

DEUNA

# FUNCTIONAL DIAGNOSTIC CZUABCO

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This page contains a grid of 100 small diagnostic charts, arranged in 10 rows and 10 columns. Each chart is a functional diagnostic for a specific component or system. The charts are organized as follows:

- Row 1:** 10 charts with titles including 'SYSTEM', 'CPU', 'MEMORY', 'I/O', 'SERIAL', 'PARALLEL', 'TIMER', 'WATCHDOG', 'POWER', and 'GROUNDING'.
- Row 2:** 10 charts with titles including 'BIOS', 'CMOS', 'RAM', 'ROM', 'HARDWARE', 'SOFTWARE', 'CONFIGURATION', 'PERFORMANCE', 'STABILITY', and 'SECURITY'.
- Row 3:** 10 charts with titles including 'NETWORK', 'COMMUNICATIONS', 'TELEPHONE', 'FAX', 'MODEM', 'ROUTER', 'SWITCH', 'BRIDGE', 'FIREWALL', and 'PROXY'.
- Row 4:** 10 charts with titles including 'SERVER', 'CLIENT', 'DATABASE', 'APPLICATION', 'SERVICE', 'UTILITY', 'TOOL', 'SCRIPT', 'PROGRAM', and 'PROCESS'.
- Row 5:** 10 charts with titles including 'LOGGING', 'MONITORING', 'ALERTING', 'REPORTING', 'ANALYSIS', 'TRENDS', 'ANOMALIES', 'CORRELATION', 'ROOT CAUSE', and 'RESOLUTION'.
- Row 6:** 10 charts with titles including 'BACKUP', 'RECOVERY', 'ARCHIVE', 'RESTORE', 'MIGRATION', 'CLONE', 'IMAGE', 'VIRTUAL', 'CONTAINER', and 'ORCHESTRATION'.
- Row 7:** 10 charts with titles including 'CLOUD', 'HYBRID', 'MULTICLOUD', 'IaaS', 'PaaS', 'SaaS', 'XaaS', 'SECURITY', 'COMPLIANCE', 'GOVERNANCE', and 'OPERATIONS'.
- Row 8:** 10 charts with titles including 'AI', 'ML', 'DL', 'NLP', 'CV', 'AS', 'RECOMMENDATION', 'PERSONALIZATION', 'OPTIMIZATION', 'PREDICTION', and 'ANALYTICS'.
- Row 9:** 10 charts with titles including 'BLOCKCHAIN', 'CRYPTOCURRENCY', 'DIGITAL IDENTITY', 'SMART CONTRACTS', 'DECENTRALIZED', 'AUTONOMOUS', 'TRUST', 'TRANSPARENCY', 'IMMUTABILITY', and 'SCALABILITY'.
- Row 10:** 10 charts with titles including 'EMERGING', 'QUANTUM', 'BIOMIMETIC', 'NANOTECHNOLOGY', 'NANOBIOTECHNOLOGY', 'NANOMATERIALS', 'NANOFABRICATION', 'NANOSCALE', 'NANOSYSTEMS', and 'NANODEVICES'.



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IDENTIFICATION  
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PRODUCT CODE: AC-T365C-MC  
PRODUCT NAME: CZUABCO FUNCTIONAL DIAG  
PRODUCT DATE: 21-OCT-84  
MAINTAINER: DISTRIBUTED SYSTEMS DIAGNOSTIC ENGINEERING  
AUTHOR: BRUCE A. HALE

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## REVISION HISTORY

DATE	AUTHOR	DESCRIPTION OF CHANGE
10-FEB-83	MICHAEL CINNAMON (MAC001)	ADD THIS SECTION. CHANGE INIT CODE TO DELAY A PERIOD OF TIME AFTER A POWER FAILURE OCCURS TO ALLOW SELF TEST TO FINISH. INCREASE AMOUNT OF TIME TO WAIT FOR DNI AFTER ISSUING A RESET TO PCSRO. FIX SELF TEST. UPDATE SELF TEST ERROR DESCRIPTIONS. USE LINE CLOCK AS TIMER INSTEAD OF SOFTWARE LOOPS UPDATE 'HEADER' STATEMENT TO REV A1.
24-MAR-83	RONALD JONES (RSJ001)	CHANGED ALL WORD WRITE REFERENCES TO THE UPPER BYTE OF PCSRO, TO BYTE REFERENCES. ADDED VARIABLE TO ADDRESS UPPER BYTE OF PCSRO AND VARIABLES TO CLEAR THE BITS. UPDATED HEADER TO REV A-2.
31-MAR-83	RONALD JONES (RSJ002)	INCREASED LENGTH OF TIME TO WAIT FOR SELF TEST COMPLETION AFTER RESET, FROM 2 SECONDS TO 12. UPDATED HEADER TO REV B-0.
3-OCT-83	RONALD JONES (RSJ003)	IN THE ROUTINE "TINIT", CHANGED THE ACCESS TO PCSRO FROM WORD TO TWO BYTE WRITES. MODIFIED THE VARIABLE "TIMASK" FROM 177400 TO 377.  ADDED A SOUS WAIT BETWEEN ACCESSES TO THE PORT COMMAND FIELD OF PCSRO.  TEST 14 SUBTEST 2. THE INITIALIZATION ROUTINE FOLLOWING THE RESET DOES NOT RESTORE THE STATE SUFFICIENTLY TO CONTINUE TESTING. ADDED SETUP OF PCBB IN PCSR2 AND 3.
4-SEP-84	JOHN P. BEIKE (JPB001)	TEST 9. TEST WOULD HANG IF DEUNA DID NOT INTERRUPT. TURNED THE CLOCK ON FOR TIME OUT, AND RESET PRI BACK TO 4. UPDATED HEADER TO REV C-0.

## TABLE OF CONTENTS

1.0	GENERAL INFORMATION
1.1	PROGRAM ABSTRACT
1.2	SYSTEM REQUIREMENTS
1.3	RELATED DOCUMENTS AND STANDARDS
1.4	DIAGNOSTIC HIERARCHY PREREQUISITES
1.5	ASSUMPTIONS
2.0	OPERATING INSTRUCTIONS
2.1	COMMANDS
2.2	SWITCHES
2.3	FLAGS
2.4	HARDWARE QUESTIONS
2.5	SOFTWARE QUESTIONS
2.6	EXTENDED P-TABLE DIALOGUE
2.7	QUICK STARTUP PROCEDURE
3.0	ERROR INFORMATION
4.0	PERFORMANCE AND PROGRESS REPORTS
5.0	DEVICE INFORMATION TABLES
6.0	TEST SUMMARIES

## 1.0 GENERAL INFORMATION

### 1.1 PROGRAM ABSTRACT

THIS PRODUCT IS THE PDP-11 FUNCTIONAL TESTING DIAGNOSTIC FOR THE DEUNA. A CONFIGURATION OF UP TO EIGHT DEUNA UNITS WILL BE ACCEPTED FOR TEST.

THIS DIAGNOSTIC WILL ONLY OPERATE IN A STAND ALONE, OFFLINE ENVIRONMENT USING THE DEUNA OPERATIONAL MICROCODE. FAILURE IDENTIFICATION WILL GENERALLY BE TO THE FAILING DEUNA FUNCTION.

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

### 1.2 SYSTEM REQUIREMENTS

THE FOLLOWING HARDWARE IS REQUIRED TO RUN THE DEUNA FUNCTIONAL TESTING DIAGNOSTIC:

PDP-11 CPU  
16K MEMORY  
CONSOLE TERMINAL  
DEUNA WITH EXTERNAL LOOPBACK CONNECTOR OR TRANSCEIVER CABLE CONNECTED TO COAXIAL CABLE.

### 1.3 RELATED DOCUMENTS AND STANDARDS

XXDP+ USER'S MANUAL - CHQUS

### 1.4 DIAGNOSTIC HIERARCHY PREREQUISITES

THE TESTS INCLUDED IN THIS DEUNA FUNCTIONAL TESTING DIAGNOSTIC ARE ARRANGED IN A TEST HIERARCHY. TESTS SHOULD BE EXECUTED IN CONSECUTIVE ORDER FOR MAXIMUM FAULT ISOLATION.

### 1.5 ASSUMPTIONS

## 2.0 OPERATING INSTRUCTIONS

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

### 2.1 COMMANDS

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

COMMAND	EFFECT
---------	--------

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

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

2.2 SWITCHES

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

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

EXAMPLE OF SWITCH USAGE:

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

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

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

	TESTS	PASS	FLAGS	EOP	UNITS
	-----	-----	-----	-----	-----
START	X	X	X	X	X

```

RESTART X X X X X
CONTINUE X X X Y
PROCEED X
DROP X
ADD X
PRINT X
DISPLAY X
FLAGS
ZFLAGS
EXIT
    
```

2.3 FLAGS

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

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

\*ERROR MESSAGES ARE DESCRIBED IN SECTION 3.1

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

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



## 2.4 HARDWARE QUESTIONS

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

WHAT IS THE PCSRO ADDRESS ?  
THIS IS THE ADDRESS AT WHICH PCSRO RESIDES ON THE UNIBUS.  
THE ALLOWABLE RANGE IS 150000 - 177776 OCTAL.

WHAT IS THE VECTOR ADDRESS ?  
THIS IS THE INTERRUPT VECTOR ADDRESS FOR THIS DEVICE.  
THE ALLOWABLE RANGE IS 000 - 776 OCTAL.

### SAMPLE DIALOGUE:

UNIT 0  
WHAT IS THE PCSRO ADDRESS? (0) ? 170000  
WHAT IS THE VECTOR ADDRESS? (0) ? 700

## 2.5 SOFTWARE QUESTIONS

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

THE FOLLOWING IS THE ONLY SOFTWARE QUESTION FOR THIS DEVICE:

RUN TEST 20 IN EXTERNAL LOOPBACK MODE ?  
THE DEFAULT IS N (NO).  
NO, RUNS TEST 20 IN INTERNAL LOOPBACK MODE.  
YES, DOES NOT SET INTERNAL LOOPBACK MODE AND THEREFORE  
THE PACKET WILL BE LOOPED EXTERNAL.

### SAMPLE DIALOGUE:

RUN TEST 20 IN EXTERNAL LOOPBACK MODE ? (L) N ? Y

## 2.6 EXTENDED P TABLE DIALOGUE

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

TO ILLUSTRATE A MORE EFFICIENT METHOD, SUPPOSE YOU ARE TESTING

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

# UNITS (0) ? 8<CR>

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

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

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

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

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

UNIT 6  
CSR ADDRESS (0) ? 160000<CR>  
SUB-DEVICE # (0) ? 5<CR>  
Q-FACTOR (0) 0 ? <CR>

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

UNIT 8  
CSR ADDRESS (0) 160000<CR>  
SUB-DEVICE # (0) ? 7<CR>  
Q-FACTOR (0) 1 ? <CR>

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

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

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

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

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

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

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

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

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

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

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

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

## 2.7 QUICK START-UP PROCEDURE (XXDP\*)

TO START-UP THIS PROGRAM:

1. BOOT XXDP\*
2. GIVE THE DATE AND ANSWER ANY QUESTIONS

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

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

### 3.0 ERROR INFORMATION

#### 3.1 TYPES OF ERROR MESSAGES

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

```
NAME TYPE NUMBER ON UNIT NUMBER TST NUMBER PC:XXXXXX
ERROR MESSAGE
```

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

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

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

#### 3.2 SPECIFIC ERROR MESSAGES

ALL ERROR REPORTS FOR THIS DIAGNOSTIC ARE SELF-EXPLANATORY AND WHENEVER POSSIBLE CALLS OUT THE FAILING DEUNA FUNCTION. WHENEVER A DATA COMPARE ERROR IS REPORTED THE "SHOULD BE" AND "WAS" DATA WILL ALSO BE REPORTED.

THE FOLLOWING IS A LIST OF ALL THE POSSIBLE ERRORS:  
 REGISTER ACCESS ERROR  
 DATA COMPARE ERROR IN PCSR2  
 DATA COMPARE ERROR IN PCSR3

DNI BIT FAILED TO SET AFTER DEVICE RESET  
SELF TEST FAILURE  
WRITING ONE TO CLEAR DNI BIT FAILED  
NO DNI INTERRUPT OCCURED AFTER GET PCBB PORT COMMAND  
DNI BIT FAILED TO SET AFTER NOP PORT COMMAND  
DNI BIT FAILED TO SET AFTER GET PCBB PORT COMMAND  
DNI BIT FAILED TO SET AFTER GET CMD PORT COMMAND  
DATA COMPARE ERROR IN MODE REGISTER  
DNI BIT FAILED TO SET AFTER START PORT COMMAND  
TXI BIT FAILED TO SET  
WRITING ONE TO CLEAR TXI BIT FAILED  
RXI BIT FAILED TO SET  
WRITING ONE TO CLEAR RXI BIT FAILED  
TIMEOUT ERROR - DENJA FAILED TO RELINQUISH OWNERSHIP OF RDRB  
TIMEOUT ERROR - DENJA FAILED TO RELINQUISH OWNERSHIP OF TORB  
DNI BIT FAILED TO SET AFTER STOP PORT COMMAND  
DATA COMPARE ERROR IN TRANSMIT DESCRIPTOR RING  
DATA COMPARE ERROR IN RECEIVE DESCRIPTOR RING  
TRANSMIT-RECEIVE DATA COMPARE ERROR  
CRC COMPARE ERROR  
INTERNAL ROM CRC COMPARE ERROR  
RCP.I BIT FAILED TO SET  
WRITING ONE TO CLEAR RCBI BIT FAILED  
TIMEOUT ERROR - DENJA FAILED TO RELINQUISH OWNERSHIP OF FIRST TDRB  
TIMEOUT ERROR - DENJA FAILED TO RELINQUISH OWNERSHIP OF SECOND TDRB  
TIMEOUT ERROR - DENJA FAILED TO RELINQUISH OWNERSHIP OF THIRD TDRB  
TIMEOUT ERROR - DENJA FAILED TO RELINQUISH OWNERSHIP OF FIRST RDRB  
TIMEOUT ERROR - DENJA FAILED TO RELINQUISH OWNERSHIP OF SECOND RDRB  
TIMEOUT ERROR - DENJA FAILED TO RELINQUISH OWNERSHIP OF THIRD RDRB  
DATA COMPARE ERROR IN FIRST TRANSMIT DESCRIPTOR RING  
DATA COMPARE ERROR IN SECOND TRANSMIT DESCRIPTOR RING  
DATA COMPARE ERROR IN THIRD TRANSMIT DESCRIPTOR RING  
DATA COMPARE ERROR IN FIRST RECEIVE DESCRIPTOR RING  
DATA COMPARE ERROR IN SECOND RECEIVE DESCRIPTOR RING  
DATA COMPARE ERROR IN THIRD RECEIVE DESCRIPTOR RING  
ERROR - LOOPBACK SUCCESSFUL WITH INVALID DESTINATION ADDRESS  
BUFL BIT FAILED TO SET WHEN ATTEMPTING TO TRANSMIT A RUNT PACKET  
PAD RUNT PACKET FAILURE  
WCS MEMORY DATA COMPARE ERROR  
LINK MEMORY DATA COMPARE ERROR  
DNI BIT FAILED TO SET AFTER READ COUNTERS PORT COMMAND  
DNI BIT FAILED TO SET AFTER SELF TEST PORT COMMAND  
ERROR - LOOPBACK SUCCESSFUL WITH HALF DUPLEX MODE SET  
ERROR - DIAGNOSTIC TYPE PACKET RECEIVED FROM ANOTHER NODE

#### 4.0 PERFORMANCE AND PROGRESS REPORTS

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

#### 5.0 DEVICE INFORMATION TABLES

AT THE COMPLETION OF THE FIRST PASS FOR EACH DEVICE BEING TESTED DEVICE INFORMATION FOR THAT DEVICE IS PRINTED. THIS PRINTOUT CONTAINS THE ETHERNET DEFAULT ADDRESS, THE ROM MICROCODE VERSION,

AND THE SWITCH PACK SETTINGS FOR SELF TEST LOOP AND REMOTE BOOT.

EXAMPLE PRINTOUT:

ETHERNET DEFAULT ADDRESS (HEX): AA-00-03-00-00-02

ROM MICROCODE VERSION (DECIMAL): 1

SWITCH PACK SET FOR :

SELF TEST LOOP DISABLED

REMOTE BOOT ENABLED

NOTE: THIS INFORMATION MAY BE PRINTED WITHOUT RUNNING THE ENTIRE DIAGNOSTIC IF TEST 28 IS RUN SEPARATELY VIA THE /TESTS:28 SUPERVISOR SWITCH.

#### 6.0 TEST SUMMARIES

##### TEST 1: PCSRO READ ACCESS TEST

THIS TEST VERIFIES THAT A DEVICE IS PRESENT AT THE PCSRO UNIBUS ADDRESS SPECIFIED.

TEST SEQUENCE:

1. READ PCSRO

##### TEST 2: PCSR1 READ ACCESS TEST

THIS TEST VERIFIES THAT A DEVICE IS PRESENT AT THE PCSR1 UNIBUS ADDRESS SPECIFIED.

TEST SEQUENCE:

1. READ PCSR1

##### TEST 3: PCSR2 READ ACCESS TEST

THIS TEST VERIFIES THAT A DEVICE IS PRESENT AT THE PCSR2 UNIBUS ADDRESS SPECIFIED.

TEST SEQUENCE:

1. READ PCSR2

##### TEST 4: PCSR3 READ ACCESS TEST

THIS TEST VERIFIES THAT A DEVICE IS PRESENT AT THE PCSR3 UNIBUS ADDRESS SPECIFIED.

TEST SEQUENCE:

1. READ PCSR3

##### TEST 5: PCSR2 STATIC BIT TEST

THIS TEST CHECKS PCSR2 FOR ALL SA0 AND SA1 ERRORS. THE HOST WRITES PATTERNS TO PCSR2 AND READS THEM BACK TO VERIFY.

NOTE: PCSR2 BIT00 SHOULD ALWAYS BE A ZERO.  
THIS BIT IS MASKED BEFORE DOING THE COMPARE.

## TEST SEQUENCE:

1. WRITE PATTERN TO PCSR2
2. COMPARE MASKED PATTERN WITH PCSR2 CONTENTS
3. REPEAT STEPS 1 AND 2 FOR ALL PATTERNS

## TEST 6: PCSR3 STATIC BIT TEST

THIS TEST CHECKS PCSR3 FOR ALL SP<sup>^</sup> AND SA1 ERRORS.  
THE HOST WRITES PATTERNS TO PCSR3 AND READS THEM  
BACK TO VERIFY.

NOTE: PCSR3 BIT02 THRU BIT15 SHOULD ALWAYS BE A ZERO.  
THESE BITS ARE MASKED BEFORE DOING THE COMPARE.

## TEST SEQUENCE:

1. WRITE PATTERN TO PCSR3
2. COMPARE MASKED PATTERN WITH PCSR3 CONTENTS
3. REPEAT STEPS 1 AND 2 FOR ALL PATTERNS

## TEST 7: SELF TEST

THIS TEST VERIFIES THAT THE ROM BASED SELF TEST  
CAN BE RUN SUCCESSFULLY WHEN INVOKED VIA  
THE SELF TEST PORT COMMAND.

## TEST SEQUENCE:

1. ISSUE THE SELF TEST PORT COMMAND
2. WAIT FOR DNI
3. CHECK LITE BITE REGISTER FOR SUCCESSFUL SELF TEST
4. WRITE ONE TO CLEAR DNI

## TEST 8: PORT COMMAND TEST

THIS TEST VERIFIES THAT NO ERRORS OCCUR WHEN  
A DEUNA PORT COMMAND IS ISSUED.

## TEST SEQUENCE:

1. ISSUE A NOP PORT COMMAND
2. WAIT FOR DNI
3. WRITE ONE TO CLEAR DNI
4. MOVE NOP FUNCTION INTO PCBB
5. ISSUE A GETPCBB PORT COMMAND
6. WAIT FOR DNI
7. WRITE ONE TO CLEAR DNI
8. ISSUE A GETCMD PORT COMMAND
9. WAIT FOR DNI
10. WRITE ONE TO CLEAR DNI

## TEST 9: INTERRUPT LOGIC TEST

THIS TEST VERIFIES THAT A DEUNA INTERRUPT CAN BE GENERATED.

## TEST SEQUENCE:

1. SET UP THE INTERRUPT VECTOR
2. ISSUE A GET PCBB PORT COMMAND
3. WAIT FOR A DNI INTERRUPT
4. WRITE ONE TO CLEAR DNI

## TEST 10: READ INTERNAL ROM TEST

THIS TEST READS AND VERIFIES THE INTERNAL ROM. THE DUMP INTERNAL MEMORY FUNCTION IS USED TO READ THE ROM. A CRC IS GENERATED FROM THE ROM DATA READ. A CRC VALUE OF ZERO SHOULD BE GENERATED FROM THE ROM DATA READ WHICH INCLUDES THE STORED ROM CRC VALUE.

## TEST SEQUENCE:

1. CLEAR RBUF
2. READ 1K OF ROM INTO RBUF
3. CALCULATE CRC ON RBUF
4. REPEAT STEPS 1-3 FOR EACH 1K BLOCK OF ROM (8 TIMES)
5. VERIFY CRC GENERATED = 0

## TEST 11: READ/WRITE INTERNAL WCS TEST

THIS TEST READS AND WRITES THE INTERNAL WCS MEMORY. THE DUMP/LOAD INTERNAL MEMORY FUNCTIONS ARE USED TO READ/WRITE THE RESERVED DOWNLINE LOAD PORTION OF THE WCS MEMORY. THE TOP 1K OF WCS.

## TEST SEQUENCE:

1. LOAD TBUF WITH DATA = ADDRESS
2. LOAD TOP 1K OF INTERNAL WCS MEMORY WITH TBUF
3. RESETUP TBUF FOR DATA COMPARE
4. CLEAR RBUF
5. DUMP INTERNAL WCS MEMORY -> RBUF
6. COMPARE RBUF WITH TBUF
7. REPEAT STEPS 1 THRU 6 WITH COMPLIMENT DATA

## TEST 12: READ/WRITE MODE FUNCTION TEST

THIS TEST VERIFIES THE READ/WRITE MODE FUNCTIONS.

## TEST SEQUENCE:

1. WRITE MODE REGISTER WITH ALL ONES
2. READ AND COMPARE MODE REGISTER
3. WRITE MODE REGISTER WITH ALL ZEROS
4. READ AND COMPARE MODE REGISTER

## TEST 13: READ/WRITE LINK MEMORY TEST

THIS TEST READS AND WRITES THE INTERNAL LINK MEMORY. THE DUMP/LOAD INTERNAL MEMORY FUNCTIONS ARE USED TO READ/WRITE THE ENTIRE 16K LINK MEMORY.

## TEST SEQUENCE:

1. WRITE MODE REGISTER = INTERNAL LOOPBACK MODE



- TO REMOVE LINK MEMORY FROM THE WIRE
2. LOAD TBUF WITH DATA = ADDRESS
  3. LOAD 1K OF INTERNAL LINK MEMORY WITH TBUF
  4. REPEAT STEPS 1 AND 2 FOR EACH 1K BLOCK OF LINK MEMORY (16 TIMES)
  5. RESETUP TBUF FOR DATA COMPARE
  6. CLEAR RBUF
  7. DUMP INTERNAL LINK MEMORY -> RBUF
  8. COMPARE RBUF WITH TBUF
  9. REPEAT STEPS 4,5,6 AND 7 FOR EACH 1K BLOCK
  10. REPEAT STEPS 1 THRU 8 WITH COMPLIMENT DATA

#### TEST 14: INTERNAL LOOPBACK TEST

PART 1 OF THIS TEST VERIFIES THAT AN INTERNAL LOOPBACK OPERATION CAN BE PERFORMED SUCCESSFULLY.  
PART 2 OF THIS TEST VERIFIES THAT THE HEARTBEAT DETECTION CIRCUITRY IS OPERATING CORRECTLY.

##### TEST SEQUENCE:

1. WRITE MODE REGISTER = INTERNAL LOOPBACK, PROM MODE
2. WRITE RING FORMAT
3. WRITE PHYSICAL ADDRESS
4. SET UP RINGS AND BUFFERS
5. ISSUE START
6. CHECK FOR ERRORS
7. ISSUE STOP
8. WRITE MODE REGISTER = INTERNAL LOOPBACK, PROM MODE, ENABLE COLLISION TEST CIRCUITRY
9. SET UP RINGS AND BUFFERS
10. ISSUE START
11. CHECK FOR ERRORS
12. ISSUE STOP
13. ISSUE READ PORT STATUS
14. VERIFY 'CERR' BIT SET IN PORT CONTROL WORD 2

#### TEST 15: CRC CHECKING TEST

THIS TEST VERIFIES THAT CRC CHECKING MODE IS OPERATIONAL.  
AN INTERNAL LOOPBACK IS PERFORMED WHILE IN THE DISABLE TRANSMIT CRC MODE.  
WITH A GOOD CRC VALUE APPENDED TO THE TRANSMIT BUFFER AN ERROR FREE LOOPBACK IS EXPECTED.

##### TEST SEQUENCE:

1. WRITE MODE REGISTER = INTERNAL LOOPBACK, PROM, AND DISABLE TRANSMIT CRC MODE
2. WRITE RING FORMAT
3. WRITE PHYSICAL ADDRESS
4. SET UP RINGS AND BUFFERS
5. APPEND GOOD CRC VALUE TO TRANSMIT BUFFER
6. ISSUE START
7. CHECK FOR ERRORS
8. ISSUE STOP

#### TEST 16: FORCE CRC ERROR TEST

THIS TEST VERIFIES THAT A CRC ERROR CAN BE DETECTED.  
AN INTERNAL LOOPBACK IS PERFORMED WHILE IN  
THE DISABLE TRANSMIT CRC MODE.  
WITH A BAD CRC VALUE APPENDED TO THE TRANSMIT BUFFER  
A CRC ERROR IS EXPECTED IN THE RECEIVE DESCRIPTOR RING.  
TEST SEQUENCE:

1. WRITE MODE REGISTER = INTERNAL LOOPBACK, PROM,  
AND DISABLE TRANSMIT CRC MODE
2. WRITE RING FORMAT
3. WRITE PHYSICAL ADDRESS
4. SET UP RINGS AND BUFFERS
5. APPEND BAD CRC VALUE TO TRANSMIT BUFFER
6. ISSUE START
7. CHECK FOR CRC ERROR IN RDRB+4
8. ISSUE STOP

#### TEST 17: DISABLE RECEIVE CHAINING TEST

THIS TEST VERIFIES DISABLE DATA CHAINING MODE.  
AN INTERNAL LOOPBACK IS PERFORMED WITH RECEIVE BUFFERS CHAINED  
WHILE IN DISABLE DATA CHAINING MODE.  
A NCHN ERROR IS EXPECTED IN THE RECEIVE DESCRIPTOR RING.  
TEST SEQUENCE:

1. WRITE MODE REGISTER = INTERNAL LOOPBACK, PROM,  
AND DISABLE DATA CHAINING MODE
2. WRITE RING FORMAT
3. WRITE PHYSICAL ADDRESS
4. SET UP RINGS AND BUFFERS FOR RECEIVE DATA CHAINING
5. ISSUE START
6. CHECK FOR NCHN ERROR IN RDRB+6
7. ISSUE STOP

#### TEST 18: TRANSMIT CHAINING ERROR TEST

THIS TEST VERIFIES THAT A TRANSMIT BUFL ERROR CAN BE GENERATED.  
AN INTERNAL LOOPBACK IS ATTEMPTED WITH TRANSMIT BUFFERS CHAINED  
AND SUCCESSIVE OWNED RINGS HAVING STP SET.  
A BUFL ERROR IS EXPECTED IN THE TRANSMIT DESCRIPTOR RING.  
TEST SEQUENCE:

1. WRITE MODE REGISTER = INTERNAL LOOPBACK AND PROM MODE
2. WRITE RING FORMAT
3. WRITE PHYSICAL ADDRESS
4. SET UP RINGS AND BUFFERS  
TRANSMIT RING = CHAINED WITH SUCCESSIVE STPS
5. ISSUE START
6. CHECK FOR BUFL ERROR IN TDRB+6
7. ISSUE STOP

#### TEST 19: NO RECEIVE BUFFER TEST

THIS TEST VERIFIES THAT A RCBI ERROR CAN BE DETECTED.  
AN INTERNAL LOOPBACK IS ATTEMPTED WITH  
NO RECEIVE BUFFERS OWNED BY THE DEUNA.

A RCBI (RECEIVE BUFFER UNAVAILABLE) ERROR IS EXPECTED IN PCRR0.  
TEST SEQUENCE:

1. WRITE MODE REGISTER = INTERNAL LOOPBACK AND PROM MODE
2. WRITE RING FORMAT (16 TRANSMIT ENTRIES)
3. WRITE PHYSICAL ADDRESS
4. SET UP RINGS AND BUFFERS  
WITH 16 TRANSMIT PACKETS  
AND NO RECEIVE BUFFERS OWNED BY THE DEUNA
5. ISSUE START
6. CHECK FOR RCBI ERROR IN PCSRO
7. ISSUE STOP

#### TEST 20: DATA CHAINING TEST

THIS TEST VERIFIES TRANSMIT AND RECEIVE DATA CHAINING.  
AN INTERNAL OR EXTERNAL LOOPBACK IS PERFORMED  
WITH THREE TRANSMIT AND THREE RECEIVE BUFFERS CHAINED.  
INTERNAL LOOPBACK IS DEFAULT WITH EXTERNAL LOOPBACK BEING  
SELECTED VIA A SOFTWARE QUESTION.

TEST SEQUENCE:

1. WRITE MODE REGISTER = PROM MODE AND EITHER  
INTERNAL(D) OR EXTERNAL LOOPBACK MODE
2. WRITE RING FORMAT
3. WRITE PHYSICAL ADDRESS
4. SET UP RINGS AND BUFFERS  
THREE TRANSMIT AND RECEIVE BUFFERS
5. ISSUE START
6. CHECK FOR ERRORS
7. ISSUE STOP

#### TEST 21: PHYSICAL ADDRESS TEST

THIS TEST VERIFIES THAT PHYSICAL ADDRESS DETECTION  
IS OPERATIONAL.

A WRITE PHYSICAL ADDRESS FUNCTION IS USED TO SET  
THE DEUNA'S PHYSICAL ADDRESS.  
INTERNAL LOOPBACKS ARE THEN PERFORMED WITH A  
CURRENTLY ENABLED AND THEN A CURRENTLY DISABLED  
DESTINATION ADDRESS.  
THE PHYSICAL ADDRESS IS THEN COMPLEMENTED AND THE  
TEST IS REPEATED.

TEST SEQUENCE:

1. WRITE MODE REGISTER = INTERNAL LOOPBACK
2. WRITE RING FORMAT
3. WRITE PHYSICAL ADDRESS
4. SET UP RINGS AND BUFFERS  
WITH DESTINATION ADDRESS = PHYSICAL ADDRESS
5. ISSUE START
6. CHECK FOR ERRORS
7. ISSUE STOP
8. SET UP RINGS AND BUFFERS  
WITH DESTINATION ADDRESS NOT = PHYSICAL ADDRESS
9. ISSUE START
10. CHECK FOR NO RXI
11. ISSUE STOP

12. WRITE PHYSICAL ADDRESS WITH COMPLEMENTED VAULE
13. REPEAT STEPS 4 - 11

**TEST 22: MULTICAST ADDRESS TEST**

THIS TEST VERIFIES THAT MULTICAST ADDRESSING IS OPERATIONAL.

A WRITE MULTICAST ADDRESS LIST FUNCTION IS USED TO SET THE DEUNA'S MULTICAST ADDRESS LIST.

INTERNAL LOOPBACKS ARE THEN PERFORMED WITH CURRENTLY ENABLED AND THEN CURRENTLY DISABLED MULTICAST DESTINATION ADDRESSES.

THE MULTICAST ADDRESS LIST IS THEN COMPLEMENTED AND THE TEST IS REPEATED.

TEST SEQUENCE:

1. WRITE MODE REGISTER = INTERNAL LOOPBACK
2. WRITE RING FORMAT
3. WRITE PHYSICAL ADDRESS
4. WRITE MULTICAST ADDRESS LIST
5. SET UP RINGS AND BUFFERS WITH DESTINATION ADDRESS = MULTICAST ADDRESS
6. ISSUE START
7. CHECK FOR ERRORS
8. ISSUE STOP
9. REPEAT STEPS 5 - 8 FOR ALL TEN LIST ENTRIES
10. SET UP RINGS AND BUFFERS WITH DESTINATION ADDRESS = COMPLEMENTED MULTICAST ADDRESS
11. ISSUE START
12. CHECK FOR NO RXI
13. ISSUE STOP
14. REPEAT STEPS 10 - 13 FOR ALL TEN ENTRIES
15. WRITE MULTICAST ADDRESS LIST WITH COMPLEMENTED VAULES
16. REPEAT STEPS 5 - 14

**TEST 23: PROMISCUOUS ADDRESS MODE TEST**

THIS TEST VERIFIES THAT PROMISCUOUS ADDRESSING MODE IS OPERATIONAL.

A WRITE PHYSICAL ADDRESS FUNCTION IS USED TO SET THE DEUNA'S PHYSICAL ADDRESS.

A WRITE MULTICAST ADDRESS LIST FUNCTION IS USED TO SET THE DEUNA'S MULTICAST ADDRESS LIST.

INTERNAL LOOPBACKS ARE THEN PERFORMED WITH CURRENTLY ENABLED AND THEN CURRENTLY DISABLED PHYSICAL AND MULTICAST DESTINATION ADDRESSES.

TEST SEQUENCE:

1. WRITE MODE REGISTER = INTERNAL LOOPBACK AND PROM MODE
2. WRITE RING FORMAT
3. WRITE PHYSICAL ADDRESS
4. WRITE MULTICAST ADDRESS LIST
5. SET UP RINGS AND BUFFERS WITH DESTINATION ADDRESS = PHYSICAL ADDRESS
6. ISSUE START
7. CHECK FOR ERRORS
8. ISSUE STOP

9. SET UP RINGS AND BUFFERS  
WITH DESTINATION ADDRESS NOT = PHYSICAL ADDRESS
10. ISSUE START
11. CHECK FOR ERRORS
12. ISSUE STOP
13. SET UP RINGS AND BUFFERS  
WITH DESTINATION ADDRESS = MULTICAST ADDRESS
14. ISSUE START
15. CHECK FOR ERRORS
16. ISSUE STOP
17. REPEAT STEPS 13 - 16 FOR ALL TEN LIST ENTRIES
18. SET UP RINGS AND BUFFERS  
WITH DESTINATION ADDRESS NOT = MULTICAST ADDRESS
19. ISSUE START
20. CHECK FOR ERRORS
21. ISSUE STOP
22. REPEAT STEPS 18 - 21 FOR ALL TEN ENTRIES

**TEST 24: ENABLE ALL MULTICAST MODE TEST**

THIS TEST VERIFIES THAT ENABLE ALL MULTICAST MODE IS OPERATIONAL.  
A WRITE MULTICAST ADDRESS LIST FUNCTION IS USED TO SET THE DEUNA'S MULTICAST ADDRESS LIST.  
INTERNAL LOOPBACKS ARE THEN PERFORMED WITH CURRENTLY ENABLED AND THEN CURRENTLY DISABLED MULTICAST DESTINATION ADDRESSES.  
ALL LOOPBACKS ARE VERIFIED FOR SUCCESSFUL RECEPTION.  
TEST SEQUENCE:

1. WRITE MODE REGISTER = INTERNAL LOOPBACK  
AND ENABLE ALL MULTICAST MODE
2. WRITE RING FORMAT
3. WRITE PHYSICAL ADDRESS
4. WRITE MULTICAST ADDRESS LIST
5. SET UP RINGS AND BUFFERS  
WITH DESTINATION ADDRESS = MULTICAST ADDRESS
6. ISSUE START
7. CHECK FOR ERRORS
8. ISSUE STOP
9. REPEAT STEPS 5 - 8 FOR ALL TEN LIST ENTRIES
10. SET UP RINGS AND BUFFERS  
WITH DESTINATION ADDRESS = COMPLEMENTED MULTICAST ADDRESS
11. ISSUE START
12. CHECK FOR ERRORS
13. ISSUE STOP
14. REPEAT STEPS 10 - 13 FOR ALL TEN ENTRIES

**TEST 25: PAD RUNT PACKETS TEST**

THIS TEST VERIFIES THAT PAD RUNT PACKET MODE IS OPERATIONAL.  
THIS TEST WILL  
FIRST, ATTEMPT TO TRANSMIT A RUNT PACKET  
WHEN NOT IN PAD RUNT PACKET MODE AND VERIFY THAT A  
BUFL ERROR IN TDRB+6 OCCURS.  
SECOND, TRANSMIT A RUNT PACKET

WHEN IN PAD RUNT PACKET MODE AND VERIFY  
SUCCESSFUL TRANSMISSION AS WELL AS PADDING OCCURS.

## TEST SEQUENCE:

1. WRITE MODE REGISTER = INTERNAL LOOPBACK, PROM MODE
2. WRITE RING FORMAT
3. WRITE PHYSICAL ADDRESS
4. SET UP RINGS AND BUFFERS  
WITH THE TRANSMIT BUFFER = RUNT PACKET
5. ISSUE START
6. CHECK FOR BUFL ERROR IN TDRB+6
7. ISSUE STOP
8. WRITE MODE REGISTER = INTERNAL LOOPBACK, PROM  
AND PAD RUNT PACKET MODE
9. SET UP RINGS AND BUFFERS  
WITH THE TRANSMIT BUFFER = RUNT PACKET
10. ISSUE START
11. CHECK FOR ERRORS
12. VERIFY PACKET HAS BEEN PADDED
13. ISSUE STOP

## TEST 26: HALF DUPLEX TEST

THIS TEST VERIFIES THAT HALF DUPLEX MODE IS OPERATIONAL.  
WHILE IN HALF DUPLEX MODE,  
A WRITE PHYSICAL ADDRESS FUNCTION IS USED TO SET  
THE DE'NA'S PHYSICAL ADDRESS.  
INTERNAL LOOPBACKS ARE THEN PERFORMED WITH A  
CURRENTLY ENABLED AND THEN A CURRENTLY DISABLED  
DESTINATION ADDRESS.

## TEST SEQUENCE:

1. WRITE MODE REGISTER = INTERNAL LOOPBACK AND  
HALF DUPLEX MODES
2. WRITE RING FORMAT
3. WRITE PHYSICAL ADDRESS
4. SET UP RINGS AND BUFFERS  
WITH DESTINATION ADDRESS = PHYSICAL ADDRESS
5. ISSUE START
6. CHECK FOR ERRORS (MATCH BIT SHOULD BE SET)
7. CHECK FOR NO RXI
8. ISSUE STOP
9. SET UP RINGS AND BUFFERS  
WITH DESTINATION ADDRESS NOT = PHYSICAL ADDRESS
10. ISSUE START
11. CHECK FOR ERRORS (MATCH BIT SHOULD NOT BE SET)
12. CHECK FOR NO RXI
13. ISSUE STOP

## TEST 27: SIMULTANEOUS OPERATIONS TEST

THIS TEST VERIFIES THAT SIMULTANEOUS OPERATIONS CAN BE PERFORMED.  
A CHAINED INTERNAL LOOPBACK WILL BE PERFORMED SIMULTANEOUSLY  
WITH A READ COUNTERS PORT FUNCTION.

## TEST SEQUENCE:

1. WRITE MODE REGISTER = PROM AND INTERNAL LOOPBACK MODE
2. WRITE RING FORMAT

- 3. WRITE PHYSICAL ADDRESS
- 4. SET UP RINGS AND BUFFERS  
THREE TRANSMIT AND RECEIVE BUFFERS
- 5. SET UP READ COUNTERS FUNCTION
- 6. ISSUE START
- 7. ISSUE GET COMMAND PORT COMMAND
- 8. CHECK FOR ERRORS
- 9. ISSUE STOP

TEST 28: PRINT DEVICE PARAMETERS TEST

THIS TEST PRINTS THE DEFAULT PHYSICAL ADDRESS, THE MICROCODE REVISION AND THE SWITCH PACK SETTINGS.

TEST SEQUENCE:

- 1. READ DEFAULT PHYSICAL ADDRESS
- 2. READ MICROCODE REVISION
- 3. READ SWITCH PACK SETTINGS
- 4. PRINT

```

1152
1153
1154
1180
1182 000000
1183
1184      002000
1186
1187 002000
1188
1189
1190
1191
1192
1193
1194 002000
1195
1212
1213 002000
      002000
      002000      103
      002001      132
      002002      125
      002003      101
      002004      102
      002005      000
      002006      000
      002007      000
      002010
      002010      103
      002011
      002011      060
      002012
      002012 000000
      002014
      002014 000000
      002016
      002016 073670
      002020
      002020 074002
      002022
      002022 002216
      002024
      002024 002224
      002026
      002026 074104
      002030
      002030 000000
      002032
      002032 000000
      002034
      002034 000000
      002036
      002036 000000
      002040
      002040 002124
      002042

```

```

.TITLE PROGRAM HEADER AND TABLES
.SBTTL PROGRAM HEADER
      .ENABL ABS,AMA
      .ENABL AMA      2000
      .
      BGNMOD
;
;
; THE PROGRAM HEADER IS THE INTERFACE BETWEEN
; THE DIAGNOSTIC PROGRAM AND THE SUPERVISOR.
;
      POINTER BGNRPT,BGNSW,BGNSFT,BGNAU,BGNDU,ERRTBL
      HEADER CZUAB,C,0,0,0,340

```

```

;RSJ001
L$NAME:: .ASCII /C/
          .ASCII /Z/
          .ASCII /U/
          .ASCII /A/
          .ASCII /B/
          .BYTE 0
          .BYTE 0
          .BYTE 0
L$REV:: .ASCII /C/
L$DEPO:: .ASCII /O/
L$UNIT:: .WORD 0
L$TIML:: .WORD 0
L$HPCP:: .WORD L$HARD
L$SPCP:: .WORD L$SOFT
L$HPTP:: .WORD L$HW
L$SPTP:: .WORD L$SW
L$LADP:: .WORD L$LAST
L$STA:: .WORD 0
L$CO:: .WORD 0
L$DTYP:: .WORD 0
L$APT:: .WORD 0
L$DTP:: .WORD L$DISPATCH
L$PRIO::

```



```

002042 000340
002044
002044 000000
002046
002046 000000
002050
002050 003
002051 003
002052
002052 000000
002054 000000
002056
002056 000000
002060
002060 015252
002062
002062 027536
002064
002064 000000
002066
002066 000000
002070
002070 030174
002072
002072 030166
002074
002074 000000
002076
002076 015260
002100
002100 104035
002102
002102 015242
002104
002104 027552
002106
002106 030160
002110
002110 030156
002112
002112 027544
002114
002114 000000
002116
002116 000000
002120
002120 000000

```

1214  
1215

```

L$ENVI:: .WORD 340
L$EXP1:: .WORD 0
L$MREV:: .WORD 0
L$EF:: .BYTE C$REVISION
          .BYTE C$EDIT
L$SPC:: .WORD 0
L$DEVP:: .WORD 0
L$REPP:: .WORD L$DVTYP
L$EXP4:: .WORD L$RPT
L$EXP5:: .WORD 0
L$AUT:: .WORD 0
L$DUT:: .WORD L$AU
L$LUN:: .WORD L$DU
L$DESP:: .WORD C
L$LOAD:: .WORD L$DESC
          EMT E$LOAD
L$ETP:: .WORD L$ERRTBL
L$ICP:: .WORD L$INIT
L$CCP:: .WORD L$CLEAN
L$ACP:: .WORD L$AUTO
L$PRT:: .WORD L$PROT
L$TEST:: .WORD 0
L$DLY:: .WORD 0
L$HIME:: .WORD 0
          :RSJ002
          :RSJ003

```

.SBTTL DISPATCH TABLE

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

DISPATCH 28

1227		
1228		
1229		
1230		
1231		
1232		
1233		
1234	002122	
	002122	000034
	002124	
	002124	030254
	002126	030352
	002130	030452
	002132	030552
	002134	030652
	002136	030726
	002140	031002
	002142	035002
	002144	035276
	002146	035604
	002150	036134
	002152	037110
	002154	037654
	002156	041062
	002160	043036
	002162	044150
	002164	045262
	002166	046370
	002170	047366
	002172	050260
	002174	052054
	002176	054736
	002200	060012
	002202	063412
	002204	065450
	002206	067170
	002210	070502
	002212	072232
1235		

.WORD	28
L#DISPATCH::	
.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

.SBTTL DEFAULT HARDWARE P-TABLE

1243  
1244  
1245  
1246  
1247  
1248  
1249  
1250  
1251

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

1252 002214  
002214 000002  
002216  
002216

BGNHW DFPTBL

.WORD L10000-L\$HW/2  
L\$HW::  
DFPTBL::

1253  
1263 002216 000000  
1264 002220 000000  
1265 002222  
002222

.WORD 0  
.WORD 0  
ENDHW

; PCSRD - UNIBUS ADDRESS  
; DEUNA INTERRUPT VECTOR

L10000:

1267  
1268  
1269  
1270  
1271  
1272  
1273  
1274  
1275  
1276  
1277  
1285  
1286  
1287  
1288  
1289  
1290

.SBTTL SOFTWARE P-TABLE

\*\*\*  
: THE SOFTWARE TABLE CONTAINS VARIOUS DATA USED BY THE  
: PROGRAM AS OPERATIONAL PARAMETERS. THESE PARAMETERS ARE  
: SET UP AT ASSEMBLY TIME AND MAY BE VARIED BY THE OPERATOR  
: AT RUN TIME.  
:--

002222  
002222 000001  
002224  
002224

BGNSW SFPTBL

.WORD L10001-L\$SW/2  
L\$SW::  
SFPTBL::

002224 000000  
002226  
002226

EXLOOP: .WORD 0 ; TEST20 EXTERNAL LOOPBACK FLAG  
.EVEN  
ENDSW

L10001:

1303  
1304  
1332  
1342  
1343  
1344  
1345  
1346  
1347  
1348  
1349  
1364  
1365 002226

.TITLE GLOBAL AREAS  
.SBTTL GLOBAL EQUATES SECTION

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

EQUALS

; BIT DIFINITIONS

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

001000	BIT9==	BIT09
000400	BIT8==	BIT08
000200	BIT7==	BIT07
000100	BIT6==	BIT06
000040	BIT5==	BIT05
000020	BIT4==	BIT04
000010	BIT3==	BIT03
000004	BIT2==	BIT02
000002	BIT1==	BIT01
000001	BIT0==	BIT00

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

000040	EF.START==	32.	; START COMMAND WAS ISSUED
000037	EF.RESTART==	31.	; RESTART COMMAND WAS ISSUED
000036	EF.CONTINUE==	30.	; CONTINUE COMMAND WAS ISSUED
000035	EF.NEW==	29.	; A NEW PASS HAS BEEN STARTED
000034	EF.PWR==	28.	; A POWER-FAIL/POWER-UP OCCURRED

; PRIORITY LEVEL DEFINITIONS

000340 PRI07== 340

```

000300
000240
000200
000140
000100
000040
000000

```

```

PRI06== 300
PRI05== 240
PRI04== 200
PRI03== 140
PRI02== 100
PRI01== 40
PRI00== 0

```

OPERATOR FLAG BITS

```

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

```

```

EVL== 4
LOT== 10
ADR== 20
IDU== 40
ISR== 100
UAM== 200
BOE== 400
PNT== 1000
PRI== 2000
IXE== 4000
IBE== 10000
IER== 20000
LOE== 40000
HOE== 100000

```

```

1366
1367
1368
1369
1370
1371
1372
1373
1374
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1386
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1396
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1398

```

```

100000
000200
040000
000100
020000
000040
010000
000020
004000
000010
002000
000004
000400
000001
000200
000100
000040
000001
000002
000003
000004
000006
000010
000017
100000
040000

```

```

; PCSR0 - PORT CONTROL AND STATUS REGISTER 0
SERI == BIT15 ; STATUS ERROR INTERRUPT
SERIB == BIT07 ; STATUS ERROR INTERRUPT BYTE REFERENCE ;RSJ001
PCEI == BIT14 ; PORT COMMAND ERROR INTERRUPT
PCEIB == BIT06 ; PORT COMMAND ERROR INTERRUPT BYTE REF ;RSJ001
RXI == BIT13 ; RECEIVE RING INTERRUPT
RXIB == BIT05 ; RECEIVE RING INTERRUPT BYTE REF ;RSJ001
TXI == BIT12 ; TRANSMIT RING INTERRUPT
TXIB == BIT04 ; TRANSMIT RING INTERRUPT BYTE REF ;RSJ001
DNI == BIT11 ; DONE INTERRUPT
DNIB == BIT03 ; DONE INTERRUPT BYTE REF ;RSJ001
RCBI == BIT10 ; RECEIVE BUFFER UNAVAILABLE
RCBIB == BIT02 ; RECEIVE BUFFER UNAVAILABLE ;RSJ001

;
FATI == BIT08 ; FATAL ERROR INTERRUPT
FATIB == BIT00 ; FATAL ERROR INTERRUPT BYTE REF ;RSJ001
INTR == BIT07 ; INTERRUPT SUMMARY <15:08>
INTE == BIT06 ; INTERRUPT ENABLE
RSET == BIT05 ; UNA RESET

; PORT COMMANDS <03:00>
GETPCB == BIT00
GETCMD == BIT01
SLFT == BIT00!BIT01
STAR == BIT02
PNOP == BIT01!BIT02
PDM == BIT03
STOP == BIT03!BIT02!BIT01!BIT00

; PCSR1 - PORT CONTROL AND STATUS REGISTER 1
XPMR == BIT15 ; TRANSCEIVER POWER OK
ICAB == BIT14 ; PORT/LINK CABLING OK

```

```

1399      ;
1400      ; SELF TEST ERROR CODE <13:08>
1401      140377      STMASK      ..      140377      ; SELF TEST MASK
1402      ;
1403      000200      PCTO      ..      BIT07      ; PORT COMMAND TIMEOUT
1404      ;
1405      000010      RMTC      ..      BIT03      ; REMOTE CONSOLE RESERVED
1406      ;
1407      ; PORT STATE <02:00>
1408      177770      SMASK      ..      177770      ; STATE MASK
1409      ;
1410      000000      RESET      ..      0
1411      000001      PRILD      ..      BIT00      ; PRIMARY LOAD STATE
1412      000002      READY      ..      BIT01
1413      000003      RUN      ..      BIT00!BIT01
1414      000005      UNHLT      ..      BIT00!BIT02
1415      000006      NIHLT      ..      BIT01!BIT02
1416      000007      NIUNI      ..      BIT00!BIT01!BIT02
1417      ;
1418      ; DESCRIPTOR RING DEFINITIONS
1419      100000      OWN      ..      BIT15
1420      040000      ERRS      ..      BIT14
1421      001000      STP      ..      BIT09
1422      000400      ENP      ..      BIT08
1423      ;
1424      100000      BUFL      ..      BIT15
1425      ; GLOBAL EQUATES
1426      000000      ZERO      ..      0
1427      177777      ONES      ..      177777
1428      000377      TIMASK      ..      377      ; UPPER BYTE = ONES ;RSJ003
1429      000000      GOODST      ..      0      ; SUCCESSFUL SELF TEST CODE
1430      175015      CMODE1      ..      175015      ; ALL SETABLE MODE BITS = ONES
1431      007777      TDRMSK      ..      7777      ; TDR MASK
1432      002540      DTYPE      ..      2540      ; DIAGNOSTIC TYPE FIELD
1433      ;
1434      000000      INITH      ..      0      ; INITIAL CRC VALUE
1435      120001      POLYH      ..      120001      ; CRC POLYNOMIAL
1436      ;
1437      020000      SIZ4K      ..      20000      ; 4K WORDS
1438      040000      SIZ8K      ..      SIZ4K*2      ; 8K WORDS
1439      000077      SECOND      ..      63.      ; 63 LINE CLOCK TICKS = APROX. 1 SECOND ;MAC001
1440      000100      IE      ..      100      ; INTERRUPT ENABLE FOR LINE CLOCK ;MAC001

```

```

1442      .SBTTL GLOBAL DATA SECTION
1443
1444      ;**
1445      ; THE GLOBAL DATA SECTION CONTAINS DATA THAT ARE USED
1446      ; IN MORE THAN ONE TEST.
1447
1448      ; --
1449      ; ADDRESSES FOR DEUNA UNDER TEST
1450      ;
1450 002226 000000 PCSRO::      .WORD 0      ; ADDRESS OF PCSRO
1451 002230 000000 PCSR1::      .WORD 0      ; ADDRESS OF PCSR1
1452 002232 000000 PCSR2::      .WORD 0      ; ADDRESS OF PCSR2
1453 002234 000000 PCSR3::      .WORD 0      ; ADDRESS OF PCSR3
1454 002236 000000 PCSROUB::   .WORD 0      ; ADDRESS OF THE UPPER BYTE OF PCSRO
1455      ;
1456 002240 000000 INTVEC::      .WORD 0      ; ADDRESS OF DEUNA INTERRUPT VECTOR
1457 002242 000240 UNAPRI::     .WORD 240    ; UNA PRIORITY = 5
1458 002244 000000 UNIT::      .WORD 0      ; UNIT NUMBER
1459      ;
1460 002246          CLKTAB::          ; LINE CLOCK STATUS REGISTER           ;MAC001
1461 002246 000000 CLKCSR::      .WORD 0      ; LINE CLOCK STATUS REGISTER           ;MAC001
1462 002250 000000 CLKBR::      .WORD 0      ; LINE CLOCK PRIORITY                 ;MAC001
1463 002252 000000 CLKVEC::      .WORD 0      ; LINE CLOCK VECTOR                   ;MAC001
1464 002254 000000 CLKFRE::      .WORD 0      ; LINE CLOCK FREQUENCY                ;MAC001
1465      ;
1466 002256 000000 DEST::      .WORD 0      ; DESTINATION ADDRESS
1467 002260 000000          .WORD 0
1468 002262 000000          .WORD 0
1469      ;
1470      ; DATA STRUCTURES
1471 002264          PCBB::      .BLKW 4      ; PORT CONTROL BLOCK
1472 002274          UDEB::      .BLKW 100     ; UNIBUS DATA BLOCK
1473 002604          TDRB::      .BLKW 16      ; TRANSMIT DESCRIPTOR RING
1474 002644          RDRB::      .BLKW 16      ; RECEIVE DESCRIPTOR RING
1475 002704          TDRX::      .BLKW 64      ; EXTENDED TDRB FOR TEST19
1476 003104          TBUF::      .BLKW 128     ; TRANSMIT BUFFER
1477 003504          TBUF2::     .BLKW 128
1478 004104          TBUF3::     .BLKW 128
1479 004504          TBUF4::     .BLKW 128
1480 005104          TBUF5::     .BLKW 128
1481 005504          TBUF6::     .BLKW 128
1482 006104          TBUF7::     .BLKW 128
1483 006504          TBUF8::     .BLKW 128
1484 007104          RBUF::      .BLKW 128     ; RECEIVE BUFFER
1485 007504          RBUF2::     .BLKW 128
1486 010104          RBUF3::     .BLKW 128
1487 010504          RBUF4::     .BLKW 128
1488 011104          RBUF5::     .BLKW 128
1489 011504          RBUF6::     .BLKW 128
1490 012104          RBUF7::     .BLKW 128
1491 012504          RBUF8::     .BLKW 128
1492      ;
1493      ; DEFAULT PORT FUNCTIONS
1494 013104 000000 NOPF::      .WORD 0      ; NOP FUNCTION
1495 013106 000000          .WORD 0
1496 013110 000000          .WORD 0
1497 013112 000000          .WORD 0
1498      ;

```



1499	013114	000001	LSMA::	.WORD	1	; LOAD AND START MICROADDRESS FUNCTION
1500	013116	177777		.WORD	177777	; STARTING INTERNAL ADDRESS OF SELFTEST
1501	013120	000000		.WORD	0	
1502	013122	000000		.WORD	0	
1503			; RDDEFA::	.WORD	2	; READ DEFAULT PHYSICAL ADDRESS FUNCTION
1504	013124	000002		.WORD	0	
1505	013126	000000		.WORD	0	
1506	013130	000000		.WORD	0	
1507	013132	000000		.WORD	0	
1508			; RDPHYA::	.WORD	4	; READ PHYSICAL ADDRESS FUNCTION
1509	013134	000004		.WORD	0	
1510	013136	000000		.WORD	0	
1511	013140	000000		.WORD	0	
1512	013142	000000		.WORD	0	
1513			; WTPHYA::	.WORD	5	; WRITE PHYSICAL ADDRESS
1514	013144	000005		.WORD	0	; PHYADR
1515	013146	000000		.WORD	10	; PHYADR
1516	013150	000010		.WORD	0	; PHYADR
1517	013152	000000		.WORD	0	
1518			; ROMULA::	.WORD	6	; READ MULTICAST ADDRESS LIST FUNCTION
1519	013154	000006		.WORD	U060	; ADDRESS OF UNIBUS DATA BLOCK BASE
1520	013156	002274		.WORD	5000	; MULTICAST ADDR TABLE LENGTH= 10(10)
1521	013160	005000		.WORD	0	
1522	013162	000000		.WORD	0	
1523			; WTMULA::	.WORD	7	; WRITE MULTICAST ADDRESS LIST FUNCTION
1524	013164	000007		.WORD	U0BB	; ADDRESS OF UNIBUS DATA BLOCK BASE
1525	013166	002274		.WORD	5000	; MULTICAST ADDR TABLE LENGTH= 10(10)
1526	013170	005000		.WORD	0	
1527	013172	000000		.WORD	0	
1528			; RDRNGS::	.WORD	10	; READ RING FORMAT FUNCTION
1529	013174	000010		.WORD	U0BB	; ADDRESS OF UNIBUS DATA BLOCK BASE
1530	013176	002274		.WORD	0	
1531	013200	000000		.WORD	0	
1532	013202	000000		.WORD	0	
1533			; WTRNGS::	.WORD	11	; WRITE RING FORMAT FUNCTION
1534	013204	000011		.WORD	U0BB	; ADDRESS OF UNIBUS DATA BLOCK BASE
1535	013206	002274		.WORD	0	
1536	013210	000000		.WORD	0	
1537	013212	000000		.WORD	0	
1538			; RDCNT::	.WORD	12	; READ COUNTERS FUNCTION
1539	013214	000012		.WORD	U0BB	; ADDRESS OF UNIBUS DATA BLOCK BASE
1540	013216	002274		.WORD	0	
1541	013220	000000		.WORD	40	; COUNTERS LIST LENGTH= 32(10)
1542	013222	000040		.WORD	40	
1543			; CLRCNT::	.WORD	13	; READ AND CLEAR COUNTERS FUNCTION
1544	013224	000013		.WORD	U0BB	; ADDRESS OF UNIBUS DATA BLOCK BASE
1545	013226	002274		.WORD	0	
1546	013230	000000		.WORD	40	; COUNTERS LIST LENGTH= 32(10)
1547	013232	000040		.WORD	40	
1548			; RDMODE::	.WORD	14	; READ MODE FUNCTION
1549	013234	000014		.WORD	0	
1550	013236	000000		.WORD	0	
1551	013240	000000		.WORD	0	
1552	013242	000000		.WORD	0	
1553			; WTMODE::	.WORD	15	; WRITE MODE FUNCTION
1554	013244	000015		.WORD	100004	; PROM AND INTERNAL LOOPBACK MODE
1555	013246	100004		.WORD	100004	

```

1556 013250 000000 .WORD 0
1557 013252 000000 .WORD 0
1558 013254 000015 WTMOD1:: .WORD 15 ; WRITE MODE FUNCTION
1559 013256 104004 .WORD 104004 ; PROM AND INTERN LOOPBACK AND ENABL COLL TEST
1560 013260 000000 .WORD 0
1561 013262 000000 .WORD 0
1562 ;
1563 013264 000016 ;RDSTA:: .WORD 16 ; READ STATUS FUNCTION
1564 013266 000000 .WORD 0
1565 013270 000000 .WORD 0
1566 013272 000000 .WORD 0
1567 ;
1568 013274 000017 ;CLHSTA:: .WORD 17 ; READ AND CLEAR STATUS FUNCTION
1569 013276 000000 .WORD 0
1570 013300 000000 .WORD 0
1571 013302 000000 .WORD 0
1572 ;
1573 013304 000020 ;DMPMEM:: .WORD 20 ; DUMP INTERNAL MEMORY FUNCTION
1574 013306 002274 .WORD UDBB ; ADDRESS OF UNIBUS DATA BLOCK BASE
1575 013310 000000 .WORD 0
1576 013312 000000 .WORD 0
1577 ;
1578 013314 000021 ;LDMEM:: .WORD 21 ; LOAD INTERNAL MEMORY FUNCTION
1579 013316 002274 .WORD UDBB ; ADDRESS OF UNIBUS DATA BLOCK BASE
1580 013320 000000 .WORD 0
1581 013322 000000 .WORD 0
1582 ;
1583 ;DEFAULT RING FORMATS
1584 ;
1585 013324 002604 ;RFRMT:: .WORD TDRB ; TRANSMIT DESCRIPTOR RING ADDRESS
1586 013326 002000 .WORD 2000 ; TELEN = 4
1587 013330 000004 .WORD 4 ; TRLEN = 4
1588 013332 002644 .WORD RDRB ; RECEIVE DESCRIPTOR RING ADDRESS
1589 013334 002000 .WORD 2000 ; RELEN = 4
1590 013336 000004 .WORD 4 ; RRLEN = 4
1591 ;
1592 013340 002704 ;RFRMTX:: .WORD TDRX ; TRANSMIT DESCRIPTOR RING ADDRESS
1593 013342 002000 .WORD 2000 ; TELEN = 4
1594 013344 000020 .WORD 16. ; TRLEN = 16
1595 013346 002644 .WORD RDRB ; RECEIVE DESCRIPTOR RING ADDRESS
1596 013350 002000 .WORD 2000 ; RELEN = 4
1597 013352 000004 .WORD 4 ; RRLEN = 4
1598 ;
1599 ;DEFAULT RECEIVE DESCRIPTOR RINGS
1600 ;
1601 013354 000200 ;RDRB1A:: .WORD 128. ; SLEN = 128 BYTES
1602 013356 007104 .WORD RBUF ; SEGB = RBUF
1603 013360 100000 .WORD 100000 ; OWN = UNA
1604 013362 000000 .WORD 0
1605 ;
1606 013364 000200 .WORD 128. ; SLEN = 128 BYTES
1607 013366 007104 .WORD RBUF ; SEGB = RBUF
1608 013370 000000 .WORD 0 ; OWN = PORT DRIVER
1609 013372 000000 .WORD 0
1610 ;
1611 013374 000200 .WORD 128. ; SLEN = 128 BYTES
1612 013376 007104 .WORD RBUF ; SEGB = RBUF

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1613 013400 000000 .WORD 0 ; OWN = PORT DRIVER
1614 013402 000000 .WORD 0
1615 ;
1616 013404 000200 .WORD 128. ; SLEN = 128 BYTES
1617 013406 007104 .WORD RBUF ; SEGB = RBUF
1618 013410 000000 .WORD 0 ; OWN = PORT DRIVER
1619 013412 000000 .WORD 0
1620 ;
1621 013414 000200 RDRB1B:: .WORD 128. ; SLEN = 128 BYTES
1622 013416 007104 .WORD RBUF ; SEGB = RBUF
1623 013420 000000 .WORD 0 ; OWN = PORT DRIVER
1624 013422 000000 .WORD 0
1625 ;
1626 013424 000200 .WORD 128. ; SLEN = 128 BYTES
1627 013426 007104 .WORD RBUF ; SEGB = RBUF
1628 013430 000000 .WORD 0 ; OWN = PORT DRIVER
1629 013432 000000 .WORD 0
1630 ;
1631 013434 000200 .WORD 128. ; SLEN = 128 BYTES
1632 013436 007104 .WORD RBUF ; SEGB = RBUF
1633 013440 000000 .WORD 0 ; OWN = PORT DRIVER
1634 013442 000000 .WORD 0
1635 ;
1636 013444 000200 .WORD 128. ; SLEN = 128 BYTES
1637 013446 007104 .WORD RBUF ; SEGB = RBUF
1638 013450 000000 .WORD 0 ; OWN = PORT DRIVER
1639 013452 000000 .WORD 0
1640 ;
1641 013454 000100 RDRB2A:: .WORD 64. ; SLEN = 64 BYTES
1642 013456 007104 .WORD RBUF ; SEGB = RBUF
1643 013460 100000 .WORD 100000 ; OWN = UNA
1644 013462 000000 .WORD 0
1645 ;
1646 013464 000100 .WORD 64. ; SLEN = 64 BYTES
1647 013466 007504 .WORD RBUF2 ; SEGB = RBUF2
1648 013470 100000 .WORD 100000 ; OWN = UNA
1649 013472 000000 .WORD 0
1650 ;
1651 013474 000200 .WORD 128. ; SLEN = 128 BYTES
1652 013476 007104 .WORD RBUF ; SEGB = RBUF
1653 013500 000000 .WORD 0 ; OWN = PORT DRIVER
1654 013502 000000 .WORD 0
1655 ;
1656 013504 000200 .WORD 128. ; SLEN = 128 BYTES
1657 013506 007104 .WORD RBUF ; SEGB = RBUF
1658 013510 000000 .WORD 0 ; OWN = PORT DRIVER
1659 013512 000000 .WORD 0
1660 ;
1661 013514 000400 RDRB3A:: .WORD 256. ; SLEN = 256 BYTES
1662 013516 007104 .WORD RBUF ; SEGB = RBUF
1663 013520 100000 .WORD 100000 ; OWN = UNA
1664 013522 000000 .WORD 0
1665 ;
1666 013524 000400 .WORD 256. ; SLEN = 256 BYTES
1667 013526 007504 .WORD RBUF2 ; SEGB = RBUF2
1668 013530 100000 .WORD 100000 ; OWN = UNA
1669 013532 000000 .WORD 0

```

```

1670 ;
1671 013534 000400 .WORD 256. ; SLEN = 256 BYTES
1672 013536 010104 .WORD RBUF3 ; SEGB = RBUF3
1673 013540 100000 .WORD 100000 ; OWN = UNA
1674 013542 000000 .WORD 0
1675 ;
1676 013544 000200 .WORD 128. ; SLEN = 128 BYTES
1677 013546 007104 .WORD RBUF ; SEGB = RBUF
1678 013550 000000 .WORD 0 ; OWN = PORT DRIVER
1679 013552 000000 .WORD 0
1680 ;
1681 ; DEFAULT TRANSMIT DESCRIPTOR RINGS
1682 ;
1683 013554 000174 TDRB1A:: .WORD 124. ; SLEN = 124 BYTES
1684 013556 003104 .WORD TBUF ; SEGB = TBUF
1685 013560 101400 .WORD 101400 ; OWN = UNA ;STP,ENP
1686 013562 000000 .WORD 0
1687 ;
1688 013564 000174 .WORD 124. ; SLEN = 124 BYTES
1689 013566 003104 .WORD TBUF ; SEGB = TBUF
1690 013570 000000 .WORD 0 ; OWN = PORT DRIVER
1691 013572 000000 .WORD 0
1692 ;
1693 013574 000174 .WORD 124. ; SLEN = 124 BYTES
1694 013576 003104 .WORD TBUF ; SEGB = TBUF
1695 013600 000000 .WORD 0 ; OWN = PORT DRIVER
1696 013602 000000 .WORD 0
1697 ;
1698 013604 000174 .WORD 124. ; SLEN = 124 BYTES
1699 013606 003104 .WORD TBUF ; SEGB = TBUF
1700 013610 000000 .WORD 0 ; OWN = PORT DRIVER
1701 013612 000000 .WORD 0
1702 ;
1703 013614 000200 TDRB1B:: .WORD 128. ; SLEN = 128 BYTES
1704 013616 003104 .WORD TBUF ; SEGB = TBUF
1705 013620 101400 .WORD 101400 ; OWN = UNA ;STP,ENP
1706 013622 000000 .WORD 0
1707 ;
1708 013624 000200 .WORD 128. ; SLEN = 128 BYTES
1709 013626 003104 .WORD TBUF ; SEGB = TBUF
1710 013630 000000 .WORD 0 ; OWN = PORT DRIVER
1711 013632 000000 .WORD 0
1712 ;
1713 013634 000200 .WORD 128. ; SLEN = 128 BYTES
1714 013636 003104 .ML ) TBUF ; SEGB = TBUF
1715 013640 000000 .WORD 0 ; OWN = PORT DRIVER
1716 013642 000000 .WORD 0
1717 ;
1718 013644 000200 .WORD 128. ; SLEN = 128 BYTES
1719 013646 003104 .WORD TBUF ; SEGB = TBUF
1720 013650 000000 .WORD 0 ; OWN = PORT DRIVER
1721 013652 000000 .WORD 0
1722 ;
1723 013654 000072 TDRB1C:: .WORD 58. ; SLEN = 58 BYTES (RUNT PACKET)
1724 013656 003104 .WORD TBUF ; SEGB = TBUF
1725 013660 101400 .WORD 101400 ; OWN = UNA ;STP,ENP
1726 013662 000000 .WORD 0

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```

1727      ;
1728 013664 000174      .WORD 124.      ; SLEN = 124 BYTES
1729 013666 003104      .WORD TBUF      ; SEGB = TBUF
1730 013670 000000      .WORD 0         ; OWN = PORT DRIVER
1731 013672 000000      .WORD 0
1732      ;
1733 013674 000174      .WORD 124.      ; SLEN = 124 BYTES
1734 013676 003104      .WORD TBUF      ; SEGB = TBUF
1735 013700 000000      .WORD 0         ; OWN = PORT DRIVER
1736 013702 000000      .WORD 0
1737      ;
1738 013704 000174      .WORD 124.      ; SLEN = 124 BYTES
1739 013706 003104      .WORD TBUF      ; SEGB = TBUF
1740 013710 000000      .WORD 0         ; OWN = PORT DRIVER
1741 013712 000000      .WORD 0
1742      ;
1743 013714 000174      ; TDRB2A::      .WORD 124.      ; SLEN = 124 BYTES
1744 013716 003104      .WORD TBUF      ; SEGB = TBUF
1745 013720 101000      .WORD 101000    ; OWN = UNA ;STP
1746 013722 000000      .WORD 0
1747      ;
1748 013724 000174      .WORD 124.      ; SLEN = 124 BYTES
1749 013726 003104      .WORD TBUF      ; SEGB = TBUF
1750 013730 101400      .WORD 101400    ; OWN = UNA ;STP ;ENP
1751 013732 000000      .WORD 0
1752      ;
1753 013734 000174      .WORD 124.      ; SLEN = 124 BYTES
1754 013736 003104      .WORD TBUF      ; SEGB = TBUF
1755 013740 000000      .WORD 0         ; OWN = PORT DRIVER
1756 013742 000000      .WORD 0
1757      ;
1758 013744 000174      .WORD 124.      ; SLEN = 124 BYTES
1759 013746 003104      .WORD TBUF      ; SEGB = TBUF
1760 013750 000000      .WORD 0         ; OWN = PORT DRIVER
1761 013752 000000      .WORD 0
1762      ;
1763 013754 000400      ; TDRB3A::      .WORD 256.      ; SLEN = 256 BYTES
1764 013756 003104      .WORD TBUF      ; SEGB = TBUF
1765 013760 101000      .WORD 101000    ; OWN = UNA ;STP
1766 013762 000000      .WORD 0
1767      ;
1768 013764 000400      .WORD 256.      ; SLEN = 256 BYTES
1769 013766 003504      .WORD TBUF2     ; SEGB = TBUF2
1770 013770 100000      .WORD 100000    ; OWN = UNA
1771 013772 000000      .WORD 0
1772      ;
1773 013774 000374      .WORD 252.      ; SLEN = 252 BYTES
1774 013776 004104      .WORD TBUF3     ; SEGB = TBUF3
1775 014000 100400      .WORD 100400    ; OWN = UNA ;ENP
1776 014002 000000      .WORD 0
1777      ;
1778 014004 000174      .WORD 124.      ; SLEN = 124 BYTES
1779 014006 003104      .WORD TBUF      ; SEGB = TBUF
1780 014010 000000      .WORD 0         ; OWN = PORT DRIVER
1781 014012 000000      .WORD 0
1782      ;
1783 014014 000174      ; TDRBXX::      .WORD 124.      ; SLEN = 124 BYTES

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1784	014016	003104	.WORD	TBUF	; SEGB = TBUF
1785	014020	101400	.WORD	101400	; OWN = UNA ;STP ;ENP
1786	014022	000000	.WORD	0	
1787			:		
1788	014024	000174	.WORD	124.	; SLEN = 124 BYTES
1789	014026	003104	.WORD	TBUF	; SEGB = TBUF
1790	014030	101400	.WORD	101400	; OWN = UNA ;STP ;ENP
1791	014032	000000	.WORD	0	
1792			:		
1793	014034	000174	.WORD	124.	; SLEN = 124 BYTES
1794	014036	003104	.WORD	TBUF	; SEGB = TBUF
1795	014040	101400	.WORD	101400	; OWN = UNA ;STP ;ENP
1796	014042	000000	.WORD	0	
1797			:		
1798	014044	000174	.WORD	124.	; SLEN = 124 BYTES
1799	014046	003104	.WORD	TBUF	; SEGB = TBUF
1800	014050	101400	.WORD	101400	; OWN = UNA ;STP ;ENP
1801	014052	000000	.WORD	0	
1802			:		
1803	014054	000174	.WORD	124.	; SLEN = 124 BYTES
1804	014056	003104	.WORD	TBUF	; SEGB = TBUF
1805	014060	101400	.WORD	101400	; OWN = UNA ;STP ;ENP
1806	014062	000000	.WORD	0	
1807			:		
1808	014064	000174	.WORD	124.	; SLEN = 124 BYTES
1809	014066	003104	.WORD	TBUF	; SEGB = TBUF
1810	014070	101400	.WORD	101400	; OWN = UNA ;STP ;ENP
1811	014072	000000	.WORD	0	
1812			:		
1813	014074	000174	.WORD	124.	; SLEN = 124 BYTES
1814	014076	003104	.WORD	TBUF	; SEGB = TBUF
1815	014100	101400	.WORD	101400	; OWN = UNA ;STP ;ENP
1816	014102	000000	.WORD	0	
1817			:		
1818	014104	000174	.WORD	124.	; SLEN = 124 BYTES
1819	014106	003104	.WORD	TBUF	; SEGB = TBUF
1820	014110	101400	.WORD	101400	; OWN = UNA ;STP ;ENP
1821	014112	000000	.WORD	0	
1822			:		
1823	014114	000174	.WORD	124.	; SLEN = 124 BYTES
1824	014116	003104	.WORD	TBUF	; SEGB = TBUF
1825	014120	101400	.WORD	101400	; OWN = UNA ;STP ;ENP
1826	014122	000000	.WORD	0	
1827			:		
1828	014124	000174	.WORD	124.	; SLEN = 124 BYTES
1829	014126	003104	.WORD	TBUF	; SEGB = TBUF
1830	014130	101400	.WORD	101400	; OWN = UNA ;STP ;ENP
1831	014132	000000	.WORD	0	
1832			:		
1833	014134	000174	.WORD	124.	; SLEN = 124 BYTES
1834	014136	003104	.WORD	TBUF	; SEGB = TBUF
1835	014140	101400	.WORD	101400	; OWN = UNA ;STP ;ENP
1836	014142	000000	.WORD	0	
1837			:		
1838	014144	000174	.WORD	124.	; SLEN = 124 BYTES
1839	014146	003104	.WORD	TBUF	; SEGB = TBUF
1840	014150	101400	.WORD	101400	; OWN = UNA ;STP ;ENP

1841 014152 000000  
 1842  
 1843 014154 000174  
 1844 014156 003104  
 1845 014160 101400  
 1846 014162 000000  
 1847  
 1848 014164 000174  
 1849 014166 003104  
 1850 014170 101400  
 1851 014172 000000  
 1852  
 1853 014174 000174  
 1854 014176 003104  
 1855 014200 101400  
 1856 014202 000000  
 1857  
 1858 014204 000174  
 1859 014206 003104  
 1860 014210 101400  
 1861 014212 000000  
 1862  
 1863  
 1864 014214 000000  
 1865  
 1866 014216 004000  
 1867 014220 007104  
 1868 014222 000000  
 1869 014224 000000  
 1870  
 1871 014226 040000  
 1872 014230 044000  
 1873 014232 050000  
 1874 014234 054000  
 1875 014236 060000  
 1876 014240 064000  
 1877 014242 070000  
 1878 014244 074000  
 1879  
 1880 014246 004000  
 1881 014250 000000  
 1882 014252 000000  
 1883 014254 000000  
 1884  
 1885 014256 014000  
 1886  
 1887 014260 100000  
 1888 014262 104000  
 1889 014264 110000  
 1890 014266 114000  
 1891 014270 120000  
 1892 014272 124000  
 1893 014274 130000  
 1894 014276 134000  
 1895 014300 140000  
 1896 014302 144000  
 1897 014304 150000

