQUENCE
:* IT IS USED TO VERIFY THAT DMP OR DMV-11 UNDER TEST, RESPONDS
:* TO THE ADDRESS THAT YOU THINK IT IS AT. ON DMP FAILURE CHECK
:* ADDRESS SWITCHES ON THE M8207 MICRO-CPU. WITH LITTLE
:* DOUBT, THIS FAILURE CAN ONLY BE ATTRIBUTED TO THE M8207 BOARD.
:* NOTE:8207 IS DMP ONLY.....
:*
.SBTTL :***** TEST 1 *****
T1::
MOV #PRI07,-(SP)
MOV #ECBINT,-(SP)
MOV #4,-(SP)
MOV #3,-(SP)
TRAP C$SVEC
ADD #10,SP
CLR JMO ;CLEAR FLAG
CLR R1
TST @SEL0 ;TEST CSR 0
MOV #2,R1 ;SAVE OFFSET FOR NEXT CSR
TST @SEL2 ;TEST CSR 2
MOV #4,R1 ;SAVE OFFSET
TST @SEL4 ;TEST CSR 4
MOV #6,R1 ;SAVE OFFSET
TST @SEL6 ;TEST CSR 6
TST JMO ;WAS THERE A NXM TRAP
BEQ 10$ ;IF NOT EXIT CLEANLY
TRAP C$DCLN
10$:
MOV #4,R0
TRAP C$CVEC
L10032:
TRAP C$ETST
JMO: .WORD 0 ;FLAG FOR O'CONNOR CODE
ECBINT::
TST JMO ;HAVE WE HAD AT LEAST 1 TRAP
BNE 10$
TRAP C$ERDF
.WORD 19
.WORD EMT0
.WORD ERR1
INC JMO ;SET FLAG
    
```

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;***** TEST 1 *****

| | | | |
|------|--------|--------|--------|
| 3609 | 014640 | | |
| 3610 | 014640 | 010146 | |
| 3611 | 014642 | 012746 | 010774 |
| 3612 | 014646 | 012746 | 000002 |
| 3613 | 014652 | 010600 | |
| 3614 | 014654 | 104415 | |
| 3615 | 014656 | 062706 | 000006 |
| 3616 | 014662 | | |
| 3617 | 014662 | 000002 | |
| 3618 | | | |
| 3619 | | | |
| 3620 | | | |

```

10$:      MOV      R1,-(SP)
          MOV      #FMT0,-(SP)
          MOV      #2,-(SP)
          MOV      SP,R0
          TRAP     CSPNTX
          ADD      #6,SP
L10033:   RTI

```

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***** TEST 2 *****

```

3621 .SBTTL :***** TEST 2 *****
3622 .SBTTL *DMP ONLY VERIFY CONTENTS OF ROM 3
3623 014664 ZZ
3624 :* THIS TEST DONE FOR DMP ONLY
3625 :*
3626 :* IN THIS TEST WE'LL VERIFY THE CONTENTS OF ROM 3
3627 :*
3628 .SBTTL :***** TEST 2 *****
3629 :*-CROMT-
3630 014664 T2::
3631 014664 022737 000000 002472 CMP #0,OPTYP ;IS THIS AN 8207 DMP
3632 014672 001150 BNE 60$ ;IF NOT END.....
3633 014674 012737 000003 002366 MOV #3,ROMN ;ROM NUMBER
3634 014702 012737 000000 002404 MOV #0,CADDR ;GET STARTING ADDR.
3635
3636 014710 012737 177777 002374 MOV #-1,CWORD ;INIT CRC WORD.
3637
3638 014716 004737 004274 10$: JSR PC,GWORD ;GET FIRST BYTE.
3639 014722 117737 165526 002372 MOVB @SEL6,WORDT ;STORE FIRST BYTE.
3640 014730 005237 002404 INC CADDR ;UPDATE ADDR.
3641 014734 004737 004274 JSR PC,GWORD ;GET NEXT BYTE.
3642 014740 117737 165510 002373 MOVB @SEL6,WORDT+1 ;STORE IN HIGH BYTE OF WORDT
3643 014746 005237 002404 INC CADDR ;UPDATE ADDR.
3644 014752 023727 002404 004000 CMP CADDR,#3777+1 ;AT END?
3645 014760 001403 BEQ 20$ ;YES,EXIT LOOP.
3646
3647 014762 004737 004376 JSR PC,CRCR ;NO-CALCULATE CRC ON THIS WORD.
3648 014766 000753 BR 10$ ;LOOP.
3649
3650 014770 005137 002374 20$: COM CWORD ;STORED CRC WORD IS COMPLEMENT.
3651 014774 023737 002374 002372 CMP CWORD,WORDT ;EQUAL?
3652 015002 001404 BEQ 30$
3653
3654 ;ROM CRC WORD BAD.
3655 015004 104455 TRAP C$ERDF
3656 015006 000024 .WORD 20
3657 015010 000000 .WORD 0
3658 015012 010162 .WORD ERR24
3659 015014 012737 003775 002404 30$: MOV #3777-2,CADDR ;SET ROM NUMBER ADDRESS
3660 015022 012737 000060 002370 MOV #60,ROMN1 ;ROM NUMBER
3661 015030 004737 004274 JSR PC,ROMN1 ;READ ROM NUMBER
3662 015034 117737 165414 002372 MOVB @SEL6,WORDT ;STORE BYTE
3663 015042 123737 002370 002372 CMPB ROMN1,WORDT ;GOOD?
3664 015050 001404 BEQ 40$
3665 015052 104455 TRAP C$ERDF
3666 015054 000025 .WORD 21
3667 015056 000000 .WORD 0
3668 015060 010224 .WORD ERR25
3669 015062
3670 015062 022737 000001 002346 40$: CMP #1,STARES ;IS THIS FIRST PASS
3671 015070 001031 BNE 50$ ;IF NOT THEN GO TO 50
3672 015072 113737 002372 013762 MOVB WORDT,ROMNO ;PUT ROM NO IN PRINT CONDITION
3673 015100 012737 003774 002404 MOV #3777-3,CADDR
3674 015106 004737 004274 JSR PC,GWORD ;READ REV NO.
3675 015112 117737 165336 013764 MOVB @SEL6,REVNO ;STORE BYTE
3676 015120 012746 013764 MOV #REVNO,-(SP)

```


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***** TEST 2 *****

| | | | | | | | | |
|------|--------|--------|--------|--------|---------|-------|---------------|--------------|
| 3677 | 015124 | 012746 | 013762 | | | MOV | #ROMNO,-(SP) | |
| 3678 | 015130 | 013746 | 02332 | | | MOV | LOGDEV,-(SP) | |
| 3679 | 015134 | 012746 | 013665 | | | MOV | #ROMMSG,-(SP) | |
| 3680 | 015140 | 012746 | 000004 | | | MOV | #4,-(SP) | |
| 3681 | 015144 | 010600 | | | | MOV | SP,R0 | |
| 3682 | 015146 | 104417 | | | | TRAP | CSPNTE | |
| 3683 | 015150 | 062706 | 000012 | | | ADD | #12,SP | |
| 3684 | 015154 | 012737 | 003773 | 002404 | 50\$: | MOV | #3777-4,CADDR | :GET VERSION |
| 3685 | 015162 | 004737 | 004274 | | | JSR | PC,GWORD | :READ IT |
| 3686 | 015166 | 117737 | 165262 | 002372 | | MOVB | @SEL6,WORDT | |
| 3687 | 015174 | 122737 | 000131 | 002372 | | CMPB | #131,WORDT | |
| 3688 | 015202 | 001404 | | | | BEQ | 60\$ | |
| 3689 | 015204 | 104455 | | | | TRAP | C\$ERDF | |
| 3690 | 015206 | 000026 | | | | .WORD | 22 | |
| 3691 | 015210 | 012540 | | | | .WORD | MEF31 | |
| 3692 | 015212 | 010422 | | | | .WORD | ERR32 | |
| 3693 | 015214 | | | | 60\$: | | | |
| 3694 | 015214 | | | | L10034: | | | |
| 3695 | 015214 | 104401 | | | | TRAP | C\$ETST | |

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***** TEST 3 *****

```

3696 .SBTTL :***** TEST 3 *****
3697 .SBTTL *DMP ONLY VERIFY CONTENTS OF ROM 2
3698 015216 ZZ
3699 :* THIS TEST DONE FOR DMP ONLY
3700 :*
3701 :* IN THIS TEST WE'LL VERIFY THE CONTENTS OF ROM 2
3702 :*
3703 .SBTTL :***** TEST 3 *****
3704 :*-CROMT-
3705 015216 T3::
3706 015216 022737 000000 002472 CMP #0,OPTYP ;IS THIS AN 8207 DMP
3707 015224 001150 BNE 60$ ;IF NOT END.....
3708 015226 012737 000002 002366 MOV #2,ROMN ;ROM NUMBER
3709 015234 012737 000000 002404 MOV #0,CADDR ;GET STARTING ADDR.
3710
3711 015242 012737 177777 002374 MOV #-1,CWORD ;INIT CRC WORD.
3712
3713 015250 004737 004274 10$: JSR PC,GWORD ;GET FIRST BYTE.
3714 015254 117737 165176 002372 MOVB @BSEL7,WORDT ;STORE FIRST BYTE.
3715 015262 005237 002404 INC CADDR ;UPDATE ADDR.
3716 015266 004737 004274 JSR PC,GWORD ;GET NEXT BYTE.
3717 015272 117737 165160 002373 MOVB @BSEL7,WORDT+1 ;STORE IN HIGH BYTE OF WORDT.
3718 015300 005237 002404 INC CADDR ;UPDATE ADDR.
3719 015304 023727 002404 004000 CMP CADDR,#3777+1 ;AT END?
3720 015312 001403 BEQ 20$ ;YES,EXIT LOOP.
3721
3722 015314 004737 004376 JSR PC,CRCR ;NO-CALCULATE CRC ON THIS WORD.
3723 015320 000753 BR 10$ ;LOOP.
3724
3725 015322 005137 002374 20$: COM CWORD ;STORED CRC WORD IS COMPLEMENT.
3726 015326 023737 002374 002372 CMP CWORD,WORDT ;EQUAL?
3727 015334 001404 BEQ 30$
3728
3729 ;ROM CRC WORD BAD.
3730 015336 104455 TRAP C$ERDF
3731 015340 000024 .WORD 20
3732 015342 000000 .WORD 0
3733 015344 010162 .WORD ERR24
3734 015346 012737 003775 002404 30$: MOV #3777-2,CADDR ;SET ROM NUMBER ADDRESS
3735 015354 012737 000061 002370 MOV #61,ROMN1 ;ROM NUMBER
3736 015362 004737 004274 JSR PC,GWORD ;READ ROM NUMBER
3737 015366 117737 165064 002372 MOVB @BSEL7,WORDT ;STORE BYTE
3738 015374 123737 002370 002372 CMPB ROMN1,WORDT ;GOOD?
3739 015402 001404 BEQ 40$
3740 015404 104455 TRAP C$ERDF
3741 015406 000025 .WORD 21
3742 015410 000000 .WORD 0
3743 015412 010224 .WORD ERR25
3744 015414
3745 015414 022737 000001 002346 40$: CMP #1,STARES ;IS THIS FIRST PASS
3746 015422 001031 BNE 50$ ;IF NOT THEN GO TO 50
3747 015424 113737 002372 013762 MOVB WORDT,ROMNO ;PUT ROM NO IN PRINT CONDITION
3748 015432 012737 003774 002404 MOV #3777-3,CADDR
3749 015440 004737 004274 JSR PC,GWORD ;READ REV NO.
3750 015444 117737 165006 013764 MOVB @BSEL7,REVNO ;STORE BYTE
3751 015452 012746 013764 MOV #REVNO,-(SP)

```

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;***** TEST 3 *****

| | | | | | | | | |
|------|--------|--------|--------|--------|---------|-------|---------------|--------------|
| 3752 | 015456 | 012746 | 013762 | | | MOV | #ROMNO,-(SP) | |
| 3753 | 015462 | 013746 | 002332 | | | MOV | LOGDEV,-(SP) | |
| 3754 | 015466 | 012746 | 013665 | | | MOV | #ROMMSG,-(SP) | |
| 3755 | 015472 | 012746 | 000004 | | | MOV | #4,-(SP) | |
| 3756 | 015476 | 010600 | | | | MOV | SP,R0 | |
| 3757 | 015500 | 104417 | | | | TRAP | CSPNTF | |
| 3758 | 015502 | 062706 | 000012 | | | ADD | #12,SP | |
| 3759 | 015506 | 012737 | 003773 | 002404 | 50\$: | MOV | #3777-4,CADDR | :GET VERSION |
| 3760 | 015514 | 004737 | 004274 | | | JSR | PC,GWORD | :READ IT |
| 3761 | 015520 | 117737 | 164732 | 002372 | | MOVR | @BSEL7,WORDT | |
| 3762 | 015526 | 122737 | 000131 | 002372 | | CMPB | #131,WORDT | |
| 3763 | 015534 | 001404 | | | | BEQ | 60\$ | |
| 3764 | 015536 | 104455 | | | | TRAP | C\$ERDF | |
| 3765 | 015540 | 000026 | | | | .WORD | 22 | |
| 3766 | 015542 | 012540 | | | | .WORD | MEF31 | |
| 3767 | 015544 | 010422 | | | | .WORD | ERR32 | |
| 3768 | 015546 | | | | 60\$: | | | |
| 3769 | 015546 | | | | L10035: | | | |
| 3770 | 015546 | 104401 | | | | TRAP | C\$ETST | |

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***** TEST 4 *****

3771
3772
3773 015550
3774
3775
3776
3777
3778
3779
3780 015550
3781 015550 022737 000000 002472
3782 015556 001150
3783 015560 012737 000004 002366
3784 015566 012737 004000 002404
3785
3786 015574 012737 177777 002374
3787
3788 015602 004737 004277
3789 015606 117737 164642 002372
3790 015614 005237 002404
3791 015620 004737 004274
3792 015624 117737 164624 002373
3793 015632 005237 002404
3794 015636 023727 002404 010000
3795 015644 001403
3796
3797 015646 004737 004376
3798 015652 000753
3799
3800 015654 005137 002374
3801 015660 023737 002374 002372
3802 015666 001404
3803
3804
3805 015670 104455
3806 015672 000024
3807 015674 000000
3808 015676 010162
3809 015700 012737 007775 002404
3810 015706 012737 000062 002370
3811 015714 004737 004274
3812 015720 117737 164530 002372
3813 015726 123737 002370 002372
3814 015734 001404
3815 015736 104455
3816 015740 000025
3817 015742 000000
3818 015744 010224
3819 015746
3820 015746 022737 000001 002346
3821 015754 001031
3822 015756 113737 002372 013762
3823 015764 012737 007774 002404
3824 015772 004737 004274
3825 015776 117737 164452 013764
3826 016004 012746 013764

.SBTTL ***** TEST 4 *****
.SBTTL *DMP ONLY VERIFY CONTENTS OF ROM 4
ZZ
;* THIS TEST DONE FOR DMP ONLY
;* IN THIS TEST WE'LL VERIFY THE CONTENTS OF ROM 4
.SBTTL ***** TEST 4 *****
;-CROMT-
T4::
CMP #0,OPTYP ;IS THIS AN 8207 DMP
BNE 60\$;IF NOT END.....
MOV #4,ROMN ;ROM NUMBER
MOV #4000,CADDR ;GET STARTING ADDR.
MOV #-1,CWORD ;INIT CRC WORD.
10\$:
JSR PC,GWORD ;GET FIRST BYTE.
MOVB @SEL6,WORDT ;STORE FIRST BYTE.
INC CADDR ;UPDATE ADDR.
JSR PC,GWORD ;GET NEXT BYTE.
MOVB @SEL6,WORDT+1 ;STORE IN HIGH BYTE OF WORDT
INC CADDR ;UPDATE ADDR.
CMP CADDR,#7777+1 ;AT END?
BEQ 20\$;YES,EXIT LOOP.
JSR PC,CRCR ;NO-CALCULATE CRC ON THIS WORD.
BR 10\$;LOOP.
20\$:
COM CWORD ;STORED CRC WORD IS COMPLEMENT.
CMP CWORD,WORDT ;EQUAL?
BEQ 30\$
30\$:
TRAP C\$ERDF ;ROM CRC WORD BAD.
.WORD 20
.WORD 0
.WORD ERR24
MOV #7777-2,CADDR ;SET ROM NUMBER ADDRESS
MOV #62,ROMN1 ;ROM NUMBER
JSR PC,GWORD ;READ ROM NUMBER
MOVB @SEL6,WORDT ;STORE BYTE
CMPB ROMN1,WORDT ;GOOD?
BEQ 40\$
TRAP C\$ERDF
.WORD 21
.WORD 0
.WORD ERR25
40\$:
CMP #1,STARES ;IS THIS FIRST PASS
BNE 50\$;IF NOT THEN GO TO 50
MOVB WORDT,ROMNO ;PUT ROM NO IN PRINT CONDITION
MOV #7777-3,CADDR
JSR PC,GWORD ;READ REV NO.
MOVB @SEL6,REVNO ;STORE BYTE
MOV #REVNO,-(SP)

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:***** TEST 4 *****

| | | | | | | | | |
|------|--------|--------|--------|--------|---------|-------|---------------|--------------|
| 3827 | 016010 | 012746 | 013762 | | | MOV | #ROMNO,-(SP) | |
| 3828 | 016014 | 013746 | 002332 | | | MOV | LOGDEV,-(SP) | |
| 3829 | 016020 | 012746 | 013665 | | | MOV | #ROMMSG,-(SP) | |
| 3830 | 016024 | 012746 | 000004 | | | MOV | #4,-(SP) | |
| 3831 | 016030 | 010600 | | | | MOV | SP,R0 | |
| 3832 | 016032 | 104417 | | | | TRAP | C\$PNTF | |
| 3833 | 016034 | 062706 | 000012 | | | ADD | #12,SP | |
| 3834 | 016040 | 012737 | 007773 | 002404 | 50\$: | MOV | #7777-4,CADDR | :GET VERSION |
| 3835 | 016046 | 004737 | 004274 | | | JSR | PC,GWORD | :READ IT |
| 3836 | 016052 | 117737 | 164376 | 002372 | | MOVB | @SEL6,WORDT | |
| 3837 | 016060 | 122737 | 000131 | 002372 | | CMPB | #131,WORDT | |
| 3838 | 016066 | 001404 | | | | BEQ | 60\$ | |
| 3839 | 016070 | 104455 | | | | TRAP | C\$ERDF | |
| 3840 | 016072 | 000026 | | | | .WORD | 22 | |
| 3841 | 016074 | 012540 | | | | .WORD | MEF31 | |
| 3842 | 016076 | 010422 | | | | .WORD | ERR32 | |
| 3843 | 016100 | | | | 60\$: | | | |
| 3844 | 016100 | | | | L10036: | | | |
| 3845 | 016100 | 104401 | | | | TRAP | C\$ETST | |

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***** TEST 5 *****

3846
3847
3848 016102
3849
3850
3851
3852
3853
3854
3855 016102
3856 016102 022737 000000 002472
3857 016110 001150
3858 016112 012737 000001 002366
3859 016120 012737 004000 002404
3860
3861 016126 012737 177777 002374
3862
3863 016134 004737 004274
3864 016140 117737 164312 002372
3865 016146 005237 002404
3866 016152 004737 004274
3867 016156 117737 164274 002373
3868 016164 005237 002404
3869 016170 023727 002404 010000
3870 016176 001403
3871
3872 016200 004737 004376
3873 016204 000753
3874
3875 016206 005137 002374
3876 016212 023737 002374 002372
3877 016220 001404
3878
3879
3880 016222 104455
3881 016224 000024
3882 016226 000000
3883 016230 010162
3884 016232 012737 007775 002404
3885 016240 012737 000063 002370
3886 016246 004737 004274
3887 016252 117737 164200 002372
3888 016260 123737 002370 002372
3889 016266 001404
3890 016270 104455
3891 016272 000025
3892 016274 000000
3893 016276 010224
3894 016300
3895 016300 022737 000001 002346
3896 016306 001031
3897 016310 113737 002372 013762
3898 016316 012737 007774 002404
3899 016324 004737 004274
3900 016330 117737 164122 013764
3901 016336 012746 013764

.SBTTL ***** TEST 5 *****
.SBTTL *DMP ONLY VERIFY CONTENTS OF ROM 1
ZZ
:* THIS TEST DONE FOR DMP ONLY
:*
:* IN THIS TEST WE'LL VERIFY THE CONTENTS OF ROM 1
:*
.SBTTL ***** TEST 5 *****
;:-CROMT-
T5::
CMP #0,OPTYP ;IS THIS AN 8207 DMP
BNE 60\$;IF NOT END.....
MOV #1,ROMN ;ROM NUMBER
MOV #4000,CADDR ;GET STARTING ADDR.
MOV #-1,CWORD ;INIT CRC WORD.
10\$:
JSR PC,GWORD ;GET FIRST BYTE.
MOVB @BSEL7,WORDT ;STORE FIRST BYTE.
INC CADDR ;UPDATE ADDR.
JSR PC,GWORD ;GET NEXT BYTE.
MOVB @BSEL7,WORDT+1 ;STORE IN HIGH BYTE OF WORDT.
INC CADDR ;UPDATE ADDR.
CMP CADDR,#7777+1 ;AT END?
BEQ 20\$;YES,EXIT LOOP.
JSR PC,CRCR ;NO-CALCULATE CRC ON THIS WORD.
BR 10\$;LOOP.
20\$:
COM CWORD ;STORED CRC WORD IS COMPLEMENT.
CMP CWORD,WORDT ;EQUAL?
BEQ 30\$
;ROM CRC WORD BAD.
TRAP C\$ERDF
.WORD 20
.WORD 0
.WORD ERR24
30\$:
MOV #7777-2,CADDR ;SET ROM NUMBER ADDRESS
MOV #63,ROMN1 ;ROM NUMBER
JSR PC,GWORD ;READ ROM NUMBER
MOVB @BSEL7,WORDT ;STORE BYTE
CMPB ROMN1,WORDT ;GOOD?
BEQ 40\$
TRAP C\$ERDF
.WORD 21
.WORD 0
.WORD ERR25
40\$:
CMP #1,STARES ;IS THIS FIRST PASS
BNE 50\$;IF NOT THEN GO TO 50
MOVB WORDT,ROMNO ;PUT ROM NO IN PRINT CONDITION
MOV #7777-3,CADDR
JSR PC,GWORD ;READ REV NO.
MOVB @BSEL7,REVNO ;STORE BYTE
MOV #REVNO,-(SP)

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***** TEST 5 *****

| | | | | | | | | |
|------|--------|--------|--------|--------|---------|-------|---------------|--------------|
| 3902 | 016342 | 012746 | 013762 | | | MOV | #ROMNO,-(SP) | |
| 3903 | 016346 | 013746 | 002332 | | | MOV | LOGDEV,-(SP) | |
| 3904 | 016352 | 012746 | 013665 | | | MOV | #ROMMSG,-(SP) | |
| 3905 | 016356 | 012746 | 000004 | | | MOV | #4,-(SP) | |
| 3906 | 016362 | 010600 | | | | MOV | SP,R0 | |
| 3907 | 016364 | 104417 | | | | TRAP | C\$PNTF | |
| 3908 | 016366 | 062706 | 000012 | | | ADD | #12,SP | |
| 3909 | 016372 | 012737 | 007773 | 002404 | 50\$: | MOV | #7777-4,CADDR | :GET VERSION |
| 3910 | 016400 | 004737 | 004274 | | | JSR | PC,GWORD | :READ IT |
| 3911 | 016404 | 117737 | 164046 | 002372 | | MOVB | @SEL7,WORDT | |
| 3912 | 016412 | 122737 | 000131 | 002372 | | CMPB | #131,WORDT | |
| 3913 | 016420 | 001404 | | | | BEQ | 60\$ | |
| 3914 | 016422 | 104455 | | | | TRAP | C\$ERDF | |
| 3915 | 016424 | 000026 | | | | .WORD | 22 | |
| 3916 | 016426 | 012540 | | | | .WORD | MEF31 | |
| 3917 | 016430 | 010422 | | | | .WORD | ERR32 | |
| 3918 | 016432 | | | | 60\$: | | | |
| 3919 | 016432 | | | | L10037: | | | |
| 3920 | 016432 | 104401 | | | | TRAP | C\$ETST | |

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***** TEST 6 *****

```

3921
3922
3923 016434
3924
3925
3926
3927
3928
3929
3930 016434
3931 016434 022737 000000 002472
3932 016442 001150
3933 016444 012737 000005 002366
3934 016452 012737 010000 002404
3935
3936 016460 012737 177777 002374
3937
3938 016466 004737 004274
3939 016472 117737 163756 002372
3940 016500 005237 002404
3941 016504 004737 004274
3942 016510 117737 163740 002373
3943 016516 005237 002404
3944 016522 023727 002404 014000
3945 016530 001403
3946
3947 016532 004737 004376
3948 016536 000753
3949
3950 016540 005137 002374
3951 016544 023737 002374 002372
3952 016552 001404
3953
3954
3955 016554 104455
3956 016556 000024
3957 016560 000000
3958 016562 010162
3959 016564 012737 013775 002404
3960 016572 012737 000064 002370
3961 016600 004737 004274
3962 016604 117737 163644 002372
3963 016612 123737 002370 002372
3964 016620 001404
3965 016622 104455
3966 016624 000025
3967 016626 000000
3968 016630 010224
3969 016632
3970 016632 022737 000001 002346
3971 016640 001031
3972 016642 113737 002372 013762
3973 016650 012737 013774 002404
3974 016656 004737 004274
3975 016662 117737 163566 013764
3976 016670 012746 013764

```

```

.SBTTL ***** TEST 6 *****
.SBTTL *DMP ONLY VERIFY CONTENTS OF ROM 5
ZZ
:* THIS TEST DONE FOR DMP ONLY
:*
:* IN THIS TEST WE'LL VERIFY THE CONTENTS OF ROM 5
.SBTTL ***** TEST 6 *****
:-CROMT-
T6::
CMP #0,OPTYP ;IS THIS AN 8207 DMP
BNE 60$ ;IF NOT END.....
MOV #5,ROMN ;ROM NUMBER
MOV #10000,CADDR ;GET STARTING ADDR.
MOV #-1,CWORD ;INIT CRC WORD.
10$: JSR PC,GWORD ;GET FIRST BYTE.
MOVB @SEL6,WORDT ;STORE FIRST BYTE.
INC CADDR ;UPDATE ADDR.
JSR PC,GWORD ;GET NEXT BYTE.
MOVB @SEL6,WORDT+1 ;STORE IN HIGH BYTE OF WORDT
INC CADDR ;UPDATE ADDR.
CMP CADDR,#13777+1 ;AT END?
BEQ 20$ ;YES,EXIT LOOP.
JSR PC,CRCR ;NO-CALCULATE CRC ON THIS WORD.
BR 10$ ;LOOP.
20$: COM CWORD ;STORED CRC WORD IS COMPLEMENT.
CMP CWORD,WORDT ;EQUAL?
BEQ 30$ ;ROM CRC WORD BAD.
TRAP C$ERDF
.WORD 20
.WORD 0
.WORD ERR24
30$: MOV #13777-2,CADDR ;SET ROM NUMBER ADDRESS
MOV #64,ROMN1 ;ROM NUMBER
JSR PC,GWORD ;READ ROM NUMBER
MOVB @SEL6,WORDT ;STORE BYTE
CMPB ROMN1,WORDT ;GOOD?
BEQ 40$
TRAP C$ERDF
.WORD 21
.WORD 0
.WORD ERR25
40$: CMP #1,STARES ;IS THIS FIRST PASS
BNE 50$ ;IF NOT THEN GO TO 50
MOVB WORDT,ROMNO ;PUT ROM NO IN PRINT CONDITION
MOV #13777-3,CADDR
JSR PC,GWORD ;READ REV NO.
MOVB @SEL6,REVNO ;STORE BYTE
MOV #REVNO,-(SP)

```


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;***** TEST 6 *****

| | | | | | | | | | |
|------|--------|--------|--------|--------|---------|-------|----------------|--|--------------|
| 3977 | 016674 | 012746 | 013762 | | | MOV | #ROMNO,-(SP) | | |
| 3978 | 016700 | 013746 | 002332 | | | MOV | LOGDEV,-(SP) | | |
| 3979 | 016704 | 012746 | 013665 | | | MOV | #ROMMSG,-(SP) | | |
| 3980 | 016710 | 012746 | 000004 | | | MOV | #4,-(SP) | | |
| 3981 | 016714 | 010600 | | | | MOV | SP,R0 | | |
| 3982 | 016716 | 104417 | | | | TRAP | C\$PNTF | | |
| 3983 | 016720 | 062706 | 000012 | | | ADD | #12,SP | | |
| 3984 | 016724 | 012737 | 013773 | 002404 | 50\$: | MOV | #13777-4,CADDR | | :GET VERSION |
| 3985 | 016732 | 004737 | 004274 | | | JSR | PC,GWORD | | :READ IT |
| 3986 | 016736 | 117737 | 163512 | 002372 | | MOVB | @SEL6,WORDT | | |
| 3987 | 016744 | 122737 | 000131 | 002372 | | CMPB | #131,WORDT | | |
| 3988 | 016752 | 001404 | | | | BEQ | 60\$ | | |
| 3989 | 016754 | 104455 | | | | TRAP | C\$ERDF | | |
| 3990 | 016756 | 000026 | | | | .WORD | 22 | | |
| 3991 | 016760 | 012540 | | | | .WORD | MEF31 | | |
| 3992 | 016762 | 010422 | | | | .WORD | ERR32 | | |
| 3993 | 016764 | | | | 60\$: | | | | |
| 3994 | 016764 | | | | L10040: | | | | |
| 3995 | 016764 | 104401 | | | | TRAP | C\$ETST | | |

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***** TEST 7 *****

```

3996 .SBTTL :***** TEST 7 *****
3997 .SBTTL *DMP ONLY VERIFY CONTENTS OF ROM 14
3998 016766 ZZ
3999 :* THIS TEST DONE FOR DMP ONLY
4000 :*
4001 :* IN THIS TEST WE'LL VERIFY THE CONTENTS OF ROM 14
4002 :*
4003 .SBTTL :***** TEST 7 *****
4004 :*-CROMT-
4005 016766 T7::
4006 016766 022737 000000 002472 CMP #0,OPTYP ;IS THIS AN 8207 DMP
4007 016774 001150 BNE 60$ ;IF NOT END.....
4008 016776 012737 000014 002366 MOV #14,ROMN ;ROM NUMBER
4009 017004 012737 010000 002404 MOV #1000,CADDR ;GET STARTING ADDR.
4010
4011 017012 012737 177777 002374 MOV #-1,CWORD ;INIT CRC WORD.
4012
4013 017020 004737 004274 10$: JSR PC,GWORD ;GET FIRST BYTE.
4014 017024 117737 163426 002372 MOVB @BSEL7,WORDT ;STORE FIRST BYTE.
4015 017032 005237 002404 INC CADDR ;UPDATE ADDR.
4016 017036 004737 004274 JSR PC,GWORD ;GET NEXT BYTE.
4017 017042 117737 163410 002373 MOVB @BSEL7,WORDT+1 ;STORE IN HIGH BYTE OF WORDT.
4018 017050 005237 002404 INC CADDR ;UPDATE ADDR.
4019 017054 023727 002404 014000 CMP CADDR,#13777+1 ;AT END?
4020 017062 001403 BEQ 20$ ;YES,EXIT LOOP.
4021
4022 017064 004737 004376 JSR PC,CRCR ;NO-CALCULATE CRC ON THIS WORD.
4023 017070 000753 BR 10$ ;LOOP.
4024
4025 017072 005137 002374 20$: COM CWORD ;STORED CRC WORD IS COMPLEMENT.
4026 017076 023737 002374 002372 CMP CWORD,WORDT ;EQUAL?
4027 017104 001404 BEQ 30$
4028
4029 ;ROM CRC WORD BAD.
4030 017106 104455 TRAP C$ERDF
4031 017110 000024 .WORD 20
4032 017112 000000 .WORD 0
4033 017114 010162 .WORD ERR24
4034 017116 012737 013775 002404 30$: MOV #13777-2,CADDR ;SET ROM NUMBER ADDRESS
4035 017124 012737 000065 002370 MOV #65,ROMN1 ;ROM NUMBER
4036 017132 004737 004274 JSR PC,GWORD ;READ ROM NUMBER
4037 017136 117737 163314 002372 MOVB @BSEL7,WORDT ;STORE BYTE
4038 017144 123737 002370 002372 CMPB ROMN1,WORDT ;GOOD?
4039 017152 001404 BEQ 40$
4040 017154 104455 TRAP C$ERDF
4041 017156 000025 .WORD 21
4042 017160 000000 .WORD 0
4043 017162 010224 .WORD ERR25
4044 017164
4045 017164 022737 000001 002346 40$: CMP #1,STARES ;IS THIS FIRST PASS
4046 017172 001031 BNE 50$ ;IF NOT THEN GO TO 50
4047 017174 113737 002372 013762 MOVB WORDT,ROMNO ;PUT ROM NO IN PRINT CONDITION
4048 017202 012737 013774 002404 MOV #13777-3,CADDR
4049 017210 004737 004274 JSR PC,GWORD ;READ REV NO.
4050 017214 117737 163236 013764 MOVB @BSEL7,REVNO ;STORE BYTE
4051 017222 012746 013764 MOV #REVNO,-(SP)

```

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***** TEST 7 *****

| | | | | | | | | |
|------|--------|--------|--------|--------|---------|-------|----------------|--------------|
| 4052 | 017226 | 012746 | 013762 | | | MOV | #ROMNO,-(SP) | |
| 4053 | 017232 | 013746 | 002332 | | | MOV | LOGDEV,-(SP) | |
| 4054 | 017236 | 012746 | 013665 | | | MOV | #ROMMSG,-(SP) | |
| 4055 | 017242 | 012746 | 000004 | | | MOV | #4,-(SP) | |
| 4056 | 017246 | C'0600 | | | | MOV | SP,R0 | |
| 4057 | 017250 | 104417 | | | | TRAP | CSPNTF | |
| 4058 | 017252 | 062706 | 000012 | | | ADD | #12,SP | |
| 4059 | 017256 | 012737 | 013773 | 002404 | 50\$: | MOV | #13777-4,CADDR | :GET VERSION |
| 4060 | 017264 | 004737 | 004274 | | | JSR | PC,GWORD | :READ IT |
| 4061 | 017270 | 117737 | 163162 | 002372 | | MOVB | @BSEL7,WORDT | |
| 4062 | 017276 | 122737 | 000131 | 002372 | | CMPB | #131,WORDT | |
| 4063 | 017304 | 001404 | | | | BEQ | 60\$ | |
| 4064 | 017306 | 104455 | | | | TRAP | C\$ERDF | |
| 4065 | 017310 | 000026 | | | | .WORD | 22 | |
| 4066 | 017312 | 012540 | | | | .WORD | MEF31 | |
| 4067 | 017314 | 010422 | | | | .WORD | ERR32 | |
| 4068 | 017316 | | | | 60\$: | | | |
| 4069 | 017316 | | | | L10041: | | | |
| 4070 | 017316 | 104401 | | | | TRAP | C\$ETST | |

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***** TEST 8 *****

4071
 4072
 4073 017320
 4074
 4075
 4076
 4077
 4078
 4079
 4080
 4081 017320
 4082 017320 032737 000003 002472
 4083 017326 001453
 4084 017330 012737 000001 002366
 4085 017336 012737 000060 002370
 4086 017344 012737 140000 002436
 4087 017352 004537 005472
 4088 017356 005037 002402
 4089 017362 104410
 4090 017364 000072
 4091 017366 022737 000001 002346
 4092 017374 001030
 4093
 4094 017376 023737 013762 002370
 4095 017404 001406
 4096 017406 104455
 4097 017410 000027
 4098 017412 000000
 4099 017414 010224
 4100
 4101 017416 104410
 4102 017420 000036
 4103 017422
 4104 017422 012746 013764
 4105 017426 012746 013762
 4106 017432 013746 002332
 4107 017436 012746 013665
 4108 017442 012746 000004
 4109 017446 010600
 4110 017450 104417
 4111 017452 062706 000012
 4112
 4113
 4114
 4115 017456
 4116 017456
 4117 017456 104401

```

.SBTTL ***** TEST 8 *****
.SBTTL * ROM VERIFY ROM 1 DMV
ZZ
:*
:*
:*
:* THIS TEST IS USED TO VERIFY THE CONTENTS OF ROM 1
:* THIS TEST IS NOT DONE FOR DMP
:*
.SBTTL ***** TEST 8 *****
T8::
BIT #3,OPTYP ;IS THIS DMV
BEQ RDVEX ;IF NOT EXIT
MOV #1,ROMN
MOV #60,ROMN1 ;SET UP ROM NUMBER(ASCII 0)
MOV #140000,ROMADD ;SET UP 1ST ROM ADDRESS
JSR R5,RMVRT ;GO CHECK ROM CRC
CLR ERRWRD
TRAP C$ESCAPE
.WORD L10042-
CMP #1,STARES ;IS IT FIRST PASS
BNE RDVEX ;IF NOT EXIT

CMP ROMNO,ROMN1 ;COMPARE ROM NUMBER
BEQ 10$
TRAP C$ERDF
.WORD 23
.WORD 0
.WORD ERR25

TRAP C$ESCAPE
.WORD L10042-

10$:
MOV #REVNO,-(SP)
MOV #ROMNO,-(SP)
MOV LOGDEV,-(SP)
MOV #ROMMSG,-(SP)
MOV #4,-(SP)
MOV SP,R0
TRAP C$PNTF
ADD #12,SP

RDVEX:
L10042:
TRAP C$SETST

```

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:***** TEST 9 *****

4118
4119
4120 017460
4121
4122
4123
4124
4125
4126
4127 017460
4128 017460 032737 000003 002472
4129 017466 001453
4130 017470 012737 000002 002366
4131 017476 012737 000061 002370
4132 017504 012737 160000 002436
4133 017512 004537 005472
4134 017516 005037 002402
4135 017522 104410
4136 017524 000072
4137 017526 022737 000001 002346
4138 017534 001030
4139
4140 017536 123737 013762 002370
4141 017544 001406
4142 017546 104455
4143 017550 000C30
4144 017552 000000
4145 017554 010224
4146 017556 104410
4147 017560 000036
4148 017562
4149 017562 012746 013764
4150 017566 012746 013762
4151 017572 013746 002332
4152 017576 012746 013665
4153 017602 012746 000004
4154 017606 010600
4155 017610 104417
4156 017612 062706 000012
4157
4158
4159 017616
4160 017616
4161 017616 104401
4162