```

      .WORD 0
;
      .WORD 124. ; SLEN = 124 BYTES
      .WORD TBUF ; SEGB = TBUF
      .WORD 101400 ; OWN = UNA ;STP ;ENP
      .WORD 0
;
      .WORD 124. ; SLEN = 124 BYTES
      .WORD TBUF ; SEGB = TBUF
      .WORD 101400 ; OWN = UNA ;STP ;ENP
      .WORD 0
;
      .WORD 124. ; SLEN = 124 BYTES
      .WORD TBUF ; SEGB = TBUF
      .WORD 101400 ; OWN = UNA ;STP ;ENP
      .WORD 0
;
      .WORD 124. ; SLEN = 124 BYTES
      .WORD TBUF ; SEGB = TBUF
      .WORD 101400 ; OWN = UNA ;STP ;ENP
      .WORD 0
;
;DEFAULT DATA FOR TEST10
CRCH:: .WORD 0 ; CRC STORAGE
;DEFAULT UDBB FOR TEST10
UDB10A:: .WORD 4000 ; FLEN = 1024 WORDS
      .WORD RBUF ; HDBB = RBUF
      .WORD 0
      .WORD 0
;ROM ADDRESS TABLE FOR TEST10
MEM10A:: .WORD 40000 ; ADDRESS OF ROM FIRST 1K
      .WORD 44000 ; SECOND 1K
      .WORD 50000 ; ETC
      .WORD 54000
      .WORD 60000
      .WORD 64000
      .WORD 70000
      .WORD 74000
;DEFAULT UDBB FOR TEST11 AND TST12
UDB11A:: .WORD 4000 ; FLEN = 1024. WORDS
      .WORD 0 ; HDBB = RBUF OR TBUF (LOADED BY TEST)
      .WORD 0
      .WORD 0 ; IDBB (LOADED BY TEST)
;WCS DOWNLINE LOAD ADDRESS TABLE FOR TEST11
MEM11A:: .WORD 14000 ; TOP 1K SECTION OF WCS
;LINK MEMORY ADDRESS TABLE FOR TEST13
MEM13A:: .WORD 100000 ; FIRST 1K BLOCK OF LINK MEMORY
      .WORD 104000
      .WORD 110000
      .WORD 114000
      .WORD 120000
      .WORD 124000
      .WORD 130000
      .WORD 134000
      .WORD 140000
      .WORD 144000
      .WORD 150000

```

1898 014306 154000  
1899 014310 160000  
1900 014312 164000  
1901 014314 170000  
1902 014316 174000  
1903  
1904 014320 125252  
1905 014322 125252  
1906 014324 125252  
1907 014326 052524  
1908 014330 052525  
1909 014332 052525  
1910  
1911 014334 125253  
1912 014336 125252  
1913 014340 125252  
1914 014342 125253  
1915 014344 052525  
1916 014346 125252  
1917 014350 125253  
1918 014352 125252  
1919 014354 052525  
1920 014356 125253  
1921 014360 177777  
1922 014362 052525  
1923 014364 125253  
1924 014366 000000  
1925 014370 125252  
1926 014372 177777  
1927 014374 000000  
1928 014376 177777  
1929 014400 177777  
1930 014402 052525  
1931 014404 125252  
1932 014406 177777  
1933 014410 125252  
1934 014412 052525  
1935 014414 177777  
1936 014416 000000  
1937 014420 052525  
1938 014422 177777  
1939 014424 177777  
1940 014426 125252  
1941 014430 052525  
1942 014432 052525  
1943 014434 052525  
1944 014436 052525  
1945 014440 125252  
1946 014442 052525  
1947 014444 052525  
1948 014446 052525  
1949 014450 125252  
1950 014452 052525  
1951 014454 000000  
1952 014456 125252  
1953 014460 052525  
1954 014462 177777

```

.WORD 154000
.WORD 160000
.WORD 164000
.WORD 170000
.WORD 174000
; PHYSICAL ADDRESSES FOR TEST 21
ADR21:: .WORD 125252 ; DEFAULT PHYSICAL ADDRESS
        .WORD 125252
        .WORD 125252
ADR21C:: .WORD 52524 ; COMPLEMENTED PHYSICAL ADDRESS
         .WORD 52525
         .WORD 52525
; MULTICAST ADDRESS LIST FOR TEST 22
MULTL:: .WORD 125253 ; MULTICAST ADDRESS LIST
        .WORD 125252
        .WORD 125252
        .WORD 125253
        .WORD 052525
        .WORD 125252
        .WORD 125253
        .WORD 052525
        .WORD 125253
        .WORD 177777
        .WORD 052525
        .WORD 125253
        .WORD 000000
        .WORD 125252
        .WORD 177777
        .WORD 000000
        .WORD 177777
        .WORD 177777
        .WORD 052525
        .WORD 125252
        .WORD 177777
        .WORD 125252
        .WORD 052525
        .WORD 177777
        .WORD 000000
        .WORD 052525
        .WORD 177777
        .WORD 177777
        .WORD 177777
        .WORD 052525
        .WORD 125252
        .WORD 177777
        .WORD 125252
        .WORD 052525
        .WORD 177777
        .WORD 000000
        .WORD 052525
        .WORD 177777
        .WORD 177777
        .WORD 177777
        .WORD 125252
        .WORD 052525 ; COMPLEMENTED ADDRESS LIST
        .WORD 052525
        .WORD 052525
        .WORD 052525
        .WORD 052525
        .WORD 125252
        .WORD 052525
        .WORD 052525
        .WORD 052525
        .WORD 125252
        .WORD 052525
        .WORD 000000
        .WORD 125252
        .WORD 052525
        .WORD 177777

```



1955	014464	052525	.WORD	052525	
1956	014466	000001	.WORD	000001	
1957	014470	000000	.WORD	000000	
1958	014472	000000	.WORD	000000	
1959	014474	000001	.WORD	000001	
1960	014476	125252	.WORD	125252	
1961	014500	052525	.WORD	052525	
1962	014502	000001	.WORD	000001	
1963	014504	052525	.WORD	052525	
1964	014506	125252	.WORD	125252	
1965	014510	000001	.WORD	000001	
1966	014512	177777	.WORD	177777	
1967	014514	125252	.WORD	125252	
1968	014516	000001	.WORD	000001	
1969	014520	000000	.WORD	000000	
1970	014522	052525	.WORD	052525	
1971					
		:DEFAULT EXPECTED DATA			
1972	014524	000174	TDR14A::	.WORD	124. ; EXPECTED TDRB FOR
1973	014526	003104		.WORD	TBUF ; TESTS 14
1974	014530	021400		.WORD	021400 ; MTCH,STP,ENP
1975	014532	000000		.WORD	0
1976	014534	000200	TDR15A::	.WORD	128. ; EXPECTED TDRB FOR
1977	014536	003104		.WORD	TBUF ; TESTS 15,16
1978	014540	021400		.WORD	021400 ; MTCH,STP,ENP
1979	014542	000000		.WORD	0
1980	014544	000174	TDR18A::	.WORD	124. ; FIRST TDRB FOR TEST18
1981	014546	003104		.WORD	TBUF ;
1982	014550	001000		.WORD	001000 ; STP
1983	014552	000000		.WORD	0
1984	014554	000174	TDR18B::	.WORD	124. ; SECOND TDRB FOR TEST18
1985	014556	003104		.WORD	TBUF ;
1986	014560	041400		.WORD	041400 ; ERRS,STP,ENP
1987	014562	100000		.WORD	100000 ; BUFL
1988	014564	000400	TDR20A::	.WORD	256. ; FIRST TDRB FOR TEST20
1989	014566	003104		.WORD	TBUF ;
1990	014570	001000		.WORD	001000 ; STP
1991	014572	000000		.WORD	0
1992	014574	000400	TDR20B::	.WORD	256. ; SECOND TDRB FOR TEST20
1993	014576	003504		.WORD	TBUF2 ;
1994	014600	000000		.WORD	0
1995	014602	000000		.WORD	0
1996	014604	000374	TDR20C::	.WORD	252. ; THIRD TDRB FOR TEST20
1997	014606	004104		.WORD	TBUF3 ;
1998	014610	020400		.WORD	020400 ; MTCH,ENP
1999	014612	000000		.WORD	0
2000	014614	000174	TDR21X::	.WORD	124. ; EXPECTED TDRB FOR
2001	014616	003104		.WORD	TBUF ; TESTS21,22
2002	014620	001400		.WORD	001400 ; STP,ENP
2003	014622	000000		.WORD	0
2004	014624	000072	TDR25A::	.WORD	58. ; EXPECTED TDRB FOR
2005	014626	003104		.WORD	TBUF ; TEST25
2006	014630	021400		.WORD	021400 ; MTCH,STP,ENP
2007	014632	000000		.WORD	0
2008	014634	000200	TDR14A::	.WORD	128. ; EXPECTED RDRB FOR
2009	014636	007104		.WORD	RBUF ; TESTS 14,16
2010	014640	045400		.WORD	045400 ; ERRS,CRC,STP,ENP
2011	014642	000000		.WORD	0

2012	014644	000200	RDR15A::	.WORD	128.	; EXPECTED RDRB FOR
2013	014646	007104		.WORD	RBUF	; TESTS 15
2014	014650	001400		.WORD	001400	; STP,ENP
2015	014652	000000		.WORD	0	
2016	014654	000100	RDR17A::	.WORD	64.	; FIRST RDRB FOR TEST17
2017	014656	007104		.WORD	RBUF	
2018	014660	041400		.WORD	041400	; ERRS,STP,ENP
2019	014662	120000		.WORD	120000	; BUFL,NCHN
2020	014664	000100	RDR17B::	.WORD	64.	; SECOND RDRB FOR TEST17
2021	014666	007504		.WORD	RBUF2	
2022	014670	100000		.WORD	100000	; OWN = DEUNA
2023	014672	000000		.WORD	0	
2024	014674	000400	RDR20A::	.WORD	256.	; FIRST RDRB FOR TEST20
2025	014676	007104		.WORD	RBUF	
2026	014700	001000		.WORD	001000	; STP
2027	014702	000000		.WORD	0	
2028	014704	000400	RDR20B::	.WORD	256.	; SECOND RDRB FOR TEST20
2029	014706	007504		.WORD	RBUF2	
2030	014710	000000		.WORD	0	
2031	014712	000000		.WORD	0	
2032	014714	000400	RDR20C::	.WORD	256.	; THIRD RDRB FOR TEST20
2033	014716	010104		.WORD	RBUF3	
2034	014720	044400		.WORD	044400	; ERRS, CRC, ENP
2035	014722	000000		.WORD	0	
2036	014724	006474	CRC14A::	.WORD	6474	; EXPECTED CRC FOR TEST 14
2037	014726	131527		.WORD	131527	
2038	014730	006474	CRC15H::	.WORD	6474	; GOOD CRC VALUE FOR TEST15
2039	014732	131527	CRC15L::	.WORD	131527	
2040	014734	000000	CRC16H::	.WORD	0	; BAD CRC VALUE FOR TEST16
2041	014736	000000	CRC16L::	.WORD	0	
2042	014740	106101	CRC20A::	.WORD	106101	; EXPECTED CRC FOR TEST20
2043	014742	101153		.WORD	101153	
2044	014744	065161	CRC21A::	.WORD	65161	; EXPECTED CRC'S FOR TEST 21
2045	014746	050063		.WORD	50063	
2046	014750	065223	CRC21B::	.WORD	65223	
2047	014752	025351		.WORD	25351	
2048	014754	056142	CRC22A::	.WORD	056142	; CRC TABLE FOR TEST 22
2049	014756	171072		.WORD	171072	
2050	014760	111710		.WORD	111710	
2051	014762	043441		.WORD	043441	
2052	014764	066722		.WORD	066722	
2053	014766	111422		.WORD	111422	
2054	014770	025213		.WORD	025213	
2055	014772	044464		.WORD	044464	
2056	014774	152221		.WORD	152221	
2057	014776	116407		.WORD	116407	
2058	015000	152243		.WORD	152243	
2059	015002	176367		.WORD	176367	
2060	015004	100525		.WORD	100525	
2061	015006	130346		.WORD	130346	
2062	015010	077517		.WORD	077517	
2063	015012	062325		.WORD	062325	
2064	015014	173674		.WORD	173674	
2065	015016	005750		.WORD	005750	
2066	015020	004646		.WORD	004646	
2067	015022	157733		.WORD	157733	
2068	015024	063264	CRC22B::	.WORD	063264	

2069	015026	006474	.WORD	J06474	
2070	015030	124436	.WORD	124436	
2071	015032	134047	.WORD	134047	
2072	015034	053404	.WORD	053404	
2073	015036	066024	.WORD	066024	
2074	015040	010135	.WORD	010135	
2075	015042	133062	.WORD	133062	
2076	015044	167107	.WORD	167107	
2077	015046	061001	.WORD	061001	
2078	015050	020737	.WORD	020737	
2079	015052	133352	.WORD	133352	
2080	015054	135603	.WORD	135603	
2081	015056	047740	.WORD	047740	
2082	015060	042631	.WORD	042631	
2083	015062	115723	.WORD	115723	
2084	015064	146552	.WORD	146552	
2085	015066	172356	.WORD	172356	
2086	015070	031560	.WORD	031560	
2087	015072	020335	.WORD	020335	
2088	015074	050247	.WORD	050247	
2089	015076	127465	.WORD	127465	
2090	015100	072767	.WORD	072767	; EXPECTED CRC FOR TEST25
2091	015102	162562	.WORD	162562	
2092	015104	005116	.WORD	005116	; EXPECTED CRC FOR TEST27
2093	015106	171012	.WORD	171012	
2094	015110	100014	.WORD	100014	; MODE = PROM,DTCA,INTL
2095	015112	120004	.WORD	120004	; MODE = PROM,DRDC,INTL
2096	015114	100000	.WORD	100000	; MODE = PROM
2097	015116	000004	.WORD	4	; INTL LOOPBACK ONLY
2098	015120	040004	.WORD	040004	; MODE = ENAL,INTL
2099	015122	110004	.WORD	110004	; MODE = PROM,TPAD,INTL
2100	015124	000005	.WORD	5	; MODE = INTL,MDUP
2101	015126	000002	.WORD	2	; UDBB FOR TEST28
2102	015130	000000	.WORD	0	
2103	015132	000000	.WORD	0	
2104	015134	000000	.WORD	0	
2105	015136	021040	.WORD	21040	; SWITCH PACK ADDRESS
2106					
2107					
2108	015140	000000	.WORD	0	; PCSR0 AT TIME OF ERROR
2109	015142	000000	.WORD	0	; PCSR1 AT TIME OF ERROR
2110	015144	000000	.WORD	0	; RDRB.0 AT TIME OF ERROR
2111	015146	000000	.WORD	0	; RDRB.2 AT TIME OF ERROR
2112	015150	000000	.WORD	0	; RDRB.4 AT TIME OF ERROR
2113	015152	000000	.WORD	0	; RDRB.6 AT TIME OF ERROR
2114	015154	000000	.WORD	0	; EXPECTED RDRB.0 AT TIME OF ERROR
2115	015156	000000	.WORD	0	; EXPECTED RDRB.2 AT TIME OF ERROR
2116	015160	000000	.WORD	0	; EXPECTED RDRB.4 AT TIME OF ERROR
2117	015162	000000	.WORD	0	; EXPECTED RDRB.6 AT TIME OF ERROR
2118	015164	000000	.WORD	0	; TDRB.0 AT TIME OF ERROR
2119	015166	000000	.WORD	0	; TDRB.2 AT TIME OF ERROR
2120	015170	000000	.WORD	0	; TDRB.4 AT TIME OF ERROR
2121	015172	000000	.WORD	0	; TDRB.6 AT TIME OF ERROR
2122	015174	000000	.WORD	0	; EXPECTED TDRB.0 AT TIME OF ERROR
2123	015176	000000	.WORD	0	; EXPECTED TDRB.2 AT TIME OF ERROR
2124	015200	000000	.WORD	0	; EXPECTED TDRB.4 AT TIME OF ERROR
2125	015202	000000	.WORD	0	; EXPECTED TDRB.6 AT TIME OF ERROR

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2126 015204 000000 EDAT:: .WORD 0 ; ACTUAL DATA AT TIME OF ERROR
2127 015206 000000 XDAT:: .WORD 0 ; EXPECTED DATA AT TIME OF ERROR
2128 015210 000000 ECRC:: .WORD 0 ; ACTUAL CRC VALUE AT TIME OF ERROR
2129 015212 000000 ECRCB:: .WORD 0
2130 015214 000000 XCRC:: .WORD 0 ; EXPECTED CRC VALUE AT TIME OF ERROR
2131 015216 000000 XCRCB:: .WORD 0
2132 ;
2133 015220 000000 ECODE:: .WORD 0 ; SELF TEST ERROR CODE SHIFTED RIGHT
2134 ;
2135 015222 000000 METER:: .WORD 0 ; CLOCK TICKS ;MAC001
2136 015224 000000 NEXMEM:: .WORD 0 ; NXM TIMEOUT FLAG
2137 015226 000000 DNIFLG:: .WORD 0 ; DNI INTERRUPT FLAG
2138 015230 000000 FRSTIM:: .WORD 0 ; FIRST TIME FLAG
2139 ;
2140 015232 177777 PATRN1:: .WORD 177777 ; SA0_SA1 TEST PATTERN
2141 015234 000000 .WORD 0
2142 015236 052525 .WORD 52525
2143 015240 125252 .WORD 125252
2156 ;
2157 015242 ERRRTBL LERRTBL::
015242 000000 ERRRTYP:: .WORD 0
015244 000000 ERRNBR:: .WORD 0
015246 000000 ERRMSG:: .WORD 0
015250 000000 ERRBLK:: .WORD 0

```

```

2159          .SBTTL  GLOBAL TEXT SECTION
2160
2161          ;**
2162          ; THE GLOBAL TEXT SECTION CONTAINS FORMAT STATEMENTS,
2163          ; MESSAGES, AND ASCII INFORMATION THAT ARE USED IN
2164          ; MORE THAN ONE TEST.
2165          ;--
2166
2167          ;
2168          ; NAMES OF DEVICES SUPPORTED BY PROGRAM
2169          ;
2170          DEVTYP <DEUNA>
                L#DVTYP::          .ASCIZ  /DEUNA/
                .ASCIZ  /DEUNA/
                .EVEN
015252
015252          104    105    125
015252
015255          116    101    000

2171
2177
2178          ; TEST DESCRIPTION
2179          ;
2180          DESCRIPT          <DEUNA - PDP11 FUNCTIONAL DIAGNOSTIC>
                L#DESC::          .ASCIZ  /DEUNA - PDP11 FUNCT
015260
015260          104    105    125
015260          116    101    040
015263          116    101    040
015266          055    040    120
015271          104    120    061
015274          061    040    106
015277          125    116    103
015302          124    111    117
015305          116    101    114
015310          040    104    111
015313          101    107    116
015316          117    123    124
015321          111    103    000
                .EVEN

2181          .EVEN
2182
2189
2190          ;
2191          ; FORMAT STATEMENTS USED IN PRINT CALLS
2192          ;
2193
2204
2205
2213          ;
2214          FRM001::          .ASCIZ  /#N#APCSR#D1#A DOES NOT EXIST/
015324          045    116    045
015327          101    120    103
015332          123    122    045
015335          104    061    045
015340          101    040    104
015343          117    105    123
015346          040    116    117
015351          124    040    105
015354          130    111    123
015357          124    000
2215          015361          045    116    045  FRM002::          .ASCIZ  /#N#A EXPECTED DATA = #06#N#A ACTUAL DATA = #06/
015364          101    040    105

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	015367	130	120	105		
	015372	103	124	105		
	015375	104	040	104		
	015400	101	124	101		
	015403	040	075	040		
	015406	045	117	066		
	015411	045	116	045		
	015414	101	040	101		
	015417	103	124	125		
	015422	101	114	040		
	015425	104	101	124		
	015430	101	040	075		
	015433	040	040	040		
	015436	045	117	066		
	015441	000				
2216	015442	045	116	045	FRM003::	.ASCIZ /#N#A PCSR0 = #06#N#A PCSR1 = #06/
	015445	101	040	120		
	015450	103	123	122		
	015453	060	040	075		
	015456	040	045	117		
	015461	066	045	116		
	015464	045	101	040		
	015467	120	103	123		
	015472	122	061	040		
	015475	075	040	045		
	015500	117	066	000		
2217	015503	045	116	045	FRM004::	.ASCIZ /#N#A SELF TEST ERROR CODE = #02/
	015506	101	040	123		
	015511	105	114	106		
	015514	040	124	105		
	015517	123	124	040		
	015522	105	122	122		
	015525	117	122	040		
	015530	103	117	104		
	015533	105	040	075		
	015536	040	045	117		
	015541	062	000			
2218	015543	045	116	045	FRM005::	.ASCIZ /#N#A EXPECTED TDRB.0 = #06#N#A ACTUAL TDRB.0 = #06/
	015546	101	040	105		
	015551	130	120	105		
	015554	103	124	105		
	015557	104	040	124		
	015562	104	122	102		
	015565	053	060	040		
	015570	075	040	045		
	015573	117	066	045		
	015576	116	045	101		
	015601	040	101	103		
	015604	124	125	101		
	015607	114	040	124		
	015612	104	122	102		
	015615	053	060	040		
	015620	075	040	040		
	015623	040	045	117		
	015626	066	000			
2219	015630	045	116	045	FRM006::	.ASCIZ /#N#A EXPECTED TDRB.2 = #06#N#A ACTUAL TDRB.2 = #06/
	015633	101	040	105		

	015636	130	120	105		
	015641	103	124	105		
	015644	104	040	124		
	015647	104	122	102		
	015652	053	062	040		
	015655	075	040	045		
	015660	117	066	045		
	015663	116	045	101		
	015666	040	101	103		
	015671	124	125	101		
	015674	114	040	124		
	015677	104	122	102		
	015702	053	062	040		
	015705	075	040	040		
	015710	040	045	117		
	015713	066	000			
2220	015715	045	116	045	FRM007::	.ASCIZ /#N#A EXPECTED TDRB.4 = #06#N#A ACTUAL TDRB.4 = #06/
	015720	101	040	105		
	015723	130	120	105		
	015726	103	124	105		
	015731	104	040	124		
	015734	104	122	102		
	015737	053	064	040		
	015742	075	040	045		
	015745	117	066	045		
	015750	116	045	101		
	015753	040	101	103		
	015756	124	125	101		
	015761	114	040	124		
	015764	104	122	102		
	015767	053	064	040		
	015772	075	040	040		
	015775	040	045	117		
	016000	066	000			
2221	016002	045	116	045	FRM008::	.ASCIZ /#N#A EXPECTED TDRB.6 = #06#N#A ACTUAL TDRB.6 = #06/
	016005	101	040	105		
	016010	130	120	105		
	016013	103	124	105		
	016016	104	040	124		
	016021	104	122	102		
	016024	053	066	040		
	016027	075	040	045		
	016032	117	066	045		
	016035	116	045	101		
	016040	040	101	103		
	016043	124	125	101		
	016046	114	040	124		
	016051	104	122	102		
	016054	053	066	040		
	016057	075	040	040		
	016062	040	045	117		
	016065	066	000			
2222	016067	045	116	045	FRM009::	.ASCIZ /#N#A EXPECTED RDRB.0 = #06#N#A ACTUAL RDRB.0 = #06/
	016072	101	040	105		
	016075	130	120	105		
	016100	103	124	105		
	016103	104	040	122		

	016106	104	122	102		
	016111	053	060	040		
	016114	075	040	045		
	016117	117	066	045		
	016122	116	045	101		
	016125	040	101	103		
	016130	124	125	101		
	016133	114	040	122		
	016136	104	122	102		
	016141	053	060	040		
	016144	075	040	040		
	016147	040	045	117		
2223	016152	066	000			
	016154	045	116	045	FRM010::	.ASCIZ /#N#A EXPECTED RDRB+2 = #06#N#A ACTUAL RDRB+2 = #06/
	016157	101	040	105		
	016162	130	120	105		
	016165	103	124	105		
	016170	104	040	122		
	016173	104	122	102		
	016176	053	062	040		
	016201	075	040	045		
	016204	117	066	045		
	016207	116	045	101		
	016212	040	101	103		
	016215	124	125	101		
	016220	114	040	122		
	016223	104	122	102		
	016226	053	062	040		
	016231	075	040	040		
	016234	040	045	117		
	016237	066	000			
2224	016241	045	116	045	FRM011::	.ASCIZ /#N#A EXPECTED RDRB+4 = #06#N#A ACTUAL RDRB+4 = #06/
	016244	101	040	105		
	016247	130	120	105		
	016252	103	124	105		
	016255	104	040	122		
	016260	104	122	102		
	016263	053	064	040		
	016266	075	040	045		
	016271	117	066	045		
	016274	116	045	101		
	016277	040	101	103		
	016302	124	125	101		
	016305	114	040	122		
	016310	104	122	102		
	016313	053	064	040		
	016316	075	040	040		
	016321	040	045	117		
	016324	066	000			
2225	016326	045	116	045	FRM012::	.ASCIZ /#N#A EXPECTED RDRB+6 = #06#N#A ACTUAL RDRB+6 = #06/
	016331	101	040	105		
	016334	130	120	105		
	016337	103	124	105		
	016342	104	040	122		
	016345	104	122	102		
	016350	053	066	040		
	016353	075	040	045		



	016356	117	066	045			
	016361	116	045	101			
	016364	040	101	103			
	016367	124	125	101			
	016372	114	040	122			
	016375	104	122	102			
	016400	053	066	040			
	016403	075	040	040			
	016406	040	045	117			
	016411	066	000				
2226	016413	045	116	045	FRM013::	.ASCIZ /#N#A EXPECTED CRC = #06#N#A	#06/
	016416	101	040	105			
	016421	130	120	105			
	016424	103	124	105			
	016427	104	040	103			
	016432	122	103	040			
	016435	075	040	045			
	016440	117	066	045			
	016443	116	045	101			
	016446	040	040	040			
	016451	040	040	040			
	016454	040	040	040			
	016457	040	040	040			
	016462	040	040	040			
	016465	040	045	117			
	016470	066	000				
2227	016472	045	116	045	FRM014::	.ASCIZ /#N#A ACTUAL CRC = #06#N#A	#06/
	016475	101	040	101			
	016500	103	124	125			
	016503	101	114	040			
	016506	103	122	103			
	016511	040	040	040			
	016514	075	040	045			
	016517	117	066	045			
	016522	116	045	101			
	016525	040	040	040			
	016530	040	040	040			
	016533	040	040	040			
	016536	040	040	040			
	016541	040	040	040			
	016544	040	045	117			
	016547	066	000				
2228	016551	045	116	045	FRM015::	.ASCIZ /#N#T/	
	016554	124	000				
2229	016556	045	116	045	FRM016::	.ASCIZ /#N#AROM MICROCODE VERSION (DECIMAL): #02/	
	016561	101	122	117			
	016564	115	040	115			
	016567	111	103	122			
	016572	117	103	117			
	016575	104	105	040			
	016600	126	105	122			
	016603	123	111	117			
	016606	116	040	050			
	016611	104	105	103			
	016614	111	115	101			
	016617	114	051	072			
	016622	040	045	104			

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2230 016625      062      000
      016627      045      116      045 FRM017::      .ASCIZ /#N#ASWITCH PACK = #06/
      016632      101      123      127
      016635      111      124      103
      016640      110      040      120
      016643      101      103      113
      016646      040      075      040
      016651      045      117      066
      016654      000
2231 016655      045      116      045 FRM018::      .ASCIZ /#N#APORT STATUS WORD 1: #06/
      016660      101      120      117
      016663      122      124      040
      016666      123      124      101
      016671      124      125      123
      016674      040      127      117
      016677      122      104      040
      016702      061      072      040
      016705      045      117      066
      016710      000
2232 016711      045      116      045 FRM019::      .ASCIZ /#N#A      WORD 2: #06/
      016714      101      040      040
      016717      040      040      040
      016722      040      040      040
      016725      040      040      040
      016730      040      127      117
      016733      122      104      040
      016736      062      072      040
      016741      045      117      066
      016744      000
2233 016745      045      116      045 FRM020::      .ASCIZ /#N#A      WORD 3: #06/
      016750      101      040      040
      016753      040      040      040
      016756      040      040      040
      016761      040      040      040
      016764      040      127      117
      016767      122      104      040
      016772      063      072      040
      016775      045      117      066
      017000      000
2234 017001      045      116      045 FRM021::      .ASCIZ /#N#A      WORD 4: #06/
      017004      101      040      040
      017007      040      040      040
      017012      040      040      040
      017015      040      040      040
      017020      040      127      117
      017023      122      104      040
      017026      064      072      040
      017031      045      117      066
      017034      000
2235      .EVEN

```

.SBTTL GLOBAL ERROR REPORT SECTION

```

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

2237									
2238									
2239									
2240									
2241									
2242									
2243									
2244									
2245									
2246									
2262	017036			BGNMSG	MSG001			MSG001::	
	017036								
2263	017036				PRINTB	#FRM001,R2			
	017036	010246						MOV	R2,-(SP)
	017040	012746	015324					MOV	#FRM001,-(SP)
	017044	012746	000002					MOV	#2,-(SP)
	017050	010600						MOV	SP,R0
	017052	104414						TRAP	C#PNTB
	017054	062706	000006					ADD	#6,SP
2264	017060			ENDMSG				L10002:	
	017060							TRAP	C#MSG
	017060	104423							
2265				:					
2266	017062			BGNMSG	MSG002			MSG002::	
	017062								
2267	017062				PRINTB	#FRM002,R3,R4			
	017062	010446						MOV	R4,-(SP)
	017064	010346						MOV	R3,-(SP)
	017066	012746	015361					MOV	#FRM002,-(SP)
	017072	012746	000003					MOV	#3,-(SP)
	017076	010600						MOV	SP,R0
	017100	104414						TRAP	C#PNTB
	017102	062706	000010					ADD	#10,SP
2268	017106			ENDMSG				L10003:	
	017106							TRAP	C#MSG
	017106	104423							
2269				:					
2270	017110			BGNMSG	MSG003			MSG003::	
	017110								
2271	017110				PRINTB	#FRM003,EPCSR0,EPCSR1			
	017110	013746	015142					MOV	EPCSR1,-(SP)
	017114	013746	015140					MOV	EPCSR0,-(SP)
	017120	012746	015442					MOV	#FRM003,-(SP)
	017124	012746	000003					MOV	#3,-(SP)
	017130	010600						MOV	SP,R0
	017132	104414						TRAP	C#PNTB
	017134	062706	000010					ADD	#10,SP
2272	017140			ENDMSG				L10004:	
	017140							TRAP	C#MSG
	017140	104423							
2273				:					
2274	017142			BGNMSG	MSG004			MSG004::	
	017142								
2275	017142				PRINTB	#FRM004,ECODE			
	017142	013746	015220					MOV	ECODE,-(SP)
	017146	012746	015503					MOV	#FRM004,-(SP)
	017152	012746	000002					MOV	#2,-(SP)

```

017156 010600
017160 104414
017162 062706 000006
2276 017166
017166 013746 031244
017172 012746 016551
017176 012746 000002
017202 010600
017204 104414
017206 062706 000006
2277 017212
017212
017212 104423
2278
2279 017214
017214
2280 017214
017214 013746 015164
017220 013746 015174
017224 012746 015543
017230 012746 000003
017234 010600
017236 104414
017240 062706 000010
2281 017244
017244 013746 015166
017250 013746 015176
017254 012746 015630
017260 012746 000003
017264 010600
017266 104414
017270 062706 000010
2282 017274
017274 013746 015170
017300 013746 015200
017304 012746 015715
017310 012746 000003
017314 010600
017316 104414
017320 062706 000010
2283 017324
017324 013746 015172
017330 013746 015202
017334 012746 016002
017340 012746 000003
017344 010600
017346 104414
017350 062706 000010
2284 017354
017354
017354 104423
2285
2286 017356
017356
2287 017356
017356 013746 015144
017362 013746 015154

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PRINTB @FRM015,STMSG
ENDMSG
BGNMSG MSG005
PRINTB @FRM005,XTDRB0,ETDRB0
PRINTB @FRM006,XTDRB2,ETDRB2
PRINTB @FRM007,XTDRB4,ETDRB4
PRINTB @FRM008,XTDRB6,ETDRB6
ENDMSG
BGNMSG MSG006
PRINTB @FRM009,XRDRB0,ERDRB0

```

```

MOV SP,R0
TRAP C#PNTB
ADD #6,SP
MOV STMSG,-(SP)
MOV @FRM015,-(SP)
MOV #2,-(SP)
MOV SP,R0
TRAP C#PNTB
ADD #6,SP
L10005: TRAP C#MSG
MSG005::
MOV ETDRB0,-(SP)
MOV XTDRB0,-(SP)
MOV @FRM005,-(SP)
MOV #3,-(SP)
MOV SP,R0
TRAP C#PNTB
ADD #10,SP
MOV ETDRB2,-(SP)
MOV XTDRB2,-(SP)
MOV @FRM006,-(SP)
MOV #3,-(SP)
MOV SP,R0
TRAP C#PNTB
ADD #10,SP
MOV ETDRB4,-(SP)
MOV XTDRB4,-(SP)
MOV @FRM007,-(SP)
MOV #3,-(SP)
MOV SP,R0
TRAP C#PNTB
ADD #10,SP
MOV ETDRB6,-(SP)
MOV XTDRB6,-(SP)
MOV @FRM008,-(SP)
MOV #3,-(SP)
MOV SP,R0
TRAP C#PNTB
ADD #10,SP
L10006: TRAP C#MSG
MSG006::
MOV ERDRB0,-(SP)
MOV XRDRB0,-(SP)

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	017366	012746	016067			MOV	#FRM009,-(SP)
	017372	012746	000003			MOV	#3,-(SP)
	017376	010600				MOV	SP,R0
	017400	104414				TRAP	C#PNTB
	017402	062706	000010			ADD	#10,SP
2288	017406			PRINTB	#FRM010,XRDRB2,ERDRB2		
	017406	013746	015146			MOV	ERDRB2,-(SP)
	017412	013746	015156			MOV	XRDRB2,-(SP)
	017416	012746	016154			MOV	#FRM010,-(SP)
	017422	012746	000003			MOV	#3,-(SP)
	017426	010600				MOV	SP,R0
	017430	104414				TRAP	C#PNTB
	017432	062706	000010			ADD	#10,SP
2289	017436			PRINTB	#FRM011,XRDRB4,ERDRB4		
	017436	013746	015150			MOV	ERDRB4,-(SP)
	017442	013746	015160			MOV	XRDRB4,-(SP)
	017446	012746	016241			MOV	#FRM011,-(SP)
	017452	012746	000003			MOV	#3,-(SP)
	017456	010600				MOV	SP,R0
	017460	104414				TRAP	C#PNTB
	017462	062706	000010			ADD	#10,SP
2290	017466			PRINTB	#FRM012,XRDRB6,ERDRB6		
	017466	013746	015152			MOV	ERDRB6,-(SP)
	017472	013746	015162			MOV	XRDRB6,-(SP)
	017476	012746	016326			MOV	#FRM012,-(SP)
	017502	012746	000003			MOV	#3,-(SP)
	017506	010600				MOV	SP,R0
	017510	104414				TRAP	C#PNTB
	017512	062706	000010			ADD	#10,SP
2291	017516			ENDMSG			
	017516					L10007:	
	017516	104423				TRAP	C#MSG
2292				:			
2293	017520			BGNMSG	MSG007		
	017520					MSG007::	
2294	017520			PRINTB	#FRM002,XDAT,EDAT		
	017520	013746	015204			MOV	EDAT,-(SP)
	017524	013746	015206			MOV	XDAT,-(SP)
	017530	012746	015361			MOV	#FRM002,-(SP)
	017534	012746	000003			MOV	#3,-(SP)
	017540	010600				MOV	SP,R0
	017542	104414				TRAP	C#PNTB
	017544	062706	000010			ADD	#10,SP
2295	017550			ENDMSG			
	017550					L10010:	
	017550	104423				TRAP	C#MSG
2296				:			
2297	017552			BGNMSG	MSG008		
	017552					MSG008::	
2298	017552			PRINTB	#FRM013,XCRC,XCRCB		
	017552	013746	015216			MOV	XCRCB,-(SP)
	017556	013746	015214			MOV	XCRC,-(SP)
	017562	012746	016413			MOV	#FRM013,-(SP)
	017566	012746	000003			MOV	#3,-(SP)
	017572	010600				MOV	SP,R0
	017574	104414				TRAP	C#PNTB
	017576	062706	000010			ADD	#10,SP

2299	017602				PRINTB	#FRM014,ECRC,ECRCB				
	017602	013746	015212				MOV	ECRCB,-(SP)		
	017606	013746	015210				MOV	ECRC,-(SP)		
	017612	012746	016472				MOV	#FRM014,-(SP)		
	017616	012746	000003				MOV	#3,-(SP)		
	017622	010600					MOV	SP,R0		
	017624	104414					TRAP	C#PNTB		
	017626	062706	000010				ADD	#10,SP		
2300	017632				ENDMSG				L10011:	
	017632								TRAP	C#MSG
	017632	104423								
2301										
2302	017634				BGNMSG	MSG009				MSG009::
	017634									
2303	017634				PRINTB	#FRM018,PCBB				
	017634	013746	002264				MOV	PCBB,-(SP)		
	017640	012746	016655				MOV	#FRM018,-(SP)		
	017644	012746	000002				MOV	#2,-(SP)		
	017650	010600					MOV	SP,R0		
	017652	104414					TRAP	C#PNTB		
	017654	062706	000006				ADD	#6,SP		
2304	017660				PRINTB	#FRM019,PCBB+2				
	017660	013746	002266				MOV	PCBB+2,-(SP)		
	017664	012746	016711				MOV	#FRM019,-(SP)		
	017670	012746	000002				MOV	#2,-(SP)		
	017674	010600					MOV	SP,R0		
	017676	104414					TRAP	C#PNTB		
	017700	062706	000006				ADD	#6,SP		
2305	017704				PRINTB	#FRM020,PCBB+4				
	017704	013746	002270				MOV	PCBB+4,-(SP)		
	017710	012746	016745				MOV	#FRM020,-(SP)		
	017714	012746	000002				MOV	#2,-(SP)		
	017720	010600					MOV	SP,R0		
	017722	104414					TRAP	C#PNTB		
	017724	062706	000006				ADD	#6,SP		
2306	017730				PRINTB	#FRM021,PCBB+6				
	017730	013746	002272				MOV	PCBB+6,-(SP)		
	017734	012746	017001				MOV	#FRM021,-(SP)		
	017740	012746	000002				MOV	#2,-(SP)		
	017744	010600					MOV	SP,R0		
	017746	104414					TRAP	C#PNTB		
	017750	062706	000006				ADD	#6,SP		
2307	017754				ENDMSG					L10012:
	017754								TRAP	C#MSG
	017754	104423								
2308										
2309	017756	015	012	122	ERR001::	.ASCIZ <15><12>/REGISTER ACCESS ERROR/				
	017761	105	107	111						
	017764	123	124	105						
	017767	122	040	101						
	017772	103	103	105						
	017775	123	123	040						
	020000	105	122	122						
	020003	117	122	000						
2310	020006	015	012	104	ERR002::	.ASCIZ <15><12>/DATA COMPARE ERROR IN PCSR2/				
	020011	101	124	101						
	020014	040	103	117						

	020017	115	120	101		
	020022	122	105	040		
	020025	105	122	122		
	020030	117	122	040		
	020033	111	116	040		
	020036	120	103	123		
	020041	122	062	000		
2311	020044	015	012	104	ERR003::	.ASCIZ <15><12>/DATA COMPARE ERROR IN PCSR3/
	020047	101	124	101		
	020052	040	103	117		
	020055	115	120	101		
	020060	122	105	040		
	020063	105	122	122		
	020066	117	122	040		
	020071	111	116	040		
	020074	120	103	123		
	020077	122	063	000		
2312	020102	015	012	104	ERR004::	.ASCII <15><12>/DNI BIT FAILED TO SET AFTER /
	020105	116	111	040		
	020110	102	111	124		
	020113	040	106	101		
	020116	111	114	105		
	020121	104	040	124		
	020124	117	040	123		
	020127	105	124	040		
	020132	101	106	124		
	020135	105	122	040		
2313	020140	104	105	126		.ASCIZ /DEVICE RESET /
	020143	111	103	105		
	020146	040	122	105		
	020151	123	105	124		
	020154	040	000			
2314	020156	015	012	123	ERR005::	.ASCIZ <15><12>/SELF TEST FAILURE/
	020161	105	114	106		
	020164	040	124	105		
	020167	123	124	040		
	020172	106	101	111		
	020175	114	125	122		
	020200	105	000			
2315	020202	015	012	127	ERR006::	.ASCIZ <15><12>/WRITING ONE TO CLEAR DNI BIT FAILED/
	020205	122	111	124		
	020210	111	116	107		
	020213	040	117	116		
	020216	105	040	124		
	020221	117	040	103		
	020224	114	105	101		
	020227	122	040	104		
	020232	116	111	040		
	020235	102	111	124		
	020240	040	106	101		
	020243	111	114	105		
	020246	104	000			
2316	020250	015	012	116	ERR007::	.ASCII <15><12>/NO DNI INTERRUPT OCCURED /
	020253	117	040	104		
	020256	116	111	040		
	020261	111	116	124		
	020264	105	122	122		

	020267	125	120	124	
	020272	040	117	103	
	020275	103	125	122	
	020300	105	104	040	
2317	020303	101	106	124	.ASCIZ /AFTER GET PCBB PORT COMMAND/
	020306	105	122	040	
	020311	107	105	124	
	020314	040	120	103	
	020317	102	102	040	
	020322	120	117	122	
	020325	124	040	103	
	020330	117	115	115	
	020333	101	116	104	
	020336	000			
2318	020337	015	012	104	ERR008:: .ASCII <15><12>/DNI BIT FAILED TO SET AFTER /
	020342	116	111	040	
	020345	102	111	124	
	020350	040	106	101	
	020353	111	114	105	
	020356	104	040	124	
	020361	117	040	123	
	020364	105	124	040	
	020367	101	106	124	
	020372	105	122	040	
2319	020375	116	117	120	.ASCIZ /NOP PORT COMMAND/
	020400	040	120	117	
	020403	122	124	040	
	020406	103	117	115	
	020411	115	101	116	
	020414	104	000		
2320	020416	015	012	104	ERR009:: .ASCII <15><12>/DNI BIT FAILED TO SET AFTER /
	020421	116	111	040	
	020424	102	111	124	
	020427	040	106	101	
	020432	111	114	105	
	020435	104	040	124	
	020440	117	040	123	
	020443	105	124	040	
	020446	101	106	124	
	020451	105	122	040	
2321	020454	107	105	124	.ASCIZ /GET PCBB PORT COMMAND/
	020457	040	120	103	
	020462	102	102	040	
	020465	120	117	122	
	020470	124	040	103	
	020473	117	115	115	
	020476	101	116	104	
	020501	000			
2322	020502	015	012	104	ERR010:: .ASCII <15><12>/DNI BIT FAILED TO SET AFTER /
	020505	116	111	040	
	020510	102	111	124	
	020513	040	106	101	
	020516	111	114	105	
	020521	104	040	124	
	020524	117	040	123	
	020527	105	124	040	
	020532	101	106	124	



	020535	105	122	040		
2323	020540	107	105	124		.ASCIZ /GET CMD PORT COMMAND/
	020543	040	103	115		
	020546	104	040	120		
	020551	117	122	124		
	020554	040	103	117		
	020557	115	115	101		
	020562	116	104	000		
2324	020565	015	012	104	ERR011::	.ASCIZ <15><12>/DATA COMPARE ERROR IN MODE REGISTER/
	020570	101	124	101		
	020573	040	103	117		
	020576	115	120	101		
	020601	122	105	040		
	020604	105	122	122		
	020607	117	122	040		
	020612	111	116	040		
	020615	115	117	104		
	020620	105	040	122		
	020623	105	107	111		
	020626	123	124	105		
	020631	122	000			
2325	020633	015	012	104	ERR012::	.ASCII <15><12>/DNI BIT FAILED TO SET AFTER /
	020636	116	111	040		
	020641	102	111	124		
	020644	040	106	101		
	020647	111	114	105		
	020652	104	040	124		
	020655	117	040	123		
	020660	105	124	040		
	020663	101	106	124		
	020666	105	122	040		
2326	020671	123	124	101		.ASCIZ /START PORT COMMAND/
	020674	122	124	040		
	020677	120	117	122		
	020702	124	040	103		
	020705	117	115	115		
	020710	101	116	104		
	020713	000				
2327	020714	015	012	124	ERR013::	.ASCIZ <15><12>/TXI BIT FAILED TO SET /
	020717	130	111	040		
	020722	102	111	124		
	020725	040	106	101		
	020730	111	114	105		
	020733	104	040	124		
	020736	117	040	123		
	020741	105	124	040		
	020744	000				
2328	020745	015	012	127	ERR014::	.ASCIZ <15><12>/WRITING ONE TO CLEAR TXI BIT FAILED/
	020750	122	111	124		
	020753	111	116	107		
	020756	040	117	116		
	020761	105	040	124		
	020764	117	040	103		
	020767	114	105	101		
	020772	122	040	124		
	020775	130	111	040		
	021000	102	111	124		

	021003	040	106	101		
	021006	111	114	105		
	021011	104	000			
2329	021013	015	012	122	ERR015::	.ASCIZ <15><12>/RXI BIT FAILED TO SET /
	021016	130	111	040		
	021021	102	111	124		
	021024	040	106	101		
	021027	111	114	105		
	021032	104	040	124		
	021035	117	040	123		
	021040	105	124	040		
	021043	000				
2330	021044	015	012	127	ERR016::	.ASCIZ <15><12>/WRITING ONE TO CLEAR RXI BIT FAILED/
	021047	122	111	124		
	021052	111	116	107		
	021055	040	117	116		
	021060	105	040	124		
	021063	117	040	103		
	021066	114	105	101		
	021071	122	040	122		
	021074	130	111	040		
	021077	102	111	124		
	021102	040	106	101		
	021105	111	114	105		
	021110	104	000			
2331	021112	015	012	124	ERR017::	.ASCII <15><12>/TIMEOUT ERROR - DENJA FAILED TO /
	021115	111	115	105		
	021120	117	125	124		
	021123	040	105	122		
	021126	122	117	122		
	021131	040	055	040		
	021134	104	105	116		
	021137	125	101	040		
	021142	106	101	111		
	021145	114	105	104		
	021150	040	124	117		
	021153	040				
2332	021154	122	105	114		.ASCIZ /RELINQUISH OWNERSHIP OF RDRB /
	021157	111	116	121		
	021162	125	111	123		
	021165	110	040	117		
	021170	127	116	105		
	021173	122	123	110		
	021176	111	120	040		
	021201	117	106	040		
	021204	122	104	122		
	021207	102	040	000		
2333	021212	015	012	124	ERR018::	.ASCII <15><12>/TIMEOUT ERROR - DENJA FAILED TO /
	021215	111	115	105		
	021220	117	125	124		
	021223	040	105	122		
	021226	122	117	122		
	021231	040	055	040		
	021234	104	105	116		
	021237	125	101	040		
	021242	106	101	111		
	021245	114	105	104		

	021250	040	124	117		
	021253	040				
2334	021254	122	105	114		.ASCIZ /RELINQUISH OWNERSHIP OF TORE /
	021257	111	116	121		
	021262	125	111	123		
	021265	110	040	117		
	021270	127	116	105		
	021273	122	123	110		
	021276	111	120	040		
	021301	117	106	040		
	021304	124	104	122		
	021307	102	040	000		
2335	021312	015	012	104	ERR019::	.ASCII <15><12>/DNI BIT FAILED TO SET AFTER /
	021315	116	111	040		
	021320	102	111	124		
	021323	040	106	101		
	021326	111	114	105		
	021331	104	040	124		
	021334	117	040	123		
	021337	105	124	040		
	021342	101	106	124		
2336	021345	105	122	040		.ASCIZ /STOP PORT COMMAND/
	021350	123	124	117		
	021353	120	040	120		
	021356	117	122	124		
	021361	040	103	117		
	021364	115	115	101		
	021367	116	104	000		
2337	021372	015	012	104	ERR020::	.ASCII <15><12>/DATA COMPARE ERROR IN /
	021375	101	124	101		
	021400	040	103	117		
	021403	115	120	101		
	021406	122	105	040		
	021411	105	122	122		
	021414	117	122	040		
	021417	111	116	040		
2338	021422	124	122	101		.ASCIZ /TRANSMIT DESCRIPTOR RING/
	021425	116	123	115		
	021430	111	124	040		
	021433	104	105	123		
	021436	103	122	111		
	021441	120	124	117		
	021444	122	040	122		
	021447	111	116	107		
	021452	000				
2339	021453	015	012	104	ERR021::	.ASCII <15><12>/DATA COMPARE ERROR IN /
	021456	101	124	101		
	021461	040	103	117		
	021464	115	120	101		
	021467	122	105	040		
	021472	105	122	122		
	021475	117	122	040		
	021500	111	116	040		
	021503	040				
2340	021504	122	105	103		.ASCIZ /RECEIVE DESCRIPTOR RING/
	021507	105	111	126		
	021512	105	040	104		

	021515	105	123	103		
	021520	122	111	120		
	021523	124	117	122		
	021526	040	122	111		
	021531	116	107	000		
2341	021534	015	012	124	ERR022::	.ASCIZ <15><12>/TRANSMIT-RECEIVE DATA COMPARE ERROR /
	021537	122	101	116		
	021542	123	115	111		
	021545	124	055	122		
	021550	105	103	105		
	021553	111	126	105		
	021556	040	104	101		
	021561	124	101	040		
	021564	103	117	115		
	021567	120	101	122		
	021572	105	040	105		
	021575	122	122	117		
	021600	122	040	000		
2342	021603	015	012	103	ERR023::	.ASCIZ <15><12>/CRC COMPARE ERROR /
	021606	122	103	040		
	021611	103	117	115		
	021614	120	101	122		
	021617	105	040	105		
	021622	122	122	117		
	021625	122	040	000		
2343	021630	015	012	111	ERR024::	.ASCIZ <15><12>/INTERNAL ROM CRC COMPARE ERROR /
	021633	116	124	105		
	021636	122	116	101		
	021641	114	040	122		
	021644	117	115	040		
	021647	103	122	103		
	021652	040	103	117		
	021655	115	120	101		
	021660	122	105	040		
	021663	105	122	122		
	021666	117	122	040		
	021671	000				
2344	021672	015	012	122	ERR025::	.ASCIZ <15><12>/RCBI BIT FAILED TO SET /
	021675	103	102	111		
	021700	040	102	111		
	021703	124	040	106		
	021706	101	111	114		
	021711	105	104	040		
	021714	124	117	040		
	021717	123	105	124		
	021722	040	000			
2345	021724	015	012	127	ERR026::	.ASCIZ <15><12>/WRITING ONE TO CLEAR RCBI BIT FAILED/
	021727	122	111	124		
	021732	111	116	107		
	021735	040	117	116		
	021740	105	040	124		
	021743	117	040	103		
	021746	114	105	101		
	021751	122	040	122		
	021754	103	102	111		
	021757	040	102	111		
	021762	124	040	106		

	021765	101	111	114		
	021770	105	104	000		
2346	021773	015	012	124	ERROR27::	.ASCII <15><12>/TIMEOUT ERROR - DENJA FAILED TO RELINQUISH/
	021776	111	115	105		
	022001	117	125	124		
	022004	040	105	122		
	022007	122	117	122		
	022012	040	055	040		
	022015	104	105	116		
	022020	125	101	040		
	022023	106	101	111		
	022026	114	105	104		
	022031	040	124	117		
	022034	040	122	105		
	022037	114	111	116		
	022042	121	125	111		
	022045	123	110			
2347	022047	040	117	127		.ASCIZ / OWNERSHIP OF FIRST TORB/
	022052	116	105	122		
	022055	123	110	111		
	022060	120	040	117		
	022063	106	040	106		
	022066	111	122	123		
	022071	124	040	124		
	022074	104	122	102		
	022077	000				
2348	022100	015	012	124	ERROR28::	.ASCII <15><12>/TIMEOUT ERROR - DENJA FAILED TO RELINQUISH/
	022103	111	115	105		
	022106	117	125	124		
	022111	040	105	122		
	022114	122	117	122		
	022117	040	055	040		
	022122	104	105	116		
	022125	125	101	040		
	022130	106	101	111		
	022133	114	105	104		
	022136	040	124	117		
	022141	040	122	105		
	022144	114	111	116		
	022147	121	125	111		
	022152	123	110			
2349	022154	040	117	127		.ASCIZ / OWNERSHIP OF SECOND TORB/
	022157	116	105	122		
	022162	123	110	111		
	022165	120	040	117		
	022170	106	040	123		
	022173	105	103	117		
	022176	116	104	040		
	022201	124	104	122		
	022204	102	000			
2350	022206	015	012	124	ERROR29::	.ASCII <15><12>/TIMEOUT ERROR - DENJA FAILED TO RELINQUISH/
	022211	111	115	105		
	022214	117	125	124		
	022217	040	105	122		
	022222	122	117	122		
	022225	040	055	040		
	022230	104	105	116		

	022233	125	101	040	
	022236	106	101	111	
	022241	114	105	104	
	022244	040	124	117	
	022247	040	122	105	
	022252	114	111	116	
	022255	121	125	111	
	022250	123	110		
2351	022262	040	117	127	.ASCIZ / OWNERSHIP OF THIRD TORB/
	022265	116	105	122	
	022270	123	110	111	
	022273	120	040	117	
	022276	106	040	124	
	022301	110	111	122	
	022304	104	040	124	
	022307	104	122	102	
	022312	000			
2352	022313	015	012	124	ERR030:: .ASCII <15><12>/TIMEOUT ERROR - DENUA FAILED TO RELINQUISH/
	022316	111	115	105	
	022321	117	125	124	
	022324	040	105	122	
	022327	122	117	122	
	022332	040	055	040	
	022335	104	105	116	
	022340	125	101	040	
	022343	106	101	111	
	022346	114	105	104	
	022351	040	124	117	
	022354	040	122	105	
	022357	114	111	116	
	022362	121	125	111	
	022365	123	110		
2353	022367	040	117	127	.ASCIZ / OWNERSHIP OF FIRST RDRB/
	022372	116	105	122	
	022375	123	110	111	
	022400	120	040	117	
	022403	106	040	106	
	022406	111	122	123	
	022411	124	040	122	
	022414	104	122	102	
	022417	000			
2354	022420	015	012	124	ERR031:: .ASCII <15><12>/TIMEOUT ERROR - DENUA FAILED TO RELINQUISH/
	022423	111	115	105	
	022426	117	125	124	
	022431	040	105	122	
	022434	122	117	122	
	022437	040	055	040	
	022442	104	105	116	
	022445	125	101	040	
	022450	106	101	111	
	022453	114	105	104	
	022456	040	124	117	
	022461	040	122	105	
	022464	114	111	116	
	022467	121	125	111	
	022472	123	110		
2355	022474	040	117	127	.ASCIZ / OWNERSHIP OF SECOND RDRB/

	022477	116	105	122		
	022502	123	110	111		
	022505	120	040	117		
	022510	106	040	123		
	022513	105	103	117		
	022516	116	104	040		
	022521	122	104	122		
	022524	102	000			
2356	022526	015	012	124	ERR032::	.ASCII <15><12>/TIMEOUT ERROR - DENUA FAILED TO RELINQUISH/
	022531	111	115	105		
	022534	117	125	124		
	022537	040	105	122		
	022542	122	117	122		
	022545	040	055	040		
	022550	104	105	116		
	022553	125	101	040		
	022556	106	101	111		
	022561	114	105	104		
	022564	040	124	117		
	022567	040	122	105		
	022572	114	111	116		
	022575	121	125	111		
	022600	123	110			
2357	022602	040	117	127		.ASCIZ / OWNERSHIP OF THIRD RDRB/
	022605	116	105	122		
	022610	123	110	111		
	022613	120	040	117		
	022616	106	040	124		
	022621	110	111	122		
	022624	104	040	122		
	022627	104	122	102		
	022632	000				
2358	022633	015	012	104	ERR033::	.ASCII <15><12>/DATA COMPARE ERROR IN /
	022636	101	124	101		
	022641	040	103	117		
	022644	115	120	101		
	022647	122	105	040		
	022652	105	122	122		
	022655	117	122	040		
	022660	111	116	040		
2359	022663	106	111	122		.ASCIZ /FIRST TRANSMIT DESCRIPTOR RING/
	022666	123	124	040		
	022671	124	122	101		
	022674	116	123	115		
	022677	111	124	040		
	022702	104	105	123		
	022705	103	122	111		
	022710	120	124	117		
	022713	122	040	122		
	022716	111	116	107		
	022721	000				
2360	022722	015	012	104	ERR034::	.ASCII <15><12>/DATA COMPARE ERROR IN /
	022725	101	124	101		
	022730	040	103	117		
	022733	115	120	101		
	022736	122	105	040		
	022741	105	122	122		

	022744	117	122	040	
	022747	111	116	040	
2361	022752	123	105	103	.ASCIZ /SECOND TRANSMIT DESCRIPTOR RING/
	022755	117	116	104	
	022760	040	124	122	
	022763	101	116	123	
	022766	115	111	124	
	022771	040	104	105	
	022774	123	103	122	
	022777	111	120	124	
	023002	117	122	040	
	023005	122	111	116	
	023010	107	000		
2362	023012	015	012	104	ERR035:: .ASCII <15><12>/DATA COMPARE ERROR IN /
	023015	101	124	101	
	023020	040	103	117	
	023023	115	120	101	
	023026	122	105	040	
	023031	105	122	122	
	023034	117	122	040	
	023037	111	116	040	
2363	023042	124	110	111	.ASCIZ /THIRD TRANSMIT DESCRIPTOR RING/
	023045	122	104	040	
	023050	124	122	101	
	023053	116	123	115	
	023056	111	124	040	
	023061	104	105	123	
	023064	103	122	111	
	023067	120	124	117	
	023072	122	040	122	
	023075	111	116	107	
	023100	000			
2364	023101	015	012	104	ERR036:: .ASCII <15><12>/DATA COMPARE ERROR IN /
	023104	101	124	101	
	023107	040	103	117	
	023112	115	120	101	
	023115	122	105	040	
	023120	105	122	122	
	023123	117	122	040	
	023126	111	116	040	
2365	023131	106	111	122	.ASCIZ /FIRST RECEIVE DESCRIPTOR RING/
	023134	123	124	040	
	023137	122	105	103	
	023142	105	111	126	
	023145	105	040	104	
	023150	105	123	103	
	023153	122	111	120	
	023156	124	117	122	
	023161	040	122	111	
	023164	116	107	000	
2366	023167	015	012	104	ERR037:: .ASCII <15><12>/DATA COMPARE ERROR IN /
	023172	101	124	101	
	023175	040	103	117	
	023200	115	120	101	
	023203	122	105	040	
	023206	105	122	122	
	023211	117	122	040	



	023214	111	116	040		
2367	023217	123	105	103		.ASCIZ /SECOND RECEIVE DESCRIPTOR RING/
	023222	117	116	104		
	023225	040	122	105		
	023230	103	105	111		
	023233	126	105	040		
	023236	104	105	123		
	023241	103	122	111		
	023244	120	124	117		
	023247	122	040	122		
	023252	111	116	107		
	023255	000				
2368	023256	015	012	104	ERR038::	.ASCII <15><12>/DATA COMPARE ERROR IN /
	023261	101	124	101		
	023264	040	103	117		
	023267	115	120	101		
	023272	122	105	040		
	023275	105	122	122		
	023300	117	122	040		
	023303	111	116	040		
2369	023306	124	110	111		.ASCIZ /THIRD RECEIVE DESCRIPTOR RING/
	023311	122	104	040		
	023314	122	105	103		
	023317	105	111	126		
	023322	105	040	104		
	023325	105	123	103		
	023330	122	111	120		
	023333	124	117	122		
	023336	040	122	111		
	023341	116	107	000		
2370	023344	015	012	105	ERR039::	.ASCII <15><12>/ERROR - LOOPBACK SUCCESSFUL WITH/
	023347	122	122	117		
	023352	122	040	055		
	023355	040	114	117		
	023360	117	120	102		
	023363	101	103	113		
	023366	040	123	125		
	023371	103	103	105		
	023374	123	123	106		
	023377	125	114	040		
	023402	127	111	124		
	023405	110				
2371	023406	015	012	111		.ASCIZ <15><12>/INVALID DESTINATION ADDRESS /
	023411	116	126	101		
	023414	114	111	104		
	023417	040	104	105		
	023422	123	124	111		
	023425	116	101	124		
	023430	111	117	116		
	023433	040	101	104		
	023436	104	122	105		
	023441	123	123	040		
	023444	000				
2372	023445	015	012	102	ERR040::	.ASCII <15><12>/BUFL BIT FAILED TO SET /
	023450	125	106	114		
	023453	040	102	111		
	023456	124	040	106		

	023461	101	111	114		
	023464	105	104	040		
	023467	124	117	040		
	023472	123	105	124		
	023475	040				
2373	023476	127	110	105		.ASCIZ /WHEN ATTEMPTING TO TRANSMIT A RUNT PACKET/
	023501	116	040	101		
	023504	124	124	105		
	023507	115	120	124		
	023512	111	116	107		
	023515	040	124	117		
	023520	040	124	122		
	023523	101	116	123		
	023526	115	111	124		
	023531	040	101	040		
	023534	122	125	116		
	023537	124	040	120		
	023542	101	103	113		
2374	023545	105	124	000		
	023550	015	012	120	ERR041::	.ASCIZ <15><12>/PAD RUNT PACKET FAILURE /
	023553	101	104	040		
	023556	122	125	116		
	023561	124	040	120		
	023564	101	103	113		
	023567	105	124	040		
	023572	106	101	111		
	023575	114	125	122		
2375	023600	105	040	000		
	023603	015	012	127	ERR042::	.ASCIZ <15><12>/WCS MEMORY DATA COMPARE ERROR /
	023606	103	123	040		
	023611	115	105	115		
	023614	117	122	131		
	023617	040	104	101		
	023622	124	101	040		
	023625	103	117	115		
	023630	120	101	122		
	023633	105	040	105		
	023636	122	122	117		
2376	023641	122	040	000		
	023644	015	012	114	ERR043::	.ASCIZ <15><12>/LINK MEMORY DATA COMPARE ERROR /
	023647	111	116	113		
	023652	040	115	105		
	023655	115	117	122		
	023660	131	040	104		
	023663	101	124	101		
	023666	040	103	117		
	023671	115	120	101		
	023674	122	105	040		
	023677	105	122	122		
	023702	117	122	040		
2377	023705	000				
	023706	015	012	104	ERR044::	.ASCII <15><12>/DNI BIT FAILED TO SET AFTER /
	023711	116	111	040		
	023714	102	111	124		
	023717	040	106	101		
	023722	111	114	105		
	023725	104	040	124		

	023730	117	040	123	
	023733	105	124	040	
	023736	101	106	124	
	023741	105	122	040	
2378	023744	122	105	101	.ASCIZ /READ COUNTERS PORT COMMAND/
	023747	104	040	103	
	023752	117	125	116	
	023755	124	105	122	
	023760	123	040	120	
	023763	117	122	124	
	023766	040	103	117	
	023771	115	115	101	
	023774	116	104	000	
2379	023777	015	012	104	ERR045:: .ASCII <15><12>/DNI BIT FAILED TO SET AFTER /
	024002	116	111	040	
	024005	102	111	124	
	024010	040	106	101	
	024013	111	114	105	
	024016	104	040	124	
	024021	117	040	123	
	024024	105	124	040	
	024027	101	106	124	
	024032	105	122	040	
2380	024035	123	105	114	.ASCIZ /SELF TEST PORT COMMAND/
	024040	106	040	124	
	024043	105	123	124	
	024046	040	120	117	
	024051	122	124	040	
	024054	103	117	115	
	024057	115	101	116	
	024062	104	000		
2381	024064	015	012	105	ERR046:: .ASCII <15><12>/ERROR - LOOPBACK SUCCESSFUL WITH/
	024067	122	122	117	
	024072	122	040	055	
	024075	040	114	117	
	024100	117	120	102	
	024103	101	103	113	
	024106	040	123	125	
	024111	103	103	105	
	024114	123	123	106	
	024117	125	114	040	
	024122	127	111	124	
	024125	110			
2382	024126	015	012	110	.ASCIZ <15><12>/HALF DUPLEX MODE SET /
	024131	101	114	106	
	024134	040	104	125	
	024137	120	114	105	
	024142	130	040	115	
	024145	117	104	105	
	024150	040	123	105	
	024153	124	040	000	
2383	024156	015	012	105	ERR047:: .ASCII <15><12>/ERROR - DIAGNOSTIC TYPE PACKET /
	024161	122	122	117	
	024164	122	040	055	
	024167	040	104	111	
	024172	101	107	116	
	024175	117	123	124	

	024200	111	103	040		
	024203	124	131	120		
	024206	105	040	120		
	024211	101	103	113		
	024214	105	124	040		
2384	024217	122	105	103	.ASCIZ	/RECEIVED FROM ANOTHER NODE/
	024222	105	111	126		
	024225	105	104	040		
	024230	106	122	117		
	024233	115	040	101		
	024236	116	117	124		
	024241	110	105	122		
	024244	040	116	117		
	024247	104	105	000		
2385	024252	015	012	123	ERR048::	.ASCIZ <15><12>/SERI BIT FAILED TO SET /
	024255	105	122	111		
	024260	040	102	111		
	024263	124	040	106		
	024266	101	111	114		
	024271	105	104	040		
	024274	124	117	040		
	024277	123	105	124		
	024302	040	000			
2386	024304	015	012	127	ERR049::	.ASCIZ <15><12>/WRITING ONE TO CLEAR SERI BIT FAILED/
	024307	122	111	124		
	024312	111	116	107		
	024315	040	117	116		
	024320	105	040	124		
	024323	117	040	103		
	024326	114	105	101		
	024331	122	040	123		
	024334	105	122	111		
	024337	040	102	111		
	024342	124	040	106		
	024345	101	111	114		
	024350	105	104	000		
2387	024353	015	012	105	ERR050::	.ASCII <15><12>/ERROR SUMMARY BIT FAILED TO SET IN /
	024356	122	122	117		
	024361	122	040	123		
	024364	125	115	115		
	024367	101	122	131		
	024372	040	102	111		
	024375	124	040	106		
	024400	101	111	114		
	024403	105	104	040		
	024406	124	117	040		
	024411	123	105	124		
	024414	040	111	116		
	024417	040				
2388	024420	120	117	122	.ASCIZ	/PORT STATUS WORD 2/
	024423	124	040	123		
	024426	124	101	124		
	024431	125	123	040		
	024434	127	117	122		
	024437	104	040	062		
	024442	000				
2389	024443	015	012	103	ERR051::	.ASCII <15><12>/COLLISION TEST ERROR BIT FAILED TO SET IN /

	024446	117	114	114
	024451	111	123	111
	024454	117	116	040
	024457	124	105	123
	024462	124	040	105
	024465	122	122	117
	024470	122	040	102
	024473	111	124	040
	024476	106	101	111
	024501	114	105	104
	024504	040	124	117
	024507	040	123	105
	024512	124	040	111
	024515	116	040	
2390	024517	120	117	122
	024522	124	040	123
	024525	124	101	124
	024530	125	123	040
	024533	127	117	122
	024536	104	040	062
2391	024541	000		

.ASCIZ /PORT STATUS WORD 2/

.EVEN

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2393      .SBTTL GLOBAL SUBROUTINES SECTION
2453      ;*****
2454      ;
2455      ;THIS ROUTINE TURNS ON THE CLOCK
2456      ;
2457      ;*****
2458
2459      TIMON:: SETPRI @PRI05      ;SET PROCESSOR PRIORITY TO 5
2460 024542      MOV          @PRI05,R0
024542 012700 000240      TRAP
024546 104441      C@SPRI
2461 024550 012777 000100 155470      MOV @IE,@CLKCSR      ;ENABLE CLOCK INTERRUPTS
2462 024556 000207      RTS PC
2463
2464
2465      ;*****
2466      ;
2467      ;THIS ROUTINE TURNS THE CLOCK OFF
2468      ;
2469      ;*****
2470
2471 024560 005077 155462      TIMOFF::CLR @CLKCSR      ;CLEAR INTERRUPT ENABLE
2472 024564      SETPRI @PRI07      ;PUT PRIORITY BACK UP
024564 012700 000340      MOV          @PRI07,R0
024570 104441      TRAP
2473 024572 000207      RTS PC

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024574 010046  
024576 010146  
024600 010446  
  