```

.SBTTL :***** TEST 9 *****
.SBTTL * ROM VERIFY ROM 2 DMV ONLY
ZZ
:*
:*
:* THIS IS THE TEST THAT VERIFIES THE CONTENTS OF ROM 2
:* OF THE DMV OPTION. THIS TEST IS NOT RUN FOR DMP
:*
.SBTTL :***** TEST 9 *****
T9::
BIT #3,OPTYP ;IS THIS DMV
BEQ RDVEX2 ;IF NOT EXIT
MOV #2,ROMN
MOV #61,ROMN1 ;SETUP ROM NUMBER(ASCII 1)
MOV #160000,ROMADD ;SETUP 1ST ROM ADDRESS
JSR R5,RMVRT ;GO CHECK ROM CRC
CLR ERRWRD
TRAP C$ESCAPE
.WORD L10043-
CMP #1,STARES
BNE RDVEX2 ;IF NOT FIRST PASS EXIT

CMPB ROMNO,ROMN1 ;CHECK ROM #
BEQ 10$
TRAP C$ERDF
.WORD 24
.WORD 0
.WORD ERR25
TRAP C$ESCAPE
.WORD L10043-

10$:
MOV #REVNO,-(SP)
MOV #ROMNO,-(SP)
MOV LOGDEV,-(SP)
MOV #ROMMSG,-(SP)
MOV #4,-(SP)
MOV SP,R0
TRAP C$PNTF
ADD #12,SP

RDVEX2:
L10043:
TRAP C$SETST

```

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***** TEST 10 *****

4163
 4164
 4165 017620
 4166
 4167
 4168
 4169
 4170
 4171
 4172
 4173
 4174
 4175
 4176
 4177
 4178
 4179
 4180
 4181
 4182
 4183
 4184
 4185
 4186
 4187
 4188
 4189
 4190
 4191
 4192
 4193
 4194
 4195
 4196
 4197
 4198
 4199
 4200
 4201
 4202
 4203
 4204
 4205
 4206
 4207
 4208
 4209
 4210
 4211
 4212
 4213
 4214
 4215 017620
 4216
 4217 017620 012737 000000 002342
 4218 017626 004737 004456

.SBTTL
 .SBTTL
 ZZ
 .SBTTL
 T10::

***** TEST 10 *****
 *INITIALIZATION TEST (INTERNAL DIAGNOSTICS)
 *
 * IN THIS TEST WE'LL START OUT BY SETTING THE MASTER CLEAR BIT (BIT 14 OF SELO)
 * THE LOGIC CLEARS AND STARTS THE MICRO DIAGNOSTICS. IF THE MICRO-DIAGNOSTICS
 * PASS, THE RUN BIT (BIT15 OF SELO) WILL SET.
 * IF THE RUN BIT FAILS TO SET WITHIN 300 MILLI-SEC, IT
 * PROBABLY MEANS THAT MICRO DIAGNOSTICS HAVE DETECTED AN
 * ERROR AND THE TEST CODE IS IN BSEL6
 *
 * DMP
 *
 * TEST CODE TEST ENTERED
 * 143 BRANCH TEST
 * 135 BRANCH EXTENDED TESTS
 * 125,252,0 IBUS/OBUS TESTS
 * 123 SCRATCH PAD TEST
 * 151 ALU TESTS
 * 222 MAIN MEMORY DATA TEST
 * 132 MAIN MEMORY DUAL ADDRESS TEST
 * 264 LINE UNIT TESTS
 * 305 TESTS COMPLETE
 *
 * DMV TEST
 * 101 BRANCH TEST
 * 102 INTERNAL REG TEST
 * 103 LOAD AND STORE INSTR.
 * 104 COMPARE INSTR. TEST
 * 105 INC/DEC INSTR.
 * 106 SHIFT AND ROTATE INSTR.
 * 107 LOGIC INSTR.
 * 110 ADC,SBC,SED,CLD INSTRU.
 * 111 STACK PUSH,PULL INSTR.
 * 112 SUBROUTINE INSTR.
 * 113 SCRATCH PAD,CSR,AND NPR
 * 114
 * 115 FALSE INT TEST
 * 116 RAM DATA AND ADDRESS
 * 117 RAM ALTERNATING TEST
 * 120 INDEX INDIRECT TEST
 * 121 LINE UNIT TEST
 *
 * NOTE THE RUN BIT WILL BE SET EVEN IF THE LINE UNIT
 * TEST FAILS. TEST CODE MUST BE CHECKED TO FIND ERROR.
 * THESE CODES ARE SET UPON ENTRY OF EACH TEST
 * ONE SHOULD NOT BE DEPENDENT ON A BAD DMP-DMV MODULE
 * TO PASS A CORRECT TEST CODE. IF THIS TEST FAILS, YOU
 * SHOULD RUN THE REPAIR LEVEL DIAGNOSTIC
 *
 * NOTE
 * IF THIS TEST FAILS, CHECK SW7 OF SP#1 TO SEE IF RUN IS ENABLED.
 *
 ***** TEST 10 *****
 MOV #0,COUNT ;CLEAR COUNTER
 JSR PC,MINITR

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***** TEST 10 *****

4219 017632
 4220 017632 004737 004244
 4221 017636 005777 162576
 4222 017642 100411
 4223 017644 005337 002342
 4224 017650 001370
 4225
 4226
 4227
 4228 017652 104455
 4229 017654 000031
 4230 017656 011043
 4231 017660 007376
 4232 017662 104410
 4233 017664 000116
 4234 017666 122777 000305 162560
 4235 017674 001420
 4236 017676 122777 000264 162550
 4237 017704 001406
 4238
 4239 017706 104455
 4240 017710 000032
 4241 017712 011043
 4242 017714 007376
 4243
 4244
 4245 017716 104410
 4246 017720 000062
 4247
 4248 017722
 4249 017722 104455
 4250 017724 000033
 4251 017726 011125
 4252 017730 010422
 4253 017732 104410
 4254 017734 000046
 4255
 4256 017736
 4257 017736 112777 000200 162474
 4258 017744 012737 017766 002406
 4259 017752
 4260 017752 004537 005070
 4261 017756 005037 002402
 4262 017762 104410
 4263 017764 000016
 4264 017766
 4265
 4266
 4267
 4268 017766 032777 000020 162450
 4269 017774 001766
 4270 017776
 4271 017776 104410
 4272 020000 000002
 4273 020002
 4274 020002 104401

10\$:
 JSR PC, WAIT50
 TST @SELO :TEST DONE?
 BMI 20\$:YES TEST FOR ERROR
 DEC COUNT :UPDATE COUNT IF NOT TOO LONG
 BNE 10\$:IN THIS WAIT LOOP, GO BACK

 ;INTERNAL DIAG FAILED

 TRAP C\$ERDF
 .WORD 25
 .WORD MEF3A
 .WORD ERR3
 TRAP C\$ESCAPE
 .WORD L10044-
 20\$: CMPB #305, @BSEL6 :LEGAL TEST COMPLETE CODE?
 BEQ 40\$
 CMPB #264, @BSEL6 :LINE UNIT TEST FAILURE?
 BEQ 30\$

 TRAP C\$ERDF
 .WORD 26
 .WORD MEF3A
 .WORD ERR3

 ;UNKNOWN ERROR WHILE INITIALLING
 ;DMP-11

 TRAP C\$ESCAPE
 .WORD L10044-

 30\$:
 TRAP C\$ERDF
 .WORD 27
 .WORD MEF4
 .WORD ERR32
 TRAP C\$ESCAPE
 .WORD L10044-

 ;MODULE FAULT

 40\$: MOVB #RQI, @BSELO :SET RQI AND THEN WAIT FOR RDI TO SET.
 MOV #ERLB1, ERRADD :SET UP ERROR ADD.
 TLB1:
 JSR R5, TOUT
 CLR ERRWRD
 TRAP C\$ESCAPE
 .WORD L10044-
 ERLB1:
 ;TIME OUT ERROR REPORTS THIS ADDRESS
 ;
 ;
 47\$: BIT #RDI, @BSEL2 :DID RDI SET?
 BEQ TLB1

 50\$:
 TRAP C\$ESCAPE
 .WORD L10044-
 L10044:
 TRAP C\$ETST

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:***** TEST 10 *****

4275
4276
4277
4278
4279 020004
4280
4281
4282
4283
4284
4285
4286
4287
4288
4289
4290
4291
4292
4293
4294 020004
4295
4296 020004 032737 000003 002472
4297 020012 001402
4298 020014 000137 021134
4299 020020
4300 020020
4301 020020 004737 004522
4302
4303
4304
4305 020024 005037 002402
4306 020030 104410
4307 020032 001102
4308 020034 105077 162416
4309 020040 112777 000200 162372
4310 020046
4311 020046 004537 002732
4312
4313 020052 005037 002402
4314 020056 104410
4315 020060 001054
4316
4317
4318
4319
4320 020062 105077 162352
4321 020066 112777 000022 162360
4322 020074 105077 162356
4323 020100 112777 000001 162336
4324
4325 020106
4326 020106 012737 020130 002406
4327 020114 004537 005070
4328 020120 005037 002402
4329 020124 104410
4330 020126 001006

.SBTTL :***** TEST 11 *****
.SBTTL * MICRO-DIAGNOSTIC-INTERFACE TESTING DMP ONLY
ZZ
:* DMP ONLY THIS TEST...
:* THIS TEST WILL EXERCISE THE MICRO-CPU'S INTERFACE TO THE PDP-11
:* WE FIRST START THE MCPU. NEXT WE GIVE THE COMMAND THAT
:* TAKES US TO THE INTERFACE DIAGNOSTIC CODE. ONCE THIS CODE IS
:* STARTED, WE MUST GO THROUGH ALL TESTS. THEREFORE, YOU WILL NOTICE
:* FIVE DISTINCT TESTS PERFORMED
:* AT THE END OF THIS TEST, THE MICRO-CODE IS LISTED.
:* VARIOUS SCOPE POINTS DO EXIST IF YOU NEED THEM. IT IS NOT
:* COMMON PRACTICE TO USE THEM, HOWEVER, WHERE SOME USE OF THEM
:* COULD BE MADE, THEY ARE NOTED.
.SBTTL :***** TEST 11 *****

T11::
BIT #3,OPTYP ;IS THIS DMV
BEQ 10\$;IF NOT GO TO 10;E: E
JMP EXMDT ;EXIT TEST
10\$:
T9BG:
JSR PC,MINITS
:****
: JUMP TO END OF TEST IF ERROR
: : :
CLR ERRWRD
TRAP C\$ESCAPE
.WORD L10045-
CLRB @BSEL7
MOVB #DRUN,@BSELO ;REQUEST INTERFACE DIAGNOSTICS
25\$:
JSR R5,WRDI ;WAIT FOR RDI TO SET
CLR ERRWRD ;CLEAR ERROR
TRAP C\$ESCAPE
.WORD L10045-
: : : : :
: TIME OUT OR READY ERROR REPORTS THIS
: ADDRESS AS FAILING PC
: : : : :
CLRB @BSELO ;NO MORE REQUESTS.
MOVB #22,@BSEL6 ;DIAGNOSTIC CODE.
CLRB @BSEL7 ;CLEAR BSEL7
MOVB #1,@BSEL2 ;START.!
TLB2:
MOV #ERLB2,ERRADD ;SET UP ERROR ADDRESS
JSR R5,TOUT
CLR ERRWRD
TRAP C\$ESCAPE
.WORD L10045-

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***** TEST 11 *****

```

4331 020130
4332
4333
4334
4335 020130 122777 000377 162320 26$: CMPB #377,@BSEL7 ;LOOK FOR SYNC OF CODE 377 IN LAST REG
4336 020136 001363 BNE TLB2 ;IF 'HANG' OCCURS HERE THEN ITS POSSIBLE
4337 ;THAT EITHER THE DATA PATHS ARE BAD OR
4338 ;THAT THE MCPU FAILED TO START
4339
4340 020140 012737 000377 002336 MOV #377,$GDDAT ;EXPECT 377 BACK FROM ALL REGS
4341 020146 013701 002440 MOV BSEL0,R1 ;EXCEPT REG 1 (MAINTENANCE)
4342 020152 012737 000000 002344 MOV #0,REG
4343 020160 111137 002340 4$: MOVB (R1),$BDDAT ;READ REG, EXPECT 377
4344 020164 123737 002340 002336 CMPB $BDDAT,$GDDAT ;OK?
4345 020172 001412 BEQ 5$ ;YES-CONTINUE
4346 020174 022737 000001 002344 CMP #1,REG ;NO ERROR? (EXCEPT REG 1)
4347 020202 001406 BEQ 5$ ;IF REG 1, SKIP
4348
4349 020204 104455 TRAP C$ERDF
4350 020206 000034 .WORD 2R
4351 020210 011200 .WORD MEFC
4352 020212 007430 .WORD ERR5
4353 020214 104410 TRAP C$ESCAPE
4354 020216 000716 .WORD L10045-.
4355 020220 005237 002344 5$: INC REG ;UPDATE REGISTER #
4356 020224 005201 INC R1 ;AND ADDRESS
4357 020226 023727 002344 000010 CMP REG,#10 ;DONE ALL REGS?
4358 020234 001351 BNE 4$
4359 020236 105077 162176 CLRB @BSEL0 ;CAUSES MCPU TO EXIT TSTA
4360
4361
4362 ;TEST B
4363
4364
4365 020242 TLB3:
4366 020242 012737 020264 002406 MOV #ERLB3,ERRADD ;SET ERROR ADDRESS
4367 020250 004537 005070 JSR R5,TOUT
4368 020254 005037 002402 CLR ERRWRD
4369 020260 104410 TRAP C$ESCAPE
4370 020262 C00652 .WORD L10045-.
4371 020264
4372
4373
4374
4375 020264 105777 162166 27$: TSTB @BSEL7 ;LOOK FOR A ZERO IN BSEL7
4376 020270 001364 BNE TLB3
4377
4378 020272 005037 002336 CLR $GDDAT ;EXPECT ALL ZEROS EXCEPT SBEL1
4379 020276 013701 002440 MOV BSEL0,R1 ;GET ADDR OF MCPU.
4380 020302 012737 000000 002344 MOV #0,REG
4381 020310 005037 002340 CLR $BDDAT
4382 020314 111137 002340 7$: MOVB (R1),$BDDAT ;READ REG
4383 020320 001412 BEQ 8$ ;IF ZERO-CONTINUE
4384 020322 022737 000001 002344 CMP #1,REG ;IF REG #1 CONTINUE
4385 020330 001406 BEQ 8$
4386

```

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***** TEST 11 *****

```

4387 020332 104455          TRAP  C$ERDF
4388 020334 000035          .WORD 29
4389 020336 011200          .WORD MEFC
4390 020340 007430          .WORD ERR5
4391 020342 104410          TRAP  C$ESCAPE
4392 020344 000570          .WORD L10045-.
4393 020346 005237 002344    8$:  INC  REG          ;UPDATE REGISTER #
4394 020352 005201          INC  R1          ;AND ADDRESS
4395 020354 122737 000010 002344  CMPB #10,REG     ;DONE ALL REGS (0-7)?
4396 020362 001354          BNE  7$          ;NO-DO NEXT ONE
4397
4398 020364 000404          BR   9$          ;REPLACE THIS INSTRUCTION WITH CODE 240
4399                          ;(NOP) IF YOU WITH TO COOP IN
4400                          ;TESTS A&B
4401 020366 112777 000200 162044  MOVB #200,@BSELO ;ALL MICRO-CODE TO LOOP
4402 020374 000611          BR   T9BG        ;LOOP
4403
4404 020376 112777 000377 162034  9$:  MOVB #377,@BSELO ;TELL MICRO-CODE TO EXIT TEST B,
4405                          ;PROCEED TO TEST C.
4406
4407
4408                          ;TEST  C
4409                          ;; WAS @KMRLVL          VRG021582
4410 020404 013746 002470    MOV  KMRLVL,-(SP)
4411 020410 012746 021044    MOV  #INTC0,-(SP)
4412 020414 013746 002462    MOV  KMRVEC,-(SP)
4413 020420 012746 000003    MOV  #3,-(SP)
4414 020424 104437          TRAP  C$SVEC
4415 020426 062706 000010    ADD  #10,SP
4416                          ;INTERRUPT VECTOR
4417                          ;; WAS @KMTLVL          VRG021582
4418
4419 020432 013746 002470    MOV  KMTLVL,-(SP)
4420 020436 012746 021060    MOV  #INTC4,-(SP)
4421 020442 013746 002464    MOV  KMTVEC,-(SP)
4422 020446 012746 000003    MOV  #3,-(SP)
4423 020452 104437          TRAP  C$SVEC
4424 020454 062706 000010    ADD  #10,SP
4425                          ;ILLEGAL INTERRUPT TO WRONG VECTOR
4426
4427 020460 005037 002334          CLR  IFLAG
4428 020464 112777 000377 161754  MOVB #377,@BSEL3 ;TELL MICRO-CODE TO FORCE INTERRUPT
4429 020472 012700 000000          MOV  #0,R0
4430 020476 104441          TRAP  C$SPRI
4431
4432 020500          TLB4:
4433 020500 012737 020522 002406  MOV  #ERLB4,ERRADD ;SET UP ERROR ADDRESS
4434 020506 004537 005070          JSR  R5,TOU;
4435 020512 005037 002402          CLR  ERRWRD
4436 020516 104410          TRAP  C$ESCAPE
4437 020520 000414          .WORD L10045-.
4438 020522          ERLB4:
4439                          ;:TIME OUT REPORTS THIS ADDRESS
4440
4441                          ;:
4442 020522 005737 002334    28$:  TST  IFLAG          ;IFLAG=1 SET BY INTERRUPT SERVICE ROUTINE

```

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***** TEST 11 *****

```

4443 020526 001764          BEQ      TLB4          ;LOOP UNIT DONE
4444                                     ;NOTE: IF HANGS HERE, MCPU FAILS TO
4445                                     ;GENERATE INTERRUPT TO PDP-11.
4446
4447
4448          ;TEST      D
4449
4450 020530 013746 002470    MOV      KMRLVL,-(SP)
4451 020534 012746 021100    MOV      #INTD0,-(SP)
4452 020540 013746 002462    MOV      KMRVEC,-(SP)
4453 020544 012746 000003    MOV      #3,-(SP)
4454 020550 104437          TRAP     C$SVEC
4455 020552 062706 000010    ADD     #10,SP
4456 020556 013746 002470    MOV      KMTLVL,-(SP)
4457 020562 012746 021120    MOV      #INTD4,-(SP)
4458 020566 013746 002464    MOV      KMTVEC,-(SP)
4459 020572 012746 000003    MOV      #3,-(SP)
4460 020576 104437          TRAP     C$SVEC
4461 020600 062706 000010    ADD     #10,SP
4462
4463 020604 005037 002334    CLR      IFLAG          ;NO INTERRUPT INDICATOR
4464 020610 012700 000000    MOV      #0,R0
4465 020614 104441          TRAP     C$SPRI
4466 020616 105077 161624    CLRB    @BSEL3          ;TELL MCPU TO INTERRUPT
4467
4468 020622
4469 020622 012737 020644 002406  TLB5:  MOV      #ERLBS,ERRADD  ;SET UP ERROR ADDRESS
4470 020630 004537 005070          JSR     R5,TOUT
4471 020634 005037 002402          CLR     ERRWRD
4472 020640 104410          TRAP     C$ESCAPE
4473 020642 000272          .WORD   L10045-
4474 020644
4475
4476          ERLB5:
4477          ;:TIME OUT REPORTS THIS ADDRESS
4478 020644 005737 002334    29$:  TST     IFLAG          ;DID MCPU INTERRUPT (IFLAG NOT 0)?
4479 020650 001764          BEQ     TLB5          ;NO - LOOP
4480                                     ;NOTE: IF PROGRAM 'HANGS' HERE, MCPU
4481                                     ;FAILED TO INTERRUPT TO VECTOR XX4
4482                                     ;WE KNOW MCPU IS ABLE TO INTERRUPT
4483                                     ;TO XX0 (TEST C)
4484
4485 020652 013700 002462    MOV      KMRVEC,R0
4486 020656 104436          TRAP     C$CVEC
4487 020660 013700 002464    MOV      KMTVEC,R0
4488 020664 104436          TRAP     C$CVEC
4489
4490
4491          ;TEST E NPR TEST
4492
4493
4494 020666 012701 033706          MOV     #DATLST,R1      ;GET DATA LIST
4495 020672 152777 000010 161542  BISB    #BIT3,@BSEL1    ;SET INDICATOR THAT WE ARE STILL IN TEST.
4496
4497 020700 011137 002336          TLB6A: MOV     (R1),%GDDAT  ;GET NEXT PATTERN
4498 020704 010177 161540          MOV     R1,@BSEL4      ;SET NPR IN ADDR

```

```

CZDMTD.P11      09-MAR-82 09:11      ;***** TEST 11 *****
4499 020710 012777 002340 161536      MOV   #BDDAT,@BSEL6 ;SET NPR OUT ADDR
4500 020716 105077 161516              CLR   @BSELO        ;TELL MCPU TO DO NPRS
4501
4502 020722              TLCS:
4503 020722 012737 020744 002406      MOV   #ERLB6,ERRADD ;SET ERROR ADDRESS
4504 020730 004537 005070              JSR   R5,TOUT
4505 020734 005037 002402              CLR   ERRWRD
4506 020740 104410              TRAP  C$ESCAPE
4507 020742 000172              .WORD L10045-.
4508 020744              ERLB6:
4509
4510              :::::
4511              : TIME OUT ERROR REPORTS THIS ADDRESS
4512 020744 132777 000010 161470 30$:  BITB  #BIT3,@BSEL1 ;DID WE ACCIDENTILY ESCAPE THIS TEST???
4513 020752 001006              BNE   135$
4514 020754 104455              TRAP  C$ERDF
4515 020756 000036              .WORD 30
4516 020760 011414              .WORD MEF7
4517 020762 010422              .WORD ERR32
4518
4519 020764 104410              TRAP  C$ESCAPE ;UNKNOWN MCPU ERROR CAUSED ABORT OF TEST.
4520 020766 000146              .WORD L10045-.
4521 020770              135$:
4522
4523 020770 122777 000377 161442      CMPB  #377,@BSELO ;WHEN MCPU DONE, IT PUTS 377 INTO BSELO
4524 020776 001351              BNE   TLB6        ;IF WE 'HANG' HERE, MCPU FAILS TO DO
4525
4526
4527 021000 023737 002336 002340      CMP   $GDDAT,$BDDAT ;NPRED FRO PATTERN LIST TO $BDDAT
4528
4529 021006 001406              BEQ   14$        ;DID XFER OCCUR SUCCESSFULLY?
4530
4531 021010 104455              TRAP  C$ERDF
4532 021012 000037              .WORD 31
4533 021014 011200              .WORD MEF7
4534 021016 007466              .WORD ERR6
4535 021020 104410              TRAP  C$ESCAPE
4536 021022 000112              .WORD L10045-.
4537 021024 022721 000562 14$:  CMP   #562,(R1)+ ;IS IT THE LAST PATTERN (562) IS TERM)?
4538 021030 001323              BNE   TLB6A
4539 021032 112777 000200 161400      MOVB  #200,@BSELO ;TELL MCPU TO EXIT TEST
4540 021040 104432              TRAP  C$EXIT
4541 021042 000072              .WORD L10045-.
4542
4543 021044              INTC0::
4544 021044 013700 000006      MOV   6,R0
4545 021050 104441              TRAP  C$SPRI
4546 021052 005237 002334              INC   IFLAG
4547 021056              L10046:
4548 021056 000002              RTI
4549
4550 021060              INTC4::
4551 021060 013700 000006      MOV   6,R0
4552 021064 104441              TRAP  C$SPRI
4553 021066 104455              TRAP  C$ERDF
4554 021070 000040              .WORD 32

```

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***** TEST 11 *****

4555 021072 011446
 4556 021074 010422
 4557 021076
 4558 021076 000002
 4559
 4560 021100
 4561 021100 013700 000006
 4562 021104 104441
 4563 021106 104455
 4564 021110 000041
 4565 021112 011446
 4566 021114 010422
 4567 021116
 4568 021116 000002
 4569
 4570 021120
 4571 021120 013700 000006
 4572 021124 104441
 4573 021126 005237 002334
 4574 021132
 4575 021132 000002
 4576
 4577 021134
 4578
 4579 021134
 4580 021134 104401
 4581
 4582

L10047: .WORD MEF8
 .WORD ERR32
 RTI
 INTD0:: MOV 6,R0
 TRAP C\$SPRI
 TRAP C\$ERDF
 .WORD 33
 .WORD MEF8
 .WORD ERR32
 L10050: RTI
 INTD4:: MOV 6,R0
 TRAP C\$SPRI
 INC IFLAG
 L10051: RTI
 EXMDT:
 L10045: TRAP C\$ETST

;CORRECT VECTOR (XX4)

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;***** TEST 12 *****

```

4583 .SBTTL ;***** TEST 12 *****
4584 .SBTTL RDI REMAINS SET TEST
4585 021136 ZZ
4586 :*
4587 :*ROM FUNCTION TEST      IN THIS TEST, WE'RE GOING TO SET RQI, GET A
4588 :*                        RDI, DO A CONTROL IN COMMAND WITH A REQUEST
4589 :*                        KEY OF 00 (NO REQUEST). NEXT WE'LL WAIT
4590 :*                        FOR RDI TO SET AGAIN SINCE RQI WAS
4591 :*                        LEFT SET
4592 :*
4593 .SBTTL ;***** TEST 12 *****
4594 021136 T12::
4595
4596 021136 004737 004522 JSR PC,MINITS ;INITIALIZE & START MCPU
4597
4598 021142 005037 002402 CLR ERRWRD
4599 021146 104410 TRAP C$ESCAPE
4600 021150 000076 .WORD L10052-.
4601 :*
4602 :* JUMP TO END OF TEST IF ERROR
4603 :*
4604
4605 021152 7$:
4606
4607 021152 052777 000200 161260 BIS #RQI,@BSEL0 ;SET RQI
4608
4609 021160 10$:
4610 021160 004537 002732 JSR R5,WRDI ;WAIT FOR RDI TO SET
4611
4612 021164 005037 002402 CLR ERRWRD ;CLEAR ERROR
4613 021170 104410 TRAP C$ESCAPE
4614 021172 000054 .WORD L10052-.
4615 :*
4616 :* TIME OUT - OR READY ERROR REPORTS
4617 :* THIS ADDRESS
4618 :*
4619
4620 021174 005077 161254 20$: CLR @BSEL6 ;CLEAR RDI, ISSUE REQUEST OF NO REQUEST
4621 ;THIS SHOULD CAUSE RDI TO SET AGAIN
4622 ;SINCE RQI HAD REMAINED SET
4623 021200 112777 000001 161236 MOVB #1,@BSEL2 ;START
4624
4625 021206 004737 004244 JSR PC,WAIT50 ;WAIT THIS SHORT TIME SO THAT THE
4626 021212 004737 004244 JSR PC,WAIT50 ;DMP MICRO-CODE MAY RESET 'RDI' IF
4627 021216 004737 004244 JSR PC,WAIT50
4628 021222 004737 004244 JSR PC,WAIT50
4629 ;IT IS GOING TO
4630
4631 021226 032777 000020 161210 BIT #RDI,@BSEL2 ;IS RDI SET?
4632 021234 001004 BNE 30$
4633
4634 021236 104455 TRAP C$ERDF
4635 021240 000042 .WORD 34
4636 021242 011630 .WORD MRFT
4637 021244 007524 .WORD ERR9
4638 ;COMPLETING A 'NO REQUEST' CONTROL

```

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;***** TEST 12 *****

:IN COMMAND

4639
4640
4641 021246
4642 021246
4643 021246 104401

30\$:
L10052: TRAP CSETST

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***** TEST 12 *****

4644
4645
4646
4647 021250
4648
4649
4650
4651
4652
4653
4654 021250
4655
4656 021250 004737 004522
4657
4658 021254 005037 002402
4659 021260 104410
4660 021262 000174
4661
4662
4663
4664
4665 021264 052777 000200 161146
4666 021272 004537 002732
4667
4668 021276 005037 002402
4669 021302 104410
4670 021304 000152
4671
4672
4673
4674
4675 021306 042777 000200 161124 20\$:
4676 021314 012777 000020 161132
4677 021322 112777 000001 161114
4678
4679 021330 004737 004244
4680 021334 004737 004244
4681
4682 021340 032777 000200 161076
4683 021346 001006
4684
4685 021350 104455
4686 021352 000043
4687 021354 011630
4688 021356 007552
4689
4690 021360 104410
4691 021362 000074
4692
4693 021364 117737 161054 002340 30\$:
4694 021372 042737 177770 002340
4695 021400 012737 000002 002336
4696 021406 023737 002336 002340
4697 021414 001411
4698 021416 012737 012007 002430
4699 021424 104455

```

.SBTTL ***** TEST 13 *****
.SBTTL *ROM FUNC TEST. VERIFY RDO SETS
ZZ
*ROM FUNC      IN THIS TEST WE'LL DO A CONTROL IN WITH
*              READ MODEM AS THE REQUEST KEY. WE'LL MAKE
*              SURE THAT RDO SETS. WE SHOULD GET A
*              RETURN KEY OF 10 'RETURN MODEM'
.SBTTL ***** TEST 13 *****
T13::

JSR    PC,MINITS      ;INIT & START MCPU

CLR    ERRWRD
TRAP   C$ESCAPE
.WORD  L10053-.
:
:
: JUMP TO END OF TEST IF ERROR
:
:
BIS    #RQI,@BSELO    ;SET REQUEST IN
JSR    RS,WRDI        ;WAIT FOR RDI TO SET

CLR    ERRWRD        ;CLEAR ERROR
TRAP   C$ESCAPE
.WORD  L10053-.
:
: TIME OUT OR READY ERROR REPORTS
: THIS ADDRESS AS FAILING PC
:
BIC    #RQI,@BSELO    ;DROP REQUEST
MOV    #20,@BSEL6     ;READ MODEM
MOVB   #1,@BSEL2

JSR    PC,WAIT50      ;STALL
JSR    PC,WAIT50

BIT    #RDO,@BSEL2    ;DID 'RDO' SET?
BNE    30$

TRAP   C$ERDF
.WORD  35
.WORD  MRFT
.WORD  ERR10
: REQUEST FOR READ MODEM

TRAP   C$ESCAPE
.WORD  L10053-.

MOVB   @BSEL2, $BDDAT ;NOW GET CSR AND
BIC    #^C<?>, $BDDAT ;STRIP FOR
MOV    #2, $GDDAT     ;TYPE CODE OF INFORMATION OUT
CMP    $GDDAT, $BDDAT
BEQ    40$
MOV    #M28F, CODEW
TRAP   C$ERDF

```


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***** TEST 13 *****

| | | | | | | | | |
|------|--------|--------|--------|--------|---------|-----------|--------------|------------------------------|
| 4700 | 021426 | 000044 | | | .WORD | 36 | | |
| 4701 | 021430 | 011506 | | | .WORD | ERIC | | |
| 4702 | 021432 | 010324 | | | .WORD | ERR27 | | |
| 4703 | | | | | | | :IN RDO | |
| 4704 | 021434 | 104410 | | | TRAP | C\$ESCAPE | | |
| 4705 | 021436 | 000020 | | | .WORD | L10053- | | |
| 4706 | | | | | | | | |
| 4707 | 021440 | | | | | | | |
| 4708 | 021440 | 112737 | 000010 | 002336 | 40\$: | MOVB | #10, \$GDDAT | :SHOULD=10 'RETURN MODEM' |
| 4709 | 021446 | 004537 | 003372 | | | JSR | R5,GETRKY | :GO GET AND CHECK RETURN KEY |
| 4710 | | | | | | | | |
| 4711 | 021452 | 005037 | 002402 | | | CLR | ERRWRD | |
| 4712 | 021456 | | | | L10053: | | | |
| 4713 | 021456 | 104401 | | | | TRAP | C\$ETST | |

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***** TEST 14 *****

4714
4715
4716 021460
4717
4718
4719
4720
4721
4722
4723
4724 021460
4725
4726 021460 112777 000100 160754
4727 021466 022737 000004 002472
4728 021474 001003
4729 021476 112777 000200 160736
4730
4731 021504
4732 021504 004537 005070
4733 021510 005037 002402
4734 021514 104410
4735 021516 000204
4736 021520 005777 160714
4737 021524 100367
4738 021526 052777 000200 160704
4739 021534 004537 002732
4740
4741 021540 005037 002402
4742 021544 104410
4743 021546 000154
4744 021550 105077 160664
4745 021554 105077 160666
4746 021560 112777 000052 160666
4747 021566 112777 000001 160650
4748 021574 004537 002646
4749 021600 005037 002402
4750 021604 104410
4751 021606 000114
4752 021610 117737 160630 002340
4753 021616 042737 177770 002340
4754 021624 022737 000002 002340
4755 021632 001433
4756 021634 022737 000001 002340
4757 021642 001411
4758 021644 012737 012000 002430
4759 021652 104455
4760 021654 000045
4761 021656 011506
4762 021660 010324
4763 021662 104410
4764 021664 000036
4765 021666 117737 160562 002340
4766 021674 022737 000100 002340
4767 021702 001407
4768 021704 012737 011762 002430
4769 021712 104455

```

.SBTTL :***** TEST 14 *****
.SBTTL * NON-MODE DEF AFTER MC PROCEDURE ERR CHECK
ZZ
:*
:*
:* THIS TEST CHECKS FOR PROCEDURE ERROR WHEN
:* NON-MODE DEFINITION IS DONE AFTER MC
:*
:*-
.SBTTL :***** TEST 14 *****
T14::
MOV#B #100,@BSEL1 ;MASTER CLEAR
CMP #4,OPTYP ;8206
BNE TLB10 ;IF NOT GO TO TLB10
MOV#B #200,@BSEL1 ;SET RUN 8206

TLB10:
JSR R5,TOUT
CLR ERRWRD
TRAP C$ESCAPE
.WORD L10054-.
ERLB10: TST @BSELO
BPL TLB10 ;LOOP IF NOT RUN
BIS #RQI,@BSELO ;SET REQUEST
JSR R5,WRDI ;WAIT FOR RDI TO SET

CLR ERRWRD ;CLEAR ERROR
TRAP C$ESCAPE
.WORD L10054-.
CLRB @BSELO ;CLEAR REQUEST
CLRB @BSEL3 ;MAKE TRIB ADD 0
MOV#B #52,@BSEL6 ;READ TSS
MOV#B #01,@BSEL2 ;EXECUTE CONTROL IN
JSR R5,WRDO ;WAIT FOR RDO
CLR ERRWRD
TRAP C$ESCAPE
.WORD L10054-.
MOV#B @BSEL2,$BDDAT
BIC #^C<7>,$BDDAT ;STRIP TO COMMAND CODE
CMP #2,$BDDAT ;IS IT INFO OUT
BEQ T14EX ;IF YES EXIT TEST
CMP #01,$BDDAT ;IF NOT IS IT CONTROL OUT
BEQ T14A
MOV #M18F,CODEW
TRAP C$ERDF
.WORD 37
.WORD EROIC
.WORD ERR27
TRAP C$ESCAPE
.WORD L10054-.
T14A: MOV#B @BSEL6,$BDDAT
CMP #100,$BDDAT ;IS IT 100
BEQ T14EX ;IF SO END TEST ELSE ERROR
MOV #M13F,CODEW
TRAP C$ERDF

```

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;***** TEST 14 *****

| | | |
|------|--------|--------|
| 4770 | 021714 | 000046 |
| 4771 | 021716 | 011506 |
| 4772 | 021720 | 010324 |
| 4773 | 021722 | |
| 4774 | 021722 | |
| 4775 | 021722 | 104401 |
| 4776 | | |

| | |
|-------|-------|
| .WORD | 38 |
| .WORD | EROIC |
| .WORD | ERR27 |

| | |
|---------|--------|
| T14EX: | |
| L10054: | |
| TRAP | CSETST |

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***** TEST 14 *****

4777
4778
4779
4780 021724
4781
4782
4783
4784
4785
4786
4787
4788
4789
4790
4791 021724
4792
4793 021724 004737 004522
4794
4795
4796 021730 005037 002402
4797 021734 104410
4798 021736 000174
4799
4800
4801
4802 021740 004737 004244
4803
4804 021744 004737 004244
4805 021750 142777 000010 160464
4806 021756 022737 000004 002476
4807 021764 001027
4808 021766 032777 000200 160450
4809 021774 001423
4810 021776 012737 000304 002336
4811 022004 117737 160444 002340
4812 022012 023737 002340 002336
4813 022020 001406
4814 022022 104455
4815 022024 000047
4816 022026 012516
4817 022030 010422
4818 022032 104432
4819 022034 000076
4820 022036
4821 022036 042777 000200 160400
4822 022044 052777 000200 160366
4823 022052 004537 002732
4824
4825 022056 005037 002402
4826 022062 104410
4827 022064 000046
4828 022066 043777 000200 160344
4829 022074 012777 000007 160352
4830 022102 012777 000002 160334
4831 022110 012737 000104 002410
4832

```

.SBTTL ***** TEST 15 *****
.SBTTL * MODE DEF,MODE DEF PROCEDURE ERROR
ZZ
:*
:*
:*
:* THIS TEST CHECKS THAT AFTER THE SEQUENCE OF
:* MASTER CLEAR MODE DEF FOLLOWED BY MODE DEF
:* DIFFERENT TYPE PRODUCES A PROCEDURE ERROR OF
:* OCTAL 104
:*
:*-
.SBTTL ***** TEST 15 *****
T15::
JSR PC,MINITS ;DO MC,MODE DEF(CONT STA/FD)

CLR ERRWRD
TRAP C$ESCAPE
.WORD L10055-.
:JUMP TO END OF TEST IF ERROR
:JUMP
JSR PC,WAIT50 ;WAIT A WHILE TO BE SURE MODEM READY
;IS SET

JSR PC,WAIT50
BIC #BIT3,@BSEL1 ;CLEAR LU LOOP
CMP #4,TSTCON ;IS THIS NO LOOPBACK
BNE 20$ ;IF LOOPBACK GO TO 20
BIT #RDO,@BSEL2 ;IS RDO SET?
BEQ 20$ ;IF NOT GO TO 20
MOV #304,$GDDAT
MOVB @BSEL6,$BDDAT ;IF YES.IS IT 304
CMP $BDDAT,$GDDAT
BEQ 25$ ;IF EQUAL GO TO 25
TRAP C$ERDF
.WORD 39
.WORD MEF30
.WORD ERR32
TRAP C$EXIT
.WORD L10055-.