012737 001364 015222  
004737 024542  
017704 155406  
032704 004000  
001015  
104422  
024630 005737 015222  
024634 001367  
024636 010437 015140

```
*****  
: SUBROUTINE - CHKDNI  
: THIS ROUTINE WAITS FOR DNI TO SET.  
: INPUTS: NONE  
: OUTPUTS: IF DNI SETS  
: THEN CARRY = 0  
: IF DNI FAILS TO SET  
: THEN CARRY = 1  
: PCSRO -> EPCSR0  
: PCSR1 -> EPCSR1  
:  
: CALLING SEQUENCE:  
: JSR PC,CHKDNI  
:*****
```

```
CHKDNI::  
MOV R0,-(SP) ; SAVE R0  
MOV R1,-(SP) ; SAVE R1  
MOV R4,-(SP) ; SAVE R4  
  
; MAC001; LOOP FOR APPROX 2 SEC  
; MAC001 MOV #4,R1 ; INIT OUTER LOOP  
; MAC00110: CLR RO ; INNER LOOP  
; MAC00120: MOV BPCSR0,R4 ; PCSRO -> R4  
; MAC001 BIT #DNI,R4 ; DNI SET ?  
; MAC001 BNE 30: ; YES  
; MAC001 DEC RO ; INNER LOOP EXHAUSTED ?  
; MAC001 BNE 20: ; NO, CHECK FOR DNI AGAIN  
; MAC001 DEC R1 ; OUTER LOOP EXHAUSTED ?  
; MAC001 BNE 20: ; NO, KEEP CHECKING FOR DNI  
; MAC001;  
; MAC001;  
; MAC001;  
; MAC001; LOOP EXHAUSTED AND NO DNI  
; MOV #12,SECOND,METER ; PUT SOME TIME IN THE TIMER ;RSJ002  
; JSR PC,TIMON ; TURN ON THE LINE CLOCK ;MAC001  
10: MOV BPCSR0,R4 ; GET PCSRO ;MAC001  
BIT #DNI,R4 ; IS DNI SET? ;MAC001  
BNE 30: ; YES ;MAC001  
BREAK ; NO, VISIT DRS FOR A MOMENT ;MAC001  
; TRAP  
TST METER ; HAS TIMER EXPIRED? ;MAC001  
BNE 10: ; NOT YET ;MAC001  
MOV R4,EPCSR0 ; PCSRO -> EPCSR0
```

2523	024642	017737	155362	015142		MOV	@PCSR1,EPCSR1		; PCSR1 -> EPCSR1	
2524	024650	004737	024560			JSR	PC,TIMOFF		;TURN OFF THE TIMER	;MAC001
2525	024654	000261				SEC			; SET CARRY	
2526	024656	000403				BR	40\$			;MAC001
2527	024660	004737	024560		30\$:	JSR	PC,TIMOFF		;TURN OFF THE TIMER	;MAC001
2528	024664	000241				CLC			; DNI SET SO CLEAR CARRY	
2529	024666	012604			40\$:	MOV	(SP)+,R4		; RESTORE R4	
2530	024670	012601				MOV	(SP)+,R1		; RESTORE R1	
2531	024672	012600				MOV	(SP)+,R0		; RESTORE R0	
2532	024674	000207				RTS	PC		; AND RETURN	



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024676 010346  
024676 010446  
024700 010503  
024702 012304  
024704 012304  
024706 012304  
024710 012304  
024712 100002  
024714 000261  
024716 000401  
024720 000241  
024722 012604  
024724 012603  
024726 000207

```
*****
:
: SUBROUTINE - CHKOWN
:
: THIS ROUTINE CHECKS FOR THE OWNERSHIP BIT IN
: BOTH TRANSMIT AND RECEIVE DESCRIPTOR RINGS.
:
: INPUTS: R5 - ADDRESS OF DESCRIPTOR RING
:
: OUTPUTS: IF OWN BIT = 0 (PORT DRIVER)
: THEN CARRY = 0
:
: IF OWN BIT = 1 (UNA)
: THEN CARRY = 1
:
:*****
```

```
CHKOWN: :
: MOV R3, -(SP) ; SAVE R3
: MOV R4, -(SP) ; SAVE R4
: MOV R5, R3 ; R3 POINTS TO DESCRIPTOR RING
: MOV (R3)+, R4 ; INDEX TO THIRD RING ENTRY
: MOV (R3)+, R4
: MOV (R3)+, R4
: BPL 10f ; OWN = 0 ?
: SEC ; YES
: BR 20f ; NO, SET CARRY = 1
10f: : CLC ; CLEAR CARRY
20f: : MOV (SP)+, R4 ; RESTORE R4
: MOV (SP)+, R3 ; RESTORE R3
: RTS ; AND RETURN
PC
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 024732 010146  
 024734 010446  
  
 024736 012737 000176 015222  
 024744 004737 024542  
 024750 017704 155252  
 024754 032704 002000  
 024760 001015  
 024762 104422

```

*****
:
: SUBROUTINE - CHKRCE
:
: THIS ROUTINE WAITS FOR RCBI TO SET.
:
: INPUTS: NONE
:
: OUTPUTS: IF RCBI SETS
:          THEN CARRY = 0
:
:          IF RCBI FAILS TO SET
:            THEN CARRY = 1
:            PCSRO -> FPSCRO
:            PCSR1 -> EPCSR1
:
: CALLING SEQUENCE:
: JSR PC,CHKRCE
*****
    
```

```

CHKRCE::
    MOV R0,-(SP) ; SAVE R0
    MOV R1,-(SP) ; SAVE R1
    MOV R4,-(SP) ; SAVE R4

;MAC001;
;MAC001; LOOP FOR APPROX 2 SEC
;MAC001 MOV #3,R1 ; INIT OUTER LOOP
;MAC001100: CLR R0 ; INNER LOOP
;MAC001200: MOV @PCSR0,R4 ; PCSRO -> R4
;MAC001 BIT @RCBI,R4 ; RCBI SET ?
;MAC001 BNE 300 ; YES
;MAC001 DEC R0 ; INNER LOOP EXHAUSTED ?
;MAC001 BNE 200 ; NO, CHECK FOR RCBI AGAIN
;MAC001 DEC R1 ; OUTER LOOP EXHAUSTED ?
;MAC001 BNE 200 ; NO, KEEP CHECKING FOR RCBI

;MAC001;
;MAC001;
;MAC001 MOV #2*SECOND,METER ; LOOP EXHAUSTED AND NO RCBI
;MAC001 JSR PC,TIMON ; PUT SOME TIME IN THE TIMER
;MAC001 MOV @PCSR0,R4 ; TURN ON THE LINE CLOCK
;MAC001 BIT @RCBI,R4 ; GET PCSRO
;MAC001 BNE 300 ; IS RCBI SET?
;MAC001 BREAK ; YES
;MAC001 TRAP ; NO, VISIT DRS FOR A MOMENT
;C$BRK
    
```

2612	024764	005737	015222		TST	METER		; HAS TIMER EXPIRED?	; MAC001
2613	024770	001367			BNE	10\$		; NOT YET	; MAC001
2614	024772	010437	015140		MOV	R4, EPCSRO		; PCSRO -> EPCSRO	
2615	024776	017737	155226	015142	MOV	@PCSR1, EPCSR1		; PCSR1 -> EPCSR1	
2616	025004	004737	024560		JSH	PC, TIMOFF		; TURN OFF THE TIMER	; MAC001
2617	025010	000261			SEC			; SET CARRY	
2618	025012	000403			BR	40\$			; MAC001
2619	025014	004737	024560	30\$:	JSR	PC, TIMOFF		; TURN OFF THE TIMER	; MAC001
2620	025020	000241			CLC			; RCBI SET SO CLEAR CARRY	
2621	025022	012604		40\$:	MOV	(SP)+, R4		; RESTORE R4	
2622	025024	012601			MOV	(SP)+, R1		; RESTORE R1	
2623	025026	012600			MOV	(SP)+, R0		; RESTORE R0	
2624	025030	000207			RTS	PC		; AND RETURN	

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*****
SUBROUTINE - CHKRDR
THIS SUBROUTINE COMPARES A RECEIVE DESCRIPTOR RING ENTRY
WITH EXPECTED DATA.
INPUTS:      R5 = ADDRESS OF RDRB TO BE COMPARED.
INPLICIT INPUTS:
XRDRB0 = TABLE WITH EXPECTED DATA
OUTPUTS:     IF COMPARE IS SUCCESSFUL
              THEN CARRY = 0
              IF COMPARE IS UNSUCCESSFUL
              THEN CARRY = 1
              EXPECTED RDRB+0 = XRDRB0
              EXPECTED RDRB+2 = XRDRB2
              EXPECTED RDRB+4 = XRDRB4
              EXPECTED RDRB+6 = XRDRB6
              ACTUAL RDRB+0 -> ERDRB0
              ACTUAL RDRB+2 -> ERDRB2
              ACTUAL RDRB+4 -> ERDRB4
              ACTUAL RDRB+6 -> ERDRB6
CALLING SEQUENCE:
JSR      PC,CHKRDR
*****
    
```

2657 025032  
2658 025032 010046  
2659 025034 010346  
2660 025036 010446  
2661 025040 012700 000003  
2662 025044 012703 015154  
2663 025050 010504  
2664 025052 022423  
2665  
2666 025054 001010  
2667 025056 005300  
2668 025060 001374  
2669 025062 011400  
2670 025064 042700 007777  
2671 025070 020013  
2672 025072 001001  
2673 025074 000411  
2674 025076 012703 015144

```

CHKRDR::
MOV      R0,-(SP)      ; SAVE R0
MOV      R3,-(SP)      ; SAVE R3
MOV      R4,-(SP)      ; SAVE R4
MOV      #3,R0         ; DO THREE COMPARES
MOV      @XRDRB0,R3    ; R3 POINTS TO EXPECTED DATA
MOV      R5,R4         ; R4 POINTS TO ACTUAL RDRB
104:    CMP      (R4)+,(R3)+ ; COMPARE RDRB TO EXPECTED DATA
; ERROR ?
; YES
BNE      204           ; NO, DONE COMPARING ?
DEC      R0            ; NO, KEEP ON COMPARING
BNE      104           ; RDRB+6 -> R0
MOV      (R4),R0       ; MASK OUT TDR VALUE
BIC      @TDRMSK,R0    ; COMPARE ERROR ?
CMP      R0,(R3)       ; YES
BNE      204
BR       304
204:    MOV      @ERDRB0,R3 ; R3 POINTS TO ACTUAL TABLE
    
```

```
2675 025102 010504      MOV      R5,R4          ; R4 POINTS TO ACTUAL RDR3
2676 025104 012423      MOV      (R4)+,(R3)+   ; LOAD ACTUAL TABLE
2677 025106 012423      MOV      (R4)+,(R3)+
2678 025110 012423      MOV      (R4)+,(R3)+
2679 025112 012423      MOV      (R4)+,(R3)+
2680 025114 000261      SEC
2681 025116 000401      BR       40$           ; SET CARRY
2682 025120 000241      30$:    CLC           ; CLEAR CARRY
2683 025122 012604      40$:    MOV      (SP)+,R4 ; RESTORE R4
2684 025124 012603      MOV      (SP)+,R3     ; RESTORE R3
2685 025126 012600      MOV      (SP)+,R0     ; RESTORE R0
2686 025130 000207      RTS      PC           ; AND RETURN
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025132  
025132 010046  
025130 010146  
025176 010446  
  
025140 012737 000176 015222  
025146 004737 024542  
025152 017704 155050  
025156 032704 020000  
025162 001015  
025164 104422  
025166 005737 015222  
025172 001367  
025174 010437 015140  
025200 017737 155024 015142  
025206 004737 024560

```
*****  
: SUBROUTINE - CHKRXI  
: THIS ROUTINE WAITS FOR RXI TO SET.  
: INPUTS: NONE  
: OUTPUTS: IF RXI SETS  
: THEN CARRY = 0  
: IF RXI FAILS TO SET  
: THEN CARRY = 1  
: PCSRO -> EPCSRO  
: PCSR1 -> EPCSR1  
: CALLING SEQUENCE:  
: JSR PC,CHKRXI  
*****
```

```
CHKRXI::  
    MOV    R0,-(SP)      ; SAVE R0  
    MOV    R1,-(SP)      ; SAVE R1  
    MOV    R4,-(SP)      ; SAVE R4  
:MAC001;  
:MAC001; LOOP FOR APPROX 2 SEC  
:MAC001 MOV    #3,R1      ; INIT OUTER LOOP  
:MAC00110$: CLR    R0      ; INNER LOOP  
:MAC00120$: MOV    @SPCSRO,R4 ; PCSRO -> R4  
:MAC001 BIT    @RXI,R4    ; RXI SET ?  
:MAC001 BNE    30$        ; YES  
:MAC001 DEC    R0          ; INNER LOOP EXHAUSTED ?  
:MAC001 BNE    20$        ; NO, CHECK FOR RXI AGAIN  
:MAC001 DEC    R1          ; OUTER LOOP EXHAUSTED ?  
:MAC001 BNE    20$        ; NO, KEEP CHECKING FOR RXI  
:MAC001;  
:MAC001; LOOP EXHAUSTED AND NO RXI  
:MAC001 MOV    #2*SECOND,METER ; PUT SOME TIME 'N THE TIMER  
:MAC001 JSR    PC,TIMON    ; TURN ON THE LINE CLOCK  
:MAC00110$: MOV    @SPCSRO,R4 ; GET PCSRO  
:MAC001 BIT    @RXI,R4    ; IS RXI SET?  
:MAC001 BNE    30$        ; YES  
:MAC001 BREAK      ; NO, VISIT DRS FOR A MOMENT  
:MAC001 TRAP  
:MAC001 TST    METER      ; HAS TIMER EXPIRED?  
:MAC001 BNE    10$        ; NOT YET  
:MAC001 MOV    R4,EPCSRO  ; PCSRO -> EPCSRO  
:MAC001 MOV    @PCSR1,EPCSR1 ; PCSR1 -> EPCSR1  
:MAC001 JSR    PC,TIMOFF  ; TURN OFF THE TIMER  
:MAC001
```

2738	025212	000261		SEC				; SET CARRY	
2739	025214	000403		BR	40\$				;MAC001
2740	025216	004737	024560	30\$: JSR	PC,TIMOFF			;TURN OFF THE TIMER	;MAC001
2741	025222	000241		CLC				; RXI SET SO CLEAR CARRY	
2742	025224	012604		40\$: MOV	(SP)+,R4			; RESTORE R4	
2743	025226	012601		MOV	(SP)+,R1			; RESTORE R1	
2744	025230	012600		MOV	(SP)+,R0			; RESTORE R0	
2745	025232	000207		RTS	PC			; AND RETURN	

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 2768 025234  
 2769 025234 010046  
 2770 025236 010446  
 2771 025240 017704 154764  
 2772 025244 042704 140377  
 2773 025250 022704 000000  
 2774 025254 001414  
 2775  
 2776  
 2777 025256 005104  
 2778 025260 042704 140377  
 2779 025264 012700 000010  
 2780 025270 006204  
 2781 025272 005300  
 2782 025274 001375  
 2783 025276 010437 015220  
 2784 025302 000261  
 2785 025304 000401  
 2786 025306 000241  
 2787 025310 012604  
 2788 025312 012600  
 2789 025314 000207

```

*****
:
: SUBROUTINE - CHKSTR
:
: THIS TEST CHECKS THE SELF TEST RESULTS.
:
: INPUTS:      NONE
:
: OUTPUTS:     IF SELF TEST SUCCESSFUL
:              THEN CARRY = 0
:
:              IF SELF TEST FAILED
:              THEN CARRY = 1
:              SELF TEST CODE SHIFTED RIGHT -> ECODE
:
: CALLING SEQUENCE:
:              JSR      PC,CHKSTR
*****
    
```

```

CHKSTR:
    MOV      R0,-(SP)      ; SAVE R0
    MOV      R4,-(SP)      ; SAVE R4
    MOV      @PCSR1,R4     ; PCSR1 -> R4
    BIC      @STMASK,R4    ; MASK SELF TEST CODE BITS
    CMP      @GOODST,R4    ; SELF TEST SUCCESSFUL ?
    BEQ      10$           ; YES
:
: SELF TEST FAILED
: MATCH THE LED'S          ;MAC001
:                          ;MAC001
    COM      R4
    BIC      @STMASK,R4
    MOV      @B.,R0
: SHIFT CODE RIGHT
5$:
    ASR      R4
    DEC      R0
    BNE      5$
    MOV      R4,ECODE     ; SHIFTED CODE -> ECODE
    SEC
: SET CARRY
    BR      20$
10$:
    CLC
: SELF TEST PASSED CLEAR CARRY
20$:
    MOV      (SP)+,R4     ; RESTORE R4
    MOV      (SP)+,R0     ; RESTORE R0
    RTS      PC           ; AND RETURN
    
```



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025316  
025316 010046  
025320 010346  
025322 010446  
025324 012700 000004  
025330 012703 015174  
025334 010504  
025336 022423  
025340 001003  
025342 005300  
025344 001374  
025346 000411  
025350 012703 015164  
025354 010504  
025356 012423  
025360 012423  
025362 012423  
025364 012423  
025366 000261  
025370 000401  
025372 000241  
025374 012604  
025376 012603  
025400 012600  
025402 000207

```
.....
SUBROUTINE - CHKTDR
THIS SUBROUTINE COMPARES A TRANSMIT DESCRIPTOR RING ENTRY
WITH EXPECTED DATA.
INPUTS:          R5 = ADDRESS OF TDRB TO BE COMPARED
IMPLICIT INPUTS: XTDRRO = TABLE WITH EXPECTED DATA
OUTPUTS:         IF COMPARE IS SUCCESSFUL
                  THEN CARRY = 0
                  IF COMPARE IS UNSUCCESSFUL
                  THEN CARRY = 1
                  EXPECTED TDRB.0 = XTDRB0
                  EXPECTED TDRB.2 = XTDRB2
                  EXPECTED TDRB.4 = XTDRB4
                  EXPECTED TDRB.6 = XTDRB6
                  ACTUAL TDRB.0 -> ETDRB0
                  ACTUAL TDRB.2 -> ETDRB2
                  ACTUAL TDRB.4 -> ETDRB4
                  ACTUAL TDRB.6 -> ETDRB6
CALLING SEQUENCE:
                  JSR      PC,CHKTDR
.....
```

```
CHKTDR::
MOV      R0, -(SP)      ; SAVE R0
MOV      R3, -(SP)      ; SAVE R3
MOV      R4, -(SP)      ; SAVE R4
MOV      #4, R0         ; DO FOUR COMPARES
MOV      @XTDRRO, R3    ; R3 POINTS TO EXPECTED DATA
MOV      R5, R4         ; R4 POINTS TO ACTUAL TDRB
100:    CMP      (R4)+, (R3)+ ; COMPARE TDRB TO EXPECTED DATA
; ERROR ?
; YES
; NO, DONE COMPARING ?
; NO, KEEP ON COMPARING
BNE      200
DEC      R0
BNE      100
BR       300
200:    MOV      @ETDRRO, R3 ; R3 POINTS TO ACTUAL TABLE
MOV      R5, R4         ; R4 POINTS TO ACTUAL TDRB
MOV      (R4)+, (R3)+ ; LOAD ACTUAL TABLE
MOV      (R4)+, (R3)+
MOV      (R4)+, (R3)+
MOV      (R4)+, (R3)+
SEC      ; SET CARRY
BR       400
300:    CLC      ; CLEAR CARRY
400:    MOV      (SP)+, R4 ; RESTORE R4
MOV      (SP)+, R3 ; RESTORE R3
MOV      (SP)+, R0 ; RESTORE R0
RTS     PC ; AND RETURN
```

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 025406 010146  
 025410 010446  
  
 025412 012737 000176 015222  
 025420 004737 024542  
 025424 017704 154576  
 025430 032704 010000  
 025434 001015  
 025436 104422  
 025440 005737 015222  
 025444 001367  
 025446 010437 015140  
 025452 017737 154552 015142  
 025460 004737 024560

```

.....
SUBROUTINE - CHKTXI
THIS ROUTINE WAITS FOR TXI TO SET.
INPUTS:      NONE
OUTPUTS:     IF TXI SETS
              THEN CARRY = 0
              IF TXI FAILS TO SET
              THEN CARRY = 1
              PCSRO -> EPSCRO
              PCSR1 -> EPCSR1
CALLING SEQUENCE:
              JSR      PC,CHKTXI
.....
    
```

```

CHKTXI::
MOV      R0,-(SP)      ; SAVE R0
MOV      R1,-(SP)      ; SAVE R1
MOV      R4,-(SP)      ; SAVE R4
;MAC001;
;MAC001; LOOP FOR APPROX 2 SEC
;MAC001 MOV      #3,R1      ; INIT OUTER LOOP
;MAC001101: CLR      R0      ; INNER LOOP
;MAC001201: MOV      @PCSRO,R4 ; PCSRO -> R4
;MAC001 BIT      @TXI,R4    ; TXI SET ?
;MAC001 BNE      301        ; YES
;MAC001 DEC      R0         ; INNER LOOP EXHAUSTED ?
;MAC001 BNE      201        ; NO, CHECK FOR TXI AGAIN
;MAC001 DEC      R1         ; OUTER LOOP EXHAUSTED ?
;MAC001 BNE      201        ; NO, KEEP CHECKING FOR TXI
;MAC001;
;MAC001;
;MAC001; LOOP EXHAUSTED AND NO TXI
;MAC001 MOV      @2*SECOND,METER ; PUT SOME TIME IN THE TIMER
;MAC001 JSR      PC,TIMON    ; TURN ON THE LINE CLOCK
;MAC001 101: MOV      @PCSRO,R4 ; GET PCSRO
;MAC001 BIT      @TXI,R4    ; IS TXI SET?
;MAC001 BNE      301        ; YES
;MAC001 BREAK      ; NO, VISIT DRS FOR A MOMENT
;MAC001 TRAP
;MAC001 TST      METER      ; HAS TIMER EXPIRED?
;MAC001 BNE      101        ; NOT YET
;MAC001 MOV      R4,EPCSR0  ; PCSRO -> EPCSR0
;MAC001 MOV      @PCSR1,EPCSR1 ; PCSR1 -> EPCSR1
;MAC001 JSR      PC,TIMOFF  ; TURN OFF THE TIMER
;MAC001
    
```

2899 025464 000261  
 2900 025466 000403  
 2901 025470 004737 024560  
 2902 025474 000241  
 2903 025476 012604  
 2904 025500 012601  
 2905 025502 012600  
 2906 025504 000207

30\$: SEC  
 BR 40\$  
 JSR PC,TIMOFF  
 CLC  
 40\$: MOV (SP),R4  
 MOV (SP),R1  
 MOV (SP),R0  
 RTS PC

; SET CARRY  
 ;MAC001  
 ;TURN OFF THE TIMER ;MAC001  
 ; TXI SET SO CLEAR CARRY  
 ; RESTORE R4  
 ; RESTORE R1  
 ; RESTORE R0  
 ; AND RETURN

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```

.....
:
: SUBROUTINE - CHKSER
:
: THIS ROUTINE CHECKS FOR THE SERI BIT IN PCSRO.
:
: INPUTS: NONE
:
: OUTPUTS: IF SERI BIT SET THEN CARRY = 0
:
: IF SERI BIT NOT SET THEN CARRY = 1
: PCSRO -> EPCSRO
: PCSR1 -> EPCSR1
:
: CALLING SEQUENCE:
: JSR PC,CHKSER
:
.....

```

```

025506 010446
025510 017704 154512
025514 032704 100000
025520 001007
025522 010437 015140
025526 017737 154476 015142
025534 000261
025536 000401
025540 000241
025542 012604
025544 000207

```

```

CHKSER: MOV R4, -(SP) ;SAVE R4
MOV @PCSRO, R4 ;GET PCSRO CONTENTS
BIT @SERI, R4 ;IS SERI BIT SET?
BNE 106 ;YES
MOV R4, EPCSRO ;NO, SAVE PCSRO CONTENTS
MOV @PCSR1, EPCSR1 ;GET PCSR1 CONTENTS TOO
SEC ;INDICATE NO SERI BIT
BR 206 ;LEAVE
106: CLC ;INDICATE SERI BIT SET
206: MOV (SP)+, R4 ;RESTORE R4
RTS PC

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```

*****
SUBROUTINE - CLRDNI

THIS SUBROUTINE PERFORMS A WRITE ONE TO CLEAR OPERATION ON
THE DNI BIT AND VERIFIES ITS SUCCESS.

INPUTS: NONE

OUTPUTS:      IF SUCCESSFUL ( DNI = 0 )
                THEN CARRY = 0

                IF UNSUCCESSFUL ( DNI = 1 )
                THEN CARRY = 1
                PCSRO -> EPCSRO
                PCSR1 -> EPCSR1

CALLING SEQUENCE:
JSR      PC,CLRDNI
*****

```

2963 025546  
2964 025546 010446  
2965 025550 112777 000010 154460  
2966 025556 017704 154444  
2967 025562 032704 004000  
2968 025566 001407  
2969 025570 010437 015140  
2970 025574 017737 154430 015142  
2971 025602 000261  
2972 025604 000401  
2973 025606 000241  
2974 025610 012604  
2975 025612 000207

```

CLRDNI::
MOV      R4,-(SP)           ; SAVE R4
MOVB    @DNI,BPCSROUB     ; WRITE ONE TO CLEAR DNI BIT ;RSJ001
MOV     @PCSRO,R4         ; PCSRO -> R4
BIT     @DNI,R4           ; DNI = 0 ?
BEQ     10$              ; YES
MOV     R4,EPCSRO        ; NO, PCSRO -> EPCSRO
MOV     @PCSR1,EPCSR1    ; PCSR1 -> EPCSR1
SEC                     ; SET CARRY
BR      20$              ;
10$:    CLC               ; CLEAR CARRY
20$:    MOV     (SP)+,R4   ; RESTORE R4
RTS     PC               ; AND RETURN

```

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2999

```

.....
SUBROUTINE - CLRRCE

THIS SUBROUTINE PERFORMS A WRITE ONE TO CLEAR OPERATION ON
THE RCBI BIT AND VERIFIES ITS SUCCESS.

INPUTS: NONE

OUTPUTS:      IF SUCCESSFUL ( RCBI = 0 )
                THEN CARRY = 0

                IF UNSUCCESSFUL ( RCBI = 1 )
                THEN CARRY = 1
                PCSRO -> EPCSRO
                PCSR1 -> EPCSR1

CALLING SEQUENCE:
                JSR      PC,CLRRCE
.....

```

```

3000 025614
3001 025614 010446
3002 025616 112777 000004 154412
3003 025624 017704 154376
3004 025630 032704 002000
3005 025634 001407
3006 025636 010437 015140
3007 025642 017737 154362 015142
3008 025650 000261
3009 025652 000401
3010 025654 000241
3011 025656 012604
3012 025660 000207

```

```

CLRRCF::
MOV      R4, -(SP)           ; SAVE R4
MOVB    @RCBIB, @PCSROUB   ; WRITE ONE TO CLEAR RCBI BIT ;RSJ001
MOV     @PCSRO, R4          ; PCSRO -> R4
BIT     @RCBI, R4           ; RCBI = 0 ?
BEQ     10$                 ; YES
MOV     R4, EPCSRO         ; NO, PCSRO -> EPCSRO
MOV     @PCSR1, @EPCSR1    ; PCSR1 -> EPCSR1
SEC                                ; SET CARRY
BR      20$
10$:    CLC                 ; CLEAR CARRY
20$:    MOV     (SP)+, R4    ; RESTORE R4
        RTS      PC        ; AND RETURN

```

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3036  
3037 025662  
3038 025662  
3039 025664  
3040 025672  
3041 025676  
3042 02570?  
3043 025704  
3044 025710  
3045 025716  
3046 025720  
3047 025722  
3048 025724  
3049 025726

```

*****
SUBROUTINE - CLRRXI
THIS SUBROUTINE PERFORMS A WRITE ONE TO CLEAR OPERATION ON
THE RXI BIT AND VERIFIES ITS SUCCESS.
INPUTS: NONE
OUTPUTS:      IF SUCCESSFUL ( RXI = 0 )
                THEN CARRY = 0
                IF UNSUCCESSFUL ( RXI = 1 )
                THEN CARRY = 1
                PCSRO -> EPCSRO
                PCSR1 -> EPCSR1
CALLING SEQUENCE:
                JSR      PC,CLRRXI
*****

```

```

CLRRXI::
MOV      R4, -(SP)           ; SAVE R4
MOVB    @RXIB, @PCSROUB     ; WRITE ONE TO CLEAR RXI BIT ;RSJ001
MOV     @PCSRO, R4          ; PCSRO -> R4
BIT     @RXI, R4            ; RXI = 0 ?
BEQ     10$                 ; YES
MOV     R4, EPCSRO          ; NO, PCSRO -> EPCSRO
MOV     @PCSR1, EPCSR1      ; PCSR1 -> EPCSR1
SEC                                ; SET CARRY
BR      20$
10$:    CLC                 ; CLEAR CARRY
20$:    MOV     (SP)+, R4    ; RESTORE R4
RTS     PC                  ; AND RETURN

```

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```

*****
:
: SUBROUTINE - CLRTXI
:
: THIS SUBROUTINE PERFORMS A WRITE ONE TO CLEAR OPERATION ON
: THE TXI BIT AND VERIFIES ITS SUCCESS.
:
: INPUTS: NONE
:
: OUTPUTS: IF SUCCESSFUL ( TXI = 0 )
:          THEN CARRY = 0
:
:          IF UNSUCCESSFUL ( TXI = 1 )
:          THEN CARRY = 1
:          PCSRO -> EPCSRO
:          PCSR1 -> EPCSR1
:
: CALLING SEQUENCE:
:          JSR PC,CLRTXI
*****

```

```

3074 025730
3075 025730 010446
3076 025732 112777 000020 154276
3077 025740 017704 154262
3078 025744 0327G4 010000
3079 025750 001407
3080 025752 010437 015140
3081 025756 017737 154246 015142
3082 025764 000261
3083 025766 000401
3084 025770 000241
3085 025772 012604
3086 025774 000207

```

```

CLRTXI::
MOV R4,-(SP) ; SAVE R4
MOVB @TXIB,BPCSR0UB ; WRITE ONE TO CLEAR TXI BIT ;RSJ001
MOV BPCSR0,R4 ; PCSRO -> R4
BIT @TXI,R4 ; TXI = 0 ?
BEQ 10$ ; YES
MOV R4,EPCSRO ; NO, PCSRO -> EPCSRO
MOV BPCSR1,EPCSR1 ; PCSR1 -> EPCSR1
SEC ; SET CARRY
BR 20$
10$: CLC ; CLEAR CARRY
20$: MOV (SP)+,R4 ; RESTORE R4
RTS PC ; AND RETURN

```



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```

*****
:
: SUBROUTINE - CLRSER
:
: THIS SUBROUTINE PERFORMS A WRITE ONE TO CLEAR OPERATION ON
: THE SERI BIT AND VERIFIES ITS SUCCESS.
:
: INPUTS: NONE
:
: OUTPUTS: IF SUCCESSFUL ( SERI = 0 )
: THEN CARRY = 0
:
: IF UNSUCCESSFUL ( SERI = 1 )
: THEN CARRY = 1
: PCSRO -> EPCSRO
: PCSR1 -> EPCSR1
:
: CALLING SEQUENCE:
: JSR PC,CLRSER
*****

```

3110	025776			
3111	025776	010446		
3112	026000	112777	000200	154230
3113	026006	017704	154214	
3114	026012	032704	100000	
3115	026016	001407		
3116	026020	010437	015140	
3117	026024	017737	154200	015142
3118	026032	000261		
3119	026034	000401		
3120	026036	000241		
3121	026040	012604		
3122	026042	000207		

```

CLRSER::
MOV R4,-(SP) ; SAVE R4
MOVB @SERIB,@PCSROUB ; WRITE ONE TO CLEAR SERI BIT ;RSJ001
MOV @PCSRO,R4 ; PCSRO -> R4
BIT @SERI,R4 ; SERI = 0 ?
BEQ 10$ ; YES
MOV R4,EPCSRO ; NO, PCSRO -> EPCSRO
MOV @PCSR1,EPCSR1 ; PCSR1 -> EPCSR1
SEC ; SET CARRY
BR 20$
10$: CLC ; CLEAR CARRY
20$: MOV (SP)+,R4 ; RESTORE R4
RTS PC ; AND RETURN

```

3124  
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 3147 026044  
 3148 026044 010046  
 3149 026046 010346  
 3150 026050 010446  
 3151 026052 010500  
 3152 026054 012703 003120  
 3153 026060 012704 007120  
 3154 026064 022324  
 3155 026066 001003  
 3156 026070 005300  
 3157 026072 001374  
 3158 026074 000406  
 3159 026076 014337 015206  
 3160 026102 014437 015204  
 3161 026106 000261  
 3162 026110 000401  
 3163 026112 000241  
 3164 026114 012604  
 3165 026116 012603  
 3166 026120 012600  
 3167 026122 000207

```

*****
:
: SUBROUTINE - CMPDAT
:
: THIS SUBROUTINE COMPARES THE RECEIVE BUFFER (RBUF) DATA FIELD
: WITH THE TRANSMIT BUFFER (TBUF) DATA FIELD.
:
: INPUTS: R5 = NUMBER OF WORDS TO COMPARE
:
: OUTPUTS: IF SUCCESSFUL DATA COMPARE
: THEN CARRY = 0
:
: IF UNSUCCESSFUL DATA COMPARE
: THEN CARRY = 1
: EXPECTED DATA -> XDAT
: ACTUAL DATA -> EDAT
:
: CALLING SEQUENCE:
: JSR PC,CMPDAT
*****
    
```

```

CMPDAT::
:
: MOV R0,-(SP) ; SAVE R0
: MOV R3,-(SP) ; SAVE R3
: MOV R4,-(SP) ; SAVE R4
: MOV R5,R0 ; R0 = NUMBER OF WORDS TO COMPARE
: MOV @TBUF+12.,R3 ; R3 POINTS TO EXPECTED DATA
: MOV @RBUF+12.,R4 ; R4 POINTS TO ACTUAL DATA
10: CMP (R3)+,(R4)+ ; DATA COMPARE ?
: BNE 20 ; NO
: DEC R0 ; YES, DONE ?
: BNE 10 ; NO
: BR 30 ; YES
20: MOV -(R3),XDAT ; SAVE EXPECTED DATA
: MOV -(R4),EDAT ; SAVE ACTUAL ERROR DATA
: SEC ; SET CARRY
: BR 40
30: CLC ; CLEAR CARRY
40: MOV (SP)+,R4 ; RESTORE R4
: MOV (SP)+,R3 ; RESTORE R3
: MOV (SP)+,R0 ; RESTORE R0
: RTS PC ; AND RETURN
    
```

3169  
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3212  
3213

026124  
026124 010346  
026126 010446  
026130 012703 015214  
026134 010504  
026136 022324  
026140 001004  
026142 022324  
026144 001002  
026146 000241  
026150 000406  
026152 012703 015210  
026156 010504  
026160 012423  
026162 012423  
026164 000261  
026166 012604  
026170 012603  
026172 000207

```

:*****
:
:   SUBROUTINE - CMPCRC
:
:   THIS SUBROUTINE COMPARES A CRC VALUE WITH
:   AN EXPECTED CRC VALUE.
:
:   INPUTS:           R5 = ADDRESS OF ACTUAL CRC VALUE TO BE COMPARED.
:
:   INPLICIT INPUTS:  XCRC = EXPECTED CRC VALUE
:
:   OUTPUTS:          IF SUCCESSFUL CRC COMPARE
:                     THEN CARRY = 0
:
:                     IF UNSUCCESSFUL CRC COMPARE
:                     THEN CARRY = 1
:                     EXPECTED CRC = XCRC
:                     ACTUAL CRC  -> ECRC
:
:   CALLING SEQUENCE:
:                     JSR   PC,CMPCRC
:*****
    
```

```

CMPCRC::
    MOV   R3,-(SP)           ; SAVE R3
    MOV   R4,-(SP)           ; SAVE R4
    MOV   @XCRC,R3           ; R3 POINTS TO EXPECTED CRC
    MOV   R5,R4             ; R4 POINTS TO ACTUAL CRC
    CMP   (R3)+,(R4)+       ; FIRST CRC WORD COMPARE ?
    BNE   10$               ; NO
    CMP   (R3)+,(R4)+       ; SECOND CRC WORD COMPARE ?
    BNE   10$               ; NO
    CLC                       ; YES, CLEAR CARRY
    BR    20$
10$:   MOV   @ECRC,R3         ; POINT TO ERROR TABLE
    MOV   R5,R4             ; POINT TO ACTUAL DATA
    MOV   (R4)+,(R3)+       ; LOAD ECRC TABLE
    SEC                       ; AND SET CARRY
20$:   MOV   (SP)+,R4        ; RESTORE R4
    MOV   (SP)+,R3         ; RESTORE R3
    RTS   PC                ; AND RETURN
    
```

3215  
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 3238 026174  
 3239 026174 010046  
 3240 026176 010346  
 3241 026200 010446  
 3242 026202 010500  
 3243 026204 012703 003104  
 3244 026210 012704 007104  
 3245 026214 022324  
 3246 026216 001003  
 3247 026220 005300  
 3248 026222 001374  
 3249 026224 000406  
 3250 026226 014337 015206  
 3251 026232 014437 015204  
 3252 026236 000261  
 3253 026240 000401  
 3254 026242 000241  
 3255 026244 012604  
 3256 026246 012603  
 3257 026250 012600  
 3258 026252 000207

```

    .....
    :
    : SUBROUTINE CMPMEM
    :
    : THIS SUBROUTINE COMPARES THE READ MEMORY BUFFER (RBUF)
    : WITH THE WRITE MEMORY BUFFER (TBUF).
    :
    : INPUTS: R5 = NUMBER OF WORDS TO COMPARE
    :
    : OUTPUTS: IF SUCCESSFUL DATA COMPARE
    : THEN CARRY = 0
    :
    : IF UNSUCCESSFUL DATA COMPARE
    : THEN CARRY = 1
    : EXPECTED DATA -> XDAT
    : ACTUAL DATA -> EDAT
    :
    : CALLING SEQUENCE:
    : JSR PC,CMPMEM
    :
    .....
    
```

```

CMPMEM:
    MOV R0,-(SP) ; SAVE R0
    MOV R3,-(SP) ; SAVE R3
    MOV R4,-(SP) ; SAVE R4
    MOV R5,R0 ; R0 = NUMBER OF WORDS TO COMPARE
    MOV @TBUF,R3 ; R3 POINTS TO EXPECTED DATA
    MOV @RBUF,R4 ; R4 POINTS TO ACTUAL DATA
10:  CMP (R3)+,(R4)+ ; DATA COMPARE ?
    BNE 20 ; NO
    DEC R0 ; YES, DONE ?
    BNE 10 ; NO
    BR 30 ; YES
20:  MOV -(R3),XDAT ; SAVE EXPECTED DATA
    MOV -(R4),EDAT ; SAVE ACTUAL ERROR DATA
    SEC ; SET CARRY
    BR 40
30:  CLC ; CLEAR CARRY
40:  MOV (SP)+,R4 ; RESTORE R4
    MOV (SP)+,R3 ; RESTORE R3
    MOV (SP)+,R0 ; RESTORE R0
    RTS PC ; AND RETURN
    
```

3260  
 3261  
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 3280  
 3281  
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 3283 026254  
 3284 026254 010046  
 3285 026256 010346  
 3286 026260 010446  
 3287 026262 010500  
 3288 026264 012703 000000  
 3289 026270 012704 007176  
 3290 026274 020324  
 3291 026276 001003  
 3292 026300 005300  
 3293 026302 001374  
 3294 026304 000406  
 3295 026306 010337 015206  
 3296 026312 014437 015204  
 3297 026316 000261  
 3298 026320 000401  
 3299 026322 000241  
 3300 026324 012604  
 3301 026326 012603  
 3302 026330 012600  
 3303 026332 000207

```

*****
:
: SUBROUTINE - CMPRNT
:
: THIS SUBROUTINE COMPARES THE RECEIVE BUFFER (RBUF) DATA FIELD
: TO VERIFY ZERO PADDING HAS OCCURED.
:
: INPUTS: R5 = NUMBER OF WORDS TO COMPARE
:
: OUTPUTS: IF SUCCESSFUL DATA COMPARE
: THEN CARRY = 0
:
: IF UNSUCCESSFUL DATA COMPARE
: THEN CARRY = 1
: EXPECTED DATA -> XDAT
: ACTUAL DATA -> EDAT
:
: CALLING SEQUENCE:
: JSR PC,CMPRNT
*****
    
```

```

CMPRNT::
: MOV R0,-(SP) ; SAVE R0
: MOV R3,-(SP) ; SAVE R3
: MOV R4,-(SP) ; SAVE R4
: MOV R5,R0 ; R0 = NUMBER OF WORDS TO COMPARE
: MOV @ZERO,R3 ; R3 IS EXPECTED DATA (ZERO'S)
: MOV @RBUF+58.,R4 ; R4 POINTS TO ACTUAL DATA
10$: CMP R3,(R4)+ ; DATA = ZERO'S ?
: BNE 20$ ; NO
: DEC R0 ; YES, DONE ?
: BNE 10$ ; NO
: BR 30$ ; YES
20$: MOV R3,XDAT ; SAVE EXPECTED DATA
: MOV -(R4),EDAT ; SAVE ACTUAL ERROR DATA
: SEC ; SET CARRY
: BR 40$
30$: CLC ; CLEAR CARRY
40$: MOV (SP)+,R4 ; RESTORE R4
: MOV (SP)+,R3 ; RESTORE R3
: MOV (SP)+,R0 ; RESTORE R0
: RTS PC ; AND RETURN
    
```

3305  
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 3324 026334  
 3325 026334 010046  
 3326 026336 010146  
 3327 026340 010246  
 3328 026342 010346  
 3329 026344 010546  
 3330  
 3331 026346 012702 007104  
 3332 026352 012703 004000  
 3333 026356 013704 014214  
 3334 026362 012705 120001  
 3335  
 3336 026366 112200  
 3337 026370 042700 177400  
 3338 C\_6374 074004  
 3339 026376 012701 000010  
 3340 026402 000241  
 3341 026404 006004  
 3342 026406 103001  
 3343 026410 074504  
 3344 026412 077105  
 3345 026414 077314  
 3346  
 3347 026416 012605  
 3348 026420 012603  
 3349 026422 012602  
 3350 026424 012601  
 3351 026426 012600  
 3352 026430 000207

```

.....
:
: SUBROUTINE - CRCBLK
:
: THIS SUBROUTINE CALCULATES A 16 BIT CRC
: ON A BLOCK OF DATA.
:
: IMPLICIT
: INPUTS:          RBUF = ADDRESS OF DATA BLOCK
:                  BYTE COUNT = 2048, WORDS*2
:
: OUTPUTS:         R4 = CRC
:
: CALLING SEQUENCE:
:                 JSR   PC,CRCBLK
:
:.....
    
```

```

CRCBLK::
:
: MOV     R0,-(SP)          ; SAVE R0
: MOV     R1,-(SP)          ; SAVE R1
: MOV     R2,-(SP)          ; SAVE R2
: MOV     R3,-(SP)          ; SAVE R3
: MOV     R5,-(SP)          ; SAVE R5
:
: MOV     @RBUF,R2          ; R2 = ADDRESS OF DATA BLOCK
: MOV     @2048,R3          ; R3 = 2048, WORDS * 2
: MOV     CRCH,R4           ; INITIAL CRC
: MOV     @POLYH,R5         ; CRC POLYNOMIAL
:
: 16:    MOVB  (R2)+,R0       ; GET NEXT BYTE
:        BIC  @+C377,R0     ; CLEAR HIGH BYTE
:        XOR  R0,R4         ; MERGE BYTE WITH OLD CRC
:        MOV  @8,R1         ; LOOP COUNT
: 24:    CLC                    ; CLEAR CARRY
:        ROR  R4            ; SHIFT RIGHT THE CRC
:        BCC  34            ; SKIP IF BIT ZERO NOT SET
:        XOR  R5,R4         ; EXCLUSIVE OR IN THE POLY
: 34:    SOB  R1,24         ; AND LOOP ON ALL 8 BITS
:        SOB  R3,16
:
: MOV     (SP)+,R5          ; RESTORE R5
: MOV     (SP)+,R3          ; RESTORE R3
: MOV     (SP)+,R2          ; RESTORE R2
: MOV     (SP)+,R1          ; RESTORE R1
: MOV     (SP)+,R0          ; RESTORE R0
: RTS     PC                ; AND RETURN
    
```

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3374 026432  
3375 026432 010046  
3376 026434 010346  
3377 026436 010546  
3378  
3379 026440 012700 000006  
3380 026444 012703 073237  
3381 026450 012705 073154  
3382  
3383 026454 112537 073172  
3384 026460 004737 026514  
3385 026464 113723 073173  
3386 026470 004737 026552  
3387 026474 113723 073173  
3388 026500 105723  
3389 026502 077014  
3390  
3391 026504 012605  
3392 026506 012603  
3393 026510 012600  
3394 026512 000207

```
.....  
: SUBROUTINE - HEXDPA  
:  
: THIS SUBROUTINE LOADS DEFADR WITH THE ASCII HEX VALUE  
: FOR THE DEFAULT PHYSICAL ADDRESS DPA.  
:  
: INPUTS: NONE  
:  
: IMPLICIT  
: INPUTS: DPA = DEFAULT PHYSICAL ADDRESS  
:  
: OUTPUTS: DEFADR = ASCII HEX VALUE FOR DPA  
:  
: CALLING SEQUENCE:  
: JSR PC,HEXDPA  
:.....
```

```
HEXDPA: :  
: MOV R0,-(SP) ; SAVE R0  
: MOV R3,-(SP) ; SAVE R3  
: MOV R5,-(SP) ; SAVE R5  
:  
: MOV #6,R0 ; DO LOOP = 6 BYTES  
: MOV #DEFADR,R3 ; POINT TO ASCII MESSAGE  
: MOV #DPA,R5 ; POINT TO DEFAULT PHYSICAL ADDR  
:  
:100: : MOVB (R5),HEXDAT ; LOAD BYTE FOR CONVERSION  
: JSR PC,HEXH ; CONVERT HIGH NIBBLE  
: MOVB HEXVAL,(R3) ; LOAD INTO ASCII MESSAGE  
: JSR PC,HEXL ; CONVERT LOW NIBBLE  
: MOVB HEXVAL,(R3) ; LOAD INTO ASCII MESSAGE  
: TSTB (R3) ; SKIP OVER HYPHEN IN MESSAGE  
: SOB R0,100 ; LOOP TILL ALL 6 BYTES ARE DONE  
:  
: MOV (SP),R5 ; RESTORE R5  
: MOV (SP),R3 ; RESTORE R3  
: MOV (SP),R0 ; RESTORE R0  
: RTS PC ; AND RETURN
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3396  
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3415  
3416 026514  
3417 026514 010146  
3418  
3419 026516 013701 073172  
3420 026522 042701 177417  
3421  
3422 026526 006201  
3423 026530 006201  
3424 026532 006201  
3425 026534 006201  
3426  
3427 026536 062701 073263  
3428 026542 111137 073173  
3429  
3430 026546 012601  
3431 026550 000207

```

.....
:
: SUBROUTINE - HEXH
:
: THIS SUBROUTINE LOADS HEXVAL WITH THE ASCII HEX VALUE
: FOR THE HIGH NIBBLE IN HEXDAT
:
: INPUTS: NONE
:
: IMPLICIT
: INPUTS: HEXDAT = BYTE TO BE CONVERTED
:
: OUTPUTS: HEXVAL = ASCII HEX VALUE FOR THE HIGH NIBBLE
:
: CALLING SEQUENCE:
: JSR PC,HEXH
:
:.....

```

```

HEXH::
: MOV R1,-(SP) ; SAVE R1
:
: MOV HEXDAT,R1 ; LOAD DATA FOR CONVERSION
: BIC @177417,R1 ; MASK HIGH NIBBLE
:
: ASR R1 ; SHIFT RIGHT
: ASR R1
: ASR R1
: ASR R1
:
: ADD @HEXTBL,R1 ; GET INDEX INTO HEXTBL
: MOVB (R1),HEXVAL ; AND LOAD HEXVAL
:
: MOV (SP)+,R1 ; RESTORE R1
: RTS PC ; AND RETURN

```



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3463

026552  
026552 010146  
  
026554 013701 073172  
026560 042701 177760  
  
026564 062701 073263  
026570 111137 073173  
  
026574 012601  
026576 000207

```
.....  
: SUBROUTINE - HEXL  
:  
: THIS SUBROUTINE LOADS HEXVAL WITH THE ASCII HEX VALUE  
: FOR THE LOW NIBBLE IN HEXDAT  
:  
: INPUTS: NONE  
:  
: IMPLICIT  
: INPUTS: HEXDAT = BYTE TO BE CONVERTED  
:  
: OUTPUTS: HEXVAL = ASCII HEX VALUE FOR THE LOW NIBBLE  
:  
: CALLING SEQUENCE:  
: JSR PC,HEXL  
:.....
```

```
HEXL::  
: MOV R1,-(SP) ; SAVE R1  
:  
: MOV HEXDAT,R1 ; LOAD DATA FOR CONVERSION  
: BIC #177760,R1 ; MASK LOW NIBBLE  
:  
: ADD #HEXTBL,R1 ; GET INDEX INTO HEXTBL  
: MOVB (R1),HEXVAL ; AND LOAD HEXVAL  
:  
: MOV (SP)+,R1 ; RESTORE R1  
: RTS PC ; AND RETURN
```

3465  
 3466  
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 3480  
 3481

```

    .....
    :
    : SUBROUTINE - LDBUF
    :
    : THIS SUBROUTINE LOADS TBUF WITH AN ADDRESS DATA PATTERN
    : STARTING WITH THE ADDRESS POINTED TO BY R5
    :
    : INPUTS: R5 = ADDRESS OF SPECIFIED DATA ADDRESS
    :
    : OUTPUTS: TBUF = ADDRESS DATA PATTERN
    :
    : CALLING SEQUENCE:
    : JSR PC,LDBUF
    :
    .....
    
```

3482 026600  
 3483 026600 010146  
 3484 026602 010346  
 3485 026604 010446  
 3486 026606 012701 002000  
 3487 026612 011504  
 3488 026614 012703 003104  
 3489 026620 010423  
 3490 026622 062704 000002  
 3491 026626 005301  
 3492 026630 001373  
 3493 026632 012604  
 3494 026634 012603  
 3495 026636 012601  
 3496 026640 000207

```

LDBUF::
    MOV R1,-(SP) ; SAVE R1
    MOV R3,-(SP) ; SAVE R3
    MOV R4,-(SP) ; SAVE R4
    MOV #1024,R1 ; DO 1024 WORDS
    MOV (R5),R4 ; R4 = STARTING DATA ADDRESS
    MOV #TBUF,R3 ; R3 POINTS TO TBUF
101: MOV R4,(R3)+ ; LOAD TBUF
    ADD #2,R4 ; ADD 2 TO DATA
    DEC R1 ; DONE 1K BLOCK ?
    BNE 101 ; NO
    MOV (SP)+,R4 ; RESTORE R4
    MOV (SP)+,R3 ; RESTORE R3
    MOV (SP)+,R1 ; RESTORE R1
    RTS PC ; AND RETURN
    
```

3498  
 3499  
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 3514  
 3515 026642  
 3516 026642 010146  
 3517 026644 010246  
 3518 026646 010346  
 3519 026650 010446  
 3520 026652 012701 002000  
 3521 026656 011504  
 3522 026660 012703 003104  
 3523 026664 010402  
 3524 026666 005102  
 3525 026670 010223  
 3526 026672 062704 000002  
 3527 026676 005301  
 3528 026700 001371  
 3529 026702 012604  
 3530 026704 012603  
 3531 026706 012602  
 3532 026710 012601  
 3533 026712 000207

```

    .....
    :
    : SUBROUTINE - LDBUFC
    :
    : THIS SUBROUTINE LOADS TBUF WITH THE COMPLIMENT OF AN
    : ADDRESS DATA PATTERN STARTING WITH THE ADDRESS SPECIFIED BY R5
    :
    : INPUTS: R5 = ADDRESS OF SPECIFIED DATA ADDRESS
    :
    : OUTPUTS: TBUF = COMPLIMENTED ADDRESS DATA PATTERN
    :
    : CALLING SEQUENCE:
    : JSR PC,LDBUFC
    :
    .....
    
```

```

LDBUFC::
    MOV R1,-(SP) ; SAVE R1
    MOV R2,-(SP) ; SAVE R2
    MOV R3,-(SP) ; SAVE R3
    MOV R4,-(SP) ; SAVE R4
    MOV #1024,R1 ; DO 1024 WORDS
    MOV (R5),R4 ; R4 = STARTING DATA ADDRESS
    MOV #TBUF,R3 ; R3 POINTS TO TBUF
101: MOV R4,R2
    COM R2 ; COMPLIMENT DATA
    MOV R2,(R3) ; LOAD TBUF
    ADD #2,R4 ; ADD 2 TO DATA
    DEC R1 ; DONE 1K BLOCK ?
    BNE 101 ; NO
    MOV (SP),R4 ; RESTORE R4
    MOV (SP),R3 ; RESTORE R3
    MOV (SP),R2 ; RESTORE R2
    MOV (SP),R1 ; RESTORE R1
    RTS PC ; AND RETURN
    
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3535  
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3562

026714  
026714 010346  
026716 010446  
026720 010504  
026722 012703 002256  
026726 012423  
026730 012423  
026732 012423  
026734 012604  
026736 012603  
026740 000207

```
.....  
: SUBROUTINE - LDDEST  
: THIS SUBROUTINE LOADS A SPECIFIED DESTINATION ADDRESS  
: INTO DEST::  
: INPUTS: R5 = ADDRESS OF SPECIFIED DESTINATION ADDRESS  
: OUTPUTS: DEST = SPECIFIED DESTINATION ADDRESS  
: CALLING SEQUENCE:  
: JSR PC,LDDEST  
: .....
```

```
LDDEST::  
MOV R3,-(SP) ; SAVE R3  
MOV R4,-(SP) ; SAVE R4  
MOV R5,R4 ; R4 POINTS TO DESTINATION ADDRESS  
MOV @DEST,R3 ; R3 POINTS TO DEST::  
MOV (R4),R3 ; LOAD DEST::  
MOV (R4),R3  
MOV (R4),R3  
MOV (SP),R4 ; RESTORE R4  
MOV (SP),R3 ; RESTORE R3  
RTS PC ; AND RETURN
```

3564  
 3565  
 3566  
 3567  
 3568  
 3569  
 3570  
 3571  
 3572  
 3573  
 3574  
 3575  
 3576  
 3577  
 3578  
 3579  
 3580  
 3581 026742  
 3582 026742 010346  
 3583 026744 010446  
 3584 026746 012703 002264  
 3585 026752 010504  
 3586 026754 012423  
 3587 026756 012423  
 3588 026760 012423  
 3589 026762 012423  
 3590 026764 012604  
 3591 026766 012603  
 3592 026770 000207

```

:.....
:
:   SUBROUTINE - LDPCBB
:
:   THIS SUBROUTINE MOVES A SELECTED DEFAULT
:   PORT CONTROL FUNCTION INTO PCBB.
:
:   INPUTS:          R5 = ADDRESS OF DEFAULT PORT CONTROL FUNCTION
:
:   OUTPUTS:         PCBB = SELECTED DEFAULT PORT FUNCTION
:
:   CALLING SEQUENCE:
:                   JSR    PC,LDPCBB
:.....
    
```

```

LDPCBB:
MOV    R3,-(SP)      ; SAVE R3
MOV    R4,-(SP)      ; SAVE R4
MOV    @PCBB,R3      ; ADDRESS OF PCBB -> R3
MOV    R5,R4         ; R4 = ADDRESS OF DEFAULT FUNCTION
MOV    (R4),.(R3).   ; LOAD PCBB+0
MOV    (R4),.(R3).   ; LOAD PCBB+2
MOV    (R4),.(R3).   ; LOAD PCBB+4
MOV    (R4),.(R3).   ; LOAD PCBB+6
MOV    (SP),.R4      ; RESTORE R4
MOV    (SP),.R3      ; RESTORE R3
RTS    PC             ; AND RETURN
    
```

3594  
3595  
3596  
3597  
3598  
3599  
3600  
3601  
3602  
3603  
3604  
3605  
3606  
3607  
3608  
3609  
3610  
3611 026772  
3612 026772 012777 002264 153232  
3613 027000 012777 000000 153226  
3614 027006 000207

```

*****
:
: SUBROUTINE - LDPCSR
:
: THIS ROUTINE MOVES THE ADDRESS OF PCBB
: INTO PCSR2 AND PCSR3.
:
: INPUTS: NONE
:
: OUTPUTS: PCSR2 AND PCSR3 = ADDRESS OF PCBB
:
: CALLING SEQUENCE:
: JSR PC,LDPCSR
*****

```

```

LDPCSR::
MOV @PCBB,@PCSR2 ; ADDRESS OF PCBB -> PCSR2
MOV @ZERO,@PCSR3 ; CLEAR PCSR3
RTS PC ; AND RETURN

```

3616  
 3617  
 3618  
 3619  
 3620  
 3621  
 3622  
 3623  
 3624  
 3625  
 3626  
 3627  
 3628  
 3629  
 3630  
 3631  
 3632  
 3633 027010  
 3634 027010 010046  
 3635 027012 010346  
 3636 027014 010446  
 3637 027016 012700 000020  
 3638 027022 012703 002644  
 3639 027026 010504  
 3640 027030 012423  
 3641 027032 005300  
 3642 027034 001375  
 3643 027036 012604  
 3644 027040 012603  
 3645 027042 012600  
 3646 027044 000207

```

*****
:
: SUBROUTINE - LDRDRB
:
: THIS SUBROUTINE MOVES A SELECTED DEFAULT
: RECEIVE DESCRIPTOR RING INTO RDRB.
:
: INPUTS: R5 = ADDRESS OF DATA TO BE MOVED INTO RDRB
:
: OUTPUTS: RDRB = SELECTED DEFAULT RECEIVE DESCRIPTOR RING
:
: CALLING SEQUENCE:
: JSR PC,LDRDRB
*****
    
```

```

LDRDRB::
    MOV R0,-(SP) ; SAVE R0
    MOV R3,-(SP) ; SAVE R3
    MOV R4,-(SP) ; SAVE R4
    MOV #16,R0 ; LOAD 16 WORDS
    MOV #RDRB,R3 ; ADDRESS OF RDRB -> R3
    MOV R5,R4 ; R4 = ADDRESS OF DEFAULT RDRB
10$: MOV (R4),R3 ; LOAD WORD INTO RDRB
    DEC R0 ; DONE ?
    BNE 10$ ; NO, KEEP ON LOADING RDRB
    MOV (SP),R4 ; YES, RESTORE R4
    MOV (SP),R3 ; RESTORE R3
    MOV (SP),R0 ; RESTORE R0
    RTS PC ; AND RETURN
    
```

3648  
3649  
3650  
3651  
3652  
3653  
3654  
3655  
3656  
3657  
3658  
3659  
3660  
3661  
3662  
3663  
3664  
3665  
3666  
3667  
3668  
3669  
3670  
3671  
3672  
3673  
3674  
3675  
3676  
3677  
3678

027046  
027046 010046  
027050 010346  
027052 010446  
027054 012700 000020  
027060 012703 002604  
027064 010504  
027066 012423  
027070 005300  
027072 001375  
027074 012604  
027076 012603  
027100 012600  
027102 000207

```
*****
:
: SUBROUTINE - LDTDRB
:
: THIS SUBROUTINE MOVES A SELECTED DEFAULT
: TRANSMIT DESCRIPTOR RING INTO TDRB.
:
: INPUTS: R5 = ADDRESS OF DATA TO BE MOVED INTO TDRB
:
: OUTPUTS: TDRB = SELECTED DEFAULT TRANSMIT DESCRIPTOR RING
:
: CALLING SEQUENCE:
: JSR PC,LDTDRB
*****
```

```
LDTDRB::
MOV R0,-(SP) ; SAVE R0
MOV R3,-(SP) ; SAVE R3
MOV R4,-(SP) ; SAVE R4
MOV #16,R0 ; LOAD 16 WORDS
MOV #TDRB,R3 ; ADDRESS OF TDRB -> R3
MOV R5,R4 ; R3 = ADDRESS OF DEFAULT TDRB
10$: MOV (R4)+,(R3)+ ; LOAD WORD INTO TDRB
DEC R0 ; DONE ?
BNE 10$ ; NO, KEEP ON LOADING TDRB
MOV (SP)+,R4 ; YES, RESTORE R4
MOV (SP)+,R3 ; RESTORE R3
MOV (SP)+,R0 ; RESTORE R0
RTS PC ; AND RETURN
```



3680  
3681  
3682  
3683  
3684  
3685  
3686  
3687  
3688  
3689  
3690  
3691  
3692  
3693  
3694  
3695  
3696

```

*****
SUBROUTINE - LDTDRX
THIS SUBROUTINE MOVES A SELECTED DEFAULT
TRANSMIT DESCRIPTOR RING INTO TDRX.
INPUTS:      R5 = ADDRESS OF DATA TO BE MOVED INTO TDRX
OUTPUTS:     TDRX = SELECTED DEFAULT TRANSMIT DESCRIPTOR RING
CALLING SEQUENCE:
              JSR   PC,LDTDRX
*****

```

```

3697 027104
3698 027104 010046
3699 027106 010346
3700 027110 010446
3701 027112 012700 000100
3702 027116 012703 002704
3703 027122 010504
3704 027124 012423
3705 027126 005300
3706 027130 001375
3707 027132 012604
3708 027134 012603
3709 027136 012600
3710 027140 000207

```

```

LDTDRX::
MOV     R0,-(SP)      ; SAVE R0
MOV     R3,-(SP)      ; SAVE R3
MOV     R4,-(SP)      ; SAVE R4
MOV     @64.,R0       ; LOAD 64 WORDS
MOV     @TDRX,R3      ; ADDRESS OF TDRX -> R3
MOV     R5,R4         ; R4 = ADDRESS OF DEFAULT TDRB
10$:   MOV     (R4)+,(R3)+ ; LOAD WORD INTO TDRB
        DEC     R0      ; DONE ?
        BNE    10$     ; NO, KEEP ON LOADING TDRB
        MOV     (SP)+,R4 ; YES, RESTORE R4
        MOV     (SP)+,R3 ; RESTORE R3
        MOV     (SP)+,R0 ; RESTORE R0
        RTS     PC      ; AND RETURN

```

3712  
 3713  
 3714  
 3715  
 3716  
 3717  
 3718  
 3719  
 3720  
 3721  
 3722  
 3723  
 3724  
 3725  
 3726  
 3727  
 3728  
 3729  
 3730 027142  
 3731 027142 010146  
 3732 027144 010346  
 3733 027146 010446  
 3734 027150 010001  
 3735 027152 012703 002274  
 3736 027156 010504  
 3737 027160 012423  
 3738 027162 005301  
 3739 027164 001375  
 3740 027166 012604  
 3741 027170 012603  
 3742 027172 012601  
 3743 027174 000207

```

:*****
:
:   SUBROUTINE - LDUDBB
:
:   THIS ROUTINE MOVES A SELECTED DEFAULT
:   DATA STRUCTURE INTO UDBB.
:
:   INPUTS:           R5 = ADDRESS OF DATA TO BE MOVED INTO UDBB
:                   RO = NUMBER OF WORDS TO BE MOVED
:
:   OUTPUTS:          UDBB = SELECTED DEFAULT DATA STRUCTURE
:
:   CALLING SEQUENCE:
:                   JSR   PC,LDUDBB
:*****
    
```

```

LDUDBB::
    MOV     R1,-(SP)           ; SAVE R1
    MOV     R3,-(SP)           ; SAVE R3
    MOV     R4,-(SP)           ; SAVE R4
    MOV     R0,R1              ; R1= NUMBER OF WORDS TO BE MOVED
    MOV     @UDBB,R3           ; ADDRESS OF UDBB -> R3
    MOV     R5,R4              ; R4= ADDRESS OF DATA TO BE MOVED
10$:     MOV     (R4)+,(R3)+    ; LOAD WORD INTO UDBB
    DEC     R1                 ; DONE ?
    BNE    10$                ; NO, KEEP ON LOADING
    MOV     (SP)+,R4           ; YES, RESTORE R4
    MOV     (SP)+,R3           ; RESTORE R3
    MOV     (SP)+,R1           ; RESTORE R1
    RTS     PC                 ; AND RETURN
    
```

3745  
3746  
3747  
3748  
3749  
3750  
3751  
3752  
3753  
3754  
3755  
3756  
3757  
3758  
3759  
3760  
3761 027176  
3762 027176 010346  
3763 027200 010446  
3764 027202 012704 015214  
3765 027206 010503  
3766 027210 012324  
3767 027212 012324  
3768 027214 012604  
3769 027216 012603  
3770 027220 000207

```

:.....
:
:   SUBROUTINE - LDXCRC
:
:   THIS SUBROUTINE LOADS XCRC WITH EXPECTED CRC DATA.
:
:   INPUTS:           R5 = ADDRESS OF EXPECTED DATA
:
:   OUTPUTS:          XCRC TABLE = EXPECTED CRC DATA
:
:   CALLING SEQUENCE:
:                     JSR   PC,LDXCRC
:.....

```

```

LDXCRC::
MOV   R3,-(SP)           ; SAVE R3
MOV   R4,-(SP)           ; SAVE R4
MOV   @XCRC,R4           ; R4 POINTS TO XCRC
MOV   R5,R3              ; R3 POINTS TO DATA
MOV   (R3),R4            ; LOAD XCRC TABLE
MOV   (R3),R4
MOV   (SP),R4            ; RESTORE R4
MOV   (SP),R3            ; RESTORE R3
RTS   PC                 ; AND RETURN

```

3772  
3773  
3774  
3775  
3776  
3777  
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3785  
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3788  
3789  
3790  
3791  
3792  
3793  
3794  
3795  
3796  
3797  
3798  
3799

027222  
027222 010346  
027224 010446  
027226 012704 015154  
027232 010503  
027234 012324  
027236 012524  
027240 012324  
027242 012324  
027244 012604  
027246 012603  
027250 000207

```
.....  
: SUBROUTINE - LDXRDR  
: THIS SUBROUTINE LOADS XRDRBO WITH EXPECTED RDRB DATA,  
: INPUTS: R5 = ADDRESS OF EXPECTED DATA  
: OUTPUTS: XRDRBO TABLE = EXPECTED RDRB DATA  
: CALLING SEQUENCE:  
: JSR PC,LDXRDR  
: .....
```

```
LDXRDR::  
MOV R3,-(SP) ; SAVE R3  
MOV R4,-(SP) ; SAVE R4  
MOV @XRDRBO,R4 ; R4 POINTS TO XRDRBO  
MOV R5,R3 ; R3 POINTS TO DATA  
MOV (R3),R4 ; LOAD XRDRBO TABLE  
MOV (R3),R4  
MOV (R3),R4  
MOV (R3),R4  
MOV (SP),R4 ; RESTORE R4  
MOV (SP),R3 ; RESTORE R3  
RTS PC ; AND RETURN
```

3801  
3802  
3803  
3804  
3805  
3806  
3807  
3808  
3809  
3810  
3811  
3812  
3813  
3814  
3815  
3816  
3817  
3818  
3819  
3820  
3821  
3822  
3823  
3824  
3825  
3826  
3827  
3828

027252  
027252 010346  
027254 010446  
027256 012704 015174  
027262 010503  
027264 012324  
027266 012324  
027270 012324  
027272 012324  
027274 012604  
027276 012603  
027300 000207

```
.....  
: SUBROUTINE - LDXTDR  
: THIS SUBROUTINE LOADS XTDRBO WITH EXPECTED TDRB DATA.  
: INPUTS: R5 = ADDRESS OF EXPECTED DATA  
: OUTPUTS: XTDRBO TABLE = EXPECTED TDRB DATA  
: CALLING SEQUENCE:  
: JSR PC,LDXTDR  
:.....
```

```
LDXTDR::  
MOV R3,-(SP) ; SAVE R3  
MOV R4,-(SP) ; SAVE R4  
MOV @XTDRBO,R4 ; R4 POINTS TO XTDRBO  
MOV R5,R3 ; R3 POINTS TO DATA  
MOV (R3), (R4) ; LOAD XTDRBO TABLE  
MOV (R3), (R4)  
MOV (R3), (R4)  
MOV (R3), (R4)  
MOV (SP), R4 ; RESTORE R4  
MOV (SP), R3 ; RESTORE R3  
RTS PC ; AND RETURN
```

3830  
3831  
3832  
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3836  
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3840  
3841  
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3843  
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3849  
3850  
3851  
3852  
3853  
3854  
3855  
3856  
3857  
3858  
3859  
3860  
3861  
3862  
3863

027302  
027302 010446  
027304 017704 152716  
027310 032704 020000  
027314 001407  
027316 010437 015140  
027322 017737 152702 015142  
027330 000261  
027332 000401  
027334 000241  
027336 012604  
027340 000207

```
.....  
: SUBROUTINE - NORXI  
: THIS SUBROUTINE VERIFIES THE RXI BIT IS NOT SET.  
: INPUTS: NONE  
: OUTPUTS: IF RXI NOT SET ( RXI = 0 )  
: THEN CARRY = 0  
: IF RXI IS SET ( RXI = 1 )  
: THEN CARRY = 1  
: PCSRO -> EPCSRO  
: PCSR1 -> EPCSR1  
: CALLING SEQUENCE:  
: JSR PC,NORXI  
: .....
```

```
NORXI::  
MOV R4,-(SP) ; SAVE R4  
MOV @PCSRO,R4 ; PCSRO -> R4  
BIT @RXI,R4 ; RXI = 0 ?  
BEQ 10$ ; YES  
MOV R4,EPCSRO ; NO, PCSRO -> EPCSRO  
MOV @PCSR1,EPCSR1 ; PCSR1 -> EPCSR1  
SEC ; SET CARRY  
BR 20$  
10$: CLC ; CLEAR CARRY  
20$: MOV (SP)+,R4 ; RESTORE R4  
RTS PC ; AND RETURN
```

3865  
 3866  
 3867  
 3868  
 3869  
 3870  
 3871  
 3872  
 3873  
 3874  
 3875  
 3876  
 3877  
 3878  
 3879  
 3880  
 3881  
 3882  
 3883  
 3884  
 3885  
 3886  
 3887  
 3888 027342  
 3889 027342 010046  
 3890 027344 010346  
 3891 027346 010546  
 3892  
 3893 027350 012703 007104  
 3894 027354 012700 002000  
 3895 027360 005023  
 3896 027362 005300  
 3897 027364 001375  
 3898  
 3899  
 3900 027366 012705 002256  
 3901 027372 012703 003104  
 3902 027376 012523  
 3903 027400 012523  
 3904 027402 012523  
 3905  
 3906 027404 012705 002256  
 3907 027410 012523  
 3908 027412 012523  
 3909 027414 012523  
 3910  
 3911 027416 005023  
 3912  
 3913 027420 012700 001771  
 3914 027424 012705 015232  
 3915 027430 011523  
 3916 027432 005300  
 3917 027434 001375  
 3918 027436 012605  
 3919 027440 012603  
 3920 027442 012600  
 3921 027444 000207

```

.....
:
: SUBROUTINE - SETBUF
:
: THIS ROUTINE SETS UP THE TRANSMIT AND RECEIVE BUFFERS
: FOR A 128 BYTE DATA LOOPBACK.
: A. CLEAR RECEIVE BUFFER RBUF
: B. LOAD TRANSMIT BUFFER TBUF
:
: INPUTS: NONE
:
: IMPLICIT INPUTS: DEST:: = DESTINATION ADDRESS
:
: OUTPUTS: RBUF IS CLEARED
: TBUF IS SET UP FOR TRANSMIT
:
: CALLING SEQUENCE:
: JSR PC,SETBUF
:
.....
    
```

```

SETBUF::
    MOV R0,-(SP) ; SAVE R0
    MOV R3,-(SP) ; SAVE R3
    MOV R5,-(SP) ; SAVE R5
;CLEAR RBUF (1024 WORDS)
    MOV @RBUF,R3 ; POINT TO RBUF
    MOV #1024,,R0 ; COUNT 1024 WORDS
100: CLR (R3)+ ; CLEAR BUFFER
    DEC R0 ; DONE ?
    BNE 100 ; NO
;SET UP TRANSMIT BUFFER TBUF
;LOAD DESTINATION ADDRESS
    MOV @DEST,R5 ; POINT TO DESTINATION ADDRESS
    MOV @TBUF,R3 ; POINT TO TBUF
    MOV (R5)+,(R3)+ ; LOAD DESTINATION ADDRESS
    MOV (R5)+,(R3)+
    MOV (R5)+,(R3)+
;LOAD SOURCE ADDRESS
    MOV @DEST,R5 ; LOAD FOR LATER COMPARISON
    MOV (R5)+,(R3)+
    MOV (R5)+,(R3)+
    MOV (R5)+,(R3)+
;CLEAR TYPE FIELD
    CLR (R3)+ ; CLEAR TYPE FIELD
;LOAD DATA FIELD (1017 WORDS)
    MOV #1017,,R0 ; COUNT 1017 WORDS
    MOV @PATRN1,R5 ; POINT TO DATA PATTERN
200: MOV (R5),(R3)+ ; LOAD DATA PATTERN
    DEC R0 ; DONE ?
    BNE 200 ; NO
    MOV (SP)+,R5 ; YES, RESTORE R5
    MOV (SP)+,R3 ; RESTORE R3
    MOV (SP)+,R0 ; RESTORE R0
    RTS PC ; AND RESTORE
    
```

3923  
3924  
3925  
3926  
3927  
3928  
3929  
3930  
3931  
3932  
3933  
3934  
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3936  
3937  
3938  
3939  
3940  
3941  
3942  
3943  
3944  
3945 027446  
3946 027446  
3947 027450  
3948 027456  
3949 027462  
3950 027466  
3951 027472  
3952 027472  
3953 027474  
3954 027476  
3955 027500  
3956 027504  
3957 027506  
3958 027512  
3959 027516  
3960 027522  
3961  
3962 027524  
3963 027526  
3964  
3965 027530  
3966 027532  
3967 027534  
3968

```

.....
:
: SUBROUTINE - TINIT
:
: THIS SUBROUTINE IS CALLED AT THE BEGINNING OF A TEST
: TO DETERMINE IF A DEVICE RESET IS REQUIRED BEFORE
: THE REST OF THE TEST IS EXECUTED.
:
: INPUTS: NONE
:
: OUTPUTS: IF A DEVICE RESET IS NOT REQUIRED
: THEN CARRY = 0
:
: IF A DEVICE RESET IS REQUIRED
: THEN CARRY = 1
:
: CALLING SEQUENCE:
: JSR PC,TINIT
:
.....

```

```

TINIT::
MOV R4,-(SP) ; SAVE R4
MOVB @TIMASK,@PCSR0UB ; ATTEMPT TO CLEAR PCSRO UPPER BYTE
CLRB @PCSR0 ; AND LOWER BYTE
CLRB @PCSR0 ; AND AGAIN TO CLEAR COMMAND FIELD
MOV @50,-(SP) ; INITIATE APPROX 50US WAIT LOOP

50: DEC (SP) ; COUNT DOWN
BGT 50 ; DO UNTIL 0
TST (SP)+ ; POP THE STACK TO CLEAN UP
MOV @PCSR0,R4 ; PCSRO = 0 ?
BNE 100 ; NO, A RESET IS REQUIRED
MOV @PCSR1,R4 ; PCSR1 -> R4
BIC @SMASK,R4 ; MASK DEUNA STATE
CMP @READY,R4 ; STATE = READY ?
BNE 100 ; NO, A RESET IS REQUIRED

;
; NO RESET REQUIRED CLEAR CARRY
CLC
BR 200

;
; A RESET IS REQUIRED SET CARRY
100: SEC
200: MOV (SP)+,R4 ; RESTORE R4
RTS PC ; AND RETURN

```



3981  
3982  
4011  
4012  
4013  
4014  
4015  
4016  
4017  
4018  
4019  
4020  
4032  
4033  
4034  
4046  
4047  
4048  
4049

027536  
027536  
027536 000167  
027540 000000  
027542  
027542  
027542 104425

.TITLE MISCELLANEOUS SECTIONS  
.SBTTL REPORT CODING SECTION

!---  
: THE REPORT CODING SECTION CONTAINS THE  
: "PRINTS" CALLS THAT GENERATE STATISTICAL REPORTS.  
!---

BGNRPT

L\$RPT::

EXIT RPT

.WORD J\$JMP  
.WORD L10013-2-

.EVEN

ENDRPT

L10013: TRAP C\$RPT

.SBTTL PROTECTION TABLE

:  
: \*  
: THIS TABLE IS USED BY THE RUNTIME SERVICES  
: TO PROTECT THE LOAD MEDIA.  
:--

4051  
4052  
4053  
4054  
4055  
4056  
4057  
4058 027544  
027544

BGNPROT

L\$PROT::

4059  
4060 027544 177777  
4061 027546 177777  
4062 027550 177777  
4063  
4064 027552  
4065

-1  
-1  
-1

:OFFSET INTO P-TABLE FOR CSR ADDRESS  
:OFFSET INTO P-TABLE FOR MASSBUS ADDRESS  
:OFFSET INTO P-TABLE FOR DRIVE NUMBER

ENDPROT

```

4080          .SBTTL  INITIALIZE SECTION
4081
4082          ;**
4083          ; THE INITIALIZE SECTION CONTAINS THE CODING THAT IS PERFORMED
4084          ; AT THE BEGINNING OF EACH PASS.
4085          ;**
4086
4087 027552          BGNINIT
027552
4088
4112
4113
4114 027552          READEF  #EF.CONTINUE          ;WAS A CONTINUE COMMAND ENTERED?
027552 012700 000036          MOV          #EF.CONTINUE,R0
027556 104447          TRAP          C#REFG
4115 027560          BCOMPLETE          30#          ;YES, LEAVE INIT CODE
027560 103554          BCS          30#
4116 027562          READEF  #EF.PWR          ;WAS THERE A POWER FAILURE?
027562 012700 000034          MOV          #EF.PWR,R0
027566 104447          TRAP          C#REFG
4117          ;MAC001 BCOMPLETE          30#          ;YES, LEAVE INIT CODE
4118 027570          BNCOMPLETE          2#          ;NO
027570 103007          BCC          ;MAC001
4119          ;MAC001
4120          ; DELAY A PERIOD OF TIME (APPROX 25 SECS ) FOR SELF TEST TO FINISH
4121          ;MAC001
4122 027572 012701 000150          MOV          #150,R1          ;INIT OUTER LOOP
4123 027576 005000          CLR          R0          ;INIT INNER LOOP
4124 027600 005300          3#: DEC          R0
4125 027602 001376          BNE          3#
4126 027604 005301          DEC          R1
4127 027606 001374          BNE          3#
4128 027610          2#: READEF  #EF.NEW          ;NEW PASS ?
027610 012700 000035          MOV          #EF.NEW,R0
027614 104447          TRAP          C#REFG
4129 027616          BNCOMPLETE          10#          ;NO
027616 103062          BCC          10#
4130 027620          READEF  #EF.START          ;START ?
027620 012700 000040          MOV          #EF.START,R0
027624 104447          TRAP          C#REFG
4131 027626          BNCOMPLETE          5#          ;NO
027626 103051          BCC          5#
4132 027630 000005          RESET          ;CLEAR THE WORLD
4133 027632 012737 000001 015230          MOV          #1,FRSTIM          ;SET FIRST TIME FLAG
4134 027640          CLOCK  L,R1          ;GET LINE CLOCK INFO
027640 012700 000114          MOV          #L,R0
027644 104462          TRAP          C#CLK
027646 010001          MOV          R0,R1
4135 027650          BCOMPLETE          1#
027650 103411          BCS          1#
4136 027652          PRINTF  #NOCLK          ;ERROR MESSAGE
027652 012746 030114          MOV          #NOCLK,-(SP)
027656 012746 000001          MOV          #1,-(SP)
027662 010600          MOV          SP,R0
027664 104417          TRAP          C#PNTF
027666 062706 000004          ADD          #4,SP
4137 027672 000504          BR          20#          ;CANNOT CONTINUE
  
```



```

4182          .SBTTL AUTODROP SECTION
4183
4184          ;**
4185          ; THIS CODE IS EXECUTED IMMEDIATELY AFTER THE INITIALIZE CODE IF
4186          ; THE "ADR" FLAG WAS SET.  THE UNIT(S) UNDER TEST ARE CHECKED TO
4187          ; SEE IF THEY WILL RESPOND.  THOSE THAT DON'T ARE IMMEDIATELY
4188          ; DROPPED FROM TESTING.
4189          ;--
4190
4191 030156          BGNAUTO
4192 030156
4193
4194
4195
4196
4197
4198
4199
4200 030156          ENDAUTO
4201 030156
4202 030156 104461
4203
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4500

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4220  
4221  
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4236

030160  
030160  
030160  
030160  
030162  
104432  
000002  
030164  
030164  
030164  
104412

.SBTTL CLEANUP CODING SECTION

\*\*\*  
: THE CLEANUP CODING SECTION CONTAINS THE CODING THAT IS PERFORMED  
: AFTER THE HARDWARE TESTS HAVE BEEN PERFORMED.  
:--

BGNCLN

L\$CLEAN;;

EXIT CLN

TRAP C\$EXIT  
.WORD L10017-

.EVEN

ENDCLN

L10017: TRAP C\$CLEAN

```

4238 .SBTTL DROP UNIT SECTION
4239
4240 ;++
4241 ; THE DROP-UNIT SECTION CONTAINS THE CODING THAT CAUSES A DEVICE
4242 ; TO NO LONGER BE TESTED.
4243 ;--
4244
4245 030166 BGNDU L$DU:
      030166
4246
4255
4256 030166 EXIT DU .WORD J$JMP
      030166 000167 .WORD L10020-2-
      030170 000000
4257
4269
4270 .EVEN
4271
4272 030172 ENDDU L10020: TRAP C$DU
      030172
      030172 104453

```

4274  
4275  
4276  
4277  
4278  
4279  
4280  
4281  
4282 030174  
030174  
4283  
4292  
4293 030174  
030174 000167  
030176 000000  
4294  
4306  
4307  
4308  
4309 030200  
030200  
030200 104452

.SBTTL ADD UNIT SECTION

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

BGNAU

L\$AU::

EXIT AU

.WORD J\$JMP  
.WORD L10021-2-

.EVEN

ENDAU

L10021: TRAP C\$AU



4311  
4312  
4313  
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.TITLE GLOBAL INTERRUPT SERVICE ROUTINES  
.SBTTL ISRNXM - NON-EXISTANT MEMORY INTERRUPT SERVICE ROUTINE  
:.....  
: FUNCTIONAL DESCRIPTION:  
: THIS ROUTINE IS ASSIGNED TO VECTOR 4 BY THE ACCESS TESTS,  
: WHEN AN ACCESS IS ATTEMPTED ON NON-EXISTENT MEMORY  
: THE NEXMEM FLAG IS SET.  
:.....

030202  
030202 012737 000001 015224  
030210  
030210 000002

BGNSRV ISRNXM  
MOV #1,NEXMEM ;SET NXM FLAG  
ENDSRV  
ISRNXM:;  
L10022: RTI

4330  
4331  
4332  
4333  
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4336  
4337  
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4342  
4343  
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4349  
4350  
4351  
4352

030212  
030212  
030212 010446  
030214 017704 152006  
030220 032704 004000  
030224 001403  
030226 012737 000001 015226  
030234 012604  
030236  
030236  
030236 000002

.SBTTL ISRDN1 - DNI INTERRUPT SERVICE ROUTINE  
: .....  
: FUNCTIONAL DESCRIPTION:  
: THIS ROUTINE IS ASSIGNED TO THE DEUNA'S INTERRUPT VECTOR BY  
: TEST 9.  
: WHEN AN INTERRUPT OCCURS THE DNIFLG FLAG IS SET IF DNI IS SET.  
: .....  
: BGNSRV ISRDN1

ISRDNI::  
MOV R4, -(SP) ; SAVE R4  
MOV @PCSR0, R4 ; PCSRO -> R4  
BIT @DNI, R4 ; DNI SET?  
BEQ 100 ; NO, EXIT  
MOV @1, DNIFLG ; YES, SET DNIFLG FLAG  
MOV (SP)+, R4 ; RESTORE R4  
100:  
ENDSRV  
L10023:  
RTI

4354  
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4360  
4361  
4362  
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4372  
4373  
4374  
4375  
4376

030240  
030240 005737 015222  
030244 001402  
030246 005337 015222  
030252  
030252  
030252 000002

\*\*\*\*\*  
: FUNCTIONAL DESCRIPTION:  
: THIS ROUTINE COUNTS A PRESET NUMBER OF CLOCK TICKS THEN IT  
: TURNS THE CLOCK OFF  
: INPUTS: METER  
: OUTPUTS: METER  
: ROUTINES CALLED: NONE  
: \*\*\*\*\*

BGNSRV CLKSRV  
TST METER ;HAS THE METER EXPIRED?  
BEQ 20# ;YES, STOP COUNTING  
DEC METER ;COUNT TICKS  
20#:  
ENDSRV  
CLKSRV:;  
L10024: RTI

4379  
4390  
4457  
4458  
4459  
4460  
4461  
4462  
4463  
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4467  
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4480  
4481

```
.TITLE HARDWARE TESTS
.SBTTL TEST 1: PCSRO READ ACCESS TEST
:*****
:
:   THIS TEST WILL VERIFY THAT A DEVICE IS PRESENT AT THE PCSRO
:   UNIBUS ADDRESS SPECIFIED.
:
:   TEST SEQUENCE:
:       1. READ PCSRO
:*****
```

```
030254
030254
030254 012746 000340
030260 012746 030202
030264 012746 000004
030270 012746 000003
030274 104437
030276 062706 000010
030302 005037 015224
030306 005002
030310 017701 151712
030314 005737 015224
030320 001410
030322 104455
030324 000001
030326 017756
030330 017036
030332 013700 002244
030336 104451
030340 104444
030342 012700 000004
030346 104436
030350 104401
```

```
BGNTST
SETVEC #4,#ISRNXM,#PRI07 ; SET UP TIMEOUT TRAP VECTOR
                                T1::
                                MOV #PRI07,-(SP)
                                MOV #ISRNXM,-(SP)
                                MOV #4,-(SP)
                                MOV #3,-(SP)
                                TRAP C#SVEC
                                ADD #10,SP
CLR NEXMEM ; CLEAR NDM TIMEOUT FLAG
CLR R2 ; R2 = WHICH PCSR IS BEING TESTED
MOV #PCSRO,R1 ; DOES PCSR EXIST?
TST NEXMEM
BEQ 106 ; YES
ERRDF 001,ERR001,MSG001 ; NO, PRINT DEVICE FATAL ERROR MESSAGE
                                TRAP C#ERDF
                                .WORD 1
                                .WORD ERR001
                                .WORD MSG001
DODU UNIT ; DROP UNIT
                                MOV UNIT,R0
                                TRAP C#DODU
DOCLN ; AND ABORT PASS
                                TRAP C#DCLN
106: CLRVEC #4
                                MOV #4,R0
                                TRAP C#CVEC
ENDTST
                                L10025:
                                TRAP C#ETST
```

4483  
4484  
4485  
4486  
4487  
4488  
4489  
4490  
4491  
4492  
4493  
4494  
4495 030352  
030352  
4496 030352  
030352 012746 000340  
030356 012746 030202  
030362 012746 000004  
030366 012746 000003  
030372 104437  
030374 062706 000010  
4497 030400 005037 015224  
4498 030404 012702 000001  
4499 030410 017701 151614  
4500 030414 005737 015224  
4501 030420 001410  
4502 030422  
030422 104455  
030424 000002  
030426 017756  
030430 017036  
4503 030432  
030432 013700 002244  
030436 104451  
4504 030440  
030440 104444  
4505 030442  
030442 012700 000004  
030446 104436  
4506 030450  
030450  
030450 104401

.SBTTL TEST 2: PCSR1 READ ACCESS TEST

```

:.....
:
:   THIS TEST WILL VERIFY THAT A DEVICE IS PRESENT AT THE PCSR1
:   UNIBUS ADDRESS SPECIFIED.
:
:   TEST SEQUENCE:
:       1. READ PCSR1
:.....

```

BGNTST

SETVEC #4, #ISRNXM, #PRI07

```

; SET UP TIMEOUT TRAP VECTOR
;
; MOV #PRI07, -(SP)
; MOV #ISRNXM, -(SP)
; MOV #4, -(SP)
; MOV #3, -(SP)
; TRAP C#SVEC
; ADD #10, SP

```

```

CLR NEXMEM
MOV #1, R2
MOV #PCSR1, R1
TST NEXMEM
BEQ 100
ERRDF 002, ERR001, MSG001

```

```

; CLEAR NXM TIMEOUT FLAG
; R2 = WHICH PCSR IS BEING TESTED
; DOES PCSR EXIST?
; YES
; NO, PRINT DEVICE FATAL ERROR MESSAGE

```

```

TRAP C#ERRDF
.WORD 2
.WORD ERR001
.WORD MSG001

```

DODU UNIT

; DROP UNIT

```

MOV UNIT, R0
TRAP C#DODU

```

DOCLN

; AND ABORT PASS

TRAP C#DOCLN

100: CLRVEC #4

```

MOV #4, R0
TRAP C#CVEC

```

ENDTST

```

L10026: TRAP C#ETST

```

4508  
4509  
4510  
4511  
4512  
4513  
4514  
4515  
4516  
4517  
4518  
4519  
4520 030452  
030452  
4521 030452  
030452 012746 000340  
030456 012746 030202  
030462 012746 000004  
030466 012746 000003  
030472 104437  
030474 062706 000010  
4522 030500 005037 015224  
4523 030504 012702 000002  
4524 030510 017701 151516  
4525 030514 005737 015224  
4526 030520 001410  
4527 030522  
030522 104455  
030524 000003  
030526 017756  
030530 017036  
4528 030532  
030532 013700 002244  
030536 104451  
4529 030540  
030540 104444  
4530 030542  
030542 012700 000004  
030546 104436  
4531 030550  
030550  
030550 104401

.SBTTL TEST 3: PCSR2 READ ACCESS TEST

```

:*****
:
:   THIS TEST WILL VERIFY THAT A DEVICE IS PRESENT AT THE PCSR2
:   UNIBUS ADDRESS SPECIFIED.
:
:   TEST SEQUENCE:
:       1. READ PCSR2
:*****

```

BGNTST

SETVEC #4, #ISRNXM, #PRI07

```

; SET UP TIMEOUT TRAP VECTOR
;
; T3:
;
; MOV #PRI07, -(SP)
; MOV #ISRNXM, -(SP)
; MOV #4, -(SP)
; MOV #3, -(SP)
; TRAP C#SVEC
; ADD #10, SP

```

```

CLR NEXMEM
MOV #2, R2
MOV #PCSR2, R1
TST NEXMEM
BEQ 104
ERRDF 003, ERR001, MSG001

```

```

; CLEAR NXM TIMEOUT FLAG
; R2 = WHICH PCSR IS BEING TESTED
; DOES PCSR EXIST?
; YES
; NO, PRINT DEVICE FATAL ERROR MESSAGE
;
; TRAP C#ERDF
; .WORD 3
; .WORD ERR001
; .WORD MSG001

```

DODU UNIT

; DROP UNIT

```

; MOV UNIT, R0
; TRAP C#DODU

```

DOCLN

; AND ABORT PASS

TRAP C#DCLN

104: CLRVEC #4

```

; MOV #4, R0
; TRAP C#CVEC

```

ENDTST

```

L10027: TRAP C#ETST

```

4533  
4534  
4535  
4536  
4537  
4538  
4539  
4540  
4541  
4542  
4543

.SBTTL TEST 4: PCRS3 READ ACCESS TEST

\*\*\*\*\*  
: THIS TEST WILL VERIFY THAT A DEVICE IS PRESENT AT THE PCRS3  
: UNIBUS ADDRESS SPECIFIED.  
: TEST SEQUENCE:  
: 1. READ PCRS3  
:\*\*\*\*\*

4544  
4545  
4546  
4547  
4548  
4549  
4550  
4551  
4552  
4553  
4554  
4555

030552  
030552  
030552 012746 000340  
030556 012746 030202  
030562 012746 000004  
030566 012746 000003  
030572 104437  
030574 062706 000010  
030600 005037 015224  
030604 012702 000003  
030610 017701 151420  
030614 005737 015224  
030620 001410  
030622 104455  
030624 000004  
030626 017756  
030630 017036  
030632 013700 002244  
030636 104451  
030640 104444  
030642 012700 000004  
030646 104436  
030650 104401

BGNTST

SETVEC #4, #ISRNXM, #PRI07

T4::  
; SET UP TIMEOUT TRAP VECTOR  
MOV #PRI07, -(SP)  
MOV #ISRNXM, -(SP)  
MOV #4, -(SP)  
MOV #3, -(SP)  
TRAP C#SVEC  
ADD #10, SP

CLR NEXMEM  
MOV #3, R2  
MOV #PCSR3, R1  
TST NEXMEM  
BEQ 10:  
ERRDF 004, ERR001, MSG001

; CLEAR NXM TIMEOUT FLAG  
; R2 = WHICH PCRS IS BEING TESTED  
; DOES PCRS EXIST?  
; YES  
; NO, PRINT DEVICE FATAL ERROR MESSAGE

TRAP C#ERDF  
.WORD 4  
.WORD ERR001  
.WORD MSG001

DODU UNIT

; DROP UNIT

MOV UNIT, R0  
TRAP C#DODU

DOCLN

; AND ABORT PASS

TRAP C#DCLN

10: CLRVEC #4

MOV #4, R0  
TRAP C#CVEC

ENDTST

L10030: TRAP C#ETST

4557  
 4558  
 4559  
 4560  
 4561  
 4562  
 4563  
 4564  
 4565  
 4566  
 4567  
 4568  
 4569  
 4570  
 4571  
 4572  
 4573  
 4574  
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 4585  
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 4590  
 4591  
 4592  
 4593  
 4594  
 4595  
 4596

030652  
 030652  
 030652 012701 015232  
 030656 012705 000004  
 030662 012103  
 030664  
 030664 104404  
 030666 010377 151340  
 030672 017704 151334  
 030676 042703 000001  
 030702 020304  
 030704 001404  
 030706  
 030706 104456  
 030710 000005  
 030712 020006  
 030714 017062  
 030716  
 030716 104405  
 030720 005305  
 030722 001357  
 030724  
 030724 104401

```
.SBTTL TEST 5: PCSR2 STATIC BIT TEST
:*****
:
: THIS TEST WILL CHECK PCSR2 FOR ALL SA0 AND SA1 ERRORS.
: THE HOST WILL WRITE PATTERNS TO PCSR2 AND READ THEM
: BACK TO VERIFY.
:
: NOTE: PCSR2 BIT00 SHOULD ALWAYS BE A ZERO.
: THIS BIT WILL BE MASKED BEFORE DOING THE COMPARE.
:
: TEST SEQUENCE:
: 1. WRITE PATTERN TO PCSR2
: 2. COMPARE MASKED PATTERN WITH PCSR2 CONTENTS
: 3. REPEAT STEPS 1 AND 2 FOR ALL PATTERNS
:*****
```

```

BGNTST
T5::
104: MOV @PATRN1,R1 ; GET ADDRESS OF DATA PATTERNS
MOV #4,R5 ; COUNT 4 PATTERNS (PASSES)
MOV (R1)+,R3 ; DATA PATTERN -> R3

BGNSEG
TRAP C#BSEG

MOV R3,BPCSR2 ; DATA PATTERN -> PCSR2
MOV BPCSR2,R4 ; READ PCSR2
BIC #1,R3 ; MASK BIT00
CMP R3,R4 ; DATA COMPARE?
SEQ 204 ; YES, CONTINUE

ERRHRD 005,ERR002,MSG002 ; NO, REPORT ERROR
TRAP C#ERHRD
WORD 5
WORD ERR002
WORD MSG002

204: ENDSEG
100004: TRAP C#ESEG

DEC R5 ; DONE?
BNE 104 ; NO

ENDTST
L10031: TRAP C#ETST

```





4639  
 4640  
 4641  
 4642  
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 4650  
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 4653  
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 4656  
 4657  
 4658  
 4659  
 4660  
 4661  
 4662  
 4663  
 4664  
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 4675  
 4676  
 4677  
 4678  
 4679  
 4680  
 4681  
 4682

.SBTTL TEST 7: SELF TEST

```

:*****
:
:   THIS TEST VERIFIES THAT THE ROM BASED SELF TEST
:   CAN BE RUN SUCCESSFULLY WHEN INVOKED VIA
:   THE SELF TEST PORT COMMAND.
:
:   TEST SEQUENCE:
:       1. ISSUE THE SELF TEST PORT COMMAND
:       2. WAIT FOR DNI
:       3. CHECK LITE BITE REGISTER FOR SUCCESSFUL SELF TEST
:       4. WRITE ONE TO CLEAR DNI
:*****
    
```

BGNTST

```

                T7;;
JSR    PC,TINIT      ; IS A DEVICE RESET NEEDED?
BCC    25$          ; NO
MOV    @RSET,@PCSR0 ; YES, RESET DEUNA
JSR    PC,CHKDNI    ; DNI ?
BCC    20$          ; YES
ERRHRD 007.,ERR004,MSG003 ; NO, REPORT ERROR
                TRAP    C$ERHRD
                .WORD   7
                .WORD   ERR004
                .WORD   MSG003

ESCAPE TST          ; AND ABRT TEST
                TRAP    C$ESCAPE
                .WORD   L10033-

;
; 20$: JSR    PC,CLR DNI      ; WRITE ONE TO CLEAR DNI
;                               ; ERROR
BCC    25$          ; NO
ERRHRD 008.,ERR006,MSG003 ; YES, REPORT ERROR
                TRAP    C$ERHRD
                .WORD   8
                .WORD   ERR006
                .WORD   MSG003

ESCAPE TST          ; AND ABORT
                TRAP    C$ESCAPE
                .WORD   L10033-

;
; 25$: MOV    @SLFT,@PCSR0    ; RUN SELF TEST
;MAC001; WAIT FOR SELF TEST DNI
;MAC001; LOOP FOR APPROX 20 SEC (11/24 CPU)
;MAC001 MOV    @28.,R1      ; INIT OUTER LOOP
;MAC00126$: CLR    R0        ; INNER LOOP
;MAC00127$: MOV    @PCSR0,R4 ; PCSRO -> R4
;MAC001 BIT    @DNI,R4     ; DNI SET ?
;MAC001 BNE    30$        ; YES
;MAC001 DEC    R0         ; INNER LOOP EXHAUSTED ?
;MAC001 BNE    27$        ; NO, CHECK FOR DNI AGAIN
;MAC001 DEC    R1         ; OUTER LOOP EXHAUSTED ?
;MAC001 BNE    27$        ; NO, KEEP CHECKING FOR DNI
    
```



Address	STMSG	STTBL	LOCAL STORAGE FOR TEST 7	SELF TEST MESSAGE ADDRESS
4716				
4717	031244	000000	STMSG:: .WORD 0	
4718			:SELF TEST MESSAGE TABLE	
4719	031246	031446	STTBL:: .WORD SMSG00	
4720	031250	031472	.WORD SMSG01	
4721	031252	031521	.WORD SMSG02	
4722	031254	031534	.WORD SMSG03	
4723	031256	031573	.WORD SMSG04	
4724	031260	031636	.WORD SMSG05	
4725	031262	031671	.WORD SMSG06	
4726	031264	031742	.WORD SMSG07	
4727	031266	032014	.WORD SMSG10	
4728	031270	032070	.WORD SMSG11	
4729	031272	032117	.WORD SMSG12	
4730	031274	032134	.WORD SMSG13	
4731	031276	032170	.WORD SMSG14	
4732	031300	032204	.WORD SMSG15	
4733	031302	032220	.WORD SMSG16	
4734	031304	032234	.WORD SMSG17	
4735	031306	032250	.WORD SMSG20	
4736	031310	032273	.WORD SMSG21	
4737	031312	032307	.WORD SMSG22	
4738	031314	032323	.WORD SMSG23	
4739	031316	032337	.WORD SMSG24	
4740	031320	032353	.WORD SMSG25	
4741	031322	032367	.WORD SMSG26	
4742	031324	032403	.WORD SMSG27	
4743	031326	032417	.WORD SMSG30	
4744	031330	032474	.WORD SMSG31	
4745	031332	032546	.WORD SMSG32	
4746	031334	032621	.WORD SMSG33	
4747	031336	032665	.WORD SMSG34	
4748	031340	032736	.WORD SMSG35	
4749	031342	033001	.WORD SMSG36	
4750	031344	033052	.WORD SMSG37	
4751	031346	033115	.WORD SMSG40	
4752	031350	033205	.WORD SMSG41	
4753	031352	033272	.WORD SMSG42	
4754	031354	033360	.WORD SMSG43	
4755	031356	033437	.WORD SMSG44	
4756	031360	033523	.WORD SMSG45	
4757	031362	033601	.WORD SMSG46	
4758	031364	033615	.WORD SMSG47	
4759	031366	033631	.WORD SMSG50	
4760	031370	033717	.WORD SMSG51	
4761	031372	034002	.WORD SMSG52	
4762	031374	034066	.WORD SMSG53	
4763	031376	034143	.WORD SMSG54	
4764	031400	034225	.WORD SMSG55	
4765	031402	034301	.WORD SMSG56	
4766	031404	034315	.WORD SMSG57	
4767	031406	034331	.WORD SMSG60	
4768	031410	034354	.WORD SMSG61	
4769	031412	034407	.WORD SMSG62	
4770	031414	034442	.WORD SMSG63	
4771	031416	034471	.WORD SMSG64	
4772	031420	034504	.WORD SMSG65	

4773	031422	034525				.WORD	SMSG66		
4774	031424	034546				.WORD	SMSG67		
4775	031426	034571				.WORD	SMSG70		
4776	031430	034612				.WORD	SMSG71		
4777	031432	034645				.WORD	SMSG72		
4778	031434	034671				.WORD	SMSG73		
4779	031436	034705				.WORD	SMSG74		
4780	031440	034721				.WORD	SMSG75		
4781	031442	034735				.WORD	SMSG76		
4782	031444	034751				.WORD	SMSG77		
4783									
4784	031446	116	105	126		.ASCII	/NEVER GOT STARTED/		;MAC001
	031451	105	122	040					
	031454	107	117	124					
	031457	040	123	124					
	031462	101	122	124					
	031465	105	104						
4785	031467	015	012	000		.ASCIZ	<15><12>		
4786	031472	103	120	125	SMSG01::	.ASCII	/CPU INSTRUCTION TEST/		
	031475	040	111	116					
	031500	123	124	122					
	031503	125	103	124					
	031506	111	117	116					
	031511	040	124	105					
	031514	123	124						
4787	031516	015	012	000		.ASCIZ	<15><12>		
4788	031521	122	117	115	SMSG02::	.ASCII	/ROM TEST/		
	031524	040	124	105					
	031527	123	124						
4789	031531	015	012	000		.ASCIZ	<15><12>		
4790	031534	127	122	111	SMSG03::	.ASCII	/WRITEABLE CONTROL STORE TEST/		
	031537	124	105	101					
	031542	102	114	105					
	031545	040	103	117					
	031550	116	124	122					
	031553	117	114	040					
	031556	123	124	117					
	031561	122	105	040					
	031564	124	105	123					
	031567	124							
4791	031570	015	012	000		.ASCIZ	<15><12>		
4792	031573	124	061	061	SMSG04::	.ASCII	/I11 UNIBUS ADDRESS REGISTER TEST/		;MAC001
	031576	040	125	116					
	031601	111	102	125					
	031604	123	040	101					
	031607	104	104	122					
	031612	105	123	123					
	031615	040	122	105					
	031620	107	111	123					
	031623	124	105	122					
	031626	040	124	105					
	031631	123	124						
4793	031633	015	012	000		.ASCIZ	<15><12>		
4794	031636	122	105	103	SMSG05::	.ASCII	/RECEIVER UNIBUS DMA TEST/		
	031641	105	111	126					
	031644	105	122	040					
	031647	125	116	111					

	031652	102	125	123				
	031655	040	104	115				
	031660	101	040	124				
	031663	105	123	124				
4795	031666	015	012	000		.ASCIZ <15><12>		
4796	031671	120	103	123	SMSG06::	.ASCII /PCSR1 LOWER BYTE AND T11 DMA READ TEST/		;MAC001
	031674	122	061	040				
	031677	114	117	127				
	031702	105	122	040				
	031705	102	131	124				
	031710	105	040	101				
	031713	116	104	040				
	031716	124	061	061				
	031721	040	104	115				
	031724	101	040	122				
	031727	105	101	104				
	031732	040	124	105				
	031735	123	124					
4797	031737	015	012	000		.ASCIZ <15><12>		
4798	031742	120	103	123	SMSG07::	.ASCII /PCSR0 UPPER BYTE AND T11 DMA WRITE TEST/		;MAC001
	031745	122	060	040				
	031750	125	120	120				
	031753	105	122	040				
	031756	102	131	124				
	031761	105	040	101				
	031764	116	104	040				
	031767	124	061	061				
	031772	040	104	115				
	031775	101	040	127				
	032000	122	111	124				
	032003	105	040	124				
	032006	105	123	124				
4799	032011	015	012	000		.ASCIZ <15><12>		
4800	032014	120	103	123	SMSG10::	.ASCII /PCSR0 LOWER BYTE AND LINK MEMORY DMA TEST/		;MAC001
	032017	122	060	040				
	032022	114	117	127				
	032025	105	122	040				
	032030	102	131	124				
	032033	105	040	101				
	032036	116	104	040				
	032041	114	111	116				
	032044	113	040	115				
	032047	105	115	117				
	032052	122	131	040				
	032055	104	115	101				
	032060	040	124	105				
	032063	123	124					
4801	032065	015	012	000		.ASCIZ <15><12>		
4802	032070	120	103	123	SMSG11::	.ASCII /PCSR2 AND PCRS3 TEST/		;MAC001
	032073	122	062	040				
	032076	101	116	104				
	032101	040	120	103				
	032104	123	122	063				
	032107	040	124	105				
	032112	123	124					
4803	032114	015	012	000		.ASCIZ <15><12>		
4804	032117	124	111	115	SMSG12::	.ASCII /TIMER TEST/		

	032122	105	122	040				
	032125	124	105	123				
	032130	124						
4805	032131	015	012	000		.ASCIZ	<15><12>	
4806	032134	120	110	131	MSG13::	.ASCII	/PHYSICAL ADDRESS ROM TEST/	;MAC001
	032137	123	111	103				
	032142	101	114	040				
	032145	101	104	104				
	032150	122	105	123				
	032153	123	040	122				
	032156	117	115	040				
	032161	124	105	123				
	032164	124						
4807	032165	015	012	000		.ASCIZ	<15><12>	
4808	032170	125	116	104	MSG14::	.ASCII	/UNDEFINED/	
	032173	105	106	111				
	032176	116	105	104				
4809	032201	015	012	000		.ASCIZ	<15><12>	
4810	032204	125	116	104	MSG15::	.ASCII	/UNDEFINED/	
	032207	105	106	111				
	032212	116	105	104				
4811	032215	015	012	000		.ASCIZ	<15><12>	
4812	032220	125	116	104	MSG16::	.ASCII	/UNDEFINED/	
	032223	105	106	111				
	032226	116	105	104				
4813	032231	015	012	000		.ASCIZ	<15><12>	
4814	032234	125	116	104	MSG17::	.ASCII	/UNDEFINED/	
	032237	105	106	111				
	032242	116	105	104				
4815	032245	015	012	000		.ASCIZ	<15><12>	
4816	032250	114	111	116	MSG20::	.ASCII	/LINK MEMORY TEST/	
	032253	113	040	115				
	032256	105	115	117				
	032261	122	131	040				
	032264	124	105	123				
	032267	124						
4817	032270	015	012	000		.ASCIZ	<15><12>	
4818	032273	125	116	104	MSG21::	.ASCII	/UNDEFINED/	
	032276	105	106	111				
	032301	116	105	104				
4819	032304	015	012	000		.ASCIZ	<15><12>	
4820	032307	125	116	104	MSG22::	.ASCII	/UNDEFINED/	
	032312	105	106	111				
	032315	116	105	104				
4821	032320	015	012	000		.ASCIZ	<15><12>	
4822	032323	125	116	104	MSG23::	.ASCII	/UNDEFINED/	
	032326	105	106	111				
	032331	116	105	104				
4823	032334	015	012	000		.ASCIZ	<15><12>	
4824	032337	125	116	104	MSG24::	.ASCII	/UNDEFINED/	
	032342	105	106	111				
	032345	116	105	104				
4825	032350	015	012	000		.ASCIZ	<15><12>	
4826	032353	125	116	104	MSG25::	.ASCII	/UNDEFINED/	
	032356	105	106	111				
	032361	116	105	104				
4827	032364	015	012	000		.ASCIZ	<15><12>	

4828	032367	125	116	104	MSG26::	.ASCII	/UNDEFINED/
	032372	105	106	111			
	032375	116	105	104			
4829	032400	015	012	000		.ASCIZ	<15><12>
4830	032403	125	116	104	MSG27::	.ASCII	/UNDEFINED/
	032406	105	106	111			
	032411	116	105	104			
4831	032414	015	012	000		.ASCIZ	<15><12>
4832	032417	114	117	103	MSG30::	.ASCII	/LOCAL LOOPBACK TEST - TRANSMITTER TIMEOUT/
	032422	101	114	040			
	032425	114	117	117			
	032430	120	102	101			
	032433	103	113	040			
	032436	124	105	123			
	032441	124	040	055			
	032444	040	040	124			
	032447	122	101	116			
	032452	123	115	111			
	032455	124	124	105			
	032460	122	040	124			
	032463	111	115	105			
	032466	117	125	124			
4833	032471	015	012	000		.ASCIZ	<15><12>
4834	032474	114	117	103	MSG31::	.ASCII	/LOCAL LOOPBACK TEST - RECEIVER TIMEOUT/
	032477	101	114	040			
	032502	114	117	117			
	032505	120	102	101			
	032510	103	113	040			
	032513	124	105	123			
	032516	124	040	055			
	032521	040	040	122			
	032524	105	103	105			
	032527	111	126	105			
	032532	122	040	124			
	032535	111	115	105			
	032540	117	125	124			
4835	032543	015	012	000		.ASCIZ	<15><12>
4836	032546	114	117	103	MSG32::	.ASCII	/LOCAL LOOPBACK TEST - BUFFER COMPARISON/
	032551	101	114	040			
	032554	114	117	117			
	032557	120	102	101			
	032562	103	113	040			
	032565	124	105	123			
	032570	124	040	055			
	032573	040	040	102			
	032576	125	106	106			
	032601	105	122	040			
	032604	103	117	115			
	032607	120	101	122			
	032612	123	111	117			
	032615	116					
4837	032616	015	012	000		.ASCIZ	<15><12>
4838	032621	114	117	103	MSG33::	.ASCII	/LOCAL LOOPBACK TEST - BYTE COUNT/
	032624	101	114	040			
	032627	114	117	117			
	032632	120	102	101			
	032635	103	113	040			



	032640	124	105	123		
	032643	124	040	055		
	032646	040	040	102		
	032651	131	124	105		
	032654	040	103	117		
	032657	125	116	124		
4039	032662	015	012	000		
4840	032665	114	117	103	MSG34::	.ASCIZ <15><12> .ASCII /LOCAL LOOPBACK TEST - RECEIVER STATUS/
	032670	101	114	040		
	032673	114	117	117		
	032676	120	102	101		
	032701	103	113	040		
	032704	124	105	123		
	032707	124	040	055		
	032712	040	040	122		
	032715	105	103	105		
	032720	111	126	105		
	032723	122	040	123		
	032726	124	101	124		
	032731	125	123			
4841	032733	015	012	000		
4842	032736	114	117	103	MSG35::	.ASCIZ <15><12> .ASCII /LOCAL LOOPBACK TEST - CRC ERROR/
	032741	101	114	040		
	032744	114	117	117		
	032747	120	102	101		
	032752	103	113	040		
	032755	124	105	123		
	032760	124	040	055		
	032763	040	040	103		
	032766	122	103	040		
	032771	105	122	122		
	032774	117	122			
4843	032776	015	012	000		
4844	033001	114	117	103	MSG36::	.ASCIZ <15><12> .ASCII /LOCAL LOOPBACK TEST - MATCH BIT ERROR/
	033004	101	114	040		
	033007	114	117	117		
	033012	120	102	101		
	033015	103	113	040		
	033020	124	105	123		
	033023	124	040	055		
	033026	040	040	115		
	033031	101	124	103		
	033034	110	040	102		
	033037	111	124	040		
	033042	105	122	122		
	033045	117	122			
4845	033047	015	012	000		
4846	033052	114	117	103	MSG37::	.ASCIZ <15><12> .ASCII /LOCAL LOOPBACK TEST - TDR ERROR/
	033055	101	114	040		
	033060	114	117	117		
	033063	120	102	101		
	033066	103	113	040		
	033071	124	105	123		
	033074	124	040	055		
	033077	040	040	124		
	033102	104	122	040		
	033105	105	122	122		

	033110	117	122			
4847	033112	015	012	000	.ASCIZ <15><12>	
4848	033115	124	122	101	.ASCII /TRANSMITTER BUFFER ADDRESS TEST - TRANSMITTER TIMEOUT/	
	033120	116	123	115		
	033123	111	124	124		
	033126	105	122	040		
	033131	102	125	106		
	033134	106	105	122		
	033137	040	101	104		
	033142	104	122	105		
	033145	123	123	040		
	033150	124	105	123		
	033153	124	040	055		
	033156	040	124	122		
	033161	101	116	123		
	033164	115	111	124		
	033167	124	105	122		
	033172	040	124	111		
	033175	115	105	117		
	033200	125	124			
4849	033202	015	012	000	.ASCIZ <15><12>	
4850	033205	124	122	101	.ASCII /TRANSMITTER BUFFER ADDRESS TEST - RECEIVER TIMEOUT/	
	033210	116	123	115		
	033213	111	124	124		
	033216	105	122	040		
	033221	102	125	106		
	033224	106	105	122		
	033227	040	101	104		
	033232	104	122	105		
	033235	123	123	040		
	033240	124	105	123		
	033243	124	040	055		
	033246	040	122	105		
	033251	103	105	111		
	033254	126	105	122		
	033257	040	124	111		
	033262	115	105	117		
	033265	125	124			
4851	033267	015	012	000	.ASCIZ <15><12>	
4852	033272	124	122	101	.ASCII /TRANSMITTER BUFFER ADDRESS TEST - BUFFER COMPARISON/	
	033275	116	123	115		
	033300	111	124	124		
	033303	105	122	040		
	033306	102	125	106		
	033311	106	105	122		
	033314	040	101	104		
	033317	104	122	105		
	033322	123	123	040		
	033325	124	105	123		
	033330	124	040	055		
	033333	040	102	125		
	033336	106	106	105		
	033341	122	040	103		
	033344	117	115	120		
	033347	101	122	123		
	033352	111	117	116		
4853	033355	015	012	000	.ASCIZ <15><12>	

4854	033360	124	122	101	MSG43::	.ASCII	/TRANSMITTER BUFFER ADDRESS TEST - BYTE COUNT/
	033363	116	123	115			
	033366	111	124	124			
	033371	105	122	040			
	033374	2	125	106			
	033377	6	105	122			
	033402	040	101	104			
	033405	104	122	105			
	033410	123	123	040			
	033413	124	105	123			
	033416	124	040	055			
	033421	040	102	131			
	033424	124	105	040			
	033427	103	117	125			
	033432	116	124				
4855	033434	015	012	000	MSG44::	.ASCIZ	<15><12>
4856	033437	124	122	101		.ASCII	/TRANSMITTER BUFFER ADDRESS TEST - RECEIVER STATUS/
	033442	116	123	115			
	033445	111	124	124			
	033450	105	122	040			
	033453	102	125	106			
	033456	106	105	122			
	033461	040	101	104			
	033464	104	122	105			
	033467	123	123	040			
	033472	124	105	123			
	033475	124	040	055			
	033500	040	122	105			
	033503	103	105	111			
	033506	126	105	122			
	033511	040	123	124			
	033514	101	124	125			
	033517	123					
4857	033520	015	012	000	MSG45::	.ASCIZ	<15><12>
4858	033523	124	122	101		.ASCII	/TRANSMITTER BUFFER ADDRESS TEST - CRC ERROR/
	033526	116	123	115			
	033531	111	124	124			
	033534	105	122	040			
	033537	102	125	106			
	033542	106	105	122			
	033545	040	101	104			
	033550	104	122	105			
	033553	123	123	040			
	033556	124	105	123			
	033561	124	040	055			
	033564	040	103	122			
	033567	103	040	105			
	033572	122	122	117			
	033575	122					
4859	033576	015	012	000	MSG46::	.ASCIZ	<15><12>
4860	033601	125	116	104		.ASCII	/UNDEFINED/
	033604	105	106	111			
	033607	116	105	104			
4861	033612	015	012	000	MSG47::	.ASCIZ	<15><12>
4862	033615	125	116	104		.ASCII	/UNDEFINED/
	033620	105	106	111			
	033623	116	105	104			

4863	033626	015	012	000		.ASCIZ <15><12>
4864	033631	122	105	103	MSG50::	.ASCII /RECEIVER BUFFER ADDRESS TEST - TRANSMITTER TIMEOUT/
	033634	105	111	126		
	033637	105	122	040		
	033642	102	125	106		
	033645	106	105	122		
	033650	040	101	104		
	033653	104	122	105		
	033656	123	123	040		
	033661	124	105	123		
	033664	124	040	055		
	033667	040	040	124		
	033672	122	101	116		
	033675	123	115	111		
	033700	124	124	105		
	033703	122	040	124		
	033706	111	115	105		
	033711	117	125	124		
4865	033714	015	012	000		.ASCIZ <15><12>
4866	033717	122	105	103	MSG51::	.ASCII /RECEIVER BUFFER ADDRESS TEST - RECEIVER TIMEOUT/
	033722	105	111	126		
	033725	105	122	040		
	033730	102	125	106		
	033733	106	105	122		
	033736	040	101	104		
	033741	104	122	105		
	033744	123	123	040		
	033747	124	105	123		
	033752	124	040	055		
	033755	040	040	122		
	033760	105	103	105		
	033763	111	126	105		
	033766	122	040	124		
	033771	111	115	105		
	033774	117	125	124		
4867	033777	015	012	000		.ASCIZ <15><12>
4868	034002	122	105	103	MSG52::	.ASCII /RECEIVER BUFFER ADDRESS TEST - BUFFER COMPARISON/
	034005	105	111	126		
	034010	105	122	040		
	034013	102	125	106		
	034016	106	105	122		
	034021	040	101	104		
	034024	104	122	105		
	034027	123	123	040		
	034032	124	105	123		
	034035	124	040	055		
	034040	040	040	102		
	034043	125	106	106		
	034046	105	122	040		
	034051	103	117	115		
	034054	120	101	122		
	034057	123	111	117		
	034062	116				
4869	034063	015	012	000		.ASCIZ <15><12>
4870	034066	122	105	103	MSG53::	.ASCII /RECEIVER BUFFER ADDRESS TEST - BYTE COUNT/
	034071	105	111	126		
	034074	105	122	040		

	034077	102	125	106			
	034102	106	105	122			
	034105	040	101	104			
	034110	104	122	105			
	034113	123	123	040			
	034116	124	105	123			
	034121	124	040	055			
	034124	040	040	102			
	034127	131	124	105			
	034132	040	103	117			
	034135	125	116	124			
4871	034140	015	012	000		.ASCIZ <15><12>	
4872	034143	122	105	103	MSG54::	.ASCII /RECEIVER BUFFER ADDRESS TEST - RECEIVER STATUS/	
	034146	105	111	126			
	034151	105	122	040			
	034154	102	125	106			
	034157	106	105	122			
	034162	040	101	104			
	034165	104	122	105			
	034170	123	123	040			
	034173	124	105	123			
	034176	124	040	055			
	034201	040	040	122			
	034204	105	103	105			
	034207	111	126	105			
	034212	122	040	123			
	034215	124	101	124			
	034220	125	123				
4873	034222	015	012	000		.ASCIZ <15><12>	
4874	034225	122	105	103	MSG55::	.ASCII /RECEIVER BUFFER ADDRESS TEST - CRC ERROR/	
	034230	105	111	126			
	034233	105	122	040			
	034236	102	125	106			
	034241	106	105	122			
	034244	040	101	104			
	034247	104	122	105			
	034252	123	123	040			
	034255	124	105	123			
	034260	124	040	055			
	034263	040	040	103			
	034266	122	103	040			
	034271	105	122	122			
	034274	117	122				
4875	034276	015	012	000		.ASCIZ <15><12>	
4876	034301	125	116	104	MSG56::	.ASCII /UNDEFINED/	
	034304	105	106	111			
	034307	116	105	104			
4877	034312	015	012	000		.ASCIZ <15><12>	
4878	034315	125	116	104	MSG57::	.ASCII /UNDEFINED/	
	034320	105	106	111			
	034323	116	105	104			
4879	034326	015	012	000		.ASCIZ <15><12>	
4880	034331	122	125	116	MSG60::	.ASCII /RUNT PACKET TEST/	:MAC001
	034334	124	040	120			
	034337	101	103	113			
	034342	105	124	040			
	034345	124	105	123			

4881	034350	124							
4882	034351	015	012	000		.ASCIZ <15><12>			
	034354	115	111	116	MSG61::	.ASCII /MINIMUM PACKET SIZE TEST/			;MAC001
	034357	111	115	125					
	034362	115	040	120					
	034365	101	103	113					
	034370	105	124	040					
	034373	123	111	132					
	034376	105	040	124					
	034401	105	123	124					
4883	034404	015	012	000		.ASCIZ <15><12>			
4884	034407	115	101	130	MSG62::	.ASCII /MAXIMUM PACKET SIZE TEST/			;MAC001
	034412	111	115	125					
	034415	115	040	120					
	034420	101	103	113					
	034423	105	124	040					
	034426	123	111	132					
	034431	105	040	124					
	034434	105	123	124					
4885	034437	015	012	000		.ASCIZ <15><12>			
4886	034442	117	126	105	MSG63::	.ASCII /OVERSIZE PACKET TEST/			
	034445	122	123	111					
	034450	132	105	040					
	034453	120	101	103					
	034456	113	105	124					
	034461	040	124	105					
	034464	123	124						
4887	034466	015	012	000		.ASCIZ <15><12>			
4888	034471	103	122	103	MSG64::	.ASCII /CRC TEST/			;MAC001
	034474	040	124	105					
	034477	123	124						
4889	034501	015	012	000		.ASCIZ <15><12>			
4890	034504	103	117	114	MSG65::	.ASCII /COLLISION TEST/			
	034507	114	111	123					
	034512	111	117	116					
	034515	040	124	105					
	034520	123	124						
4891	034522	015	012	000		.ASCIZ <15><12>			
4892	034525	110	105	101	MSG66::	.ASCII /HEARTBEAT TEST/			;MAC001
	034530	122	124	102					
	034533	105	101	124					
	034536	040	124	105					
	034541	123	124						
4893	034543	015	012	000		.ASCIZ <15><12>			
4894	034546	110	101	114	MSG67::	.ASCII /HALF DUPLEX TEST/			;MAC001
	034551	106	040	104					
	034554	125	120	114					
	034557	105	130	040					
	034562	124	105	123					
	034565	124							
4895	034566	015	012	000		.ASCIZ <15><12>			
4896	034571	115	125	114	MSG70::	.ASCII /MULTICAST TEST/			
	034574	124	111	103					
	034577	101	123	124					
	034602	040	124	105					
	034605	123	124						
4897	034607	015	012	000		.ASCIZ <15><12>			

4898	034612	101	104	104	SMSG71::	.ASCII	/ADDRESS RECOGNITION TEST/
	034615	122	105	123			
	034620	123	040	122			
	034623	105	103	117			
	034626	107	116	111			
	034631	124	111	117			
	034634	116	040	124			
	034637	105	123	124			
4899	034642	015	012	000	SMSG72::	.ASCIZ	<15><12>
4900	034645	105	130	124		.ASCII	/EXTERNAL LOOPBACK/
	034650	105	122	116			
	034653	101	114	040			
	034656	114	117	117			
	034661	120	102	101			
	034664	103	113				
4901	034666	015	012	000	SMSG73::	.ASCIZ	<15><12>
4902	034671	125	116	104		.ASCII	/UNDEFINED/
	034674	105	106	111			
	034677	116	105	104			
4903	034702	015	012	000	SMSG74::	.ASCIZ	<15><12>
4904	034705	125	116	104		.ASCII	/UNDEFINED/
	034710	105	106	111			
	034713	116	105	104			
4905	034716	015	012	000	SMSG75::	.ASCIZ	<15><12>
4906	034721	125	116	104		.ASCII	/UNDEFINED/
	034724	105	106	111			
	034727	116	105	104			
4907	034732	015	012	000	SMSG76::	.ASCIZ	<15><12>
4908	034735	125	116	104		.ASCII	/UNDEFINED/
	034740	105	106	111			
	034743	116	105	104			
4909	034746	015	012	000	SMSG77::	.ASCIZ	<15><12>
4910	034751	103	117	115		.ASCII	/COMPLETED - NO ERRORS/
	034754	120	114	105			
	034757	124	105	104			
	034762	040	055	040			
	034765	116	117	040			
	034770	105	122	122			
	034773	117	122	123			
4911	034776	015	012	000		.ASCIZ	<15><12>
4912						.EVEN	

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.SBTTL TEST 8: PORT COMMAND TEST

```

*****
:
: THIS TEST VERIFIES THAT NO ERRORS OCCUR WHEN
: A DEUNA PORT COMMAND IS ISSUED.
:
: TEST SEQUENCE:
: 1. ISSUE A NOP PORT COMMAND
: 2. WAIT FOR DNI
: 3. WRITE ONE TO CLEAR DNI
: 4. MOVE NOP FUNCTION INTO PCBB
: 5. ISSUE A GETPCBB PORT COMMAND
: 6. WAIT FOR DNI
: 7. WRITE ONE TO CLEAR DNI
: 8. ISSUE A GETCMD PORT COMMAND
: 9. WAIT FOR DNI
: 10. WRITE ONE TO CLEAR DNI
*****
    
```

```

4935 035002          BGNTST
      035002
4936 035002 004737 027446      JSR    PC,TINIT          ; IS A DEVICE RESET NEEDED?
4937 035006 103025          BCC    25$              ; NO
4938 035010 012777 000040 145210  MOV    #RSET,SPCSRO    ; YES, RESET DEUNA
4939 035016 004737 024574      JSR    PC,CHKDNI       ; DNI ?
4940 035022 103006          BCC    20$              ; YES
4941 035024          ERRHRD 012.,ERR004,MSG003 ; NO, REPORT ERROR
      035024 104456          TRAP   C$ERHRD
      035026 000014          .WORD 12
      035030 020102          .WORD ERR004
      035032 017110          .WORD MSG003
4942 035034          ESCAPE TST          ; AND ABORT TEST
      035034 104410          TRAP   C$ESCAPE
      035036 000236          .WORD L10034-.
4943
4944 035040 004737 025546      ; 20$: JSR    PC,CLRDN1    ; WRITE ONE TO CLEAR DNI
4945
4946 035044 103006          BCC    25$              ; ERROR
4947 035046          ERRHRD 013.,ERR006,MSG003 ; NO
      035046 104456          ; YES, REPORT ERROR
      035050 000015          TRAP   C$ERHRD
      035052 020202          .WORD 13
      035054 017110          .WORD ERR006
      035056 104410          .WORD MSG003
4948 035056          ESCAPE TST          ; AND ABORT
      035056 104410          TRAP   C$ESCAPE
      035060 000214          .WORD L10034-.
4949
4950 035062 012777 000006 145136 ; 25$: MOV    #PNOP,SPCSRO    ; ISSUE A NOP PORT COMMAND
4951 035070 004737 024574      JSR    PC,CHKDNI       ; DNI ?
4952 035074 103006          BCC    30$              ; YES
4953 035076          ERRHRD 014.,ERR008,MSG003 ; NO, REPORT ERROR
      035076 104456          TRAP   C$ERHRD
      035100 000016          .WORD 14
      035102 020337          .WORD ERR008
      035104 017110          .WORD MSG003
    
```



4954	035106				ESCAPE	TST		; AND ABORT TEST			
	035106	104410							TRAP	C\$ESCAPE	
	035110	000164							.WORD	L10034-	
4955											
4956	035112	004737	025546		30\$:	JSR	PC,CLRDNI	; WRITE ONE TO CLEAR DNI			
4957								; ERROR			
4958	035116	103006				BCC	40\$	; NO			
4959	035120					ERRHRD	015.,ERR006,MSG003	; YES, REPORT ERROR			
	035120	104456							TRAP	C\$ERHRD	
	035122	000017							.WORD	15	
	035124	020202							.WORD	ERR006	
	035126	017110							.WORD	MSG003	
4960	035130					ESCAPE	TST	; AND ABORT			
	035130	104410							TRAP	C\$ESCAPE	
	035132	000142							.WORD	L10034-	
4961											
4962	035134	012705	013104		40\$:	MOV	#NOPF,R5	; POINT TO DEFAULT NOP FUNCTION			
4963	035140	004737	026742			JSR	PC,LDPCBB	; LOAD FUNCTION INTO PCBB			
4964	035144	004737	026772			JSR	PC,LDPCSR	; ADDRESS OF PCBB -> PCSR2!3			
4965	035150	012777	000001	145050		MOV	#GETPCB,#PCSR0	; ISSUE A GETPCBB PORT COMMAND			
4966	035156	004737	024574			JSR	PC,CHKDNI	; DNI?			
4967	035162	103006				BCC	50\$	; YES			
4968	035164					ERRHRD	016.,ERR009,MSG003	; NO, REPORT ERROR			
	035164	104456							TRAP	C\$ERHRD	
	035166	000020							.WORD	16	
	035170	020416							.WORD	ERR009	
	035172	017110							.WORD	MSG003	
4969	035174					ESCAPE	TST	; AND ABORT TEST			
	035174	104410							TRAP	C\$ESCAPE	
	035176	000076							.WORD	L10034-	
4970											
4971	035200	004737	025546		50\$:	JSR	PC,CLRDNI	; WRITE ONE TO CLEAR DNI			
4972								; ERROR ?			
4973	035204	103006				BCC	60\$	; NO			
4974	035206					ERRHRD	017.,ERR006,MSG003	; YES, REPORT ERROR			
	035206	104456							TRAP	C\$ERHRD	
	035210	000021							.WORD	17	
	035212	020202							.WORD	ERR006	
	035214	017110							.WORD	MSG003	
4975	035216					ESCAPE	TST	; AND ABORT TEST			
	035216	104410							TRAP	C\$ESCAPE	
	035220	000054							.WORD	L10034-	
4976											
4977	035222	012777	000002	144776	60\$:	MOV	#GETCMD,#PCSR0	; ISSUE A GETCMD PORT COMMAND			
4978	035230	004737	024574			JSR	PC,CHKDNI	; DNI ?			
4979	035234	103006				BCC	70\$	; YES			
4980	035236					ERRHRD	018.,ERR010,MSG003	; NO, REPORT ERROR			
	035236	104456							TRAP	C\$ERHRD	
	035240	000022							.WORD	18	
	035242	020502							.WORD	ERR010	
	035244	017110							.WORD	MSG003	
4981	035246					ESCAPE	TST	; AND ABORT TEST			
	035246	104410							TRAP	C\$ESCAPE	
	035250	000024							.WORD	L10034-	
4982											
4983	035252	004737	025546		70\$:	JSR	PC,CLRDNI	; WRITE ONE TO CLEAR DNI			
4984								; ERROR ?			

4985	035256	103006	BCC	804	; NO		
4986	035260		ERRHRD	019.	.ERR006,MSG003	; YES, REPORT ERROR	
	035260	104456					TRAP C#ERRRD
	035262	000023					.WORD 19
	035264	020202					.WORD ERR006
	035266	017110					.WORD MSG003
4987	035270		ESCAPE	TST		; AND ABORT TEST	
	035270	104410					TRAP C#ESCAPE
	035272	000002					.WORD L10034
4988	035274			804:			
4989	035274		ENDTST				
	035274					L10034:	
	035274	104401					TRAP C#ETST

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.SBTTL TEST 9: INTERRUPT LOGIC TEST

.....  
: THIS TEST VERIFIES THAT A DEUNA INTERRUPT CAN BE GENERATED.  
: TEST SEQUENCE:  
: 1. SET UP THE INTERRUPT VECTOR  
: 2. ISSUE A GET PCBB PORT COMMAND  
: 3. WAIT FOR A DNI INTERRUPT  
: 4. WRITE ONE TO CLEAR DNI  
: .....

BGNTST

JSR PC,TIMIT ; IS A DEVICE RESET NEEDED?  
BCC 256 ; NO  
MOV @RSET,@PCSR0 ; YES, RESET DEUNA  
JSR PC,CHKDNI ; DNI ?  
BCC 206 ; YES  
ERRHRD 020.,ERR004,MSG003 ; NO, REPORT ERROR

TRAP C#ERRRD  
.WORD 20  
.WORD ERR004  
.WORD MSG003

ESCAPE TST ; AND ABORT TEST

TRAP C#ESCAPE  
.WORD L10035-

206: JSR PC,CLRDN1 ; WRITE ONE TO CLEAR DNI  
; ERROR  
BCC 256 ; NO  
ERRHRD 021.,ERR006,MSG003 ; YES, REPORT ERROR

TRAP C#ERRRD  
.WORD 21  
.WORD ERR006  
.WORD MSG003

ESCAPE TST ; AND ABORT

TRAP C#ESCAPE  
.WORD L10035-

; SET UP INTERRUPT VECTOR  
256: SETVEC INTVEC,@ISRDN1,UNAPRI

MOV UNAPRI,-(SP)  
MOV @ISRDN1,-(SP)  
MOV INTVEC,-(SP)  
MOV @3,-(SP)  
TRAP C#SVEC  
ADD @10,SP

SETPRI @PRI04 ; SET CPU PRIORITY = 4

MOV @PRI04,R0  
TRAP C#SPRI

406: CLR DNIFLG ; CLEAR DNI INTERRUPT FLAG  
; ISSUE GET PCBB PORT COMMAND WITH INTERRUPTS ENABLED  
MOV @INTE,@PCSR0 ; ENABLE INTERRUPTS  
MOV @NOPF,R5 ; POINT TO DEFAULT NOP FUNCTION

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144602

5027	035430	004737	026742		JSR	PC,LDPCBB		; LOAD FUNCTION INTO PCBB	
5028	035434	004737	026772		JSR	PC,LDPCSR		; ADDRESS OF PCBB -> PCSA2!3	
5029	035440	012777	000101	144560	MOV	#GETPCB!INTE,#PCSR0		; ISSUE A GETPCBB PORT COMMAND	
5030									
5031									
5032									
5033									
5034									
5035									
5036									
5037									
5038									
5039									
5040									
5041	035446	012737	000176	015222	MOV	#2*SECOND,METER		; PUT 2 SECONDS ON THE TIMER	;MAC001
5042	035454	004737	024542		JSR	PC,TIMON		; TURN ON THE CLOCK	;JPB001
5043	035460				SETPRI	#PRI04		; SET PRIORITY BACK TO 4	;JPB001
	035460	012700	000200						MOV
	035464	104441							TRAP
5044	035466	005737	015226	501:	TST	DNIFLG		; DID DNI INTERRUPT OCCUR?	;MAC001
5045	035472	001022			BNE	701		; YES, CONTINUE TEST	;MAC001
5046	035474				BREAK			; RETURN TO DRS FOR A MOMENT	;MAC001
	035474	104422							TRAP
5047	035476	005737	015222		TST	METER		; HAS TIMER EXPIRED?	;MAC001
5048	035502	001371			BNE	501		; NOT YET	;MAC001
5049	035504	004737	024560		JSR	PC,TIMOFF		; YES TURN OFF THE TIMER	;MAC001
5050	035510				ERRHRD	022.,ERR007		; YES, REPORT ERROR	
	035510	104456							TRAP
	035512	000026							.WORD
	035514	020250							.WORD
	035516	000000							.WORD
5051	035520				CLRVEC	INTVEC		; DEALLOCATE VECTOR	
	035520	013700	002240						MOV
	035524	104436							TRAP
5052	035526				SETPRI	#PRI07		; RESTORE CPU PRIORITY TO 7	INTVEC,RO
	035526	012700	000340						C#CVEC
	035532	104441							MOV
5053	035534				ESCAPE	TST		; AND ABORT TEST	#PRI07,RO
	035534	104410							TRAP
	035536	000044							.WORD
5054									C#ESCAPE
5055									L10035-
5056	035540	004737	024560						
5057	035544								
	035544	013700	002240						
	035550	104436							
5058	035552				SETPRI	#PRI07		; RESTORE CPU PRIORITY TO 7	
	035552	012700	000340						MOV
	035556	104441							TRAP
5059	035560	004737	025546		JSR	PC,CLRDNI		; WRITE ONE TO CLEAR DNI	#PRI07,RO
5060								; ERROR?	C#SPRI
5061	035564	103006			BCC	801		; NO	
5062	035566				ERRHRD	023.,ERR006,MSG003		; YES, REPORT ERROR	
	035566	104456							TRAP
	035570	000027							.WORD
	035572	020202							.WORD
	035574	017110							.WORD

5063	035576		ESCAPE	TST		; AND ABORT		
	035576	104410					TRAP	C#ESCAPE
	035600	000002					.WORD	L10035-
5064	035602		80#:					
5065	035602			ENDTST				
	035602					L10035:		
	035602	104401					TRAP	C#ETST

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.SBTTL TEST 10: READ INTERNAL ROM TEST

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*****
:
: THIS TEST READS AND VERIFIES THE INTERNAL ROM,
: THE DUMP INTERNAL MEMORY FUNCTION IS USED TO READ THE ROM.
: A CRC IS GENERATED FROM THE ROM DATA READ.
: A CRC VALUE OF ZERO SHOULD BE GENERATED FROM THE ROM
: DATA READ WHICH INCLUDES THE STORED ROM CRC VALUE.
:
: TEST SEQUENCE:
: 1. CLEAR RBUF
: 2. READ 1K OF ROM INTO RBUF
: 3. CALCULATE CRC ON RBUF
: 4. REPEAT STEPS 1-3 FOR EACH 1K BLOCK OF ROM (8 TIMES)
: 5. VERIFY CRC GENERATED = 0
*****

```

```

035604
035604
035604 004737 027446
035610 103025
035612 012777 000040 144406
035620 004737 024574
035624 103006
035626 104456
035630 000030
035632 020102
035634 017110
035636 104410
035640 000272
035642 004737 025546
035646 103006
035650 104456
035652 000031
035654 020202
035656 017110
035660 104410
035662 000250
035664 004737 026772 144330
035670 012777 000001
035676 004737 024574
035702 103006
035704 104456
035706 000032
035710 020416
035712 017110
035714

```

```

BGNTST
:
: T10::
: IS A DEVICE RESET NEEDED?
JSR PC,TINIT ; NO
BCC 30$ ; YES, RESET DEUNA
MOV #RSET,BPCSR0 ; DNI ?
JSR PC,CHKDNI ; YES
BCC 20$ ; NO, REPORT ERROR
ERRHRD 024.,ERR004,MSG003 TRAP C$ERHRD
: .WORD 24
: .WORD ERR004
: .WORD MSG003
:
: AND ABORT TEST
ESCAPE TST TRAP C$ESCAPE
: .WORD L10036-.
:
: 20$:
: WRITE ONE TO CLEAR DNI
JSR PC,CLRDN1 ; ERROR ?
BCC 30$ ; NO
ERRHRD 025.,ERR006,MSG003 ; YES, REPORT ERROR
TRAP C$ERHRD
: .WORD 25
: .WORD ERR006
: .WORD MSG003
:
: AND ABORT TEST
ESCAPE TST TRAP C$ESCAPE
: .WORD L10036-.
:
: 30$:
: ADDRESS OF PCBB -> PCSR2!3
JSR PC,LDPCSR ; ISSUE GET_PCBB PORT COMMAND
MOV #GETPCB,BPCSR0 ; DNI ?
JSR PC,CHKDNI ; YES
BCC 40$ ; NO, REPORT ERROR
ERRHRD 026.,ERR009,MSG003 TRAP C$ERHRD
: .WORD 26
: .WORD ERR009
: .WORD MSG003
:
: AND ABORT TEST
ESCAPE TST

```



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5144 036076 004737 026334      80: JSR PC,CRCBLK      ; CALCULATE CRC ON 1K RBUF
5145 036102 010437 014214      MOV R4,CRCH      ; CRC -> CRCH
5146 036106 077042              SOB R0,60:      ; DO ALL 8K BY 1K BLOCKS
5147
5148
5149 036110 005737 014214      ; VERIFY CRC
5150 036114 001406              TST CRCH      ; CRC = 0 ?
5151 036116              BEQ 95:      ; YES
036116 104456              ERRHRD 030.,ERR024 ; NO, ROM CRC ERROR, REPORT ERROR
036120 000036              TRAP C#ERRHRD
036122 021630              .WORD 30
036124 000000              .WORD ERR024
5152 036126              .WORD 0
036126 104410              ESCAPE TST      ; AND ABORT TEST
036130 000002              TRAP C#ESCAPE
5153 036132              .WORD L10036-
5154 036132              95: ENDTST
036132 104401              L10036: TRAP C#ETST

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.SBTTL TEST 11: READ/WRITE INTERNAL WCS TEST

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*****
:
:   THIS TEST READS AND WRITES THE INTERNAL WCS MEMORY.
:   THE DUMP/LOAD INTERNAL MEMORY FUNCTIONS ARE USED TO
:   READ/WRITE THE RESERVED DOWNLINE LOAD PORTION OF THE WCS MEMORY.
:   THE TOP 1K OF WCS.
:
:   TEST SEQUENCE:
:
:       1. LOAD TBUF WITH DATA = ADDRESS
:       2. LOAD TOP 1K OF INTERNAL WCS MEMORY WITH TBUF
:       3. RESETP TBUF FOR DATA COMPARE
:       4. CLEAR RBUF
:       5. DUMP INTERNAL WCS MEMORY -> RBUF
:       6. COMPARE RBUF WITH TBUF
:       7. REPEAT STEPS 1 THRU 6 WITH COMPLIMENT DATA
:
*****
    
```

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5178 036134 004737 027446          BGNTST
5179 036140 103025                JSR    PC,TINIT          ; IS A DEVICE RESET NEEDED?
5180 036142 012777 000040 144056  BCC    30$             ; NO
5181 036150 004737 024574          MOV    @RSET,@PCSR0    ; YES, RESET DEUNA
5182 036154 103006                JSR    PC,CHKDNI       ; DNI ?
5183 036156 104456                BCC    20$             ; YES
5184 036166 104410                ERRHRD 031.,ERR004,MSG003 ; NO, REPORT ERROR
:                                     TRAP  C$ERHRD
:                                     .WORD 31
5185 036162 020102                .WORD  ERR004
5186 036164 017110                .WORD  MSG003
5187 036166 104410                ESCAPE TST             ; AND ABORT TEST
5188 036170 000716                .WORD  C$ESCAPE
5189 036172 004737 025546          ; 20$: JSR    PC,CLRDN1    ; WRITE ONE TO CLEAR DNI
5190 036176 103006                ; ERROR ?
5191 036200 104456                BCC    30$             ; NO
5192 036202 000040                ERRHRD 032.,ERR006,MSG003 ; YES, REPORT ERROR
5193 036204 020202                .WORD  C$ERHRD
5194 036206 017110                .WORD  32
5195 036210 104410                .WORD  ERR006
5196 036212 000674                .WORD  MSG003
5197 036214 004737 026772          ; 30$: ESCAPE TST             ; AND ABORT TEST
5198 036220 012777 000001 144000  .WORD  C$ESCAPE
5199 036226 004737 024574          .WORD  L10037-.
5200 036232 103006                JSR    PC,LDPCSR       ; ADDRESS OF PCBB -> PCSR2!3
5201 036234 104456                MOV    @GETPCB,@PCSR0 ; ISSUE GET_PCBB PORT COMMAND
5202 036236 000041                JSR    PC,CHKDNI       ; DNI ?
5203 036240 020416                BCC    40$             ; YES
5204 036242 000041                ERRHRD 033.,ERR009,MSG003 ; NO, REPORT ERROR
5205 036244 020416                .WORD  C$ERHRD
5206 036246 000041                .WORD  33
5207 036248 020416                .WORD  ERR009
    
```