25$:
BIC #RDO,@BSEL2 ;CLEAR RDO
20$:
BIS #RQI,@BSELO ;SET REQUEST
JSR R5,WRDI ;WAIT FOR RDI TO SET

CLR ERRWRD ;CLEAR ERROR
TRAP C$ESCAPE
.WORD L10055-.
BIC RQI,@BSELO ; CLEAR REQUEST
MOV #7,@BSEL6 ;SET MODE FOR TRIB/FD
MOV #02,@BSEL2 ;DO MODE DEF
MOV #104,PERR ;SET PROCEDURE ERROR OF
; 104 TO BE CHECKED

```

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***** TEST 15 *****

4833 022116 004537 003016
 4834
 4835 022122 005037 002402
 4836 022126 104410
 4837 022130 000002
 4838
 4839
 4840
 4841
 4842
 4843 022132
 4844 022132 104401

JSR R5,WFPE ;WAIT FOR PROCEDURE ERROR

CLR ERRWRD
 TRAP C\$ESCAPE
 .WORD L10055-

.....
 : ESCAPE TEST IF ERROR

; ERROR,OR TIME OUT.

L10055:
 TRAP C\$ETST

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:***** TEST 15 *****

4845
4846
4847
4848 022134
4849
4850
4851
4852
4853
4854
4855
4856 022134
4857
4858 022134 004737 004522
4859 022140 004737 004244
4860
4861 022144 005037 002402
4862 022150 104410
4863 022152 000212
4864
4865
4866
4867
4868 022154 022737 000003 002476
4869 022162 001011
4870 022164 012704 000104
4871 022170 012703 000021
4872 022174 004537 003162
4873
4874 022200 005737 002402
4875 022204 100467
4876
4877 022206 142777 000010 160226
4878
4879 022214 004737 004244
4880 022220 004737 004244
4881 022224 022737 000004 002476
4882 022232 001020
4883 022234 032777 000200 160202
4884 022242 001414
4885 022244 012737 000304 002410
4886 022252 004537 003016
4887
4888 022256 005037 002402
4889 022262 104410
4890 022264 000100
4891
4892
4893
4894 022266 042777 000200 160150
4895 022274 052777 000200 160136
4896 022302 004537 002732
4897
4898 022306 005037 002402
4899 022312 104410
4900 022314 000050

```

.SBTTL :***** TEST 16 *****
.SBTTL * MODE DEF ,MODE DEF CHANGE DUPLEX ONLY.
ZZ
:*
:*
:* THIS CHECKS THAT YOU CAN CHANGE THE DUPLEX PORTION
:* OF A MODE DEF
:*
.SBTTL :***** TEST 16 *****
T16::

JSR PC,MIN' :MC,MODE DEF(CONT/FD)
JSR PC,WA,1;0 :DELAY

CLR ERRWRD
TRAP C$ESCAPE
.WORD L10056-.

; JUMP TO END OF TEST IF ERROR

CMP #3,TSTCON :IS IT REMOTE MODEM
BNE 2$ :IF NOT THEN GO TO 2A
MOV #104,R4
MOV #21,R3
JSR R5,CONTIN : WRITE MODEM WITH CORRECT
: TYPE OF LOOP CODE

TST ERRWRD
BMI 10$ :EXIT IF ERROR

2$: BICB #BIT3,@BSEL1 :CLEAR LU LOOP

JSR PC,WAIT50 :WAIT A WHILE
JSR PC,WAIT50
CMP #4,TSTCON
BNE 20$ :IF LOOPBACK GO TO 20
BIT #RDO,@BSEL2 :ELSE SEE IF READY OUT
BEQ 20$ :IF NOT GO TO 20
MOV #304,PERR
JSR R5,WFPD :WAIT FOR PROCEDURE ERROR

CLR ERRWRD
TRAP C$ESCAPE
.WORD L10056-.

: ESCAPE TEST IF ERROR
:
:
:
20$: BIC #RDO,@BSEL2 :CLEAR OUTPUT
BIS #RQI,@BSEL0 :SET REQUEST
JSR R5,WRDI :WAIT FOR RDI TO SET

CLR ERRWRD :CLEAR ERROR
TRAP C$ESCAPE
.WORD L10056-.

```

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***** TEST 16 *****

4901
 4902
 4903
 4904 022316 043777 000200 160114
 4905 022324 112777 000004 160122
 4906 022332 112777 000002 160104
 4907 022340 004737 004244
 4908 022344 032777 000200 160072
 4909 022352 001404
 4910 022354 104455
 4911 022356 000050
 4912 022360 012516
 4913 022362 010422
 4914 022364
 4915 022364
 4916 022364 104401
 4917

TIME OUT OR READY ERRORS REPORT THIS PC

```

BIC R01,@BSEL0 ;NO MORE REQUESTS
MOVB #04,@BSEL6 ;CONT/FD FOR MODE
MOVB #02,@BSEL2 ;DO MODE DEF
JSR PC,WAIT50 ;DELAY A WHILE
BIT #RDO,@BSEL2 ;IS RDO SET
BEQ 10$ ;BRANCH IF NOT
TRAP C$ERDF
.WORD 40
.WORD MEF30
.WORD ERR32

```

10\$:
L10056:

TRAP C\$ETST

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:***** TEST 17 *****

4918
4919
4920 022366
4921
4922
4923
4924
4925
4926
4927
4928
4929
4930
4931 022366
4932 022366 012737 000040 002362
4933 022374 032737 000003 002472
4934 022402 001403
4935 022404 012737 000014 002362
4936 022412
4937
4938 022412 112737 000161 002360
4939 022420 112737 000161 002364
4940 022426 063737 002362 002364
4941
4942 022434 004737 004522
4943
4944 022440 005037 002402
4945 022444 104410
4946 022446 000150
4947
4948
4949
4950 022450
4951 022450 112703 000001
4952 022454 004537 003162
4953
4954
4955
4956
4957 022460 005037 002402
4958 022464 104410
4959 022466 000130
4960
4961
4962
4963 022470 005237 002360
4964 022474 023737 002364 002360
4965 022502 001362
4966
4967 022504
4968 022504 112703 000001
4969 022510 004537 003162
4970
4971
4972
4973

```

.SBTTL :***** TEST 17 *****
.SBTTL *ROM FUNC. TEST. VERIFY THAT MAX TRIBS CAN BE ESTABLISHED
ZZ
:*ROM FUNCTION TEST-ESTABLISHING TRIBS-
:* THIS TEST WILL ESTABLISH MAX TRIBS
:* THEN TRY TO ESTABLISH MAX+1 TRIBS
:* AND CHECK FOR PROCEDURE ERROR.
:* THE TEST ALSO CHECKS FOR PROCEDURE
:* ERROR WHEN TRYING TO ESTABLISH AN
:* ALREADY ESTABLISHED TRIB.
.SBTTL :***** TEST 17 *****

T17::
MOV #32.,TRIBMX ;SET MAX TRIB TO 32
BIT #3,OPTYP ;IS THIS DMV
BEQ XX ;IF NOT BRANCH
MOV #12.,TRIBMX ;ELSE SET THE MAX TO 12

XX:
MOVB #161,TRIBN ;NUMBER OF TRIBUTARY,
MOVB #161,TRIBH ;START TRIB HIGH AT SAME AS TRIBN
ADD TRIBMX,TRIBH ;ADD MAX NUMBER OF TRIBS TO TRIBH

JSR PC,MINITS ;INITIALIZE

CLR ERRWRD
TRAP C$ESCAPE
.WORD L10057-.
: JUMP TO END OF TEST IF ERROR
:
:
30$:
MOVB #01,R3 ;SET ESTABLISH TRIB
JSR R5,CONTIN ;
:
: READY OR TIME OUT ERRORS REPORT THIS PC
:
:
CLR ERRWRD
TRAP C$ESCAPE
.WORD L10057-.
: JUMP TO END OF TEST IF ERROR
:
:
INC TRIBN ;UPDATE TRIB#
CMP TRIBH, TRIBN ;ONLY ALLOW MAX TRIBS TO BE SET
BNE 30$

37$:
MOVB #01, R3 ;ESTABLISH MAX +1 TRIBS
JSR R5,CONTIN ; DO IT
:
: READY OR TIME OUT ERRORS REPORT THIS PC
:
:

```


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***** TEST 17 *****

4974 022514 005037 002402

4975 022520 104410

4976 022522 000074

4977

4978

4979

4980

4981 022524 012737 000114 002410

4982

4983

4984 022532 004537 003016

4985

4986 022536 005037 002402

4987 022542 104410

4988 022544 000052

4989

4990

4991

4992 022546 60\$:

4993 022546 042777 000200 157670

4994 022554 005337 002360

4995 022560 112703 000001

4996 022564 004537 003162

4997

4998

4999

5000

5001 022570 005037 002402

5002 022574 104410

5003 022576 000020

5004

5005

5006

5007 022600 112737 000116 002410

5008

5009

5010 022606 004537 003016

5011 022612 005037 002402

5012 022616

5013 022616

5014 022616 104401

5015

5016

CLR ERRWRD
TRAP C\$ESCAPE
.WORD L10057-

.....
: JUMP TO END OF TEST IF ERROR
.....

MOV #114, PERR :SHOULD READ 114, PROCEDURE ERROR
:TRYING TO ESTABLISH MAX+1 TRIBUTARIES

JSR R5,WFPE :WAIT FOR PROCEDURE ERROR

CLR ERRWRD
TRAP C\$ESCAPE
.WORD L10057-

.....
: ESCAPE TEST IF ERROR
.....

BIC #RDO,@BSEL2 :CLEAR PDO
DEC TRIBN :DEC TRIB NUMBER
MOVB #01, R3 :SET ESTABLISH TRIB
JSR R5,CONTIN :DO IT

.....
: READY OR TIME OUT ERRORS REPORT THIS PC
.....

CLR ERRWRD
TRAP C\$ESCAPE
.WORD L10057-

.....
: JUMP TO END OF TEST IF ERROR
.....

MOVB #116, PERR :SHOULD BE PROCEDURE ERROR
: OF 116 ESTABLISH ALREADY
:ESTABLISHED TRIB.
:GO CHECK FOR PROCEDURE ERROR

JSR R5,WFPE
CLR ERRWRD

70\$:
L10057:
TRAP C\$ETST

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***** TEST 18 *****

```

5017 .SBTTL :***** TEST 18 *****
5018 .SBTTL * READ/WRITE TSS TEST
5019 022620 ZZ
5020 :*
5021 :*
5022 :* THIS TEST CHECKS THAT A TRIB STATUS SLOT CAN
5023 :* BE WRITTEN AND READ
5024 :*
5025 :*-
5026 .SBTTL :***** TEST 18 *****
5027 022620 T18::
5028 022620 012737 000030 002412 MOV #30,TSSADD ;START ADD AT 30
5029 022626 005002 NEWSLT: CLR R2 ;CLEAR R2
5030
5031 022630 004737 004522 NEWPAT: JSR PC,MINITS ;MASTER CLEAR MODE DEF
5032
5033 022634 005037 002402 CLR ERRWRD
5034 022640 104410 TRAP C$ESCAPE
5035 022642 000240 .WORD L10060-.
5036 :*
5037 :* JUMP TO END OF TEST IF ERROR
5038 :*
5039
5040 022644 012737 000055 002360 MOV #55,TRIBN ;PUT 55 IN TRIB NUMBER
5041 022652 012703 000001 MOV #01,R3 ;THIS WILL ESTABLISH
5042 022656 004537 003162 JSR R5,CONTIN ; A TRIB
5043 :*
5044 :* TIME OUT AND READY ERRORS REPORT THIS PC
5045 :*
5046
5047 022662 005037 002402 CLR ERRWRD
5048 022666 104410 TRAP C$ESCAPE
5049 022670 000212 .WORD L10060-.
5050 :*
5051 :* JUMP TO END OF TEST IF ERROR
5052 :*
5053
5054 022672 016204 033706 MOV DATLST(R2),R4 ;PATTERN TO BE WRITTEN
5055 022676 013703 002412 MOV TSSADD,R3 ;WRITE TO TSS
5056 022702 052703 000200 BIS #BIT7,R3 ;SET THE WRITE BIT
5057 022706 004537 003162 JSR R5,CONTIN ; GO DO IT!!!
5058 :*
5059 :* TIME OUT AND READY ERRORS REPORT THIS PC
5060 :*
5061
5062 022712 005037 002402 CLR ERRWRD
5063 022716 104410 TRAP C$ESCAPE
5064 022720 000162 .WORD L10060-.
5065 :*
5066 :* JUMP TO END OF TEST IF ERROR
5067 :*
5068
5069 022722 013703 002412 MOV TSSADD,R3 ;SET UP :0 READ SLOT
5070 022726 052703 000040 BIS #BIT5,R3 ;SET THE READ BIT
5071 022732 004537 003162 JSR R5,CONTIN ;DO CONTROL IN
5072 :*

```

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***** TEST 18 *****

```

5073      ; TIME OUT AND READY ERRORS REPORT THIS PC
5074      ; : : : : :
5075      ; : : : : :
5076 022736 005037 002402      CLR      ERRWRD
5077 022742 104410      TRAP    C$ESCAPE
5078 022744 000136      .WORD  L10060-.
5079      ; : : : : :
5080      ; JUMP TO END OF TEST IF ERROR
5081      ; : : : : :
5082 022746 012737 000002 002336  MOV     #02,$GDDAT      ; COMPARE FOR A INFO OUT
5083 022754 004537 003242      JSR     R5,GETOUT      ; CHECK FOR INFO OUT AND
5084      ; : : : : :
5085      ; CORRECT TRIB NO. IF ERROR
5086      ; REPORT THIS PC.
5086 022760 005037 002402      CLR      ERRWRD
5087 022764 104410      TRAP    C$ESCAPE
5088 022766 000114      .WORD  L10060-.
5089      ; : : : : :
5090      ; JUMP TO END OF TEST IF ERROR
5091      ; : : : : :
5092      ; : : : : :
5093 022770 013737 002412 002336  MOV     TSSADD,$GDDAT  ;MOVE EXPECTED ADDRESS TO GDDAT
5094 022776 052737 000040 002336  BIS     #BIT5,$GDDAT  ;SET THE READ TSS BIT IN EXPECTED
5095 023004 004537 003372      JSR     R5,GETRKY     ; GO CHECK FOR GOOD RETURN KEY
5096      ; : : : : :
5097 023010 005037 002402      CLR      ERRWRD
5098 023014 104410      TRAP    C$ESCAPE
5099 023016 000064      .WORD  L10060-.
5100      ; : : : : :
5101      ; JUMP TO END OF TEST IF ERROR
5102      ; : : : : :
5103      ; : : : : :
5104 023020 016237 033706 002336 30$:  MOV     DATLST(R2),$GDDAT ;MOVE EXPECTED PATTERN
5105 023026 004537 003446      JSR     R5,GETDAT     ;GET DATA RETURNED.
5106      ; : : : : :
5107      ; IF ERROR REPORT THIS PC.
5107 023032 005037 002402      CLR      ERRWRD
5108 023036 104410      TRAP    C$ESCAPE
5109 023040 000042      .WORD  L10060-.
5110      ; : : : : :
5111      ; JUMP TO END OF TEST IF ERROR
5112      ; : : : : :
5113      ; : : : : :
5114 023042 022762 000562 033706  CMP     #562,DATLST(R2) ;ARE WE DONE WITH PATTERN
5115 023050 001404      BEQ     50$           ;IF SO DO NEXT SLOT
5116 023052 062702 000002      ADD     #2,R2         ;BUMP LIST POINTER
5117 023056 000137 022630      JMP     NEWPAT        ;GO BACK FOR THIS PATTERN.
5118 023062 022737 000037 002412 50$:  CMP     #37,TSSADD    ;IS THIS THE LAST SLOT
5119 023070 001404      BEQ     60$           ;IF SO END TEST
5120 023072 005237 002412      INC     TSSADD        ;ELSE BUMP ADD
5121 023076 000137 022626      JMP     NEWSLT        ; AND DO NEXT SLOT
5122 023102      60$:
5123      ; : : : : :
5124 023102      L10060:
5125 023102 104401      TRAP    C$ETST
5126

```

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:***** TEST 18 *****

5127
5128
5129
5130 023104
5131
5132
5133
5134
5135
5136
5137
5138 023104
5139
5140 023104 004737 004522
5141
5142 023110 005037 002402
5143 023114 104410
5144 023116 000072
5145
5146
5147
5148
5149 023120 012737 000022 002360
5150 023126 012703 000001
5151 023132 004537 003162
5152
5153
5154
5155
5156 023136 005037 002402
5157 023142 104410
5158 023144 000044
5159
5160
5161
5162
5163 023146 012703 000204
5164 023152 004537 003162
5165
5166
5167
5168
5169 023156 005037 002402
5170 023162 104410
5171 023164 000024
5172
5173
5174
5175
5176 023166 012737 000132 002410
5177 023174 004537 003016
5178
5179 023200 005037 002402
5180 023204 104410
5181 023206 000002
5182

```

.SBTTL :***** TEST 19 *****
.SBTTL *WRITE RESERVED AREA OF TSS. P.E. 132
ZZ
:
:
:* THIS TEST CHECKS FOR PROCEDURE ERROR
:* ON WRITING TO ILLEGAL SLOT
:
:*
.SBTTL :***** TEST 19 *****
T19::

JSR    PC,MINITS      ;MASTER CLEAR MODE DEF

CLR    ERRWRD
TRAP   C$ESCAPE
.WORD  L10061-.
:
: JUMP TO END OF TEST IF ERROR
:
MOV    #22,TRIBN      ;SET TRIB NUMBER TO 22
MOV    #01,R3
JSR    R5,CONTIN     ;ESTABLISH TRIB
:
: TIME OUT OR READY ERRORS REPORT THIS PC
:
CLR    ERRWRD
TRAP   C$ESCAPE
.WORD  L10061-.
:
: JUMP TO END OF TEST IF ERROR
:
MOV    #204,R3        ;SEL6=204
JSR    R5,CONTIN     ;WRITE TSS (ILLEGAL)
:
: TIME OUT OR READY ERROR REPORT THIS PC
:
CLR    ERRWRD
TRAP   C$ESCAPE
.WORD  L10061-.
:
: JUMP TO END OF TEST IF ERROR
:
MOV    #132,PERR      ;CHECK FOR PROCEDURE ERROR
JSR    R5,WFPE        ;WAIT FOR PROCEDURE ERROR

CLR    ERRWRD
TRAP   C$ESCAPE
.WORD  L10061-.
:

```

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;***** TEST 19 *****

5183
5184
5185
5186
5187
5188

023210
023210 104401

: ESCAPE TEST IF ERROR
: : : : : :

L10061: TRAP CSETST

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***** TEST 19 *****

5189
5190
5191
5192 023212
5193
5194
5195
5196
5197
5198
5199
5200 023212
5201
5202 023212 004737 004522
5203
5204 023216 005037 002402
5205 023222 104410
5206 023224 000072
5207
5208
5209
5210
5211 023226 012737 000077 002360
5212 023234 012703 000001
5213 023240 004537 003162
5214
5215
5216
5217
5218 023244 005037 002402
5219 023250 104410
5220 023252 000044
5221
5222
5223
5224
5225 023254 012703 000106
5226 023260 004537 003162
5227
5228
5229
5230
5231 023264 005037 002402
5232 023270 104410
5233 023272 000024
5234
5235
5236
5237
5238 023274 012737 000132 002410
5239
5240 023302 004537 003016
5241
5242 023306 005037 002402
5243 023312 104410
5244 023314 000002

```

.SBTTL ***** TEST 20 *****
.SBTTL *READ CLEAR WRONG ADD P.E.132
ZZ
:*
:*
:* THIS TEST CHECKS FOR PROCEDURE ERROR
:* FOR RD/CLR TSS WRONG ADD(132)
:*
:*-
.SBTTL ***** TEST 20 *****
T20::
JSR PC,MINITS ;MASTER CLEAR MODE DEF
CLR ERRWRD
TRAP C$ESCAPE
.WORD L10062-.
:JUMP TO END OF TEST IF ERROR
:
MOV #77,TRIBN ;MAKE TRIBN 77
MOV #01,R3 ;ESTABLISH TRIB
JSR R5,CONTIN
: TIME OUT OR READY ERROR REPORTS THIS PC
:
CLR ERRWRD
TRAP C$ESCAPE
.WORD L10062-.
:JUMP TO END OF TEST IF ERROR
:
MOV #106,R3
JSR R5,CONTIN ;READ/CLEAR ADD 6
: TIME OUT OR READY ERRORS REPORT THIS PC
:
CLR ERRWRD
TRAP C$ESCAPE
.WORD L10062-.
:JUMP TO END OF TEST IF ERROR
:
MOV #132,PERR ;SET PROCEDURE ERROR TO
;BE CHECKED TO 132
JSR R5,WFPD ;WAIT FOR PROCEDURE ERROR
CLR ERRWRD
TRAP C$ESCAPE
.WORD L10062-.

```

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;***** TEST 20 *****

5245
5246
5247
5248
5249 023316
5250 023316 104401

.....
: ESCAPE TEST IF ERROR
:.....

L10062: TRAP CSETST

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:***** TEST 20 *****

5251
5252
5253
5254
5255 023320
5256
5257
5258
5259
5260
5261
5262 023320
5263
5264 023320 004737 004522
5265
5266 023324 005037 002402
5267 023330 104410
5268 023332 000100
5269
5270
5271
5272
5273 023334 012737 000003 002360
5274 023342 012703 000001
5275 023346 004537 003162
5276
5277
5278
5279
5280 023352 005037 002402
5281 023356 104410
5282 023360 000052
5283
5284
5285
5286
5287 023362 012703 000107
5288 023366 004537 003162
5289
5290
5291
5292
5293 023372 005037 002402
5294 023376 104410
5295 023400 000032
5296
5297
5298
5299
5300 023402 004737 004244
5301 023406 004737 004244
5302 023412 032777 000200 157024
5303 023420 001004
5304
5305 023422 104455
5306 023424 000051

```

.SBTTL :***** TEST 21 *****
.SBTTL *READ/CLEAR TSS
ZZ
:*
:*
:* THIS TEST THAT READ CLEAR WORKS
:*
:*-
.SBTTL :***** TEST 21 *****
T21::
JSR PC,MINITS ;MASTER CLEAR MODE-DEF

CLR ERRWRD
TRAP C$ESCAPE
.WORD L10063-.
: JUMP TO END OF TEST IF ERROR
:

MOV #03,TRIBN ;SET TRIB NUMBER
MOV #01,R3
JSR R5,CONTIN ;ESTABLISH TRIB
: TIME OUT OR READY ERRORS REPORT THIS PC
:

CLR ERRWRD
TRAP C$ESCAPE
.WORD L10063-.
: JUMP TO END OF TEST IF ERROR
:

MOV #107,R3
JSR R5,CONTIN ;READ/CLEAR ADD 7
: TIME OUT OR READY ERRORS REPORT THIS PC
:

CLR ERRWRD
TRAP C$ESCAPE
.WORD L10063-.
: JUMP TO END OF TEST IF ERROR
:

JSR PC,WAIT50
JSR PC,WAIT50 ;DELAY
BIT #RDO,@BSEL2
BNE 10$ ;IF RDO THEN END
;ELSE ERROR

TRAP C$ERDF
.WORD 41

```


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;***** TEST 21 *****

5307 023426 011630
5308 023430 007552
5309
5310 023432
5311 023432
5312 023432 104401

.WORD MRFT
.WORD ERR10
TRAP CSETST

10\$:
L10063:

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***** TEST 22 *****

5313
5314
5315 023434
5316
5317
5318
5319
5320
5321
5322 023434
5323
5324 023434
5325 023434 104402
5326
5327
5328
5329
5330 023436 005037 002412
5331 023442 005037 002360
5332 023446
5333 023446 004737 004522
5334
5335 023452 005037 002402
5336 023456 104410
5337 023460 000114
5338
5339
5340
5341
5342 023462 013703 002412
5343 023466 052703 000040
5344 023472 004537 003162
5345
5346 023476 005037 002402
5347 023502 104410
5348 023504 000070
5349
5350
5351
5352
5353 023506 012737 000002 002336
5354 023514 004537 003242
5355
5356
5357 023520 005037 002402
5358 023524 104410
5359 023526 000046
5360
5361
5362
5363
5364 023530
5365 023530 013737 002412 002336
5366 023536 052737 000040 002336
5367 023544 004537 003372
5368

```

.SBTTL ***** TEST 22 *****
.SBTTL *GLOBAL STATUS SLOT TESTS
ZZ
:*
:* THIS TEST CHECKS THAT GLOBAL STATUS
:* SLOTS RESPOND TO COMMANDS
:*
:*-
.SBTTL ***** TEST 22 *****
T22::
T22.1:
TRAP CSBSUB
:READ ALL SLOTS TEST:
:
:
5$: CLR TSSADD ;CLEAR ADD
CLR TRIBN ;MAKE TRIB #0(GLOBAL COMM)
JSR PC,MINITS ;MASTER CLEAR INIT
CLR ERRWRD
TRAP C$ESCAPE
.WORD L10065-.
: JUMP TO END OF TEST IF ERROR
:
MOV TSSADD,R3
BIS #BITS,R3 ;SET UP READ GSS COMMAND
JSR R5,CONTIN ;GO DO IT
CLP ERRWRD
TRAP C$ESCAPE
.WORD L10065-.
: JUMP TO END OF TEST IF ERROR
:
MOV #2,$GDDAT
JSR R5,GETOUT ;CHECK CORRECT TYPE AND
; TRIB NO.
CLR ERRWRD
TRAP C$ESCAPE
.WORD L10065-.
: ESCAPE SUB IF ERROR
:
10$: MOV TSSADD,$GDDAT
BIS #BITS,$GDDAT ;SET THE READ TSS BIT
JSR R5,GETRKY ;CHECK RETURN KEY

```

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***** TEST 22 *****

```

5369 023550 005037 002402          CLR   ERRWRD
5370 023554 104410          TRAP  C$ESCAPE
5371 023556 000016          .WORD L10065-.
5372          :.....:
5373          : GO TO END OF SUB IF ERROR
5374          :.....:
5375
5376
5377 023560 005237 002412          30$:  INC   TSSADD          ;BUMP ADDRESS
5378 023564 022737 000040 002412  CMP   #40,TSSADD        ; ARE WE ALL DONE
5379 023572 001325          BNE   5$                ; IF NOT GO BACK
5380          :.....:                ;ELSE END SUBTEST
5381 023574          L10065:
5382 023574 104403          TRAP  C$ESUB
5383 023576          T22.2:
5384 023576 104402          TRAP  C$BSUB
5385          :.....:
5386          : WRITE ALL SLOTS TEST :
5387          :.....:
5388
5389 023600 012737 000034 002412          MOV   #34,TSSADD        ;START WITH FIRST WRITABLE ADD
5390 023606 005037 002360          CLR   TRIBN            ;AND TRIBN AT ZERO
5391 023612 004737 004522          40$:  JSR   PC,MINITS      ;MASTER CLEAR INT
5392
5393 023616 005037 002402          CLR   ERRWRD
5394 023622 104410          TRAP  C$ESCAPE
5395 023624 000226          .WORD L10066-.
5396          :.....:
5397          : JUMP TO END OF SUB IF ERROR
5398          :.....:
5399
5400 023626 013703 002412          45$:  MOV   TSSADD,R3
5401 023632 052703 000200          BIS   #BIT7,R3          ;WRITE TSS(GLOBAL BECAUSE TRIBN=0)
5402 023636 013704 002412          MOV   TSSADD,R4        ;PUT IN ADD FOR DATA
5403 023642 004537 003162          JSR   R5,CONTIN        ;DO IT
5404
5405 023646 005037 002402          CLR   ERRWRD
5406 023652 104410          TRAP  C$ESCAPE
5407 023654 000176          .WORD L10066-.
5408          :.....:
5409          : JUMP TO END OF SUB IF ERROR
5410          :.....:
5411
5412 023656 005237 002412          INC   TSSADD            ;BUMP ADD
5413 023662 022737 000040 002412  CMP   #40,TSSADD        ;DONE ALL
5414 023670 001356          BNE   45$              ;NO GO FINISH!!!
5415 023672 012703 000227          MOV   #227,R3
5416 023676 013704 002412          MOV   TSSADD,R4
5417 023702 004537 003162          JSR   R5,CONTIN        ; TRY TO WRITE BAD ADDRESS
5418
5419 023706 005037 002402          CLR   ERRWRD
5420 023712 104410          TRAP  C$ESCAPE
5421 023714 000136          .WORD L10066-.
5422          :.....:
5423          : JUMP TO END OF SUB IF ERROR
5424          :.....:

```

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***** TEST 22 *****

```

5425 023716 012737 000132 002410      MOV    #132,PERR
5426 023724 004537 003016              JSR    R5,WFPE          ;WAIT FOR PROCEDURE ERROR
5427
5428 023730 005037 002402      CLR    ERRWRD
5429 023734 104410      TRAP  C$ESCAPE
5430 023736 000222      .WORD L10064-.
5431      :::::
5432      ; ESCAPE TEST IF ERROR
5433      :::::
5434
5435 023740 042777 000200 156476 GSSREP: BIC    #RDO,@BSEL2      ;CLEAR OUTPUT
5436 023746 005337 002412      DEC    TSSADD          ;GET TSSADD BACK TO MAX
5437 023752 013703 002412      MOV    TSSADD,R3
5438 023756 052703 000040      BIS    #BITS,R3       ;SET READ BIT
5439 023762 004537 003162      JSR    R5,CONTIN      ;READ TSS
5440
5441 023766 005037 002402      CLR    ERRWRD
5442 023772 104410      TRAP  C$ESCAPE
5443 023774 000056      .WORD L10066-.
5444      :::::
5445      ; JUMP TO END OF SUB IF ERROR
5446      :::::
5447
5448 023776 012737 000002 002336      MOV    #2,$GDDAT
5449 024004 004537 003242      JSR    R5,GETOUT      ;CHECK FOR INFOR. OUT AND
5450
5451 024010 005037 002402      CLR    ERRWRD
5452      ;CORRECT TRIBN.
5453 024014 104410      TRAP  C$ESCAPE
5454 024016 000034      .WORD L10066-.
5455      :::::
5456      ; JUMP TO END OF SUB IF ERROR
5457      :::::
5458 024020 013737 002412 002336 60$:  MOV    TSSADD,$GDDAT
5459 024026 004537 003446      JSR    R5,GETDAT      ;CHECK FOR GOOD DATA
5460
5461 024032 005037 002402      CLR    ERRWRD
5462 024036 104410      TRAP  C$ESCAPE
5463 024040 000012      .WORD L10066-.
5464      :::::
5465      ;JUMP TO END OF SUB IF ERROR
5466      :::::
5467
5468 024042 022737 000034 002412 70$:  CMP    #34,TSSADD      ;ARE WE ALL DONE
5469 024050 001333      BNE    GSSREP          ;GO BACK IF NOT
5470
5471      L10066:
5472      T22.3:  TRAP  C$ESUB
5473      TRAP  C$BSUB
5474      TRAP  C$BSUB
5475      :::::
5476      ; READ CLEAR SLOT TEST :
5477      :::::
5478
5479 024056 004737 004522      JSR    PC,MINITS      ;MASTER CLEAR MODE DEF
5480

```

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***** TEST 22 *****

5481 024062 005037 002402
5482 024066 104410
5483 024070 000066
5484
5485
5486
5487
5488 024072 005037 002360
5489 024076 012703 000117
5490 024102 004537 003162
5491
5492 024106 005037 002402
5493 024112 104410
5494 024114 000042
5495
5496
5497
5498
5499 024116 012737 000002 002336
5500 024124 004537 003242
5501
5502 024130 005037 002402
5503 024134 104410
5504 024136 000020
5505
5506
5507
5508
5509 024140 012737 000117 002336
5510 024146 004537 003372
5511
5512 024152 005037 002402
5513 024156
5514 024156 104403
5515 024160
5516 024160 104401
5517

CLR ERRWRD
TRAP C\$ESCAPE
.WORD L10067-
:JUMP TO END OF SUB IF ERROR
:TRAP C\$ESCAPE
CLR TRIBN
MOV #117,R3
JSR R5,CONTIN ;READ CLEAR SLOT

CLR ERRWRD
TRAP C\$ESCAPE
.WORD L10067-
:JUMP TO END OF SUB IF ERROR

MOV #02,\$GDDAT
JSR R5,GETOUT ;CHECK FOR INFO OUT
;AND CORRECT TRIBN.

CLR ERRWRD
TRAP C\$ESCAPE
.WORD L10067-
:JUMP TO END OF SUB IF ERROR

MOV #117,\$GDDAT
JSR R5,GETRKY ;CHECK FOR CORRECT RETURN KEY

L10067: CLR ERRWRD
L10064: TRAP C\$ESUB
TRAP C\$ETST

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***** TEST 22 *****

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024162

024162

024162 004737 004522
024166 005037 002402
024172 104410
024174 000412
024176 012737 000036 002360
024204 012703 000001
024210 004537 003162

024214 005037 002402
024220 104410
024222 000364
024224 012703 000003
024230 004537 003162

024234 005037 002402
024240 104410
024242 000344
024244 012737 000001 002336
024252 004537 003242

024256 005037 002402
024262 104410
024264 000322
024266 012737 000024 002336
024274 004537 003670
024300 005037 002402
024304 104410
024306 000300

024310 042777 000200 156126 20\$:
024316 052777 000200 156114

024324 004537 002732

.SBTTL ***** TEST 23 *****

.SBTTL *HALT TRIB COMMAND TEST

ZZ

:*

:*

:* THIS TEST CHECKS THE HALT TRIB COMMAND

:* AND THEN CHECKS THAN A 2ND HALT TRIB

:* DOES NOT CAUSE A CONTROL OUT.

:*-

.SBTTL ***** TEST 23 *****

T23: :

JSR PC,MINITS ;MASTER CLEAR -MODE DEF
CLR ERRWRD ;IF ERROR GO TO END TEST

TRAP C\$ESCAPE

.WORD L10070-

MOV #36,TRIBN ;SET TRIBN

MOV #01,R3

JSR R5,CONTIN ;ESTABLISH TRIB

:IF TIME OUT OR READY ERRORS THE PROGRAM WILL

:REPORT THIS PC AS FAILING PC

CLR ERRWRD ; JUMP TO END OF TEST IF ERROR

TRAP C\$ESCAPE

.WORD L10070-

MOV #03,R3

JSR R5,CONTIN ;ISTRT TRIB

:IF TIME OUT OR READY ERRORS THE PROGRAM WILL

:REPORT THIS PC AS FAILING PC

CLR ERRWRD ; JUMP TO END OF TEST IF ERROR

TRAP C\$ESCAPE

.WORD L10070-

MOV #01,\$GDDAT

JSR R5,GETOUT ;CHECK

:FOR CONTROL OUT AND

:CORRECT TRIBN

:IF ERROR REPORT

:THIS PC AND ESCAPE TEST

: JUMP TO END OF TEST IF ERROR

CLR ERRWRD

TRAP C\$ESCAPE

.WORD L10070-

MOV #24,\$GDDAT

JSR R5,GETOC

;CHECK FOR GOOD OUTPUT CODE

: JUMP TO END OF TEST IF ERROR

CLR ERRWRD

TRAP C\$ESCAPE

.WORD L10070-

: QUE REC BUFFER WITH 100 DECIMAL LOCATIONS

BIC #RDO,@BSEL2 ;CLEAR READY OUT

BIS #RQI,@BSELO ;SET REQUEST IN

;WAIT FOR READY IN

;WAIT FOR RDI TO SET

JSR R5,WRDI

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***** TEST 23 *****

```

5574 024330 005037 002402      CLR      ERRWRD      ;CLEAR ERROR
5575 024334 104410              TRAP     C$ESCAPE
5576 024336 000250              .WORD   L10070-
5577 024340 042777 000200 156072 BIC      #RQ1,@BSEL0  ;CLEAR REQUEST IN
5578 024346 012777 033726 156074 MOV      #RECBU1,@BSEL4 ;
5579 024354 012777 000144 156072 MOV      #100.,@BSEL6
5580 024362 113777 002360 156056 MOV     TRIBN,@BSEL3
5581 024370 105077 156050      CLR     @BSEL2      ;QUE UP BUFF
5582 024374 012703 000005      MOV     #05,R3
5583 024400 004537 003162      JSR     R5,CONTIN   ;HALT TRIB
5584                      ;IF TIME OUT OR READY ERRORS THE PROGRAM WILL
5585                      ;REPORT THIS PC AS FAILING PC
5586
5587 024404 005037 002402      CLR      ERRWRD      ; JUMP TO END OF TEST IF ERROR
5588 024410 104410              TRAP     C$ESCAPE
5589 024412 000174              .WORD   L10070-
5590 024414 012737 000003 002336 MOV      #03,$GDDAT
5591 024422 004537 003242      JSR     R5,GETOUT   ;CHECK FOR BUFFER UNUSED
5592                      ;AND CORRECT TRIBN.
5593 024426 005037 002402      CLR      ERRWRD      ; JUMP TO END OF TEST IF ERROR
5594 024432 104410              TRAP     C$ESCAPE
5595 024434 000152              .WORD   L10070-
5596 024436 012737 000144 002336 MOV      #100.,$GDDAT
5597 024444 004537 003514      JSR     R5,GETCC    ;CHECK FOR GOOD CHAR.COUNT
5598 024450 005037 002402      CLR      ERRWRD      ; JUMP TO END OF TEST IF ERROR
5599 024454 104410              TRAP     C$ESCAPE
5600 024456 000130              .WORD   L10070-
5601 024460 012737 033726 002336 MOV      #RECBU1,$GDDAT
5602 024466 004537 003576      JSR     R5,GETBA    ;CHECK FOR GOOD BUFF. ADD.
5603 024472 005037 002402      CLR      ERRWRD      ; JUMP TO END OF TEST IF ERROR
5604 024476 104410              TRAP     C$ESCAPE
5605 024500 000106              .WORD   L10070-
5606 024502 042777 000200 155734 23$: BIC      #RDO,@BSEL2  ;CLEAR OUTPUT AND LOOK FOR NEXT
5607 024510 012737 000002 002336 MOV      #2,$GDDAT
5608 024516 004537 003242      JSR     R5,GETOUT   ;NEXT GET INFO OUT
5609 024522 005037 002402      CLR      ERRWRD      ; JUMP TO END OF TEST IF ERROR
5610 024526 104410              TRAP     C$ESCAPE
5611 024530 000056              .WORD   L10070-
5612 024532 012737 000020 002336 MOV      #20,$GDDAT
5613 024540 004537 003372      JSR     R5,GETRKY   ;CHECK FOR GOOD RETURN KEY
5614                      ; BUFFER RETURN COMPLETE
5615 024544 005037 002402      CLR      ERRWRD      ; JUMP TO END OF TEST IF ERROR
5616 024550 104410              TRAP     C$ESCAPE
5617 024552 000034              .WORD   L10070-
5618 024554 042777 000200 155662 25$: BIC      #RDO,@BSEL2  ;CLEAR OUTPUT
5619 024562 004737 004244      JSR     PC,WAIT50
5620 024566 004737 004244      JSR     PC,WAIT50   ;WAIT A WHILE
5621 024572 012703 000000      MOV     #0,R3       ;DO A NO REQUEST
5622 024576 004537 003162      JSR     R5,CONTIN
5623 024602 005037 002402      CLR      ERRWRD
5624                      ;IF ERROR OCCURS THE SECOND
5625                      ;HALT TRIB CAUSED AN OUTPUT
5626                      ;AND SHOULD NOT HAVE.
5626 024606              L10070:
5627 024606 104401              TRAP     C$ETST
    
```

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***** TEST 23 *****

5628
5629
5630
5631 024610
5632
5633
5634
5635
5636 024610
5637
5638 024610 004737 004522
5639
5640 024614 005037 002402
5641 024620 104410
5642 024622 000412
5643
5644
5645
5646
5647 024624 012737 000143 002360
5648 024632 012703 000001
5649 024636 004537 003162
5650
5651
5652
5653
5654 024642 005037 002402
5655 024646 104410
5656 024650 000364
5657
5658
5659
5660
5661 024652 012703 000041
5662 024656 004537 003162
5663
5664
5665
5666
5667 024662 005037 002402
5668 024666 104410
5669 024670 000344
5670
5671
5672
5673
5674 024672 012737 000002 002336
5675 024700 004537 003242
5676
5677
5678 024704 005037 002402
5679 024710 104410
5680 024712 000322
5681
5682
5683

```

.SBTTL ***** TEST 24 *****
.SBTTL *KILL TRIB TESTS
ZZ
:*
:* THIS TEST CHECKS THE KILL TRIB FUNCTIONS
:*
.SBTTL ***** TEST 24 *****
T24::
JSR      PC,MINITS

CLR      ERRWRD
TRAP     C$ESCAPE
.WORD    L10071-.
:
: JUMP TO END OF TEST IF ERROR
:
MOV      #143,TRIBN      ;SET TRIB NUMBER
MOV      #01,R3
JSR      R5,CONTIN      ;ESTABLISH TRIB
:
: TIME OUT OR READY ERRORS REPORT THIS P
:
CLR      ERRWRD
TRAP     C$ESCAPE
.WORD    L10071-.
:
: JUMP TO END OF TEST IF ERROR
:
MOV      #41,R3
JSR      R5,CONTIN      ;READ TRIB STATUS SLOT 1
:
: TIME OUT OR READY ERRORS REPORT THIS PC
:
CLR      ERRWRD
TRAP     C$ESCAPE
.WORD    L10071-.
:
: JUMP TO END OF TEST IF ERROR
:
MOV      #02,$GDDAT     ;SET TYPE FOR INFO OUT
JSR      R5,GETOUT      ;CHECK FOR INFO OUT AND
                        ;CORRECT TRIBN.