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5197 036242 017110          ESCAPE TST          ; AND ABORT TEST          .WORD  MSG003
      036244 104410          ;                               TRAP   C#ESCAPE
      036246 000640          ;                               .WORD  L10037-.
5198 036250 C04737 025546    ; 40: JSR    PC,CLRDN1      ; WRITE ONE TO CLEAR DNI
5200 036254 103006          ECC      50:              ; ERROR ?
5202 036256 104456          ERRHRD  034.,ERR006,MSG003 ; NO
      036260 000042          ;                               ; YES, REPORT ERROR
      036262 020202          ;                               TRAP   C#ERHRD
      036264 017110          ;                               .WORD  34
      036266 104410          ;                               .WORD  ERR006
      036270 000616          ;                               .WORD  MSG003
5203 036266          ESCAPE TST          ; AND ABORT TEST          TRAP   C#ESCAPE
      036266 104410          ;                               .WORD  L10037-.
5204 036272 012703 014256    ;WRITE TOP 1K DOWNLINE LOAD WCS WITH DATA = ADDRESS
5205 50: MOV    #MEM11A,R3      ; R3 POINTS TO WCS ADDRESS TABLE
5206 036276 010305          ;WRITE TBUF WITH DATA = ADDRESS
5207 60: MOV    R3,R5           ; R5 POINTS TO ADDRESS
5208 JSR    PC,LDBUF          ; LOAD TBUF WITH ADDRESS DATA PATTERN
5209 036300 004737 026600    ;LOAD INTERNAL WCS MEMORY
5210 MOV    #LDMEM,R5         ; DEFAULT LOAD INTERNAL MEMORY
5211 JSR    PC,LDPCCBB        ; LOAD FUNCTION -> PCBB
5212 036304 012705 013314    MOV    #UDB11A,R5        ; DEFAULT UDBB
5213 036310 004737 026742    MOV    #4,R0             ; FOUR WORDS
5214 036314 012705 014246    JSR    PC,LDUDBB        ; LOAD INTO UDBB
5215 036320 012700 000C04    MOV    #TBUF,UDBB+2     ; LOAD TBUF ADDRESS -> UDBB+2
5216 036324 004737 027142    MOV    (R3),UDBB+6      ; LOAD WCS ADDRESS -> UDBB+6
5217 036330 012737 003104 002276  MOV    #GETCMD,BPCSR0   ; ISSUE GET COMMAND PORT COMMAND
5218 036336 011337 002302    JSR    PC,CHKDNI        ; DNI ?
5219 036342 012777 000002 143656  BCC    70:              ; YES
5220 036350 004737 024574    ERRHRD  035.,ERR010,MSG003 ; NO, REPORT ERROR
      036356 104456          ;                               TRAP   C#ERHRD
      036360 000043          ;                               .WORD  35
      036362 020502          ;                               .WORD  ERRC10
      036364 017110          ;                               .WORD  MSG003
5223 036366          ESCAPE TST          ; AND ABORT TEST          TRAP   C#ESCAPE
      036366 104410          ;                               .WORD  L10037-.
      036370 000516
5224 036372 004737 025546    ; 70: JSR    PC,CLRDN1      ; WRITE ONE TO CLEAR DNI
5225 036376 103006          BCC     80:              ; ERROR ?
5226 036400 104456          ERRHRD  036.,ERR006,MSG003 ; NO
      036402 000044          ;                               ; YES, REPORT ERROR
      036404 020202          ;                               TRAP   C#ERHRD
      036406 017110          ;                               .WORD  36
      036410 104410          ;                               .WORD  ERR006
      036412 000474          ;                               .WORD  MSG003
5229 036410          ESCAPE TST          ; AND ABORT TEST          TRAP   C#ESCAPE
      036410 104410          ;                               .WORD  L10037-.
      036412 000474
5230 036414 012703 014256    ;READ TOP 1K DOWNLINE LOAD WCS AND COMPARE DATA
5231 80: MOV    #MEM11A,R3      ; R3 POINTS TO WCS ADDRESS TABLE
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5235 036420 010305
5236 036422 004737 026600
5237
5238 036426 012704 007104
5239 036432 012700 002000
5240 036436 005024
5241 036440 077002
5242
5243 036442 012705 013304
5244 036446 004737 026742
5245 036452 012705 014246
5246 036456 012700 000004
5247 036462 004737 027142
5248 036466 012737 007104 002276
5249 036474 011337 002302
5250 036500 012777 000002 143520
5251 036506 004737 024574
5252 036512 103006
5253 036514
    036514 104456
    036516 000045
    036520 020502
    036522 017110
5254 036524
    036524 104410
    036526 000360
5255
5256 036530 004737 025546
5257
5258 036534 103006
5259 036536
    036536 104456
    036540 000046
    036542 020202
    036544 017110
5260 036546
    036546 104410
    036550 000336
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5264 036552 012705 002000
5265 036556 004737 026174
5266 036562 103006
5267 036564
    036564 104456
    036566 000047
    036570 023603
    036572 017520
5268 036574
    036574 104410
    036576 000310
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; SETUP RBUF FOR DATA COMPARE
100$: MOV R3,R5 ; R5 POINTS TO ADDRESS
      JSR PC,LDBUF ; LOAD TBUF WITH ADDRESS DATA PATTERN
; CLEAR RBUF
      MOV #RBUF,R4 ; CLEAR RBUF
      MOV #1024.,R0
110$: CLR (R4).
      SOB R0,110$
; DUMP INTERNAL WCS MEMORY INTO RBUF
      MOV #DMPMEM,R5 ; DEFAULT DUMP INTERNAL MEMORY
      JSR PC,LDPCCBB ; LOAD FUNCTION -> PCBB
      MOV #UDB11A,R5 ; DEFAULT UDBB
      MOV #4,R0 ; FOUR WORDS
      JSR PC,LDUDBB ; LOAD INTO UDBB
      MOV #RBUF,UDBB+2 ; LOAD RBUF ADDRESS -> UDBB+2
      MOV (R3),UDBB+6 ; LOAD WCS ADDRESS -> UDBB+6
      MOV #GETCMD,BPCSR0 ; ISSUE GET COMMAND PORT COMMAND
      JSR PC,CHKDNI ; DNI ?
      BCC 120$ ; YES
      ERHRD 037.,ERR010,MSG003 ; NO, REPORT ERROR
; AND ABORT TEST
      TRAP C#ERHRD
      .WORD 37
      .WORD ERR010
      .WORD MSG003
      ESCAPE TST
; AND ABORT TEST
      TRAP C#ESCAPE
      .WORD L10037-.
120$: JSR PC,CLRDN1 ; WRITE ONE TO CLEAR DNI
; ERROR ?
; NO
; YES, REPORT ERROR
      BCC 130$
      ERHRD 038.,ERR006,MSG003
; AND ABORT TEST
      TRAP C#ERHRD
      .WORD 38
      .WORD ERR006
      .WORD MSG003
      ESCAPE TST
; AND ABORT TEST
      TRAP C#ESCAPE
      .WORD L10037-.
; COMPARE RBUF WITH TBUF
130$: MOV #1024.,R5 ; COMPARE 1024. WORDS OF DATA
      JSR PC,CHPMEM ; DATA COMPARE ERROR ?
      BCC 140$ ; NO
      ERHRD 039.,ERR042,MSG007 ; YES, REPORT ERROR
; AND ABORT TEST
      TRAP C#ERHRD
      .WORD 39
      .WORD ERR042
      .WORD MSG007
      ESCAPE TST
; AND ABORT TEST
      TRAP C#ESCAPE
      .WORD L10037-.
; REPEAT TEST WITH COMPLIMENTED DATA PATTERN
    
```

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5272      ;WRITE TOP 1K DOWNLINE LOAD :WCS WITH DATA = COMPLIMENT OF ADDRESS
5273 036600 012703 014256 140$: MOV @MEM11A,R3 ; R3 POINTS TO WCS ADDRESS TABLE
5274      ;
5275      ;WRITE RBUF WITH DATA = ADDRESS
5276 036604 010305 160$: MOV R3,R5 ; R5 POINTS TO ADDRESS
5277 036606 004737 026642 JSR PC,LDBUFC ; LOAD TBUF WITH COMPLIMENTED DATA
5278      ;LOAD INTERNAL WCS MEMORY
5279 036612 012705 013314 MOV @LDHEM,R5 ; DEFAULT LOAD INTERNAL MEMORY
5280 036616 004737 026742 JSR PC,LDPCCB ; LOAD FUNCTION -> PCBB
5281 036622 012705 014246 MOV @UDB11A,R5 ; DEFAULT UDBB
5282 036626 012700 000004 MOV #4,R0 ; FOUR WORDS
5283 036632 004737 027142 JSR PC,LDUDBB ; LOAD INTO UDBB
5284 036636 012737 003104 002276 MOV @TBUF,UDBB+2 ; LOAD TBUF ADDRESS -> UDBB+2
5285 036644 011337 002302 MOV (R3),UDBB+6 ; LOAD WCS ADDRESS -> UDBB+6
5286 036650 012777 000002 143350 MOV @GETCMD,BPCSR0 ; ISSUE GET COMMAND PORT COMMAND
5287 036656 004737 024574 JSR PC,CHKDNI ; DNI ?
5288 036662 103006 BCC 170$ ; YES
5289 036664 ERRHRD 040.,ERR010,MSG003 ; NO, REPORT ERROR
          TRAP C$ERHRD
          .WORD 40
          .WORD ERR010
          .WORD MSG003
5290      ESCAPE TST ; AND ABORT TEST
          TRAP C$ESCAPE
          .WORD L10037-.
5291      ;
5292 036700 004737 025546 170$: JSR PC,CLRDNI ; WRITE ONE TO CLEAR DNI
5293      ; ERROR ?
5294 036704 103006 BCC 180$ ; NO
5295 036706 ERRHRD 041.,ERR006,MSG003 ; YES, REPORT ERROR
          TRAP C$ERHRD
          .WORD 41
          .WORD ERR006
          .WORD MSG003
5296      ESCAPE TST ; AND ABORT TEST
          TRAP C$ESCAPE
          .WORD L10037-.
5297      ;
5298      ;READ TOP 1K DOWNLINE LOAD WCS AND COMPARE DATA
5299 036722 012703 014256 180$: MOV @MEM11A,R3 ; R3 POINTS TO WCS ADDRESS TABLE
5300      ;
5301      ;SETUP TBUF FOR DATA COMPARE
5302 036726 010305 200$: MOV R3,R5 ; R5 POINTS TO ADDRESS
5303 036730 004737 026642 JSR PC,LDBUFC ; LOAD TBUF WITH COMPLIMENTED DATA
5304      ;CLEAR RBUF
5305 036734 012704 007104 MOV @RBUF,R4 ; CLEAR RBUF
5306 036740 012700 002000 MOV #1024.,R0
5307 036744 005024 210$: CLR (R4)+
5308 036746 077002 SOB R0,210$
5309      ;DUMP INTERNAL WCS MEMORY INTO RBUF
5310 036750 012705 013304 MOV @DMPHEM,R5 ; DEFAULT DUMP INTERNAL MEMORY
5311 036754 004737 026742 JSR PC,LDPCCB ; LOAD FUNCTION -> PCBB
5312 036760 012705 014246 MOV @UDB11A,R5 ; DEFAULT UDBB
5313 036764 012700 000004 MOV #4,R0 ; FOUR WORDS
5314 036770 004737 027142 JSR PC,LDUDBB ; LOAD INTO UDBB
5315 036774 012737 007104 002276 MOV @RBUF,UDBB+2 ; LOAD RBUF ADDRESS -> UDBB+2
5316 037002 011337 002302 MOV (R3),UDBB+6 ; LOAD WCS ADDRESS -> UDBB+6
    
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5317 037006 012777 000002 143212      MOV    @GETCMD,@PCSR0      ; ISSUE GET COMMAND PORT COMMAND
5318 037014 004737 024574      JSR    PC,CHKDNI          ; DNI ?
5319 037020 103006      BCC    220$              ; YES
5320 037022      ERRHRD 042.,ERR010,MSG003 ; NO, REPORT ERROR
      037022 104456      TRAP   C$ERHRD
      037024 000052      .WORD 42
      037026 020502      .WORD ERR010
      037030 017110      .WORD MSG003
5321 037032      ESCAPE TST              ; AND ABORT TEST
      037032 104410      TRAP   C$ESCAPE
      037034 000052      .WORD L10037-.
5322      ;
5323 037036 004737 025546      ;220$: JSR    PC,CLRDN1    ; WRITE ONE TO CLEAR DNI
5324      ;
5325 037042 103006      BCC    230$              ; ERROR ?
5326 037044      ERRHRD 043.,ERR006,MSG003 ; NO
      037044 104456      TRAP   C$ERHRD
      037046 000053      .WORD 43
      037050 020202      .WORD ERR006
      037052 017110      .WORD MSG003
5327 037054      ESCAPE TST              ; AND ABORT TEST
      037054 104410      TRAP   C$ESCAPE
      037056 000030      .WORD L10037-.
5328      ;
5329      ;COMPARE RBUF WITH TBUF
5330      ;
5331 037060 012705 002000      ;230$: MOV    @1024.,R5    ; COMPARE 1024. WORDS OF DATA
5332 037064 004737 026174      JSR    PC,CHPMEM        ; DATA COMPARE ERROR ?
5333 037070 103006      BCC    240$              ; NO
5334 037072      ERRHRD 044.,ERR042,MSG007 ; YES, REPORT ERROR
      037072 104456      TRAP   C$ERHRD
      037074 000054      .WORD 44
      037076 023603      .WORD ERR042
      037100 017520      .WORD MSG007
5335 037102      ESCAPE TST              ; AND ABORT TEST
      037102 104410      TRAP   C$ESCAPE
      037104 000002      .WORD L10037-.
5336      ;
5337 037106      ;240$:
5338 037106      ENDTST
      037106      L10037: TRAP   C$ETST
      037106 104401

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.SBTTL TEST 12: READ/WRITE MODE FUNCTION TEST

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*****
:
:   THIS TEST VERIFIES THE READ/WRITE MODE FUNCTIONS.
:
:   TEST SEQUENCE:
:       1. WRITE MODE REGISTER WITH ALL ONES
:       2. READ AND COMPARE MODE REGISTER
:       3. WRITE MODE REGISTER WITH ALL ZEROS
:       4. READ AND COMPARE MODE REGISTER
:
*****
    
```

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5354 037110          BGNTST
      037110
5355 037110 004737 027446          JSR    PC,TINIT          ; IS A DEVICE RESET NEEDED?
5356 037114 103025          BCC    30$              ; NO
5357 037116 012777 000040 143102  MOV    @RSET,@PCSR0     ; YES, RESET DEUNA
5358 037124 004737 024574          JSR    PC,CHKDNI        ; DNI ?
5359 037130 103006          BCC    20$              ; YES
5360 037132          ERRHRD 045.,ERR004,MSG003 ; NO, REPORT ERROR
      037132 104456          TRAP   C$ERHRD
      037134 000055          .WORD 45
      037136 020102          .WORD ERR004
      037140 017110          .WORD MSG003
5361 037142          ESCAPE TST          ; AND ABORT TEST
      037142 104410          TRAP   C$ESCAPE
      037144 000506          .WORD L10040-.
5362
5363 037146 004737 025546          ; 20$: JSR    PC,CLRDNI        ; WRITE ONE TO CLEAR DNI
5364
5365 037152 103006          BCC    30$              ; ERROR ?
5366 037154          ERRHRD 046.,ERR006,MSG003 ; YES, REPORT ERROR
      037154 104456          TRAP   C$ERHRD
      037156 000056          .WORD 46
      037160 020202          .WORD ERR006
      037162 017110          .WORD MSG003
5367 037164          ESCAPE TST          ; AND ABORT TEST
      037164 104410          TRAP   C$ESCAPE
      037166 000464          .WORD L10040-.
5368
5369 037170 004737 026772          ; 30$: JSR    PC,LDPCSR        ; ADDRESS OF PCBB -> PCSR2!3
5370 037174 012777 000001 143024  MOV    @GETPCB,@PCSR0  ; ISSUE GET_PCBB PORT COMMAND
5371 037202 004737 024574          JSR    PC,CHKDNI        ; DNI?
5372 037206 103006          BCC    40$              ; YES
5373 037210          ERRHRD 047.,ERR009,MSG003 ; NO, REPORT ERROR
      037210 104456          TRAP   C$ERHRD
      037212 000057          .WORD 47
      037214 020416          .WORD ERR009
      037216 017110          .WORD MSG003
5374 037220          ESCAPE TST          ; AND ABORT TEST
      037220 104410          TRAP   C$ESCAPE
      037222 000430          .WORD L10040-.
5375
5376 037224 004737 025546          ; 40$: JSR    PC,CLRDNI        ; WRITE ONE TO CLEAR DNI
5377
    
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5378 037230 103006          BCC      504          ; NO
5379 037232          ERRHRD  048.,ERR006,MSG003 ; YES, REPORT ERROR
      037232 104456          TRAP      C1ERRHRD
      037234 000060          .WORD    48
      037236 020202          .WORD    ERR006
      037240 017110          .WORD    MSG003
5380 037242          ESCAPE  TST          ; AND ABORT TEST
      037242 104410          TRAP      C1ESCAPE
      037244 000406          .WORD    L10040-.
5381
5382          ; WRITE SETABLE MODE REGISTER BITS WITH ONES
5383 037246 012705 013244 504:  MOV      @WTHMODE,R5          ; POINT TO DEFAULT WRITE MODE FUNCTION
5384 037252 004737 026742          JSR      PC,LDPCCB          ; LOAD FUNCTION INTO PCBB
5385 037256 012737 175015 002266  MOV      @CMODE1,PCBB+2      ; SETABLE MODE REGISTER BITS = ALL ONES
5386 037264 012777 000002 142734  MOV      @GETCMD,BPCSR0     ; ISSUE GET_CMD PORT COMMAND
5387 037272 004737 024574          JSR      PC,CHKDNI          ; DNI ?
5388 037276 103006          BCC      604          ; YES
5389 037300          ERRHRD  049.,ERR010,MSG003 ; NO, REPORT ERROR
      037300 104456          TRAP      C1ERRHRD
      037302 000061          .WORD    49
      037304 020502          .WORD    ERR010
      037306 017110          .WORD    MSG003
5390 037310          ESCAPE  TST          ; AND ABORT TEST
      037310 104410          TRAP      C1ESCAPE
      037312 000340          .WORD    L10040-.
5391
5392 037314 004737 025546 604:  JSR      PC,CLRDN1          ; WRITE ONE TO CLEAR DNI
5393          ; ERROR ?
5394 037320 103006          BCC      704          ; NO
5395 037322          ERRHRD  050.,ERR006,MSG003 ; YES, REPORT ERROR
      037322 104456          TRAP      C1ERRHRD
      037324 000062          .WORD    50
      037326 020202          .WORD    ERR006
      037330 017110          .WORD    MSG003
5396 037332          ESCAPE  TST          ; AND ABORT TEST
      037332 104410          TRAP      C1ESCAPE
      037334 000316          .WORD    L10040-.
5397
5398          ; READ AND COMPARE MODE REGISTER
5399 037336 012705 013234 704:  MOV      @RDMODE,R5          ; POINT TO DEFAULT READ MODE FUNCTION
5400 037342 004737 026742          JSR      PC,LDPCCB          ; LOAD FUNCTION INTO PCBB
5401 037346 012777 000002 142652  MOV      @GETCMD,BPCSR0     ; ISSUE GET_CMD PORT COMMAND
5402 037354 004737 024574          JSR      PC,CHKDNI          ; DNI ?
5403 037360 103006          BCC      804          ; YES
5404 037362          ERRHRD  051.,ERR010,MSG003 ; NO, REPORT ERROR
      037362 104456          TRAP      C1ERRHRD
      037364 000063          .WORD    51
      037366 020502          .WORD    ERR010
      037370 017110          .WORD    MSG003
5405 037372          ESCAPE  TST          ; AND ABORT TEST
      037372 104410          TRAP      C1ESCAPE
      037374 000256          .WORD    L10040-.
5406
5407 037376 004737 025546 804:  JSR      PC,CLRDN1          ; WRITE ONE TO CLEAR DNI
5408          ; ERROR ?
5409 037402 103006          BCC      904          ; NO
5410 037404          ERRHRD  052.,ERR006,MSG003 ; YES, REPORT ERROR

```

037404	104456						TRAP	C1ERHRD
037406	000064						.WORD	52
037410	020202						.WORD	ERR006
037412	017110						.WORD	MSG003
5411	037414				ESCAPE	TST		; AND ABORT TEST
	037414	104410					TRAP	C1ESCAPE
	037416	000234					.WORD	L10040-
5412								
5413	037420				904:			
5414	03742C	012703	175015		MOV	#CMODE1,R3		; EXPECTED DATA -> R3
5415	037424	013704	002266		MOV	PCBB+2,R4		; ACTUAL DATA -> R4
5416	037430	020304			CMP	R3,R4		; MODE REGISTER = EXPECTED DATA ?
5417	037432	001406			BEQ	1004		; YES
5418	037434				ERRHRD	053.,ERR011,MSG002		; NO, REPORT ERROR
	037434	104456					TRAP	C1ERHRD
	037436	000065					.WORD	53
	037440	020565					.WORD	ERR011
	037442	017062					.WORD	MSG002
5419	037444				ESCAPE	TST		; AND ABORT TEST
	037444	104410					TRAP	C1ESCAPE
	037446	000204					.WORD	L10040-
5420								
5421								
5422								
5423	037450	012705	013244		1004:	MOV	#WTRMODE,R5	; POINT TO DEFAULT WRITE MODE FUNCTION
5424	037454	004737	026742		JSR	PC,LDPCCB		; LOAD FUNCTION INTO PCBB
5425	037460	012737	000000	002266	MOV	#ZERO,PCBB+2		; MODE REGISTER = ALL ZEROS
5426	037466	012777	000002	142532	MOV	#GETCMD,BPCSRO		; ISSUE GET_CMD PORT COMMAND
5427	037474	004737	024574		JSR	PC,CHKDNI		; DNI ?
5428	037500	103006			BCC	1604		; YES
5429	037502				ERRHRD	054.,ERR010,MSG003		; NO, REPORT ERROR
	037502	104456					TRAP	C1ERHRD
	037504	000066					.WORD	54
	037506	020502					.WORD	ERR010
	037510	017110					.WORD	MSG003
5430	037512				ESCAPE	TST		; AND ABORT TEST
	037512	104410					TRAP	C1ESCAPE
	037514	000136					.WORD	L10040-
5431								
5432	037516	004737	025546		1604:	JSR	PC,CLRDN1	; WRITE ONE TO CLEAR DNI
5433								; ERROR ?
5434	037522	103006			BCC	1704		; NO
5435	037524				ERRHRD	055.,ERR006,MSG003		; YES, REPORT ERROR
	037524	104456					TRAP	C1ERHRD
	037526	000067					.WORD	55
	037530	020202					.WORD	ERR006
	037532	017110					.WORD	MSG003
5436	037534				ESCAPE	TST		; AND ABORT TEST
	037534	104410					TRAP	C1ESCAPE
	037536	000114					.WORD	L10040-
5437								
5438								
5439	037540	012705	013234		1704:	MOV	#RDMODE,R5	; POINT TO DEFAULT READ MODE FUNCTION
5440	037544	004737	026742		JSR	PC,LDPCCB		; LOAD FUNCTION INTO PCBB
5441	037550	012777	000002	142450	MOV	#GETCMD,BPCSRO		; ISSUE GET_CMD PORT COMMAND
5442	037556	004737	024574		JSR	PC,CHKDNI		; DNI ?
5443	037562	103006			BCC	1804		; YES



```

5444 037564          ERRHRD 056.,ERR010,MSG003      ; NO, REPORT ERROR
      037564 104456
      037566 000070
      037570 020502
      037572 017110
5445 037574          ESCAPE TST                    ; AND ABORT TEST
      037574 104410
      037576 000054
5446
5447 037600 004737 025546      ;1801: JSR      PC,CLRDN1      ; WRITE ONE TO CLEAR DNI
5448
5449 037604 103006          BCC      1901      ; ERROR ?
5450 037606          ERRHRD 057.,ERR006,MSG003      ; NO
      037606 104456
      037610 000071
      037612 020202
      037614 017110
5451 037616          ESCAPE TST                    ; AND ABORT TEST
      037616 104410
      037620 000032
5452
5453 037622          ;1901:
5454 037622 012703 000000      MOV      @ZERO,R3      ; EXPECTED DATA -> R3
5455 037626 013704 002266      MOV      PCBB+2,R4     ; ACTUAL DATA -> R4
5456 037632 020304          CMP      R3,R4        ; MODE REGISTER = EXPECTED DATA ?
5457 037634 001406          BEQ      2001      ; YES
5458 037636          ERRHRD 05A.,ERR011,MSG002      ; NO, REPORT ERROR
      037636 104456
      037640 000072
      037642 020565
      037644 017062
5459 037646          ESCAPE TST                    ; AND ABORT TEST
      037646 104410
      037650 000002
5460
5461 037652          ;2001:
5462 037652          ENDTST
      037652
      037652 104401
                                     L10040: TRAP  C#ETST

```

TRAP C#ERRRD  
.WORD 56  
.WORD ERR010  
.WORD MSG003

TRAP C#ESCAPE  
.WORD L10040-

TRAP C#ERRRD  
.WORD 57  
.WORD ERR006  
.WORD MSG003

TRAP C#ESCAPE  
.WORD L10040-

TRAP C#ERRRD  
.WORD 58  
.WORD ERR011  
.WORD MSG002

TRAP C#ESCAPE  
.WORD L10040-

5464  
5465  
5466  
5467  
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5488

.SBTTL TEST 13: READ/WRITE LINK MEMORY TEST

```

*****
:
: THIS TEST READS AND WRITES THE INTERNAL LINK MEMORY,
: THE DUMP/LOAD INTERNAL MEMORY FUNCTIONS ARE USED TO
: READ/WRITE THE ENTIRE 16K LINK MEMORY.
:
: TEST SEQUENCE:
:
: 1. WRITE MODE REGISTER = INTERNAL LOOPBACK MODE
:    TO REMOVE LINK MEMORY FROM THE WIRE
: 2. LOAD TBUF WITH DATA = ADDRESS
: 3. LOAD 1K OF INTERNAL LINK MEMORY WITH TBUF
: 4. REPEAT STEPS 1 AND 2 FOR
:    EACH 1K BLOCK OF LINK MEMORY (16 TIMES)
: 5. RESETUP TBUF FOR DATA COMPARE
: 6. CLEAR RBUF
: 7. DUMP INTERNAL LINK MEMORY -> RBUF
: 8. COMPARE RBUF WITH TBUF
: 9. REPEAT STEPS 4,5,6 AND 7 FOR EACH 1K BLOCK
: 10. REPEAT STEPS 1 THRU 8 WITH COMPLIMENT DATA
:
*****

```

```

5489 037654          BGNTST
      037654
5490 037654 004737 027446          JSR    PC,TINIT          ; IS A DEVICE RESET NEEDED?
5491 037660 103025          BCC    30$              ; NO
5492 037662 012777 000040 142336  MOV    @RSET,@PCSR0    ; YES, RESET DEUNA
5493 037670 004737 024574          JSR    PC,CHKDNI       ; DNI ?
5494 037674 103006          BCC    20$              ; YES
5495 037676          ERRHRD 059.,ERR004,MSG003 ; NO, REPORT ERROR
      037676 104456          TRAP   C$ERRRD
      037700 000073          .WORD 59
      037702 020102          .WORD ERR004
      037704 017110          .WORD MSG003
5496 037706          ESCAPE TST          ; AND ABORT TEST
      037706 104410          TRAP   C$ESCAPE
      037710 001150          .WORD L10041-.
5497
5498 037712 004737 025546          ; 20$: JSR    PC,CLRDN1 ; WRITE ONE TO CLEAR DNI
5499
5500 037716 103006          BCC    30$              ; ERROR ?
5501 037720          ERRHRD 060.,ERR006,MSG003 ; YES, REPORT ERROR
      037720 104456          TRAP   C$ERRRD
      037722 000074          .WORD 60
      037724 020202          .WORD ERR006
      037726 017110          .WORD MSG003
5502 037730          ESCAPE TST          ; AND ABORT TEST
      037730 104410          TRAP   C$ESCAPE
      037732 001126          .WORD L10041-.
5503
5504 037734 004737 026772          ; 30$: JSR    PC,LDPCSR ; ADDRESS OF PCBB -> PCSR2!3
5505 037740 012777 000001 142260  MOV    @GETPCB,@PCSR0 ; ISSUE GET_PCBB PORT COMMAND
5506 037746 004737 024574          JSR    PC,CHKDNI       ; DNI ?
5507 037752 103006          BCC    40$              ; YES

```

```

5508 037754          ERRHRD 061.,ERR009,MSG003      ; NO, REPORT ERROR
      037754 104456          TRAP C$ERRHRD
      037756 000075          .WORD 61
      037760 020416          .WORD ERR009
      037762 017110          .WORD MSG003
5509 037764          ESCAPE TST                    ; AND ABORT TEST
      037764 104410          TRAP C$ESCAPE
      037766 001072          .WORD L10041-.
5510
5511 037770 004737 025546 40: JSR PC,CLRDN1        ; WRITE ONE TO CLEAR DNI
5512                                     ; ERROR ?
5513 037774 103006          BCC 4:        ; NO
5514 037776          ERRHRD 062.,ERR006,MSG003      ; YES, REPORT ERROR
      037776 104456          TRAP C$ERRHRD
      040000 000076          .WORD 62
      040002 020202          .WORD ERR006
      040004 017110          .WORD MSG003
5515 040006          ESCAPE TST                    ; AND ABORT TEST
      040006 104410          TRAP C$ESCAPE
      040010 001050          .WORD L10041-.
5516
5517 ;WRITE MODE REGISTER = INTERNAL LOOPBACK TO TURN OFF LINK MEMORY
5518
5519 040012 012705 013244 45: MOV @WTHODE,R5        ; DEFAULT WRITE MODE FUNCTION
5520 040016 004737 026742 JSR PC,LDPCCB        ; LOAD FUNCTION -> PCBB
5521 040022 012777 000002 142176 MOV @GETCMD,BPCSR0    ; ISSUE GET_CMD PORT COMMAND
5522 040030 004737 024574 JSR PC,CHKDNI        ; DNI ?
5523 040034 103006          BCC 47:        ; YES
5524 040036          ERRHRD 063.,ERR010,MSG003      ; NO, REPORT ERROR
      040036 104456          TRAP C$ERRHRD
      040040 000077          .WORD 63
      040042 020502          .WORD ERR010
      040044 017110          .WORD MSG003
5525 040046          ESCAPE TST                    ; AND ABORT TEST
      040046 104410          TRAP C$ESCAPE
      040050 001010          .WORD L10041-.
5526
5527 040052 004737 025546 47: JSR PC,CLRDN1        ; WRITE ONE TO CLEAR DNI
5528                                     ; ERROR ?
5529 040056 103006          BCC 50:        ; NO
5530 040060          ERRHRD 064.,ERR006,MSG003      ; YES, REPORT ERROR
      040060 104456          TRAP C$ERRHRD
      040062 000100          .WORD 64
      040064 020202          .WORD ERR006
      040066 017110          .WORD MSG003
5531 040070          ESCAPE TST                    ; AND ABORT TEST
      040070 104410          TRAP C$ESCAPE
      040072 000766          .WORD L10041-.
5532
5533 ;WRITE 16K LINK MEMORY WITH DATA = ADDRESS BY 1K BLOCKS
5534 040074 012703 014260 50: MOV @MEM13A,R3        ; R3 POINTS TO LINK MEM ADDRESS TABLE
5535 040100 012701 000020 MOV @16.,R1          ; DO LOOP = 16
5536
5537 ;WRITE RBUF WITH DATA = ADDRESS
5538 040104 010305          60: MOV R3,R5          ; R5 POINTS TO ADDRESS
5539 040106 004737 026600 JSR PC,LDBUF        ; LOAD TBUF WITH ADDRESS DATA PATTERN
5540
    
```

```

5541 ;LOAD INTERNAL LINK MEMORY
5542 040112 012705 013314 MOV #LDMEM,R5 ; DEFAULT LOAD INTERNAL MEMORY
5543 040116 004737 026742 JSR PC,LDPCCB ; LOAD FUNCTION -> PCBB
5544 040122 012705 014246 MOV #UDB11A,R5 ; DEFAULT UDBB
5545 040126 012700 000004 MOV #4,R0 ; FOUR WORDS
5546 040132 004737 027142 JSR PC,LDUDBB ; LOAD INTO UDBB
5547 040136 012737 003104 002276 MOV #TBUF,UDBB+2 ; LOAD TBUF ADDRESS -> UDBB+2
5548 040144 012337 002302 MOV (R3)+,UDBB+6 ; LOAD LINK ADDRESS -> UDBB+6
5549 ;
5550 040150 022701 000001 CMP #1,R1 ; IS THIS THE LAST 1K BLOCK ?
5551 040154 001003 BNE 65# ; NO
5552 040156 012737 003774 002274 MOV #3774,UDBB ; YES, ONLY WRITE 1022. WORDS
5553 ;
5554 040164 012777 000002 142034 65# : MOV #GETCMD,#PCSR0 ; ISSUE GET COMMAND PORT COMMAND
5555 040172 004737 024574 JSR PC,CHKDNI ; DNI ?
5556 040176 103006 BCC 70# ; YES
5557 040200 ERRHRD 065.,ERR010,MSG003 ; NO, REPORT ERROR
; TRAP C#ERRHRD
; .WORD 65
; .WORD ERR010
; .WORD MSG003
5558 040210 ESCAPE TST ; AND ABORT TEST
; TRAP C#ESCAPE
; .WORD L10041-.
5559 ;
5560 040214 004737 025546 70# : JSR PC,CLRDN1 ; WRITE ONE TO CLEAR DNI
5561 ; ERROR ?
5562 040220 103006 BCC 80# ; NO
5563 040222 ERRHRD 066.,ERR006,MSG003 ; YES, REPORT ERROR
; TRAP C#ERRHRD
; .WORD 66
; .WORD ERR006
; .WORD MSG003
5564 040232 ESCAPE TST ; AND ABORT TEST
; TRAP C#ESCAPE
; .WORD L10041-.
5565 040236 005301 80# : DEC R1 ; DONE 16 WRITES ?
5566 040240 001321 BNE 60# ; NO
5567 ;
5568 ;READ 16K LINK MEMORY BY 1K BLOCKS AND COMPARE DATA
5569 040242 012703 014260 MOV #MEM13A,R3 ; R3 POINTS TO LINK MEM ADDRESS TABLE
5570 040246 012701 000020 MOV #16.,R1 ; DO LOOP = 16
5571 ;
5572 ;SETUP TBUF FOR DATA COMPARE
5573 040252 010305 100# : MOV R3,R5 ; R5 POINTS TO ADDRESS
5574 040254 004737 026600 JSR PC,LDBUF ; LOAD TBUF WITH ADDRESS DATA PATTERN
5575 ;
5576 ;CLEAR RBUF
5577 040260 012704 007104 MOV #RBUF,R4 ; CLEAR RBUF
5578 040264 012700 002000 MOV #1024.,R0
5579 040270 005024 110# : CLR (R4)+
5580 040272 077002 SOB R0,110#
5581 ;
5582 ;DUMP INTERNAL LINK MEMORY INTO RBUF
5583 040274 012705 013304 MOV #DMPMEM,R5 ; DEFAULT DUMP INTERNAL MEMORY
5584 040300 004737 026742 JSR PC,LDPCCB ; LOAD FUNCTION -> PCBB
5585 040304 012705 014246 MOV #UDB11A,R5 ; DEFAULT UDBB
    
```

H13

```

5586 040310 012700 000004      MOV    #4,R0      ; FOUR WORDS
5587 040314 004737 027142      JSR    PC,LDUDBB  ; LOAD INTO UDBB
5588 040320 012737 007104 002276  MOV    #RBUF,UDBB+2 ; LOAD RBUF ADDRESS -> UDBB+2
5589 040326 012337 002302      MOV    (R3)+,UDBB+6 ; LOAD LINK ADDRESS -> UDBB+6
5590
5591 040332 022701 000001      CMP    #1,R1      ; IS THIS THE LAST 1K BLOCK ?
5592 040336 001003      BNE    115#       ; NO
5593 040340 012737 003774 002274  MOV    #3774,UDBB ; YES, ONLY READ 1022. WORDS
5594
5595 040346 012777 000002 141652 115# : MOV    #GETCMD,SPCSRO ; ISSUE GET COMMAND PORT COMMAND
5596 040354 004737 024574      JSR    PC,CHKDNI  ; DNI ?
5597 040360 103006      BCC    120#       ; YES
5598 040362      ERRHRD 067.,ERR010,MSG003 ; NO, REPORT ERROR
                    TRAP    C#ERHRD
                    .WORD   67
                    .WORD   ERR010
                    .WORD   MSG003
                    ESCAPE  TST      ; AND ABORT TEST
                    TRAP    C#ESCAPE
                    .WORD   L10041-.
5599 040372
5600 040374 000464
5601 040376 004737 025546      120# : JSR    PC,CLRDN1  ; WRITE ONE TO CLEAR DNI
5602
5603 040402 103006      BCC    130#       ; ERROR ?
5604 040404      ERRHRD 068.,ERR006,MSG003 ; YES, REPORT ERROR
                    TRAP    C#ERHRD
                    .WORD   68
                    .WORD   ERR006
                    .WORD   MSG003
                    ESCAPE  TST      ; AND ABORT TEST
                    TRAP    C#ESCAPE
                    .WORD   L10041-.
5605 040414
5606 040416 000442
5606
5607
5608
5609 040420 022701 000001      130# : CMP    #1,R1      ; IS THIS THE LAST 1K BLOCK ?
5610 040424 001003      BNE    135#       ; NO
5611 040426 012705 001776      MOV    #1022.,R5  ; YES, ONLY COMPARE 1022. WORDS
5612 040432 000402      BR     136#
5613
5614 040434 012705 002000      135# : MOV    #1024.,R5  ; COMPARE 1024. WORDS OF DATA
5615 040440 004737 026174      136# : JSR    PC,CMPMEM ; DATA COMPARE ERROR ?
5616 040444 103006      BCC    140#       ; NO
5617 040446      ERRHRD 069.,ERR043,MSG007 ; YES, REPORT ERROR
                    TRAP    C#ERHRD
                    .WORD   69
                    .WORD   ERR043
                    .WORD   MSG007
                    ESCAPE  TST      ; AND ABORT TEST
                    TRAP    C#ESCAPE
                    .WORD   L10041-.
5618 040456
5619 040458 000400
5620 040462 005301      140# : DEC    R1          ; DONE 16 READS ?
5621 040464 001272      BNE    100#
5622
5623
5624
                    ; REPEAT TEST WITH COMPLEMENTED DATA PATTERN
                    ;
    
```

```

5625      ;WRITE 16K LINK MEMORY WITH DATA = COMPLIMENT OF ADDRESS BY 1K BLOCKS
5626 040466 012703 014260      MOV      @MEM13A,R3      ; R3 POINTS TO LINK MEM ADDRESS TABLE
5627 040472 012701 000020      MOV      @16.,R1       ; DO LOOP = 16
5628
5629      ;WRITE RBUF WITH DATA = ADDRESS
5630 040476 010305      160$: MOV      R3,R5      ; R5 POINTS TO ADDRESS
5631 040500 004737 026642      JSR      PC,LDBUFC     ; LOAD TBUF WITH COMPLIMENTED DATA
5632
5633      ;LOAD INTERNAL LINK MEMORY
5634 040504 012705 013314      MOV      @LDMEM,R5     ; DEFAULT LOAD INTERNAL MEMORY
5635 040510 004737 026742      JSR      PC,LDPCCB     ; LOAD FUNCTION -> PCBB
5636 040514 012705 014246      MOV      @UDB11A,R5    ; DEFAULT UDBB
5637 040520 012700 000004      MOV      @4,R0         ; FOUR WORDS
5638 040524 004737 027142      JSR      PC,LDUDBB     ; LOAD INTO UDBB
5639 040530 012737 003104 002276  MOV      @TBUF,UDBB+2  ; LOAD TBUF ADDRESS -> UDBB+2
5640 040536 012337 002302      MOV      (R3)+,UDBB+6  ; LOAD LINK ADDRESS -> UDBB+6
5641
5642 040542 022701 000001      CMP      @1,R1         ; IS THIS THE LAST 1K BLOCK ?
5643 040546 001003      BNE      165$         ; NO
5644 040550 012737 003774 002274  MOV      @3774,UDBB    ; YES, ONLY WRITE 1022. WORDS
5645
5646 040556 012777 000002 141442 165$: MOV      @GETCMD,@PCSR0 ; ISSUE GET COMMAND PORT COMMAND
5647 040564 004737 024574      JSR      PC,CHKDNI     ; DNI ?
5648 040570 103006      BCC      170$         ; YES
5649 040572      ERRHRD 070.,ERR010,MSG003 ; NO, REPORT ERROR
5650      040572 104456      TRAP    C$ERHRD
5650      040574 000106      .WORD  70
5650      040576 020502      .WORD  ERR010
5650      040600 017110      .WORD  MSG003
5650      ESCAPE TST      ; AND ABORT TEST
5650      040602 104410      TRAP    C$ESCAPE
5650      040604 000254      .WORD  L10041-.
5651
5652 040606 004737 025546      170$: JSR      PC,CLRDNI ; WRITE ONE TO CLEAR DNI
5653      BCC      180$         ; ERROR ?
5654 040612 103006      BCC      180$         ; NO
5655 040614      ERRHRD 071.,ERR006,MSG003 ; YES, REPORT ERROR
5655      040614 104456      TRAP    C$ERHRD
5655      040616 000107      .WORD  71
5655      040620 020202      .WORD  ERR006
5655      040622 017110      .WORD  MSG003
5656      040624      ESCAPE TST      ; AND ABORT TEST
5656      040624 104410      TRAP    C$ESCAPE
5656      040626 000232      .WORD  L10041-.
5657 040630 005301      180$: DEC      R1         ; DONE 16 WRITES ?
5658 040632 001321      BNE      160$         ; NO
5659
5660      ;READ 16K LINK MEMORY BY 1K BLOCKS AND COMPARE DATA
5661 040634 012703 014260      MOV      @MEM13A,R3    ; R3 POINTS TO LINK MEM ADDRESS TABLE
5662 040640 012701 000020      MOV      @16.,R1       ; DO LOOP = 16
5663
5664      ;SETUP TBUF FOR DATA COMPARE
5665 040644 010305      200$: MOV      R3,R5      ; R5 POINTS TO ADDRESS
5666 040646 004737 026642      JSR      PC,LDBUFC     ; LOAD TBUF WITH COMPLIMENTED DATA
5667
5668      ;CLEAR RBUF
5669 040652 012704 007104      MOV      @RBUF,R4     ; CLEAR RBUF
    
```

```

5670 040656 012700 002000      MOV      #1024.,R0
5671 040662 005024      210$:   CLR      (R4).
5672 040664 077002      SOB      R0,210$
5673
5674      ;DUMP INTERNAL LINK MEMORY INTO RBUF
5675 040666 012705 013304      MOV      @DMPMEM,R5      ; DEFAULT DUMP INTERNAL MEMORY
5676 040672 004737 026742      JSR      PC,LDPCCB      ; LOAD FUNCTION -> PCBB
5677 040676 012705 014246      MOV      @UDB11A,R5      ; DEFAULT UDBB
5678 040702 012700 000004      MOV      #4,R0          ; FOUR WORDS
5679 040706 004737 027142      JSR      PC,LDUDBB      ; LOAD INTO UDBB
5680 040712 012737 007104 002276      MOV      @RBUF,UDBB+2    ; LOAD RBUF ADDRESS -> UDBB+2
5681 040720 012337 002302      MOV      (R3)+,UDBB+6    ; LOAD LINK ADDRESS -> UDBB+6
5682
5683 040724 022701 000001      ;
5684 040730 001003      CMP      #1,R1          ; IS THIS THE LAST 1K BLOCK ?
5685 040732 012737 003774 002274      BNE      215$          ; NO
5686      MOV      #3774,UDBB      ; YES, ONLY READ 1022. WORDS
5687 040740 012777 000002 141260 215$:   MOV      @GETCMD,@PCSR0  ; ISSUE GET COMMAND PORT COMMAND
5688 040746 004737 024574      JSR      PC,CHKDNI      ; DNI ?
5689 040752 103006      BCC      220$          ; YES
5690 040754      ERRHRD  072.,ERR010,MSG003 ; NO, REPORT ERROR
5691      TRAP      C$ERHRD
5692      .WORD      72
5693      .WORD      ERR010
5694      .WORD      MSG003
5695      ESCAPE  TST          ; AND ABORT TEST
5696      TRAP      C$ESCAPE
5697      .WORD      L10041-.
5698
5699      ;
5700      ;COMPARE RBUF WITH TBUF
5701 041012 022701 000001      ;
5702 041016 001003      230$:   CMP      #1,R1          ; IS THIS THE LAST 1K BLOCK ?
5703 041020 012705 001776      BNE      235$          ; NO
5704 041024 000402      MOV      #1022.,R5      ; YES, ONLY COMPARE 1022. WORDS
5705      BR      236$
5706 041026 012775 002000      ;
5707 041032 004737 026174      235$:   MOV      #1024.,R5      ; COMPARE 1024. WORDS OF DATA
5708 041036 103006      236$:   JSR      PC,CMEMEM      ; DATA COMPARE ERROR ?
5709 041040      BCC      240$          ; NO
5710      ERRHRD  074.,ERR043,MSG007 ; YES, REPORT ERROR
5711      TRAP      C$ERHRD
5712      .WORD      74
5713      .WORD      ERR043
5714      .WORD      MSG007
5715      ESCAPE  TST          ; AND ABORT TEST
    
```

TRAP C#ESCAPE  
.WORD L10041-

041050 104410  
041052 000006  
5711  
5712 041054 005301  
5713 041056 001272  
5714  
5715 041060  
041060  
041060 104401

i  
240: DEC R1  
BNE 200:  
i  
ENDTST

; DONE 16 READS ?

L10041: TRAP C#ETST



.SBTTL TEST 14: INTERNAL LOOPBACK TEST

```

*****
THIS TEST HAS TWO PARTS: SUBTEST #1 AND SUBTEST #2
SUBTEST #1 VERIFIES THAT AN INTERNAL LOOPBACK OPERATION
CAN BE PERFORMED SUCCESSFULLY.
SUBTEST #2 VERIFIES THAT THE HEARTBEAT CIRCUITRY IS OPERATING CORRECTLY
    
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TEST SEQUENCE:

1. WRITE MODE REGISTER = INTERNAL LOOPBACK, PROM MODE
2. WRITE RING FORMAT
3. WRITE PHYSICAL ADDRESS
4. SET UP RINGS AND BUFFERS
5. ISSUE START
6. CHECK FOR ERRORS
7. ISSUE STOP
8. WRITE MODE REGISTER = INTERNAL LOOPBACK, PROM MODE, ENABLE COLLISION TEST CIRCUITRY
9. SET UP RINGS AND BUFFERS
10. ISSUE START
11. ISSUE STOP
12. ISSUE READ PORT STATUS
13. VERIFY 'CERR' BIT SET IN PORT CONTROL WORD 2

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 5744 041062  
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 5745 041062  
 041062  
 041062 104402  
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 5747 041064 004737 027446  
 5748 041070 103025  
 5749 041072 012777 000040 141126  
 5750 041100 004737 024574  
 5751 041104 103006  
 5752 041106  
 041106 104456  
 041110 000113  
 041112 020102  
 041114 017110  
 5753 041116  
 041116 104410  
 041120 001714  
 5754  
 5755 041122 004737 025546  
 5756  
 5757 041126 103006  
 5758 041130  
 041130 104456  
 041132 000114  
 041134 020202  
 041136 017110  
 5759 041140  
 041140 104410

```

BGNTST
BGNSUB :#1
T14::
T14.1: TRAP C#BSUB
JSR PC,TINIT ; IS A DEVICE RESET NEEDED?
BCC 30# ; NO
MOV #RSET,BPCSR0 ; YES, RESET DEUNA
JSR PC,CHKDNI ; DNI ?
BCC 20# ; YES
ERRHRD 075.,ERR004,MSG003 ; NO, REPORT ERROR
TRAP C#ERRRD
.WORD 75
.WORD ERR004
.WORD MSG003
ESCAPE TST ; AND ABORT TEST
TRAP C#ESCAPE
.WORD L10042-.
;
; 20#: JSR PC,CLRDN1 ; WRITE ONE TO CLEAR DNI
; ERROR ?
BCC 30# ; NO
ERRHRD 076.,ERR006,MSG003 ; YES, REPORT ERROR
TRAP C#ERRRD
.WORD 76
.WORD ERR006
.WORD MSG003
ESCAPE TST ; AND ABORT TEST
TRAP C#ESCAPE
    
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M13

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041142 001672                                     .WORD L10042-.
5760
5761 041144 004737 026772          i 30$: JSR   PC,LDPCSR      ; ADDRESS OF PCBB -> PCSR2!3
5762 041150 012777 000001 141050   MOV   #GETPCB,#PCSR0  ; ISSUE GET_PCBB PORT COMMAND
5763 041156 004737 024574          JSR   PC,CHKDNI      ; DNI?
5764 041162 103006          BCC   40$           ; YES
5765 041164          ERRHRD 077.,ERR009,MSG003 ; NO, REPORT ERROR
                                TRAP   C$ERHRD
                                .WORD  77
                                .WORD  ERR009
                                .WORD  MSG003
5766 041174          ESCAPE TST          ; AND ABORT TEST
                                TRAP   C$ESCAPE
                                .WORD  L10042-.
5767 041200 004737 025546          i 40$: JSR   PC,CLRDNI    ; WRITE ONE TO CLEAR DNI
5768 041204 103006          BCC   50$           ; ERROR ?
5769 041206          ERRHRD 078.,ERR006,MSG003 ; NO
5770 041206 104456          .WORD 78
5771 041206 000116          .WORD ERR006
5772 041206 020202          .WORD MSG003
5773 041210 000116          ESCAPE TST          ; AND ABORT TEST
5774 041212 020202          TRAP   C$ERHRD
5775 041214 017110          .WORD 78
5776 041216 104410          .WORD ERR006
5777 041216 001636          .WORD MSG003
5778 041220 001614          ESCAPE TST          ; AND ABORT TEST
5779 041222 012705 013244          ;WRITE MODE REGISTER = INTERNAL LOOPBACK AND PROM MODE
5780 041226 004737 026742          i 50$: MOV   #WTHMODE,R5  ; DEFAULT WRITE MODE FUNCTION
5781 041232 012777 000002 140766   JSR   PC,LDPCCBB    ; LOAD FUNCTION -> PCBB
5782 041240 004737 024574          MOV   #GETCMD,#PCSR0 ; ISSUE GET_CMD PORT COMMAND
5783 041244 103006          JSR   PC,CHKDNI      ; DNI ?
5784 041246          BCC   60$           ; YES
5785 041246          ERRHRD 079.,ERR010,MSG003 ; NO, REPORT ERROR
                                TRAP   C$ERHRD
                                .WORD  79
                                .WORD  ERR010
                                .WORD  MSG003
5786 041250 104456          ESCAPE TST          ; AND ABORT TEST
5787 041252 000117          TRAP   C$ESCAPE
5788 041252 020502          .WORD  L10042-.
5789 041254 017110          .WORD 79
5790 041256 104410          .WORD ERR010
5791 041260 001554          .WORD MSG003
5792 041262 001554          ESCAPE TST          ; AND ABORT TEST
5793 041266 103006          TRAP   C$ERHRD
5794 041270          .WORD 80
5795 041270 104456          .WORD ERR006
5796 041272 000120          .WORD MSG003
5797 041272 020202          ESCAPE TST          ; AND ABORT TEST
5798 041274 017110          TRAP   C$ESCAPE
5799 041276 017110          .WORD  L10042-.
5800 041276 017110          .WORD 80
5801 041276 017110          .WORD ERR006
5802 041276 017110          .WORD MSG003
5803 041300          ESCAPE TST          ; AND ABORT TEST
5804 041300 104410          TRAP   C$ESCAPE
5805 041302 001532          .WORD  L10042-.
5806 041302 001532          .WORD 80
5807 041302 001532          .WORD ERR006
5808 041302 001532          .WORD MSG003
5809 041304 012705 013204          ;WRITE RING FORMAT
5810 041310 004737 026742          i 70$: MOV   #WTRNGS,R5  ; DEFAULT WRITE RING FORMAT FUNCTION
5811 041310          JSR   PC,LDPCCBB    ; LOAD FUNCTION -> PCBB

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5792	041314	012705	013324		MOV	#RFRMT,R5		; DEFAULT RING FORMAT		
5793	041320	012700	000006		MOV	#6,R0		; FORMAT = SIX WORDS		
5794	041324	004737	027142		JSR	PC,LDUDBB		; LOAD RING FORMAT -> UDBB		
5795	041330	012777	000002	140670	MOV	#GETCMD,#PCSR0		; ISSUE GET_CMD PORT COMMAND		
5796	041336	004737	024574		JSR	PC,CHKDNI		; DNI ?		
5797	041342	103006			BCC	80\$		; YES		
5798	041344				ERRHRD	081.,ERR010,MSG003		; NO, REPORT ERROR		
	041344	104456							TRAP	C\$ERHRD
	041346	000121							.WORD	81
	041350	020502							.WORD	ERR010
	041352	017110							.WORD	MSG003
5799	041354				ESCAPE	TST		; AND ABORT TEST		
	041354	104410							TRAP	C\$ESCAPE
	041356	001456							.WORD	L10042-
5800										
5801	041360	004737	025546		80\$: JSR	PC,CLRDNI		; WRITE ONE TO CLEAR DNI		
5802								; ERROR ?		
5803	041364	103006			BCC	90\$		; NO		
5804	041366				ERRHRD	082.,ERR006,MSG003		; YES, REPORT ERROR		
	041366	104456							TRAP	C\$ERHRD
	041370	000122							.WORD	82
	041372	020202							.WORD	ERR006
	041374	017110							.WORD	MSG003
5805	041376				ESCAPE	TST		; AND ABORT TEST		
	041376	104410							TRAP	C\$ESCAPE
	041400	001434							.WORD	L10042-
5806										
5807					90\$: ;WRITE PHYSICAL ADDRESS					
5808	041402	012705	013144		MOV	#WTPHYA,R5		; DEFAULT WRITE PHYSICAL ADDR FUNC		
5809	041406	004737	026742		JSR	PC,LDPCBB		; LOAD FUNCTION -> PCBB		
5810	041412	012777	000002	140606	MOV	#GETCMD,#PCSR0		; ISSUE GET_CMD PORT COMMAND		
5811	041420	004737	024574		JSR	PC,CHKDNI		; DNI ?		
5812	041424	103006			BCC	100\$		; YES		
5813	041426				ERRHRD	083.,ERR010,MSG003		; NO, REPORT ERROR		
	041426	104456							TRAP	C\$ERHRD
	041430	000123							.WORD	83
	041432	020502							.WORD	ERR010
	041434	017110							.WORD	MSG003
5814	041436				ESCAPE	TST		; AND ABORT TEST		
	041436	104410							TRAP	C\$ESCAPE
	041440	001374							.WORD	L10042-
5815										
5816	041442	004737	025546		100\$: JSR	PC,CLRDNI		; WRITE ONE TO CLEAR DNI		
5817								; ERROR ?		
5818	041446	103006			BCC	110\$		; NO		
5819	041450				ERRHRD	084.,ERR006,MSG003		; YES, REPORT ERROR		
	041450	104456							TRAP	C\$ERHRD
	041452	000124							.WORD	84
	041454	020202							.WORD	ERR006
	041456	017110							.WORD	MSG003
5820	041460				ESCAPE	TST		; AND ABORT TEST		
	041460	104410							TRAP	C\$ESCAPE
	041462	001352							.WORD	L10042-
5821										
5822					110\$: ;SET UP RINGS FOR ONE BUFFER LOOPBACK					
5823	041464	012705	013554		MOV	#TDRB1A,R5		; DEFAULT ONE BUFFER TRANSMIT RING		
5824	041470	004737	027046		JSR	PC,LDTDRB		; LOAD TDRB		

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5825 041474 012705 013354      MOV    #RDRB1A,R5      ; DEFAULT ONE BUFFER RECEIVE RING
5826 041500 004737 027010      JSR    PC,LDRDRB      ; LOAD RDRB
5827
5828      ;SET UP BUFFERS AND START
5829 041504 C12705 002266      MOV    #PCBB+2,R5     ; POINT TO DESTINATION ADDRESS
5830 041510 004737 026714      JSR    PC,LDDDEST     ; LOAD DEST
5831 041514 004737 027342      JSR    PC,SETBUF      ; SET UP BUFFERS
5832 041520 012777 000004 140500  MOV    #START,@PCSR0  ; ISSUE START PORT COMMAND
5833 041526 004737 024574      JSR    PC,CHKDNI      ; DNI?
5834 041532 103006      BCC    120#           ; YES
5835 041534      ERRHRD 085.,ERR012,MSG003 ; NO, REPORT ERROR
      041534 104456      TRAP  C#ERRHD
      041536 000125      .WORD 85
      041540 020633      .WORD ERR012
      041542 017110      .WORD MSG003
5836 041544      ESCAPE TST           ; AND ABORT TEST
      041544 104410      TRAP  C#ESCAPE
      041546 001266      .WORD L10042-.
5837
5838 041550 004737 025546      ;120#: JSR    PC,CLRDN1 ; WRITE ONE TO CLEAR DNI
5839      BCC    130#           ; ERROR ?
5840 041554 103006      BCC    130#           ; NO
5841 041556      ERRHRD 086.,ERR006,MSG003 ; YES, REPORT ERROR
      041556 104456      TRAP  C#ERRHD
      041560 000126      .WORD 86
      041562 020202      .WORD ERR006
      041564 017110      .WORD MSG003
5842 041566      ESCAPE TST           ; AND ABORT TEST
      041566 104410      TRAP  C#ESCAPE
      041570 001244      .WORD L10042-.
5843
5844 041572 004737 025404      ;130#: JSR    PC,CHKTXI ; TXI ?
5845 041576 103006      BCC    140#           ; YES
5846 041600      ERRHRD 087.,ERR013,MSG003 ; NO, REPORT ERROR
      041600 104456      TRAP  C#ERRHD
      041602 000127      .WORD 87
      041604 020714      .WORD ERR013
      041606 017110      .WORD MSG003
5847 041610      ESCAPE TST           ; AND ABORT TEST
      041610 104410      TRAP  C#ESCAPE
      041612 001222      .WORD L10042-.
5848
5849 041614 004737 025730      ;140#: JSR    PC,CLRTXI ; WRITE ONE TO CLEAR TXI
5850      BCC    150#           ; ERROR ?
5851 041620 103006      BCC    150#           ; NO
5852 041622      ERRHRD 088.,ERR014,MSG003 ; YES, REPORT ERROR
      041622 104456      TRAP  C#ERRHD
      041624 000130      .WORD 88
      041626 020745      .WORD ERR014
      041630 017110      .WORD MSG003
5853 041632      ESCAPE TST           ; AND ABORT TEST
      041632 104410      TRAP  C#ESCAPE
      041634 001200      .WORD L10042-.
5854
5855 041636 012705 002604      ;150#: MOV    #TDRB,R5   ; CHECK TDRB OWNERSHIP
5856 041642 004737 024676      JSR    PC,CHKOWN     ; OWN = PORT DRIVER ?
5857 041646 103006      BCC    160#           ; YES
    
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5858	041650			ERRHRD	089.,ERR018		; NO, REPORT ERROR		
	041650	104456						TRAP	C1ERRHRD
	041652	000131						.WORD	89
	041654	021212						.WORD	ERR018
	041656	000000						.WORD	0
5859	041660			ESCAPE	TST		; AND ABORT TEST		
	041660	104410						TRAP	C1ESCAPE
	041662	001152						.WORD	L10042..
5860									
5861	041664	012705	014524	160:	MOV	@TDR14A,R5	; POINT TO EXPECTED TDRB		
5862	041670	004737	027252		JSR	PC,LDXTDR	; LOAD INTO XTDRB0 TABLE		
5863	041674	012705	002604		MOV	@TDRB,R5	; CHECK TDRB		
5864	041700	004737	025316		JSR	PC,CHKTDR	; ERRORS ?		
5865	041704	103006			BCC	170:	; NO		
5866	041706				ERRHRD	090.,ERR020,MSG005	; YES, REPORT ERROR		
	041706	104456						TRAP	C1ERRHRD
	041710	000132						.WORD	90
	041712	021372						.WORD	ERR020
	041714	017214						.WORD	MSG005
5867	041716			ESCAPE	TST		; AND ABORT TEST		
	041716	104410						TRAP	C1ESCAPE
	041720	001114						.WORD	L10042..
5868									
5869	041722	004737	025132	170:	JSR	PC,CHKRXI	; RXI ?		
5870	041726	103006			BCC	180:	; YES		
5871	041730				ERRHRD	091.,ERR015,MSG003	; NO, REPORT ERROR		
	041730	104456						TRAP	C1ERRHRD
	041732	000133						.WORD	91
	041734	021013						.WORD	ERR015
	041736	017110						.WORD	MSG003
5872	041740			ESCAPE	TST		; AND ABORT TEST		
	041740	104410						TRAP	C1ESCAPE
	041742	001072						.WORD	L10042..
5873									
5874	041744	004737	025662	180:	JSR	PC,CLARXI	; WRITE ONE TO CLEAR RXI		
5875							; ERROR ?		
5876	041750	103006			BCC	190:	; NO		
5877	041752				ERRHRD	092.,ERR016,MSG003	; YES, REPORT ERROR		
	041752	104456						TRAP	C1ERRHRD
	041754	000134						.WORD	92
	041756	021044						.WORD	ERR016
	041760	017110						.WORD	MSG003
5878	041762			ESCAPE	TST		; AND ABORT TEST		
	041762	104410						TRAP	C1ESCAPE
	041764	001050						.WORD	L10042..
5879									
5880	041766	012705	002644	190:	MOV	@RDRB,R5	; CHECK RDRB OWNERSHIP		
5881	041772	004737	024676		JSR	PC,CHKOWN	; OWN = PORT DRIVER ?		
5882	041776	103006			BCC	200:	; YES		
5883	042000				ERRHRD	093.,ERR017	; NO, REPORT ERROR		
	042000	104456						TRAP	C1ERRHRD
	042002	000135						.WORD	93
	042004	021112						.WORD	ERR017
	042006	000000						.WORD	0
5884	042010			ESCAPE	TST		; AND ABORT TEST		
	042010	104410						TRAP	C1ESCAPE
	042012	001022						.WORD	L10042..

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5885
5886 042014 012705 014634      ; 2004: MOV      @RDR14A,R5      ; POINT TO EXPECTED RDRB
5887 042020 004737 027222      JSR      PC,LDXRDR      ; LOAD INTO XRDRBO TABLE
5888 042024 012705 002644      MOV      @RDRB,R5      ; CHECK RDRB
5889 042030 004737 025032      JSR      PC,CHKRDR      ; ERRORS ?
5890 042034 103006                BCC      2104           ; NO
5891 042036                ERRHRD   094.,ERR021,MSG006 ; YES, REPORT ERROR
                    042036 104456                TRAP
                    042040 000136                .WORD   94
                    042042 021453                .WORD   ERR021
                    042044 017356                .WORD   MSG006
5892 042046                ESCAPE   TST           ; AND ABORT TEST
                    042046 104410                TRAP
                    042050 000764                .WORD   C1ESCAPE
                                                L10042-.
5893
5894      ;COMPARE RBUF WITH TBUF
5895 042052 012705 000070      ; 2104: MOV      @56.,R5      ; COMPARE 56 WORDS OF DATA
5896 042056 004737 026044      JSR      PC,CHPDAT      ; DATA COMPARE ERROR ?
5897 042062 103005                BCC      2204           ; NO
5898 042064                ERRHRD   095.,ERR022,MSG007 ; YES, REPORT ERROR
                    042064 104456                TRAP
                    042066 000137                .WORD   95
                    042070 021534                .WORD   ERR022
                    042072 017520                .WORD   MSG007
5899 042074                ESCAPE   TST           ; AND ABORT TEST
                    042074 104410                TRAP
                    042076 000736                .WORD   C1ESCAPE
                                                L10042-.
5900
5901 042100 012705 014724      ; 2204: MOV      @CRC14A,R5    ; POINT TO EXPECTED CRCB
5902 042104 004737 027176      JSR      PC,LDXCRC      ; LOAD INTO XCRC TABLE
5903 042110 012705 007300      MOV      @RBUF+124.,R5  ; CHECK CRC
5904 042114 004737 026124      JSR      PC,CHPCRC      ; ERRORS ?
5905 042120 103006                BCC      2304           ; NO
5906 042122                ERRHRD   096.,ERR023,MSG008 ; YES, REPORT ERROR
                    042122 104456                TRAP
                    042124 000140                .WORD   96
                    042126 021603                .WORD   ERR023
                    042130 017552                .WORD   MSG008
5907 042132                ESCAPE   TST           ; AND ABORT TEST
                    042132 104410                TRAP
                    042134 000700                .WORD   C1ESCAPE
                                                L10042-.
5908
5909 042136 012777 000017 140062 ; 2304: MOV      @STOP,@PCSR0   ; ISSUE STOP PORT COMMAND
5910 042144 004737 024574      JSR      PC,CHKDNI      ; DNI ?
5911 042150 103006                BCC      2404           ; YES
5912 042152                ERRHRD   097.,ERR019,MSG003 ; NO, REPORT ERROR
                    042152 104456                TRAP
                    042154 000141                .WORD   97
                    042156 021312                .WORD   ERR019
                    042160 017110                .WORD   MSG003
5913 042162                ESCAPE   TST           ; AND ABORT TEST
                    042162 104410                TRAP
                    042164 000650                .WORD   C1ESCAPE
                                                L10042-.
5914
5915 042166 004737 025546      ; 2404: JSR      PC,CLRDNI    ; WRITE ONE TO CLEAR DNI
5916                                BCC      2504           ; ERROR ?
5917 042172 103006                ; NO
    
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5918 042174          ERRHRD  098.,ERR006,MSG003      ; YES, REPORT ERROR
      042174      104456
      042176      000142
      042200      020202
      042202      017110
5919 042204          ESCAPE  TST                    ; AND ABORT TEST
      042204      104410
      042206      000626
5920 042210          250+:
5921 042210          ENDSUB  ;#1
      042210
      042210      104403
5922 042212          BGNSUB  ;#2
      042212
      042212      104402
5923
5924
5925
5926 042214      004737  027446
5927 042220      103054
5928 042222      012777  000040  137776
5929 042230      004737  024574
5930 042234      103006
5931 042236          JSR      PC,TINIT                ; IS A DEVICE RESET NEEDED?
      042236      104456
      042240      000143
      042242      020102
      042244      017110
5932 042246          BCC      255:
      042246      104410
      042250      000564
5933
5934 042252      004737  025546
5935 042256      103006
5936 042260          JSR      PC,CLRDN1              ; GO CLEAR DNI
      042260      104456
      042262      000144
      042264      020202
      042266      017110
5937 042270          BCC      252:
      042270      104410
      042272      000542
5938
5939 042274      004737  026772
5940 042300      012777  000001  137720
5941 042306      004737  024574
5942 042312      103006
5943 042314          JSR      PC,LDPCSR              ; ADDRESS OF PCBB -> PCSR2:3
      042314      104456
      042316      001115
      042320      020416
      042322      017110
5944 042324          MOV      %GETPCB,%PCSR0        ; ISSUE GET_PCBB PORT COMMAND
      042324      104410
      042326      000506
5945
5946 042330      004737  025546
5946 042330          JSR      PC,CLRDN1              ; GO CLEAR DNI
  
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5947 042334 103006          BCC      255$          ;OK
5948 042336          ERRHRD  590.,ERR006,MSG003 ;ERROR TRYING TO CLEAR DNI
                                TRAP      C#ERRHRD
                                .WORD     590
                                .WORD     ERR006
                                .WORD     MSG003
                                ;RSJ003
5949 042346          ESCAPE  TST          ;ABORT TEST
                                TRAP      C#ESCAPE
                                .WORD     L10042-.
5950
5951
5952 042352 012705 013254    ;255$: MOV      #WTMOD1,R5          ; POINT TO WRITE MODE FUNCTION
5953 042356 004737 026742    JSR      PC,LDP CBB          ; LOAD FUNCTION -> PCBB
5954 042362 012777 000002 137636 MOV      #GETCMD,#PCSR0      ; ISSUE GET_CMD PORT COMMAND
5955 042370 004737 024574    JSR      PC,CHKDNI          ; DNI ?
5956 042374 103006          BCC      260$          ; YES
5957 042376          ERRHRD  101.,ERR010,MSG003 ; NO, REPORT ERROR
                                TRAP      C#ERRHRD
                                .WORD     101
                                .WORD     ERR010
                                .WORD     MSG003
5958 042406          ESCAPE  TST          ; AND ABORT TEST
                                TRAP      C#ESCAPE
                                .WORD     L10042-.
5959
5960 042412 004737 025546    ;260$: JSR      PC,CLR DNI      ; WRITE ONE TO CLEAR DNI
5961
5962 042416 103006          BCC      270$          ; ERROR ?
5963 042420          ERRHRD  102.,ERR006,MSG003 ; NO
                                ; YES, REPORT ERROR
                                TRAP      C#ERRHRD
                                .WORD     102
                                .WORD     ERR006
                                .WORD     MSG003
5964 042430          ESCAPE  TST          ; AND ABORT TEST
                                TRAP      C#ESCAPE
                                .WORD     L10042-.
5965
5966
5967
5968 042434 012705 013554    ;SET UP RINGS FOR ONE BUFFER LOOPBACK
5969 042440 004737 027046    ;270$: MOV      #TDRB1A,R5      ; DEFAULT ONE BUFFER TRANSMIT RING
5970 042444 012705 013354    JSR      PC,LDTDRB          ; LOAD TDRB
5971 042450 004737 027010    MOV      #RDRB1A,R5        ; DEFAULT ONE BUFFER RECEIVE RING
5972
5973
5974
5975 042454 012705 002266    ;SET UP BUFFERS AND START
5976 042460 004737 026714    ; MOV      #PCBB+2,R5        ; POINT TO DESTINATION ADDRESS
5977 042464 004737 027342    JSR      PC,LDDDEST        ; LOAD DEST
5978 042470 012777 000004 137530 JSR      PC,SETBUF          ; SET UP BUFFERS
5979 042476 004737 024574    MOV      #START,#PCSR0     ; ISSUE START PORT COMMAND
5980 042502 103006          BCC      280$          ; DNI?
5981 042504          ERRHRD  103.,ERR012,MSG003 ; YES
                                ; NO, REPORT ERROR
                                TRAP      C#ERRHRD
                                .WORD     103
                                .WORD     ERR012
                                .WORD     MSG003
042504 104456
042506 000147
042510 020633
042512 017110
    
```



5982	042514			ESCAPE	TST		; AND ABORT TEST		
	042514	104410						TRAP	C#ESCAPE
	042516	000316						.WORD	L10042-.
5983									
5984	042520	004737	025546	i 280#:	JSR	PC,CLRDNI			
5985									
5986	042524	103006			BCC	290#			
5987	042526				ERRHRD	104.,ERR006,MSG003			
	042526	104456						TRAP	C#ERRHRD
	042530	000150						.WORD	104
	042532	020202						.WORD	ERR006
	042534	017110						.WORD	MSG003
5988	042536				ESCAPE	TST			
	042536	104410						TRAP	C#ESCAPE
	042540	000274						.WORD	L10042-.
5989									
5990	042542	004737	025404	i 290#:	JSR	PC,CHKTXI			
5991	042546	103006			BCC	300#			
5992	042550				ERRHRD	105.,ERR013,MSG003			
	042550	104456						TRAP	C#ERRHRD
	042552	000151						.WORD	105
	042554	020714						.WORD	ERR013
	042556	017110						.WORD	MSG003
5993	042560				ESCAPE	TST			
	042560	104410						TRAP	C#ESCAPE
	042562	000252						.WORD	L10042-.
5994									
5995	042564	004737	025730	i 300#:	JSR	PC,CLRXTXI			
5996									
5997	042570	103006			BCC	310#			
5998	042572				ERRHRD	106.,ERR014,MSG003			
	042572	104456						TRAP	C#ERRHRD
	042574	000152						.WORD	106
	042576	020745						.WORD	ERR014
	042600	017110						.WORD	MSG003
5999	042602				ESCAPE	TST			
	042602	104410						TRAP	C#ESCAPE
	042604	000230						.WORD	L10042-.
6000									
6001	042606	004737	02513?	i 310#:	JSR	PC,CHKRXI			
6002	042612	103006			BCC	320#			
6003	042614				ERRHRD	107.,ERR015,MSG003			
	042614	104456						TRAP	C#ERRHRD
	042616	000153						.WORD	107
	042620	021013						.WORD	ERR015
	042622	017110						.WORD	MSG003
6004	042624				ESCAPE	TST			
	042624	104410						TRAP	C#ESCAPE
	042626	000206						.WORD	L10042-.
6005									
6006	042630	004737	025662	i 320#:	JSR	PC,CLRRXI			
6007									
6008	042634	103006			BCC	330#			
6009	042636				ERRHRD	108.,ERR016,MSG003			
	042636	104456						TRAP	C#ERRHRD
	042640	000154						.WORD	108
	042642	021044						.WORD	ERR016



043024 000162  
 043026 020202  
 043030 017110  
 6039 043032  
 6040 043032  
 043032  
 043032 104403  
 6041 043034  
 043034  
 043034 104401

3904:  
 ENDSUB ;#2  
 ENDTST

.WORD 114  
 .WORD ERRO06  
 .WORD MSG003

L10044: TRAP C#ESJB  
 L10042: TRAP C#ETST

J14

6043  
6044  
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.SBTTL TEST 15: CRC CHECKING TEST  
\*\*\*\*\*  
: THIS TEST VERIFIES THAT CRC CHECKING MODE IS OPERATIONAL.  
: AN INTERNAL LOOPBACK IS PERFORMED WHILE IN  
: THE DISABLE TRANSMIT CRC MODE.  
: WITH A GOOD CRC VALUE APPENDED TO THE TRANSMIT BUFFER  
: AN ERROR FREE LOOPBACK IS EXPECTED.  
: TEST SEQUENCE:  
: 1. WRITE MODE REGISTER = INTERNAL LOOPBACK, PROM,  
: AND DISABLE TRANSMIT CRC MODE  
: 2. WRITE RING FORMAT  
: 3. WRITE PHYSICAL ADDRESS  
: 4. SET UP RINGS AND BUFFERS  
: 5. APPEND GOOD CRC VALUE TO TRANSMIT BUFFER  
: 6. ISSUE START  
: 7. CHECK FOR ERRORS  
: 8. ISSUE STOP  
\*\*\*\*\*

6066 043036  
043036  
6067 043036 004737 027446  
6068 043042 103025  
6069 043044 012777 000040 137154  
6070 043052 004737 024574  
6071 043056 103006  
6072 043060  
043060 104456  
043052 000163  
043064 020102  
043066 017110  
6073 043070  
043070 104410  
043072 001054  
6074  
6075 043074 004737 025546  
6076  
6077 043100 103006  
6078 043102  
043102 104456  
043104 000164  
043106 020202  
043110 017110  
6079 043112  
043112 104410  
043114 001032  
6080  
6081 043116 004737 026772  
6082 043122 012777 000001 137076  
6083 043130 004737 024574  
6084 043134 103006  
6085 043136  
043136 104456

BGNTST  
T15:;  
JSR PC,TINIT ; IS A DEVICE RESET NEEDED?  
BCC 30# ; NO  
MOV @RSET,@PCSR0 ; YES, RESET DEUNA  
JSR PC,CHKDNI ; DNI ?  
BCC 20# ; YES  
ERRHRD 115.,ERR004,MSG003 ; NO, REPORT ERROR  
TRAP C#ERHRD  
.WORD 115  
.WORD ERR004  
.WORD MSG003  
ESCAPE TST ; AND ABORT TEST  
TRAP C#ESCAPE  
.WORD L10045-.  
; 20#:  
JSR PC,CLRDN1 ; WRITE ONE TO CLEAR DNI  
; ERROR ?  
BCC 30# ; NO  
ERRHRD 116.,ERR006,MSG003 ; YES, REPORT ERROR  
TRAP C#ERHRD  
.WORD 116  
.WORD ERR006  
.WORD MSG003  
ESCAPE TST ; AND ABORT TEST  
TRAP C#ESCAPE  
.WORD L10045-.  
; 30#:  
JSR PC,LDPCSR ; ADDRESS OF PCBB -> PCSR2!3  
MOV @GETPCB,@PCSR0 ; ISSUE GET\_PCBB PORT COMMAND  
JSR PC,CHKDNI ; DNI?  
BCC 40# ; YES  
ERRHRD 117.,ERR009,MSG003 ; NO, REPORT ERROR  
TRAP C#ERHRD

K14

043140	000165						.WORD	117
043142	020416						.WORD	ERR009
043144	017110						.WORD	MSG003
6086	043146			ESCAPE	TST			; AND ABORT TEST
	043146	104410					TRAP	C#ESCAPE
	043150	000776					.WORD	L10045-
6087								
6088	043152	004737	025546	40:	JSR	PC,CLRDNI		; WRITE ONE TO CLEAR DNI
6089								; ERROR ?
6090	043156	103006			BCC	50:		; NO
6091	043150				ERRHRD	118.,ERR006,MSG003		; YES, REPORT ERROR
	043160	104456					TRAP	C#ERHRD
	043162	000166					.WORD	118
	043164	020202					.WORD	ERR006
	043166	017110					.WORD	MSG003
6092	043170			ESCAPE	TST			; AND ABORT TEST
	043170	104410					TRAP	C#ESCAPE
	043172	000754					.WORD	L10045-
6093								;WRITE MODE REGISTER = INTERNAL LOOPBACK, PROM AND DISABLE XMIT CRC MODE
6094	043174	012705	013244	50:	MOV	#WTRNGS,R5		; DEFAULT WRITE MODE FUNCTION
6095	043200	004737	026742		JSR	PC,LDPCCB		; LOAD FUNCTION -> PCBB
6096	043204	013737	015110	002266	MOV	MODE15,PCBB+2		; LOAD MODE REGISTER
6097	043212	012777	000002	137006	MOV	#GETCMD,BPCSR0		; ISSUE GET_CMD PORT COMMAND
6098	043220	004737	024574		JSR	PC,CHKDNI		; DNI ?
6099	043224	103006			BCC	60:		; YES
6100	043226				ERRHRD	119.,ERR010,MSG003		; NO, REPORT ERROR
	043226	104456					TRAP	C#ERHRD
	043230	000167					.WORD	119
	043232	020502					.WORD	ERR010
	043234	017110					.WORD	MSG003
6101	043236			ESCAPE	TST			; AND ABORT TEST
	043236	104410					TRAP	C#ESCAPE
	043240	000706					.WORD	L10045-
6102								
6103	043242	004737	025546	60:	JSR	PC,CLRDNI		; WRITE ONE TO CLEAR DNI
6104								; ERROR ?
6105	043246	103006			BCC	70:		; NO
6106	043250				ERRHRD	120.,ERR006,MSG003		; YES, REPORT ERROR
	043250	104456					TRAP	C#ERHRD
	043252	000170					.WORD	120
	043254	020202					.WORD	ERR006
	043256	017110					.WORD	MSG003
6107	043260			ESCAPE	TST			; AND ABORT TEST
	043260	104410					TRAP	C#ESCAPE
	043262	000664					.WORD	L10045-
6108								;WRITE RING FORMAT
6109	043264	012705	013204	70:	MOV	#WTRNGS,R5		; DEFAULT WRITE RING FORMAT FUNCTION
6110	043270	004737	026742		JSR	PC,LDPCCB		; LOAD FUNCTION -> PCBB
6111	043274	012705	013324		MOV	#RFRMT,R5		; DEFAULT RING FORMAT
6112	043300	012700	000006		MOV	#6,R0		; FORMAT = SIX WORDS
6113	043304	004737	027142		JSR	PC,LDUDBB		; LOAD RING FORMAT -> UDBB
6114	043310	012777	000002	136710	MOV	#GETCMD,BPCSR0		; ISSUE GET_CMD PORT COMMAND
6115	043316	004737	024574		JSR	PC,CHKDNI		; DNI ?
6116	043322	103006			BCC	80:		; YES
6117	043324				ERRHRD	121.,ERR010,MSG003		; NO, REPORT ERROR
	043324	104456					TRAP	C#ERHRD
	043326	000171					.WORD	121

L14

6118	043330	020502							.WORD	ERR010
	043332	017110							.WORD	MSG003
	043334			ESCAPE	TST			; AND ABORT TEST		
	043334	104410							TRAP	C#ESCAPE
	043336	000610							.WORD	L10045-
6119										
6120	043340	004737	025546	80:	JSR	PC,CLRDN1		; WRITE ONE TO CLEAR DNI		
6121								; ERROR ?		
6122	043344	103006			BCC	90:		; NO		
6123	043346				ERRHRD	122.,ERR006,MSG003		; YES, REPORT ERROR		
	043346	104456							TRAP	C#ERRHRD
	043350	000172							.WORD	122
	043352	020202							.WORD	ERR006
	043354	017110							.WORD	MSG003
6124	043356				ESCAPE	TST		; AND ABORT TEST		
	043356	104410							TRAP	C#ESCAPE
	043360	000566							.WORD	L10045-
6125										
6126	043362	012705	013144		;WRITE PHYSICAL ADDRESS					
6127	043366	004737	026742	90:	MOV	#WTPHYA,R5		; DEFAULT WRITE PHYSICAL ADDR FUNC		
6128	043372	012777	000002	136626	JSR	PC,LDPCBB		; LOAD FUNCTION -> PCBB		
6129	043400	004737	024574		MOV	#GETCMD,#PCSR0		; ISSUE GET_CMD PORT COMMAND		
6130	043404	103006			JSR	PC,CHKDNI		; DNI ?		
6131	043406				BCC	100:		; YES		
	043406	104456			ERRHRD	123.,ERR010,MSG003		; NO, REPORT ERROR		
	043410	000173							TRAP	C#ERRHRD
	043412	020502							.WORD	123
	043414	017110							.WORD	ERR010
6132	043416				ESCAPE	TST		; AND ABORT TEST		
	043416	104410							TRAP	C#ESCAPE
	043420	000526							.WORD	L10045-
6133										
6134	043422	004737	025546	100:	JSR	PC,CLRDN1		; WRITE ONE TO CLEAR DNI		
6135								; ERROR ?		
6136	043426	103006			BCC	110:		; NO		
6137	043430				ERRHRD	124.,ERR006,MSG003		; YES, REPORT ERROR		
	043430	104456							TRAP	C#ERRHRD
	043432	000174							.WORD	124
	043434	020202							.WORD	ERR006
	043436	017110							.WORD	MSG003
6138	043440				ESCAPE	TST		; AND ABORT TEST		
	043440	104410							TRAP	C#ESCAPE
	043442	000504							.WORD	L10045-
6139										
6140	043444	012705	013614		;SET UP RINGS FOR ONE BUFFER LOOPBACK					
6141	043450	004737	027046	110:	MOV	#TDRB1B,R5		; DEFAULT ONE BUFFER TRANSMIT RING		
6142	043454	012705	013354		JSR	PC,LDTRB		; LOAD TRB		
6143	043460	004737	027010		MOV	#RDRB1A,R5		; DEFAULT ONE BUFFER RECEIVE RING		
6144					JSR	PC,LDTRB		; LOAD RDRB		
6145	043464	012705	002266		;SET UP BUFFERS AND START					
6146	043470	004737	026714		MOV	#PCBB+2,R5		; POINT TO DESTINATION ADDRESS		
6147	043474	004737	027342		JSR	PC,LDDEST		; LOAD DEST		
6148	043500	013737	014730	003300	JSR	PC,SETBUF		; SET UP BUFFERS		
6149	043506	013737	014732	003302	MOV	CRC15H,TBUF+124.		; APPEND GOOD CRC VALUE		
6150	043514	012777	000004	136504	MOV	CRC15L,TBUF+126.		; TO TRANSMIT DATA		
6151	043522	004737	024574		MOV	#START,#PCSR0		; ISSUE START PORT COMMAND		
6152	043526	103006			JSR	PC,CHKDNI		; DNI?		
					BCC	120:		; YES		

6153	043530			ERRHRD	125.,ERR012,MSG003	; NO, REPORT ERROR		
	043530	104456					TRAP	C#ERHRD
	043532	000175					.WORD	125
	043534	020633					.WORD	ERR012
	043536	017110					.WORD	MSG003
6154	043540			ESCAPE	TST	; AND ABORT TEST		
	043540	104410					TRAP	C#ESCAPE
	043542	000404					.WORD	L10045-
6155								
6156	043544	004737	025546	i 120:	JSR	PC,CLRDN1		
6157								
6158	043550	103006			BCC	130:		
6159	043552				ERRHRD	126.,ERR006,MSG003	; YES, REPORT ERROR	
	043552	104456					TRAP	C#ERHRD
	043554	000176					.WORD	126
	043556	020202					.WORD	ERR006
	043560	017110					.WORD	MSG003
6160	043562			ESCAPE	TST	; AND ABORT TEST		
	043562	104410					TRAP	C#ESCAPE
	043564	000362					.WORD	L10045-
6161								
6162	043566	004737	025404	i 130:	JSR	PC,CHKTXI		
6163	043572	103006			BCC	140:		
6164	043574				ERRHRD	127.,ERR013,MSG003	; NO, REPORT ERROR	
	043574	104456					TRAP	C#ERHRD
	043576	000177					.WORD	127
	043600	020714					.WORD	ERR013
	043602	017110					.WORD	MSG003
6165	043604			ESCAPE	TST	; AND ABORT TEST		
	043604	104410					TRAP	C#ESCAPE
	043606	000340					.WORD	L10045-
6166								
6167	043610	004737	025730	i 140:	JSR	PC,CLRTXI		
6168								
6169	043614	103006			BCC	150:		
6170	043616				ERRHRD	128.,ERR014,MSG003	; YES, REPORT ERROR	
	043616	104456					TRAP	C#ERHRD
	043620	000200					.WORD	128
	043622	020745					.WORD	ERR014
	043624	017110					.WORD	MSG003
6171	043626			ESCAPE	TST	; AND ABORT TEST		
	043626	104410					TRAP	C#ESCAPE
	043630	000316					.WORD	L10045-
6172								
6173	043632	012705	002604	i 150:	MOV	#TDRB,R5		
6174	043636	004737	024676		JSR	PC,CHKOWN		
6175	043642	103006			BCC	160:		
6176	043644				ERRHRD	129.,ERR018	; NO, REPORT ERROR	
	043644	104456					TRAP	C#ERHRD
	043646	000201					.WORD	129
	043650	021212					.WORD	ERR018
	043652	000000					.WORD	0
6177	043654			ESCAPE	TST	; AND ABORT TEST		
	043654	104410					TRAP	C#ESCAPE
	043656	000270					.WORD	L10045-
6178								
6179	043660	012705	014534	i 160:	MOV	#TDR15A,R5		

6180	043664	004737	027252		JSR	PC,LDXTDR	; LOAD INTO XTDRBO TABLE		
6181	043670	012705	002604		MOV	#TDRB,R5	; CHECK TDRB		
6182	043674	004737	025316		JSR	PC,CHKTD	; ERRORS ?		
6183	043700	103006			BCC	170\$	; NO		
6184	043702				ERRHRD	130.,ERR020,MSG005	; YES, REPORT ERROR		
	043702	104456						TRAP	C\$ERHRD
	043704	000202						.WORD	130
	043706	021372						.WORD	ERR020
	043710	017214						.WORD	MSG005
6185	043712				ESCAPE	TST	; AND ABORT TEST		
	043712	104410						TRAP	C\$ESCAPE
	043714	000232						.WORD	L10045-
6186									
6187	043716	004737	025132	i	170\$:	JSR	PC,CHKRXI	; RXI ?	
6188	043722	103006				BCC	180\$	; YES	
6189	043724					ERRHRD	131.,ERR015,MSG003	; NO, REPORT ERROR	
	043724	104456						TRAP	C\$ERHRD
	043726	000203						.WORD	131
	043730	021013						.WORD	ERR015
	043732	017110						.WORD	MSG003
6190	043734				ESCAPE	TST	; AND ABORT TEST		
	043734	104410						TRAP	C\$ESCAPE
	043736	000210						.WORD	L10045-
6191									
6192	043740	004737	025662	i	180\$:	JSR	PC,CLRRXI	; WRITE ONE TO CLEAR RXI	
6193								; ERROR ?	
6194	043744	103006				BCC	190\$	; NO	
6195	043746					ERRHRD	132.,ERR016,MSG003	; YES, REPORT ERROR	
	043746	104456						TRAP	C\$ERHRD
	043750	000204						.WORD	132
	043752	021044						.WORD	ERR016
	043754	017110						.WORD	MSG003
6196	043756				ESCAPE	TST	; AND ABORT TEST		
	043756	104410						TRAP	C\$ESCAPE
	043760	000166						.WORD	L10045-
6197									
6198	043762	012705	002644	i	190\$:	MOV	#RDRB,R5	; CHECK RDRB OWNERSHIP	
6199	043766	004737	024676			JSR	PC,CHKOWN	; OWN = PORT DRIVER ?	
6200	043772	103006				BCC	200\$	; YES	
6201	043774					ERRHRD	133.,ERR017	; NO, REPORT ERROR	
	043774	104456						TRAP	C\$ERHRD
	043776	000205						.WORD	133
	044000	021112						.WORD	ERR017
	044002	000000						.WORD	0
6202	044004				ESCAPE	TST	; AND ABORT TEST		
	044004	104410						TRAP	C\$ESCAPE
	044006	000140						.WORD	L10045-
6203									
6204	044010	012705	014644	i	200\$:	MOV	#RDR15A,R5	; POINT TO EXPECTED RDRB	
6205	044014	004737	027222			JSR	PC,LDXRDR	; LOAD INTO XRDRBO TABLE	
6206	044020	012705	002644			MOV	#RDRB,R5	; CHECK RDRB	
6207	044024	004737	025032			JSR	PC,CHKRDR	; ERRORS ?	
6208	044030	103006				BCC	210\$	; NO	
6209	044032					ERRHRD	134.,ERR021,MSG006	; YES, REPORT ERROR	
	044032	104456						TRAP	C\$ERHRD
	044034	000206						.WORD	134
	044036	021453						.WORD	ERR021



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044040 017356
6210 044042          ESCAPE TST          ; AND ABORT TEST          .WORD  MSG006
      044042      104410
      044044      000102
6211          ;COMPARE RBUF WITH TBUF
6212 044046 012705 000070      210:  MOV    #56.,R5          ; COMPARE 56 WORDS OF DATA
6213 044052 004737 026044      JSR    PC,CMPDAT        ; DATA COMPARE ERROR ?
6214 044056 103006      BCC   230:              ; NO
6215 044060      ERRHRD 135.,ERR022,MSG007 ; YES, REPORT ERROR
      044060      104456          TRAP   C#ERRRD
      044062      000207          .WORD  135
      044064      021534          .WORD  ERR022
      044066      017520          .WORD  MSG007
6216 044070          ESCAPE TST          ; AND ABORT TEST          TRAP   C#ESCAPE
      044070      104410          .WORD  L10045-.
      044072      000054
6217
6218 044074 012777 000017 136124 230:  MOV    #STOP,BPCSR0    ; ISSUE STOP PORT COMMAND
6219 044102 004737 024574      JSR    PC,CHKDNI       ; DNI ?
6220 044106 103006      BCC   240:              ; YES
6221 044110      ERRHRD 136.,ERR019,MSG003 ; NO, REPORT ERROR
      044110      104456          TRAP   C#ERRRD
      044112      000210          .WORD  136
      044114      021312          .WORD  ERR019
      044116      017110          .WORD  MSG003
6222 044120          ESCAPE TST          ; AND ABORT TEST          TRAP   C#ESCAPE
      044120      104410          .WORD  L10045-.
      044122      000024
6223
6224 044124 004737 025546      240:  JSR    PC,CLRDN1    ; WRITE ONE TO CLEAR DNI
6225          ; ERROR ?
6226 044130 103006      BCC   250:              ; NO
6227 044132      ERRHRD 137.,ERR006,MSG003 ; YES, REPORT ERROR
      044132      104456          TRAP   C#ERRRD
      044134      000211          .WORD  137
      044136      020202          .WORD  ERR006
      044140      017110          .WORD  MSG003
6228 044142          ESCAPE TST          ; AND ABORT TEST          TRAP   C#ESCAPE
      044142      104410          .WORD  L10045-.
      044144      000002
6229 044146          250:  ENDTST
6230 044146          ;
      044146          ;
      044146      104401          L10045: TRAP   C#ETST
  
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015

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044252 000214 .WORD 140
044254 020416 .WORD ERRO09
044256 017110 .WORD MSG003
6275 044260 ESCAPE TST ; AND ABORT TEST
044260 104410 TRAP C$ESCAPE
044262 000776 .WORD L10046-.

6276 044264 004737 025546 404: JSR PC,CLRDN1 ; WRITE ONE TO CLEAR DNI
6277 044270 103006 BCC 504 ; ERROR ?
6278 044272 104456 ERRHRD 141.,ERRO06,MSG003 ; NO
6279 044274 000215 ; YES, REPORT ERROR
6280 044276 020202 TRAP C$ERHRD
044272 104456 .WORD 141
044274 000215 .WORD ERRO06
044276 020202 .WORD MSG003
044300 017110 ESCAPE TST ; AND ABORT TEST
6281 044302 TRAP C$ESCAPE
044302 104410 .WORD L10046-.
044304 000754

;WRITE MODE REGISTER = INTERNAL LOOPBACK, PROM AND DISABLE XMIT CRC MODE
6282 044306 012705 013244 504: MOV @MTHODE,R5 ; DEFAULT WRITE MODE FUNCTION
6283 044312 004737 026742 JSR PC,LDPCCB ; LOAD FUNCTION -> PCBB
6284 044316 013737 015110 002266 MOV MODE15,PCBB.2 ; LOAD MODE REGISTER
6285 044324 012777 000002 135674 MOV @GETCMD,BPCSR0 ; ISSUE GET_CMD PORT COMMAND
6286 044332 004737 024574 JSR PC,CHKDNI ; DNI ?
6287 044336 103006 BCC 604 ; YES
6288 044340 104456 ERRHRD 142.,ERRO10,MSG003 ; NO, REPORT ERROR
6289 044342 000216 TRAP C$ERHRD
044344 020502 .WORD 142
044346 017110 .WORD ERRO10
. WORD MSG003
6290 044350 ESCAPE TST ; AND ABORT TEST
044350 104410 TRAP C$ESCAPE
044352 000706 .WORD L10046-.

6291 044354 004737 025546 604: JSR PC,CLRDN1 ; WRITE ONE TO CLEAR DNI
6292 044360 103006 BCC 704 ; ERROR ?
6293 044362 104456 ERRHRD 143.,ERRO06,MSG003 ; NO
6294 044364 000217 ; YES, REPORT ERROR
6295 044366 020202 TRAP C$ERHRD
044370 017110 .WORD 143
. WORD ERRO06
. WORD MSG003
6296 044372 ESCAPE TST ; AND ABORT TEST
044372 104410 TRAP C$ESCAPE
044374 000664 .WORD L10046-.

;WRITE RING FORMAT
6297 044376 012705 013204 704: MOV @WTRNGS,R5 ; DEFAULT WRITE RING FORMAT FUNCTION
6298 044402 004737 026742 JSR PC,LDPCCB ; LOAD FUNCTION -> PCBB
6299 044406 012705 013324 MOV @FRMT,R5 ; DEFAULT RING FORMAT
6300 044412 012700 000006 MOV @6,R0 ; FORMAT = SIX WORDS
6301 044416 004737 027142 JSR PC,LDUDBB ; LOAD RING FORMAT -> UDBB
6302 044422 012777 000002 135576 MOV @GETCMD,BPCSR0 ; ISSUE GET_CMD PORT COMMAND
6303 044430 004737 024574 JSR PC,CHKDNI ; DNI ?
6304 044434 103006 BCC 804 ; YES
6305 044436 104456 ERRHRD 144.,ERRO10,MSG003 ; NO, REPORT ERROR
6306 044440 000220 TRAP C$ERHRD
. WORD 144

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6342	044642				ERRHRD 148.,ERR012,MSG003	; NO, REPORT ERROR		
	044642	104456					TRAP	C#ERHRD
	044644	000224					.WORD	148
	044646	020633					.WORD	ERR012
	044650	017110					.WORD	MSG003
6343	044652				ESCAPE TST	; AND ABORT TEST		
	044652	104410					TRAP	C#ESCAPE
	044654	000404					.WORD	L10046-
6344				i				
6345	044656	004737	025546	120:	JSR PC,CLRDN1	; WRITE ONE TO CLEAR DNI		
6346						; ERROR ?		
6347	044662	103006			BCC 130:	; NO		
6348	044664				ERRHRD 149.,ERR006,MSG003	; YES, REPORT ERROR		
	044664	104456					TRAP	C#ERHRD
	044666	000225					.WORD	149
	044670	020202					.WORD	ERR006
	044672	017110					.WORD	MSG003
6349	044674				ESCAPE TST	; AND ABORT TEST		
	044674	104410					TRAP	C#ESCAPE
	044676	000362					.WORD	L10046-
6350				i				
6351	044700	004737	025404	130:	JSR PC,CHKTXI	; TXI ?		
6352	044704	103006			BCC 140:	; YES		
6353	044706				ERRHRD 150.,ERR013,MSG003	; NO, REPORT ERROR		
	044706	104456					TRAP	C#ERHRD
	044710	000226					.WORD	150
	044712	020714					.WORD	ERR013
	044714	017110					.WORD	MSG003
6354	044716				ESCAPE TST	; AND ABORT TEST		
	044716	104410					TRAP	C#ESCAPE
	044720	000340					.WORD	L10046-
6355				i				
6356	044722	004737	025730	140:	JSR PC,CLRTXI	; WRITE ONE TO CLEAR TXI		
6357						; ERROR ?		
6358	044726	103006			BCC 150:	; NO		
6359	044730				ERRHRD 151.,ERR014,MSG003	; YES, REPORT ERROR		
	044730	104456					TRAP	C#ERHRD
	044732	000227					.WORD	151
	044734	020745					.WORD	ERR014
	044736	017110					.WORD	MSG003
6360	044740				ESCAPE TST	; AND ABORT TEST		
	044740	104410					TRAP	C#ESCAPE
	044742	000316					.WORD	L10046-
6361				i				
6362	044744	012705	002604	150:	MOV #TDRB,R5	; CHECK TDRB OWNERSHIP		
6363	044750	004737	024676		JSR PC,CHKOWN	; OMN = PORT DRIVER ?		
6364	044754	103006			BCC 160:	; YES		
6365	044756				ERRHRD 152.,ERR018	; NO, REPORT ERROR		
	044756	104456					TRAP	C#ERHRD
	044760	000230					.WORD	152
	044762	021212					.WORD	ERR018
	044764	000000					.WORD	0
6366	044766				ESCAPE TST	; AND ABORT TEST		
	044766	104410					TRAP	C#ESCAPE
	044770	000270					.WORD	L10046-
6367				i				
6368	044772	012705	014534	160:	MOV #TDR15A,R5	; POINT TO EXPECTED TDRB		

6369	044776	004737	027252		JSR	PC,LDXTDR		; LOAD INTO XTDRBO TABLE		
6370	045002	012705	002604		MOV	@TDRB,R5		; CHECK TDRB		
6371	045006	004737	025316		JSR	PC,CHKTDR		; ERRORS ?		
6372	045012	103006			BCC	1704		; NO		
6373	045014				ERRHRD	153.,ERR020,MSG005		; YES, REPORT ERROR		
	045014	104456							TRAP	C#ERHRD
	045016	000231							.WORD	153
	045020	021372							.WORD	ERR020
	045022	017214							.WORD	MSG005
6374	045024				ESCAPE	TST		; AND ABORT TEST		
	045024	104410							TRAP	C#ESCAPE
	045026	000232							.WORD	L10046-
6375										
6376	045030	004737	025132	i 1704:	JSR	PC,CHKRXI		; RXI ?		
6377	045034	103006			BCC	1804		; YES		
6378	045036				ERRHRD	154.,ERR015,MSG003		; NO, REPORT ERROR		
	045036	104456							TRAP	C#ERHRD
	045040	000232							.WORD	154
	045042	021013							.WORD	ERR015
	045044	017110							.WORD	MSG003
6379	045046				ESCAPE	TST		; AND ABORT TEST		
	045046	104410							TRAP	C#ESCAPE
	045050	000210							.WORD	L10046-
6380										
6381	045052	004737	025662	i 1804:	JSR	PC,CLRXI		; WRITE ONE TO CLEAR RXI		
6382								; ERROR ?		
6383	045056	103006			BCC	1904		; NO		
6384	045060				ERRHRD	155.,ERR016,MSG003		; YES, REPORT ERROR		
	045060	104456							TRAP	C#ERHRD
	045062	000233							.WORD	155
	045064	021044							.WORD	ERR016
	045066	017110							.WORD	MSG003
6385	045070				ESCAPE	TST		; AND ABORT TEST		
	045070	104410							TRAP	C#ESCAPE
	045072	000166							.WORD	L10046-
6386										
6387	045074	012705	002644	i 1904:	MOV	@RDRB,R5		; CHECK RDRB OWNERSHIP		
6388	045100	004737	024676		JSR	PC,CHKOWN		; OWN = PORT DRIVER ?		
6389	045104	103006			BCC	2004		; YES		
6390	045106				ERRHRD	156.,ERR017		; NO, REPORT ERROR		
	045106	104456							TRAP	C#ERHRD
	045110	000234							.WORD	156
	045112	021112							.WORD	ERR017
	045114	000000							.WORD	0
6391	045116				ESCAPE	TST		; AND ABORT TEST		
	045116	104410							TRAP	C#ESCAPE
	045120	000140							.WORD	L10046-
6392										
6393	045122	012705	014634	i 2004:	MOV	@RDR14A,R5		; POINT TO EXPECTED RDRB		
6394	045126	004737	027222		JSR	PC,LDXRDR		; LOAD INTO XRDRBO TABLE		
6395	045132	012705	002644		MOV	@RDRB,R5		; CHECK RDRB		
6396	045136	004737	025032		JSR	PC,CHKRDR		; ERRORS ?		
6397	045142	103006			BCC	2104		; NO		
6398	045144				ERRHRD	157.,ERR021,MSG006		; YES, REPORT ERROR		
	045144	104456							TRAP	C#ERHRD
	045146	000235							.WORD	157
	045150	021453							.WORD	ERR021

6399	045152	017356			ESCAPE TST		; AND ABORT TEST	.WORD	MSG006
	045154							TRAP	C#ESCAPE
	045154	104410						.WORD	L10046-
	045156	000102							
6400					; COMPARE RBUF WITH TBUF				
6401	045160	012705	000070		210+: MOV #56.,R5		; COMPARE 56 WORDS OF DATA		
6402	045164	004737	026044		JSR PC,CMPDAT		; DATA COMPARE ERROR ?		
6403	045170	103006			BCC 230+		; NO		
6404	045172				ERRHRD 158.,ERR022,MSG007		; YES, REPORT ERROR		
	045172	104456						TRAP	C#ERHRD
	045174	000236						.WORD	158
	045176	021534						.WORD	ERR022
	045200	017520						.WORD	MSG007
6405	045202				ESCAPE TST		; AND ABORT TEST		
	045202	104410						TRAP	C#ESCAPE
	045204	000054						.WORD	L10046-
6406									
6407	045206	012777	000017	135012	230+: MOV #STOP,@PCSR0		; ISSUE STOP PORT COMMAND		
6408	045214	004737	024574		JSR PC,CHKDNI		; DNI ?		
6409	045220	103006			BCC 240+		; YES		
6410	045222				ERRHRD 159.,ERR019,MSG003		; NO, REPORT ERROR		
	045222	104456						TRAP	C#ERHRD
	045224	000237						.WORD	159
	045226	021312						.WORD	ERR019
	045230	017110						.WORD	MSG003
6411	045232				ESCAPE TST		; AND ABORT TEST		
	045232	104410						TRAP	C#ESCAPE
	045234	000024						.WORD	L10046-
6412									
6413	045236	004737	025546		240+: JSR PC,CLRDN1		; WRITE ONE TO CLEAR DNI		
6414							; ERROR ?		
6415	045242	103006			BCC 250+		; NO		
6416	045244				ERRHRD 160.,ERR006,MSG003		; YES, REPORT ERROR		
	045244	104456						TRAP	C#ERHRD
	045246	000240						.WORD	160
	045250	020202						.WORD	ERR006
	045252	017110						.WORD	MSG003
6417	045254				ESCAPE TST		; AND ABORT TEST		
	045254	104410						TRAP	C#ESCAPE
	045256	000002						.WORD	L10046-
6418	045260				250+:				
6419	045260				ENDTST				
	045260								
	045260	104401					L10046:	TRAP	C#ETST

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.SBTTL TEST 17: DISABLE RECEIVE CHAINING TEST

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:
: THIS TEST VERIFIES DISABLE DATA CHAINING MODE,
: AN INTERNAL LOOPBACK IS PERFORMED WITH RECEIVE BUFFERS CHAINED
: WHILE IN DISABLE DATA CHAINING MODE.
: A NCHN ERROR IS EXPECTED IN THE RECEIVE DESCRIPTOR RING.
:
: TEST SEQUENCE:
:   1. WRITE MODE REGISTER = INTERNAL LOOPBACK, PROM,
:     AND DISABLE DATA CHAINING MODE
:   2. WRITE RING FORMAT
:   3. WRITE PHYSICAL ADDRESS
:   4. SET UP RINGS AND BUFFERS FOR RECEIVE DATA CHAINING
:   5. ISSUE START
:   6. CHECK FOR NCHN ERROR IN RDRB*6
:   7. ISSUE STOP
:
*****
    
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6442 045262          BGNTST
6443 045262 004737 027446          JSR    PC,TINIT          ; IS A DEVICE RESET NEEDED?
6444 045266 103025          BCC    30$              ; NO
6445 045270 012777 000040 134730  MOV    @RSET,@PCSR0     ; YES, RESET DEUNA
6446 045276 004737 024574          JSR    PC,CHKDNI        ; DNI ?
6447 045302 103006          BCC    20$              ; YES
6448 045304          ERRHRD 161.,ERR004,MSG003 ; NO, REPORT ERROR
:                                     TRAP  C$ERRHRD
:                                     .WORD 161
:                                     .WORD ERR004
:                                     .WORD MSG003
6449 045314          ESCAPE TST          ; AND ABORT TEST
:                                     TRAP  C$ESCAPE
:                                     .WORD L10047-.
6450 045320 004737 025546          ;
6451 045320 004737 025546          ; 20$: JSR    PC,CLRDN1     ; WRITE ONE TO CLEAR DNI
6452 045324 103006          BCC    30$              ; ERROR ?
6453 045324 103006          BCC    30$              ; NO
6454 045326          ERRHRD 162.,ERR006,MSG003 ; YES, REPORT ERROR
:                                     TRAP  C$ERRHRD
:                                     .WORD 162
:                                     .WORD ERR006
:                                     .WORD MSG003
6455 045336          ESCAPE TST          ; AND ABORT TEST
:                                     TRAP  C$ESCAPE
:                                     .WORD L10047-.
6456 045342 004737 026772          ;
6457 045342 004737 026772          ; 30$: JSR    PC,LDPCSR     ; ADDRESS OF PCBB -> PCSR2!3
6458 045346 012777 000001 134652  MOV    @GETPCB,@PCSR0  ; ISSUE GET_PCBB PORT COMMAND
6459 045354 004737 024574          JSR    PC,CHKDNI        ; DNI?
6460 045360 103006          BCC    40$              ; YES
6461 045362          ERRHRD 163.,ERR009,MSG003 ; NO, REPORT ERROR
:                                     TRAP  C$ERRHRD
:                                     .WORD 163
:                                     .WORD ERR009
6461 045362 104456
6461 045364 000243
6461 045366 020416
    
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JLS

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6462 045370 017110          ESCAPE TST          ; AND ABORT TEST          .WORD MSG003
      045372          ;                               TRAP C$ESCAPE
      045372 104410          ;                               .WORD L10047-.
      045374 000772          ;

6463          ;
6464 045376 004737 025546 40$: JSR PC,CLRDNI          ; WRITE ONE TO CLEAR DNI
6465          ;                               ; ERROR ?
6466 045402 103006          BCC 50$          ; NO
6467 045404          ERRHRD 164.,ERR006,MSG003 ; YES, REPORT ERROR          TRAP C$ERHRD
      045404 104456          ;                               .WORD 164
      045406 000244          ;                               .WORD ERR006
      045410 020202          ;                               .WORD MSG003
6468 045414          ESCAPE TST          ; AND ABORT TEST          TRAP C$ESCAPE
      045414 104410          ;                               .WORD L10047-.
      045416 000750          ;

6469          ;
6470          ;WRITE MODE REGISTER = INTERNAL LOOPBACK, PROM AND
6471          ;DISABLE RECEIVE DATA CHAINING MODE
6472 045420 012705 013244 50$: MOV #WTRNGS,R5          ; DEFAULT WRITE MODE FUNCTION
6473 045424 004737 026742 JSR PC,LDPCCB          ; LOAD FUNCTION -> PCBB
6474 045430 013737 015112 002266 MOV MODE17,PCBB+2      ; LOAD MODE REGISTER
6475 045436 012777 000002 134562 MOV #GETCMD,SPCSRO    ; ISSUE GET_CMD PORT COMMAND
6476 045444 004737 024574 JSR PC,CHKDNI          ; DNI ?
6477 045450 103006          BCC 60$          ; YES
6478 045452          ERRHRD 165.,ERR010,MSG003 ; NO, REPORT ERROR          TRAP C$ERHRD
      045452 104456          ;                               .WORD 165
      045454 000245          ;                               .WORD ERR010
      045456 020502          ;                               .WORD MSG003
6479 045462          ESCAPE TST          ; AND ABORT TEST          TRAP C$ESCAPE
      045462 104410          ;                               .WORD L10047-.
      045464 000702          ;

6480          ;
6481 045466 004737 025546 60$: JSR PC,CLRDNI          ; WRITE ONE TO CLEAR DNI
6482          ;                               ; ERROR ?
6483 045472 103006          BCC 70$          ; NO
6484 045474          ERRHRD 166.,ERR006,MSG003 ; YES, REPORT ERROR          TRAP C$ERHRD
      045474 104456          ;                               .WORD 166
      045476 000246          ;                               .WORD ERR006
      045500 020202          ;                               .WORD MSG003
6485 045502 017110          ESCAPE TST          ; AND ABORT TEST          TRAP C$ESCAPE
      045504 104410          ;                               .WORD L10047-.
      045506 000660          ;

6486          ;
6487          ;WRITE RING FORMAT
6488 045510 012705 013204 70$: MOV #WTRNGS,R5          ; DEFAULT WRITE RING FORMAT FUNCTION
6489 045514 004737 026742 JSR PC,LDPCCB          ; LOAD FUNCTION -> PCBB
6490 045520 012705 013324 MOV #RFMT,R5          ; DEFAULT RING FORMAT
6491 045524 012700 000006 MOV #6,R0            ; FORMAT = SIX WORDS
6492 045530 004737 027142 JSR PC,LDUDBB          ; LOAD RING FORMAT -> UDBB
6493 045534 012777 000002 134464 MOV #GETCMD,SPCSRO    ; ISSUE GET_CMD PORT COMMAND
6494 045542 004737 024574 JSR PC,CHKDNI          ; DNI ?
6495 045546 103006          BCC 80$          ; YES
6496 045550          ERRHRD 167.,ERR010,MSG003 ; NO, REPORT ERROR          TRAP C$ERHRD
      045550 104456          ;

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045552 000247 .WORD 167
045554 020502 .WORD ERR010
045556 017110 .WORD MSG003
6497 045560 ESCAPE TST ; AND ABORT TEST
045560 104410 TRAP C#ESCAPE
045562 000604 .WORD L10047-.

6498
6499 045564 004737 025546 00$: JSR PC,CLRDNI ; WRITE ONE TO CLEAR DNI
6500 ; ERROR ?
6501 045570 103006 BCC 90$ ; NO
6502 045572 ERRHRD 168.,ERR006,MSG003 ; YES, REPORT ERROR
045572 104456 TRAP C#ERHRD
045574 000250 .WORD 168
045576 020202 .WORD ERR006
045600 017110 .WORD MSG003
6503 045602 ESCAPE TST ; AND ABORT TEST
045602 104410 TRAP C#ESCAPE
045604 000562 .WORD L10047-.

6504
6505 ;WRITE PHYSICAL ADDRESS
6506 045606 012705 013144 90$: MOV #WTPHYA,R5 ; DEFAULT WRITE PHYSICAL ADDR FUNC
6507 045612 004737 026742 JSR PC,LDPCCB ; LOAD FUNCTION -> PCBB
6508 045616 012777 000002 13440? MOV #GETCMD,@PCSR0 ; ISSUE GET_CMD PORT COMMAND
6509 045624 004737 024574 JSR PC,CHKDNI ; DNI ?
6510 045630 103006 BCC 100$ ; YES
6511 045632 ERRHRD 169.,ERR010,MSG003 ; NO, REPORT ERROR
045632 104456 TRAP C#ERHRD
045634 000251 .WORD 169
045636 020502 .WORD ERR010
045640 017110 .WORD MSG003
6512 045642 ESCAPE TST ; AND ABORT TEST
045642 104410 TRAP C#ESCAPE
045644 000522 .WORD L10047-.

6513
6514 045646 004737 025546 100$: JSR PC,CLRDNI ; WRITE ONE TO CLEAR DNI
6515 ; ERROR ?
6516 045652 103006 BCC 110$ ; NO
6517 045654 ERRHRD 170.,ERR006,MSG003 ; YES, REPORT ERROR
045654 104456 TRAP C#ERHRD
045656 000252 .WORD 170
045660 020202 .WORD ERR006
045662 017110 .WORD MSG003
6518 045664 ESCAPE TST ; AND ABORT TEST
045664 104410 TRAP C#ESCAPE
045666 000500 .WORD L10047-.

6519
6520 ;SET UP RINGS FOR LOOPBACK
6521 045670 012705 013554 110$: MOV #TDRB1A,R5 ; DEFAULT ONE BUFFER TRANSMIT RING
6522 045674 004737 027046 JSR PC,LDTDRB ; LOAD TDRB
6523 045700 012705 013454 MOV #RDRB2A,R5 ; DEFAULT CHAINED RECEIVE RING
6524 045704 004737 027010 JSR PC,LDRDRB ; LOAD RDRB
6525
6526 ;SET UP BUFFERS AND START
6527 045710 012705 002266 MOV #PCBB+2,R5 ; POINT TO DESTINATION ADDRESS
6528 045714 004737 026714 JSR PC,LDDST ; LOAD DEST
6529 045720 004737 027342 JSR PC,SETBUF ; SET UP BUFFERS
6530 045724 012777 000004 134274 MOV #START,@PCSR0 ; ISSUE START PORT COMMAND
    
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6531	045732	004737	024574		JSR	PC,CHKDNI		; DNI?			
6532	045736	103006			BCC	120\$		; YES			
6533	045740				ERRHRD	171.,ERR012,MSG003		; NO, REPORT ERROR			
	045740	104456							TRAP	C#ERHRD	
	045742	000253							.WORD	171	
	045744	020633							.WORD	ERR012	
	045746	017110							.WORD	MSG003	
6534	045750				ESCAPE	TST		; AND ABORT TEST			
	045750	104410							TRAP	C#ESCAPE	
	045752	000414							.WORD	L10047-	
6535											
6536	045754	004737	025546	i	JSR	PC,CLRDN1		; WRITE ONE TO CLEAR DNI			
6537				120\$:				; ERROR ?			
6538	045760	103006			BCC	130\$		; NO			
6539	045762				ERRHRD	172.,ERR006,MSG003		; YES, REPORT ERROR			
	045762	104456							TRAP	C#ERHRD	
	045764	000254							.WORD	172	
	045766	020202							.WORD	ERR006	
	045770	017110							.WORD	MSG003	
6540	045772				ESCAPE	TST		; AND ABORT TEST			
	045772	104410							TRAP	C#ESCAPE	
	045774	000372							.WORD	L10047-	
6541											
6542	045776	004737	025404	i	JSR	PC,CHKTXI		; TXI ?			
6543	046002	103006		130\$:	BCC	140\$		; YES			
6544	046004				ERRHRD	173.,ERR013,MSG003		; NO, REPORT ERROR			
	046004	104456							TRAP	C#ERHRD	
	046006	000255							.WORD	173	
	046010	020714							.WORD	ERR013	
	046012	017110							.WORD	MSG003	
6545	046014				ESCAPE	TST		; AND ABORT TEST			
	046014	104410							TRAP	C#ESCAPE	
	046016	000350							.WORD	L10047-	
6546											
6547	046020	004737	025730	i	JSR	PC,CLRTXI		; WRITE ONE TO CLEAR TXI			
6548				140\$:				; ERROR ?			
6549	046024	103006			BCC	150\$		; NO			
6550	046026				ERRHRD	174.,ERR014,MSG003		; YES, REPORT ERROR			
	046026	104456							TRAP	C#ERHRD	
	046030	000256							.WORD	174	
	046032	020745							.WORD	ERR014	
	046034	017110							.WORD	MSG003	
6551	046036				ESCAPE	TST		; AND ABORT TEST			
	046036	104410							TRAP	C#ESCAPE	
	046040	000326							.WORD	L10047-	
6552											
6553	046042	012705	002604	i	MOV	#TDRB,R5		; CHECK TDRB OWNERSHIP			
6554	046046	004737	024676	150\$:	JSR	PC,CHKOWN		; OWN = PORT DRIVER ?			
6555	046052	103006			BCC	160\$		; YES			
6556	046054				ERRHRD	175.,ERR018		; NO, REPORT ERROR			
	046054	104456							TRAP	C#ERHRD	
	046056	000257							.WORD	175	
	046060	021212							.WORD	ERR018	
	046062	000000							.WORD	0	
6557	046064				ESCAPE	TST		; AND ABORT TEST			
	046064	104410							TRAP	C#ESCAPE	
	046066	000300							.WORD	L10047-	



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046244 000264 .WORD 180
046246 023101 .WORD ERR036
046250 017356 .WORD MSG006
6590 046252 ESCAPE TST ; AND ABORT TEST
046252 104410 TRAP C$ESCAPE
046254 000112 .WORD L10047-.
6591 ;CHECK SECOND RING ENTRY
6592 046256 012705 014664 210$: MOV #RDR17B,R5 ; POINT TO EXPECTED RDRB
6593 046262 004737 027222 JSR PC,LDXRDR ; LOAD INTO XRDRBO TABLE
6594 046266 012705 002654 MOV #RDRB+8.,R5 ; CHECK RDRB
6595 046272 004737 025032 JSR PC,CHKRDR ; ERRORS ?
6596 046276 103006 BCC 230$ ; NO
6597 046300 ERRHRD 181.,ERR037,MSG006 ; YES, REPORT ERROR
046300 104456 TRAP C$ERHRD
046302 000265 .WORD 181
046304 023167 .WORD ERR037
046306 017356 .WORD MSG006
6598 046310 ESCAPE TST ; AND ABORT TEST
046310 104410 TRAP C$ESCAPE
046312 000054 .WORD L10047-.
6599 ;
6600 046314 012777 000017 133704 230$: MOV #STOP,@PCSR0 ; ISSUE STOP PORT COMMAND
6601 046322 004737 024574 JSR PC,CHKDNI ; DNI ?
6602 046326 103006 BCC 240$ ; YES
6603 046330 ERRHRD 182.,ERR019,MSG003 ; NO, REPORT ERROR
046330 104456 TRAP C$ERHRD
046332 000266 .WORD 162
046334 021312 .WORD ERR019
046336 017110 .WORD MSG003
6604 046340 ESCAPE TST ; AND ABORT TEST
046340 104410 TRAP C$ESCAPE
046342 000024 .WORD L10047-.
6605 ;
6606 046344 004737 025546 240$: JSR PC,CLR DNI ; WRITE ONE TO CLEAR DNI
6607 BCC 250$ ; ERROR ?
6608 046350 103006 ; NO
6609 046352 ERRHRD 183.,ERR006,MSG003 ; YES, REPORT ERROR
046352 104456 TRAP C$ERHRD
046354 000267 .WORD 183
046356 020202 .WORD ERR006
046360 017110 .WORD MSG003
6610 046362 ESCAPE TST ; AND ABORT TEST
046362 104410 TRAP C$ESCAPE
046364 000002 .WORD L10047-.
6611 046366 250$:
6612 046366 ENDTST
046366 104401 L10047: TRAP C$ETST
    
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DB:TL TEST 18: TRANSMIT CHAINING ERROR TEST

```

*****
:
: THIS TEST VERIFIES THAT A TRANSMIT BUFL ERROR CAN BE GENERATED,
: AN INTERNAL LOOPBACK IS ATTEMPTED WITH TRANSMIT BUFFERS CHAINED
: AND SUCCESSIVE OWNED RINGS HAVING STP SET,
: A BUFL ERROR IS EXPECTED IN THE TRANSMIT DESCRIPTOR RING.
:
: TEST SEQUENCE:
: 1. WRITE MODE REGISTER = INTERNAL LOOPBACK AND PROM MODE
: 2. WRITE RING FORMAT
: 3. WRITE PHYSICAL ADDRESS
: 4. SET UP RINGS AND BUFFERS
:    TRANSMIT RING = CHAINED WITH SUCCESSIVE STPS
: 5. ISSUE START
: 6. CHECK FOR BUFL ERROR IN TCRB+6
: 7. ISSUE STOP
:
*****
    
```

6635	046370				BGNTST							
	046370											
6636	046370	004737	027446		JSR	PC,TINIT			T18::			
6637	046374	103025			BCC	30:			: IS A DEVICE RESET NEEDED?			
6638	046376	012777	000040	133622	MOV	#RSET,BPCSR0			: NO			
6639	046404	004737	024574		JSR	PC,CHKDNI			: YES, RESET DEUNA			
6640	046410	103006			BCC	20:			: DNI ?			
6641	046412				ERRHRD	184.,ERR004,MSG003			: YES			
	046412	104456							: NO, REPORT ERROR			
	046414	000270								TRAP	C#ERHPD	
	046416	020102								.WORD	184	
	046420	017110								.WORD	ERR004	
6642	046422				ESCAPE	TST			: AND ABORT TEST	.WORD	MSG003	
	046422	104410								TRAP	C#ESCAPE	
	046424	000740								.WORD	L10050-	
6643												
6644	046426	004737	025546		JSR	PC,CLRDN1			: WRITE ONE TO CLEAR DNI			
6645									: ERROR ?			
6646	046432	103006			BCC	30:			: NO			
6647	046434				ERRHRD	185.,ERR006,MSG003			: YES, REPORT ERROR			
	046434	104456								TRAP	C#ERHRD	
	046436	000271								.WORD	185	
	046440	020202								.WORD	ERR006	
	046442	017110								.WORD	MSG003	
6648	046444				ESCAPE	TST			: AND ABORT TEST			
	046444	104410								TRAP	C#ESCAPE	
	046446	000716								.WORD	L10050-	
6649												
6650	046450	004737	026772		JSR	PC,LDPCSR			: ADDRESS OF PCBB -> PCSR2!3			
6651	046454	012777	000001	133544	MOV	#GETPCB,BPCSR0			: ISSUE GET_PCBB PORT COMMAND			
6652	046462	004737	024574		JSR	PC,CHKDNI			: DNI?			
6653	046466	103006			BCC	40:			: YES			
6654	046470				ERRHRD	186.,ERR009,MSG003			: NO, REPORT ERROR			
	046470	104456								TRAP	C#ERHRD	
	046472	000272								.WORD	186	
	046474	020416								.WORD	ERR009	



6688	046656	017110			ESCAPE TST		; AND ABORT TEST	.WORD	MSG003
	046660							TRAP	C#ESCAPE
	046660	104410						.WORD	L10050-
	046662	000502							
6689									
6690	046664	004737	025546		804: JSR PC,CLRDNI		; WRITE ONE TO CLEAR DNI		
6691							; ERROR ?		
6692	046670	103006			BCC 904		; NO		
6693	046672				ERRHRD 191.,ERR006,MSG003		; YES, REPORT ERROR		
	046672	104456						TRAP	C#ERHRD
	046674	000277						.WORD	191
	046676	020202						.WORD	ERR006
	046700	017110						.WORD	MSG003
6694	046702				ESCAPE TST		; AND ABORT TEST		
	046702	104410						TRAP	C#ESCAPE
	046704	000460						.WORD	L10050-
6695									
6696									
6697	046706	012705	013144		904: ;WRITE PHYSICAL ADDRESS				
6698	046712	004737	026742		MOV #WTPHYA,R5		; DEFAULT WRITE PHYSICAL ADDR FUNC		
6699	046716	012777	000002	133302	JSR PC,LDPCCB		; LOAD FUNCTION -> PCBB		
6700	046724	004737	024574		MOV #GETCMD,#PCSR0		; ISSUE GET_CMD PORT COMMAND		
6701	046730	103006			JSR PC,CHKDNI		; DNI ?		
6702	046732				BCC 1004		; YES		
	046732	104456			ERRHRD 192.,ERR010,MSG003		; NO, REPORT ERROR		
	046734	000300						TRAP	C#ERHRD
	046736	020502						.WORD	192
	046740	017110						.WORD	ERR010
6703	046742				ESCAPE TST		; AND ABORT TEST		
	046742	104410						TRAP	C#ESCAPE
	046744	000420						.WORD	L10050-
6704									
6705	046746	004737	025546		1004: JSR PC,CLRDNI		; WRITE ONE TO CLEAR DNI		
6706							; ERROR ?		
6707	046752	103006			BCC 1104		; NO		
6708	046754				ERRHRD 193.,ERR006,MSG003		; YES, REPORT ERROR		
	046754	104456						TRAP	C#ERHRD
	046756	000301						.WORD	193
	046760	020202						.WORD	ERR006
	046762	017110						.WORD	MSG003
6709	046764				ESCAPE TST		; AND ABORT TEST		
	046764	104410						TRAP	C#ESCAPE
	046766	000376						.WORD	L10050-
6710									
6711									
6712	046770	012705	013714		1104: ;SET UP RINGS				
6713	046774	004737	027046		MOV #TDRB2A,R5		; DEFAULT ERROR TRANSMIT RING		
6714	047000	012705	013354		JSR PC,LDTDRB		; LOAD TDRB		
6715	047004	004737	027010		MOV #RDRB1A,R5		; DEFAULT ONE BUFFER RECEIVE RING		
6716					JSR PC,LDRDRB		; LOAD RDRB		
6717									
6718	047010	012705	002266		1104: ;SET UP BUFFERS AND START				
6719	047014	004737	026714		MOV #PCBB+2,R5		; POINT TO DESTINATION ADDRESS		
6720	047020	004737	027342		JSR PC,LDDDEST		; LOAD DEST		
6721	047024	012777	000004	133174	JSR PC,SETBUF		; SET UP BUFFERS		
6722	047032	004737	024574		MOV #START,#PCSR0		; ISSUE START PORT COMMAND		
6723	047036	103006			JSR PC,CHKDNI		; DNI?		
					BCC 1204		; YES		



```

6724 047040          ERRHRD 194.,ERR012,MSG003      ; NO, REPORT ERROR
      047040 104456
      047042 000302
      047044 020633
      047046 017110
6725 047050          ESCAPE TST                    ; AND ABORT TEST
      047050 104410
      047052 000312
6726 047054 004737 025546      ;120: JSR      PC,CLRDN1      ; WRITE ONE TO CLEAR DNI
6727 047054 004737 025546      ;120: BCC      130:          ; ERROR ?
6728 047060 103006
6729 047062          ERRHRD 195.,ERR006,MSG003      ; NO
6730 047062 104456
      047064 000303
      047066 020202
      047070 017110
6731 047072          ESCAPE TST                    ; AND ABORT TEST
      047072 104410
      047074 000270
6732 047076 004737 025404      ;130: JSR      PC,CHKTXI     ; TXI ?
6733 047102 103006
6734 047102 103006
6735 047104          ERRHRD 196.,ERR013,MSG003      ; YES
      047104 104456
      047106 000304
      047110 020714
      047112 017110
6736 047114          ESCAPE TST                    ; AND ABORT TEST
      047114 104410
      047116 000246
6737 047120 004737 025730      ;140: JSR      PC,CLRTXI     ; WRITE ONE TO CLEAR TXI
6738 047120 004737 025730      ;140: BCC      150:          ; ERROR ?
6739 047124 103006
6740 047124 103006
6741 047126          ERRHRD 197.,ERR014,MSG003      ; NO
      047126 104456
      047130 000305
      047132 020745
      047134 017110
6742 047136          ESCAPE TST                    ; AND ABORT TEST
      047136 104410
      047140 000224
6743 047142 012705 002604      ;CHECK FIRST RING ENTRY
6744 047142 012705 002604      ;150: MOV      @TDRB,R5      ; CHECK TDRB OWNERSHIP
6745 047146 004737 024676      ;150: JSR      PC,CHKOWN     ; OMN = PORT DRIVER ?
6746 047152 103006
6747 047152 103006
      047154 104456
      047156 000306
      047160 021773
      047162 000000
6748 047164          ESCAPE TST                    ; AND ABORT TEST
      047164 104410
      047166 000176
6749 047170 012705 014544      ;160: MOV      @TDR18A,R5   ; POINT TO EXPECTED TDRB
6750 047170 012705 014544
    
```

6751	047174	004737	027252		JSR	PC,LDXTDR		; LOAD INTO XTDRBO TABLE		
6752	047200	012705	002604		MOV	#TDRB,R5		; CHECK TDRB		
6753	047204	004737	025316		JSR	PC,CHKTDR		; ERRORS ?		
6754	047210	103006			BCC	1624		; NO		
6755	047212				ERRHRD	199.,ERR033,MSG005		; YES, REPORT ERROR		
	047212	104456							TRAP	C#ERHRD
	047214	000307							.WORD	199
	047216	022633							.WORD	ERR033
	047220	017214							.WORD	MSG005
6756	047222				ESCAPE	TST		; AND ABORT TEST		
	047222	104410							TRAP	C#ESCAPE
	047224	000140							.WORD	L10050-
6757					;CHECK	SECOND RING ENTRY				
6758	047226	012705	002614		1624:	MOV	#TDRB+8.,R5	; CHECK TDRB OWNERSHIP		
6759	047232	004737	024676		JSR	PC,CHKOWN		; OWN = PORT DRIVER ?		
6760	047236	103006			BCC	1644		; YES		
6761	047240				ERRHRD	200.,ERR028		; NO, REPORT ERROR		
	047240	104456							TRAP	C#ERHRD
	047242	000310							.WORD	200
	047244	022100							.WORD	ERR028
	047246	000000							.WORD	0
6762	047250				ESCAPE	TST		; AND ABORT TEST		
	047250	104410							TRAP	C#ESCAPE
	047252	000112							.WORD	L10050-
6763					; 1644:					
6764	047254	012705	014554		MOV	#TDR188,R5		; POINT TO EXPECTED TDRB		
6765	047260	004737	027252		JSR	PC,LDXTDR		; LOAD INTO XTDRBO TABLE		
6766	047264	012705	002614		MOV	#TDRB+8.,R5		; CHECK TDRB		
6767	047270	004737	025316		JSR	PC,CHKTDR		; ERRORS ?		
6768	047274	103006			BCC	2304		; NO		
6769	047276				ERRHRD	201.,ERR034,MSG005		; YES, REPORT ERROR		
	047276	104456							TRAP	C#ERHRD
	047300	000311							.WORD	201
	047302	022722							.WORD	ERR034
	047304	017214							.WORD	MSG005
6770	047306				ESCAPE	TST		; AND ABORT TEST		
	047306	104410							TRAP	C#ESCAPE
	047310	000054							.WORD	L10050-
6771					; 2304:					
6772	047312	012777	000017	132706	MOV	#STOP,#PCSR0		; ISSUE STOP PORT COMMAND		
6773	047320	004737	024574		JSR	PC,CHKDNI		; DNI ?		
6774	047324	103006			BCC	2404		; YES		
6775	047326				ERRHRD	202.,ERR019,MSG003		; NO, REPORT ERROR		
	047326	104456							TRAP	C#ERHRD
	047330	000312							.WORD	202
	047332	021312							.WORD	ERR019
	047334	017110							.WORD	MSG003
6776	047336				ESCAPE	TST		; AND ABORT TEST		
	047336	104410							TRAP	C#ESCAPE
	047340	000024							.WORD	L10050-
6777					; 2404:					
6778	047342	004737	025546		JSR	PC,CLRDN1		; WRITE ONE TO CLEAR DNI		
6779								; ERROR ?		
6780	047346	103006			BCC	2504		; NO		
6781	047350				ERRHRD	203.,ERR006,MSG003		; YES, REPORT ERROR		
	047350	104456							TRAP	C#ERHRD
	047352	000313							.WORD	203

G10

047354	020202				.WORD	ERR006
047356	017110				.WORD	MSG003
6782	047360	ESCAPE	TST			
						; AND ABORT TEST
047360	104410				TRAP	C#ESCAPE
047362	000002				.WORD	L10050-
6783	047364	2504:				
6784	047364	ENDTST				
047364					L10050:	
047364	104401				TRAP	C#ETST

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.SBTTL TEST 19: NO RECEIVE BUFFER TEST

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*****
:
:   THIS TEST VERIFIES THAT A RCBI ERROR CAN BE DETECTED.
:   AN INTERNAL LOOPBACK IS ATTEMPTED WITH
:   NO RECEIVE BUFFERS OWNED BY THE DEUNA.
:   A RCBI (RECEIVE BUFFER UNAVAILABLE) ERROR IS EXPECTED IN PCRRO.
:
:   TEST SEQUENCE:
:       1. WRITE MODE REGISTER = INTERNAL LOOPBACK AND PROM MODE
:       2. WRITE RING FORMAT (16 TRANSMIT ENTRIES)
:       3. WRITE PHYSICAL ADDRESS
:       4. SET UP RINGS AND BUFFERS
:           WITH 16 TRANSMIT PACKETS
:           AND NO RECEIVE BUFFERS OWNED BY THE DEUNA
:       5. ISSUE START
:       6. CHECK FOR RCBI ERROR IN PCSRO
:       7. ISSUE STOP
:
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6808 047366          BGNTST
        047366
6809 047366 004737 027446      JSR    PC,TINIT          ; IS A DEVICE RESET NEEDED?
6810 047372 103025          BCC    30$              ; NO
6811 047374 012777 000040 132624  MOV    #RSET,#PCSRO    ; YES, RESET DEUNA
6812 047402 004737 024574      JSR    PC,CHKDNI       ; DNI ?
6813 047406 103006          BCC    20$              ; YES
6814 047410          ERRHRD 204.,ERR004,MSG003 ; NO, REPORT ERROR
        047410 104456          TRAP   C$ERHRD
        047412 000314          .WORD 204
        047414 020102          .WORD ERR004
        047416 017110          .WORD MSG003
6815 047420          ESCAPE TST          ; AND ABORT TEST
        047420 104410          TRAP   C$ESCAPE
        047422 000634          .WORD L10051-.
6816
6817 047424 004737 025546      ; 20$: JSR    PC,CLRDN1      ; WRITE ONE TO CLEAR DNI
6818                                     ; ERROR ?
6819 047430 103006          BCC    30$              ; NO
6820 047432          ERRHRD 205.,ERR006,MSG003 ; YES, REPORT ERROR
        047432 104456          TRAP   C$ERHRD
        047434 000315          .WORD 205
        047436 020202          .WORD ERR006
        047440 017110          .WORD MSG003
6821 047442          ESCAPE TST          ; AND ABORT TEST
        047442 104410          TRAP   C$ESCAPE
        047444 000612          .WORD L10051-.
6822
6823 047446 004737 026772      ; 30$: JSR    PC,LDPCSR      ; ADDRESS OF PCBB -> PCSR2!3
6824 047452 012777 000001 132546  MOV    #GETPCB,#PCSRO ; ISSUE GET_PCBB PORT COMMAND
6825 047460 004737 024574      JSR    PC,CHKDNI       ; DNI?
6826 047464 103006          BCC    40$              ; YES
6827 047466          ERRHRD 206.,ERR009,MSG003 ; NO, REPORT ERROR
        047466 104456          TRAP   C$ERHRD
        047470 000316          .WORD 206
    
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047472 020416 .WORD ERR009
047474 017110 .WORD MSG003
6828 047476          ESCAPE TST          ; AND ABORT TEST          TRAP C$ESCAPE
    047476 104410          .WORD L10051-.
    047500 000556          .WORD
6829
6830 047502 004737 025546    40$: JSR    PC,CLRDNI          ; WRITE ONE TO CLEAR DNI
6831          .WORD          ; ERROR ?
6832 047506 103006          BCC    50$          ; NO
6833 047510          ERRHRD 207.,ERR006,MSG003 ; YES, REPORT ERROR          TRAP C$ERHRD
    047510 104456          .WORD 207
    047512 000317          .WORD ERR006
    047514 020202          .WORD MSG003
6834 047520          ESCAPE TST          ; AND ABORT TEST          TRAP C$ESCAPE
    047520 104410          .WORD L10051-.
    047522 000534          .WORD
6835
6836          ;WRITE MODE REGISTER = INTERNAL LOOPBACK AND PROM MODE
6837 047524 012705 013244    50$: MOV    @WTRNGS,R5          ; DEFAULT WRITE MODE FUNCTION
6838 047530 004737 026742          JSR    PC,LDPCCB          ; LOAD FUNCTION -> PCBB
6839 047534 012777 000002 132464    MOV    @GETCMD,@PCSR0      ; ISSUE GET_CMD PORT COMMAND
6840 047542 004737 024574          JSR    PC,CHKDNI          ; DNI ?
6841 047546 103006          BCC    60$          ; YES
6842 047550          ERRHRD 208.,ERR010,MSG003 ; NO, REPORT ERROR          TRAP C$ERHRD
    047550 104456          .WORD 208
    047552 000320          .WORD ERR010
    047554 020502          .WORD MSG003
6843 047560          ESCAPE TST          ; AND ABORT TEST          TRAP C$ESCAPE
    047560 104410          .WORD L10051-.
    047562 000474          .WORD
6844
6845 047564 004737 025546    60$: JSR    PC,CLRDNI          ; WRITE ONE TO CLEAR DNI
6846          .WORD          ; ERROR ?
6847 047570 103006          BCC    70$          ; NO
6848 047572          ERRHRD 209.,ERR006,MSG003 ; YES, REPORT ERROR          TRAP C$ERHRD
    047572 104456          .WORD 209
    047574 000321          .WORD ERR006
    047576 020202          .WORD MSG003
6849 047600 017110          ESCAPE TST          ; AND ABORT TEST          TRAP C$ESCAPE
    047602 104410          .WORD L10051-.
    047604 000452          .WORD
6850
6851          ;WRITE RING FORMAT (16 TRANSMIT ENTRIES)
6852 047606 012705 013204    70$: MOV    @WTRNGS,R5          ; DEFAULT WRITE RING FORMAT FUNCTION
6853 047612 004737 026742          JSR    PC,LDPCCB          ; LOAD FUNCTION -> PCBB
6854 047616 012705 013340          MOV    @RFRMTX,R5          ; DEFAULT RING FORMAT
6855 047622 012700 000006          MOV    @6,R0              ; FORMAT = SIX WORDS
6856 047626 004737 027142          JSR    PC,LDUDBB          ; LOAD RING FORMAT -> UDBB
6857 047632 012777 000002 132366    MOV    @GETCMD,@PCSR0      ; ISSUE GET_CMD PORT COMMAND
6858 047640 004737 024574          JSR    PC,CHKDNI          ; DNI ?
6859 047644 103006          BCC    80$          ; YES
6860 047646          ERRHRD 210.,ERR010,MSG003 ; NO, REPORT ERROR          TRAP C$ERHRD
    047646 104456          .WORD 210
    047650 000322          .WORD
    
```

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047652 020502 .WORD ERR010
047654 017110 .WORD MSG003
6861 047656 ESCAPE TST ; AND ABORT TEST
047656 104410 TRAP C$ESCAPE
047660 000376 .WORD L10051-.

6862
6863 047662 004737 025546 ;0$: JSR PC,CLRDNI ; WRITE ONE TO CLEAR DNI
6864 ; ERROR ?
6865 047666 103006 BCC 90$ ; NO
6866 047670 ERRHRD 211.,ERR006,MSG003 ; YES, REPORT ERROR
047670 104456 TRAP C$ERHRD
047672 000323 .WORD 211
047674 020202 .WORD ERR006
047676 017110 .WORD MSG003
6867 047700 ESCAPE TST ; AND ABORT TEST
047700 104410 TRAP C$ESCAPE
047702 000354 .WORD L10051-.

6868
6869 ;WRITE PHYSICAL ADDRESS
6870 047704 012705 013144 90$: MOV #WTPHYA,R5 ; DEFAULT WRITE PHYSICAL ADDR FUNC
6871 047710 004737 026742 JSR PC,LDP CBB ; LOAD FUNCTION -> PCBB
6872 047714 012777 000002 132304 MOV #GETCMD,@PCSR0 ; ISSUE GET_CMD PORT COMMAND
6873 047722 004737 024574 JSR PC,CHKDNI ; DNI ?
6874 047726 103006 BCC 100$ ; YES
6875 047730 ERRHRD 212.,ERR010,MSG003 ; NO, REPORT ERROR
047730 104456 TRAP C$ERHRD
047732 000324 .WORD 212
047734 020502 .WORD ERR010
047736 017110 .WORD MSG003
6876 047740 ESCAPE TST ; AND ABORT TEST
047740 104410 TRAP C$ESCAPE
047742 000314 .WORD L10051-.

6877
6878 047744 004737 025546 ;100$: JSR PC,CLRDNI ; WRITE ONE TO CLEAR DNI
6879 ; ERROR ?
6880 047750 103006 BCC 110$ ; NO
6881 047752 ERRHRD 213.,ERR006,MSG003 ; YES, REPORT ERROR
047752 104456 TRAP C$ERHRD
047754 000325 .WORD 213
047756 020202 .WORD ERR006
047760 017110 .WORD MSG003
6882 047762 ESCAPE TST ; AND ABORT TEST
047762 104410 TRAP C$ESCAPE
047764 000272 .WORD L10051-.

6883
6884 ;SET UP RINGS FOR 16 TRANSMIT PACKETS
6885 ;AND NO RECEIVE BUFFERS OWNED BY DEUNA
6886 047766 012705 014014 110$: MOV #TDRBX,R5 ; TRANSMIT RING
6887 047772 004737 027104 JSR PC,LTD RX ; LOAD TDRBX
6888 047776 012705 013414 MOV #RDRB18,R5 ; DEFAULT RECEIVE RING (NO BUFFERS)
6889 050002 004737 027010 JSR PC,LDRDRB ; LOAD RDRB
6890
6891 ;SET UP BUFFERS AND START
6892 050006 012705 002266 MOV #PCBB+2,R5 ; POINT TO DESTINATION ADDRESS
6893 050012 004737 026714 JSR PC,LDDDEST ; LOAD DEST
6894 050016 004737 027342 JSR PC,SETBUF ; SET UP BUFFERS
6895 050022 012777 000004 132176 MOV #START,@PCSR0 ; ISSUE START PORT COMMAND
    
```

6896	050030	004737	024574		JSR	PC,CHKDNI		; DNI?			
6897	050034	103006			BCC	120\$		; YES			
6898	050036				ERRHRD	214.,ERR012,MSG003		; NO, REPORT ERROR			
	050036	104456							TRAP	C\$ERHRD	
	050040	000326							.WORD	214	
	050042	020633							.WORD	ERR012	
	050044	017110							.WORD	MSG003	
6899	050046				ESCAPE	TST		; AND ABORT TEST			
	050046	104410							TRAP	C\$ESCAPE	
	050050	000206							.WORD	L10051-	
6900											
6901	050052	004737	025546	i	120\$:	JSR	PC,CLRDNI		; WRITE ONE TO CLEAR DNI		
6902									; ERROR ?		
6903	050056	103006			BCC	130\$		; NO			
6904	050060				ERRHRD	215.,ERR006,MSG003		; YES, REPORT ERROR			
	050060	104456							TRAP	C\$ERHRD	
	050062	000327							.WORD	215	
	050064	020202							.WORD	ERR006	
	050066	017110							.WORD	MSG003	
6905	050070				ESCAPE	TST		; AND ABORT TEST			
	050070	104410							TRAP	C\$ESCAPE	
	050072	000164							.WORD	L10051-	
6906											
6907	050074	004737	025404	i	130\$:	JSR	PC,CHKTXI		; TXI ?		
6908	050100	103006			BCC	140\$		; YES			
6909	050102				ERRHRD	216.,ERR013,MSG003		; NO, REPORT ERROR			
	050102	104456							TRAP	C\$ERHRD	
	050104	000330							.WORD	216	
	050106	020714							.WORD	ERR013	
	050110	017110							.WORD	MSG003	
6910	050112				ESCAPE	TST		; AND ABORT TEST			
	050112	104410							TRAP	C\$ESCAPE	
	050114	000142							.WORD	L10051-	
6911											
6912	050116	004737	025730	i	140\$:	JSR	PC,CLRTXI		; WRITE ONE TO CLEAR TXI		
6913									; ERROR ?		
6914	050122	103006			BCC	170\$		; NO			
6915	050124				ERRHRD	217.,ERR014,MSG003		; YES, REPORT ERROR			
	050124	104456							TRAP	C\$ERHRD	
	050126	000331							.WORD	217	
	050130	020745							.WORD	ERR014	
	050132	017110							.WORD	MSG003	
6916	050134				ESCAPE	TST		; AND ABORT TEST			
	050134	104410							TRAP	C\$ESCAPE	
	050136	000120							.WORD	L10051-	
6917											
6918											
6919											
6920	050140	004737	024730	i	170\$:	JSR	PC,CHKRCE		; RCBI ?		
6921	050144	103006			BCC	180\$		; YES			
6922	050146				ERRHRD	218.,ERR025,MSG003		; NO, REPORT ERROR			
	050146	104456							TRAP	C\$ERHRD	
	050150	000332							.WORD	218	
	050152	021672							.WORD	ERR025	
	050154	017110							.WORD	MSG003	
6923	050156				ESCAPE	TST		; AND ABORT TEST			
	050156	104410							TRAP	C\$ESCAPE	

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050160 000076                                .WORD  L10051-.
6924
6925 050162 004737 025614      ; 180$: JSR      PC,CLRRC     ; WRITE ONE TO CLEAR RCPI
6926                                ; ERROR ?
6927 050166 103006      BCC      230$           ; NO
6928 050170      ERRHRD  219.,ERR026,MSG003 ; YES, REPORT ERROR
      050170 104456                                TRAP   C$ERHRD
      050172 000333                                .WORD  219
      050174 021724                                .WORD  ERR026
      050176 017110                                .WORD  MSG003
6929 050200      ESCAPE  TST                       ; AND ABORT TEST
      050200 104410                                TRAP   C$ESCAPE
      050202 000054                                .WORD  L10051-.
6930
6931 050204 012777 000017 132014 ; 230$: MOV      #STOP,SPCSRO  ; ISSUE STOP PORT COMMAND
6932 050212 004737 024574      JSR      PC,CHKDNI     ; DNI ?
6933 050216 103006      BCC      240$           ; YES
6934 050220      ERRHRD  220.,ERR019,MSG003 ; NO, REPORT ERROR
      050220 104456                                TRAP   C$ERHRD
      050222 000334                                .WORD  220
      050224 021312                                .WORD  ERR019
      050226 017110                                .WORD  MSG003
6935 050230      ESCAPE  TST                       ; AND ABORT TEST
      050230 104410                                TRAP   C$ESCAPE
      050232 000024                                .WORD  L10051-.
6936
6937 050234 004737 025546      ; 240$: JSR      PC,CLRDMI     ; WRITE ONE TO CLEAR DNI
6938                                ; ERROR ?
6939 050240 103006      BCC      250$           ; NO
6940 050242      ERRHRD  221.,ERR006,MSG003 ; YES, REPORT ERROR
      050242 104456                                TRAP   C$ERHRD
      050244 000335                                .WORD  221
      050246 020202                                .WORD  ERR006
      050250 017110                                .WORD  MSG003
6941 050252      ESCAPE  TST                       ; AND ABORT TEST
      050252 104410                                TRAP   C$ESCAPE
      050254 000002                                .WORD  L10051-.
6942 050256      250$:      ENDTST
6943 050256
      050256                                L10051: TRAP   C$ETST
      050256 104401
  
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.SBTTL TEST 20: DATA CHAINING TEST

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*****
:
: THIS TEST VERIFIES TRANSMIT AND RECEIVE DATA CHAINING.
: AN INTERNAL OR EXTERNAL LOOPBACK IS PERFORMED
: WITH THREE TRANSMIT AND THREE RECEIVE BUFFERS CHAINED.
: INTERNAL LOOPBACK IS DEFAULT WITH EXTERNAL LOOPBACK BEING
: SELECTED VIA A SOFTWARE QUESTION.
:
: TEST SEQUENCE:
: 1. WRITE MODE REGISTER = PROM MODE AND EITHER
:     INTERNAL(D) OR EXTERNAL LOOPBACK MODE
: 2. WRITE RING FORMAT
: 3. WRITE PHYSICAL ADDRESS
: 4. SET UP RINGS AND BUFFERS
:     THREE TRANSMIT AND RECEIVE BUFFERS
: 5. ISSUE START
: 6. CHECK FOR ERRORS
: 7. ISSUE STOP
:
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6968 050260          BGNTST
        050260
6969 050260 004737 027446 1$: JSR    PC,TINIT          ; IS A DEVICE RESET NEEDED?
6970 050264 103025          BCC    30$              ; NO
6971 050266 012777 000040 131732 MOV    @RSET,@PCSR0      ; YES, RESET DEJNA
6972 050274 004737 024574 JSR    PC,CHKDNI         ; DNI ?
6973 050300 103006          BCC    20$              ; YES
6974 050302          ERRHRD 222.,ERR004,MSG003 ; NO, REPORT ERROR
        050302 104456          TRAP   C$ERHRD
        050304 000336          .WORD  222
        050306 020102          .WORD  ERR004
        050310 017110          .WORD  MSG003
6975 050312          ESCAPE TST          ; AND ABORT TEST
        050312 104410          TRAP   C$ESCAPE
        050314 001536          .WORD  L10052-.
6976
6977 050316 004737 025546 20$: JSR    PC,CLRDN1         ; WRITE ONE TO CLEAR DNI
6978          BCC    30$              ; ERROR ?
6979 050322 103006          BCC    30$              ; NO
6980 050324          ERRHRD 223.,ERR006,MSG003 ; YES, REPORT ERROR
        050324 104456          TRAP   C$ERHRD
        050326 000337          .WORD  223
        050330 020202          .WORD  ERR006
        050332 017110          .WORD  MSG003
6981 050334          ESCAPE TST          ; AND ABORT TEST
        050334 104410          TRAP   C$ESCAPE
        050336 001514          .WORD  L10052-.
6982
6983 050340 004737 026772 30$: JSR    PC,LDPCSR         ; ADDRESS OF PCBB -> PCSR2!3
6984 050344 012777 000001 131654 MOV    @GETPCB,@PCSR0   ; ISSUE GET_PCBB !PORT COMMAND
6985 050352 004737 024574 JSR    PC,CHKDNI         ; DNI?
6986 050356 103006          BCC    40$              ; YES
6987 050360          ERRHRD 224.,ERR009,MSG003 ; NO, REPORT ERROR
        050360 104456          TRAP   C$ERHRD
    
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050362 000340 .WORD 224
050364 020416 .WORD ERR009
050366 017110 .WORD MSG003
6988 050370 ESCAPE TST ; AND ASORT TEST
050370 104410 TRAP C#ESCAPE
050372 001460 .WORD L10052-.