CLR      ERRWRD
TRAP     C$ESCAPE
.WORD    L10071-.
:
: JUMP TO END OF TEST IF ERROR
:

```


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;***** TEST 24 *****

```

5684
5685 024714 000377 155530 20$: SWAB @BSEL4 ;SWAB BYTES
5686 024720 117737 155524 002340 MOV @BSEL4,$BDDAT ;MOVE TRIB ADD TO BDDAT
5687 024726 113737 002360 002336 MOVB TRIBN,$GDDAT ;MOVE TRIB NUMBER TO GDDAT
5688 024734 123737 002336 002340 CMPB $GDDAT,$BDDAT ;COMPARE
5689 024742 001407 BEQ 30$ ;IF OK GO TO 30
5690 ;ELSE ERROR
5691 024744 012737 012014 002430 MOV #M30F, CODEW
5692 024752 104455 TRAP C$ERDF
5693 024754 000052 .WORD 42
5694 024756 011506 .WORD EROIC
5695 024760 010324 .WORD ERR27
5696
5697 024762 042777 000200 155454 30$: BIC #RDO,@BSEL2 ;CLEAR OUTPUT
5698 024770 012703 000004 MOV #04,R3
5699 024774 004537 003162 JSR R5,CONTIN ;MAINT STATE TRIB
5700 ;:
5701 ;:TIME OUT OR READY ERRORS REPORT THIS PC
5702 ;:
5703
5704 025000 005037 002402 CLR ERRWRD
5705 025004 104410 TRAP C$ESCAPE
5706 025006 000226 .WORD L10071-.
5707 ;:
5708 ;: JUMP TO END OF TEST IF ERROR
5709 ;:
5710
5711 025010 012703 000002 MOV #02,R3
5712 025014 004537 003162 JSR R5,CONTIN ;KILL TRIB
5713 ;:
5714 ;:TIME OUT OR READY ERRORS REPORT THIS PC
5715 ;:
5716
5717 025020 005037 002402 CLR ERRWRD
5718 025024 104410 TRAP C$ESCAPE
5719 025026 000206 .WORD L10071-.
5720 ;:
5721 ;: JUMP TO END OF TEST IF ERROR
5722 ;:
5723
5724 025030 012737 000112 002410 MOV #112,PERR ;CHECK FOR KILL TO UNHALTED
5725 025036 004537 003016 JSR R5,W$PE ;WAIT FOR PROCEDURE ERROR
5726
5727 025042 005037 002402 CLR ERRWRD
5728 025046 104410 TRAP C$ESCAPE
5729 025050 000164 .WORD L10071-.
5730 ;:
5731 ;:ESCAPE TEST IF ERROR
5732 ;:
5733 025052 042777 000200 155364 BIC #RDO,@BSEL2 ;CLEAR OUTPUT
5734 025060 012703 000005 MOV #05,R3
5735 025064 004537 003162 JSR R5,CONTIN ;HALT TRIB
5736 ;:
5737 ;:TIME OUT OR READY ERRORS REPORT THIS PC
5738 ;:
5739

```

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***** TEST 24 *****

```

5740 025070 005037 002402      CLR      ERRWRD
5741 025074 104410              TRAP     C$ESCAPE
5742 025076 000136              .WORD   L10071-.
5743                          :.:.:.:.
5744                          : JUMP TO END OF TEST IF ERROR
5745                          :.:.:.:.
5746
5747 025100 012737 000002 002336  MOV      #2,$GDDAT
5748 025106 004537 003242      JSR      R5,GETOUT      ;CHECK FOR INFO OUT
5749                          ;AND CORRECT PC
5750
5751 025112 005037 002402      CLR      ERRWRD
5752 025116 104410              TRAP     C$ESCAPE
5753 025120 000114              .WORD   L10071-.
5754                          :.:.:.:.
5755                          : JUMP TO END OF TEST IF ERROR
5756                          :.:.:.:.
5757
5758 025122 012737 000020 002336  MOV      #20,$GDDAT
5759 025130 004537 003372      JSR      R5,GETRKY      ;CHECK FOR GOOD RETURN KEY
5760
5761
5762 025134 005037 002402      CLR      ERRWRD
5763 025140 104410              TRAP     C$ESCAPE
5764 025142 000072              .WORD   L10071-.
5765                          :.:.:.:.
5766                          : JUMP TO END OF TEST IF ERROR
5767                          :.:.:.:.
5768
5769 025144 042777 000200 155272 2$: BIC      #RDO,ABSEL2      ;CLEAR OUTPUT
5770 025152 012703 000002      MOV      #02,R3          ;KILL TRIB
5771 025156 004537 003162      JSR      R5,CONTIN
5772                          :.:.:.:.
5773                          : TIME OUT OR READY ERRORS REPORT THIS PC
5774                          :.:.:.:.
5775
5776 025162 005037 002402      CLR      ERRWRD
5777 025166 104410              TRAP     C$ESCAPE
5778 025170 000044              .WORD   L10071-.
5779                          :.:.:.:.
5780                          : JUMP TO END OF TEST IF ERROR
5781                          :.:.:.:.
5782
5783 025172 012703 000041      MOV      #41,R3          ;READ SLOT 1
5784 025176 004537 003162      JSR      R5,CONTIN
5785                          :.:.:.:.
5786                          : TIME OUT OR READY ERRORS REPORT THIS PC
5787                          :.:.:.:.
5788
5789 025202 005037 002402      CLR      ERRWRD
5790 025206 104410              TRAP     C$ESCAPE
5791 025210 000024              .WORD   L10071-.
5792                          :.:.:.:.
5793                          : JUMP TO END OF TEST IF ERROR
5794                          :.:.:.:.
5795

```

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***** TEST 24 *****

5796 025212 012737 000106 002410
 5797 025220 004537 003016
 5798
 5799 025224 005037 002402
 5800 025230 104410
 5801 025232 000002
 5802
 5803
 5804
 5805
 5806 025234
 5807 025234 104401
 5808
 5809

MOV #106,PERR ;CHECK FOR PROCEDURE 106 ERROR
 JSR R5,WFPE ;WAIT FOR PROCEDURE ERROR

 CLR ERRWRD
 TRAP C\$ESCAPE
 .WORD L10071-
 :
 :
 : ESCAPE TEST IF ERROR
 :
 :
 :
 L10071:
 TRAP C\$ETST

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:***** TEST 24 *****

5810
5811
5812
5813 025236
5814
5815
5816
5817
5818
5819
5820
5821
5822 025236
5823 025236 012702 002414
5824
5825 025242 004737 004522
5826
5827 025246 005037 002402
5828 025252 104410
5829 025254 000074
5830
5831
5832
5833
5834 025256 052777 000200 155154
5835 025264 004537 002732
5836
5837 025270 005037 002402
5838 025274 104410
5839 025276 000052
5840 025300 042777 000200 155132
5841 025306 112277 155132
5842 025312 012737 000102 002410
5843 025320 004537 003016
5844
5845 025324 005037 002402
5846 025330 104410
5847 025332 000016
5848
5849
5850
5851 025334 042777 000200 15 02
5852 025342 022702 002420
5853 025346 001335
5854
5855
5856 025350
5857 025350 104401
5858

```

.SBTTL :***** TEST 25 *****
.SBTTL *CHECK FOR PROCEDURE ERROR 102
ZZ
*
*
* THIS TEST CHECKS THAT ILLEGAL TYPE CODES
* ON INPUT COMMANDS WILL PRODUCE PROCEDURE
* ERRORS.
*
*
*
.SBTTL :***** TEST 25 *****
T25::
MOV #TYLST,R2 ;SET R2 TO START OF LIST
10$: JSR PC,MINITS ;MASTER CLEAR-MODE DEF
CLR ERRWRD ;CLEAR ERROR
TRAP C$ESCAPE
.WORD L10072-.
: JUMP TO END OF TEST IF ERROR
:
BIS #RQI,@BSELO ;SET REQUEST
JSR R5,WRDI ;WAIT FOR RDI TO SET
CLR ERRWRD ;CLEAR ERROR
TRAP C$ESCAPE
.WORD L10072-.
BIC #RQI,@BSELO ;CLEAR REQUEST
MOVB (R2)+,@BSEL2 ;DO FIRST BAD CODE
MOV #102,PERR
JSR R5,WFPE ;WAIT FOR PROCEDURE ERROR
CLR ERRWRD
TRAP C$ESCAPE
.WORD L10072-.
: ESCAPE TEST IF ERROR
:
BIC #RDO,@BSEL2 ;CLEAR READY OUT
CMP #TYEND,R2 ;IS IT END
BNE 10$ ;IF NOT GO BACK

L10072: TRAP C$ETST

```

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***** TEST 25 *****

5859
5860
5861
5862 025352
5863
5864
5865
5866
5867
5868
5869
5870 025352
5871
5872 025352 004737 004522
5873
5874 025356 005037 002402
5875 025362 104410
5876 025364 000050
5877
5878
5879
5880
5881 025366 005037 002360
5882 025372 012703 000001
5883 025376 004537 003162
5884
5885 025402 005037 002402
5886 025406 104410
5887 025410 000024
5888
5889
5890
5891
5892 025412 012737 000110 002410
5893 025420 004537 003016
5894
5895 025424 005037 002402
5896 025430 104410
5897 025432 000002
5898
5899
5900
5901
5902 025434
5903 025434 104401

```

.SBTTL ***** TEST 26 *****
.SBTTL * CHECK FOR PROCEDURE ERROR 110
      ZZ
      :
      :
      : THIS TEST CHECKS FOR THE PROCEDURE ERROR
      : NON-GLOBAL COMMAND TO TRIB ADDRESS OF 0
      :
      :
.SBTTL ***** TEST 26 *****
T26::
      JSR    PC,MINITS      ;MASTER CLEAR -MODE-DEF
      CLR    ERRWRD
      TRAP   C$ESCAPE
      .WORD  L10073-.
      :
      : JUMP TO END OF TEST IF ERROR
      :
      CLR    TRIBN          ;MAKE TRIB ADDRESS 0
      MOV    #01,R3
      JSR    R5,CONTIN     ;TRY TO DO ISTRT
      CLR    ERRWRD
      TRAP   C$ESCAPE
      .WORD  L10073-.
      :
      : JUMP TO END OF TEST IF ERROR
      :
      MOV    #110,PERR     ;CHECK FOR PE OF 110
      JSR    R5,WFPE      ;WAIT FOR PROCEDURE ERROR
      CLR    ERRWRD
      TRAP   C$ESCAPE
      .WORD  L10073-.
      :
      : ESCAPE TEST IF ERROR
      :
L10073:
      TRAP   C$ETST

```

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:***** TEST 26 *****

5904
5905
5906
5907
5908 025436
5909
5910
5911
5912
5913
5914
5915
5916 025436
5917
5918
5919 025436 004737 004522
5920
5921 025442 005037 002402
5922 025446 104410
5923 025450 000212
5924
5925
5926
5927
5928 025452 012737 000003 002360
5929 025460 012703 000001
5930 025464 004537 003162
5931
5932
5933
5934
5935 025470 005037 002402
5936 025474 104410
5937 025476 000164
5938
5939
5940
5941
5942 025500 012703 000007
5943 025504 004537 003162
5944
5945 025510 005037 002402
5946 025514 104410
5947 025516 000144
5948
5949
5950
5951
5952 025520 012737 000120 002410
5953 025526 004537 003016
5954
5955 025532 005037 002402
5956 025536 104410
5957 025540 000122
5958
5959

```

.SBTTL :***** TEST 27 *****
.SBTTL * CHECKS FOR PROCEDURE ERROR 120
ZZ
:*
:*
:* THIS TEST ISSUES A CONTROL IN WITH A REQUEST
:* KEY OF 7 AND LOOKS FOR A PROCEDURE ERROR OF
:* ILLEGAL REQUEST KEY ON CONTROL IN (120)
:*
:*-
.SBTTL :***** TEST 27 *****
T27::

JSR    PC,MINITS      ;MASTER CLEAR - MODE DEF

CLR    ERRWRD
TRAP   C$ESCAPE
.WORD  L10074-.
:.....:
: JUMP TO END OF TEST IF ERROR
:.....:

MOV    #3,TRIBN
MOV    #01,R3
JSR    R5,CONTIN      ;ESTABLISH TRIB
:.....:
:TIME OUT OR READY ERRORS REPORT HERE
:.....:

CLR    ERRWRD
TRAP   C$ESCAPE
.WORD  L10074-.
:.....:
: JUMP TO END OF TEST IF ERROR
:.....:

MOV    #07,R3
JSR    R5,CONTIN      ;DO CONTROL IN WITH KEY OF 07

CLR    ERRWRD
TRAP   C$ESCAPE
.WORD  L10074-.
:.....:
: JUMP TO END OF TEST IF ERROR
:.....:

MOV    #120,PERR      ;LOOK FOR ERROR
JSR    R5,WFPE        ;WAIT FOR PROCEDURE ERROR

CLR    ERRWRD
TRAP   C$ESCAPE
.WORD  L10074-.
:.....:
: ESCAPE TEST IF ERROR

```

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***** TEST 27 *****

```

5960
5961 025542 042777 000200 154674      BIC      #RDO,@BSEL2      ;CLEAR RDO
5962 025550 012703 000017              MOV      #17,R3           ;MOV 17 TO KEY WORD
5963 025554 004537 003162              JSR      R5,CONTIN       ;DO CONTROL IN WITH KEY OF 17
5964
5965 025560 005037 002402              CLR      ERRWRD
5966 025564 104410              TRAP    C$ESCAPE
5967 025566 000074              .WORD   L10074-.
5968
5969              : JUMP TO END OF TEST IF ERROR
5970
5971
5972 025570 012737 000120 002410      MOV      #120,PERR       ;LOOK FOR ERROR
5973 025576 004537 003016              JSR      R5,W:PE        ;WAIT FOR PROCEDURE ERROR
5974
5975 025602 005037 002402              CLR      ERRWRD
5976 025606 104410              TRAP    C$ESCAPE
5977 025610 000052              .WORD   L10074-.
5978
5979              : ESCAPE TEST IF ERROR
5980
5981 025612 042777 000200 154624      BIC      #RDO,@BSEL2      ;CLEAR OUTPUT
5982 025620 005003              CLR      R3
5983 025622 004537 003162              JSR      R5,CONTIN       ;DO A NO REQUEST
5984
5985 025626 005037 002402              CLR      ERRWRD
5986 025632 104410              TRAP    C$ESCAPE
5987 025634 000026              .WORD   L10074-.
5988
5989              : JUMP TO END OF TEST IF ERROR
5990
5991
5992 025636 004737 004244              JSR      PC,WAIT50       ;THEN DELAY
5993 025642 032777 000200 154574      BIT      #RDO,@BSEL2
5994 025650 001404              BEQ     10$              ;IF NOT SET THEN END
5995
5996 025652 104455              TRAP    C$ERDF          ;ELSE ERROR
5997 025654 000053              .WORD   43
5998 025656 012516              .WORD   MEF30
5999 025660 010422              .WORD   ERR32
6000 025662
6001 025662
6002 025662 104401
6003

```

10\$: L10074:

TRAP C\$ETST

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***** TEST 28 *****

6004
6005
6006 025664
6007
6008
6009
6010
6011
6012
6013
6014 025664
6015
6016 025664 004737 004522
6017
6018 025670 005037 002402
6019 025674 104410
6020 025676 000212
6021
6022
6023
6024
6025 025700 012737 000005 002360
6026 025706 012703 000001
6027 025712 004537 003162
6028
6029
6030
6031
6032 025716 005037 002402
6033 025722 104410
6034 025724 000164
6035
6036
6037
6038
6039 025726 012703 100000
6040 025732 004537 003162
6041
6042 025736 005037 002402
6043 025742 104410
6044 025744 000144
6045
6046
6047
6048
6049 025746 012737 000134 002410
6050 025754 004537 003016
6051
6052 025760 005037 002402
6053 025764 104410
6054 025766 000122
6055
6056
6057
6058 025770 042777 000200 154446
6059 025776 012703 046000

```

.SBTTL ***** TEST 28 *****
.SBTTL * CHECK FOR PROCEDURE ERROR 134
ZZ
*
*
* THIS TEST CHECKS FOR PROCEDURE ERROR OF USING
* RESERVED BITS IN BSEL7 ON CONTROL IN
*
*
.SBTTL ***** TEST 28 *****
T28::
JSR PC,MINITS ;MASTER CLEAR MODE DEF

CLR ERRWRD
TRAP C$ESCAPE
.WORD L10075-.
: JUMP TO END OF TEST IF ERROR
: JUMP TO END OF TEST IF ERROR
: JUMP TO END OF TEST IF ERROR
MOV #5,TRIBN
MOV #1,R3
JSR R5,CONTIN ;ESTABLISH TRIB
: TIME OUT OR READY ERRORS REPORT THIS PC
: JUMP TO END OF TEST IF ERROR
CLR ERRWRD
TRAP C$ESCAPE
.WORD L10075-.
: JUMP TO END OF TEST IF ERROR
: JUMP TO END OF TEST IF ERROR
MOV #100000,R3 ;SET BIT 7
JSR R5,CONTIN

CLR ERRWRD
TRAP C$ESCAPE
.WORD L10075-.
: JUMP TO END OF TEST IF ERROR
: JUMP TO END OF TEST IF ERROR
MOV #134,PERR
JSR R5,WFPE ;WAIT FOR PROCEDURE ERROR

CLR ERRWRD
TRAP C$ESCAPE
.WORD L10075-.
: ESCAPE TEST IF ERROR
: ESCAPE TEST IF ERROR
BIC #RDO,ABSEL2 ;CLEAR OUTPUT
MOV #46000,R3 ;SET 6 3 AND2

```


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***** TEST 28 *****

```

6060 026002 004537 003162      JSR    R5,CONTIN      ;DO CONTROL IN
6061
6062 026006 005037 002402      CLR    ERRWRD
6063 026012 104410                TRAP   C$ESCAPE
6064 026014 000074                .WORD  L10075-.
6065
6066
6067
6068
6069 026016 012737 000134 002410  MOV    #134,PERR
6070 026024 004537 003016                JSR    R5,W$PE      ;WAIT FOR PROCEDURE ERROR
6071
6072 026030 005037 002402      CLR    ERRWRD
6073 026034 104410                TRAP   C$ESCAPE
6074 026036 000052                .WORD  L10075-.
6075
6076
6077
6078 026040 005003                CLR
6079 026042 042777 000200 154374  BIC    #RDO,@BSEL2  ;CLEAR OUTPUT
6080 026050 004537 003162                JSR    R5,CONTIN      ;DO CONTROL IN
6081
6082 026054 005037 002402      CLR    ERRWRD
6083 026060 104410                TRAP   C$ESCAPE
6084 026062 000026                .WORD  L10075-.
6085
6086
6087
6088
6089 026064 004737 004244                JSR    PC,WAIT50     ;WAIT A WHILE
6090 026070 032777 000200 154346  BIT    #RDO,@BSEL2  ;IS RDO SET NOW
6091 026076 001404                BEQ    10$           ;IF NOT THEN GO ON
6092
6093 026100 104455                ;ELSE ERROR
6094 026102 000054                TRAP   C$ERDF
6095 026104 012516                .WORD  44
6096 026106 010422                .WORD  MEF30
6097 026110
6098 026110
6099 026110 104401                .WORD  ERR32
6100

```

10\$:
L10075:

```
TRAP C$ETST
```

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***** TEST 29 *****

6101
6102
6103 026112
6104
6105
6106
6107
6108
6109
6110
6111
6112
6113 026112
6114
6115 026112 004737 004522
6116
6117 026116 005037 002402
6118 026122 104410
6119 026124 000312
6120
6121
6122
6123
6124 026126 012737 000027 002360
6125 026134 012703 000001
6126 026140 004537 003162
6127
6128
6129
6130
6131 026144 005037 002402
6132 026150 104410
6133 026152 000264
6134
6135
6136
6137
6138 026154 012704 000003
6139 026160 012703 020000
6140 026164 004537 003162
6141
6142
6143
6144
6145 026170 005037 002402
6146 026174 104410
6147 026176 000240
6148
6149
6150
6151
6152 026200 012703 000042
6153 026204 004537 003162
6154
6155
6156

```

.SBTTL ***** TEST 29 *****
.SBTTL *LATCH - UNLATCH POLL CHECK
ZZ
:*
:*
:* THIS TEST CHECKS THE LATCH - UNLATCH POLL
:* COMMANDS. FIRST LATCH TRIB IN DEAD STATE
:* MAKE SURE ITS DEAD. THEN UNLATCH AND MAKE
:* SURE THAT IT GOES ACTIVE.
:*
:*
.SBTTL ***** TEST 29 *****
T29::
JSR PC,MINITS ;MASTER CLEAR MODE DEF

CLR ERRWRD
TRAP C$ESCAPE
.WORD L10076-.
: JUMP TO END OF TEST IF ERROR
:
MOV #27,TRIBN
MOV #01,R3 ;ESTABLISH TRIB
JSR R5,CCNTIN
: TIME OUT OR READY ERROR REPORT THIS PC
:
CLR ERRWRD
TRAP C$ESCAPE
.WORD L10076-.
: JUMP TO END OF TEST IF ERROR
:
MOV #3,R4
MOV #20000,R3 ;LATCH POLL DEAD
JSR R5,CONTIN
: TIME OUT OR READY ERRORS REPORT THIS PC
:
CLR ERRWRD
TRAP C$ESCAPE
.WORD L10076-.
: JUMP TO END OF TEST IF ERROR
:
MOV #42,R3
JSR R5,CONTIN ;READ SLOT 2 TSS
: TIME OUT OR READY ERRORS REPORT THIS PC
:

```

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:***** TEST 29 *****

```

6157
6158 026210 005037 002402      CLR   ERRWRD
6159 026214 104410      TRAP  C$ESCAPE
6160 026216 000220      .WORD L10076-.
6161
6162      : JUMP TO END OF TEST IF ERROR
6163      :
6164
6165 026220 012737 000002 002336  MOV   #02,$GDDAT
6166 026226 004537 003242      JSR   R5,GETOUT
6167
6168      :
6169      : CHECK FOR INFO OUT AND CORRECT TRIBN
6170      : IF ERROR REPORT THIS PC
6171      :
6172 026232 005037 002402      CLR   ERRWRD
6173 026236 104410      TRAP  C$ESCAPE
6174 026240 000176      .WORD L10076-.
6175
6176      : JUMP TO END OF TEST IF ERROR
6177      :
6178
6179 026242 012737 000042 002336  MOV   #42,$GDDAT
6180 026250 004537 003372      JSR   R5,GETRKY
6181
6182      : CHECK FOR CORRECT RETURN KEY
6183      :
6184
6185 026254 005037 002402      CLR   ERRWRD
6186 026260 104410      TRAP  C$ESCAPE
6187 026262 000154      .WORD L10076-.
6188
6189      : JUMP TO END OF TEST IF ERROR
6190      :
6191
6192 026264 012737 100220 002336  MOV   #100220,$GDDAT ;
6193 026272 004537 003446      JSR   R5,GETDAT
6194
6195      : CHECK FOR DEAD STATE
6196      :
6197
6198 026276 005037 002402      CLR   ERRWRD
6199 026302 104410      TRAP  C$ESCAPE
6200 026304 000132      .WORD L10076-.
6201
6202      : JUMP TO END OF TEST IF ERROR
6203      :
6204
6205 026306 042777 000200 154130  BIC   #RDO,@BSEL2    ;CLEAR OUTPUT
6206 026314 012703 010000      MOV   #10000,R3
6207 026320 004537 003162      JSR   R5,CONTIN     ;UNLATCH POLL
6208
6209      : TIME OUT OR READY ERRORS REPORT THIS PC
6210      :
6211
6212 026324 005037 002402      CLR   ERRWRD

```

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***** TEST 29 *****

6213 026330 104410
6214 026332 000104
6215
6216
6217
6218
6219 026334 012703 000042
6220 026340 004537 003162
6221
6222
6223
6224
6225 026344 005037 002402
6226 026350 104410
6227 026352 000064
6228
6229
6230
6231
6232 026354 012737 000002 002336
6233 026362 004537 003242
6234
6235
6236
6237
6238 026366 005037 002402
6239 026372 104410
6240 026374 000042
6241
6242
6243
6244
6245 026376 012737 000042 002336
6246 026404 004537 003372
6247
6248
6249
6250
6251 026410 005037 002402
6252 026414 104410
6253 026416 000020
6254
6255
6256
6257
6258 026420 012737 000600 002336
6259 026426 004537 003446
6260
6261
6262
6263 026432 005037 002402
6264 026436
6265 026436 104401
6266

```

TRAP  C$ESCAPE
.WORD  L10076-.
:
: JUMP TO END OF TEST IF ERROR
:
MOV    #42,R3
JSR    R5,CONTIN      ;READ TSS SLOT 2
:
: TIME OUT OR READY ERRORS REPORT THIS PC
:
CLR    ERRWRD
TRAP  C$ESCAPE
.WORD  L10076-.
:
: JUMP TO END OF TEST IF ERROR
:
MOV    #02,$GDDAT    ;
JSR    R5,GETOUT
:
: CHECK FOR INFORMATION OUT AND CORRECT TRIBN
:
CLR    ERRWRD
TRAP  C$ESCAPE
.WORD  L10076-.
:
: JUMP TO END OF TEST IF ERROR
:
MOV    #42,$GDDAT
JSR    R5,GETRKY
:
: CHECK FOR CORRECT RETURN KEY
:
CLR    ERRWRD
TRAP  C$ESCAPE
.WORD  L10076-.
:
: JUMP TO END OF TEST IF ERROR
:
MOV    #600,$GDDAT
JSR    R5,GETDAT
:
: CHECK FOR ACTIVE STATE
:
CLR    ERRWRD
L10076: TRAP  C$SETST

```

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***** TEST 29 *****

6267
6268
6269
6270
6271
6272
6273
6274
6275
6276
6277
6278
6279
6280
6281
6282
6283
6284
6285
6286
6287
6288
6289
6290
6291
6292
6293
6294
6295
6296
6297
6298
6299
6300
6301
6302
6303
6304

026440

026440

026440

026446

026454

026462

026470

026474

026502

026506

026512

026514

026516

026522

026526

026530

026532

026532

012737

012737

012737

012737

005037

012737

004737

005037

104410

000016

004537

005037

104410

000002

026532

104401

001750

033726

033446

000004

002432

000003

004522

002402

006346

002402

002424

002422

002420

002426

002360

.SBTTL ***** TEST 30 *****
.SBTTL SHORT MESSAGE SENDING TEST, WITH INTERNAL LOOPBACK

ZZ
:*
:* THIS TEST SENDS A 4 BYTE MESSAGE FROM AN EVEN TRANSMIT
:* BUFFER TO AN EVEN REC BUFFER IN DDCMP FORMAT CONFIGURED
:* AS A MULTIPOINT CONTROL STATION FULL DUPLEX. THE TEST
:* CHECKS THAT REC BUFFERS ARE RETURNED AND THAT THE DATA
:* IS CORRECT. IT ALSO CHECKS THAT THE NEXT OUTPUT COMMAND
:* IS A TX BUFFER COMPLETE.

.SBTTL ***** TEST 30 *****

T30::
MOV #1000, RXCC ;SET UP RX CC
MOV #RECBU1, RXADD ;SET UP RX ADD
MOV #MR1, TXADD ;SET UP TX ADD
MOV #4, TXCC ;SET UP TX COUNT
CLR GENWRD ;CLEAR GEN WORD
MOV #3, TRIBN ;SET TRIB ADDRESS
JSR PC, MINITS ;INITIALIZE

CLR ERRWRD
TRAP C\$ESCAPE
.WORD L10077-.
: JUMP TO END OF TEST IF ERROR
: : : : : :
: : : : : :

JSR R5, TXRX3 ;TRANSMIT AND REC.
CLR ERRWRD
TRAP C\$ESCAPE
.WORD L10077-.
L10077: TRAP C\$ETST

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***** TEST 31 *****

6305
6306
6307 026534
6308
6309
6310
6311
6312
6313
6314 026534
6315
6316 026534 004737 004522
6317
6318 026540 005037 002402
6319 026544 104410
6320 026546 000104
6321
6322
6323
6324
6325 026550 052777 000200 153662
6326 026556 004537 002732
6327
6328 026562 005037 002402
6329 026566 104410
6330 026570 000062
6331 026572 042777 000200 153640
6332 026600 112777 000003 153640
6333 026606 012777 000010 153640
6334 026614 012777 033726 153626
6335 026622 112777 000000 153614
6336 026630 012737 000122 002410
6337 026636 004537 003016
6338
6339 026642 005037 002402
6340 026646 104410
6341 026650 000002
6342
6343
6344
6345 026652
6346 026652 104401
6347

```

.SBTTL ***** TEST 31 *****
.SBTTL * PROCEDURE ERROR 122 CHECK
ZZ
:*
:*
:* THIS TEST CHECKS FOR PROCEDURE ERROR 122
:* ESTABLISH BUFFER FOR UNESTABLISHED TRIB.
:*
.SBTTL ***** TEST 31 *****
T31::

JSR    PC,MINITS      ;MASTER CLEAR MODE DEF

CLR    ERRWRD
TRAP   C$ESCAPE
.WORD  L10100-.

:.....:
: JUMP TO END OF TEST IF ERROR
:.....:

BIS    #RQI,@BSELO    ;SET REQUEST FOR INPUT
JSR    R5,WRDI        ;WAIT FOR RDI TO SET

CLR    ERRWRD        ;CLEAR ERROR
TRAP   C$ESCAPE
.WORD  L10100-.

BIC    #RQI,@BSELO    ;CLEAR REQUEST
MOVB   #03,@BSEL3
MOV    #10,@BSEL6     ;SET CC
MOV    #RECBU1,@BSEL4 ;SET BA
MOVB   #0,@BSEL2     ;ESTABLISH BUFFER
MOV    #122,PERR      ;WAIT
JSR    R5,WFPE        ;WAIT FOR PROCEDURE ERROR

CLR    ERRWRD
TRAP   C$ESCAPE
.WORD  L10100-.

:.....:
: ESCAPE TEST IF ERROR
:.....:

L10100:
TRAP   C$SETST

```

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***** TEST 32 *****

6348
6349
6350 026654
6351
6352
6353
6354
6355
6356
6357 026654
6358
6359 026654 004737 004522
6360
6361 026660 005037 002402
6362 026664 104410
6363 026666 000132
6364
6365
6366
6367
6368 026670 012737 000047 002360
6369 026676 012703 000001
6370 026702 004537 003162
6371
6372
6373
6374
6375 026706 005037 002402
6376 026712 104410
6377 026714 000104
6378
6379
6380
6381
6382 026716 052777 000200 153514
6383 026724 004537 002732
6384
6385 026730 005037 002402
6386 026734 104410
6387 026736 000062
6388 026740 042777 000200 153472
6389 026746 012777 000010 153500
6390 026754 012777 033726 153466
6391 026762 113777 002360 153456
6392 026770 112777 000000 153446
6393 026776 012737 000124 002410
6394 027004 004537 003016
6395
6396 027010 005037 002402
6397 027014 104410
6398 027016 000002
6399
6400
6401
6402 027020
6403 027020 104401

```

.SBTTL ***** TEST 32 *****
.SBTTL *PROCEDURE ERROR 124 CHECK
ZZ
*
*
* THIS TEST CHECKS FOR PROCEDURE ERROR 124
* ESTABLISHING BUFFER FOR HALTED TRIB
*
.SBTTL ***** TEST 32 *****
T32::
JSR PC,MINITS ;MASTER CLEAR MODE DEF

CLR ERRWRD
TRAP C$ESCAPE
.WORD L10101-.
:JUMP TO END OF TEST IF ERROR
:

MOV #47,TRIBN
MOV #01,R3
JSR R5,CONTIN ;ESTABLISH TRIB
:TIME OUT AND READY ERRORS REPORT THIS PC
:

CLR ERRWRD
TRAP C$ESCAPE
.WORD L10101-.
:JUMP TO END OF TEST IF ERROR
:

BIS #RQI,@BSELO ;SET REQUEST
JSR R5,WRDI ;WAIT FOR RDI TO SET

CLR ERRWRD ;CLEAR ERROR
TRAP C$ESCAPE
.WORD L10101-.