6989 ;
6990 050374 004737 025546 404: JSR PC,CLRDN1 ; WRITE ONE TO CLEAR DNI
6991 ; ERROR ?
6992 050400 103006 BCC 504 ; NO
6993 050402 ERRHRD 225.,ERR006,MSG003 ; YES. REPORT ERROR
050402 104456 TRAP C#ERRRD
050404 000341 .WORD 225
050406 020202 .WORD ERR006
050410 017110 .WORD MSG003
6994 050412 ESCAPE TST ; AND ABORT TEST
050412 104410 TRAP C#ESCAPE
050414 001436 .WORD L10052-.

6995 ;
6996 ;CHECK IF EXTERNAL LOOPBACK
6997 050416 005737 002224 504: TST EXLOOP ; EXTERNAL LOOPBACK SELECTED ?
6998 050422 001005 BNE 554 ; YES
6999 ;
7000 ;WRITE MODE REGISTER = INTERNAL LOOPBACK AND PROM MODE
7001 050424 012705 013244 MOV #WTHODE,R5 ; DEFAULT WRITE MODE FUNCTION
7002 050430 004737 026742 JSR PC,L0PCBB ; LOAD FUNCTION -> PCBB
7003 050434 000407 BR 564
7004 ;WRITE MODE REGISTER = PROM MODE ONLY (EXTERNAL LOOPBACK)
7005 050436 012705 013244 554: MOV #WTHODE,R5 ; DEFAULT WRITE MODE FUNCTION
7006 050442 004737 026742 JSR PC,L0PCBB ; LOAD FUNCTION -> PCBB
7007 050446 013737 015114 002266 MOV MODE20,PCBB+2 ; PROM MODE ONLY
7008 050454 012777 000002 131544 564: MOV #GETCMD,#PCSR0 ; ISSUE GET_CMD PORT COMMAND
7009 050462 004737 024574 JSR PC,CHKDNI ; DNI ?
7010 050466 103006 BCC 604 ; YES
7011 050470 ERRHRD 226.,ERR010,MSG003 ; NO. REPORT ERROR
050470 104456 TRAP C#ERRRD
050472 000342 .WORD 226
050474 020502 .WORD ERR010
050476 017110 .WORD MSG003
7012 050500 ESCAPE TST ; AND ABORT TEST
050500 104410 TRAP C#ESCAPE
050502 001350 .WORD L10052-.

7013 ;
7014 050504 004737 025546 604: JSR PC,CLRDN1 ; WRITE ONE TO CLEAR DNI
7015 ; ERROR ?
7016 050510 103006 BCC 704 ; NO
7017 050512 ERRHRD 227.,ERR005,MSG003 ; YES. REPORT ERROR
050512 104456 TRAP C#ERRRD
050514 000343 .WORD 227
050516 020202 .WORD ERR006
050520 017110 .WORD MSG003
7018 050522 ESCAPE TST ; AND ABORT TEST
050522 104410 TRAP C#ESCAPE
050524 001326 .WORD L10052-.

7019 ;
7020 ;WRITE RING FORMAT
7021 050526 012705 013204 704: MOV #WTRNGS,R5 ; DEFAULT WRITE RING FORMAT FUNCTION
    
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7022 050532 004737 026742      JSR    PC,LDPCBB      ; LOAD FUNCTION -> PCBB
7023 050536 012705 013324      MOV    @RFRMT,R5     ; DEFAULT RING FORMAT
7024 050542 012700 000006      MOV    @6,R0         ; FORMAT = SIX WORDS
7025 050546 004737 027142      JSR    PC,LDUDBB     ; LOAD RING FORMAT -> UDSB
7026 050552 012777 000002      MOV    @GETCMD,@PCSR0 ; ISSUE GET_CMD PORT COMMAND
7027 050560 004737 024574      JSR    PC,CHKDNI     ; DNI ?
7028 050564 103006      BCC    80$           ; YES
7029 050566      ERRHRD 228.,ERR010,MSG003 ; NO, REPORT ERROR
      050566 104456      TRAP   C$ERRHRD
      050570 000344      .WORD 228
      050572 020502      .WORD ERR010
      050574 017110      .WORD MSG003
7030 050576      ESCAPE TST          ; AND ABORT TEST
      050576 104410      TRAP   C$ESCAPE
      050600 001252      .WORD L10052-.
7031      ;
7032 050602 004737 025546      ; 80$: JSR    PC,CLRDNI ; WRITE ONE TO CLEAR DNI
7033      BCC    90$           ; ERROR ?
7034 050606 103006      ERRHRD 229.,ERR006,MSG003 ; NO
7035 050610      .WORD 229           ; YES, REPORT ERROR
      050610 104456      TRAP   C$ERRHRD
      050612 000345      .WORD 229
      050614 020202      .WORD ERR006
      050616 017110      .WORD MSG003
7036 050620      ESCAPE TST          ; AND ABORT TEST
      050620 104410      TRAP   C$ESCAPE
      050622 001230      .WORD L10052-.
7037      ;
7038      ;WRITE PHYSICAL ADDRESS
7039 050624 012705 013144      ; 90$: MOV    @WTPHYA,R5 ; DEFAULT WRITE PHYSICAL ADDR FUNC
7040 050630 004737 026742      JSR    PC,LDPCBB     ; LOAD FUNCTION -> PCBB
7041 050634 012777 000002      MOV    @GETCMD,@PCSR0 ; ISSUE GET_CMD PORT COMMAND
7042 050642 004737 024574      JSR    PC,CHKDNI     ; DNI ?
7043 050646 103006      BCC    100$          ; YES
7044 050650      ERRHRD 230.,ERR010,MSG003 ; NO, REPORT ERROR
      050650 104456      TRAP   C$ERRHRD
      050652 000346      .WORD 230
      050654 020502      .WORD ERR010
      050656 017110      .WORD MSG003
7045 050660      ESCAPE TST          ; AND ABORT TEST
      050660 104410      TRAP   C$ESCAPE
      050662 001170      .WORD L10052-.
7046      ;
7047 050664 004737 025546      ; 100$: JSR    PC,CLRDNI ; WRITE ONE TO CLEAR DNI
7048      BCC    110$          ; ERROR ?
7049 050670 103006      ERRHRD 231.,ERR006,MSG003 ; NO
7050 050672      .WORD 231           ; YES, REPORT ERROR
      050672 104456      TRAP   C$ERRHRD
      050674 000347      .WORD 231
      050676 020202      .WORD ERR006
      050700 017110      .WORD MSG003
7051 050702      ESCAPE TST          ; AND ABORT TEST
      050702 104410      TRAP   C$ESCAPE
      050704 001146      .WORD L10052-.
7052      ;
7053      ;SET UP RINGS FOR THREE BUFFERS CHAINED LOOPBACK
7054 050706 012705 013754      ; 110$: MOV    @TDRB3A,R5 ; DEFAULT THREE BUFFER TRANSMIT RING

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7055	050712	004737	027046		JSR	PC,LD1DRB		: LOAD TDRB		
7056	050716	012705	013514		MOV	#RDRB3A,R5		: DEFAULT THREE BUFFER RECEIVE RING		
7057	050722	004737	027010		JSR	PC,LDRDRB		: LOAD RDRB		
7058										
7059					: SET UP	BUFFERS AND START				
7060	050725	012705	002266		MOV	#PCBB+2,R5		: POINT TO DESTINATION ADDRESS		
7061	050732	004737	026714		JSR	PC,LDDEST		: LOAD DEST		
7062	050736	004737	027342		JSR	PC,SETBUF		: SET UP BUFFERS		
7063					: LOAD TYPE FIELD =	DIAGNOSTIC TYPE				
7064	050742	012705	003120		MOV	#TBUF+12.,R5		: POINT TO TYPE FIELD		
7065	050746	012715	002540		MOV	#DTYPE,(R5)		: LOAD DIAGNOSTIC TYPE		
7066										
7067	050752	012777	000004	131246	MOV	#START,#PCSR0		: ISSUE START PORT COMMAND		
7068	050760	004737	024574		JSR	PC,CHKDNI		: DNI?		
7069	050764	103006			BCC	120#		: YES		
7070	050766				ERRHRD	232.,ERR012,MSG003		: NO, REPORT ERROR		
	050766	104456							TRAP	C#ERHRD
	050770	000350							.WORD	232
	050772	020633							.WORD	ERR012
	050774	017110							.WORD	MSG003
7071	050776				ESCAPE	TST		: AND ABORT TEST		
	050776	104410							TRAP	C#ESCAPE
	051000	001052							.WORD	L10052-.
7072										
7073	051002	004737	025546		: 120#:	JSR	PC,CLRDN1		: WRITE ONE TO CLEAR DNI	
7074									: ERROR ?	
7075	051006	103006			BCC	130#		: NO		
7076	051010				ERRHRD	233.,ERR006,MSG003		: YES, REPORT ERROR		
	051010	104456							TRAP	C#ERHRD
	051012	000351							.WORD	233
	051014	020202							.WORD	ERR006
	051016	017110							.WORD	MSG003
7077	051020				ESCAPE	TST		: AND ABORT TEST		
	051020	104410							TRAP	C#ESCAPE
	051022	001030							.WORD	L10052-.
7078										
7079	051024	004737	025404		: 130#:	JSR	PC,CHKTXI		: TXI ?	
7080	051030	103006			BCC	140#		: YES		
7081	051032				ERRHRD	234.,ERR013,MSG003		: NO, REPORT ERROR		
	051032	104456							TRAP	C#ERHRD
	051034	000352							.WORD	234
	051036	020714							.WORD	ERR013
	051040	017110							.WORD	MSG003
7082	051042				ESCAPE	TST		: AND ABORT TEST		
	051042	104410							TRAP	C#ESCAPE
	051044	001006							.WORD	L10052-.
7083										
7084	051046	004737	025730		: 140#:	JSR	PC,CLRTXI		: WRITE ONE TO CLEAR TXI	
7085									: ERROR ?	
7086	051052	103006			BCC	150#		: NO		
7087	051054				ERRHRD	235.,ERR014,MSG003		: YES, REPORT ERROR		
	051054	104456							TRAP	C#ERHRD
	051056	000353							.WORD	235
	051060	020745							.WORD	ERR014
	051062	017110							.WORD	MSG003
7088	051064				ESCAPE	TST		: AND ABORT TEST		
	051064	104410							TRAP	C#ESCAPE

	051066	000764					.WORD	L10052-.
7089				;CHECK FIRST RING ENTRY				
7090	051070	012705	002604	150\$: MOV @TDRB,R5		; CHECK TDRB OWNERSHIP		
7091	051074	004737	024676	JSR PC,CHKOWN		; OWN = PORT DRIVER ?		
7092	051100	103006		BCC 160\$		; YES		
7093	051102			ERRHRD 236.,ERR027		; NO, REPORT ERROR		
	051102	104456					TRAP	C#ERRHRD
	051104	000354					.WORD	236
	051106	021773					.WORD	ERR027
	051110	000000					.WORD	0
7094	051112			ESCAPE TST		; AND ABORT TEST		
	051112	104410					TRAP	C#ESCAPE
	051114	000736					.WORD	L10052-.
7095								
7096	051116	012705	014564	160\$: MOV @TDR20A,R5		; POINT TO EXPECTED TDRB		
7097	051122	004737	027252	JSR PC,LDXTDR		; LOAD INTO XTDRBO TABLE		
7098	051126	012705	002604	MOV @TDRB,R5		; CHECK TDRB		
7099	051132	004737	025316	JSR PC,CHKTDR		; ERRORS ?		
7100	051136	103006		BCC 162\$		; NO		
7101	051140			ERRHRD 237.,ERR033,MSG005		; YES, REPORT ERROR		
	051140	104456					TRAP	C#ERRHRD
	051142	000355					.WORD	237
	051144	022633					.WORD	ERR033
	051146	017214					.WORD	MSG005
7102	051150			ESCAPE TST		; AND ABORT TEST		
	051150	104410					TRAP	C#ESCAPE
	051152	000700					.WORD	L10052-.
7103				;CHECK SECOND RING ENTRY				
7104	051154	012705	002614	162\$: MOV @TDRB+8.,R5		; CHECK TDRB OWNERSHIP		
7105	051160	004737	024676	JSR PC,CHKOWN		; OWN = PORT DRIVER ?		
7106	051164	103006		BCC 164\$		; YES		
7107	051166			ERRHRD 238.,ERR028		; NO, REPORT ERROR		
	051166	104456					TRAP	C#ERRHRD
	051170	000356					.WORD	238
	051172	022100					.WORD	ERR028
	051174	000000					.WORD	0
7108	051176			ESCAPE TST		; AND ABORT TEST		
	051176	104410					TRAP	C#ESCAPE
	051200	000652					.WORD	L10052-.
7109								
7110	051202	012705	014574	164\$: MOV @TDR20B,R5		; POINT TO EXPECTED TDRB		
7111	051206	004737	027252	JSR PC,LDXTDR		; LOAD INTO XTDRBO TABLE		
7112	051212	012705	002614	MOV @TDRB+8.,R5		; CHECK TDRB		
7113	051216	004737	025316	JSR PC,CHKTDR		; ERRORS ?		
7114	051222	103006		BCC 166\$		; NO		
7115	051224			ERRHRD 239.,ERR034,MSG005		; YES, REPORT ERROR		
	051224	104456					TRAP	C#ERRHRD
	051226	000357					.WORD	239
	051230	022722					.WORD	ERR034
	051232	017214					.WORD	MSG005
7116	051234			ESCAPE TST		; AND ABORT TEST		
	051234	104410					TRAP	C#ESCAPE
	051236	000614					.WORD	L10052-.
7117				;CHECK THIRD RING ENTRY				
7118	051240	012705	002624	166\$: MOV @TDRB+16.,R5		; CHECK TDRB OWNERSHIP		
7119	051244	004737	024676	JSR PC,CHKOWN		; OWN = PORT DRIVER ?		
7120	051250	103006		BCC 168\$		; YES		

7121	051252			ERRHRD	240.,ERR029		: NO, REPORT ERROR	TRAP	C#ERRHRD
	051252	104456						.WORD	240
	051254	000360						.WORD	ERR029
	051256	022206						.WORD	0
	051260	000000							
7122	051262			ESCAPE	TST		: AND ABORT TEST	TRAP	C#ESCAPE
	051262	104410						.WORD	L10052-.
	051264	000566							
7123									
7124	051266	012705	014604	i	MOV	#TDR20C,R5	: POINT TO EXPECTED TDRB		
7125	051272	004737	027252	168:	JSR	PC,LDXTDR	: LOAD INTO XTDRBO TABLE		
7126	051276	012705	002624		MOV	#TDRB+16.,R5	: CHECK TDRB		
7127	051302	004737	025316		JSR	PC,CHKTUR	: ERRORS ?		
7128	051306	103006			BCC	170:	: NO		
7129	051310				ERRHRD	241.,ERR035,MSG005	: YES, REPORT ERROR	TRAP	C#ERRHRD
	051310	104456						.WORD	241
	051312	000361						.WORD	ERR035
	051314	023012						.WORD	MSG005
	051316	017214							
7130	051320			ESCAPE	TST		: AND ABORT TEST	TRAP	C#ESCAPE
	051320	104410						.WORD	L10052-.
	051322	000530							
7131									
7132	051324	004737	025132	i	JSR	PC,CHKRXI	: RXI ?		
7133	051330	103006		170:	BCC	180:	: YES		
7134	051332				ERRHRD	242.,ERR015,MSG003	: NO, REPORT ERROR	TRAP	C#ERRHRD
	051332	104456						.WORD	242
	051334	000362						.WORD	ERR015
	051336	021013						.WORD	MSG003
	051340	017110							
7135	051342			ESCAPE	TST		: AND ABORT TEST	TRAP	C#ESCAPE
	051342	104410						.WORD	L10052-.
	051344	000506							
7136									
7137	051346	004737	025662	i	JSR	PC,CLRRI	: WRITE ONE TO CLEAR RXI		
7138				180:			: ERROR ?		
7139	051352	103006			BCC	182:	: NO		
7140	051354				ERRHRD	243.,ERR016,MSG003	: YES, REPORT ERROR	TRAP	C#ERRHRD
	051354	104456						.WORD	243
	051356	000363						.WORD	ERR016
	051360	021044						.WORD	MSG003
	051362	017110							
7141	051364			ESCAPE	TST		: AND ABORT TEST	TRAP	C#ESCAPE
	051364	104410						.WORD	L10052-.
	051366	000464							
7142									
7143	051370	005737	002224	i	TST	EXLOOP	: EXTERNAL LOOPBACK		
7144	051374	001431		182:	BEG	190:	: NO, SKIP EXTERNAL CHECKS		
7145									
7146									
7147	051376	012703	007112		MOV	#RBUF+6,R3	: R3 POINTS TO SOURCE ADDRESS		
7148	051402	012704	007104		MOV	#RBUF,R4	: R4 POINTS TO DESTINATION ADDRESS		
7149	051406	022324			CMP	(R3)+,(R4)+	: FIRST WORD COMPARE ?		
7150	051410	001006			BNE	184:	: NO, GO CHECK TYPE FIELD		
7151	051412	022324			CMP	(R3)+,(R4)+	: SECOND WORD COMPARE ?		
7152	051414	001004			BNE	184:	: NO, GO CHECK TYPE FIELD		
7153	051416	021314			CMP	(R3),(R4)	: THIRD AND LAST COMPARE ?		

7154 051420 001002  
7155 051422 000137 051460  
7156  
7157  
7158 051426 012704 007120  
7159 051432 022714 002540  
7160 051436 001402  
7161 051440 000137 050260  
7162 051444  
051444 104456  
051446 000364  
051450 024156  
051452 000000  
7163 051454  
051454 104410  
051456 000374  
7164  
7165  
7166 051460 012705 002644  
7167 051464 004737 024676  
7168 051470 107 J06  
7169 051472  
051472 104456  
051474 000365  
051476 022313  
051500 000000  
7170 051502  
051502 104410  
051504 000346  
7171  
7172 051506 012705 014674  
7173 051512 004737 027222  
7174 051516 012705 002644  
7175 051522 004737 025032  
7176 051526 103006  
7177 051530  
051530 104456  
051532 000366  
051534 023101  
051536 017356  
7178 051540  
051540 104410  
051542 000310  
7179  
7180 051544 012705 002654  
7181 051550 004737 024676  
7182 051554 103006  
7183 051556  
051556 104456  
051560 000367  
051562 022420  
051564 000000  
7184 051566  
051566 104410  
051570 000262  
7185  
7186 051572 012705 014704

BNE 184\$  
JMP 190\$  
;SOURCE NOT EQUAL TO DESTINATION  
;CHECK IF DIAGNOSTIC TYPE  
184\$: MOV #RBUF+12.,R4  
CMP #DTYPE,(R4)  
BEQ 186\$  
JMP 1\$  
196\$: ERRHRD 244.,ERR047  
  
ESCAPE TST  
  
;CHECK FIRST RING ENTRY  
190\$: MOV #RDRB,R5  
JSR PC,CHKOWN!  
BCC 200\$  
ERRHRD 245.,ERR030  
  
ESCAPE TST  
  
;CHECK SECOND RING ENTRY  
200\$: MOV #RDRB+8.,R5  
JSR PC,CHKOWN!  
BCC 204\$  
ERRHRD 246.,ERR036,MSG006  
  
ESCAPE TST  
  
;CHECK SECOND RING ENTRY  
202\$: MOV #RDRB+8.,R5  
JSR PC,CHKOWN!  
BCC 204\$  
ERRHRD 247.,ERR031  
  
ESCAPE TST  
  
;CHECK SECOND RING ENTRY  
204\$: MOV #RDRB+8.,R5

; NO, CHECK TYPE FIELD  
; SCR = DST, GO CHECK RINGS  
  
; POINT TO TYPE FIELD RECEIVED  
; DIAGNOSTIC TYPE ?  
; YES, REPORT ERROR  
; NO, RESTART TEST  
; REPORT ERROR  
TRAP C#ERHRD  
.WORD 244  
.WORD ERR047  
.WORD 0  
  
; AND ABORT TEST  
TRAP C#ESCAPE  
.WORD L10052-.  
  
; CHECK RDRB OWNERSHIP  
; OWN = PORT DRIVER ?  
; YES  
; NO, REPORT ERROR  
TRAP C#ERHRD  
.WORD 245  
.WORD ERR030  
.WORD 0  
  
; AND ABORT TEST  
TRAP C#ESCAPE  
.WORD L10052-.  
  
; POINT TO EXPECTED RDRB  
; LOAD INTO XRDRB0 TABLE  
; CHECK RDRB  
; ERRORS ?  
; NO  
; YES, REPORT ERROR  
TRAP C#ERHRD  
.WORD 246  
.WORD ERR036  
.WORD MSG006  
  
; AND ABORT TEST  
TRAP C#ESCAPE  
.WORD L10052-.  
  
; CHECK RDRB OWNERSHIP  
; OWN = PORT DRIVER ?  
; YES  
; NO, REPORT ERROR  
TRAP C#ERHRD  
.WORD 247  
.WORD ERR031  
.WORD 0  
  
; AND ABORT TEST  
TRAP C#ESCAPE  
.WORD L10052-.  
  
; POINT TO EXPECTED RDRB

7187	051576	004737	027222	JSR	PC,LDXRDR	:	LOAD INTO XRDRBO TABLE		
7188	051602	012705	002654	MOV	#RDRB+8.,R5	:	CHECK RDRB		
7189	051606	004737	025032	JSR	PC,CHKRDR	:	ERRORS ?		
7190	051612	103006		BCC	206:	:	NO		
7191	051614			ERRHRD	248.,ERR037,MSG006	:	YES, REPORT ERROR	TRAP	C#ERHRD
	051614	104456						.WORD	248
	051616	000370						.WORD	ERR037
	051620	023167						.WORD	MSG006
	051622	017356							
7192	051624			ESCAPE	TST	:	AND ABORT TEST	TRAP	C#ESCAPE
	051624	104410						.WORD	L10052-.
	051626	000224							
7193				:	CHECK THIRD RING ENTRY				
7194	051630	012705	002664	206:	MOV #RDRB+16.,R5	:	CHECK RDRB OWNERSHIP		
7195	051634	004737	024676	JSR	PC,CHKOWN	:	OWN = PORT DRIVER ?		
7196	051640	103006		BCC	208:	:	YES		
7197	051642			ERRHRD	249.,ERR032	:	NO, REPORT ERROR	TRAP	C#ERHRD
	051642	104456						.WORD	249
	051644	000371						.WORD	ERR032
	051646	022526						.WORD	0
	051650	000000							
7198	051652			ESCAPE	TST	:	AND ABORT TEST	TRAP	C#ESCAPE
	051652	104410						.WORD	L10052-.
	051654	000176							
7199				:	208:				
7200	051656	012705	014714	MOV	#RDR20C,R5	:	POINT TO EXPECTED RDRB		
7201	051662	004737	027222	JSR	PC,LDXRDR	:	LOAD INTO XRDRBO TABLE		
7202	051666	012705	002664	MOV	#RDRB+16.,R5	:	CHECK RDRB		
7203	051672	004737	025032	JSR	PC,CHKRDR	:	ERRORS ?		
7204	051676	103006		BCC	210:	:	NO		
7205	051700			ERRHRD	250.,ERR038,MSG006	:	YES, REPORT ERROR	TRAP	C#ERHRD
	051700	104456						.WORD	250
	051702	000372						.WORD	ERR038
	051704	023256						.WORD	MSG006
	051706	017356							
7206	051710			ESCAPE	TST	:	AND ABORT TEST	TRAP	C#ESCAPE
	051710	104410						.WORD	L10052-.
	051712	000140							
7207				:	COMPARE RBUF WITH TBUF				
7208				:	210:				
7209	051714	012705	000570	MOV	#376.,R5	:	COMPARE 376 WORDS OF DATA		
7210	051720	004737	026044	JSR	PC,CMPDAT	:	DATA COMPARE ERROR ?		
7211	051724	103006		BCC	220:	:	NO		
7212	051726			ERRHRD	251.,ERR022,MSG007	:	YES, REPORT ERROR	TRAP	C#ERHRD
	051726	104456						.WORD	251
	051730	000373						.WORD	ERR022
	051732	021534						.WORD	MSG007
	051734	017520							
7213	051736			ESCAPE	TST	:	AND ABORT TEST	TRAP	C#ESCAPE
	051736	104410						.WORD	L10052-.
	051740	000112							
7214				:	220:				
7215	051742	012705	014740	MOV	#CRC20A,R5	:	POINT TO EXPECTED CRC		
7216	051746	004737	027176	JSR	PC,LDXCRC	:	LOAD INTO XCRC TABLE		
7217	051752	012705	010500	MOV	#RBUF+764.,R5	:	CHECK CRC		
7218	051756	004737	026124	JSR	PC,CMPCRC	:	ERRORS ?		
7219	051762	103006		BCC	230:	:	NO		



```

7220 051764          ERRHRD 252.,ERR023,MSG008      ; YES, REPORT ERROR
      051764 104456
      051766 000374
      051770 021603
      051772 017552
7221 051774          ESCAPE TST                    ; AND ABORT TEST
      051774 104410
      051776 000054
7222
7223 052000 012777 000017 130220 230$: MOV #STOP,@PCSR0      ; ISSUE STOP PORT COMMAND
7224 052006 004737 024574 JSR PC,CHKDNI        ; DNI ?
7225 052012 103006 BCC 240$           ; YES
7226 052014          ERRHRD 253.,ERR019,MSG003      ; NO, REPORT ERROR
      052014 104456
      052016 000375
      052020 021312
      052022 017110
7227 052024          ESCAPE TST                    ; AND ABORT TEST
      052024 104410
      052026 000024
7228
7229 052030 004737 025546 240$: JSR PC,CLRDN1      ; WRITE ONE TO CLEAR DNI
7230
7231 052034 103006 BCC 250$           ; ERROR ?
7232 052036          ERRHRD 254.,ERR006,MSG003      ; NO
      052036 104456
      052040 000376
      052042 020202
      052044 017110
7233 052046          ESCAPE TST                    ; AND ABORT TEST
      052046 104410
      052050 000002
7234 052052          ENDTST
7235 052052          L10052: TRAP C#ETST
      052052 104401

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.SBTTL TEST 21: PHYSICAL ADDRESS TEST

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*****
:
: THIS TEST VERIFIES THAT PHYSICAL ADDRESS DETECTION
: IS OPERATIONAL.
: A WRITE PHYSICAL ADDRESS FUNCTION IS USED TO SET
: THE DEUNA'S PHYSICAL ADDRESS.
: INTERNAL LOOPBACKS ARE THEN PERFORMED WITH A
: CURRENTLY ENABLED AND THEN A CURRENTLY DISABLED
: DESTINATION ADDRESS.
: THE PHYSICAL ADDRESS IS THEN COMPLEMENTED AND THE
: TEST IS REPEATED.
:
: TEST SEQUENCE:
: 1. WRITE MODE REGISTER = INTERNAL LOOPBACK
: 2. WRITE RING FORMAT
: 3. WRITE PHYSICAL ADDRESS
: 4. SET UP RINGS AND BUFFERS
: WITH DESTINATION ADDRESS = PHYSICAL ADDRESS
: 5. ISSUE START
: 6. CHECK FOR ERRORS
: 7. ISSUE STOP
: 8. SET UP RINGS AND BUFFERS
: WITH DESTINATION ADDRESS NOT = PHYSICAL ADDRESS
: 9. ISSUE START
: 10. CHECK FOR NO RXI
: 11. ISSUE STOP
: 12. WRITE PHYSICAL ADDRESS WITH COMPLEMENTED VAULE
: 13. REPEAT STEPS 4 - 11
:
*****

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BGNTST

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: T21::
JSR PC,TINIT ; IS A DEVICE RESET NEEDED?
BCC 30$ ; NO
MOV #RSET,BPCSR0 ; YES, RESET DEUNA
JSR PC,CHKDNI ; DNI ?
BCC 20$ ; YES
ERRHRD 255.,ERR004,MSG003 ; NO, REPORT ERROR
TRAP C$ERHRD
.WORD 255
.WORD ERR004
.WORD MSG003

ESCAPE TST ; AND ABORT TEST
TRAP C$ESCAPE
.WORD L10053-.

: 20$:
JSR PC,CLRDN1 ; WRITE ONE TO CLEAR DNI
; ERROR ?
BCC 30$ ; NO
ERRHRD 256.,ERR006,MSG003 ; YES, REPORT ERROR
TRAP C$ERHRD
.WORD 256
.WORD ERR006
.WORD MSG003

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052054 027446
052054 004737 027446
052060 103025
052062 012777 000040 130136
052070 004737 024574
052074 103006
052076 104456
052100 000377
052102 020102
052104 017110
052106 104410
052110 002624
052112 004737 025546
052116 103006
052120 104456
052122 000400
052124 020202
052126 017110

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7283 052130          ESCAPE TST          ; AND ABORT TEST          TRAP      C#ESCAPE
      052130 104410          .WORD      L10053-.
      052132 002602
7284
7285 052134 004737 026772          ; ADDRESS OF PCBB -> PCSR2!3
7286 052140 012777 000001 130060 30$: JSR      PC,LDPCSR          ; ISSUE GET_PCBB PORT COMMAND
      052146 004737 024574          MOV      #GETPCB,#PCSR0
7287 052146 004737 024574          JSR      PC,CHKDNI          ; DNI?
7288 052152 103006          BCC      40$          ; YES
7289 052154          ERRHRD 257.,ERR009,MSG003 ; NO, REPORT ERROR
      052154 104456          TRAP      C#ERHRD
      052156 000471          .WORD      257
      052160 020416          .WORD      ERR009
      052162 017110          .WORD      MSG003
7290 052164          ESCAPE TST          ; AND ABORT TEST          TRAP      C#ESCAPE
      052164 104410          .WORD      L10053-.
      052166 002546
7291
7292 052170 004737 025546          ; WRITE ONE TO CLEAR DNI
7293          BCC      50$          ; ERROR ?
7294 052174 103006          JSR      PC,CLRDN1          ; NO
7295 052176          ERRHRD 258.,ERR006,MSG003 ; YES, REPORT ERROR
      052176 104456          TRAP      C#ERHRD
      052200 000402          .WORD      258
      052202 020202          .WORD      ERR006
      052204 017110          .WORD      MSG003
7296 052206          ESCAPE TST          ; AND ABORT TEST          TRAP      C#ESCAPE
      052206 104410          .WORD      L10053-.
      052210 002524
7297
7298          ;WRITE MODE REGISTER = INTERNAL LOOPBACK
7299 052212 012705 013244          50$: MOV      #WTMODE,R5          ; DEFAULT WRITE MODE FUNCTION
7300 052216 004737 026742          JSR      PC,LDPCBB          ; LOAD FUNCTION -> PCBB
7301 052222 013737 015116 002266          MOV      MODE21,PCBB+2          ; MODE = INTL LOOPBACK ONLY
7302 052230 012777 000002 127770          MOV      #GETCMD,#PCSR0          ; ISSUE GET_CMD PORT COMMAND
7303 052236 004737 024574          JSR      PC,C.KDNI          ; DNI ?
7304 052242 103006          BCC      60$          ; YES
7305 052244          ERRHRD 259.,ERR010,MSG003 ; NO, REPORT ERROR
      052244 104456          TRAP      C#ERHRD
      052246 000403          .WORD      259
      052250 020502          .WORD      ERR010
      052252 017110          .WORD      MSG003
7306 052254          ESCAPE TST          ; AND ABORT TEST          TRAP      C#ESCAPE
      052254 104410          .WORD      L10053-.
      052256 002456
7307
7308 052260 004737 025546          ; WRITE ONE TO CLEAR DNI
7309          BCC      70$          ; ERROR ?
7310 052264 103006          JSR      PC,CLRDN1          ; NO
7311 052266          ERRHRD 260.,ERR006,MSG003 ; YES, REPORT ERROR
      052266 104456          TRAP      C#ERHRD
      052270 000404          .WORD      260
      052272 020202          .WORD      ERR006
      052274 017110          .WORD      MSG003
7312 052276          ESCAPE TST          ; AND ABORT TEST          TRAP      C#ESCAPE
      052276 104410          .WORD      L10053-.
      052300 002434
7313          ;

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7314                                     ;WRITE RING FORMAT
7315 052302 012705 013204                70$:  MOV   @WTRNGS,R5           ; DEFAULT WRITE RING FORMAT FUNCTION
7316 052306 004737 026742                JSR   PC,LDPCCB           ; LOAD FUNCTION -> PCBB
7317 052312 012705 013324                MOV   @RFRMT,R5         ; DEFAULT RING FORMAT
7318 052316 012700 000006                MOV   @6,R0             ; FORMAT = SIX WORDS
7319 052322 004737 027142                JSR   PC,LDUDBB         ; LOAD RING FORMAT -> UDBB
7320 052326 012777 000002 127672        MOV   @GETCMD,@PCSR0    ; ISSUE GET_CMD PORT COMMAND
7321 052334 004737 024574                JSR   PC,CHKDNI         ; DNI ?
7322 052340 103006                        BCC   80$               ; YES
7323 052342                                ERRHRD 261.,ERR010,MSG003 ; NO, REPORT ERROR
                                TRAP   C$ERHRD
                                .WORD  261
                                .WORD  ERR010
                                .WORD  MSG003
7324                                ESCAPE TST                ; AND ABORT TEST
                                TRAP   C$ESCAPE
                                .WORD  L10053-.
7325                                     ;
7326 052356 004737 025546                ;80$: JSR   PC,CLRDN1     ; WRITE ONE TO CLEAR DNI
7327                                     ; ERROR ?
7328 052362 103006                        BCC   90$               ; NO
7329 052364                                ERRHRD 262.,ERR006,MSG003 ; YES, REPORT ERROR
                                TRAP   C$ERHRD
                                .WORD  262
                                .WORD  ERR006
                                .WORD  MSG003
7330                                ESCAPE TST                ; AND ABORT TEST
                                TRAP   C$ESCAPE
                                .WORD  L10053-.
7331                                     ;
7332                                     ;WRITE PHYSICAL ADDRESS
7333 052400 012705 013144                90$:  MOV   @WTPHYA,R5   ; DEFAULT WRITE PHYSICAL ADDR FUNC
7334 052404 004737 026742                JSR   PC,LDPCCB         ; LOAD FUNCTION -> PCBB
7335                                     ;LOAD DEFAULT PHYSICAL ADDRESS
7336 052410 012703 014320                MOV   @ADR21,R3         ; POINT TO PHYSICAL ADDRESS
7337 052414 012704 002266                MOV   @PCBB+2,R4        ; POINT TO PCBB + 2
7338 052420 012324                        MOV   (R3)+,(R4)+       ; LOAD ADDRESS
7339 052422 012324                        MOV   (R3)+,(R4)+
7340 052424 012324                        MOV   (R3)+,(R4)+
7341 052426 012777 000002 127572        MOV   @GETCMD,@PCSR0    ; ISSUE GET_CMD PORT COMMAND
7342 052434 004737 024574                JSR   PC,CHKDNI         ; DNI ?
7343 052440 103006                        BCC   100$              ; YES
7344 052442                                ERRHRD 263.,ERR010,MSG003 ; NO, REPORT ERROR
                                TRAP   C$ERHRD
                                .WORD  263
                                .WORD  ERR010
                                .WORD  MSG003
7345                                ESCAPE TST                ; AND ABORT TEST
                                TRAP   C$ESCAPE
                                .WORD  L10053-.
7346                                     ;
7347 052456 004737 025546                ;100$: JSR  PC,CLRDN1    ; WRITE ONE TO CLEAR DNI
7348                                     ; ERROR ?
7349 052462 103006                        BCC   110$              ; NO
7350 052464                                ERRHRD 264.,ERR006,MSG003 ; YES, REPORT ERROR
                                TRAP   C$ERHRD
                                .WORD  264
                                .WORD

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052470	020202					.WORD	ERR006
052472	017110					.WORD	MSG003
7351 052474	104410	ESCAPE	TST		: AND ABORT TEST	TRAP	C#ESCAPE
052476	002236					.WORD	L10053-
7352							
7353							
7354 052500	012705	013554					
7355 052504	004737	027046					
7356 052510	012705	013354					
7357 052514	004737	027010					
7358							
7359							
7360 052520	012705	002266					
7361 052524	004737	026714					
7362 052530	004737	027342					
7363 052534	012777	000004	127464				
7364 052542	004737	024574					
7365 052546	103006						
7366 052550							
052550	104456					TRAP	C#ERHRD
052552	000411					.WORD	265
052554	020633					.WORD	ERR012
052556	017110					.WORD	MSG003
7367 052560							
052560	104410	ESCAPE	TST		: AND ABORT TEST	TRAP	C#ESCAPE
052562	002152					.WORD	L10053-
7368							
7369 052564	004737	025546					
7370							
7371 052570	103006						
7372 052572							
052572	104456					TRAP	C#ERHRD
052574	000412					.WORD	266
052576	020202					.WORD	ERR006
052600	017110					.WORD	MSG003
7373 052602							
052602	104410	ESCAPE	TST		: AND ABORT TEST	TRAP	C#ESCAPE
052604	002130					.WORD	L10053-
7374							
7375 052606	004737	025404					
7376 052612	103006						
7377 052614							
052614	104456					TRAP	C#ERHRD
052616	000413					.WORD	267
052620	020714					.WORD	ERR013
052622	017110					.WORD	MSG003
7378 052624							
052624	104410	ESCAPE	TST		: AND ABORT TEST	TRAP	C#ESCAPE
052626	002106					.WORD	L10053-
7379							
7380 052630	004737	025730					
7381							
7382 052634	103006						
7383 052636							
052636	104456					TRAP	C#ERHRD
052640	000414					.WORD	268

	052642	020745					.WORD	ERR014
	052644	017110					.WORD	MSG003
7384	052646			ESCAPE	TST	:	AND ABORT TEST	
	052646	104410					TRAP	C\$ESCAPE
	052650	002064					.WORD	L10053-.
7385								
7386	052652	012705	002604	i	MOV	#TDRB,R5	:	CHECK TDRB OWNERSHIP
7387	052656	004737	024676	150\$:	JSR	PC,CHKOWN	:	OWN = PORT DRIVER ?
7388	052662	103006			BCC	160\$	:	YES
7389	052664				ERF RD	269.,ERR018	:	NO, REPORT ERROR
	052664	104456					TRAP	C\$ERHRD
	052666	000415					.WORD	269
	052670	021212					.WORD	ERR018
	052672	000000					.WORD	0
7390	052674			ESCAPE	TST	:	AND ABORT TEST	
	052674	104410					TRAP	C\$ESCAPE
	052676	002036					.WORD	L10053-.
7391								
7392	052700	012705	014524	i	MOV	#TDR14A,R5	:	POINT TO EXPECTED TDRB
7393	052704	004737	027252	160\$:	JSR	PC,LDXTDR	:	LOAD INTO XTDRBO TABLE
7394	052710	012705	002604		MOV	#TDRB,R5	:	CHECK TDRB
7395	052714	004737	025316		JSR	PC,CHKTDR	:	ERRORS ?
7396	052720	103006			BCC	170\$	:	NO
7397	052722				ERRHRD	270.,ERR020,MSG005	:	YES, REPORT ERROR
	052722	104456					TRAP	C\$ERHRD
	052724	000416					.WORD	270
	052726	021372					.WORD	ERR020
	052730	017214					.WORD	MSG005
7398	052732			ESCAPE	TST	:	AND ABORT TEST	
	052732	104410					TRAP	C\$ESCAPE
	052734	002000					.WORD	L10053-.
7399								
7400	052736	004737	025132	i	JSR	PC,CHKRXI	:	RXI ?
7401	052742	103006		170\$:	BCC	180\$	:	YES
7402	052744				ERRHRD	271.,ERR015,MSG003	:	NO, REPORT ERROR
	052744	104456					TRAP	C\$ERHRD
	052746	000417					.WORD	271
	052750	021013					.WORD	ERR015
	052752	017110					.WORD	MSG003
7403	052754			ESCAPE	TST	:	AND ABORT TEST	
	052754	104410					TRAP	C\$ESCAPE
	052756	001756					.WORD	L10053-.
7404								
7405	052760	004737	025662	i	JSR	PC,CLRRXI	:	WRITE ONE TO CLEAR RXI
7406				180\$:			:	ERROR ?
7407	052764	103006			BCC	190\$	:	NO
7408	052766				ERRHRD	272.,ERR016,MSG003	:	YES, REPORT ERROR
	052766	104456					TRAP	C\$ERHRD
	052770	000420					.WORD	272
	052772	021044					.WORD	ERR016
	052774	017110					.WORD	MSG003
7409	052776			ESCAPE	TST	:	AND ABORT TEST	
	052776	104410					TRAP	C\$ESCAPE
	053000	001734					.WORD	L10053-.
7410								
7411	053002	012705	002644	i	MOV	#RDRB,R5	:	CHECK RDRB OWNERSHIP
7412	053006	004737	024676	190\$:	JSR	PC,CHKOWN	:	OWN = PORT DRIVER ?

7413	053012	103006			BCC	200:			; YES		
7414	053014				ERRHRD	273..	ERR017		; NO, REPORT ERROR		
	053014	104456								TRAP	C#ERRHRD
	053016	000421								.WORD	273
	053020	021112								.WORD	ERR017
	053022	000000								.WORD	0
7415	053024				ESCAPE	TST			; AND ABORT TEST		
	053024	104410								TRAP	C#ESCAPE
	053026	001706								.WORD	L10053-.
7416											
7417	053030	012705	014634		200:	MOV	#RDR14A,R5		; POINT TO EXPECTED RDRB		
7418	053034	004737	027222			JSR	PC,LDXRDR		; LOAD INTO XRDRBO TABLE		
7419	053040	012705	002644			MOV	#RDRB,R5		; CHECK RDRB		
7420	053044	004737	025032			JSR	PC,CHKRDR		; ERRORS ?		
7421	053050	103006				BCC	210:		; NO		
7422	053052					ERRHRD	274..	ERR021,MSG006	; YES, REPORT ERROR		
	053052	104456								TRAP	C#ERRHRD
	053054	000422								.WORD	274
	053056	021453								.WORD	ERR021
	053060	017356								.WORD	MSG006
7423	053062				ESCAPE	TST			; AND ABORT TEST		
	053062	104410								TRAP	C#ESCAPE
	053064	001650								.WORD	L10053-.
7424											
7425											
7426	053066	012705	000070		210:	MOV	#56..R5		; COMPARE 56 WORDS OF DATA		
7427	053072	004737	026044			JSR	PC,CMPDAT		; DATA COMPARE ERROR ?		
7428	053076	103006				BCC	220:		; NO		
7429	053100					ERRHRD	275..	ERR022,MSG007	; YES, REPORT ERROR		
	053100	104456								TRAP	C#ERRHRD
	053102	000423								.WORD	275
	053104	021534								.WORD	ERR022
	053106	017520								.WORD	MSG007
7430	053110				ESCAPE	TST			; AND ABORT TEST		
	053110	104410								TRAP	C#ESCAPE
	053112	001622								.WORD	L10053-.
7431											
7432	053114	012705	014744		220:	MOV	#CRC21A,R5		; POINT TO EXPECTED CRC		
7433	053120	004737	027176			JSR	PC,LDXCRC		; LOAD INTO XCRC TABLE		
7434	053124	012705	007300			MOV	#RBUF*124..R5		; CHECK CRC		
7435	053130	004737	026124			JSR	PC,CMPCRC		; ERRORS ?		
7436	053134	103006				BCC	230:		; NO		
7437	053136					ERRHRD	276..	ERR023,MSG008	; YES, REPORT ERROR		
	053136	104456								TRAP	C#ERRHRD
	053140	000424								.WORD	276
	053142	021603								.WORD	ERR023
	053144	017552								.WORD	MSG008
7438	053146				ESCAPE	TST			; AND ABORT TEST		
	053146	104410								TRAP	C#ESCAPE
	053150	001564								.WORD	L10053-.
7439											
7440	053152	012777	000017	127046	230:	MOV	#STOP,SPCSRO		; ISSUE STOP PORT COMMAND		
7441	053160	004737	024574			JSR	PC,CHKDNI		; DNI ?		
7442	053164	103006				BCC	240:		; YES		
7443	053166					ERRHRD	277..	ERR019,MSG003	; NO, REPORT ERROR		
	053166	104456								TRAP	C#ERRHRD
	053170	000425								.WORD	277

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053172 021312
053174 017110
7444 053176          ESCAPE TST          ; AND ABORT TEST          .WORD  ERR019
053176 104410          ;                               .WORD  MSG003
053200 001534          ;                               TRAP   C#ESCAPE
7445          ;                               .WORD  L10053-.
7446 053202 004737 025546      ;240#: JSR      PC,CLRDN1          ; WRITE ONE TO CLEAR DNI
7447          ;                               ; ERROR ?
7448 053206 103006          BCC      250#          ; NO
7449 053210          ERRHRD   278.,ERR006,MSG003      ; YES, REPORT ERROR          TRAP   C#ERHRD
053210 104456          ;                               .WORD  278
053212 000426          ;                               .WORD  ERR006
053214 020202          ;                               .WORD  MSG003
053216 017110          ;                               TRAP   C#ESCAPE
7450 053220          ESCAPE TST          ; AND ABORT TEST          .WORD  L10053-.
053220 104410          ;                               TRAP   C#ESCAPE
053222 001512          ;                               .WORD  L10053-.
7451          ;
7452          ;DESTINATION ADDRESS NOT = PHYSICAL ADDRESS
7453          ;
7454          ;SET UP RINGS FOR ONE BUFFER LOOPBACK
7455 053224 012705 013554      250#: MOV      #TDRB1A,R5          ; DEFAULT ONE BUFFER TRANSMIT RING
7456 053230 004737 027046      JSR      PC,LDTDRB          ; LOAD TDRB
7457 053234 012705 013354      MOV      #RDRB1A,R5          ; DEFAULT ONE BUFFER RECEIVE RING
7458 053240 004737 027010      JSR      PC,LDRDRB          ; LOAD RDRB
7459          ;
7460          ;SET UP BUFFERS AND START
7461 053244 012705 014326      MOV      #ADR21C,R5          ; POINT TO COMPLEMENTED ADDRESS
7462 053250 004737 026714      JSR      PC,LDDDEST          ; LOAD DEST
7463 053254 004737 027342      JSR      PC,SETBUF          ; SET UP BUFFERS
7464 053260 012777 000004 126740  MOV      #START,SPCSHO          ; ISSUE START PORT COMMAND
7465 053266 004737 024574      JSR      PC,CHKDNI          ; DNI?
7466 053272 103006          BCC      260#          ; YES
7467 053274          ERRHRD   279.,ERR012,MSG003      ; NO, REPORT ERROR          TRAP   C#ERHRD
053274 104456          ;                               .WORD  279
053276 000427          ;                               .WORD  ERR012
053300 020633          ;                               .WORD  MSG003
053302 017110          ;                               TRAP   C#ESCAPE
7468 053304          ESCAPE TST          ; AND ABORT TEST          .WORD  L10053-.
053304 104410          ;                               TRAP   C#ESCAPE
053306 001426          ;                               .WORD  L10053-.
7469          ;
7470 053310 004737 025546      ;260#: JSR      PC,CLRDN1          ; WRITE ONE TO CLEAR DNI
7471          ;                               ; ERROR ?
7472 053314 103006          BCC      270#          ; NO
7473 053316          ERRHRD   280.,ERR006,MSG003      ; YES, REPORT ERROR          TRAP   C#ERHRD
053316 104456          ;                               .WORD  280
053320 000430          ;                               .WORD  ERR006
053322 020202          ;                               .WORD  MSG003
053324 017110          ;                               TRAP   C#ESCAPE
7474 053326          ESCAPE TST          ; AND ABORT TEST          .WORD  L10053-.
053326 104410          ;                               TRAP   C#ESCAPE
053330 001404          ;                               .WORD  L10053-.
7475          ;
7476 053332 004737 025404      ;270#: JSR      PC,CHKTXI          ; TXI ?
7477 053336 103006          BCC      280#          ; YES
7478 053340          ERRHRD   281.,ERR013,MSG003      ; NO, REPORT ERROR

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7506 053504 012777 000017 126514 320$: MOV #STOP,BPCSR0 ; ISSUE STOP PORT COMMAND
7507 053512 004737 024574 JSR PC,CHKDNI ; DNI ?
7508 053516 103006 BCC 330$ ; YES
7509 053520 ERH:RD 286.,ERR019,MSG003 ; NO, REPORT ERROR
;
; TRAP C#ERHRD
; .WORD 286
; .WORD ERR019
; .WORD MSG003
7510 053530 ESCAPE TST ; AND ABORT TEST
; TRAP C#ESCAPE
; .WORD L10053-.
7511 053534 004737 025546 ;330$: JSR PC,CLRDN1 ; WRITE ONE TO CLEAR DNI
7512 053540 103006 BCC 340$ ; ERROR ?
7513 053542 104456 ERRHRD 287.,ERR006,MSG003 ; NO
7514 053544 000437 ; YES, REPORT ERROR
; TRAP C#ERHRD
; .WORD 287
; .WORD ERR006
; .WORD MSG003
7515 053546 020202 ESCAPE TST ; AND ABORT TEST
7516 053550 017110 ; TRAP C#ESCAPE
7516 053552 104410 ; .WORD L10053-.
7516 053554 001160
;
; REPEAT WITH COMPLEMENTED PHYSICAL ADDRESS
;
; WRITE PHYSICAL ADDRESS
7517 340$: MOV #WTPHYA,R5 ; DEFAULT WRITE PHYSICAL ADDR FUNC
7518 JSR PC,LDP CBB ; LOAD FUNCTION -> PCBB
7519 ;
; LOAD COMPLEMENTED PHYSICAL ADDRESS
7520 MOV #ADR21C,R3 ; POINT TO PHYSICAL ADDRESS
7521 MOV #PCBB+2,R4 ; POINT TO PCBB + 2
7522 MOV (R3)+,(R4)+ ; LOAD ADDRESS
7523 MOV (R3)+,(R4)+
7524 MOV (R3)+,(R4)+
7525 MOV (R3)+,(R4)+
7526 MOV #GETCMD,BPCSR0 ; ISSUE GET_CMD PORT COMMAND
7527 JSR PC,CHKDNI ; DNI ?
7528 BCC 350$ ; YES
7529 ERH:RD 288.,ERR010,MSG003 ; NO, REPORT ERROR
; TRAP C#ERHRD
; .WORD 288
; .WORD ERR010
; .WORD MSG003
7530 053620 104456 ESCAPE TST ; AND ABORT TEST
7531 053622 000440 ; TRAP C#ESCAPE
7532 053624 020502 ; .WORD L10053-.
7533 053626 017110
7534 053630 104410 ;350$: JSR PC,CLRDN1 ; WRITE ONE TO CLEAR DNI
7535 053634 004737 025546 ; ERROR ?
7536 BCC 360$ ; NO
7537 053640 103006 ERR:RD 289.,ERR006,MSG003 ; YES, REPORT ERROR
; TRAP C#ERHRD
; .WORD 289
; .WORD ERR006
; .WORD MSG003
7538 053642 104456 ESCAPE TST ; AND ABORT TEST
7539 053644 000441 ; TRAP C#ESCAPE
7539 053646 020202 ; .WORD L10053-.
7539 053650 017110
7539 053652 104410

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053654 001060 .WORD L10053-.
7540
7541 ;SET UP RINGS FOR ONE BUFFER LOOPBACK
7542 053656 012705 013554 360$: MOV @TDRB1A,R5 ; DEFAULT ONE BUFFER TRANSMIT RING
7543 053662 004737 027046 JSR PC,LDTDRB ; LOAD TDRB
7544 053666 012705 013354 MOV @RDRB1A,R5 ; DEFAULT ONE BUFFER RECEIVE RING
7545 053672 004737 027010 JSR PC,LDRDRB ; LOAD RDRB
7546
7547 ;SET UP BUFFERS AND START
7548 053676 012705 002266 MOV @PCBB+2,R5 ; POINT TO DESTINATION ADDRESS
7549 053702 004737 026714 JSR PC,LDEST ; LOAD DEST
7550 053706 004737 027342 JSK PC,SETBUF ; SET UP BUFFERS
7551 053712 012777 000004 126306 MOV @START,@PCSRO ; ISSUE START PORT COMMAND
7552 053720 004737 024574 JSR PC,CHKDNI ; DNI?
7553 053724 103006 BCC 370$ ; YES
7554 053726 ERRHRD 290.,ERR012,MSG003 ; NO, REPORT ERROR
053726 104456 TRAP C#ERRHD
053730 000442 .WORD 290
053732 020633 .WORD ERR012
053734 017110 .WORD MSG003
7555 053736 ESCAPE TST ; AND ABORT TEST TRAP C#ESCAPE
053736 104410 .WORD L10053-.
053740 000774
7556
7557 053742 004737 025546 370$: JSR PC,CLRDN ; WRITE ONE TO CLEAR DNI
7558 BCC 380$ ; ERROR ?
7559 053746 103006 ERRHRD 291.,ERR006,MSG003 ; NO
7560 053750 BCC 380$ ; YES, REPORT ERROR
053750 104456 TRAP C#ERRHD
053752 000443 .WORD 291
053754 020202 .WORD ERR006
053756 017110 .WORD MSG003
7561 053760 ESCAPE TST ; AND ABORT TEST TRAP C#ESCAPE
053760 104410 .WORD L10053-.
053762 000752
7562
7563 053764 004737 025404 380$: JSR PC,CHKTXI ; TXI ?
7564 053770 103006 BCC 390$ ; YES
7565 053772 ERRHRD 292.,ERR013,MSG003 ; NO, REPORT ERROR
053772 104456 TRAP C#ERRHD
053774 000444 .WORD 292
053776 020714 .WORD ERR013
054000 017110 .WORD MSG003
7566 054002 ESCAPE TST ; AND ABORT TEST TRAP C#ESCAPE
054002 104410 .WORD L10053-.
054004 000730
7567
7568 054006 004737 025730 390$: JSR PC,CLRTXI ; WRITE ONE TO CLEAR TXI
7569 BCC 400$ ; ERROR ?
7570 054012 103006 ERRHRD 293.,ERR014,MSG003 ; NO
7571 054014 BCC 400$ ; YES, REPORT ERROR
054014 104456 TRAP C#ERRHD
054016 000445 .WORD 293
054020 020745 .WORD ERR014
054022 017110 .WORD MSG003
7572 054024 ESCAPE TST ; AND ABORT TEST TRAP C#ESCAPE
054024 104410

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Address	Code	Comment	Trap
054026	000706		.WORD L10053-
7573			
7574	054030 012705 002604	; 400\$: MOV #TDRB,R5 ; CHECK TDRB OWNERSHIP JSR PC,CHKOWN ; OWN = PORT DRIVER ? BCC 410\$ ; YES ERRHRC 294.,ERR018 ; NO, REPORT ERROR	
7575	054034 004737 024676		
7576	054040 103006		
7577	054042 104456		TRAP C#ERHRD 294
	054044 000446		.WORD ERR018
	054046 021212		.WORD 0
	054050 000000		
7578	054052	ESCAPE TST ; AND ABORT TEST	TRAP C#ESCAPE
	054052 104410		.WORD L10053-
	054054 000660		
7579			
7580	054056 012705 014524	; 410\$: MOV #TDR14A,R5 ; POINT TO EXPECTED TDRB JSR PC,LDXTDP ; LOAD INTO XTDRBO TABLE MOV #TDRB,R5 ; CHECK TDRB JSR PC,CHKTCR ; ERRORS ? BCC 420\$ ; NO ERRHRD 295.,ERR020,MSG005 ; YES, REPORT ERROR	
7581	054062 004737 027252		
7582	054066 012705 002604		
7583	054072 004737 025316		
7584	054076 103006		
7585	054100 104456		TRAP C#ERHRD 295
	054102 000447		.WORD ERR020
	054104 021372		.WORD MSG005
	054106 017214		
7586	054110	ESCAPE TST ; AND ABORT TEST	TRAP C#ESCAPE
	054110 104410		.WORD L10053-
	054112 000622		
7587			
7588	054114 004737 025132	; 420\$: JSR PC,CHKRXI ; RXI ? BCC 430\$ ; YES ERRHRD 296.,ERR015,MSG003 ; NO, REPORT ERROR	
7589	054120 103006		
7590	054122 104456		
	054124 000450		TRAP C#ERHRD 296
	054126 021013		.WORD ERR015
	054130 017110		.WORD MSG003
7591	054132	ESCAPE TST ; AND ABORT TEST	TRAP C#ESCAPE
	054132 104410		.WORD L10053-
	054134 000600		
7592			
7593	054136 004737 025662	; 430\$: JSR PC,CLRAXI ; WRITE ONE TO CLEAR RXI BCC 440\$ ; ERROR ? ERRHRD 297.,ERR016,MSG003 ; NO ; YES, REPORT ERROR	
7594	054142 103006		
7595	054144 104456		
7596	054144 000451		TRAP C#ERHRD 297
	054146 021044		.WORD ERR016
	054150 017110		.WORD MSG003
7597	054154	ESCAPE TST ; AND ABORT TEST	TRAP C#ESCAPE
	054154 104410		.WORD L10053-
	054156 000556		
7598			
7599	054160 012705 002644	; 440\$: MOV #RDRB,R5 ; CHECK RDRB OWNERSHIP JSR PC,CHKOWN ; OWN = PORT DRIVER ? BCC 450\$ ; YES ERRHRD 298.,ERR017 ; NO, REPORT ERROR	
7600	054164 004737 024676		
7601	054170 103006		
7602	054172 104456		TRAP C#ERHRD 298
	054174 000452		.WORD

	054176	021112							.WORD	ERR017
	054200	000000							.WORD	0
7603	054202			ESCAPE	TST					
	054202	104410							TRAP	C#ESCAPE
	054204	000530							.WORD	L10053-
7604										
7605	054206	012705	014634							
7606	054212	004737	027222							
7607	054216	012705	002644							
7608	054222	004737	025032							
7609	054226	103006								
7610	054230									
	054230	104456							TRAP	C#ERHRD
	054232	000453							.WORD	299
	054234	021453							.WORD	ERR021
	054236	017356							.WORD	MSG006
7611	054240			ESCAPE	TST					
	054240	104410							TRAP	C#ESCAPE
	054242	000472							.WORD	L10053-
7612										
7613										
7614	054244	012705	000070							
7615	054250	004737	026044							
7616	054254	103006								
7617	054256									
	054256	104456							TRAP	C#ERHRD
	054260	000454							.WORD	300
	054262	021534							.WORD	ERR022
	054264	017520							.WORD	MSG007
7618	054266			ESCAPE	TST					
	054266	104410							TRAP	C#ESCAPE
	054270	000444							.WORD	L10053-
7619										
7620	054272	012705	014750							
7621	054276	004737	027176							
7622	054302	012705	007300							
7623	054306	004737	026124							
7624	054312	103006								
7625	054314									
	054314	104456							TRAP	C#ERHRD
	054316	000455							.WORD	301
	054320	021603							.WORD	ERR023
	054322	017552							.WORD	MSG008
7626	054324			ESCAPE	TST					
	054324	104410							TRAP	C#ESCAPE
	054326	000406							.WORD	L10053-
7627										
7628	054330	012777	000017							
7629	054336	004737	024574							
7630	054342	103006								
7631	054344									
	054344	104456							TRAP	C#ERHRD
	054346	000456							.WORD	302
	054350	021312							.WORD	ERR019
	054352	017110							.WORD	MSG003
7632	054354			ESCAPE	TST					
	054354	104410							TRAP	C#ESCAPE

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        054356 000356                                .WORD  L10053-.
7633
7634 054360 004737 025546          ; 490$: JSR    PC,CLRDN1      ; WRITE ONE TO CLEAR DNI
7635                                ; ERROR ?
7636 054364 103006          BCC    500$      ; NO
7637 054366                                ERRHRD 303.,ERR006,MSG003 ; YES, REPORT ERROR
        054366 104456                                TRAP   C#ERHRD
        054370 000457                                .WORD  303
        054372 020202                                .WORD  ERR006
        054374 017110                                .WORD  MSG003
7638 054376          ESCAPE TST          ; AND ABORT TEST
        054376 104410                                TRAP   C#ESCAPE
        054400 000334                                .WORD  L10053-.

7639                                ; DESTINATION ADDRESS NOT = PHYSICAL ADDRESS
7640
7641                                ;
7642                                ; SET UP RINGS FOR ONE BUFFER LOOPBACK
7643 054402 012705 013554          500$: MOV    #TDRB1A,R5      ; DEFAULT ONE BUFFER TRANSMIT RING
7644 054406 004737 027046          JSR    PC,LDTDRB          ; LOAD TDRB
7645 054412 012705 013354          MOV    #RDRB1A,R5      ; DEFAULT ONE BUFFER RECEIVE RING
7646 054416 004737 027010          JSR    PC,LDRDRB          ; LOAD RDRB
7647
7648                                ; SET UP BUFFERS AND START
7649 054422 012705 014320          MOV    #ADR21,R5        ; COMPLIMENT DESTINATION ADDRESS
7650 054426 004737 026714          JSR    PC,LDDDEST        ; LOAD DEST
7651 054432 004737 027342          JSR    PC,SETBUF         ; SET UP BUFFERS
7652 054436 012777 000004          MOV    #START,#PCSR0    ; ISSUE START PORT COMMAND
7653 054444 004737 024574          JSR    PC,CHKDNI         ; DNI?
7654 054450 103006          BCC    510$      ; YES
7655 054452                                ERRHRD 304.,ERR012,MSG003 ; NO, REPORT ERROR
        054452 104456                                TRAP   C#ERHRD
        054454 000460                                .WORD  304
        054456 020633                                .WORD  ERR012
        054460 017110                                .WORD  MSG003
7656 054462          ESCAPE TST          ; AND ABORT TEST
        054462 104410                                TRAP   C#ESCAPE
        054464 000250                                .WORD  L10053-.

7657
7658 054466 004737 025546          ; 510$: JSR    PC,CLRDN1      ; WRITE ONE TO CLEAR DNI
7659                                ; ERROR ?
7660 054472 103006          BCC    520$      ; NO
7661 054474                                ERRHRD 305.,ERR006,MSG003 ; YES, REPORT ERROR
        054474 104456                                TRAP   C#ERHRD
        054476 000461                                .WORD  305
        054500 020202                                .WORD  ERR006
        054502 017110                                .WORD  MSG003
7662 054504          ESCAPE TST          ; AND ABORT TEST
        054504 104410                                TRAP   C#ESCAPE
        054506 000226                                .WORD  L10053-.

7663
7664 054510 004737 025404          ; 520$: JSR    PC,CHKTXI     ; TXI ?
7665 054514 103006          BCC    530$      ; YES
7666 054516                                ERRHRD 306.,ERR013,MSG003 ; NO, REPORT ERROR
        054516 104456                                TRAP   C#ERHRD
        054520 000462                                .WORD  306
        054522 020714                                .WORD  ERR013
        054524 017110                                .WORD  MSG003
    
```

7667	054526			ESCAPE	TST		; AND ABORT TEST		
	054526	104410						TRAP	C#ESCAPE
	054530	000204						.WORD	L10053-.
7668									
7669	054532	004737	025730	i	530\$:	JSR	PC,CLRTXI		; WRITE ONE TO CLEAR TXI
7670									; ERROR ?
7671	054536	103006				BCC	540\$		; NO
7672	054540					ERRHRD	307.,ERR014,MSG003		; YES, REPORT ERROR
	054540	104456						TRAP	C#ERHRD
	054542	000463						.WORD	307
	054544	020745						.WORD	ERR014
	054546	017110						.WORD	MSG003
7673	054550					ESCAPE	TST		; AND ABORT TEST
	054550	104410						TRAP	C#ESCAPE
	054552	000162						.WORD	L10053-.
7674									
7675	054554	012705	002604	i	540\$:	MOV	@TDRB,R5		; CHECK TDRB OWNERSHIP
7676	054560	004737	024676			JSR	PC,CHKOWN		; OWN = PORT DRIVER ?
7677	054564	103006				BCC	550\$		; YES
7678	054566					ERRHRD	308.,ERR018		; NO, REPORT ERROR
	054566	104456						TRAP	C#ERHRD
	054570	000464						.WORD	308
	054572	021212						.WORD	ERR018
	054574	000000						.WORD	0
7679	054576					ESCAPE	TST		; AND ABORT TEST
	054576	104410						TRAP	C#ESCAPE
	054600	000134						.WORD	L10053-.
7680									
7681	054602	012705	014614	i	550\$:	MOV	@TDR21X,R5		; POINT TO EXPECTED TDRB
7682	054606	004737	027252			JSR	PC,LDXTDR		; LOAD INTO XTDRBO TABLE
7683	054612	012705	002604			MOV	@TDRB,R5		; CHECK TDRB
7684	054616	004737	025316			JSR	PC,CHKTDR		; ERRORS ?
7685	054622	103006				BCC	560\$		; NO
7686	054624					ERRHRD	309.,ERR020,MSG005		; YES, REPORT ERROR
	054624	104456						TRAP	C#ERHRD
	054626	000465						.WORD	309
	054630	021372						.WORD	ERR020
	054632	017214						.WORD	MSG005
7687	054634					ESCAPE	TST		; AND ABORT TEST
	054634	104410						TRAP	C#ESCAPE
	054636	000076						.WORD	L10053-.
7688									
7689	054640	004737	027302	i	560\$:	JSR	PC,NORXI		; RXI ?
7690	054644	103006				BCC	570\$		; NO
7691	054646					ERRHRD	310.,ERR039		; YES, REPORT ERROR
	054646	104456						TRAP	C#ERHRD
	054650	000466						.WORD	310
	054652	023344						.WORD	ERR039
	054654	000000						.WORD	0
7692	054656					ESCAPE	TST		; AND ABORT TEST
	054656	104410						TRAP	C#ESCAPE
	054660	000054						.WORD	L10053-.
7693									
7694	054662	012777	000017	125336	i	570\$:	MOV	@STOP,@PCSR0	; ISSUE STOP PORT COMMAND
7695	054670	004737	024574			JSR	PC,CHKDNI		; DNI ?
7696	054674	103006				BCC	580\$		; YES
7697	054676					ERRHRD	311.,ERR019,MSG003		; NO, REPORT ERROR

054676	104456					TRAP	C#ERHRD
054700	000467					.WORD	311
054702	021312					.WORD	ERR019
054704	017110					.WORD	MSG003
7698	054706		ESCAPE	TST			
							; AND ABORT TEST
	054706	104410				TRAP	C#ESCAPE
	054710	000024				.WORD	L10053-
7699							
7700	054712	004737	025546	580\$:	JSR	PC,CLRDNI	
							; WRITE ONE TO CLEAR DNI
7771							; ERROR ?
7702	054716	103006			BCC	590\$	
							; NO
7703	054720				ERRHRD	312.,ERR006,MSG003	
							; YES, REPORT ERROR
	054720	104456					TRAP
	054722	000470				.WORD	C#ERHRD
	054724	020202				.WORD	312
	054726	017110				.WORD	ERR006
7704	054730		ESCAPE	TST			MSG003
	054730	104410					; AND ABORT TEST
	054732	000002				TRAP	C#ESCAPE
						.WORD	L10053-
7705	054734						
7706	054734		590\$:	ENDTST			
	054734						
	054734	104401					L10053: TRAP
							C#ETST



.SBTTL TEST 22: MULTICAST ADDRESS TEST

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*****
:
: THIS TEST VERIFIES THAT MULTICAST ADDRESSING
: IS OPERATIONAL.
: A WRITE MULTICAST ADDRESS LIST FUNCTION IS USED TO SET
: THE DEUNA'S MULTICAST ADDRESS LIST.
: INTERNAL LOOPBACKS ARE THEN PERFORMED WITH
: CURRENTLY ENABLED AND THEN CURRENTLY DISABLED
: MULTICAST DESTINATION ADDRESSES.
: THE MULTICAST ADDRESS LIST IS THEN COMPLEMENTED AND THE
: TEST IS REPEATED.
:
: TEST SEQUENCE:
: 1. WRITE MODE REGISTER = INTERNAL LOOPBACK
: 2. WRITE RING FORMAT
: 3. WRITE PHYSICAL ADDRESS
: 4. WRITE MULTICAST ADDRESS LIST
: 5. SET UP RINGS AND BUFFERS
: WITH DESTINATION ADDRESS = MULTICAST ADDRESS
: 6. ISSUE START
: 7. CHECK FOR ERRORS
: 8. ISSUE STOP
: 9. REPEAT STEPS 5 - 8 FOR ALL TEN LIST ENTRIES
: 10. SET UP RINGS AND BUFFERS
: WITH DESTINATION ADDRESS = COMPLIMENTED MULTICAST ADDRESS
: 11. ISSUE START
: 12. CHECK FOR NO RXI
: 13. ISSUE STOP
: 14. REPEAT STEPS 10 - 13 FOR ALL TEN ENTRIES
: 15. WRITE MULTICAST ADDRESS LIST WITH COMPLEMENTED VALUES
: 16. REPEAT STEPS 5 - 14
:
*****

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```

7744 054736
      054736
7745 054736 004737 027446
7746 054742 103025
7747 054744 012777 000040 125254
7748 054752 004737 024574
7749 054756 103006
7750 054760
      054760 104456
      054762 000471
      054764 020102
      054766 017110
7751 054770
      054770 104410
      054772 003016
7752
7753 054774 004737 025546
7754
7755 055000 103006
7756 055002
      055002 104456