BIC #RQI,@BSELO ;CLEAR REQUEST
MOV #10,@BSEL6 ;SET CC
MOV #RECBU1,@BSEL4 ;SET BA
MCVB TRIBN,@BSEL3 ;SET TRIB NO.
MCVB #0,@BSEL2 ;ESTABLISH BUFFER
MOV #124,PERR ;WAIT FOR ERROR
JSR R5,WFPF ;WAIT FOR PROCEDURE ERROR

CLR ERRWRD
TRAP C$ESCAPE
.WORD L10101-.
:ESCAPE TEST IF ERROR
:
L10101:
TRAP C$ETST

```

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;***** TEST 32 *****

6404
6405
6406
6407

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:***** TEST 33 *****

6408
6409
6410 027022
6411
6412
6413
6414
6415
6416
6417
6418 027022
6419
6420 027022 004737 004522
6421
6422 027026 005037 002402
6423 027032 104410
6424 027034 000152
6425
6426
6427
6428
6429 027036 012737 000074 002360
6430 027044 012703 000001
6431 027050 004537 003162
6432
6433 027054 005037 002402
6434 027060 104410
6435 027062 000124
6436
6437
6438
6439
6440 027064 012703 000004
6441 027070 004537 003162
6442
6443 027074 005037 002402
6444 027100 104410
6445 027102 000104
6446
6447
6448
6449
6450 027104 052777 000200 153326
6451 027112 004537 002732
6452
6453 027116 005037 002402
6454 027122 104410
6455 027124 000062
6456 027126 042777 000200 153304
6457 027134 012777 000000 153312
6458 027142 012777 033726 153300
6459 027150 113777 002360 153270
6460 027156 112777 000000 153260
6461 027164 012737 000126 002410
6462 027172 004537 003016
6463

```

.SBTTL :***** TEST 33 *****
.SBTTL *PROCEDURE ERROR #126 CHECK
      ZZ
      *
      *
      * THIS TEST CHECKS FOR A PROCEDURE ERROR OF #126
      * ASSIGNING A BUFFER WITH A ZERO BYTE COUNT
      *
      *
.SBTTL :***** TEST 33 *****
T33::
      JSR    PC,MINITS      ;MASTER CLEAR MODE DEF
      CLR    ERRWRD
      TRAP   C$ESCAPE
      .WORD  L10102-.
      :::::
      : JUMP TO END OF TEST IF ERROR
      :::::
      MOV    #74,TRIBN
      MOV    #01,R3
      JSR    R5,CONTIN      ; ESTABLISH TRIB
      CLR    ERRWRD
      TRAP   C$ESCAPE
      .WORD  L10102-.
      :::::
      : JUMP TO END OF TEST IF ERROR
      :::::
      MOV    #04,R3
      JSR    R5,CONTIN      ;MAINT STATE
      CLR    ERRWRD
      TRAP   C$ESCAPE
      .WORD  L10102-.
      :::::
      : JUMP TO END OF TEST IF ERROR
      :::::
      BIS    #RQI,@BSELO    ;SET REQUEST
      JSR    R5,WRDI        ;WAIT FOR RDI TO SET
      CLR    ERRWRD        ;CLEAR ERROR
      TRAP   C$ESCAPE
      .WORD  L10102-.
      BIC    #RQI,@BSELO    ;CLEAR REQUEST
      MOV    #0,@BSEL6      ;0 BYTES
      MOV    #RECBU1,@BSEL4 ;BA
      MOVB  TRIBN,@BSEL3   ;SET TRIBN
      MOVB  #0,@BSEL2      ;SET BUFFER
      MOV    #126,PERR      ;WAIT FOR ERROR
      JSR    R5,WFPF        ;WAIT FOR PROCEDURE ERROR

```

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;***** TEST 33 *****

6464 027176 005037 002402
 6465 027202 104410
 6466 027204 000002
 6467
 6468
 6469
 6470
 6471 027206
 6472 027206 104401
 6473

CLR ERRWRD
 TRAP C\$ESCAPE
 .WORD L10102-
 :::::
 : ESCAPE TEST IF ERROR
 :::::

L10102:
 TRAP C\$ETST

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***** TEST 34 *****

6474
6475
6476 027210
6477
6478
6479
6480
6481
6482
6483
6484 027210
6485
6486 027210 004737 004522
6487
6488 027214 005037 002402
6489 027220 104410
6490 027222 000102
6491
6492
6493
6494
6495 027224 052777 000200 153206
6496
6497 027232 004537 002732
6498
6499 027236 005037 002402
6500 027242 104410
6501 027244 000060
6502 027246 042777 000200 153164
6503 027254 105077 153166
6504 027260 012777 000010 153166
6505 027266 012777 033446 153154
6506 027274 012777 000004 153142
6507
6508 027302 012737 000130 002410
6509 027310 004537 003016
6510
6511 027314 005037 002402
6512 027320 104410
6513 027322 000002
6514
6515
6516
6517 027324
6518 027324 104401
6519
6520
6521

```

.SBTTL ***** TEST 34 *****
.SBTTL *CHECK FOR PROCEDURE ERROR 130
ZZ
:*
:*
:* THIS TEST CHECKS FOR A PROCEDURE ERROR OF 130
:* ASSIGNING TRANSMIT BUFFER FOR TRIB 0
:*
.SBTTL ***** TEST 34 *****
T34::
JSR    PC,MINITS      ;MASTER CLEAR MODE DEF
CLR    ERRWRD
TRAP   C$ESCAPE
.WORD  L10103-.
:.....
: JUMP TO END OF TEST IF ERROR
:.....
BIS    #RQI,@BSELO    ;SET REQUEST
:WAIT FOR READY
JSR    R5,WRDI        ;WAIT FOR RDI TO SET
CLR    ERRWRD        ;CLEAR ERROR
TRAP   C$ESCAPE
.WORD  L10103-.
BIC    #RQI,@BSELO    ;CLEAR REQUEST.
CLRB   @BSEL3        ;MAKE TRIB NO. 0
MOV    #10,@BSEL6     ;MAKE CC 10
MUV    #MR1,@BSEL4    ;MAKE ADD MR1
MOV    #4,@BSEL2      ;CLEAR RDI AND ESTAB
:TRANSMIT BUFFER
MOV    #130,PERR      ;WAIT FOR PROCEDURE ERROR
JSR    R5,WFPE        ;WAIT FOR PROCEDURE ERROR
CLR    ERRWRD
TRAP   C$ESCAPE
.WORD  L10103-.
:.....
: ESCAPE TEST IF ERROR
:.....
L10103: TRAP   C$ETST

```

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:***** TEST 34 *****

6522
6523
6524
6525 027326
6526
6527
6528
6529
6530
6531
6532
6533
6534
6535
6536 027326
6537 027326 012737 000035 002370
6538
6539 027334 012737 001750 002424
6540 027342 012737 033726 002422
6541 027350 012737 000400 002426
6542 027356 012737 033446 002420
6543 027364 005037 002432
6544 027370 012737 000001 002360
6545 027376 022737 000004 002476
6546 027404 001402
6547 027406 005237 002400
6548 027412 004737 004512
6549 027416 005037 002400
6550 027422 005037 002402
6551 027426 104410
6552 027430 000016
6553
6554
6555
6556
6557 027432 004537 005720
6558
6559 027436 005037 002402
6560 027442 104410
6561 027444 000002
6562
6563
6564
6565
6566 027446
6567 027446 104401
6568
6569

```

.SBTTL :***** TEST 35 *****
.SBTTL * TRANSMIT REC 256,PTP,DDCMP
      ZZ
      *
      *
      * THIS TEST WILL TRANSMIT 256 BYTE MESSAGE
      * DDCMP PROTOCOL
      * THIS WILL BE DONE EXTERNAL LOOPBACK IF
      * IT EXISTS ELSE INTERNAL LOOPBACK WILL
      * BE USED
      *
      *
.SBTTL :***** TEST 35 *****
t35::
      MOV      #35,ROMN1      ;SET UP TEST NUMBER
      MOV      #1000.,RXCC    ;SET REC BUFFER FOR 1000BYTES
      MOV      #RECBUI,RXADD  ;SET UP BUFF ADD
      MOV      #256.,TXCC    ;SET UP RX CHAR COUNT
      MOV      #MR1,TXADD     ;AND ADDRESS
      CLR      GENWRD        ;CLEAR GEN WORD
      MOV      #01,TRIBN     ;SET THE TRIB TO 01
      CMP      #4,TSTCON     ;CHECK FOR LOOPBACK CONNECTOR.
      BEQ      1$
      INC      EXLOOP        ;EXT CONNECTOR PRESENT: SET EXT LOOP FLAG
1$:    JSR      PC,MINIT1    ;MASTER CLEAR-MODE DEF
      CLR      EXLOOP        ;CLEAR EXTERNAL LOOP FLAG
      CLR      ERRWRD
      TRAP     C$ESCAPE
      .WORD   L10104-.
      *
      *
      * JUMP TO END OF TEST IF ERROR
      *
      *
      JSR      R5,TXRXSR     ;GO TRANSMIT RX AND CHECK
      CLR      ERRWRD
      TRAP     C$ESCAPE
      .WORD   L10104-.
      *
      *
      * JUMP TO END OF TEST IF ERROR
      *
      *
L10104: TRAP     C$ETST

```

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:***** TEST 35 *****

6570
6571
6572
6573 027450
6574
6575
6576
6577
6578
6579
6580
6581
6582
6583 027450
6584 027450 032737 000003 002472
6585 027456 001454
6586
6587 027460 012737 000036 002370
6588 027466 012737 001750 002424
6589 027474 012737 033726 002422
6590 027502 012737 000400 002426
6591 027510 012737 033446 002420
6592 027516 005037 002432
6593 027522 012737 000001 002360
6594 027530 022737 000004 002476
6595 027536 001402
6596 027540 005237 002400
6597 027544 004737 004512
6598 027550 005037 002400
6599 027554 005037 002402
6600 027560 104410
6601 027562 000026
6602
6603
6604
6605 027564 005237 002376
6606 027570 004537 005720
6607 027574 005037 002402
6608 027600 005037 002376
6609 027604 104410
6610 027606 000002
6611
6612
6613
6614 027610
6615 027610
6616 027610 104401
6617

```

.SBTTL :***** TEST 36 *****
.SBTTL * DMV Q22 MODE TX AND RX,256 BYTES,DDCMP
      ZZ
      *
      *
      *      **** DMV ONLY ****
      * THIS TEST WILL TRANSMIT A 256 BYTE MESSAGE DDCMP PROTOCOL
      * USING THE 'Q22' CSR MODE OF THE DMV-11
      * THIS WILL BE DONE EXTERNAL LOOPBACK IF IT EXISTS ( ELSE
      * INTERNAL LOOPBACK WILL BE USED).
      *
      *
      *
.SBTTL :***** TEST 36 *****
T36::
      BIT      #3,OPTYP      ;IS THIS A DMV ?
      BEQ      T36END        ;IF NOT: EXIT TEST

      MOV      #36,ROMN1     ;SET UP TEST NUMBER
      MOV      #1000,RXCC    ;SET REC BUFFER FOR 1000BYTES
      MOV      #RECBU1,RXADD ; SET UP BUFF ADD
      MOV      #256,TXCC     ;SET UP RX CHAR COUNT
      MOV      #MR1,TXADD    ;AND ADDRESS
      CLR      GENWRD        ;CLEAR GEN WORD
      MOV      #01,TRIBN     ;SET THE TRIB TO 01
      CMP      #4,TSTCON     ;CHECK FOR LOOPBACK CONNECTOR.
      BEQ      1$
      INC      EXLOOP        ;EXT CONNECTOR PRESENT: SET EXT LOOP FLAG
1$:    JSR      PC,MINIT1    ;MASTER CLEAR-MODE DEF
      CLR      EXLOOP        ;CLEAR NO TTLOOP FLAG
      CLR      ERRWRD
      TRAP     C$ESCAPE
      .WORD    L10105-.

      :::::::
      : JUMP TO END OF TEST IF ERROR
      :::::::
      INC      MODQ22        ;SET Q22 MODE FLAG (FOR TXRXSR)
      JSR      R5,TXRXSR    ;GO TRANSMIT RX AND CHECK
      CLR      ERRWRD
      CLR      MODQ22
      TRAP     C$ESCAPE
      .WORD    L10105-.

      :::::::
      : JUMP TO END OF TEST IF ERROR
      :::::::
T36END:
L10105: TRAP     C$ETST

```

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***** TEST 37 *****

6618
6619
6620 027612
6621
6622
6623
6624
6625
6626
6627
6628
6629
6630 027612
6631 027612 012737 000377 002426
6632 027620 012737 033446 002420
6633 027626 012737 000764 002424
6634 027634 012737 033727 002422
6635 027642 012737 000075 002360
6636 027650 005037 002432
6637 027654 004737 004522
6638
6639
6640 027660 005037 002402
6641 027664 104410
6642 027666 000016
6643
6644
6645
6646
6647 027670 004537 006346
6648
6649
6650 027674 005037 002402
6651 027700 104410
6652 027702 000002
6653
6654
6655
6656
6657 027704
6658 027704 104401
6659

```

.SBTTL ***** TEST 37 *****
.SBTTL * TX AND RX,255 BYTES,EVEN TX,ODD RX,DDCMP,MULTIPOINT
ZZ
:*
:*
:* THIS TEST WILL TRANSMIT A MESSAGE OF 255
:* BYTES FROM AN EVEN TX START ADD TO AN ODD
:* REC START ADD. IN DDCMP MODE MULTI POINT
:* CONTROL STATION.
:*
:*-
.SBTTL ***** TEST 37 *****
I37::
MOV #255.,TXCC ;SET UP TRANSMIT CHAR COUNT
MOV #MR1,TXADD ;SET UP TRANSMIT ADD
MOV #500.,RXCC ;SET UP REC CHAR COUNT
MOV #RECBU1+1,RXADD ;SET UP REC ADD
MOV #75,TRIBN ;SET UP TRIB NO.
CLR GENWRD ;CLEAR THE GENWRD
JSR PC,MINITS ;MASTER CLEAR MODE DEF
;MULTI POINT CONTROL

CLR ERRWRD
TRAP C$ESCAPE
.WORD L10106-.
: JUMP TO END OF TEST IF ERROR
: JUMP TO END OF TEST IF ERROR

20$: JSR R5,TXRX3 ;GO TRANSMIT AND REC
; AND CHECK DATA.

CLR ERRWRD
TRAP C$ESCAPE
.WORD L10106-.
: JUMP TO END OF TEST IF ERROR
: JUMP TO END OF TEST IF ERROR

L10106: TRAP C$ETST

```

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:***** TEST 38 *****

6660
6661
6662 027706
6663
6664
6665
6666
6667
6668
6669
6670
6671 027706
6672
6673 027706 032737 000003 002472
6674 027714 001402
6675 027716 104432
6676 027720 000412
6677
6678 027722 005002
6679 027724 022737 000000 002476
6680 027732 001135
6681 027734 016237 030306 002506
6682 027742 004737 004530
6683 027746 004737 004244
6684
6685 027752 005037 002402
6686 027756 104410
6687 027760 000352
6688
6689
6690
6691 027762 22702 000010
6692 027766 101403
6693
6694 027770 142777 000010 152444
6695
6696 027776 005037 002360
6697 030002 016204 030232
6698 030006 012703 000023
6699 030012 004537 003162
6700
6701
6702
6703
6704 030016 005037 002402
6705 030022 104410
6706 030024 000306
6707
6708
6709
6710 030026 012704 000100
6711 030032 012703 000021
6712 030036 004537 003162
6713
6714
6715

```

.SBTTL :***** TEST 38 *****
.SBTTL *READ/WRITE MODEM TESTS
ZZ
:*
:*
:* THIS TEST WILL SELECT EACH OF THE 4 MODEM
:* INTERFACES AND WRITE AND READ THEM. THIS IS
:* ONLY DONE IF CONNECTORS ARE PRESENT
:* ( DMP ONLY ).
:*
.SBTTL :***** TEST 38 *****
T38::
BIT #3,OPTYP ;IS THIS A DMV11 ?
BEQ 1$ ; NO: GOOD, CONTINUE TEST
TRAP C$EXIT
.WORD L10107-.
1$: CLR R2 ;CLEAR R2
CMP #0,TSTCON ;IS THIS WITH TEST CONN LOOPBACK
BNE MODEX ;IF NOT GO TO END
MODEB: MOV DUPTYP(R2),AXNUM
JSR PC,MINTR ;MASTER CLEAR MODE DEF
JSR PC,WAIT50 ;DELAY

CLR ERRWRD
TRAP C$ESCAPE
.WORD L10107-.
: JUMP TO END OF TEST IF ERROR
: JUMP TO END OF TEST IF ERROR
CMP #10,R2
BLOS MODEA ;DON'T TURN OFF LINE UINT LOOP
;IF PAST THIS POINT IN TABLES
MODEA: BICB #BIT3,@BSEL1
CLR TRIBN ;MAKE TRIB NO. = 0
MOV MODTYP(R2),R4 ;SELECT TYPE OF INTERFACE
MOV #23,R3 ;SELECT INTERFACE
JSR R5,CONTIN
: TIME OUT OR READY ERRORS REPORT THIS PC
: JUMP TO END OF TEST IF ERROR
: JUMP TO END OF TEST IF ERROR
MODED: MOV #100,R4
MOV #21,R3 ;WRITE MODEM
JSR R5,CONTIN
: TIME OUT OR READY ERRORS REPORT THIS PC
: JUMP TO END OF TEST IF ERROR

```

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***** TEST 38 *****

| | | | | | |
|------|--------|--------|--------|--------|-----------------------------------------------|
| 6716 | | | | | |
| 6717 | 030042 | 005037 | 002402 | | CLR ERRWRD |
| 6718 | 030046 | 104410 | | | TRAP C\$ESCAPE |
| 6719 | 030050 | 000262 | | | .WORD L10107- |
| 6720 |  |  |  |  | ..... |
| 6721 | | | | | : JUMP TO END OF TEST IF ERROR |
| 6722 |  |  |  |  | ..... |
| 6723 | | | | | |
| 6724 | 030052 | 012703 | 000020 | | MOV #20,R3 |
| 6725 | 030056 | 004537 | 003162 | | JSR R5,CONTIN ;READ MODEM |
| 6726 |  |  |  |  | ..... |
| 6727 | | | | | : TIME OUT OR READY ERRORS REPORT THIS PC |
| 6728 |  |  |  |  | ..... |
| 6729 | | | | | |
| 6730 | 030062 | 005037 | 002402 | | CLR ERRWRD |
| 6731 | 030066 | 104410 | | | TRAP C\$ESCAPE |
| 6732 | 030070 | 000242 | | | .WORD L10107- |
| 6733 |  |  |  |  | ..... |
| 6734 | | | | | : JUMP TO END OF TEST IF ERROR |
| 6735 |  |  |  |  | ..... |
| 6736 | | | | | |
| 6737 | 030072 | 012737 | 000002 | 002336 | MOV #02,\$GDDAT |
| 6738 | 030100 | 004537 | 003242 | | JSR R5,GETOUT |
| 6739 |  |  |  |  | ..... |
| 6740 | | | | | : CHECK FOR INFORMATION OUT AND CORRECT TRIBN |
| 6741 |  |  |  |  | ..... |
| 6742 | | | | | |
| 6743 | 030104 | 005037 | 002402 | | CLR ERRWRD |
| 6744 | 030110 | 104410 | | | TRAP C\$ESCAPE |
| 6745 | 030112 | 000220 | | | .WORD L10107- |
| 6746 |  |  |  |  | ..... |
| 6747 | | | | | : JUMP TO END OF TEST IF ERROR |
| 6748 |  |  |  |  | ..... |
| 6749 | | | | | |
| 6750 | 030114 | 012737 | 000010 | 002336 | MOV #10,\$GDDAT |
| 6751 | 030122 | 004537 | 003372 | | JSR R5,GETRKY |
| 6752 |  |  |  |  | ..... |
| 6753 | | | | | : CHECK FOR CORRECT RETURN KEY MODEM STATUS |
| 6754 |  |  |  |  | ..... |
| 6755 | | | | | |
| 6756 | 030126 | 005037 | 002402 | | CLR ERRWRD |
| 6757 | 030132 | 104410 | | | TRAP C\$ESCAPE |
| 6758 | 030134 | 000176 | | | .WORD L10107- |
| 6759 |  |  |  |  | ..... |
| 6760 | | | | | : JUMP TO END OF TEST IF ERROR |
| 6761 |  |  |  |  | ..... |
| 6762 | 030136 | 005037 | 002336 | | CLR \$GDDAT |
| 6763 | 030142 | 005037 | 002340 | | CLR \$BDDAT |
| 6764 | 030146 | 117737 | 152276 | 002340 | MOVB @BSEL4,\$BDDAT |
| 6765 | 030154 | 116237 | 030262 | 002336 | MOVB MODOUT(R2),\$GDDAT |
| 6766 | 030162 | 123737 | 002340 | 002336 | CMPB \$BDDAT,\$GDDAT |
| 6767 | 030170 | 001411 | | | BEQ 10\$ |
| 6768 | 030172 | 012737 | 012014 | 002430 | MOV #M30F, CODEW |
| 6769 | 030200 | 104455 | | | TRAP C\$ERDF |
| 6770 | 030202 | 000055 | | | .WORD 45 |
| 6771 | 030204 | 011506 | | | .WORD EROIC |

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;***** TEST 38 *****

6772 030206 010324
6773 030210 104410
6774 030212 000120
6775 030214 062702 000002
6776
6777 030220 022702 000024
6778 030224 001243
6779 030226
6780 030226 104432
6781 030230 000102
6782
6783 030232 000323
6784 030234 000313
6785 030236 000233
6786 030240 000133
6787 030242 000133
6788 030244 000233
6789 030246 000323
6790 030250 000323
6791 030252 000323
6792 030254 000313
6793 030256 000377
6794 030260 000100
6795
6796 030262 000310
6797 030264 000310
6798 030266 000330
6799 030270 000330
6800 030272 000330
6801 030274 000330
6802 030276 000330
6803 030300 000330
6804 030302 000310
6805 030304 000310
6806
6807
6808
6809 030306 000005
6810 030310 000005
6811 030312 000004
6812 030314 000004
6813 030316 000004
6814 030320 000004
6815 030322 000004
6816 030324 000004
6817 030326 000005
6818 030330 000005
6819
6820 030332
6821 030332 104401
6822
6823
6824
6825
6826

```

          .WORD  ERR27
          TRAP   C$ESCAPE
10$:      .WORD  L10107-.
          ADD    #2,R2

          CMP    #24,R2
          BNE   MODEB          ;IF NOT DONE GO TO B
MODEX:    TRAP   C$EXIT
          .WORD  L10107-.

MODTYP:   .WORD  323
          .WORD  313
          .WORD  233
          .WORD  133
          .WORD  133
          .WORD  233
          .WORD  323
          .WORD  323
          .WORD  323
MODIN:    .WORD  313
          .WORD  377
          .WORD  100

MODOUT:   .WORD  310
          .WORD  310
          .WORD  330
          .WORD  330
          .WORD  330
          .WORD  330
          .WORD  330
          .WORD  330
          .WORD  310
          .WORD  310

DUPTYP:   .WORD  5
          .WORD  5
          .WORD  4
          .WORD  4
          .WORD  4
          .WORD  4
          .WORD  4
          .WORD  4
          .WORD  4
          .WORD  5
          .WORD  5

L10107:   TRAP   C$ETST

```

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;***** TEST 39 *****

```

6827
6828
6829 030334
6830
6831
6832
6833
6834
6835
6836
6837
6838
6839
6840
6841
6842 030334
6843
6844 030334 012737 004222 000004
6845 030342 005037 000006
6846 030346 012737 000002 002542
6847 030354 012746 000002
6848 030360 012705 030570
6849
6850 030364 005737 177572
6851
6852
6853 030370 062706 000002
6854 030374 012700 000000
6855 030400 104441
6856 030402 012701 172300
6857 030406 012702 000010
6858 030412
6859 030412 012721 077406
6860 030416 005302
6861 030420 001374
6862 030422 012701 172340
6863 030426 005011
6864 030430 012761 000200 000002
6865 030436 012761 000400 000004
6866 030444 012761 000600 000006
6867 030452 012761 001000 000010
6868 030460 012761 177600 000016
6869
6870 030466 012761 002000 000012
6871 030474 005037 002432
6872 030500 012737 000033 002360
6873 030506 052737 040000 002432
6874 030514 012737 177776 002422
6875 030522 012737 001750 002424
6876 030530 012737 033446 002420
6877 030536 012737 001000 002426
6878 030544 004737 004522
6879 030550 004537 006346
6880 030554 005037 002402
6881 030560 104410
6882 030562 000012

```

```

.SBTTL ***** TEST 39 *****
.SBTTL TEST OF MEM EXTENSION BIT 16, ADDRESS 200000
ZZ
:
:
: * THIS TEST WE'LL TRY TRANSMITTING A MESSAGE
: * TO VIRTUAL ADDRESS 200000 (BIT 16 SET).
: * IF MEMORY MANAGEMENT AND/OR SUFFICIENT MEMORY IS NOT
: * AVAILABLE FOR MESSAGE STORAGE, WE WILL EXPECT THE DMP-11
: * TO RETURN A NON-EXISTENT MEMORY ERROR FOR THE BUFFER.
: * IF ENOUGH MEMORY EXISTS, WE'LL MAKE SURE THE TRANSFER TAKES
: * PLACE PROPERLY.
:
:
: *-
.SBTTL ***** TEST 39 *****
T39::
MOV #META,4 ;SET UP TRAP FOR NO MEM
CLR 6
MOV #2,$TMP0
MOV #2,-(SP) ;DUMMY MOVE TO STACK
MOV #RET16,R5 ;SET UP R5 FOR RETURN IF TRAP
; TAKES U TO SR.
TST @#177572 ;DOES MEM MANAGEMENT EXIST
; IF NOT TRAP TO META
; ELSE CONTINUE
; FIX THE STACK ;:(SP) VRG021882
ADD #2,SP
MOV #0,R0
TRAP C$SPRI
MOV #172300,R1 ;GET ADDRESS OF KERNEL PDR REQD/
MOV #8.,R2 ; DO 8 TIMES
10$:
MOV #77406,(R1)+
DEC R2
BNE 10$
MOV #172340,R1
CLR (R1)
MOV #200,2(R1)
MOV #400,4(R1)
MOV #600,6(R1)
MOV #1000,10(R1)
MOV #177600,16(R1) ;:CHANGED FROM 7600 FOR
;:AN 11/24 VRG030482
MOV #2000,12(R1)
CLR GENWRD
MOV #33,TRIBN ;MAP MEM CLEAR GEN AND SET UP TRIB
BIS #BIT14,GENWRD ;SET MM BIT
MOV #177776,RXADD ;SET UP RX ADD
MOV #1750,RXCC ;SET UP RX COUNT(1000 DEC)
MOV #MR1, TXADD ;SET UP TRANSMIT COUNT
MOV #512.,TXCC ;SET UP TRANSMIT COUNT
JSR PC,MINITS ; MASTER CLEAR MODE DEF
JSR R5, TXRX3 ;GO TRANSMIT AND RX
CLR ERRWRD ; IF ERROR GO TO END
TRAP C$ESCAPE
.WORD L10110-.

```

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***** TEST 39 *****

6883 030564 004537 003744
6884 030570 005037 002402
6885 030574
6886 030574 104401

RET16: JSR R5, MEMEX ;CHECK MEM EXTENSION
CLR ERRWRD ;CLEAR ERROR WORD
L10110:
TRAP CSETST

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:***** TEST 40 *****

6887
6888
6889 030576
6890
6891
6892
6893
6894
6895
6896
6897
6898
6899
6900
6901
6902 030576
6903
6904 030576 012737 004222 000004
6905 030604 005037 000006
6906 030610 012737 000004 0C2542
6907 030616 012746 000004
6908 030622 012705 031032
6909
6910 030626 005737 177572
6911
6912
6913 030632 062706 000002
6914 030636 012700 000000
6915 030642 104441
6916 030644 012701 172300
6917 030650 012702 000010
6918 030654
6919 030654 012721 077406
6920 030660 005302
6921 030662 001374
6922 030664 012701 172340
6923 030670 005011
6924 030672 012761 000200 000002
6925 030700 012761 000400 000004
6926 030706 012761 000600 000006
6927 030714 012761 001000 000010
6928 030722 012761 177600 000016
6929
6930
6931 030730 012761 004000 000012
6932 030736 005037 002432
6933 030742 012737 000033 002360
6934 030750 052737 040000 002432
6935 030756 012737 177776 002422
6936 030764 012737 041750 002424
6937 030772 012737 033446 002420
6938 031000 012737 001000 002426
6939 031006 004737 004522
6940 031012 004537 006346
6941 031016 005037 002402
6942 031022 104410

```

.SBTTL :***** TEST 40 *****
.SBTTL TEST OF MEM EXTENSION BIT 17, ADDRESS 400000
ZZ
:*
:*
:* THIS TEST WE'LL TRY TRANSMITTING A MESSAGE
:* TO VIRTUAL ADDRESS 400000 (BIT 17 SET).
:* IF MEMORY MANAGEMENT AND/OR SUFFICIENT MEMORY IS NOT
:* AVAILABLE FOR MESSAGE STORAGE, WE WILL EXPECT THE DMP-11
:* TO RETURN A NON-EXISTENT MEMORY ERROR FOR THE BUFFER.
:* IF ENOUGH MEMORY EXISTS,WE'LL MAKE SURE THE TRANSFER TAKES
:* PLACE PROPERLY.
:*
:*-
.SBTTL :***** TEST 40 *****
T40::
MOV #META,4 ;SET UP TRAP FOR NO MEM
CLR 6
MOV #4,STMP0
MOV #4,-(SP) ;DUMMY MOVE ON STACK IF TRAP
MOV #RET17,R5 ;SET UP R5 FOR RETURN IF TRAP IS
; TO SR.EXMEM.
TST @#177572 ;DOES MEM MANAGEMENT EXIST
;IF NOT TRAP TO META
; ELSE CONTINUE
ADD #2,SP ;FIX THE STACK ;:(SP) VRG021882
MOV #0,R0
TRAP C$SPRI
MOV #172300,R1 ;GET ADDRESS OF KERNEL PDR REQD/
MOV #8.,R2 ; DO 8 TIMES
10$:
MOV #77406,(R1)+
DEC R2
BNE 10$
MOV #172340,R1
CLR (R1)
MOV #200,2(R1)
MOV #400,4(R1)
MOV #600,6(R1)
MOV #1000,10(R1)
MOV #177600,16(R1) ;:CHANGED FROM 7600 FOR
;:AN 11/24 VRG030482
MOV #4000,12(R1)
CLR GENWRD
MOV #33,TRIBN ;MAP MEM CLEAR GEN AND SET UP TRIB
BIS #BIT14,GENWRD ;SET MM BIT
MOV #177776,RXADD ;SET UP RX ADD
MOV #41750,RXCC ;SET UP RX COUNT (1000 DEC)+BA16
MOV #MR1,TXADD ;SET UP TRANSMIT COUNT
MOV #512.,TXCC ;SET UP TRANSMIT COUNT
JSR PC,MINITS ; MASTER CLEAR MODE DEF
JSR R5,TXRX3 ;GO TRANSMIT AND RX
CLR ERRWRD ; IF ERROR GO TO END
TRAP C$ESCAPE

```

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***** TEST 40 *****

| | | | |
|------|--------|--------|--------|
| 6943 | 031024 | 000012 | |
| 6944 | 031026 | 004537 | 003744 |
| 6945 | 031032 | 005037 | 002402 |
| 6946 | 031036 | | |
| 6947 | 031036 | 104401 | |
| 6948 | | | |

| | | | |
|---------|-------|-----------|----------------------|
| | .WORD | L10111- | |
| | JSR | R5, MEMEX | :CHECK MEM EXTENSION |
| RET17: | CLR | ERRWRD | :CLEAR ERROR WORD |
| L10111: | | | |
| | TRAP | CSETST | |

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***** TEST 41 *****

6949
6950
6951 031040
6952
6953
6954
6955
6956
6957
6958
6959
6960
6961
6962
6963
6964 031040
6965
6966 031040 012737 004222 000004
6967 031046 005037 000006
6968 031052 012737 000006 002542
6969 031060 012746 000006
6970
6971 031064 012705 031274
6972
6973 031070 005737 177572
6974
6975
6976 031074 062706 000002
6977 031100 012700 000000
6978 031104 104441
6979 031106 012701 172300
6980 031112 012702 000010
6981 031116
6982 031116 012721 077406
6983 031122 005302
6984 031124 001374
6985 031126 012701 172340
6986 031132 005011
6987 031134 012761 000200 000002
6988 031142 012761 000400 000004
6989 031150 012761 000600 000006
6990 031156 012761 001000 000010
6991 031164 012761 177600 000016
6992
6993
6994 031172 012761 006000 000012
6995 031200 005037 002432
6996 031204 012737 000033 002360
6997 031212 052737 040000 002432
6998 031220 012737 177776 002422
6999 031226 012737 101750 002424
7000 031234 012737 033446 002420
7001 031242 012737 001000 002426
7002 031250 004737 004522
7003 031254 004537 006346
7004 031260 005037 002402

```

.SBTTL ***** TEST 41 *****
.SBTTL TEST OF MEM EXTENSION BIT 16 AND 17, ADDRESS 600000
ZZ
:
:
: * THIS TEST WE'LL TRY TRANSMITTING A MESSAGE
: * TO VIRTUAL ADDRESS 600000 (BIT 16 AND 17 SET).
: * IF MEMORY MANAGEMENT AND/OR SUFFICIENT MEMORY IS NOT
: * AVAILABLE FOR MESSAGE STORAGE, WE WILL EXPECT THE DMP-11
: * TO RETURN A NON-EXISTENT MEMORY ERROR FOR THE BUFFER.
: * IF ENOUGH MEMORY EXISTS, WE'LL MAKE SURE THE TRANSFER TAKES
: * PLACE PROPERLY.
:
:
: *
: *
.SBTTL ***** TEST 41 *****
T41::
MOV #META,4 ;SET UP TRAP FOR NO MEM
CLR 6
MOV #6,$TMP0
MOV #6,-(SP) ;DUMMY MOVE TO STACK IF
;TRAP TAKES U TO SR.
MOV #RET18,R5 ;SET UP R5 FOR RETURN
TST @#177572 ;DOES MEM MANAGEMENT EXIST
;IF NOT TRAP TO META
; ELSE CONTINUE
ADD #2,SP ;FIX STACK ;:(SP) VRG021882
MOV #0,R0
TRAP C$SPRI
MOV #172300,R1 ;GET ADDRESS OF KERNEL PDR REQD/
MOV #8,R2 ; DO 8 TIMES
10$:
MOV #77406,(R1)+
DEC R2
BNE 10$
MOV #172340,R1
CLR (R1)
MOV #200,2(R1)
MOV #400,4(R1)
MOV #600,6(R1)
MOV #1000,10(R1)
MOV #177600,16(R1) ;:CHANGED FROM 7600 FOR
;:AN 11/24 VRG030482
MOV #6000,12(R1)
CLR GENWRD
MOV #33,TRIBN ;MAP MEM CLEAR GEN AND SET UP TRIB
BIS #BIT14,GENWRD ;SET MM BIT
MOV #177776,RXADD ;SET UP RX ADD
MOV #101750,RXCC ;SET UP RX COUNT (1000 DEC)+BA17
MOV #MR1,TXADD ;SET UP TRANSMIT COUNT
MOV #512,TXCC ;SET UP TRANSMIT COUNT
JSR PC,MINITS ; MASTER CLEAR MODE DEF
JSR R5,TXRX3 ;GO TRANSMIT AND RX
CLR ERRWRD ; IF ERROR GO TO END

```

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;***** TEST 41 *****

| | | | |
|------|--------|--------|--------|
| 7005 | 031264 | 104410 | |
| 7006 | 031266 | 000012 | |
| 7007 | 031270 | 004537 | 003744 |
| 7008 | 031274 | 005037 | 002402 |
| 7009 | 031300 | | |
| 7010 | 031300 | 104401 | |
| 7011 | | | |

| | | | |
|---------|-------|-----------|----------------------|
| | TRAP | C\$ESCAPE | |
| | .WORD | L10112- | |
| | JSR | R5, MEMEX | :CHECK MEM EXTENSION |
| RET18: | CLR | ERRWRD | :CLEAR ERROR WORD |
| L10112: | | | |
| | TRAP | C\$ETST | |

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***** TEST 42 *****

7012
7013
7014 031302
7015
7016
7017
7018
7019
7020
7021
7022
7023
7024
7025
7026 031302
7027
7028 031302 012737 000042 002370
7029
7030 031310 005037 002432
7031 031314 012737 000401 002426
7032 031322 012737 033447 002420
7033 031330 012737 033727 002422
7034 031336 012737 001750 002424
7035 031344 012737 000001 002360
7036 031352 022737 000004 002476
7037 031360 001402
7038 031362 005237 002400
7039 031366 004737 004512
7040 031372 005037 002400
7041 031376 005037 002402
7042 031402 104410
7043 031404 000012
7044
7045
7046
7047 031406 004537 005720
7048 031412 005037 002402
7049 031416
7050 031416 104401
7051

```

.SBTTL :***** TEST 42 *****
.SBTTL *TX AND RX 257 BYTES,ODD TX,ODD RX,DDCMP,POINT TO POINT
ZZ
:*
:*
:* THIS TEST WILL TRANSMIT A MESSAGE OF 257 BYTES
:* FROM A TX BUFFER STARTING WITH AN ODD BYTE TO
:* A RECEIVE BUFFER STARTING WITH AN ODD BYTE IN
:* DDCMP MODE,POINT TO POINT IF THERE IS EXTERNAL LOOP
:* BACK THEN THE TEST WILL BE DONE OVER THAT LOOPBACK
:* ELSE THE LOOPBACK WILL BE SET TO INTERNAL(TTL).
:*
:*-
.SBTTL :***** TEST 42 *****
T42::
MOV #42,ROMN1 ;SET UP TEST NUMBER
CLR GENWRD ;CLEAR THE GEN WORD
MOV #257,TXCC ;SET UP TRANSMIT CHAR COUNT
MOV #MR1+1,TXADD ;SET UP ADD FOR TX
MOV #RECBU1+1,RXADD ;SET UP RX
MOV #1000,RXCC ;SET UP RX COUNT 1000 DECIMAL
MOV #01,TRIBN ;SET TRIB # TO 1
CMP #4,TSTCON ;CHECK FOR LOOPBACK CONNECTOR
BEQ 1$
INC EXLOOP ;EXT CONNECTOR PRESENT: SET EXT LOOP FLAG
1$: JSR PC,MINIT1 ;MASTER CLEAR-MODE DEF
CLR EXLOOP ;CLEAR EXTERNAL LOOP FLAG
CLR ERRWRD
TRAP C$ESCAPE
.WORD L10113-.
:ESCAPE TEST IF ERROR
:
20$: JSR R5,TXRXSR ;GO DO IT
CLR ERRWRD
L10113: TRAP C$ETST

```


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***** TEST 43 *****

7052
 7053
 7054 031420
 7055
 7056
 7057
 7058
 7059
 7060
 7061
 7062
 7063 031420
 7064
 7065 031420 012737 000001 002360
 7066 031426 012737 000001 002426
 7067 031434 012737 033447 002420
 7068 031442 012737 000764 002424
 7069 031450 012737 033726 002422
 7070 031456 005037 002432
 7071 031462 052737 100000 002432
 7072 031470 004737 004522
 7073 031474 005037 002402
 7074 031500 104410
 7075 031502 000012
 7076
 7077
 7078
 7079 031504 004537 006346
 7080 031510 005037 002402
 7081 031514
 7082 031514 104401

.SBTTL ***** TEST 43 *****
 .SBTTL *TX AND RX 1 BYTE,ODD TX,EVEN RX,MAINT,MULTIPOINT
 ZZ
 :*
 :*
 :* THIS TEST TRANSMITS AND RECEIVES 1 BYTE MESSAGE
 :* FROM AND ODD TRANSMIT BUFFER TO AN EVEN RX BUFFER
 :* IN MAINTAINCE MODE,MULTIPOINT
 :*
 :*-

.SBTTL ***** TEST 43 *****
 T43::

```

MOV #01,TRIBN
MOV #01,TXCC
MOV #MR1+1,TXADD
MOV #500.,RXCC
MOV #RECBU1,RXADD
CLR GENWRD
BIS #BIT15,GENWRD ;SET UP TX RX AND MAINT STATE
JSR PC,MINITS ;MASTER CLEAR MULTIPOINT
CLR ERRWRD
TRAP C$ESCAPE
.WORD L10114-.

: : : : :
: ESCAPE TEST IF ERROR
: : : : :
20$: JSR R5,TRX3 ;GO DO IT
CLR ERRWRD ;CLEAR ERROR WORD

L10114: TRAP C$SETST

```

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***** TEST 44 *****

7083
7084
7085 031516
7086
7087
7088
7089
7090
7091
7092
7093 031516
7094
7095 031516 005037 002432
7096 031522 004737 004522
7097 031526 005037 002402
7098 031532 104410
7099 031534 000774
7100
7101
7102
7103 031536 005037 002360
7104 031542 012703 000237
7105 031546 012704 000100
7106 031552 004537 003162
7107 031556 005037 002402
7108 031562 104410
7109 031564 000744
7110
7111
7112
7113
7114 031566 012737 000034 002360
7115 031574 012703 000001
7116 031600 004537 003162
7117 031604 005037 002402
7118 031610 104410
7119 031612 000716
7120
7121
7122
7123 031614 012703 000236
7124 031620 012704 002000
7125 031624 032737 000003 002472
7126 031632 001402
7127 031634 012704 000144
7128 031640 004537 003162
7129 031644 005037 002402
7130 031650 104410
7131 031652 000656
7132
7133
7134
7135 031654 012704 002010
7136 031660 012703 000234
7137 031664 004537 003162
7138 031670 005037 002402

```

.SBTTL ***** TEST 44 *****
.SBTTL POLLING STATE TESTS
ZZ
:*
:*
:* THIS TEST CHECKS THE DEGRADING OF THE POLLING
:* STATES FROM ACTIVE TO INACTIVE TO POTEN. DEAD
:* TO DEAD.
.SBTTL ***** TEST 44 *****
T44::
BEGPOL: CLR      GENWRD      ;CLEAR FLAG WORD
        JSR      PC,MINITS  ;MASTER CLEAR MODE DEF(FD/CS/MP)
        CLR      ERRWRD
        TRAP     C$ESCAPE
        .WORD    L10115-.
        :::::::::::
        :SET POLL DELAY
        :::::::::::
        CLR      TRIBN
        MOV      #237,R3
        MOV      #100,R4
        JSR      R5,CONTIN
        CLR      ERRWRD
        TRAP     C$ESCAPE
        .WORD    L10115-.
        :::::::::::
        :ESTABLISH TRIB
        :::::::::::
        MOV      #34,TRIBN  ;SET TRIB NO.
        MOV      #01,R3
        JSR      R5,CONTIN
        CLR      ERRWRD
        TRAP     C$ESCAPE
        .WORD    L10115-.
        :::::::::::
        :SET SELECTION TIMER TO 1 SEC
        :::::::::::
        MOV      #236,R3
        MOV      #2000,R4
        BIT      #3,OPTYP   ;* IS THIS A DMV ?
        BEQ      1$        ;*
        MOV      #144,R4    ;* IF YES: ADJUST VALUE.
        JSR      R5,CONTIN
        CLR      ERRWRD
        TRAP     C$ESCAPE
        .WORD    L10115-.
        :::::::::::
        :WRITE NDM > INACTIVE AND #TO > PDEAD
        :::::::::::
        MOV      #2010,R4
        MOV      #234,R3
        JSR      R5,CONTIN  ;WRITE TSS SLOT
        CLR      ERRWRD

```

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***** TEST 44 *****

| | | | | | | | | |
|------|--------|--------|--------|--------|-------|---------|----------------------------------|------------------|
| 7139 | 031674 | 104410 | | | | TRAP | C\$ESCAPE | |
| 7140 | 031676 | 000632 | | | | .WORD | L10115- | |
| 7141 | | | | | | | | |
| 7142 | | | | | | : ISTRT | TRIB | |
| 7143 |  |  |  |  |  | ..... |  |  |
| 7144 | 031700 | 012703 | 000003 | | | MOV | #03,R3 | |
| 7145 | 031704 | 004537 | 003162 | | | JSR | R5,CONTIN | |
| 7146 | 031710 | 005037 | 002402 | | | CLR | ERRWRD | |
| 7147 | 031714 | 104410 | | | | TRAP | C\$ESCAPE | |
| 7148 | 031716 | 000612 | | | | .WORD | L10115- | |
| 7149 |  |  |  |  |  | ..... |  |  |
| 7150 | | | | | | : WAIT | FOR RUN STATE | |
| 7151 |  |  |  |  |  | ..... |  |  |
| 7152 | 031720 | 012737 | 000001 | 002336 | | MOV | #01,\$GDDAT | |
| 7153 | 031726 | 004537 | 003242 | | | JSR | R5,GETOUT | |
| 7154 | 031732 | 005037 | 002402 | | | CLR | ERRWRD | |
| 7155 | 031736 | 104410 | | | | TRAP | C\$ESCAPE | |
| 7156 | 031740 | 000570 | | | | .WORD | L10115- | |
| 7157 | 031742 | 012737 | 000024 | 002336 | | MOV | #24,\$GDDAT | |
| 7158 | 031750 | 004537 | 003670 | | | JSR | R5,GETOC | |
| 7159 | 031754 | 005037 | 002402 | | | CLR | ERRWRD | |
| 7160 | 031760 | 104410 | | | | TRAP | C\$ESCAPE | |
| 7161 | 031762 | 000546 | | | | .WORD | L10115- | |
| 7162 |  |  |  |  |  | ..... |  |  |
| 7163 | | | | | | : READ | TSS SLOT WITH POLL STATUS | |
| 7164 |  |  |  |  |  | ..... |  |  |
| 7165 | 031764 | 042777 | 000200 | 150452 | 20\$: | BIC | #RDO,@BSEL2 | ;CLEAR RDO |
| 7166 | 031772 | 012703 | 000042 | | | MOV | #42,R3 | |
| 7167 | 031776 | 004537 | 003162 | | | JSR | R5,CONTIN | ;READ TSS SLOT 2 |
| 7168 | 032002 | 005037 | 002402 | | | CLR | ERRWRD | |
| 7169 | 032006 | 104410 | | | | TRAP | C\$ESCAPE | |
| 7170 | 032010 | 000520 | | | | .WORD | L10115- | |
| 7171 | 032012 | 012737 | 000002 | 002336 | | MOV | #02,\$GDDAT | |
| 7172 | 032020 | 004537 | 003242 | | | JSR | R5,GETOUT | ;GET INFO OUT |
| 7173 | 032024 | 005037 | 002402 | | | CLR | ERRWRD | |
| 7174 | 032030 | 104410 | | | | TRAP | C\$ESCAPE | |
| 7175 | 032032 | 000476 | | | | .WORD | L10115- | |
| 7176 | 032034 | 032777 | 001000 | 150406 | | BIT | #BIT9,@BSEL4 | ;IS IT INACTIVE |
| 7177 | 032042 | 001750 | | | | BEQ | 20\$ | ;IF NOT GO BACK |
| 7178 |  |  |  |  |  | ..... |  |  |
| 7179 | | | | | | : GET | HERE WHEN STATE GOES TO INACTIVE | |
| 7180 |  |  |  |  |  | ..... |  |  |
| 7181 | 032044 | 042777 | 000200 | 150372 | | BIC | #RDO,@BSEL2 | ;CLEAR OUTPUT |
| 7182 |  |  |  |  |  | ..... |  |  |
| 7183 | | | | | | : READ | # OF SELECTION INTERVALS | |
| 7184 |  |  |  |  |  | ..... |  |  |
| 7185 | 032052 | 012703 | 000051 | | | MOV | #51,R3 | |
| 7186 | 032056 | 004537 | 003162 | | | JSR | R5,CONTIN | |
| 7187 | 032062 | 005037 | 002402 | | | CLR | ERRWRD | |
| 7188 | 032066 | 104410 | | | | TRAP | C\$ESCAPE | |
| 7189 | 032070 | 000440 | | | | .WORD | L10115- | |
| 7190 | 032072 | 012737 | 000002 | 002336 | | MOV | #02,\$GDDAT | |
| 7191 | 032100 | 004537 | 003242 | | | JSR | R5,GETOUT | |
| 7192 | | | | | | | | |
| 7193 | | | | | | : MAKE | SURE #OF SELC. INTV IS CORRECT | |
| 7194 | | | | | | | | |

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:***** TEST 44 *****

```

7195 032104 012737 000010 002336      MOV    #10,$GDDAT
7196 032112 004537 003446              JSR    R5,GETDAT
7197                                     : : : : :
7198                                     : GET HERE IN INACTIVE STATE
7199                                     : : : : :
7200 032116                                40$: BIC    #RDO,@BSEL2      ;CLEAR OUTPUT
7201 032116 042777 000200 150320          : : : : :
7202                                     : CHANGE MODE TO HALF DUPLEX
7203                                     : : : : :
7204                                     : : : : :
7205 032124 052777 000200 150306          BIS    #RQI,@BSELO
7206 032132 004537 002732              JSR    R5,WRDI      ;WAIT FOR RDI TO SET
7207                                     : : : : :
7208 032136 005037 002402              CLR    ERRWRD      ;CLEAR ERROR
7209 032142 104410                      TRAP   C$ESCAPE
7210 032144 000364                      .WORD L10115-
7211 032146 042777 000200 150264          BIC    #RQI,@BSELO
7212 032154 012777 000004 150272          MOV    #04,@BSEL6
7213 032162 112777 000002 150254          MOVB  #02,@BSEL2
7214 032170 042777 000200 150246          50$: BIC    #RDO,@BSEL2
7215                                     : : : : :
7216                                     : : : : :
7217                                     : : : : :
7218                                     : READ POLL STATUS SLOT
7219                                     : : : : :
7220 032176 012703 000042              MOV    #42,R3
7221 032202 004537 003162              JSR    R5,CONTIN
7222 032206 005037 002402              CLR    ERRWRD
7223 032212 104410                      TRAP   C$ESCAPE
7224 032214 000314                      .WORD L10115-
7225 032216 012737 000002 002336          MOV    #02,$GDDAT
7226                                     : : : : :
7227 032224 004537 003242              JSR    R5,GETOUT
7228                                     : : : : :
7229                                     : IS THE STATE POTN. DEAD??
7230                                     : : : : :
7231 032230 032777 010000 150212          BIT    #BIT12,@BSEL4
7232 032236 001754                      BEQ    50$
7233                                     : : : : :
7234                                     : IF NOT CO BACK TO 50
7235                                     : : : : :
7236                                     : : : : :
7237                                     : : : : :
7238                                     : IF SO READ THE SELECTION TIMER
7239                                     : : : : :
7240                                     : : : : :
7241 032240 012703 000056              MOV    #56,R3
7242 032244 042777 000200 150172          BIC    #RDO,@BSEL2
7243 032252 004537 003162              JSR    R5,CONTIN
7244 032256 005037 002402              CLR    ERRWRD
7245 032262 104410                      TRAP   C$ESCAPE
7246 032264 000244                      .WORD L10115-
7247 032266 012737 000002 002336          MOV    #02,$GDDAT
7248 032274 004537 003242              JSR    R5,GETOUT
7249 032300 005037 002402              CLR    ERRWRD
7250 032304 104410                      TRAP   C$ESCAPE

```

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***** TEST 44 *****

| | | | | |
|------|--------|--------|--------|--------|
| 7251 | 032306 | 000222 | | |
| 7252 | | | | |
| 7253 | | | | |
| 7254 | | | | |
| 7255 | | | | |
| 7256 | 032310 | 012737 | 001004 | 002336 |
| 7257 | 032316 | 004537 | 003446 | |
| 7258 | | | | |
| 7259 | | | | |
| 7260 | | | | |
| 7261 | 032322 | 042777 | 000200 | 150114 |
| 7262 | | | | |
| 7263 | 032330 | 012737 | 000001 | 002336 |
| 7264 | 032336 | 004537 | 003242 | |
| 7265 | 032342 | 005037 | 002402 | |
| 7266 | 032346 | 104410 | | |
| 7267 | 032350 | 000160 | | |
| 7268 | 032352 | 012737 | 000006 | 002336 |
| 7269 | 032360 | 004537 | 003670 | |
| 7270 | 032364 | 005037 | 002402 | |
| 7271 | 032370 | 104410 | | |
| 7272 | 032372 | 000136 | | |
| 7273 | 032374 | 042777 | 000200 | 150042 |
| 7274 | | | | |
| 7275 | | | | |
| 7276 | | | | |
| 7277 | 032402 | 012737 | 000001 | 002336 |
| 7278 | 032410 | 004537 | 003242 | |
| 7279 | 032414 | 005037 | 002402 | |
| 7280 | 032420 | 104410 | | |
| 7281 | 032422 | 000106 | | |
| 7282 | 032424 | 012737 | 000022 | 002336 |
| 7283 | 032432 | 004537 | 003670 | |
| 7284 | | | | |
| 7285 | 032436 | 005037 | 002402 | |
| 7286 | 032442 | 104410 | | |
| 7287 | 032444 | 000064 | | |
| 7288 | | | | |
| 7289 | | | | |
| 7290 | | | | |
| 7291 | | | | |
| 7292 | | | | |
| 7293 | | | | |
| 7294 | 032446 | 042777 | 000200 | 147770 |
| 7295 | 032454 | 012703 | 000056 | |
| 7296 | 032460 | 004537 | 003162 | |
| 7297 | 032464 | 005037 | 002402 | |
| 7298 | 032470 | 104410 | | |
| 7299 | 032472 | 000036 | | |
| 7300 | 032474 | 012737 | 000002 | 002336 |
| 7301 | 032502 | 004537 | 003242 | |
| 7302 | 032506 | 005037 | 002402 | |
| 7303 | 032512 | 104410 | | |
| 7304 | 032514 | 000014 | | |
| 7305 | 032516 | 012737 | 001010 | 002336 |
| 7306 | 032524 | 004537 | 003446 | |

```

.WORD L10115-.
: COMPARE SELECTION TIME OUTS WITH # WRITTEN
:
:
MOV #1004,$GDDAT
JSR R5,GETDAT
:
: WAIT FOR TRIB TO POST SELECT. THRESH. ERROR
:
BIC #RDO,@BSEL2 ;CLEAR OUTPUT CODE
:
MOV #01,$GDDAT
JSR R5,GETOUT
CLR ERRWRD
TRAP C$ESCAPE
.WORD L10115-.
MOV #6,$GDDAT
JSR R5,GETOC
CLR ERRWRD
TRAP C$ESCAPE
.WORD L10115-.
BIC #RDO,@BSEL2
:
: NOW WAIT FOR TRIB TO POST DEAD STATUS
:
MOV #01,$GDDAT
JSR R5,GETOUT
CLR ERRWRD
TRAP C$ESCAPE
.WORD L10115-.
MOV #22,$GDDAT
JSR R5,GETOC
:
CLR ERRWRD
TRAP C$ESCAPE
.WORD L10115-.
:
: NOW READ SELECTION TIMER AND
: SEE IF IT IS EQUAL TO 10
:
BIC #RDO,@BSEL2
MOV #56,R3
JSR R5,CONTIN
CLR ERRWRD
TRAP C$ESCAPE
.WORD L10115-.
MOV #02,$GDDAT
JSR R5,GETOUT
CLR ERRWRD
TRAP C$ESCAPE
.WORD L10115-.
MOV #1010,$GDDAT
JSR R5,GETDAT

```

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;***** TEST 44 *****

7307 032530
7308 032530 104401
7309
7310
7311
7312
7313
7314

L10115:

TRAP CSETST

.SBTTL ----- END OF HARDWARE TESTS -----

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----- END OF HARDWARE TESTS -----

7315
7316
7317
7318
7319
7320
7321
7322
7323
7324
7325
7326
7327
7328
7329 032532 000041
7330 032534
7331 032534 000032
7332 032536 032636
7333 032540 000007
7334 032542 000000
7335 032544 000007
7336 032546 001031
7337 032550 032721
7338 032552 160000
7339 032554 177776
7340 032556 002031
7341 032560 032747
7342 032562 000000
7343 032564 000674
7344 032566 003032
7345 032570 033000
7346 032572 007000
7347 032574 000004
7348 032576 000007
7349 032600 010032
7350 032602 033031
7351 032604 000007
7352 032606 000000
7353 032610 000004
7354 032612 011032
7355 032614 033135
7356 032616 000007
7357 032620 000000
7358 032622 000007
7359 032624 013032
7360 032626 033346
7361 032630 000007
7362 032632 000000
7363 032634 000007
7364
7365
7366
7367 032636
7368
7369 032636 042523 042514 052103
7370 032644 052040 050131 020105

.SBTTL HARDWARE PARAMETER CODING SECTION

```

://////
:/ 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.
://////

```

LSHARD: .WORD L10116-LSHARD/2

```

.WORD T$CODE
.WORD OPTYPM
.WORD 7
.WORD T$LOLIM
.WORD T$HILIM
.WORD T$CODE
.WORD ADDRES
.WORD T$LOLIM
.WORD T$HILIM
.WORD T$CODE
.WORD VECTOR
.WORD T$LOLIM
.WORD T$HILIM
.WORD T$CODE
.WORD PIRTY
.WORD 7000
.WORD T$LOLIM
.WORD T$HILIM
.WORD T$CODE
.WORD LOOPBK
.WORD 7
.WORD T$LOLIM
.WORD T$HILIM
.WORD T$CODE
.WORD IFTYPM
.WORD 7
.WORD T$LOLIM
.WORD T$HILIM

```

L10116: .EVEN

OPTYPM: .ASCIZ /SELECT TYPE (0=8207'DMP',1=8053'DMV',2=8064'DMV):/

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HARDWARE PARAMETER CODING SECTION

| | | | | | |
|------|--------|--------|--------|--------|----------------------------------------------------------------------------|
| 7371 | 032652 | 020050 | 036460 | 031070 | |
| 7372 | 032660 | 033460 | 042047 | 050115 | |
| 7373 | 032666 | 026047 | 036461 | 030070 | |
| 7374 | 032674 | 031465 | 042047 | 053115 | |
| 7375 | 032702 | 026047 | 036462 | 030070 | |
| 7376 | 032710 | 032066 | 042047 | 053115 | |
| 7377 | 032716 | 035051 | 000 | | |
| 7378 | 032721 | 104 | 053105 | 041511 | ADDRES: .ASCIZ /DEVICE CSR ADDRESS : / |
| 7379 | 032726 | 020105 | 051503 | 020122 | |
| 7380 | 032734 | 042101 | 051104 | 051505 | |
| 7381 | 032742 | 020123 | 020072 | 000 | |
| 7382 | 032747 | 104 | 053105 | 041511 | VECTOR: .ASCIZ /DEVICE VECTOR ADDRESS : / |
| 7383 | 032754 | 020105 | 042526 | 052103 | |
| 7384 | 032762 | 051117 | 040440 | 042104 | |
| 7385 | 032770 | 042522 | 051523 | 035040 | |
| 7386 | 032776 | 000040 | | | |
| 7387 | 033000 | 042504 | 044526 | 042503 | PRIPTY: .ASCIZ /DEVICE PRIORITY LEVEL : / |
| 7388 | 033006 | 050040 | 044522 | 051117 | |
| 7389 | 033014 | 052111 | 020131 | 042514 | |
| 7390 | 033022 | 042526 | 020114 | 020072 | |
| 7391 | 033030 | 000 | | | |
| 7392 | 033031 | 124 | 051125 | 040516 | LOOPBK: .ASCII /TURNAROUND TYPE -/ |
| 7393 | 033036 | 047522 | 047125 | 020104 | |
| 7394 | 033044 | 054524 | 042520 | 0264'0 | |
| 7395 | 033052 | 030050 | 044075 | 031063 | .ASCIZ /(0=H3254&H3255,1=CABLE,2=MOD LOC,3=MOD REM,4=NONE)/ |
| 7396 | 033060 | 032065 | 044046 | 031063 | |
| 7397 | 033066 | 032465 | 030'54 | 041475 | |
| 7398 | 033074 | 041101 | 042514 | 031054 | |
| 7399 | 033102 | 046475 | 042117 | 046040 | |
| 7400 | 033110 | 041517 | 031454 | 046475 | |
| 7401 | 033116 | 042117 | 051040 | 046505 | |
| 7402 | 033124 | 032054 | 047075 | 047117 | |
| 7403 | 033132 | 024505 | 000 | | |
| 7404 | 033135 | 120 | 042514 | 051501 | SPEDEM: .ASCII 'PLEASE SELECT BAUD RATE;TYPE '0' FOR 2.4K; '1' FOR 4.8K;'' |
| 7405 | 033142 | 020105 | 042523 | 042514 | |
| 7406 | 033150 | 052103 | 041040 | 052501 | |
| 7407 | 033156 | 020104 | 040522 | 042524 | |
| 7408 | 033164 | 052073 | 050131 | 020105 | |
| 7409 | 033172 | 030047 | 020047 | 047506 | |
| 7410 | 033200 | 020122 | 027062 | 045464 | |
| 7411 | 033206 | 020073 | 030447 | 020047 | |
| 7412 | 033214 | 047506 | 020122 | 027064 | |
| 7413 | 033222 | 045470 | 073 | | |
| 7414 | 033225 | 015 | 023412 | 023462 | .ASCII<15><12>'2' FOR 9.6K; '3' FOR 19.2K; '4' FOR 56K; '5' FOR 250K;'' |
| 7415 | 033232 | 043040 | 051117 | 034440 | |
| 7416 | 033240 | 033056 | 035513 | 023440 | |
| 7417 | 033246 | 023463 | 043040 | 051117 | |
| 7418 | 033254 | 030440 | 027071 | 045462 | |
| 7419 | 033262 | 020073 | 032047 | 020047 | |
| 7420 | 033270 | 047506 | 020122 | 033065 | |
| 7421 | 033276 | 035513 | 023440 | 023465 | |
| 7422 | 033304 | 043040 | 051117 | 031040 | |
| 7423 | 033312 | 030065 | 035513 | | |
| 7424 | 033316 | 005015 | 051117 | 023440 | .ASCIZ<15><12>'OR '6' FOR 500K BAUDS'' |
| 7425 | 033324 | 023466 | 043040 | 051117 | |
| 7426 | 033332 | 032440 | 030060 | 020113 | |

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HARDWARE PARAMETER CODING SECTION

| | | | | |
|------|--------|--------|--------|--------|
| 7427 | 033340 | 040502 | 042125 | 000123 |
| 7428 | 033346 | 042523 | 042514 | 052103 |
| 7429 | 033354 | 044440 | 052116 | 051105 |
| 7430 | 033362 | 040506 | 042503 | 052040 |
| 7431 | 033370 | 050131 | 020105 | 030450 |
| 7432 | 033376 | 044475 | 052116 | 043505 |
| 7433 | 033404 | 040522 | 026114 | 036462 |
| 7434 | 033412 | 044505 | 026101 | 036463 |
| 7435 | 033420 | 027126 | 032463 | 032054 |
| 7436 | 033426 | 032075 | 031062 | 035051 |
| 7437 | 033434 | 000 | | |
| 7438 | | | | |
| 7439 | 033436 | | | |
| 7440 | | | | |
| 7441 | | | | |
| 7442 | | | | |

IFTYPM: .ASCIZ /SELECT INTERFACE TYPE (1=INTEGRAL,2=EIA,3=V.35,4=422):/

.EVEN

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SOFTWARE PARAMETER CODING SECTION

.SBTTL SOFTWARE PARAMETER CODING SECTION

7443
7444
7445
7446
7447
7448
7449
7450
7451
7452
7453
7454
7455 033436 000000
7456 033440
7457
7458
7459 033440
7460
7461
7462
7463
7464
7465
7466
7467
7468
7469
7470 033440
7471 033440 000240
7472 033442 000240
7473 033444 000240
7474
7475
7476
7477 033446 041101 000103
7478 033452
7479
7480 033452 047516 020127 051511
7481 033460 052040 042510 052040
7482 033466 046511 020105 047506
7483 033474 020122 046101 020114
7484 033502 047507 042117 050040
7485 033510 047505 046120 020105
7486 033516 047524 041440 046517
7487 033524 020105 047524 052040
7488 033532 042510
7489 033534 044124 020105 052521
7490 033542 041511 020113 051102
7491 033550 053517 020116 047506
7492 033556 020130 052512 050115
7493 033564 042105 047440 042526
7494 033572 020122 044124 020105
7495 033600 040514 054532 042040
7496 033606 043517 051447
7497 033612 040502 045503 020056
7498 033620 047514 051520 040440

```

:////////////////////
:/ THE SOFTWARE PARAMETER CODING SECTION CONTAINS MACROS
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:////////////////////

```

```

L$SOFT: .WORD L10117-L$SOFT/2
L10117: .EVEN

```

```

:***** PATCH AREA FOR DEBUG *****
PATCH:
        NOP
        NOP
        NOP
:*****

```

```

MR1: .ASCIZ "ABC"
MR1E:
MR12: .ASCII "NOW IS THE TIME FOR ALL GOOD PEOPLE TO COME TO THE"

        .ASCII "THE QUICK BROWN FOX JUMPED OVER THE LAZY DOG'S"

        .ASCII "BACK. LOPS ARE TOPS!"

```

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SOFTWARE PARAMETER CODING SECTION

| | | | | | |
|------|--------|--------|--------|--------|-------------------------------------|
| 7499 | 033626 | 042522 | 052040 | 050117 | |
| 7500 | 033634 | 020523 | | | |
| 7501 | 033636 | 041101 | 042103 | 043105 | .ASCII 'ABCDEFGHIJKLMNOPQRSTUVWXYZ' |
| 7502 | 033644 | 044107 | 045111 | 046113 | |
| 7503 | 033652 | 047115 | 050117 | 051121 | |
| 7504 | 033660 | 052123 | 053125 | 054127 | |
| 7505 | 033666 | 055131 | | | |
| 7506 | 033670 | 041501 | 043505 | 045511 | .ASCII 'ACEGIKMOQSUWY' |
| 7507 | 033676 | 047515 | 051521 | 053525 | |
| 7508 | 033704 | 131 | | | |
| 7509 | | | | | |
| 7510 | | 033706 | | | .EVFN |
| 7511 | 033706 | | | | MR12E: |
| 7512 | | | | | |
| 7513 | 033706 | 000000 | | | DATLST: 0 |
| 7514 | 033710 | 125252 | | | 125252 |
| 7515 | 033712 | 052525 | | | 052525 |
| 7516 | 033714 | 000000 | | | 0 |
| 7517 | 033716 | 177777 | | | -1 |
| 7518 | 033720 | 000377 | | | 377 |
| 7519 | 033722 | 177400 | | | 177400 |
| 7520 | 033724 | 000562 | | | 562 |
| 7521 | | | | | |
| 7522 | 033726 | 001750 | | | RECBU1: .BLKW 1000. |
| 7523 | | | | | |
| 7524 | | | | | .EVEN |
| 7525 | 037646 | 000000 | | | .WORD 0 |
| 7526 | 037650 | 000000 | | | .WORD 0 |
| 7527 | 037652 | | | | LSLAST:: |
| 7528 | | | | | |
| 7529 | | 000001 | | | .END |

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CROSS REFERENCE TABLE -- USER SYMBOLS

| | | | | | | | | | | | | | | | | | | | | |
|---------|--------|------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|--|--|--|--|--|
| ADDRES | 032721 | 7337 | 7378# | | | | | | | | | | | | | | | | | |
| ADR = | 000020 | G | 1399# | | | | | | | | | | | | | | | | | |
| ASSEMB= | 000010 | | 1097 | | | | | | | | | | | | | | | | | |
| AXNUM | 002506 | | 1521# | 2220* | 2222* | 2280 | 2486* | 2599 | 6681* | | | | | | | | | | | |
| BADBR | 006232 | | 2515 | 2531 | 2574# | | | | | | | | | | | | | | | |
| BADBRM | 010544 | | 2576 | 3053# | | | | | | | | | | | | | | | | |
| BADIF | 006200 | | 2513 | 2529 | 2544 | 2554 | 2563# | | | | | | | | | | | | | |
| BADIFM | 010466 | | 2565 | 3045# | | | | | | | | | | | | | | | | |
| BASER | 010450 | | 3033 | 3042# | | | | | | | | | | | | | | | | |
| BEGPOL | 031522 | | 7096# | | | | | | | | | | | | | | | | | |
| BIT0 = | 000001 | G | 1372# | 1426 | 2493 | 3436 | | | | | | | | | | | | | | |
| BIT00 = | 000001 | G | 1361# | 1372 | | | | | | | | | | | | | | | | |
| BIT01 = | 000002 | G | 1360# | 1371 | | | | | | | | | | | | | | | | |
| BIT02 = | 000004 | G | 1359# | 1370 | | | | | | | | | | | | | | | | |
| BIT03 = | 000010 | G | 1358# | 1369 | | | | | | | | | | | | | | | | |
| BIT04 = | 000020 | G | 1357# | 1368 | | | | | | | | | | | | | | | | |
| BIT05 = | 000040 | G | 1356# | 1367 | | | | | | | | | | | | | | | | |
| BIT06 = | 000100 | G | 1355# | 1366 | | | | | | | | | | | | | | | | |
| BIT07 = | 000200 | G | 1354# | 1365 | | | | | | | | | | | | | | | | |
| BIT08 = | 000400 | G | 1353# | 1364 | | | | | | | | | | | | | | | | |
| BIT09 = | 001000 | G | 1352# | 1363 | | | | | | | | | | | | | | | | |
| BIT1 = | 000002 | G | 1371# | 1425 | 2490 | | | | | | | | | | | | | | | |
| BIT10 = | 002000 | G | 1351# | | | | | | | | | | | | | | | | | |
| BIT11 = | 004000 | G | 1350# | | | | | | | | | | | | | | | | | |
| BIT12 = | 010000 | G | 1349# | 7231 | | | | | | | | | | | | | | | | |
| BIT13 = | 020000 | G | 1348# | | | | | | | | | | | | | | | | | |
| BIT14 = | 040000 | G | 1347# | 2687 | 6873 | 6934 | 6997 | | | | | | | | | | | | | |
| BIT15 = | 100000 | G | 1346# | 2609 | 7071 | | | | | | | | | | | | | | | |
| BIT2 = | 000004 | G | 1370# | 1424 | | | | | | | | | | | | | | | | |
| BIT3 = | 000010 | G | 1369# | 1423 | 1431 | 2271 | 2504 | 4495 | 4512 | 4805 | 4877 | 6694 | | | | | | | | |
| BIT4 = | 000020 | G | 1368# | 1422 | | | | | | | | | | | | | | | | |
| BIT5 = | 000040 | G | 1367# | 5070 | 5094 | 5343 | 5366 | 5438 | | | | | | | | | | | | |
| BIT6 = | 000100 | G | 1366# | 1421 | | | | | | | | | | | | | | | | |
| BIT7 = | 000200 | G | 1365# | 1420 | 5056 | 5401 | | | | | | | | | | | | | | |
| BIT8 = | 000400 | G | 1364# | | | | | | | | | | | | | | | | | |
| BIT9 = | 001000 | G | 1363# | 7176 | | | | | | | | | | | | | | | | |
| BOE = | 000400 | G | 1403# | | | | | | | | | | | | | | | | | |
| BSELO | 002440 | | 1492# | 1776* | 1781* | 2235 | 2273* | 2281* | 2644* | 2679* | 2684* | 4257* | 4309* | 4320* | 4341 | | | | | |
| | | | 4359* | 4379 | 4401* | 4404* | 4500* | 4523 | 4539* | 4607* | 4655* | 4675* | 4736 | 4738* | 4744* | | | | | |
| | | | 4822* | 4828* | 4895* | 490* | 5570* | 5577* | 5834* | 5840* | 6325* | 6331* | 6382* | 6388* | 6450* | | | | | |
| | | | 6456* | 6495* | 6502* | 7205* | 7211* | | | | | | | | | | | | | |
| BSEL1 | 002442 | | 1495# | 2140* | 2142* | 2143* | 2190* | 2193* | 2223* | 2226* | 2263* | 2271* | 2397* | 2504* | 3454* | | | | | |
| | | | 3455* | 4495* | 4512 | 4726* | 4729* | 4805* | 4877* | 6694* | | | | | | | | | | |
| BSEL10 | 002460 | | 1505# | 2404* | 2656* | 2677* | 3466* | 3467* | | | | | | | | | | | | |
| BSEL2 | 002444 | | 1497# | 1633 | 1636 | 1646* | 1676 | 1679 | 1689* | 1721 | 1784* | 1815 | 2025 | 2265* | 2278 | | | | | |
| | | | 2282* | 2406* | 2630* | 2658* | 2662* | 2680* | 2685* | 2704 | 2724* | 2765* | 4268 | 4323* | 4623* | | | | | |
| | | | 4631 | 4677* | 4682 | 4693 | 4747* | 4752 | 4808 | 4821* | 4830* | 4883 | 4894* | 4906* | 4908 | | | | | |
| | | | 4993* | 5302 | 5435* | 5569* | 5581* | 5606* | 5618* | 5697* | 5733* | 5769* | 5841* | 5851* | 5961* | | | | | |
| | | | 5981* | 5993 | 6058* | 6079* | 6090 | 6205* | 6335* | 6392* | 6460* | 6506* | 7165* | 7181* | 7201* | | | | | |
| | | | 7213* | 7214* | 7242* | 7261* | 7273* | 7294* | | | | | | | | | | | | |
| BSEL3 | 002446 | | 1498# | 1780* | 1829 | 2651* | 2672* | 3460* | 3461* | 4428* | 4466* | 4745* | 5580* | 6332* | 6391* | | | | | |
| | | | 6459* | 6503* | | | | | | | | | | | | | | | | |
| BSEL4 | 002450 | | 1499# | 1782* | 1885 | 2251 | 2650* | 2671* | 4498* | 5578* | 5685* | 5686 | 6334* | 6390* | 6458* | | | | | |
| | | | 6505* | 6764 | 7176 | 7231 | | | | | | | | | | | | | | |
| BSEL5 | 002452 | | 1501# | 3462* | 3463* | | | | | | | | | | | | | | | |
| BSEL6 | 002454 | | 1502# | 1737 | 1783* | 1856 | 1986 | 2032 | 2141* | 2242 | 2244 | 2280* | 2657* | 2661* | 2678* | | | | | |

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CROSS REFERENCE TABLE -- USER SYMBOLS

| | | | | | | | | | | | | | | |
|----------|--------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| | | 2683* | 2804 | 4234 | 4236 | 4321* | 4499* | 4620* | 4676* | 4746* | 4765 | 4811 | 4829* | 4905* |
| BSEL7 | 002456 | 5579* | 6333* | 6389* | 6457* | 6504* | 7212* | | | | | | | |
| | | 1504# | 3464* | 3465* | 3714 | 3717 | 3737 | 3750 | 3761 | 3864 | 3867 | 3887 | 3900 | 3911 |
| CADDR | 002404 | 4014 | 4017 | 4037 | 4050 | 4061 | 4308* | 4322* | 4335 | 4375 | | | | |
| | | 1475# | 2116 | 2120 | 3634* | 3640* | 3643* | 3644 | 3659* | 3673* | 3684* | 3709* | 3715* | 3718* |
| | | 3719 | 3734* | 3748* | 3759* | 3784* | 3790* | 3793* | 3794 | 3809* | 3823* | 3834* | 3859* | 3865* |
| | | 3868* | 3869 | 3884* | 3898* | 3909* | 3934* | 3940* | 3943* | 3944 | 3959* | 3973* | 3984* | 4009* |
| | | 4015* | 4018* | 4019 | 4034* | 4048* | 4059* | | | | | | | |
| CFM1 | 005306 | 2330 | 2359# | | | | | | | | | | | |
| CFM2 | 005373 | 2339 | 2368# | | | | | | | | | | | |
| CFM3 | 005451 | 2347 | 2376# | | | | | | | | | | | |
| CFM4 | 005466 | 2353 | 2379# | | | | | | | | | | | |
| CODEW | 002430 | 1486# | 1727* | 1741* | 1820* | 1861* | 1891* | 1991* | 2035* | 3020 | 4698* | 4758* | 4768* | 5691* |
| | | 6768* | | | | | | | | | | | | |
| CONTIN | 003162 | 1775# | 2497 | 2595 | 2604 | 2615 | 2636 | 4872 | 4952 | 4969 | 4996 | 5042 | 5057 | 5071 |
| | | 5151 | 5164 | 5213 | 5226 | 5275 | 5288 | 5344 | 5403 | 5417 | 5439 | 5490 | 5537 | 5546 |
| | | 5583 | 5622 | 5649 | 5662 | 5699 | 5712 | 5735 | 5771 | 5784 | 5883 | 5930 | 5943 | 5963 |
| | | 5983 | 6027 | 6040 | 6060 | 6080 | 6126 | 6140 | 6153 | 6207 | 6220 | 6370 | 6431 | 6441 |
| | | 6699 | 6712 | 6725 | 7106 | 7116 | 7128 | 7137 | 7145 | 7167 | 7186 | 7221 | 7243 | 7296 |
| COUNT | 002342 | 1457# | 3487* | 3492* | 4217* | 4223* | | | | | | | | |
| COUNTT | 005134 | 2296* | 2303* | 2309# | | | | | | | | | | |
| CRCCAL | 002434 | 1488# | 2414* | 2435 | | | | | | | | | | |
| CRCR | 004376 | 2161# | 2422 | 3647 | 3722 | 3797 | 3872 | 3947 | 4022 | | | | | |
| CWORD | 002374 | 1471# | 2165* | 2169 | 2170* | 2171* | 2396* | 2436 | 2966 | 3636* | 3650* | 3651 | 3711* | 3725* |
| | | 3726 | 3786* | 3800* | 3801 | 3861* | 3875* | 3876 | 3936* | 3950* | 3951 | 4011* | 4025* | 4026 |
| C\$AU = | 000052 | 1097# | 3546 | | | | | | | | | | | |
| C\$AUTO= | 000061 | 1097# | 3500 | | | | | | | | | | | |
| C\$BRK = | 000022 | 1097# | 2306 | | | | | | | | | | | |
| C\$BSEG= | 000004 | 1097# | | | | | | | | | | | | |
| C\$BSUB= | 000002 | 1097# | 5325 | 5384 | 5474 | | | | | | | | | |
| C\$CEFG= | 000045 | 1097# | | | | | | | | | | | | |
| C\$CLCK= | 000062 | 1097# | | | | | | | | | | | | |
| C\$CLEA= | 000012 | 1097# | 3513 | | | | | | | | | | | |
| C\$CLOS= | 000035 | 1097# | | | | | | | | | | | | |
| C\$CLP1= | 000006 | 1097# | | | | | | | | | | | | |
| C\$CVEC= | 000036 | 1097# | 3594 | 4486 | 4488 | | | | | | | | | |
| C\$DCLN= | 000044 | 1097# | 3591 | | | | | | | | | | | |
| C\$DODU= | 000051 | 1097# | 3495 | | | | | | | | | | | |
| C\$DRPT= | 000024 | 1097# | | | | | | | | | | | | |
| C\$DU = | 000053 | 1097# | 3530 | | | | | | | | | | | |
| C\$EDIT= | 000003 | 1097# | 1174 | | | | | | | | | | | |
| C\$ERDF= | 000055 | 1097# | 1641 | 1694 | 1731 | 1745 | 1821 | 1833 | 1862 | 1892 | 1925 | 1961 | 1992 | 2036 |
| | | 2049 | 2065 | 2072 | 2298 | 2438 | 2748 | 3604 | 3655 | 3665 | 3689 | 3730 | 3740 | 3764 |
| | | 3805 | 3815 | 3839 | 3880 | 3890 | 3914 | 3955 | 3965 | 3989 | 4030 | 4040 | 4064 | 4096 |
| | | 4142 | 4228 | 4239 | 4249 | 4349 | 4387 | 4514 | 4531 | 4553 | 4563 | 4634 | 4685 | 4699 |
| | | 4759 | 4769 | 4814 | 4910 | 5305 | 5692 | 5996 | 6093 | 6769 | | | | |
| C\$ERHR= | 000056 | 1097# | | | | | | | | | | | | |
| C\$ERRO= | 000060 | 1097# | | | | | | | | | | | | |
| C\$ERSF= | 000054 | 1097# | | | | | | | | | | | | |
| C\$ERSO= | 000057 | 1097# | 2253 | | | | | | | | | | | |
| C\$ESCA= | 000010 | 1097# | 4089 | 4101 | 4135 | 4146 | 4232 | 4245 | 4253 | 4262 | 4271 | 4306 | 4314 | 4329 |
| | | 4353 | 4369 | 4391 | 4436 | 4472 | 4506 | 4519 | 4535 | 4599 | 4613 | 4659 | 4669 | 4690 |
| | | 4704 | 4734 | 4742 | 4750 | 4763 | 4797 | 4826 | 4836 | 4862 | 4889 | 4899 | 4945 | 4958 |
| | | 4975 | 4987 | 5002 | 5034 | 5048 | 5063 | 5077 | 5087 | 5098 | 5108 | 5143 | 5157 | 5170 |
| | | 5180 | 5205 | 5219 | 5232 | 5243 | 5267 | 5281 | 5294 | 5336 | 5347 | 5358 | 5370 | 5394 |
| | | 5406 | 5420 | 5429 | 5442 | 5453 | 5462 | 5482 | 5493 | 5503 | 5533 | 5543 | 5551 | 5559 |

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CROSS REFERENCE TABLE -- USER SYMBOLS

| | | | | | | | | | | | | | | |
|------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|--|
| DRUN = 000200 G | 1100# | 4309 | | | | | | | | | | | | |
| DUPTYP 030306 | 6681 | 6809# | | | | | | | | | | | | |
| ECBINT 014616 G | 3575 | 3601# | | | | | | | | | | | | |
| EF.CON= 000036 G | 1379# | 3424 | | | | | | | | | | | | |
| EF.NEW= 000035 G | 1380# | 3420 | | | | | | | | | | | | |
| EF.PWR= 000034 G | 1381# | | | | | | | | | | | | | |
| EF.RES= 000037 G | 1378# | 3416 | | | | | | | | | | | | |
| EF.STA= 000040 G | 1377# | 3412 | | | | | | | | | | | | |
| EMTO 010746 | 3076# | 3606 | | | | | | | | | | | | |
| ENDIT 014426 | 3426 | 3480# | | | | | | | | | | | | |
| ERLB1 017766 | 4258 | 4264# | | | | | | | | | | | | |
| ERLB10 021520 | 4736# | | | | | | | | | | | | | |
| ERLB2 020130 | 4326 | 4331# | | | | | | | | | | | | |
| ERLB3 020264 | 4366 | 4371# | | | | | | | | | | | | |
| ERLB4 020522 | 4433 | 4438# | | | | | | | | | | | | |
| ERLB5 020644 | 4469 | 4474# | | | | | | | | | | | | |
| ERLB6 020744 | 4503 | 4508# | | | | | | | | | | | | |
| ERLB7 004600 | 2229 | 2233# | | | | | | | | | | | | |
| ERLB8 004632 | 2237 | 2241# | | | | | | | | | | | | |
| ERLB9 005036 | 2274 | 2278# | | | | | | | | | | | | |
| EROIC 011506 | 1733 | 1747 | 1823 | 1864 | 1894 | 1994 | 2038 | 3142# | 4701 | 4761 | 4771 | 5694 | 6771 | |
| ERRADD 002406 | 1476# | 1629* | 1672* | 1716* | 1775* | 1811* | 1855* | 1884* | 1914* | 1948* | 1985* | 2229* | 2237* | |
| | 2274* | 2867 | 2952 | 2994 | 3010 | 4258* | 4326* | 4366* | 4433* | 4469* | 4503* | | | |
| ERROR1 002326 | 1451# | 3400* | | | | | | | | | | | | |
| ERRWRD 002402 | 1474# | 1631 | 1645* | 1674 | 1688* | 1718 | 1735* | 1749* | 1778 | 1813 | 1825* | 1837* | 1866* | |
| | 1896* | 1929* | 1965* | 1996* | 2023 | 2040* | 2053* | 2069* | 2231 | 2239 | 2257* | 2267 | 2276 | |
| | 2302* | 2399 | 2408 | 2499 | 2596 | 2606 | 2617 | 2624 | 2628 | 2638 | 2647 | 2668 | 2702 | |
| | 2713 | 2717 | 2721 | 2727 | 2731 | 2735 | 2752* | 2768 | 2772 | 2776 | 4088* | 4134* | 4261* | |
| | 4305* | 4313* | 4328* | 4368* | 4435* | 4471* | 4505* | 4598* | 4612* | 4658* | 4668* | 4711* | 4733* | |
| | 4741* | 4749* | 4796* | 4825* | 4835* | 4861* | 4874 | 4888* | 4898* | 4944* | 4957* | 4974* | 4986* | |
| | 5001* | 5012* | 5033* | 5047* | 5062* | 5076* | 5086* | 5097* | 5107* | 5142* | 5156* | 5169* | 5179* | |
| | 5204* | 5218* | 5231* | 5242* | 5266* | 5280* | 5293* | 5335* | 5346* | 5357* | 5369* | 5393* | 5405* | |
| | 5419* | 5428* | 5441* | 5451* | 5461* | 5481* | 5492* | 5502* | 5512* | 5532* | 5542* | 5550* | 5558* | |
| | 5563* | 5574* | 5587* | 5593* | 5598* | 5603* | 5609* | 5615* | 5623* | 5640* | 5654* | 5667* | 5678* | |
| | 5704* | 5717* | 5727* | 5740* | 5751* | 5762* | 5776* | 5789* | 5799* | 5827* | 5837* | 5845* | 5874* | |
| | 5885* | 5895* | 5921* | 5935* | 5945* | 5955* | 5965* | 5975* | 5985* | 6018* | 6032* | 6042* | 6052* | |
| | 6062* | 6072* | 6082* | 6117* | 6131* | 6145* | 6158* | 6172* | 6185* | 6198* | 6212* | 6225* | 6238* | |
| | 6251* | 6263* | 6291* | 6299* | 6318* | 6328* | 6339* | 6351* | 6375* | 6385* | 6396* | 6422* | 6433* | |
| | 6443* | 6453* | 6464* | 6488* | 6499* | 6511* | 6550* | 6559* | 6599* | 6607* | 6640* | 6650* | 6685* | |
| | 6704* | 6717* | 6730* | 6743* | 6756* | 6880* | 6884* | 6941* | 6945* | 7004* | 7008* | 7041* | 7048* | |
| | 7073* | 7080* | 7097* | 7107* | 7117* | 7129* | 7138* | 7146* | 7154* | 7159* | 7168* | 7173* | 7187* | |
| | 7208* | 7222* | 7244* | 7249* | 7265* | 7270* | 7279* | 7285* | 7297* | 7302* | | | | |
| ERR1 007350 G | 2790# | 3607 | | | | | | | | | | | | |
| ERR10 007552 G | 2852# | 4688 | 5308 | | | | | | | | | | | |
| ERR18 007600 G | 1836 | 2866# | | | | | | | | | | | | |
| ERR19 007646 G | 2751 | 2882# | | | | | | | | | | | | |
| ERR20 007706 G | 2052 | 2897# | | | | | | | | | | | | |
| ERR21 007740 G | 2068 | 2908# | | | | | | | | | | | | |
| ERR22 010522 G | 2075 | 2926# | | | | | | | | | | | | |
| ERR23 010114 G | 1928 | 1964 | 2951# | | | | | | | | | | | |
| ERR24 010162 G | 2441 | 2965# | 3658 | 3733 | 3808 | 3883 | 3958 | 4033 | | | | | | |
| ERR25 010224 G | 2978# | 3668 | 3743 | 3818 | 3893 | 3968 | 4043 | 4099 | 4145 | | | | | |
| ERR26 010266 G | 1644 | 1687 | 2301 | 2993# | | | | | | | | | | |
| ERR27 010324 G | 1734 | 1748 | 1824 | 1865 | 1895 | 1995 | 2039 | 3009# | 4702 | 4762 | 4772 | 5695 | 6772 | |
| ERR3 007376 G | 2803# | 4231 | 4242 | | | | | | | | | | | |
| ERR32 010422 G | 2256 | 3032# | 3692 | 3767 | 3842 | 3917 | 3992 | 4067 | 4252 | 4517 | 4556 | 4566 | 4817 | |

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CROSS REFERENCE TABLE -- USER SYMBOLS

| | | | | | |
|--------|--------|---|-------|-------|-------|
| LSDUT | 002072 | G | 1190# | | |
| LSDVTY | 002564 | G | 1181 | 1571# | |
| LSEF | 002052 | G | 1175# | | |
| LSENV1 | 002044 | G | 1168# | | |
| LSETP | 002102 | G | 1198# | | |
| LSEXP1 | 002046 | G | 1170# | | |
| LSEXP4 | 002064 | G | 1184# | | |
| LSEXP5 | 002066 | G | 1186# | | |
| LSHARD | 032534 | G | 1147 | 7329 | 7330# |
| LSHIME | 002120 | G | 1212# | | |
| LSHPCP | 002016 | G | 1146# | | |
| LSHPTP | 002022 | G | 1150# | | |
| LSHW | 002764 | G | 1151 | 1287 | 1288# |
| LSICP | 002104 | G | 1200# | | |
| LSINIT | 013774 | G | 1201 | 3396# | |
| LSLADP | 002026 | G | 1154# | | |
| LSLAST | 037652 | G | 1155 | 7527# | |
| LSLOAD | 002100 | G | 1196# | | |
| LSLUN | 002074 | G | 1192# | | |
| LSMREV | 002050 | G | 1172# | | |
| LSNAME | 002000 | G | 1129# | | |
| LSPRIO | 002042 | G | 1166# | | |
| LSPROT | 002122 | G | 1207 | 1215# | |
| LSPRT | 002112 | G | 1206# | | |
| LSREPP | 002062 | G | 1182# | | |
| LSREV | 002010 | G | 1138# | | |
| LSRPT | 013766 | G | 3375# | | |
| LSOFT | 033440 | G | 7455 | 7456# | |
| LSSPC | 002056 | G | 1178# | | |
| LSSPCP | 002020 | G | 1148# | | |
| LSSTP | 002024 | G | 1152# | | |
| LSSTA | 002030 | G | 1156# | | |
| LSW | 002316 | G | 1321 | 1322# | |
| LSTEST | 002114 | G | 1208# | | |
| LSTIML | 002014 | G | 1144# | | |
| LSUNIT | 002012 | G | 1142# | 3441 | |
| L10001 | 002314 | | 1287 | 1308# | |
| L10002 | 002316 | | 1321 | 1326# | |
| L10003 | 007374 | | 2797# | | |
| L10004 | 007426 | | 2811# | | |
| L10005 | 007464 | | 2823# | | |
| L10006 | 007522 | | 2835# | | |
| L10007 | 007550 | | 2847# | | |
| L10010 | 007576 | | 2859# | | |
| L10011 | 007644 | | 2877# | | |
| L10012 | 007704 | | 2892# | | |
| L10013 | 007736 | | 2905# | | |
| L10014 | 010020 | | 2923# | | |
| L10015 | 010112 | | 2944# | | |
| L10016 | 010160 | | 2962# | | |
| L10017 | 010222 | | 2975# | | |
| L10020 | 010264 | | 2988# | | |
| L10021 | 010322 | | 3002# | | |
| L10022 | 010420 | | 3027# | | |
| L10023 | 010446 | | 3039# | | |
| L10024 | 013772 | | 3379 | 3382# | |

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CROSS REFERENCE TABLE -- USER SYMBOLS

STEPMP= 000001
SUBRPC 002324
SVCGBL= 000000

SVCINS= 000000

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| 1426# | | | | | | | | | | | | | | |
| 1450# | 3399* | | | | | | | | | | | | | |
| 1097# | 1105 | 1112# | 1129 | 1130 | 1138 | 1139 | 1140 | 1141 | 1142 | 1143 | 1144 | 1145 | | |
| 1146 | 1147 | 1148 | 1149 | 1150 | 1151 | 1152 | 1153 | 1154 | 1155 | 1156 | 1157 | 1158 | | |
| 1159 | 1160 | 1161 | 1162 | 1163 | 1164 | 1165 | 1166 | 1167 | 1168 | 1169 | 1170 | 1171 | | |
| 1172 | 1173 | 1175 | 1176 | 1178 | 1179 | 1180 | 1181 | 1182 | 1183 | 1184 | 1185 | 1186 | | |
| 1187 | 1188 | 1189 | 1190 | 1191 | 1192 | 1193 | 1194 | 1195 | 1196 | 1197 | 1198 | 1199 | | |
| 1200 | 1201 | 1202 | 1203 | 1204 | 1205 | 1206 | 1207 | 1208 | 1209 | 1210 | 1211 | 1212 | | |
| 1213 | 1215 | 1216 | 1228 | 1229 | 1288 | 1289 | 1290 | 1322 | 1323 | 1324 | 1571 | 1572 | | |
| 1577 | 1578 | 2790 | 2791 | 2803 | 2804 | 2814 | 2815 | 2826 | 2827 | 2840 | 2841 | 2852 | | |
| 2853 | 2866 | 2867 | 2882 | 2883 | 2897 | 2898 | 2908 | 2909 | 2926 | 2927 | 2951 | 2952 | | |
| 2965 | 2966 | 2978 | 2979 | 2993 | 2994 | 3009 | 3010 | 3032 | 3033 | 3375 | 3376 | 3396 | | |
| 3397 | 3485 | 3486 | 3509 | 3510 | 3526 | 3527 | 3544 | 3545 | 3601 | 3602 | 4543 | 4544 | | |
| 4550 | 4551 | 4560 | 4561 | 4570 | 4571 | 7330 | 7331 | 7456 | 7457 | 7527# | 7528 | | | |
| 1097# | 1109# | 1130 | 1131 | 1132 | 1133 | 1134 | 1135 | 1136 | 1137 | 1138 | 1139 | 1140 | | |
| 1141 | 1142 | 1143 | 1144 | 1145 | 1146 | 1147 | 1148 | 1149 | 1150 | 1151 | 1152 | 1153 | | |
| 1154 | 1155 | 1156 | 1157 | 1158 | 1159 | 1160 | 1161 | 1162 | 1163 | 1164 | 1165 | 1166 | | |
| 1167 | 1168 | 1169 | 1170 | 1171 | 1172 | 1173 | 1174 | 1175 | 1176 | 1177 | 1178 | 1179 | | |
| 1180 | 1181 | 1182 | 1183 | 1184 | 1185 | 1186 | 1187 | 1188 | 1189 | 1190 | 1191 | 1192 | | |
| 1193 | 1194 | 1195 | 1196 | 1197 | 1198 | 1199 | 1200 | 1201 | 1202 | 1203 | 1204 | 1205 | | |
| 1206 | 1207 | 1208 | 1209 | 1210 | 1211 | 1212 | 1213 | 1214 | 1227 | 1228 | 1229 | 1230 | | |
| 1231 | 1232 | 1233 | 1234 | 1235 | 1236 | 1237 | 1238 | 1239 | 1240 | 1241 | 1242 | 1243 | | |
| 1244 | 1245 | 1246 | 1247 | 1248 | 1249 | 1250 | 1251 | 1252 | 1253 | 1254 | 1255 | 1256 | | |
| 1257 | 1258 | 1259 | 1260 | 1261 | 1262 | 1263 | 1264 | 1265 | 1266 | 1267 | 1268 | 1269 | | |
| 1270 | 1271 | 1272 | 1273 | 1287 | 1288 | 1321 | 1322 | 1572 | 1575 | 1576 | 1578 | 1584 | | |
| 1585 | 1641 | 1642 | 1643 | 1644 | 1645 | 1684 | 1685 | 1686 | 1687 | 1688 | 1731 | 1732 | | |
| 1733 | 1734 | 1735 | 1745 | 1746 | 1747 | 1748 | 1749 | 1821 | 1822 | 1823 | 1824 | 1825 | | |
| 1833 | 1834 | 1835 | 1836 | 1837 | 1862 | 1863 | 1864 | 1865 | 1866 | 1892 | 1893 | 1894 | | |
| 1895 | 1896 | 1925 | 1926 | 1927 | 1928 | 1929 | 1961 | 1962 | 1963 | 1964 | 1965 | 1992 | | |
| 1993 | 1994 | 1995 | 1996 | 2036 | 2037 | 2038 | 2039 | 2040 | 2049 | 2050 | 2051 | 2052 | | |
| 2053 | 2065 | 2066 | 2067 | 2068 | 2069 | 2072 | 2073 | 2074 | 2075 | 2076 | 2253 | 2254 | | |
| 2255 | 2256 | 2257 | 2298 | 2299 | 2300 | 2301 | 2302 | 2306 | 2307 | 2328 | 2329 | 2330 | | |
| 2331 | 2332 | 2333 | 2334 | 2335 | 2336 | 2337 | 2338 | 2339 | 2340 | 2341 | 2342 | 2343 | | |
| 2344 | 2346 | 2347 | 2348 | 2349 | 2350 | 2351 | 2352 | 2353 | 2354 | 2355 | 2356 | 2357 | | |
| 2358 | 2438 | 2439 | 2440 | 2441 | 2442 | 2565 | 2566 | 2567 | 2568 | 2569 | 2570 | 2576 | | |
| 2577 | 2578 | 2579 | 2580 | 2581 | 2582 | 2583 | 2584 | 2585 | 2586 | 2587 | 2588 | 2748 | | |
| 2749 | 2750 | 2751 | 2752 | 2791 | 2792 | 2793 | 2794 | 2795 | 2796 | 2797 | 2798 | 2799 | | |
| 2804 | 2805 | 2806 | 2807 | 2808 | 2809 | 2810 | 2812 | 2813 | 2815 | 2816 | 2817 | 2818 | | |
| 2819 | 2820 | 2821 | 2822 | 2824 | 2825 | 2827 | 2828 | 2829 | 2830 | 2831 | 2832 | 2833 | | |
| 2834 | 2836 | 2837 | 2841 | 2842 | 2843 | 2844 | 2845 | 2846 | 2848 | 2849 | 2853 | 2854 | | |
| 2855 | 2856 | 2857 | 2858 | 2860 | 2861 | 2867 | 2868 | 2869 | 2870 | 2871 | 2872 | 2873 | | |
| 2874 | 2875 | 2876 | 2878 | 2879 | 2883 | 2884 | 2885 | 2886 | 2887 | 2888 | 2889 | 2890 | | |
| 2891 | 2893 | 2894 | 2898 | 2899 | 2900 | 2901 | 2902 | 2903 | 2904 | 2906 | 2907 | 2909 | | |
| 2910 | 2911 | 2912 | 2913 | 2914 | 2915 | 2916 | 2917 | 2918 | 2919 | 2920 | 2921 | 2922 | | |
| 2924 | 2925 | 2927 | 2928 | 2929 | 2930 | 2931 | 2932 | 2933 | 2934 | 2935 | 2936 | 2937 | | |
| 2938 | 2939 | 2940 | 2941 | 2942 | 2943 | 2945 | 2946 | 2952 | 2953 | 2954 | 2955 | 2956 | | |
| 2957 | 2958 | 2959 | 2960 | 2961 | 2963 | 2964 | 2966 | 2967 | 2968 | 2969 | 2970 | 2971 | | |
| 2972 | 2973 | 2974 | 2976 | 2977 | 2979 | 2980 | 2981 | 2982 | 2983 | 2984 | 2985 | 2986 | | |
| 2987 | 2989 | 2990 | 2994 | 2995 | 2996 | 2997 | 2998 | 2999 | 3000 | 3001 | 3003 | 3004 | | |
| 3010 | 3011 | 3012 | 3013 | 3014 | 3015 | 3016 | 3017 | 3018 | 3019 | 3020 | 3021 | 3022 | | |
| 3023 | 3024 | 3025 | 3026 | 3028 | 3029 | 3033 | 3034 | 3035 | 3036 | 3037 | 3038 | 3040 | | |
| 3041 | 3378 | 3379 | 3380 | 3383 | 3384 | 3412 | 3413 | 3414 | 3415 | 3416 | 3417 | 3418 | | |
| 3419 | 3420 | 3421 | 3422 | 3423 | 3424 | 3425 | 3426 | 3427 | 3443 | 3444 | 3445 | 3446 | | |
| 3447 | 3482 | 3483 | 3494 | 3495 | 3496 | 3498 | 3499 | 3500 | 3501 | 3510 | 3511 | 3513 | | |
| 3514 | 3528 | 3529 | 3530 | 3531 | 3546 | 3547 | 3574 | 3575 | 3576 | 3577 | 3578 | 3579 | | |
| 3580 | 3591 | 3592 | 3593 | 3594 | 3595 | 3597 | 3598 | 3604 | 3605 | 3606 | 3607 | 3608 | | |

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CROSS REFERENCE TABLE -- USER SYMBOLS

| | | | | | | | | | | | | |
|------|------|------|------|------|------|------|------|------|------|------|------|------|
| 3610 | 3611 | 3612 | 3613 | 3614 | 3615 | 3616 | 3617 | 3618 | 3655 | 3656 | 3657 | 3658 |
| 3659 | 3665 | 3666 | 3667 | 3668 | 3669 | 3676 | 3677 | 3678 | 3679 | 3680 | 3681 | 3682 |
| 3683 | 3684 | 3689 | 3690 | 3691 | 3692 | 3693 | 3695 | 3696 | 3730 | 3731 | 3732 | 3733 |
| 3734 | 3740 | 3741 | 3742 | 3743 | 3744 | 3751 | 3752 | 3753 | 3754 | 3755 | 3756 | 3757 |
| 3758 | 3759 | 3764 | 3765 | 3766 | 3767 | 3768 | 3770 | 3771 | 3805 | 3806 | 3807 | 3808 |
| 3809 | 3815 | 3816 | 3817 | 3818 | 3819 | 3826 | 3827 | 3828 | 3829 | 3830 | 3831 | 3832 |
| 3833 | 3834 | 3839 | 3840 | 3841 | 3842 | 3843 | 3845 | 3846 | 3880 | 3881 | 3882 | 3883 |
| 3884 | 3890 | 3891 | 3892 | 3893 | 3894 | 3901 | 3902 | 3903 | 3904 | 3905 | 3906 | 3907 |
| 3908 | 3909 | 3914 | 3915 | 3916 | 3917 | 3918 | 3920 | 3921 | 3955 | 3956 | 3957 | 3958 |
| 3959 | 3965 | 3966 | 3967 | 3968 | 3969 | 3976 | 3977 | 3978 | 3979 | 3980 | 3981 | 3982 |
| 3983 | 3984 | 3989 | 3990 | 3991 | 3992 | 3993 | 3995 | 3996 | 4030 | 4031 | 4032 | 4033 |
| 4034 | 4040 | 4041 | 4042 | 4043 | 4044 | 4051 | 4052 | 4053 | 4054 | 4055 | 4056 | 4057 |
| 4058 | 4059 | 4064 | 4065 | 4066 | 4067 | 4068 | 4070 | 4071 | 4089 | 4090 | 4091 | 4096 |
| 4097 | 4098 | 4099 | 4100 | 4101 | 4102 | 4103 | 4104 | 4105 | 4106 | 4107 | 4108 | 4109 |
| 4110 | 4111 | 4112 | 4117 | 4118 | 4135 | 4136 | 4137 | 4142 | 4143 | 4144 | 4145 | 4146 |
| 4147 | 4148 | 4149 | 4150 | 4151 | 4152 | 4153 | 4154 | 4155 | 4156 | 4157 | 4161 | 4162 |
| 4228 | 4229 | 4230 | 4231 | 4232 | 4233 | 4234 | 4239 | 4240 | 4241 | 4242 | 4243 | 4245 |
| 4246 | 4247 | 4249 | 4250 | 4251 | 4252 | 4253 | 4254 | 4255 | 4262 | 4263 | 4264 | 4271 |
| 4272 | 4273 | 4274 | 4275 | 4306 | 4307 | 4308 | 4314 | 4315 | 4316 | 4329 | 4330 | 4331 |
| 4349 | 4350 | 4351 | 4352 | 4353 | 4354 | 4355 | 4369 | 4370 | 4371 | 4387 | 4388 | 4389 |
| 4390 | 4391 | 4392 | 4393 | 4410 | 4411 | 4412 | 4413 | 4414 | 4415 | 4416 | 4419 | 4420 |
| 4421 | 4422 | 4423 | 4424 | 4425 | 4429 | 4430 | 4431 | 4436 | 4437 | 4438 | 4450 | 4451 |
| 4452 | 4453 | 4454 | 4455 | 4456 | 4457 | 4458 | 4459 | 4460 | 4461 | 4462 | 4464 | 4465 |
| 4466 | 4472 | 4473 | 4474 | 4485 | 4486 | 4487 | 4488 | 4489 | 4506 | 4507 | 4508 | 4514 |
| 4515 | 4516 | 4517 | 4518 | 4519 | 4520 | 4521 | 4531 | 4532 | 4533 | 4534 | 4535 | 4536 |
| 4537 | 4540 | 4541 | 4542 | 4544 | 4545 | 4546 | 4548 | 4549 | 4551 | 4552 | 4553 | 4554 |
| 4555 | 4556 | 4557 | 4558 | 4559 | 4561 | 4562 | 4563 | 4564 | 4565 | 4566 | 4567 | 4568 |
| 4569 | 4571 | 4572 | 4573 | 4575 | 4576 | 4580 | 4581 | 4599 | 4600 | 4601 | 4613 | 4614 |
| 4615 | 4634 | 4635 | 4636 | 4637 | 4638 | 4643 | 4644 | 4659 | 4660 | 4661 | 4669 | 4670 |
| 4671 | 4685 | 4686 | 4687 | 4688 | 4689 | 4690 | 4691 | 4692 | 4699 | 4700 | 4701 | 4702 |
| 4703 | 4704 | 4705 | 4706 | 4713 | 4714 | 4734 | 4735 | 4736 | 4742 | 4743 | 4744 | 4750 |
| 4751 | 4752 | 4759 | 4760 | 4761 | 4762 | 4763 | 4764 | 4765 | 4769 | 4770 | 4771 | 4772 |
| 4773 | 4775 | 4776 | 4797 | 4798 | 4799 | 4814 | 4815 | 4816 | 4817 | 4818 | 4819 | 4820 |
| 4826 | 4827 | 4828 | 4836 | 4837 | 4838 | 4844 | 4845 | 4862 | 4863 | 4864 | 4889 | 4890 |
| 4891 | 4899 | 4900 | 4901 | 4910 | 4911 | 4912 | 4913 | 4914 | 4916 | 4917 | 4945 | 4946 |
| 4947 | 4958 | 4959 | 4960 | 4975 | 4976 | 4977 | 4987 | 4988 | 4989 | 5002 | 5003 | 5004 |
| 5015 | 5016 | 5034 | 5035 | 5036 | 5048 | 5049 | 5050 | 5063 | 5064 | 5065 | 5077 | 5078 |
| 5079 | 5087 | 5088 | 5089 | 5098 | 5099 | 5100 | 5108 | 5109 | 5110 | 5125 | 5126 | 5143 |
| 5144 | 5145 | 5157 | 5158 | 5159 | 5170 | 5171 | 5172 | 5180 | 5181 | 5182 | 5187 | 5188 |
| 5205 | 5206 | 5207 | 5219 | 5220 | 5221 | 5232 | 5233 | 5234 | 5243 | 5244 | 5245 | 5250 |
| 5251 | 5267 | 5268 | 5269 | 5281 | 5282 | 5283 | 5294 | 5295 | 5296 | 5305 | 5306 | 5307 |
| 5308 | 5309 | 5312 | 5313 | 5325 | 5326 | 5336 | 5337 | 5338 | 5347 | 5348 | 5349 | 5358 |
| 5359 | 5360 | 5370 | 5371 | 5372 | 5382 | 5383 | 5384 | 5385 | 5394 | 5395 | 5396 | 5406 |
| 5407 | 5408 | 5420 | 5421 | 5422 | 5429 | 5430 | 5431 | 5442 | 5443 | 5444 | 5453 | 5454 |
| 5455 | 5462 | 5463 | 5464 | 5472 | 5473 | 5474 | 5475 | 5482 | 5483 | 5484 | 5493 | 5494 |
| 5495 | 5503 | 5504 | 5505 | 5514 | 5515 | 5516 | 5517 | 5533 | 5534 | 5535 | 5543 | 5544 |
| 5545 | 5551 | 5552 | 5553 | 5559 | 5560 | 5561 | 5564 | 5565 | 5566 | 5575 | 5576 | 5577 |
| 5588 | 5589 | 5590 | 5594 | 5595 | 5596 | 5599 | 5600 | 5601 | 5604 | 5605 | 5606 | 5610 |
| 5611 | 5612 | 5616 | 5617 | 5618 | 5627 | 5628 | 5641 | 5642 | 5643 | 5655 | 5656 | 5657 |
| 5668 | 5669 | 5670 | 5679 | 5680 | 5681 | 5692 | 5693 | 5694 | 5695 | 5696 | 5705 | 5706 |
| 5707 | 5718 | 5719 | 5720 | 5728 | 5729 | 5730 | 5741 | 5742 | 5743 | 5752 | 5753 | 5754 |
| 5763 | 5764 | 5765 | 5777 | 5778 | 5779 | 5790 | 5791 | 5792 | 5800 | 5801 | 5802 | 5807 |
| 5808 | 5828 | 5829 | 5830 | 5838 | 5839 | 5840 | 5846 | 5847 | 5848 | 5857 | 5858 | 5875 |
| 5876 | 5877 | 5886 | 5887 | 5888 | 5896 | 5897 | 5898 | 5903 | 5904 | 5922 | 5923 | 5924 |
| 5936 | 5937 | 5938 | 5946 | 5947 | 5948 | 5956 | 5957 | 5958 | 5966 | 5967 | 5968 | 5976 |
| 5977 | 5978 | 5986 | 5987 | 5988 | 5996 | 5997 | 5998 | 5999 | 6000 | 6002 | 6003 | 6019 |

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CROSS REFERENCE TABLE -- USER SYMBOLS

| | | | | | | | | | | | | |
|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 6020 | 6021 | 6033 | 6034 | 6035 | 6043 | 6044 | 6045 | 6053 | 6054 | 6055 | 6063 | 6064 |
| 6065 | 6073 | 6074 | 6075 | 6083 | 6084 | 6085 | 6093 | 6094 | 6095 | 6096 | 6097 | 6099 |
| 6100 | 6118 | 6119 | 6120 | 6132 | 6133 | 6134 | 6146 | 6147 | 6148 | 6159 | 6160 | 6161 |
| 6173 | 6174 | 6175 | 6186 | 6187 | 6188 | 6199 | 6200 | 6201 | 6213 | 6214 | 6215 | 6226 |
| 6227 | 6228 | 6239 | 6240 | 6241 | 6252 | 6253 | 6254 | 6265 | 6266 | 6292 | 6293 | 6294 |
| 6300 | 6301 | 6302 | 6303 | 6304 | 6319 | 6320 | 6321 | 6329 | 6330 | 6331 | 6340 | 6341 |
| 6342 | 6346 | 6347 | 6362 | 6363 | 6364 | 6376 | 6377 | 6378 | 6386 | 6387 | 6388 | 6397 |
| 6398 | 6399 | 6403 | 6404 | 6423 | 6424 | 6425 | 6434 | 6435 | 6436 | 6444 | 6445 | 6446 |
| 6454 | 6455 | 6456 | 6465 | 6466 | 6467 | 6472 | 6473 | 6489 | 6490 | 6491 | 6500 | 6501 |
| 6502 | 6512 | 6513 | 6514 | 6518 | 6519 | 6551 | 6552 | 6553 | 6560 | 6561 | 6562 | 6567 |
| 6568 | 6600 | 6601 | 6602 | 6609 | 6610 | 6611 | 6616 | 6617 | 6641 | 6642 | 6643 | 6651 |
| 6652 | 6653 | 6658 | 6659 | 6675 | 6676 | 6677 | 6686 | 6687 | 6688 | 6705 | 6706 | 6707 |
| 6718 | 6719 | 6720 | 6731 | 6732 | 6733 | 6744 | 6745 | 6746 | 6757 | 6758 | 6759 | 6769 |
| 6770 | 6771 | 6772 | 6773 | 6774 | 6775 | 6780 | 6781 | 6782 | 6821 | 6822 | 6854 | 6855 |
| 6856 | 6881 | 6882 | 6883 | 6886 | 6887 | 6914 | 6915 | 6916 | 6942 | 6943 | 6944 | 6947 |
| 6948 | 6977 | 6978 | 6979 | 7005 | 7006 | 7007 | 7010 | 7011 | 7042 | 7043 | 7044 | 7050 |
| 7051 | 7074 | 7075 | 7076 | 7082 | 7083 | 7098 | 7099 | 7100 | 7108 | 7109 | 7110 | 7118 |
| 7119 | 7120 | 7130 | 7131 | 7132 | 7139 | 7140 | 7141 | 7147 | 7148 | 7149 | 7155 | 7156 |
| 7157 | 7160 | 7161 | 7162 | 7169 | 7170 | 7171 | 7174 | 7175 | 7176 | 7188 | 7189 | 7190 |
| 7209 | 7210 | 7211 | 7223 | 7224 | 7225 | 7245 | 7246 | 7247 | 7250 | 7251 | 7252 | 7266 |
| 7267 | 7268 | 7271 | 7272 | 7273 | 7280 | 7281 | 7282 | 7286 | 7287 | 7288 | 7298 | 7299 |
| 7300 | 7303 | 7304 | 7305 | 7308 | 7309 | 7329 | 7330 | 7331 | 7332 | 7333 | 7334 | 7335 |
| 7336 | 7337 | 7338 | 7339 | 7340 | 7341 | 7342 | 7343 | 7344 | 7345 | 7346 | 7347 | 7348 |
| 7349 | 7350 | 7351 | 7352 | 7353 | 7354 | 7355 | 7356 | 7357 | 7358 | 7359 | 7360 | 7361 |
| 7362 | 7363 | 7364 | 7366 | 7367 | 7455 | 7456 | 7458 | 7459 | 7524 | 7525 | 7526 | 7527 |
| 1097# | 1111# | 5324 | 5325 | 5383 | 5384 | 5473 | 5474 | | | | | |
| 1097# | 1113# | 1308 | 1309 | 1326 | 1327 | 2797 | 2798 | 2811 | 2812 | 2823 | 2824 | 2835 |
| 2836 | 2847 | 2848 | 2859 | 2860 | 2877 | 2878 | 2892 | 2893 | 2905 | 2906 | 2923 | 2924 |
| 2944 | 2945 | 2962 | 2963 | 2975 | 2976 | 2988 | 2989 | 3002 | 3003 | 3027 | 3028 | 3039 |
| 3040 | 3382 | 3383 | 3481 | 3482 | 3499 | 3500 | 3512 | 3513 | 3529 | 3530 | 3545 | 3546 |
| 3596 | 3597 | 3616 | 3617 | 3694 | 3695 | 3769 | 3770 | 3844 | 3845 | 3919 | 3920 | 3994 |
| 3995 | 4069 | 4070 | 4116 | 4117 | 4160 | 4161 | 4273 | 4274 | 4547 | 4548 | 4557 | 4558 |
| 4567 | 4568 | 4574 | 4575 | 4579 | 4580 | 4642 | 4643 | 4712 | 4713 | 4774 | 4775 | 4843 |
| 4844 | 4915 | 4916 | 5014 | 5015 | 5124 | 5125 | 5186 | 5187 | 5249 | 5250 | 5311 | 5312 |
| 5381 | 5382 | 5471 | 5472 | 5513 | 5514 | 5515 | 5516 | 5626 | 5627 | 5806 | 5807 | 5856 |
| 5857 | 5902 | 5903 | 6001 | 6002 | 6098 | 6099 | 6264 | 6265 | 6302 | 6303 | 6345 | 6346 |
| 6402 | 6403 | 6471 | 6472 | 6517 | 6518 | 6566 | 6567 | 6615 | 6616 | 6657 | 6658 | 6820 |
| 6821 | 6885 | 6886 | 6946 | 6947 | 7009 | 7010 | 7049 | 7050 | 7081 | 7082 | 7307 | 7308 |
| 7367 | 7368 | 7459 | 7460 | | | | | | | | | |
| 1097# | 1110# | 3573 | 3574 | 3630 | 3631 | 3705 | 3706 | 3780 | 3781 | 3855 | 3856 | 3930 |
| 3931 | 4005 | 4006 | 4081 | 4082 | 4127 | 4128 | 4215 | 4216 | 4294 | 4295 | 4594 | 4595 |
| 4654 | 4655 | 4724 | 4725 | 4791 | 4792 | 4856 | 4857 | 4931 | 4932 | 5027 | 5028 | 5138 |
| 5139 | 5200 | 5201 | 5262 | 5263 | 5322 | 5323 | 5529 | 5530 | 5636 | 5637 | 5822 | 5823 |
| 5870 | 5871 | 5917 | 5918 | 6014 | 6015 | 6113 | 6114 | 6281 | 6282 | 6314 | 6315 | 6357 |
| 6358 | 6418 | 6419 | 6484 | 6485 | 6536 | 6537 | 6583 | 6584 | 6630 | 6631 | 6671 | 6672 |
| 6842 | 6843 | 6902 | 6903 | 6964 | 6965 | 7026 | 7027 | 7063 | 7064 | 7093 | 7094 | |
| 1097# | 1309# | 1327# | 2798# | 2812# | 2824# | 2836# | 2848# | 2860# | 2878# | 2893# | 2906# | 2924# |
| 2945# | 2963# | 2976# | 2989# | 3003# | 3028# | 3040# | 3383# | 3482# | 3500# | 3513# | 3530# | 3546# |
| 3597# | 3617# | 3695# | 3770# | 3845# | 3920# | 3995# | 4070# | 4117# | 4161# | 4274# | 4548# | 4558# |
| 4568# | 4575# | 4580# | 4643# | 4713# | 4775# | 4844# | 4916# | 5015# | 5125# | 5187# | 5250# | 5312# |
| 5382# | 5472# | 5514# | 5516# | 5627# | 5807# | 5857# | 5903# | 6002# | 6099# | 6265# | 6303# | 6346# |
| 6403# | 6472# | 6518# | 6567# | 6616# | 6658# | 6821# | 6886# | 6947# | 7010# | 7050# | 7082# | 7308# |
| 7368# | 7460# | | | | | | | | | | | |
| 2564 | 2575 | 2588# | | | | | | | | | | |
| 2570 | 2581# | | | | | | | | | | | |
| 2583 | 3061# | | | | | | | | | | | |

SVCSUB= 000000
SVCTAG= 000000

SVCTST= 000000

S\$LSYM= 010000

TABEN 006306
TABM 006262
TESTAB 010624

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CROSS REFERENCE TABLE -- USER SYMBOLS

TYLST 002414
TSARGC= 000004

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| 1479# | 5823 | | | | | | | | | | | | |
| 1130# | 1131# | 1132# | 1133# | 1134# | 1135# | 2328# | 2334 | 2335# | 2343 | 2346# | 2351 | 2353# | |
| 2357 | 2565# | 2569 | 2576# | 2580 | 2582# | 2587 | 2791# | 2796 | 2804# | 2809 | 2815# | 2821 | |
| 2827# | 2833 | 2841# | 2845 | 2853# | 2857 | 2867# | 2875 | 2883# | 2890 | 2898# | 2903 | 2909# | |
| 2913 | 2914# | 2921 | 2927# | 2931 | 2932# | 2937 | 2938# | 2942 | 2952# | 2960 | 2966# | 2973 | |
| 2979# | 2986 | 2994# | 3000 | 3010# | 3016 | 3017# | 3025 | 3033# | 3037 | 3610# | 3615 | 3676# | |
| 3683 | 3751# | 3758 | 3826# | 3833 | 3901# | 3908 | 3976# | 3983 | 4051# | 4058 | 4104# | 4111 | |
| 4149# | 4156 | | | | | | | | | | | | |

TSCODE= 013032
TSERRN= 000055

| | | | | | | | | | | | | | |
|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|--|
| 7331# | 7336# | 7340# | 7344# | 7349# | 7354# | 7359# | | | | | | | |
| 1097# | 1642# | 1685# | 1732# | 1746# | 1822# | 1834# | 1863# | 1893# | 1926# | 1962# | 1993# | 2037# | |
| 2050# | 2066# | 2073# | 2254# | 2299# | 2439# | 2749# | 3605# | 3656# | 3666# | 3690# | 3731# | 3741# | |
| 3765# | 3806# | 3816# | 3840# | 3881# | 3891# | 3915# | 3956# | 3966# | 3990# | 4031# | 4041# | 4065# | |
| 4097# | 4143# | 4229# | 4240# | 4250# | 4350# | 4388# | 4515# | 4532# | 4554# | 4564# | 4635# | 4686# | |
| 4700# | 4760# | 4770# | 4815# | 4911# | 5306# | 5693# | 5997# | 6094# | 6770# | | | | |

TSEXCP= 000000
TSFLAG= 000040

| | | | | | | | | | | | | | |
|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|--|
| 7331# | 7336# | 7340# | 7344# | 7349# | 7354# | 7359# | 7364 | | | | | | |
| 3378# | 3380 | 4089# | 4101# | 4135# | 4146# | 4232# | 4245# | 4253# | 4262# | 4271# | 4306# | 4314# | |
| 4329# | 4353# | 4369# | 4391# | 4436# | 4472# | 4506# | 4519# | 4535# | 4540# | 4599# | 4613# | 4659# | |
| 4669# | 4690# | 4704# | 4734# | 4742# | 4750# | 4763# | 4797# | 4818# | 4826# | 4836# | 4862# | 4889# | |
| 4899# | 4945# | 4958# | 4975# | 4987# | 5002# | 5034# | 5048# | 5063# | 5077# | 5087# | 5098# | 5108# | |
| 5143# | 5157# | 5170# | 5180# | 5205# | 5219# | 5232# | 5243# | 5267# | 5281# | 5294# | 5336# | 5347# | |
| 5358# | 5370# | 5394# | 5406# | 5420# | 5429# | 5442# | 5453# | 5462# | 5482# | 5493# | 5503# | 5533# | |
| 5543# | 5551# | 5559# | 5564# | 5575# | 5588# | 5594# | 5599# | 5604# | 5610# | 5616# | 5641# | 5655# | |
| 5668# | 5679# | 5705# | 5718# | 5728# | 5741# | 5752# | 5763# | 5777# | 5790# | 5800# | 5828# | 5838# | |
| 5846# | 5875# | 5886# | 5896# | 5922# | 5936# | 5946# | 5956# | 5966# | 5976# | 5986# | 6019# | 6033# | |
| 6043# | 6053# | 6063# | 6073# | 6083# | 6118# | 6132# | 6146# | 6159# | 6173# | 6186# | 6199# | 6213# | |
| 6226# | 6239# | 6252# | 6292# | 6300# | 6319# | 6329# | 6340# | 6362# | 6376# | 6386# | 6397# | 6423# | |
| 6434# | 6444# | 6454# | 6465# | 6489# | 6500# | 6512# | 6551# | 6560# | 6600# | 6609# | 6641# | 6651# | |
| 6675# | 6686# | 6705# | 6718# | 6731# | 6744# | 6757# | 6773# | 6780# | 6881# | 6942# | 7005# | 7042# | |
| 7074# | 7098# | 7108# | 7118# | 7130# | 7139# | 7147# | 7155# | 7160# | 7169# | 7174# | 7188# | 7209# | |
| 7223# | 7245# | 7250# | 7266# | 7271# | 7280# | 7286# | 7298# | 7303# | | | | | |

TSGMAN= 000000
TSHILI= 000007

| | | | | | | | | | | | | | |
|-------|-------|------|-------|------|-------|------|-------|------|-------|------|-------|------|-------|
| 1097# | 7331# | 7335 | 7336# | 7339 | 7340# | 7343 | 7344# | 7348 | 7349# | 7353 | 7354# | 7358 | 7359# |
| 7363 | | | | | | | | | | | | | |

TSLAST= 000001
TSLOLI= 000000

| | | | | | | | | | | | | | |
|-------|-------|------|-------|------|-------|------|-------|------|-------|------|-------|------|-------|
| 1097# | 7331# | 7334 | 7336# | 7338 | 7340# | 7342 | 7344# | 7347 | 7349# | 7352 | 7354# | 7357 | 7359# |
| 7362 | | | | | | | | | | | | | |

TSLSYM= 010000

| | | | | | | | | | | | | | |
|-------|------|------|------|------|------|------|------|------|------|------|------|------|--|
| 1097# | 1309 | 1327 | 2798 | 2812 | 2824 | 2836 | 2848 | 2860 | 2878 | 2893 | 2906 | 2924 | |
| 2945 | 2963 | 2976 | 2989 | 3003 | 3028 | 3040 | 3383 | 3482 | 3500 | 3513 | 3530 | 3546 | |
| 3597 | 3617 | 3695 | 3770 | 3845 | 3920 | 3995 | 4070 | 4117 | 4161 | 4274 | 4548 | 4558 | |
| 4568 | 4575 | 4580 | 4643 | 4713 | 4775 | 4844 | 4916 | 5015 | 5125 | 5187 | 5250 | 5312 | |
| 5382 | 5472 | 5514 | 5516 | 5627 | 5807 | 5857 | 5903 | 6002 | 6099 | 6265 | 6303 | 6346 | |
| 6403 | 6472 | 6518 | 6567 | 6616 | 6658 | 6821 | 6886 | 6947 | 7010 | 7050 | 7082 | 7308 | |
| 7368 | 7460 | | | | | | | | | | | | |

TSLTNO= 000054
TSNEST= 000000

| | | | | | | | | | | | | | |
|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 7528# | 1097# | 1105# | 1215# | 1219# | 1287# | 1308# | 1321# | 1326# | 2790# | 2797# | 2803# | 2811# | 2814# |
| 2823# | 2826# | 2835# | 2840# | 2847# | 2852# | 2859# | 2866# | 2877# | 2882# | 2892# | 2897# | 2905# | |
| 2908# | 2923# | 2926# | 2944# | 2951# | 2962# | 2965# | 2975# | 2978# | 2988# | 2993# | 3002# | 3009# | |
| 3027# | 3032# | 3039# | 3375# | 3382# | 3396# | 3481# | 3485# | 3499# | 3509# | 3512# | 3526# | 3529# | |
| 3544# | 3545# | 3574# | 3596# | 3601# | 3616# | 3631# | 3694# | 3706# | 3769# | 3781# | 3844# | 3856# | |
| 3919# | 3931# | 3994# | 4006# | 4069# | 4082# | 4116# | 4128# | 4160# | 4216# | 4273# | 4295# | 4543# | |
| 4547# | 4550# | 4557# | 4560# | 4567# | 4570# | 4574# | 4579# | 4595# | 4642# | 4655# | 4712# | 4725# | |
| 4774# | 4792# | 4843# | 4857# | 4915# | 4932# | 5014# | 5028# | 5124# | 5139# | 5186# | 5201# | 5249# | |
| 5263# | 5311# | 5323# | 5325# | 5381# | 5384# | 5471# | 5474# | 5513# | 5515# | 5530# | 5626# | 5637# | |
| 5806# | 5823# | 5856# | 5871# | 5902# | 5918# | 6001# | 6015# | 6098# | 6114# | 6264# | 6282# | 6302# | |
| 6315# | 6345# | 6358# | 6402# | 6419# | 6471# | 6485# | 6517# | 6537# | 6566# | 6584# | 6615# | 6631# | |
| 6657# | 6672# | 6820# | 6843# | 6885# | 6903# | 6946# | 6965# | 7009# | 7027# | 7049# | 7064# | 7081# | |

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CROSS REFERENCE TABLE -- USER SYMBOLS

| | | | | | | | | | | | | | |
|-----------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| T\$NSO = 000000 | 7094# | 7307# | 7329# | 7366# | 7455# | 7458# | | | | | | | |
| T\$NS1 = 000005 | 1105# | | | | | | | | | | | | |
| | 1215# | 1219 | 1287# | 1308 | 1321# | 1326 | 2790# | 2797 | 2803# | 2811 | 2814# | 2823 | 2826# |
| | 2835 | 2840# | 2847 | 2852# | 2859 | 2866# | 2877 | 2882# | 2892 | 2897# | 2905 | 2908# | 2923 |
| | 2926# | 2944 | 2951# | 2962 | 2965# | 2975 | 2978# | 2988 | 2993# | 3002 | 3009# | 3027 | 3032# |
| | 3039 | 3375# | 3382 | 3396# | 3481 | 3485# | 3499 | 3509# | 3512 | 3526# | 3529 | 3544# | 3545 |
| | 3574# | 3596 | 3601# | 3616 | 3631# | 3694 | 3706# | 3769 | 3781# | 3844 | 3856# | 3919 | 3931# |
| | 3994 | 4006# | 4069 | 4082# | 4116 | 4128# | 4160 | 4216# | 4273 | 4295# | 4579 | 4595# | 4642 |
| | 4655# | 4712 | 4725# | 4774 | 4792# | 4843 | 4857# | 4915 | 4932# | 5014 | 5028# | 5124 | 5139# |
| | 5186 | 5201# | 5249 | 5263# | 5311 | 5323# | 5515 | 5530# | 5626 | 5637# | 5806 | 5823# | 5856 |
| | 5871# | 5902 | 5918# | 6001 | 6015# | 6098 | 6114# | 6264 | 6282# | 6302 | 6315# | 6345 | 6358# |
| | 6402 | 6419# | 6471 | 6485# | 6517 | 6537# | 6566 | 6584# | 6615 | 6631# | 6657 | 6672# | 6820 |
| | 6843# | 6885 | 6903# | 6946 | 6965# | 7009 | 7027# | 7049 | 7064# | 7081 | 7094# | 7307 | 7329# |
| | 7366 | 7455# | 7458 | | | | | | | | | | |
| T\$NS2 = 000002 | 4543# | 4547 | 4550# | 4557 | 4560# | 4567 | 4570# | 4574 | 5325# | 5381 | 5384# | 5471 | 5474# |
| | 5513 | | | | | | | | | | | | |
| T\$PTNU= 000000 | 1097# | | | | | | | | | | | | |
| T\$SAVL= 177777 | 1097# | | | | | | | | | | | | |
| T\$SEGL= 177777 | 1097# | | | | | | | | | | | | |
| T\$SUBN= 000000 | 1097# | 3573# | 3630# | 3705# | 3780# | 3855# | 3930# | 4005# | 4081# | 4127# | 4215# | 4294# | 4594# |
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| | 5529# | 5636# | 5822# | 5870# | 5917# | 6014# | 6113# | 6281# | 6314# | 6357# | 6418# | 6484# | 6536# |
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CROSS REFERENCE TABLE -- USER SYMBOLS

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T\$TSTM= 177777

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| 2049 | 2065 | 2072 | 2253 | 2298 | 2306 | 2333 | 2342 | 2350 | 2356 | 2438 | 2568 | 2579 |
| 2586 | 2748 | 2795 | 2798 | 2808 | 2812 | 2820 | 2824 | 2832 | 2836 | 2844 | 2848 | 2856 |
| 2860 | 2874 | 2878 | 2889 | 2893 | 2902 | 2906 | 2912 | 2920 | 2924 | 2930 | 2936 | 2941 |
| 2945 | 2959 | 2963 | 2972 | 2976 | 2985 | 2989 | 2999 | 3003 | 3015 | 3024 | 3028 | 3036 |
| 3040 | 3383 | 3413 | 3417 | 3421 | 3425 | 3444 | 3482 | 3495 | 3498 | 3500 | 3510 | 3513 |
| 3528 | 3530 | 3546 | 3578 | 3591 | 3594 | 3597 | 3604 | 3614 | 3655 | 3665 | 3682 | 3689 |
| 3695 | 3730 | 3740 | 3757 | 3764 | 3770 | 3805 | 3815 | 3832 | 3839 | 3845 | 3880 | 3890 |
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| 4089 | 4096 | 4101 | 4110 | 4117 | 4135 | 4142 | 4146 | 4155 | 4161 | 4228 | 4232 | 4239 |
| 4245 | 4249 | 4253 | 4262 | 4271 | 4274 | 4306 | 4314 | 4329 | 4349 | 4353 | 4369 | 4387 |
| 4391 | 4414 | 4423 | 4430 | 4436 | 4454 | 4460 | 4465 | 4472 | 4486 | 4488 | 4506 | 4514 |
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| 4634 | 4643 | 4659 | 4669 | 4685 | 4690 | 4699 | 4704 | 4713 | 4734 | 4742 | 4750 | 4759 |
| 4763 | 4769 | 4775 | 4797 | 4814 | 4818 | 4826 | 4836 | 4844 | 4862 | 4889 | 4899 | 4910 |
| 4916 | 4945 | 4958 | 4975 | 4987 | 5002 | 5015 | 5034 | 5048 | 5063 | 5077 | 5087 | 5098 |
| 5108 | 5125 | 5143 | 5157 | 5170 | 5180 | 5187 | 5205 | 5219 | 5232 | 5243 | 5250 | 5267 |
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| 5966 | 5976 | 5986 | 5996 | 6002 | 6019 | 6033 | 6043 | 6053 | 6063 | 6073 | 6083 | 6093 |
| 6099 | 6118 | 6132 | 6146 | 6159 | 6173 | 6186 | 6199 | 6213 | 6226 | 6239 | 6252 | 6265 |
| 6292 | 6300 | 6303 | 6319 | 6329 | 6340 | 6346 | 6362 | 6376 | 6386 | 6397 | 6403 | 6423 |
| 6434 | 6444 | 6454 | 6465 | 6472 | 6489 | 6500 | 6512 | 6518 | 6551 | 6560 | 6567 | 6600 |
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| 7050 | 7074 | 7082 | 7098 | 7108 | 7118 | 7130 | 7139 | 7147 | 7155 | 7160 | 7169 | 7174 |
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CROSS REFERENCE TABLE -- USER SYMBOLS

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| T20 | 023212 | G | 1248 | 5200# | | | | | | | | | | | |
| T21 | 023320 | G | 1249 | 5262# | | | | | | | | | | | |
| T22 | 023434 | G | 1250 | 5322# | | | | | | | | | | | |
| T22.1 | 023434 | | 5324# | | | | | | | | | | | | |
| T22.2 | 023576 | | 5383# | | | | | | | | | | | | |
| T22.3 | 024054 | | 5473# | | | | | | | | | | | | |
| T23 | 024162 | G | 1251 | 5529# | | | | | | | | | | | |
| T24 | 024610 | G | 1252 | 5636# | | | | | | | | | | | |
| T25 | 025236 | G | 1253 | 5822# | | | | | | | | | | | |
| T26 | 025352 | G | 1254 | 5870# | | | | | | | | | | | |
| T27 | 025436 | G | 1255 | 5917# | | | | | | | | | | | |
| T28 | 025664 | G | 1256 | 6014# | | | | | | | | | | | |
| T29 | 026112 | G | 1257 | 6113# | | | | | | | | | | | |
| T3 | 015216 | G | 1231 | 3705# | | | | | | | | | | | |
| T30 | 026440 | G | 1258 | 6281# | | | | | | | | | | | |
| T31 | 026534 | G | 1259 | 6314# | | | | | | | | | | | |
| T32 | 026654 | G | 1260 | 6357# | | | | | | | | | | | |
| T33 | 027022 | G | 1261 | 6418# | | | | | | | | | | | |
| T34 | 027210 | G | 1262 | 6484# | | | | | | | | | | | |
| T35 | 027326 | G | 1263 | 6536# | | | | | | | | | | | |
| T36 | 027450 | G | 1264 | 6583# | | | | | | | | | | | |
| T36END | 027610 | | 6585 | 6614# | | | | | | | | | | | |
| T37 | 027612 | G | 1265 | 6630# | | | | | | | | | | | |
| T38 | 027706 | G | 1266 | 6671# | | | | | | | | | | | |
| T39 | 030334 | G | 1267 | 6842# | | | | | | | | | | | |
| T4 | 015550 | G | 1232 | 3780# | | | | | | | | | | | |
| T40 | 030576 | G | 1268 | 6902# | | | | | | | | | | | |
| T41 | 031040 | G | 1269 | 6964# | | | | | | | | | | | |
| T42 | 031302 | G | 1270 | 7026# | | | | | | | | | | | |
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| T44 | 031516 | G | 1272 | 7093# | | | | | | | | | | | |
| T5 | 016102 | G | 1233 | 3855# | | | | | | | | | | | |
| T6 | 016434 | G | 1234 | 3930# | | | | | | | | | | | |
| T7 | 016766 | G | 1235 | 4005# | | | | | | | | | | | |
| T8 | 017320 | G | 1236 | 4081# | | | | | | | | | | | |
| T9 | 017460 | G | 1237 | 4127# | | | | | | | | | | | |
| T98G | 020020 | | 4300# | 4402 | | | | | | | | | | | |
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| V35TC | 006132 | | 2527 | 2541# | | | | | | | | | | | |
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| | | | 4680 | 4802 | 4804 | 4859 | 4879 | 4880 | 4907 | 5300 | 5301 | 5619 | 5620 | 5992 | 6089 |
| | | | 6683 | | | | | | | | | | | | |
| WPE | 003016 | | 1716# | 4833 | 4886 | 4984 | 5011 | 5177 | 5240 | 5426 | 5725 | 5797 | 5843 | 5893 | 5953 |
| | | | 5973 | 6050 | 6070 | 6337 | 6394 | 6462 | 6509 | | | | | | |
| WORDT | 002372 | | 1470# | 2166* | 2421* | 2435* | 2436 | 2967 | 2979 | 3639* | 3642* | 3651 | 3662* | 3663 | 3672 |
| | | | 3686* | 3687 | 3714* | 3717* | 3726 | 3737* | 3738 | 3747 | 3761* | 3762 | 3789* | 3792* | 3801 |
| | | | 3812* | 3813 | 3822 | 3836* | 3837 | 3864* | 3867* | 3876 | 3887* | 3888 | 3897 | 3911* | 3912 |
| | | | 3939* | 3942* | 3951 | 3962* | 3963 | 3972 | 3986* | 3987 | 4014* | 4017* | 4026 | 4037* | 4038 |
| | | | 4047 | 4061* | 4062 | | | | | | | | | | |
| WRDI | 002732 | | 1672# | 2645 | 2666 | 4311 | 4610 | 4666 | 4739 | 4823 | 4896 | 5572 | 5835 | 6326 | 6383 |
| | | | 6451 | 6497 | 7206 | | | | | | | | | | |
| WRDIE | 003014 | | 1675 | 1677 | 1690# | | | | | | | | | | |
| WRDI1 | 002736 | | 1673# | 1680 | 1777 | | | | | | | | | | |
| WRDO | 002646 | | 1629# | 2022 | 2264 | 2398 | 2407 | 2701 | 4748 | | | | | | |

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CROSS REFERENCE TABLE -- MACRO NAMES

| | | | | | | | | | | | | | | | | | | | |
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| GPRMD | 1# | 1097# | 7331 | 7344 | 7349 | 7354 | 7359 | | | | | | | | | | | | |
| GPRML | 1# | 1097# | | | | | | | | | | | | | | | | | |
| HEADER | 1# | 1097# | 1129 | | | | | | | | | | | | | | | | |
| INLOOP | 1# | 1097# | | | | | | | | | | | | | | | | | |
| IOSETU | 1# | 1097# | | | | | | | | | | | | | | | | | |
| IOSTAR | 1# | 1097# | | | | | | | | | | | | | | | | | |
| KT11 | 1# | 1097# | | | | | | | | | | | | | | | | | |
| LASTAD | 1# | 1097# | 7524 | | | | | | | | | | | | | | | | |
| MANUAL | 1# | 1097# | | | | | | | | | | | | | | | | | |
| MEMORY | 1# | 1097# | | | | | | | | | | | | | | | | | |
| MSBYTE | 1# | 1097# | 1129# | 1135 | 1136 | 1137 | | | | | | | | | | | | | |
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CROSS REFERENCE TABLE -- MACRO NAMES

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CROSS REFERENCE TABLE -- MACRO NAMES

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CROSS REFERENCE TABLE -- MACRO NAMES

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CROSS REFERENCE TABLE -- MACRO NAMES

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| 6099# | 6118# | 6132# | 6146# | 6159# | 6173# | 6186# | 6199# | 6213# | 6226# | 6239# | 6252# | 6265# | 6292# | 6300# |
| 6303# | 6319# | 6329# | 6340# | 6346# | 6362# | 6376# | 6386# | 6397# | 6403# | 6423# | 6434# | 6444# | 6454# | 6465# |
| 6472# | 6489# | 6500# | 6512# | 6518# | 6551# | 6560# | 6567# | 6600# | 6609# | 6616# | 6641# | 6651# | 6658# | 6675# |
| 6686# | 6705# | 6718# | 6731# | 6744# | 6757# | 6769# | 6773# | 6780# | 6821# | 6855# | 6881# | 6886# | 6915# | 6942# |
| 6947# | 6978# | 7005# | 7010# | 7042# | 7050# | 7074# | 7082# | 7098# | 7108# | 7118# | 7130# | 7139# | 7147# | 7155# |
| 7160# | 7169# | 7174# | 7188# | 7209# | 7223# | 7245# | 7250# | 7266# | 7271# | 7280# | 7286# | 7298# | 7303# | 7308# |
| M\$TSTL | 1# | 1097# | 1641# | 1684# | 1731# | 1745# | 1821# | 1833# | 1862# | 1892# | 1925# | 1961# | 1992# | 2036# |
| 2065# | 2072# | 2253# | 2298# | 2306# | 2333# | 2342# | 2350# | 2356# | 2438# | 2568# | 2579# | 2586# | 2748# | 2795# |
| 2798# | 2808# | 2812# | 2820# | 2824# | 2832# | 2836# | 2844# | 2848# | 2856# | 2860# | 2874# | 2878# | 2889# | 2893# |
| 2902# | 2906# | 2912# | 2920# | 2924# | 2930# | 2936# | 2941# | 2945# | 2959# | 2963# | 2972# | 2976# | 2985# | 2989# |
| 2999# | 3003# | 3015# | 3024# | 3028# | 3036# | 3040# | 3383# | 3413# | 3417# | 3421# | 3425# | 3444# | 3482# | 3495# |
| 3498# | 3500# | 3510# | 3513# | 3528# | 3530# | 3546# | 3578# | 3591# | 3594# | 3597# | 3604# | 3614# | 3655# | 3665# |
| 3682# | 3689# | 3695# | 3730# | 3740# | 3757# | 3764# | 3770# | 3805# | 3815# | 3832# | 3839# | 3845# | 3880# | 3890# |
| 3907# | 3914# | 3920# | 3955# | 3965# | 3982# | 3989# | 3995# | 4030# | 4040# | 4057# | 4064# | 4070# | 4089# | 4096# |
| 4101# | 4110# | 4117# | 4135# | 4142# | 4146# | 4155# | 4161# | 4228# | 4232# | 4239# | 4245# | 4249# | 4253# | 4262# |
| 4271# | 4274# | 4306# | 4314# | 4329# | 4349# | 4353# | 4369# | 4387# | 4391# | 4414# | 4423# | 4430# | 4436# | 4454# |
| 4460# | 4465# | 4472# | 4486# | 4488# | 4506# | 4514# | 4519# | 4531# | 4535# | 4540# | 4545# | 4552# | 4553# | 4562# |
| 4563# | 4572# | 4580# | 4599# | 4613# | 4634# | 4643# | 4659# | 4669# | 4685# | 4690# | 4699# | 4704# | 4713# | 4734# |
| 4742# | 4750# | 4759# | 4763# | 4769# | 4775# | 4797# | 4814# | 4818# | 4826# | 4836# | 4844# | 4862# | 4889# | 4899# |
| 4910# | 4916# | 4945# | 4958# | 4975# | 4987# | 5002# | 5015# | 5034# | 5048# | 5063# | 5077# | 5087# | 5098# | 5108# |
| 5125# | 5143# | 5157# | 5170# | 5180# | 5187# | 5205# | 5219# | 5232# | 5243# | 5250# | 5267# | 5281# | 5294# | 5305# |
| 5312# | 5325# | 5336# | 5347# | 5358# | 5370# | 5382# | 5384# | 5394# | 5406# | 5420# | 5429# | 5442# | 5453# | 5462# |
| 5472# | 5474# | 5482# | 5493# | 5503# | 5514# | 5516# | 5533# | 5543# | 5551# | 5559# | 5564# | 5575# | 5588# | 5594# |
| 5599# | 5604# | 5610# | 5616# | 5627# | 5641# | 5655# | 5668# | 5679# | 5692# | 5705# | 5718# | 5728# | 5741# | 5752# |
| 5763# | 5777# | 5790# | 5800# | 5807# | 5828# | 5838# | 5846# | 5857# | 5875# | 5886# | 5896# | 5903# | 5922# | 5936# |
| 5946# | 5956# | 5966# | 5976# | 5986# | 5996# | 6002# | 6019# | 6033# | 6043# | 6053# | 6063# | 6073# | 6083# | 6093# |
| 6099# | 6118# | 6132# | 6146# | 6159# | 6173# | 6186# | 6199# | 6213# | 6226# | 6239# | 6252# | 6265# | 6292# | 6300# |
| 6303# | 6319# | 6329# | 6340# | 6346# | 6362# | 6376# | 6386# | 6397# | 6403# | 6423# | 6434# | 6444# | 6454# | 6465# |
| 6472# | 6489# | 6500# | 6512# | 6518# | 6551# | 6560# | 6567# | 6600# | 6609# | 6616# | 6641# | 6651# | 6658# | 6675# |
| 6686# | 6705# | 6718# | 6731# | 6744# | 6757# | 6769# | 6773# | 6780# | 6821# | 6855# | 6881# | 6886# | 6915# | 6942# |
| 6947# | 6978# | 7005# | 7010# | 7042# | 7050# | 7074# | 7082# | 7098# | 7108# | 7118# | 7130# | 7139# | 7147# | 7155# |
| 7160# | 7169# | 7174# | 7188# | 7209# | 7223# | 7245# | 7250# | 7266# | 7271# | 7280# | 7286# | 7298# | 7303# | 7308# |
| M\$WORD | 1# | 1097# | 1168# | 1177 | 1227# | 1229 | 1230 | 1231 | 1232 | 1233 | 1234 | 1235 | 1236 | 1237 |
| 1239 | 1240 | 1241 | 1242 | 1243 | 1244 | 1245 | 1246 | 1247 | 1248 | 1249 | 1250 | 1251 | 1252 | 1253 |
| 1254 | 1255 | 1256 | 1257 | 1258 | 1259 | 1260 | 1261 | 1262 | 1263 | 1264 | 1265 | 1266 | 1267 | 1268 |
| 1269 | 1270 | 1271 | 1272 | 1641# | 1642 | 1643 | 1644 | 1644# | 1685 | 1686 | 1687 | 1731# | 1732 | 1733 |
| 1734 | 1745# | 1746 | 1747 | 1748 | 1821# | 1822 | 1823 | 1824 | 1833# | 1834 | 1835 | 1836 | 1862# | 1863 |

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CROSS REFERENCE TABLE -- MACRO NAMES

| | | | | | | | | | | | | | | | |
|--------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| | 1864 | 1865 | 1892# | 1893 | 1894 | 1895 | 1925# | 1926 | 1927 | 1928 | 1961# | 1962 | 1963 | 1964 | 1992# |
| | 1993 | 1994 | 1995 | 2036# | 2037 | 2038 | 2039 | 2049# | 2050 | 2051 | 2052 | 2065# | 2066 | 2067 | 2068 |
| | 2072# | 2073 | 2074 | 2075 | 2253# | 2254 | 2255 | 2256 | 2298# | 2299 | 2300 | 2301 | 2438# | 2439 | 2440 |
| | 2441 | 2748# | 2749 | 2750 | 2751 | 3378# | 3604# | 3605 | 3606 | 3607 | 3655# | 3656 | 3657 | 3658 | 3665# |
| | 3666 | 3667 | 3668 | 3689# | 3690 | 3691 | 3692 | 3730# | 3731 | 3732 | 3733 | 3740# | 3741 | 3742 | 3743 |
| | 3764# | 3765 | 3766 | 3767 | 3805# | 3806 | 3807 | 3808 | 3815# | 3816 | 3817 | 3818 | 3839# | 3840 | 3841 |
| | 3842 | 3880# | 3881 | 3882 | 3883 | 3890# | 3891 | 3892 | 3893 | 3914# | 3915 | 3916 | 3917 | 3955# | 3956 |
| | 3957 | 3958 | 3965# | 3966 | 3967 | 3968 | 3989# | 3990 | 3991 | 3992 | 4030# | 4031 | 4032 | 4033 | 4040# |
| | 4041 | 4042 | 4043 | 4064# | 4065 | 4066 | 4067 | 4096# | 4097 | 4098 | 4099 | 4142# | 4143 | 4144 | 4145 |
| | 4228# | 4229 | 4230 | 4231 | 4239# | 4240 | 4241 | 4242 | 4249# | 4250 | 4251 | 4252 | 4349# | 4350 | 4351 |
| | 4352 | 4387# | 4388 | 4389 | 4390 | 4514# | 4515 | 4516 | 4517 | 4531# | 4532 | 4533 | 4534 | 4540# | 4553# |
| | 4554 | 4555 | 4556 | 4563# | 4564 | 4565 | 4566 | 4634# | 4635 | 4636 | 4637 | 4685# | 4686 | 4687 | 4688 |
| | 4699# | 4700 | 4701 | 4702 | 4759# | 4760 | 4761 | 4762 | 4769# | 4770 | 4771 | 4772 | 4814# | 4815 | 4816 |
| | 4817 | 4818# | 4910# | 4911 | 4912 | 4913 | 5305# | 5306 | 5307 | 5308 | 5692# | 5693 | 5694 | 5695 | 5996# |
| | 5997 | 5998 | 5999 | 6093# | 6094 | 6095 | 6096 | 6675# | 6769# | 6770 | 6771 | 6772 | 6780# | 7331# | 7336# |
| | 7340# | 7344# | 7349# | 7354# | 7359# | 7525 | 7526 | | | | | | | | |
| MSXFER | 1# | 1097# | | | | | | | | | | | | | |
| NEWTST | 1098# | 3559 | 3621 | 3696 | 3771 | 3846 | 3921 | 3996 | 4071 | 4118 | 4163 | 4277 | 4583 | 4645 | 4714 |
| | 4778 | 4846 | 4918 | 5017 | 5128 | 5190 | 5253 | 5313 | 5519 | 5629 | 5811 | 5860 | 5906 | 6004 | 6101 |
| | 6269 | 6305 | 6348 | 6408 | 6474 | 6523 | 6571 | 6618 | 6660 | 6827 | 6887 | 6949 | 7012 | 7052 | 7083 |
| OPEN | 1# | 1097# | | | | | | | | | | | | | |
| POINTE | 1# | 1097# | 1127 | | | | | | | | | | | | |
| PRINTB | 1# | 1097# | 2791 | 2804 | 2815 | 2827 | 2841 | 2853 | 2867 | 2883 | 2898 | 2909 | 2914 | 2927 | 2932 |
| | 2938 | 2952 | 2966 | 2979 | 2994 | 3010 | 3017 | 3033 | | | | | | | |
| PRINTF | 1# | 1097# | 2565 | 2576 | 2581 | 3676 | 3751 | 3826 | 3901 | 3976 | 4051 | 4104 | 4149 | | |
| PRINTS | 1# | 1097# | | | | | | | | | | | | | |
| PRINTX | 1# | 1097# | 2327 | 2335 | 2346 | 2352 | 3609 | | | | | | | | |
| READBU | 1# | 1097# | | | | | | | | | | | | | |
| READEF | 1# | 1097# | 3412 | 3416 | 3420 | 3424 | | | | | | | | | |
| RFLAGS | 1# | 1097# | | | | | | | | | | | | | |
| SETPRI | 1# | 1097# | 4429 | 4464 | 4544 | 4551 | 4561 | 4571 | 6854 | 6914 | 6977 | | | | |
| SETVEC | 1# | 1097# | 3574 | 4410 | 4419 | 4450 | 4456 | | | | | | | | |
| SLASH | 1# | 1097# | | | | | | | | | | | | | |
| STARS | 1# | 1097# | | | | | | | | | | | | | |
| SVC | 1# | 1097# | | | | | | | | | | | | | |
| TOR | 1602# | 4259 | 4327 | 4367 | 4434 | 4470 | 4504 | 4731 | | | | | | | |
| WFE | 1694# | 4833 | 4886 | 4984 | 5177 | 5240 | 5426 | 5725 | 5797 | 5843 | 5893 | 5953 | 5973 | 6050 | 6070 |
| | 6337 | 6394 | 6462 | 6509 | | | | | | | | | | | |
| WFR | 1692# | 4311 | 4610 | 4666 | 4739 | 4823 | 4896 | 5572 | 5835 | 6326 | 6383 | 6451 | 6497 | 7206 | |
| WFRO | 1693# | | | | | | | | | | | | | | |
| XFER | 1# | 1097# | 3378# | 4540# | 4818# | 6675# | 6780# | | | | | | | | |
| XFERF | 1# | 1097# | | | | | | | | | | | | | |
| XFERT | 1# | 1097# | | | | | | | | | | | | | |
| ZZ | 3559# | 3561 | 3621# | 3623 | 3696# | 3698 | 3771# | 3773 | 3846# | 3848 | 3921# | 3923 | 3996# | 3998 | 4071# |
| | 4073 | 4118# | 4120 | 4163# | 4165 | 4277# | 4279 | 4583# | 4585 | 4645# | 4647 | 4714# | 4716 | 4778# | 4780 |
| | 4846# | 4848 | 4918# | 4920 | 5017# | 5019 | 5128# | 5130 | 5190# | 5192 | 5252# | 5255 | 5313# | 5315 | 5519# |
| | 5521 | 5629# | 5631 | 5811# | 5813 | 5860# | 5862 | 5906# | 5908 | 6004# | 6006 | 6101# | 6103 | 6268# | 6271 |
| | 6305# | 6307 | 6348# | 6350 | 6408# | 6410 | 6474# | 6476 | 6522# | 6525 | 6570# | 6573 | 6618# | 6620 | 6660# |
| | 6662 | 6827# | 6829 | 6887# | 6889 | 6949# | 6951 | 7012# | 7014 | 7052# | 7054 | 7083# | 7085 | | |

. ABS. 037652 000

ERRORS DETECTED: 0

CZDMTD.P11 09-MAR-82 09:11

CROSS REFERENCE TABLE -- MACRO NAMES

CZDMTD,CZDMTD/SOL/CRF=SVC34R.MLB,CZDMTD.P11
RUN-TIME: 35 43 5 SECONDS
RUN-TIME RATIO: 118/83=1.4
CORE USED: 21K (41 PAGES)