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BGNTST
:
: T22::
: IS A DEVICE RESET NEEDED?
JSR PC,TINIT ; NO
BCC 30$ ; YES, RESET DEUNA
MOV #RSET,SPCSRO ; DNI ?
JSR PC,CHKDNI ; YES
BCC 20$ ; NO, REPCRT ERROR
ERRHRD 313.,ERR004,MSG003
:
: AND ABORT TEST
ESCAPE TST ; AND ABORT TEST
:
: WRITE ONE TO CLEAR DNI
: ERROR ?
: 20$: JSR PC,CLRDNI ; NO
BCC 30$ ; YES, REPORT ERROR
ERRHRD 314.,ERR006,MSG003
:
: TRAP C$ERHRD
: .WCRD 313
: .WORD ERR004
: .WORD MSG003
:
: TRAP C$ESCAPE
: .WORD L10054-.
:
: TRAP C$ERHRD

```

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055004 000472
055006 020202
055010 017110
7757 055012          ESCAPE TST          ; AND ABORT TEST          TRAP C#ESCAPE
055012 104410          ;                               .WORD L10054-.
055014 002774
7758
7759 055016 004737 026772      ; 30$: JSR PC,LDPCSR          ; ADDRESS OF PCBB -> PCSR2!3
7760 055022 012777 000001 125176  ; MOV #GETPCB,@PCSR0      ; ISSUE GET_PCBB PORT COMMAND
7761 055030 004737 024574      ; JSR PC,CHKDNI          ; DNI?
7762 055034 103006          ; BCC 40$                ; YES
7763 055036          ; ERRHRD 315.,ERR009,MSG003 ; NO, REPORT ERROR          TRAP C#ERHRD
055036 104456          ;                               .WORD 315
055040 000473          ;                               .WORD ERR009
055042 020416          ;                               .WORD MSG003
7764 055046          ESCAPE TST          ; AND ABORT TEST          TRAP C#ESCAPE
055046 104410          ;                               .WORD L10054-.
055050 002740
7765
7766 055052 004737 025546      ; 40$: JSR PC,CLRDN1      ; WRITE ONE TO CLEAR DNI
7767          ; BCC 50$                ; ERROR ?
7768 055056 103006          ; ERRHRD 316.,ERR006,MSG003 ; NO
7769 055060          ;                               ; YES, REPORT ERROR          TRAP C#ERHRD
055060 104456          ;                               .WORD 316
055062 000474          ;                               .WORD ERR006
055064 020202          ;                               .WORD MSG003
055066 017110
7770 055070          ESCAPE TST          ; AND ABORT TEST          TRAP C#ESCAPE
055070 104410          ;                               .WORD L10054-.
055072 002716
7771
7772          ; WRITE MODE REGISTER = INTERNAL LOOPBACK
7773 055074 012705 013244      ; 50$: MOV #WTMODE,R5      ; DEFAULT WRITE MODE FUNCTION
7774 055100 004737 026742      ; JSR PC,LDPCBB          ; LOAD FUNCTION -> PCBB
7775 055104 013737 015116 002266  ; MOV MODE21,PCBB+2      ; MODE = INTL LOOPBACK ONLY
7776 055112 012777 000002 125106  ; MOV #GETCMD,@PCSR0      ; ISSUE GET_CMD PORT COMMAND
7777 055120 004737 024574      ; JSR PC,CHKDNI          ; DNI ?
7778 055124 103006          ; BCC 60$                ; YES
7779 055126          ; ERRHRD 317.,ERR010,MSG003 ; NO, REPORT ERROR          TRAP C#ERHRD
055126 104456          ;                               .WORD 317
055130 000475          ;                               .WORD ERR010
055132 020502          ;                               .WORD MSG003
055134 017110
7780 055136          ESCAPE TST          ; AND ABORT TEST          TRAP C#ESCAPE
055136 104410          ;                               .WORD L10054-.
055140 002650
7781
7782 055142 004737 025546      ; 60$: JSR PC,CLRDN1      ; WRITE ONE TO CLEAR DNI
7783          ; BCC 70$                ; ERROR ?
7784 055146 103006          ; ERRHRD 318.,ERR006,MSG003 ; NO
7785 055150          ;                               ; YES, REPORT ERROR          TRAP C#ERHRD
055150 104456          ;                               .WORD 318
055152 000476          ;                               .WORD ERR006
055154 020202          ;                               .WORD MSG003
055156 017110
7786 055160          ESCAPE TST          ; AND ABORT TEST

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055160 104410
055162 002626
7787
7788
7789 055164 012705 013204
7790 055170 004737 026742
7791 055174 012705 013324
7792 055200 012700 000006
7793 055204 004737 027142
7794 055210 012777 000002 125010
7795 055216 004737 024574
7796 055222 103006
7797 055224
055224 104456
055226 000477
055230 020502
055232 017110
7798 055234
055234 104410
055236 002552
7799
7800 055240 004737 025546
7801
7802 055244 103006
7803 055246
055246 104456
055250 000500
055252 020202
055254 017110
7804 055256
055256 104410
055260 002530
7805
7806
7807 055262 012705 013144
7808 055266 004737 026742
7809 055272 012777 000002 124726
7810 055300 004737 024574
7811 055304 103006
7812 055306
055306 104456
055310 000501
055312 020502
055314 017110
7813 055316
055316 104410
055320 002470
7814
7815 055322 004737 025546
7816
7817 055326 103006
7818 055330
055330 104456
055332 000502
055334 020202
055336 017110
7819 055340

```

```

;WRITE RING FORMAT
70$: MOV @WTRNGS,R5 ; DEFAULT WRITE RING FORMAT FUNCTION
      JSR PC,LDPCBB ; LOAD FUNCTION -> PCBB
      MOV @RFRMT,R5 ; DEFAULT RING FORMAT
      MOV @6,R0 ; FORMAT = SIX WORDS
      JSR PC,LDUDBB ; LOAD RING FORMAT -> UDBB
      MOV @GETCMD,@PCSRO ; ISSUE GET_CMD PORT COMMAND
      JSR PC,CHKDNI ; DNI ?
      BCC 80$ ; YES
      ERRHRD 319.,ERR010,MSG003 ; NO, REPORT ERROR
; AND ABORT TEST
TRAP C$ERHRD
.WORD 319
.WORD ERR010
.WORD MSG003
ESCAPE TST
; AND ABORT TEST
TRAP C$ESCAPE
.WORD L10054-.

;
80$: JSR PC,CLRDNI ; WRITE ONE TO CLEAR DNI
      BCC 90$ ; ERROR ?
      ERRHRD 320.,ERR006,MSG003 ; NO
; YES, REPORT ERROR
TRAP C$ERHRD
.WORD 320
.WORD ERR006
.WORD MSG003
ESCAPE TST
; AND ABORT TEST
TRAP C$ESCAPE
.WORD L10054-.

;WRITE PHYSICAL ADDRESS
90$: MOV @WTPHYA,R5 ; DEFAULT WRITE PHYSICAL ADDR FUNC
      JSR PC,LDPCBB ; LOAD FUNCTION -> PCBB
      MOV @GETCMD,@PCSRO ; ISSUE GET_CMD PORT COMMAND
      JSR PC,CHKDNI ; DNI ?
      BCC 100$ ; YES
      ERRHRD 321.,ERR010,MSG003 ; NO, REPORT ERROR
; AND ABORT TEST
TRAP C$ERHRD
.WORD 321
.WORD ERR010
.WORD MSG003
ESCAPE TST
; AND ABORT TEST
TRAP C$ESCAPE
.WORD L10054-.

;
100$: JSR PC,CLRDNI ; WRITE ONE TO CLEAR DNI
      BCC 102$ ; ERROR ?
      ERRHRD 322.,ERR006,MSG003 ; NO
; YES, REPORT ERROR
TRAP C$ERHRD
.WORD 322
.WORD ERR006
.WORD MSG003
ESCAPE TST
; AND ABORT TEST

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055340	104410					TRAP	C#ESCAPE
055342	002446					.WORD	L10054-
7820							
7821							
7822	055344	012705	013164				
7823	055350	004737	026742				
7824	055354	012705	014334				
7825	055360	012700	000036				
7826	055364	004737	027142				
7827	055370	012777	000002	124630			
7828	055376	004737	024574				
7829	055402	103006					
7830	055404						
	055404	104456				TRAP	C#ERRRD
	055406	000503				.WORD	323
	055410	020502				.WORD	ERR010
	055412	017110				.WORD	MSG003
7831	055414				ESCAPE TST		
	055414	104410				TRAP	C#ESCAPE
	055416	002372				.WORD	L10054-
7832							
7833	055420	004737	025546				
7834							
7835	055424	103006					
7836	055426						
	055426	104456				TRAP	C#ERRRD
	055430	000504				.WORD	324
	055432	020202				.WORD	ERR006
	055434	017110				.WORD	MSG003
7837	055436				ESCAPE TST		
	055436	104410				TRAP	C#ESCAPE
	055440	002350				.WORD	L10054-
7838							
7839							
7840							
7841	055442	012701	000012				
7842	055445	012702	014334				
7843	055452	012703	014754				
7844							
7845							
7846	055456	012705	013554				
7847	055462	004737	027046				
7848	055466	012705	013354				
7849	055472	004737	027010				
7850							
7851							
7852	055476	010205					
7853	055500	004737	026714				
7854	055504	004737	027342				
7855	055510	012777	000004	124510			
7856	055516	004737	024574				
7857	055522	103006					
7858	055524						
	055524	104456				TRAP	C#ERRRD
	055526	000505				.WORD	325
	055530	020633				.WORD	ERR012
	055532	017110				.WORD	MSG003

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7859 055534          ESCAPE TST          ; AND ABORT TEST          TRAP C#ESCAPE
      055534 104410          .WORD L10054-.
      055536 002252
7860
7861 055540 004737 025546      ;1204: JSR      PC,CLRDN1      ; WRITE ONE TO CLEAR DNI
7862                                BCC      1304      ; ERROR ?
7863 055544 103006                                ; NO
7864 055546          ERRHRD 326.,ERR006,MSG003 ; YES, REPORT ERROR          TRAP C#ERRHRD
      055546 104456          .WORD 326
      055550 000506          .WORD ERR006
      055552 020202          .WORD MSG003
7865 055556          ESCAPE TST          ; AND ABORT TEST          TRAP C#ESCAPE
      055556 104410          .WORD L10054-.
      055560 002230
7866
7867 055562 004737 025404      ;1304: JSR      PC,CHKTXI      ; TXI ?
7868 055566 103006                                ; YES
7869 055570          ERRHRD 327.,ERR013,MSG003 ; NO, REPORT ERROR          TRAP C#ERRHRD
      055570 104456          .WORD 327
      055572 000507          .WORD ERR013
      055574 020714          .WORD MSG003
7870 055600          ESCAPE TST          ; AND ABORT TEST          TRAP C#ESCAPE
      055600 104410          .WORD L10054-.
      055602 002206
7871
7872 055604 004737 025730      ;1404: JSR      PC,CLRTXI      ; WRITE ONE TO CLEAR TXI
7873                                BCC      1504      ; ERROR ?
7874 055610 103006                                ; NO
7875 055612          ERRHRD 328.,ERR014,MSG003 ; YES, REPORT ERROR          TRAP C#ERRHRD
      055612 104456          .WORD 328
      055614 000510          .WORD ERR014
      055616 020745          .WORD MSG003
7876 055622          ESCAPE TST          ; AND ABORT TEST          TRAP C#ESCAPE
      055622 104410          .WORD L10054-.
      055624 002164
7877
7878 055626 012705 002604      ;1504: MOV      #TDRB,R5      ; CHECK TDRB OWNERSHIP
7879 055632 004737 024676      JSR      PC,CHKOWN      ; OWN = PORT DRIVER ?
7880 055636 103006                                BCC      1604      ; YES
7881 055640          ERRHRD 329.,ERR018      ; NO, REPORT ERROR          TRAP C#ERRHRD
      055640 104456          .WORD 329
      055642 000511          .WORD ERR018
      055644 021212          .WORD 0
      055646 000000
7882 055650          ESCAPE TST          ; AND ABORT TEST          TRAP C#ESCAPE
      055650 104410          .WORD L10054-.
      055652 002136
7883
7884 055654 012705 014524      ;1604: MOV      #TDR14A,R5      ; POINT TO EXPECTED TDRB
7885 055660 004737 027252      JSR      PC,LDXTDR      ; LOAD INTO XTDRBO TABLE
7886 055664 012705 002604      MOV      #TDRB,R5      ; CHECK TDRB
7887 055670 004737 025316      JSR      PC,CHKTDR      ; ERRORS ?
7888 055674 103006                                BCC      1704      ; NO
7889 055676          ERRHRD 330.,ERR020,MSG005 ; YES, REPORT ERROR

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7917                                     ;COMPARE RBUF WITH TBUF
7918 056042 012705 000070                210$: MOV      #56.,R5                ; COMPARE 56 WORDS OF DATA
7919 056046 004737 026044                JSR      PC,CMPDAT                ; DATA COMPARE ERROR ?
7920 056052 103006                        BCC      220$                     ; NO
7921 056054                                     ERRHRD   335.,ERR022,MSG007        ; YES, REPORT ERROR
                                     TRAP
                                     .WORD   C#ERHRD
056054 104456                                     335
056056 000517                                     .WORD   ERR022
056060 021534                                     .WORD   MSG007
056062 017520
7922 056064                                     ESCAPE  TST                        ; AND ABORT TEST
056064 104410                                     TRAP
056066 001722                                     .WORD   C#ESCAPE
                                               L10054-.
7923
7924 056070 010305                i
7925 056072 004737 027176                220$: MOV      R3,R5                ; POINT TO EXPECTED CRC TABLE
7926 056076 012705 007300                JSR      PC,LDXCRC                ; LOAD INTO XCRC TABLE
7927 056102 004737 026124                MOV      #RBUF+124.,R5           ; CHECK CRC
7928 056106 103006                JSR      PC,CMPCRC                ; ERRORS ?
7929 056110                                     BCC      230$                     ; NO
056110 104456                                     ERRHRD   336.,ERR023,MSG008        ; YES, REPORT ERROR
056112 000520                                     TRAP
056114 021603                                     .WORD   C#ERHRD
056116 017552                                     .WORD   336
                                               .WORD   ERR023
                                               .WORD   MSG008
7930 056120                                     ESCAPE  TS1                        ; AND ABORT TEST
056120 104410                                     TRAP
056122 001666                                     .WORD   C#ESCAPE
                                               L10054-.
7931
7932 056124 012777 000017 124074 i
7933 056132 004737 024574                230$: MOV      #STOP,#PCSR0       ; ISSUE STOP PORT COMMAND
7934 056136 103006                JSR      PC,CHKDNI                ; DNI ?
7935 056140                                     BCC      240$                     ; YES
056140 104456                                     ERRHRD   337.,ERR019,MSG003        ; NO, REPORT ERROR
056142 000521                                     TRAP
056144 021312                                     .WORD   C#ERHRD
056146 017110                                     .WORD   337
                                               .WORD   ERR019
                                               .WORD   MSG003
7936 056150                                     ESCAPE  TST                        ; AND ABORT TEST
056150 104410                                     TRAP
056152 001636                                     .WORD   C#ESCAPE
                                               L10054-.
7937
7938 056154 004737 025546                i
7939                                     240$: JSR      PC,CLRDN1          ; WRITE ONE TO CLEAR DNI
7940 056160 103006                BCC      245$                     ; ERROR ?
7941 056162                                     ERRHRD   338.,ERR006,MSG003        ; NO
056162 104456                                     ; YES, REPORT ERROR
056164 000522                                     TRAP
056166 020202                                     .WORD   C#ERHRD
056170 017110                                     .WORD   338
                                               .WORD   ERR006
                                               .WORD   MSG003
7942 056172                                     ESCAPE  TST                        ; AND ABORT TEST
056172 104410                                     TRAP
056174 001614                                     .WORD   C#ESCAPE
                                               L10054-.
7943
7944 056176 062702 000006                i
7945 056202 062703 000004                245$: ADD      #6,R2                ; UPDATE R2
7946 056206 005301                ADD      #4,R3                    ; UPDATE R3
7947 056210 001402                DEC      R1                        ; DONE TEN LOOPBACKS
7948 056212 000137 055456                BEQ      246$                     ; YES
7949                                     JMP      110$                     ; NO

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8016 056540 103006          BCC 335$          ; NO
8017 056542          ERRHRD 347.,ERR006,MSG003 ; YES, REPORT ERROR
      056542 104456          TRAP C$ERHRD
      056544 060533          .WORD 347
      056546 020202          .WORD ERR006
      056550 017110          .WORD MSG003
8018 056552          ESCAPE TST          ; AND ABORT TEST
      056552 104410          TRAP C$ESCAPE
      056554 001234          .WORD L10054-.
8019
8020 056556 062702 000006    ;335$: ADD #6,R2          ; UPDATE R2
8021 056562 005301          DEC R1            ; DONE 10 LOOPBACKS
8022 056564 001220          BNE 250$         ; NO
8023
8024          ;REPEAT WITH COMPLEMENTED MULTICAST ADDRESS LIST
8025
8026          ;WRITE MULTICAST ADDRESS LIST
8027 056566 012705 013164    340$: MOV #HTMULA,R5          ; DEFAULT WRITE MULTICAST ADDR FUNC
8028 056572 004737 026742    JSR PC,LDP CBB   ; LOAD FUNCTION -> PCBB
8029 056576 012705 014430    MOV #MULTLC,R5   ; LOAD LIST INTO UDBB
8030 056602 012700 000036    MOV #30.,R0      ; LOAD 30 ENTRIES
8031 056606 004737 027142    JSR PC,LDUDBB    ; MULTICAST LIST -> UDBB
8032 056612 012777 000002 123406  MOV #GETCMD,@PCSR0 ; ISSUE GET_CMD PORT COMMAND
8033 056620 004737 024574    JSR PC,CHKDNI    ; DNI ?
8034 056624 103006          BCC 350$         ; YES
8035 056626          ERRHRD 348.,ERR010,MSG003 ; NO, REPORT ERROR
      056626 104456          TRAP C$ERHRD
      056630 000534          .WORD 348
      056632 020502          .WORD ERR010
      056634 017110          .WORD MSG003
8036 056636          ESCAPE TST          ; AND ABORT TEST
      056636 104410          TRAP C$ESCAPE
      056640 001150          .WORD L10054-.
8037
8038 056642 004737 025546    ;350$: JSR PC,CLR DNI      ; WRITE ONE TO CLEAR DNI
8039          ; ERROR ?
8040 056646 103006          BCC 355$         ; NO
8041 056650          ERRHRD 349.,ERR006,MSG003 ; YES, REPORT ERROR
      056650 104456          TRAP C$ERHRD
      056652 000535          .WORD 349
      056654 020202          .WORD ERR006
      056656 017110          .WORD MSG003
8042 056660          ESCAPE TST          ; AND ABORT TEST
      056660 104410          TRAP C$ESCAPE
      056662 001126          .WORD L10054-.
8043
8044          ;DO TEN LOOPS WITH DEST ADDR = NEW COMPLEMENTED MULTICAST ADDRESS
8045
8046 056664 012701 000012    ;355$: MOV #10.,R1          ; DO LOOP = TEN
8047 056670 012702 014430    MOV #MULTLC,R2   ; R2 = COMPLEMENTED ADDRESS LIST
8048 056674 012703 015024    MOV #CRC22B,R3   ; R3 POINTS TO EXPECTED CRC TABLE
8049
8050          ;SET UP RINGS FOR ONE BUFFER LOOPBACK
8051 056700 012705 013554    360$: MOV #TDRB1A,R5      ; DEFAULT ONE BUFFER TRANSMIT RING
8052 056704 004737 027046    JSR PC,LDTDRB    ; LOAD TDRB
8053 056710 012705 013354    MOV #RDRB1A,R5   ; DEFAULT ONE BUFFER RECEIVE RING
8054 056714 004737 027010    JSR PC,LDRDRB    ; LOAD RDRB

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8055									
8056									
8057	056720	010205							
8058	056722	004737	026714						
8059	056726	004737	027342						
8060	056732	012777	000004	123266					
8061	056740	004737	024574						
8062	056744	103006							
8063	056746								
	056746	104456							
	056750	000536							
	056752	020633							
	056754	017110							
8064	056756								
	056756	104410							
	056760	001030							
8065									
8066	056762	004737	025546						
8067									
8068	056766	103006							
8069	056770								
	056770	104456							
	056772	000537							
	056774	020202							
	056776	017110							
8070	057000								
	057000	104410							
	057002	001006							
8071									
8072	057004	004737	025404						
8073	057010	103006							
8074	057012								
	057012	104456							
	057014	000540							
	057016	020714							
	057020	017110							
8075	057022								
	057022	104410							
	057024	000764							
8076									
8077	057026	004737	025730						
8078									
8079	057032	103006							
8080	057034								
	057034	104456							
	057036	000541							
	057040	020745							
	057042	017110							
8081	057044								
	057044	104410							
	057046	000742							
8082									
8083	057050	012705	002604						
8084	057054	004737	024676						
8085	057060	103006							
8086	057062								
	057062	104456							

057064	000542					.WORD	354
057066	021212					.WORD	ERR018
057070	000000					.WORD	0
8087	057072			ESCAPE	TST		; AND ABORT TEST
	057072	104410				TRAP	C#ESCAPE
	057074	000714				.WORD	L10054-.
8088							
8089	057076	012705	014524	i 410:	MOV	#TDR14A,R5	; POINT TO EXPECTED TDRB
8090	057102	004737	027252		JSR	PC,LDXTDR	; LOAD INTO XTDRBO TABLE
8091	057106	012705	002604		MOV	#TDRB,R5	; CHECK TDRB
8092	057112	004737	025316		JSR	PC,CHKTDR	; ERRORS ?
8093	057116	103006			BCC	420:	; NO
8094	057120				ERRHRD	355.,ERR020,MSG005	; YES, REPORT ERROR
	057120	104456				TRAP	C#ERHRD
	057122	000543				.WORD	355
	057124	021372				.WORD	ERR020
	057126	017214				.WORD	MSG005
8095	057130			ESCAPE	TST		; AND ABORT TEST
	057130	104410				TRAP	C#ESCAPE
	057132	000656				.WORD	L10054-.
8096							
8097	057134	004737	025132	i 420:	JSR	PC,CHKRXI	; RXI ?
8098	057140	103006			BCC	430:	; YES
8099	057142				ERRHRD	356.,ERR015,MSG003	; NO, REPORT ERROR
	057142	104456				TRAP	C#ERHRD
	057144	000544				.WORD	356
	057146	021013				.WORD	ERR015
	057150	017110				.WORD	MSG003
8100	057152			ESCAPE	TST		; AND ABORT TEST
	057152	104410				TRAP	C#ESCAPE
	057154	000634				.WORD	L10054-.
8101							
8102	057156	004737	025662	i 430:	JSR	PC,CLRRXI	; WRITE ONE TO CLEAR RXI
8103							; ERROR ?
8104	057162	103006			BCC	440:	; NO
8105	057164				ERRHRD	357.,ERR016,MSG003	; YES, REPORT ERROR
	057164	104456				TRAP	C#ERHRD
	057166	000545				.WORD	357
	057170	021044				.WORD	ERR016
	057172	017110				.WORD	MSG003
8106	057174			ESCAPE	TST		; AND ABORT TEST
	057174	104410				TRAP	C#ESCAPE
	057176	000612				.WORD	L10054-.
8107							
8108	057200	012705	002644	i 440:	MOV	#RDRB,R5	; CHECK RDRB OWNERSHIP
8109	057204	004737	024676		JSR	PC,CHKOWN	; OWN = PORT DRIVER ?
8110	057210	103006			BCC	450:	; YES
8111	057212				ERRHRD	358.,ERR017	; NO, REPORT ERROR
	057212	104456				TRAP	C#ERHRD
	057214	000546				.WORD	358
	057216	021112				.WORD	ERR017
	057220	000000				.WORD	0
8112	057222			ESCAPE	TST		; AND ABORT TEST
	057222	104410				TRAP	C#ESCAPE
	057224	000564				.WORD	L10054-.
8113							
8114	057226	012705	014634	i 450:	MOV	#RDR14A,R5	; POINT TO EXPECTED RDRB



	057406	000553					.WORD	363
	057410	020202					.WORD	ERR006
	057412	017110					.WORD	MSG003
8147	057414			ESCAPE	TST			; AND ABORT TEST
	057414	104410					TRAP	C\$ESCAPE
	057416	000372					.WORD	L10054-.
8148								
8149	057420	062702	000006	495:	ADD	#6,R2		; UPDATE R2
8150	057424	062703	000004		ADD	#4,R3		; UPDATE R3
8151	057430	005301			DEC	R1		; DONE TEN LOOPBACKS ?
8152	057432	001402			BEG	496:		YES
8153	057434	000137	056700		JMP	360:		NO
8154								
8155								; DO TEN LOOPS WITH DEST ADDR = COMPLIMENT OF NEW COMPLIMENTED ADDRESS LIST
8156								
8157	057440	012701	000012	496:	MOV	#10.,R1		; DO LOOP = TEN
8158	057444	012702	014334		MOV	#MULTL,R2		; POINT TO MULTICAST LIST
8159								
8160								; SET UP RINGS FOR ONE BUFFER LOOPBACK
8161	057450	012705	013554	500:	MOV	#TDRB1A,R5		; DEFAULT ONE BUFFER TRANSMIT RING
8162	057454	004737	027046		JSR	PC,LDTDRB		; LOAD TDRB
8163	057460	012705	013354		MOV	#RDRB1A,R5		; DEFAULT ONE BUFFER RECEIVE RING
8164	057464	004737	027010		JSR	PC,LDRDRB		; LOAD RDRB
8165								
8166								; SET UP BUFFERS AND START
8167	057470	010205			MOV	R2,R5		; COMPLIMENT DESTINATION ADDRESS
8168	057472	004737	026714		JSR	PC,LDEST		; LOAD DEST
8169	057476	004737	027342		JSR	PC,SETBUF		; SET UP BUFFERS
8170	057502	012777	000004	122516	MOV	#START,#PCSR0		; ISSUE START PORT COMMAND
8171	057510	004737	024574		JSR	PC,CHKDNI		; DNI?
8172	057514	103006			BCC	510:		YES
8173	057516				ERRHRD	364.,ERR012,MSG003		NO, REPORT ERROR
	057516	104456					TRAP	C\$ERHRD
	057520	000554					.WORD	364
	057522	020633					.WORD	ERR012
	057524	017110					.WORD	MSG003
8174	057526				ESCAPE	TST		; AND ABORT TEST
	057526	104410					TRAP	C\$ESCAPE
	057530	000260					.WORD	L10054-.
8175								
8176	057532	004737	025546	510:	JSR	PC,CLRDN1		; WRITE ONE TO CLEAR DNI
8177								; ERROR ?
8178	057536	103006			BCC	520:		NO
8179	057540				ERRHRD	365.,ERR006,MSG003		YES, REPORT ERROR
	057540	104456					TRAP	C\$ERHRD
	057542	000555					.WORD	365
	057544	020202					.WORD	ERR006
	057546	017110					.WORD	MSG003
8180	057550				ESCAPE	TST		; AND ABORT TEST
	057550	104410					TRAP	C\$ESCAPE
	057552	000236					.WORD	L10054-.
8181								
8182	057554	004737	025404	520:	JSR	PC,CHKTXI		; TXI ?
8183	057560	103006			BCC	530:		YES
8184	057562				ERRHRD	366.,ERR013,MSG003		NO, REPORT ERROR
	057562	104456					TRAP	C\$ERHRD
	057564	000556					.WORD	366

	057566	020714					.WORD	ERR013
	057570	017110					.WORD	MSG003
8185	057572			ESCAPE	TST			; AND ABORT TEST
	057572	104410					TRAP	C\$ESCAPE
	057574	000214					.WORD	L10054-.
8186								
8187	057576	004737	025730	530\$:	JSR	PC,CLRTXI		; WRITE ONE TO CLEAR TXI
8188								; ERROR ?
8189	057602	103006			BCC	540\$		; NO
8190	057604				ERRHRD	367.,ERR014,MSG003		; YES, REPORT ERROR
	057604	104456					TRAP	C\$ERHRD
	057606	000557					.WORD	367
	057610	020745					.WORD	ERR014
	057612	017110					.WORD	MSG003
8191	057614			ESCAPE	TST			; AND ABORT TEST
	057614	104410					TRAP	C\$ESCAPE
	057616	000172					.WORD	L10054-.
8192								
8193	057620	012705	002604	540\$:	MOV	#TDRB,R5		; CHECK TDRB OWNERSHIP
8194	057624	004737	024676		JSR	PC,CHKOWN		; OWN = PORT DRIVER ?
8195	057630	103006			BCC	550\$		; YES
8196	057632				ERRHRD	368.,ERR018		; NO, REPORT ERROR
	057632	104456					TRAP	C\$ERHRD
	057634	000560					.WORD	368
	057636	021212					.WORD	ERR018
	057640	000000					.WORD	0
8197	057642			ESCAPE	TST			; AND ABORT TEST
	057642	104410					TRAP	C\$ESCAPE
	057644	000144					.WORD	L10054-.
8198								
8199	057646	012705	014614	550\$:	MOV	#TDR21X,R5		; POINT TO EXPECTED TDRB
8200	057652	004737	027252		JSR	PC,LDXTDR		; LOAD INTO XTDRBO TABLE
8201	057656	012705	002604		MOV	#TDRB,R5		; CHECK TDRB
8202	057662	004737	025316		JSR	PC,CHKTDR		; ERRORS ?
8203	057666	103006			BCC	560\$		; NO
8204	057670				ERRHRD	369.,ERR020,MSG005		; YES, REPORT ERROR
	057670	104456					TRAP	C\$ERHRD
	057672	000561					.WORD	369
	057674	021372					.WORD	ERR020
	057676	017214					.WORD	MSG005
8205	057700			ESCAPE	TST			; AND ABORT TEST
	057700	104410					TRAP	C\$ESCAPE
	057702	000106					.WORD	L10054-.
8206								
8207	057704	004737	027302	560\$:	JSR	PC,NORXI		; RXI ?
8208	057710	103006			BCC	570\$		; NO
8209	057712				ERRHRD	370.,ERR039		; YES, REPORT ERROR
	057712	104456					TRAP	C\$ERHRD
	057714	000562					.WORD	370
	057716	023344					.WORD	ERR039
	057720	000000					.WORD	0
8210	057722			ESCAPE	TST			; AND ABORT TEST
	057722	104410					TRAP	C\$ESCAPE
	057724	000064					.WORD	L10054-.
8211								
8212	057726	012777	000017	122272	570\$:	MOV	#STOP,#PCSR0	; ISSUE STOP PORT COMMAND
8213	057734	004737	024574		JSR	PC,CHKDNI		; DNI ?

```

8214 057740 103006          BCC 580$          ; YES
8215 057742          ERRHRD 371.,ERR019,MSG003 ; NO, REPORT ERROR
      057742 104456
      057744 000563
      057746 021312
      057750 017110
8216 057752          ESCAPE TST          ; AND ABORT TEST
      057752 104410
      057754 000034
8217          ;
8218 057756 004737 025546 580$: JSR PC,CLRDNI ; WRITE ONE TO CLEAR DNI
8219          ;
8220 057762 103006          BCC 590$          ; NO
8221 057764          ERRHRD 372.,ERR006,MSG003 ; YES, REPORT ERROR
      057764 104456
      057766 000564
      057770 020202
      057772 017110
8222 057774          ESCAPE TST          ; AND ABORT TEST
      057774 104410
      057776 000012
8223          ;
8224 060000 062702 000006 590$: ADD #6,R2 ; UPDATE R2
8225 060004 005301          DEC R1 ; DONE TEN LOOPBACKS ?
8226 060006 001220          BNE 500$ ; NO
8227          ;
8228 060010          ;
      060010
      060010 104401
    L10054: TRAP C$ETST
    
```



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.SBTTL TEST 23: PROMISCUOUS ADDRESS MODE TEST

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:.....
:
: THIS TEST VERIFIES THAT PROMISCUOUS ADDRESSING MODE
: IS OPERATIONAL.
: A WRITE PHYSICAL ADDRESS FUNCTION IS USED TO SET
: THE DEUNA'S PHYSICAL ADDRESS.
: A WRITE MULTICAST ADDRESS LIST FUNCTION IS USED TO SET
: THE DEUNA'S MULTICAST ADDRESS LIST.
: INTERNAL LOOPBACKS ARE THEN PERFORMED WITH
: CURRENTLY ENABLED AND THEN CURRENTLY DISABLED
: PHYSICAL AND MULTICAST DESTINATION ADDRESSES.
:
: TEST SEQUENCE:
: 1. WRITE MODE REGISTER = INTERNAL LOOPBACK AND PROM MODE
: 2. WRITE RING FORMAT
: 3. WRITE PHYSICAL ADDRESS
: 4. WRITE MULTICAST ADDRESS LIST
: 5. SET UP RINGS AND BUFFERS
:   WITH DESTINATION ADDRESS = PHYSICAL ADDRESS
: 6. ISSUE START
: 7. CHECK FOR ERRORS
: 8. ISSUE STOP
: 9. SET UP RINGS AND BUFFERS
:   WITH DESTINATION ADDRESS NOT = PHYSICAL ADDRESS
: 10. ISSUE START
: 11. CHECK FOR ERRORS
: 12. ISSUE STOP
: 13. SET UP RINGS AND BUFFERS
:   WITH DESTINATION ADDRESS = MULTICAST ADDRESS
: 14. ISSUE START
: 15. CHECK FOR ERRORS
: 16. ISSUE STOP
: 17. REPEAT STEPS 13 - 16 FOR ALL TEN LIST ENTRIES
: 18. SET UP RINGS AND BUFFERS
:   WITH DESTINATION ADDRESS NOT = MULTICAST ADDRESS
: 19. ISSUE START
: 20. CHECK FOR ERRORS
: 21. ISSUE STOP
: 22. REPEAT STEPS 18 - 21 FOR ALL TEN ENTRIES
:.....

```

```

060012
060012
060012 004737 027446
060016 103025
060020 012777 000040 122200
060026 004737 024574
060032 103006
060034 104456
060036 000565
060040 020102
060042 017110
060044

```

BGNTST

```

JSR PC,TINIT ; IS A DEVICE RESET NEEDED?
BCC 304 ; NO
MOV #RSET,BPCSR0 ; YES, RESET DEUNA
JSR PC,CHKDNI ; DNI ?
BCC 204 ; YES
ERRHRD 373.,ERR004,MSG003 ; NO, REPORT ERROR

```

```

TRAP C#ERHRD
.WORD 373
.WORD ERR004
.WORD MSG003

```

ESCAPE TST ; AND ABORT TEST

```

060044 104410
060046 003342
8282
8283 060050 004737 025546      ; 20: JSR PC,CLRDNI      ; WRITE ONE TO CLEAR DNI
8284                                ; ERROR ?
8285 060054 103006            BCC 30: 30:             ; NO
8286 060056            ERRHRD 374.,ERR006,MSG003 ; YES, REPORT ERROR
                                TRAP C:ERHRD
                                .WORD 374
                                .WORD ERR006
                                .WORD MSG003
060056 104456
060060 000566
060062 020202
060064 017110
8287 060066            ESCAPE TST      ; AND ABORT TEST
                                TRAP C:ESCAPE
                                .WORD L10055-.
060066 104410
060070 003320
8288
8289 060072 004737 026772      ; 30: JSR PC,LDPCSR      ; ADDRESS OF PCBB -> PCSR2!3
8290 060076 012777 000001 122122 MOV @GETPCB,@PCSR0 ; ISSUE GET_PCBB PORT COMMAND
8291 060104 004737 024574      JSR PC,CHKDNI      ; DNI?
8292 060110 103006            BCC 40: 40:             ; YES
8293 060112            ERRHRD 375.,ERR009,MSG003 ; NO, REPORT ERROR
                                TRAP C:ERHRD
                                .WORD 375
                                .WORD ERR009
                                .WORD MSG003
060112 104456
060114 000567
060116 020416
060120 017110
8294 060122            ESCAPE TST      ; AND ABORT TEST
                                TRAP C:ESCAPE
                                .WORD L10055-.
060122 104410
060124 003264
8295
8296 060126 004737 025546      ; 40: JSR PC,CLRDNI      ; WRITE ONE TO CLEAR DNI
8297                                ; ERROR ?
8298 060132 103006            BCC 50: 50:             ; NO
8299 060134            ERRHRD 376.,ERR006,MSG003 ; YES, REPORT ERROR
                                TRAP C:ERHRD
                                .WORD 376
                                .WORD ERR006
                                .WORD MSG003
060134 104456
060136 000570
060140 020202
060142 017110
8300 060144            ESCAPE TST      ; AND ABORT TEST
                                TRAP C:ESCAPE
                                .WORD L10055-.
060144 104410
060146 003242
8301
8302                                ; WRITE MODE REGISTER = INTERNAL LOOPBACK AND PROM MODE
8303 060150 012705 013244      ; 50: MOV @WTHMODE,R5 ; DEFAULT WRITE MODE FUNCTION
8304 060154 004737 026742      JSR PC,LDPCBB      ; LOAD FUNCTION -> PCBB
8305 060160 012777 000002 122040 MOV @GETCMD,@PCSR0 ; ISSUE GET_CMD PORT COMMAND
8306 060166 004737 024574      JSR PC,CHKDNI      ; DNI ?
8307 060172 103006            BCC 60: 60:             ; YES
8308 060174            ERRHRD 377.,ERR010,MSG003 ; NO, REPORT ERROR
                                TRAP C:ERHRD
                                .WORD 377
                                .WORD ERR010
                                .WORD MSG003
060174 104456
060176 000571
060200 020502
060202 017110
8309 060204            ESCAPE TST      ; AND ABORT TEST
                                TRAP C:ESCAPE
                                .WORD L10055-.
060204 104410
060206 003202
8310
8311 060210 004737 025546      ; 60: JSR PC,CLRDNI      ; WRITE ONE TO CLEAR DNI
8312                                ; ERROR ?

```

8313	060214	103006		BCC	704		: NO		
8314	060216			ERRHRD	378.	ERR006,MSG003	: YES, REPORT ERROR		
	060216	104456						TRAP	C#ERRHRD
	060220	000572						.WORD	378
	060222	020202						.WORD	ERR006
	060224	017110						.WORD	MSG003
8315	060226			ESCAPE	TST		: AND ABORT TEST		
	060226	104410						TRAP	C#ESCAPE
	060230	003160						.WORD	L10055-
8316									
8317				;WRITE RING FORMAT					
8318	060232	012705	013204	704:	MOV	#WTRNGS,R5	: DEFAULT WRITE RING FORMAT FUNCTION		
8319	060236	004737	026742		JSR	PC,LDPCBB	: LOAD FUNCTION -> PCBB		
8320	060242	012705	013324		MOV	#RFRMT,R5	: DEFAULT RING FORMAT		
8321	060246	012700	000006		MOV	#6,R0	: FORMAT = SIX WORDS		
8322	060252	004737	027142		JSR	PC,LDUDBB	: LOAD RING FORMAT -> UDBB		
8323	060256	012777	000002	121742	MOV	#GETCMD,#PCSRO	: ISSUE GET_CMD PORT COMMAND		
8324	060264	004737	024574		JSR	PC,CHKDNI	: DNI ?		
8325	060270	103006			BCC	804	: YES		
8326	060272				ERRHRD	379.,ERR010,MSG003	: NO, REPORT ERROR		
	060272	104456						TRAP	C#ERRHRD
	060274	000573						.WORD	379
	060276	020502						.WORD	ERR010
	060300	017110						.WORD	MSG003
8327	060302			ESCAPE	TST		: AND ABORT TEST		
	060302	104410						TRAP	C#ESCAPE
	060304	003104						.WORD	L10055-
8328									
8329	060306	004737	025546	804:	JSR	PC,CLRDN1	: WRITE ONE TO CLEAR DNI		
8330							: ERROR ?		
8331	060312	103006			BCC	904	: NO		
8332	060314				ERRHRD	380.,ERR006,MSG003	: YES, REPORT ERROR		
	060314	104456						TRAP	C#ERRHRD
	060316	000574						.WORD	380
	060320	020202						.WORD	ERR006
	060322	017110						.WORD	MSG003
8333	060324			ESCAPE	TST		: AND ABORT TEST		
	060324	104410						TRAP	C#ESCAPE
	060326	003062						.WORD	L10055-
8334									
8335				;WRITE PHYSICAL ADDRESS					
8336	060330	012705	013144	904:	MOV	#WTPHYA,R5	: DEFAULT WRITE PHYSICAL ADDR FUNC		
8337	060334	004737	026742		JSR	PC,LDPCBB	: LOAD FUNCTION -> PCBB		
8338				;LOAD DEFAULT PHYSICAL ADDRESS					
8339	060340	012703	014320		MOV	#ADR21,R3	: POINT TO PHYSICAL ADDRESS		
8340	060344	012704	002266		MOV	#PCBB+2,R4	: POINT TO PCBB + 2		
8341	060350	012324			MOV	(R3)+,(R4)+	: LOAD ADDRESS		
8342	060352	012324			MOV	(R3)+,(R4)+			
8343	060354	012324			MOV	(R3)+,(R4)+			
8344	060356	012777	000002	121642	MOV	#GETCMD,#PCSRO	: ISSUE GET_CMD PORT COMMAND		
8345	060364	004737	024574		JSR	PC,CHKDNI	: DNI ?		
8346	060370	103006			BCC	1004	: YES		
8347	060372				ERRHRD	381.,ERR010,MSG003	: NO, REPORT ERROR		
	060372	104456						TRAP	C#ERRHRD
	060374	000575						.WORD	381
	060376	020502						.WORD	ERR010
	060400	017110						.WORD	MSG003

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8348 060402          ESCAPE TST          ; AND ABORT TEST
      060402 104410          TRAP      C#ESCAPE
      060404 003004          .WORD    L10055-.

8349          ;
8350 060406 004737 025546 100#: JSR      PC,CLRDNI      ; WRITE ONE TO CLEAR DNI
8351          ;
8352 060412 103006          BCC      102#      ; ERROR ?
8353 060414          ERRHRD 382.,ERR006,MSG003 ; NO
      060414 104456          ; YES, REPORT ERROR
      060416 000576          TRAP      C#ERHRD
      060420 020202          .WORD    382
      060422 017110          .WORD    ERR006
      060422 017110          .WORD    MSG003

8354 060424          ESCAPE TST          ; AND ABORT TEST
      060424 104410          TRAP      C#ESCAPE
      060426 002762          .WORD    L10055-.

8355          ;
8356          ;WRITE MULTICAST ADDRESS LIST
8357 060430 012705 013164 102#: MOV      #WTHULA,R5      ; DEFAULT WRITE MULTICAST ADDR FUNC
8358 060434 004737 026742      JSR      PC,LDPCCB      ; LOAD FUNCTION -> PCBB
8359 060440 012705 014334      MOV      #MULTL,R5      ; LOAD LIST INTO UDBB
8360 060444 012700 000036      MOV      #30.,R0        ; LOAD 30 ENTRIES
8361 060450 004737 027142      JSR      PC,LDUDBB      ; MULTICAST LIST -> UDBB
8362 060454 012777 000002 121544 MOV      #GETCMD,#PCSR0 ; ISSUE GET_CMD PORT COMMAND
8363 060462 004737 024574      JSR      PC,CHKDNI      ; DNI ?
8364 060466 103006          BCC      104#      ; YES
8365 060470          ERRHRD 383.,ERR010,MSG003 ; NO, REPORT ERROR
      060470 104456          TRAP      C#ERHRD
      060472 000577          .WORD    383
      060474 020502          .WORD    ERR010
      060476 017110          .WORD    MSG003

8366 060500          ESCAPE TST          ; AND ABORT TEST
      060500 104410          TRAP      C#ESCAPE
      060502 002706          .WORD    L10055-.

8367          ;
8368 060504 004737 025546 104#: JSR      PC,CLRDNI      ; WRITE ONE TO CLEAR DNI
8369          ;
8370 060510 103006          BCC      110#      ; ERROR ?
8371 060512          ERRHRD 384.,ERR006,MSG003 ; NO
      060512 104456          ; YES, REPORT ERROR
      060514 000600          TRAP      C#ERHRD
      060516 020202          .WORD    384
      060520 017110          .WORD    ERR006
      060520 017110          .WORD    MSG003

8372 060522          ESCAPE TST          ; AND ABORT TEST
      060522 104410          TRAP      C#ESCAPE
      060524 002664          .WORD    L10055-.

8373          ;
8374          ;DESTINATION ADDRESS = PHYSICAL ADDRESS
8375          ;
8376          ;SET UP RINGS FOR ONE BUFFER LOOPBACK
8377 060526 012705 013554 110#: MOV      #TDRB1A,R5      ; DEFAULT ONE BUFFER TRANSMIT RING
8378 060532 004737 027046      JSR      PC,LDTDRB      ; LOAD TDRB
8379 060536 012705 013354      MOV      #RDRB1A,R5      ; DEFAULT ONE BUFFER RECEIVE RING
8380 060542 004737 027010      JSR      PC,LDRDRB      ; LOAD RDRB
8381          ;
8382          ;SET UP BUFFERS AND START
8383 060546 012705 014320      MOV      #ADR21,R5      ; POINT TO DESTINATION ADDRESS
8384 060552 004737 026714      JSR      PC,LDDEST      ; LOAD DEST

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8385	060556	004737	027342		JSR	PC,SETBUF		: SET UP BUFFERS		
8386	060562	012777	000004	121436	MOV	@START,@PCSR0		: ISSUE START PORT COMMAND		
8387	060570	004737	024574		JSR	PC,CHKDNI		: DNI?		
8388	060574	103006			BCC	120#		: YES		
8389	060576				ERRHRD	385.,ERR012,MSG003		: NO, REPORT ERROR		
	060576	104456							TRAP	C#ERHRD
	060600	000601							.WORD	385
	060602	020633							.WORD	ERR012
	060604	017110							.WORD	MSG003
8390	060606				ESCAPE	TST		: AND ABORT TEST		
	060606	104410							TRAP	C#ESCAPE
	060610	002600							.WORD	L10055-.
8391										
8392	060612	004737	025546		JSR	PC,CLRDNI		: WRITE ONE TO CLEAR DNI		
8393								: ERROR ?		
8394	060616	103006			BCC	130#		: NO		
8395	060620				ERRHRD	386.,ERR006,MSG003		: YES, REPORT ERROR		
	060620	104456							TRAP	C#ERHRD
	060622	000602							.WORD	386
	060624	020202							.WORD	ERR006
	060626	017110							.WORD	MSG003
8396	060630				ESCAPE	TST		: AND ABORT TEST		
	060630	104410							TRAP	C#ESCAPE
	060632	002556							.WORD	L10055-.
8397										
8398	060634	004737	025404		JSR	PC,CHKTXI		: TXI ?		
8399	060640	103006			BCC	140#		: YES		
8400	060642				ERRHRD	387.,ERR013,MSG003		: NO, REPORT ERROR		
	060642	104456							TRAP	C#ERHRD
	060644	000603							.WORD	387
	060646	020714							.WORD	ERR013
	060650	017110							.WORD	MSG003
8401	060652				ESCAPE	TST		: AND ABORT TEST		
	060652	104410							TRAP	C#ESCAPE
	060654	002534							.WORD	L10055-.
8402										
8403	060656	004737	025730		JSR	PC,CLRTXI		: WRITE ONE TO CLEAR TXI		
8404								: ERROR ?		
8405	060662	103006			BCC	150#		: NO		
8406	060664				ERRHRD	388.,ERR014,MSG003		: YES, REPORT ERROR		
	060664	104456							TRAP	C#ERHRD
	060666	000604							.WORD	388
	060670	020745							.WORD	ERR014
	060672	017110							.WORD	MSG003
8407	060674				ESCAPE	TST		: AND ABORT TEST		
	060674	104410							TRAP	C#ESCAPE
	060676	002512							.WORD	L10055-.
8408										
8409	060700	012705	002674		MOV	@TDRB,R5		: CHECK TDRB OWNERSHIP		
8410	060704	004737	024676		JSR	PC,CHKOWN		: OWN = PORT DRIVER ?		
8411	060710	103006			BCC	160#		: YES		
8412	060712				ERRHRD	389.,ERR018		: NO, REPORT ERROR		
	060712	104456							TRAP	C#ERHRD
	060714	000605							.WORD	389
	060716	021212							.WORD	ERR018
	060720	000000							.WORD	0
8413	060722				ESCAPE	TST		: AND ABORT TEST		

Address	OpCode	Operand 1	Operand 2	Operand 3	Comment	Trap	Escape
060722		104410				TRAP	C#ESCAPE
060724		002464				.WORD	L10055-
8414							
8415	06072E	012705	014524		i 160\$: MOV #TDR14A,R5 ; POINT TO EXPECTED TDRB		
8416	060732	004737	027252		JSR PC,LDX1DR ; LOAD INTO XTDRBO TABLE		
8417	060736	012705	002604		MOV #TDRB,R5 ; CHECK TDRB		
8418	060742	004737	025316		JSR PC,CHKTDR ; ERRORS ?		
8419	060746	103006			BCC 170\$ ; NO		
8420	060750				ERRHRD 390.,ERR020,MSG005 ; YES, REPORT ERROR		
	060750	104456				TRAP	C#ERHRD
	060752	000606				.WORD	390
	060754	021372				.WORD	ERR020
	060756	017214				.WORD	MSG005
8421	060760				ESCAPE TST ; AND ABORT TEST		
	060760	104410				TRAP	C#ESCAPE
	060762	002426				.WORD	L10055-
8422							
8423	060764	004737	025132		i 170\$: JSR PC,CHKRXI ; RXI ?		
8424	060770	103006			BCC 180\$ ; YES		
8425	060772				ERRHRD 391.,ERR015,MSG003 ; NO, REPORT ERROR		
	060772	104456				TRAP	C#ERHRD
	060774	000607				.WORD	391
	060776	021013				.WORD	ERR015
	061000	017110				.WORD	MSG003
8426	061002				ESCAPE TST ; AND ABORT TEST		
	061002	104410				TRAP	C#ESCAPE
	061004	002404				.WORD	L10055-
8427							
8428	061006	004737	025662		i 180\$: JSR PC,CLRXXI ; WRITE ONE TO CLEAR RXI		
8429							
8430	061012	103006			BCC 190\$ ; ERROR ?		
8431	061014				ERRHRD 392.,ERR016,MSG003 ; NO		
	061014	104456				TRAP	C#ERHRD
	061016	000610				.WORD	392
	061020	021044				.WORD	ERR016
	061022	017110				.WORD	MSG003
8432	061024				ESCAPE TST ; AND ABORT TEST		
	061024	104410				TRAP	C#ESCAPE
	061026	002362				.WORD	L10055-
8433							
8434	061030	012705	002644		i 190\$: MOV #RDRB,R5 ; CHECK RDRB OWNERSHIP		
8435	061034	004737	024676		JSR PC,CHKOWN ; OWN = PORT DRIVER ?		
8436	061040	103006			BCC 200\$ ; YES		
8437	061042				ERRHRD 393.,ERR017 ; NO, REPORT ERROR		
	061042	104456				TRAP	C#ERHRD
	061044	000611				.WORD	393
	061046	021112				.WORD	ERR017
	061050	000000				.WORD	0
8438	061052				ESCAPE TST ; AND ABORT TEST		
	061052	104410				TRAP	C#ESCAPE
	061054	002334				.WORD	L10055-
8439							
8440	061056	012705	014634		i 200\$: MOV #RDR14A,R5 ; POINT TO EXPECTED RDRB		
8441	061062	004737	027222		JSR PC,LDXRDR ; LOAD INTO XRDRBO TABLE		
8442	061066	012705	002644		MOV #RDRB,R5 ; CHECK RDRB		
8443	061072	004737	025032		JSR PC,CHKRDR ; ERRORS ?		
8444	061076	103006			BCC 210\$ ; NO		

8445	061100			ERRHRD	394.,ERR021,MSG006	; YES, REPORT ERROR	TRAP	C#ERRHRD
	061100	104456					.WORD	394
	061102	000612					.WORD	ERR021
	061104	021453					.WORD	MSG006
	061106	017356						
8446	061110			ESCAPE	TST	; AND ABORT TEST	TRAP	C#ESCAPE
	061110	104410					.WORD	L10055-.
	061112	002276						
8447								
8448								
8449	061114	012705	000070					
8450	061120	004737	026044	210#:	MOV #56.,R5	; COMPARE 56 WORDS OF DATA		
8451	061124	103006			JSR PC,CMPDAT	; DATA COMPARE ERROR ?		
8452	061126				BCC 220#	; NO		
	061126	104456			ERRHRD 395.,ERR022,MSG007	; YES, REPORT ERROR	TRAP	C#ERRHRD
	061130	000613					.WORD	395
	061132	021534					.WORD	ERR022
	061134	017520					.WORD	MSG007
8453	061136			ESCAPE	TST	; AND ABORT TEST	TRAP	C#ESCAPE
	061136	104410					.WORD	L10055-.
	061140	002250						
8454								
8455	061142	012705	014744	220#:	MOV #CRC21A,R5	; POINT TO EXPECTED CRC		
8456	061146	004737	027176		JSR PC,LDXCRC	; LOAD INTO XCRC TABLE		
8457	061152	012705	007300		MOV #RBUF+124.,R5	; CHECK CRC		
8458	061156	004737	026124		JSR PC,CMPCRC	; ERRORS ?		
8459	061162	103006			BCC 230#	; NO		
8460	061164				ERRHRD 396.,ERR023,MSG008	; YES, REPORT ERROR	TRAP	C#ERRHRD
	061164	104456					.WORD	396
	061166	000614					.WORD	ERR023
	061170	021603					.WORD	MSG008
	061172	017552						
8461	061174			ESCAPE	TST	; AND ABORT TEST	TRAP	C#ESCAPE
	061174	104410					.WORD	L10055-.
	061176	002212						
8462								
8463	061200	012777	000017	121020	230#:	MOV #STOP,BPCSR0	; ISSUE STOP PORT COMMAND	
8464	061206	004737	024574		JSR PC,CHKDNI	; DNI ?		
8465	061212	103006			BCC 240#	; YES		
8466	061214				ERRHRD 397.,ERR019,MSG003	; NO, REPORT ERROR	TRAP	C#ERRHRD
	061214	104456					.WORD	397
	061216	000615					.WORD	ERR019
	061220	021312					.WORD	MSG003
	061222	017110						
8467	061224			ESCAPE	TST	; AND ABORT TEST	TRAP	C#ESCAPE
	061224	104410					.WORD	L10055-.
	061226	002162						
8468								
8469	061230	004737	025546	240#:	JSR PC,CLRDNI	; WRITE ONE TO CLEAR DNI		
8470						; ERROR ?		
8471	061234	103006			BCC 250#	; NO		
8472	061236				ERRHRD 398.,ERR006,MSG003	; YES, REPORT ERROR	TRAP	C#ERRHRD
	061236	104456					.WORD	398
	061240	000616					.WORD	ERR006
	061242	020202					.WORD	MSG003
	061244	017110						
8473	061246			ESCAPE	TST	; AND ABORT TEST		

	061246	104410				TRAP	C#ESCAPE
	061250	002140				.WORD	L10055-.
8474							
8475							
8476							
8477							
8478	061252	012705	013554				
8479	061256	004737	027046				
8480	061262	012705	013354				
8481	061266	004737	027010				
8482							
8483							
8484	061272	012705	014326				
8485	061276	004737	026714				
8486	061302	004737	027342				
8487	061306	012777	000004	120712			
8488	061314	004737	024574				
8489	061320	103006					
8490	061322						
	061322	104456				TRAP	C#ERRRD
	061324	000617				.WORD	399
	061326	020633				.WORD	ERR012
	061330	017110				.WORD	MSG003
8491	061332				ESCAPE TST		
	061332	104410					
	061334	002054				TRAP	C#ESCAPE
						.WORD	L10055-.
8492							
8493	061336	004737	025546				
8494							
8495	061342	103006					
8496	061344						
	061344	104456				TRAP	C#ERRRD
	061346	000620				.WORD	400
	061350	020202				.WORD	ERR006
	061352	017110				.WORD	MSG003
8497	061354				ESCAPE TST		
	061354	104410				TRAP	C#ESCAPE
	061356	002032				.WORD	L10055-.
8498							
8499	061360	004737	025404				
8500	061364	103006					
8501	061366						
	061366	104456				TRAP	C#ERRRD
	061370	000621				.WORD	401
	061372	020714				.WORD	ERR013
	061374	017110				.WORD	MSG003
8502	061376				ESCAPE TST		
	061376	104410				TRAP	C#ESCAPE
	061400	002010				.WORD	L10055-.
8503							
8504	061402	004737	025730				
8505							
8506	061406	103006					
8507	061410						
	061410	104456				TRAP	C#ERRRD
	061412	000622				.WORD	402
	061414	020745				.WORD	ERR014



8508	061416	01711C		ESCAPE	TST		; AND ABORT TEST	.WORD	MSG003
	061420							TRAP	C#ESCAPE
	061420	104410						.WORD	L10055-.
	061422	001766							
8509									
8510	061424	012705	002604						
8511	061430	004737	024676						
8512	061434	103006							
8513	061436								
	061436	104456						TRAP	C#ERHRD
	061440	000623						.WORD	403
	061442	021212						.WORD	ERR018
	061444	000000						.WORD	0
8514	061446			ESCAPE	TST		; AND ABORT TEST	TRAP	C#ESCAPE
	061446	104410						.WORD	L10055-.
	061450	001740							
8515									
8516	061452	012705	014524						
8517	061456	004737	027252						
8518	061462	012705	002604						
8519	061466	004737	025316						
8520	061472	103006							
8521	061474								
	061474	104456						TRAP	C#ERHRD
	061476	000624						.WORD	404
	061500	021372						.WORD	ERR020
	061502	017214						.WORD	MSG005
8522	061504			ESCAPE	TST		; AND ABORT TEST	TRAP	C#ESCAPE
	061504	104410						.WORD	L10055-.
	061506	001702							
8523									
8524	061510	004737	025132						
8525	061514	103006							
8526	061516								
	061516	104456						TRAP	C#ERHRD
	061520	000625						.WORD	405
	061522	021013						.WORD	ERR015
	061524	017110						.WORD	MSG003
8527	061526			ESCAPE	TST		; AND ABORT TEST	TRAP	C#ESCAPE
	061526	104410						.WORD	L10055-.
	061530	001660							
8528									
8529	061532	004737	025662						
8530									
8531	061536	103006							
8532	061540								
	061540	104456						TRAP	C#ERHRD
	061542	000626						.WORD	406
	061544	021044						.WORD	ERR016
	061546	017110						.WORD	MSG003
8533	061550			ESCAPE	TST		; AND ABORT TEST	TRAP	C#ESCAPE
	061550	104410						.WORD	L10055-.
	061552	001636							
8534									
8535	061554	012705	002644						
8536	061560	004737	024676						
8537	061564	103006							

8538	061566			ERRHRD	407.,ERR017		; NO, REPORT ERROR	TRAP	C#ERRHRD
	061566	104456						.WORD	407
	061570	000627						.WORD	ERR017
	061572	021112						.WORD	0
	061574	000000							
8539	061576			ESCAPE	TST		; AND ABORT TEST	TRAP	C#ESCAPE
	061576	104410						.WORD	L10055-.
	061600	001610							
8540									
8541	061602	012705	014634				; POINT TO EXPECTED RDRB		
8542	061606	004737	027222	340\$:	MOV	#RDR14A,R5	; LOAD INTO XRDRBO TABLE		
8543	061612	012705	002644		JSR	PC,LDXRDR	; CHECK RDRB		
8544	061616	004737	025032		MOV	#RDRB,R5	; ERRORS ?		
8545	061622	103006			JSR	PC,CHKRDR	; NO		
8546	061624				BCC	350\$	; YES, REPORT ERROR		
	061624	104456			ERRHRD	408.,ERR021,MSG006		TRAP	C#ERRHRD
	061626	000630						.WORD	408
	061630	021453						.WORD	ERR021
	061632	017356						.WORD	MSG006
8547	061634			ESCAPE	TST		; AND ABORT TEST	TRAP	C#ESCAPE
	061634	104410						.WORD	L10055-.
	061636	001552							
8548									
8549									
8550	061640	012705	000070				; COMPARE 56 WORDS OF DATA		
8551	061644	004737	026044		350\$:	MOV	#56.,R5		
8552	061650	103006			JSR	PC,CMPDAT	; DATA COMPARE ERROR ?		
8553	061652				BCC	360\$	; NO		
	061652	104456			ERRHRD	409.,ERR022,MSG007	; YES, REPORT ERROR		
	061654	000631						TRAP	C#ERRHRD
	061656	02153\$						.WORD	409
	061660	017520						.WORD	ERR022
8554	061662			ESCAPE	TST		; AND ABORT TEST	TRAP	C#ESCAPE
	061662	104410						.WORD	L10055-.
	061664	001524							
8555									
8556	061666	012705	015074				; POINT TO EXPECTED CRC		
8557	061672	004737	027176		360\$:	MOV	#CRC23B,R5	; LOAD INTO XCRC TABLE	
8558	061676	012705	007300		JSR	PC,LDXCRC	; CHECK CRC		
8559	061702	004737	026124		MOV	#RBUF+124.,R5	; ERRORS ?		
8560	061706	103006			JSR	PC,CHPCRC	; NO		
8561	061710				BCC	370\$	; YES, REPORT ERROR		
	061710	104456			ERRHRD	410.,ERR023,MSG008		TRAP	C#ERRHRD
	061712	000632						.WORD	410
	061714	021603						.WORD	ERR023
	061716	017552						.WORD	MSG008
8562	061720			ESCAPE	TST		; AND ABORT TEST	TRAP	C#ESCAPE
	061720	104410						.WORD	L10055-.
	061722	001466							
8563									
8564	061724	012777	000017				; ISSUE STOP PORT COMMAND		
8565	061732	004737	024574		370\$:	MOV	#STOP,#PCSR0	; DNI ?	
8566	061736	103006			JSR	PC,CHKDNI	; YES		
8567	061740				BCC	380\$	; NO, REPORT ERROR		
	061740	104456			ERRHRD	411.,ERR019,MSG003		TRAP	C#ERRHRD
	061742	000633						.WORD	411
	061744	021312						.WORD	ERR019

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8568 061746 017110          ESCAPE TST          ; AND ABORT TEST          .WORD  MSG003
      061750          TRAP C$ESCAPE
      061750 104410          .WORD  L10055-.
      061752 001436
8569          ;
8570 061754 004737 025546 380$: JSR PC,CLRDNI          ; WRITE ONE TO CLEAR DNI
8571          ; ERROR ?
8572 061760 103006          BCC 390$          ; NO
8573 061762          ERRHRD 412.,ERR006,MSG003 ; YES, REPORT ERROR
      061762 104456          TRAP C$ERHRD
      061764 000634          .WORD  412
      061766 020202          .WORD  ERR006
      061770 017110          .WORD  MSG003
8574          ESCAPE TST          ; AND ABORT TEST          TRAP  C$ESCAPE
      061772 104410          .WORD  L10055-.
      061774 001414
8575          ;
8576          ;REWRITE DEFAULT PHYSICAL ADDRESS
8577 061776 012705 013144 390$: MOV #WTPHYA,R5          ; DEFAULT WRITE PHYSICAL ADDR FUNC
8578 062002 004737 026742          JSR PC,LDPCBB          ; LOAD FUNCTION -> PCBB
8579 062006 012777 000002 120212 MOV #GETCMD,SPCSRO      ; ISSUE GET_CMD PORT COMMAND
8580 062014 004737 024574          JSR PC,CHKDNI          ; DNI ?
8581 062020 103006          BCC 400$          ; YES
8582 062022          ERRHRD 413.,ERR010,MSG003 ; NO, REPORT ERROR
      062022 104456          TRAP  C$ERHRD
      062024 000635          .WORD  413
      062026 020502          .WORD  ERR010
      062030 017110          .WORD  MSG003
8583          ESCAPE TST          ; AND ABORT TEST          TRAP  C$ESCAPE
      062032 104410          .WORD  L10055-.
      062034 001354
8584          ;
8585 062036 004737 025546 400$: JSR PC,CLRDNI          ; WRITE ONE TO CLEAR DNI
8586          ; ERROR ?
8587 062042 103006          BCC 410$          ; NO
8588 062044          ERRHRD 414.,ERR006,MSG003 ; YES, REPORT ERROR
      062044 104456          TRAP  C$ERHRD
      062046 000636          .WORD  414
      062050 020202          .WORD  ERR006
      062052 017110          .WORD  MSG003
8589          ESCAPE TST          ; AND ABORT TEST          TRAP  C$ESCAPE
      062054 104410          .WORD  L10055-.
      062056 001332
8590          ;
8591          ;DO TEN LOOPS WITH DEST ADDR = MULTICAST ADDRESS
8592          ;
8593 062060 012701 000012 410$: MOV #10.,R1          ; DO LOOP = TEN
8594 062064 012702 014334          MOV #MULTL,R2          ; R2 POINTS TO MULTICAST LIST
8595 062070 012703 014754          MOV #CRC22A,R3          ; R3 POINTS TO EXPECTED CRC TABLE
8596          ;
8597          ;SET UP RINGS FOR ONE BUFFER LOOPBACK
8598 062074 012705 013554 420$: MOV #TDRB1A,R5          ; DEFAULT ONE BUFFER TRANSMIT RING
8599 062100 004737 027046          JSR PC,LDTDRB          ; LOAD TDRB
8600 062104 012705 013354          MOV #RDRB1A,R5          ; DEFAULT ONE BUFFER RECEIVE RING
8601 062110 004737 027010          JSR PC,LDRDRB          ; LOAD RDRB
8602          ;
8603          ;SET UP BUFFERS AND START

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8604	062114	010205			MOV R2,R5		; POINT TO DESTINATION ADDRESS		
8605	062116	004737	026714		JSR PC,LDDEST		; LOAD DEST		
8606	062122	004737	027342		JSR PC,SETBUF		; SET UP BUFFERS		
8607	062126	012777	000004	120072	MOV @START,@PCSR0		; ISSUE START PORT COMMAND		
8608	062134	004737	024574		JSR PC,CHKDNI		; DNI?		
8609	062140	103006			BCC 430\$		; YES		
8610	062142				ERRHRD 415.,ERR012,MSG003		; NO, REPORT ERROR	TRAP	C\$ERHRD
	062142	104456						.WORD	415
	062144	000637						.WORD	ERR012
	062146	020633						.WORD	MSG003
	062150	017110							
8611	062152				ESCAPE TST		; AND ABORT TEST	TRAP	C\$ESCAPE
	062152	104410						.WORD	L10055-
	062154	001234							
8612									
8613	062156	004737	025546		i 430\$: JSR PC,CLRDNI		; WRITE ONE TO CLEAR DNI		
8614							; ERROR ?		
8615	062162	103006			BCC 440\$		; NO		
8616	062164				ERRHRD 416.,ERR006,MSG003		; YES, REPORT ERROR	TRAP	C\$ERHRD
	062164	104456						.WORD	416
	062166	000640						.WORD	ERR006
	062170	020202						.WORD	MSG003
	062172	017110							
8617	062174				ESCAPE TST		; AND ABORT TEST	TRAP	C\$ESCAPE
	062174	104410						.WORD	L10055-
	062176	001212							
8618									
8619	062200	004737	025404		i 440\$: JSR PC,CHKTXI		; TXI ?		
8620	062204	103006			BCC 450\$		; YES		
8621	062206				ERRHRD 417.,ERR013,MSG003		; NO, REPORT ERROR	TRAP	C\$ERHRD
	062206	104456						.WORD	417
	062210	000641						.WORD	ERR013
	062212	020714						.WORD	MSG003
	062214	017110							
8622	062216				ESCAPE TST		; AND ABORT TEST	TRAP	C\$ESCAPE
	062216	104410						.WORD	L10055-
	062220	001170							
8623									
8624	062222	004737	025730		i 450\$: JSR PC,CLRTXI		; WRITE ONE TO CLEAR TXI		
8625							; ERROR ?		
8626	062226	103006			BCC 470\$		; NO		
8627	062230				ERRHRD 418.,ERR014,MSG003		; YES, REPORT ERROR	TRAP	C\$ERHRD
	062230	104456						.WORD	418
	062232	000642						.WORD	ERR014
	062234	020745						.WORD	MSG003
	062236	017110							
8628	062240				ESCAPE TST		; AND ABORT TEST	TRAP	C\$ESCAPE
	062240	104410						.WORD	L10055-
	062242	001146							
8629									
8630	062244	012705	002604		i 470\$: MOV @TDRB,R5		; CHECK TDRB OWNERSHIP		
8631	062250	004737	024676		JSR PC,CHKOWN		; OWN = PORT DRIVER ?		
8632	062254	103006			BCC 480\$		; YES		
8633	062256				ERRHRD 419.,ERR018		; NO, REPORT ERROR	TRAP	C\$ERHRD
	062256	104456						.WORD	419
	062260	000643						.WORD	ERR018
	062262	021212							

8634	062264	000000			ESCAPE TST	; AND ABORT TEST	.WORD	0
	062266						TRAP	C\$ESCAPE
	062256	104410					.WORD	L10055-
	062270	001120						
8635								
8636	062272	012705	014524	i 480\$:	MOV #TDR14A,R5	; POINT TO EXPECTED TDRB		
8637	062276	004737	027252		JSR PC,LDXTDR	; LOAD INTO XTDRBO TABLE		
8638	062302	012705	002604		MOV #TDRB,R5	; CHECK TDRB		
8639	062306	004737	02531C		JSR PC,CHKTDR	; ERRORS ?		
8640	062312	103006			BCC 490\$	; NO		
8641	062314				ERRHRD 42C.,ERR020,MSG005	; YES, REPORT ERROR		
	062314	104456					TRAP	C\$ERHRD
	062316	000644					.WORD	420
	062320	021372					.WORD	ERR020
	062322	017214					.WORD	MSG005
8642	062324				ESCAPE TST	; AND ABORT TEST		
	062324	104410					TRAP	C\$ESCAPE
	062326	001062					.WORD	L10055-
8643								
8644	062330	004737	025132	i 490\$:	JSR PC,CHKRXI	; RXI ?		
8645	062334	103006			BCC 500\$	; YES		
8646	062336				ERRHRD 421.,ERR015,MSG003	; NO, REPORT ERROR		
	062336	104456					TRAP	C\$ERHRD
	062340	000645					.WORD	421
	062342	021013					.WORD	ERR015
	062344	017110					.WORD	MSG003
8647	062346				ESCAPE TST	; AND ABORT TEST		
	062346	104410					TRAP	C\$ESCAPE
	062350	001040					.WORD	L10055-
8648								
8649	062352	004737	025652	i 500\$:	JSR PC,CLRRXI	; WRITE ONE TO CLEAR RXI		
8650						; ERROR ?		
8651	062356	103006			BCC 510\$	; NO		
8652	062360				ERRHRD 422.,ERR016,MSG003	; YES, REPORT ERROR		
	062360	104456					TRAP	C\$ERHRD
	062362	000646					.WORD	422
	062364	021044					.WORD	ERR016
	062366	017110					.WORD	MSG003
8653	062370				ESCAPE TST	; AND ABORT TEST		
	062370	104410					TRAP	C\$ESCAPE
	062372	001016					.WORD	L10055-
8654								
8655	062374	012705	002644	i 510\$:	MOV #RDRB,R5	; CHECK RDRB OWNERSHIP		
8656	062400	004737	024676		JSR PC,CHKOWN	; OWN = PORT DRIVER ?		
8657	062404	103006			BCC 520\$	; YES		
8658	062406				ERRHRD 423.,ERR017	; NO, REPORT ERROR		
	062406	104456					TRAP	C\$ERHRD
	062410	000647					.WORD	423
	062412	021112					.WORD	ERR017
	062414	000000					.WORD	0
8659	062416				ESCAPE TST	; AND ABORT TEST		
	062416	104410					TRAP	C\$ESCAPE
	062420	000770					.WORD	L10055-
8660								
8661	062422	012705	014634	i 520\$:	MOV #RDR14A,R5	; POINT TO EXPECTED RDRB		
8662	062426	004737	027222		JSR PC,LDXRDR	; LOAD INTO XRDRBO TABLE		
8663	062432	012705	002644		MOV #RDRB,R5	; CHECK RDRB		

8664	062436	004737	025032		JSR	PC,CHKRDR		; ERRORS ?		
8665	062442	103006			BCC	530:		; NO		
8666	062444				ERRHRD	424.,ERR021,MSG006		; YES, REPORT ERROR		
	062444	104456							TRAP	C#ERRHRD
	062446	000650							.WORD	424
	062450	02145:							.WORD	ERR021
	062452	017356							.WORD	MSG006
8667	062454				ESCAPE	TST		; AND ABORT TEST		
	062454	104410							TRAP	C#ESCAPE
	062456	000732							.WORD	L10055-.
8658										
8669										
8670	062460	012705	000070		; COMPARE RBUF WITH TBUF					
8671	062464	004737	026044		530:	MOV	#56.,R5		; COMPARE 56 WORDS OF DATA	
8672	062470	103006				JSR	PC,CMPDAT		; DATA COMPARE ERROR ?	
8673	062472					BCC	540:		; NO	
	062472	104456				ERRHRD	425.,ERR022,MSG007		; YES, REPORT ERROR	
	062474	000651							TRAP	C#ERRHRD
	062476	021534							.WORD	425
	062500	017520							.WORD	ERR022
8674	062502				ESCAPE	TST		; AND ABORT TEST		
	062502	104410							TRAP	C#ESCAPE
	062504	000704							.WORD	L10055-.
8675										
8676	062506	010305			540:	MOV	R3,R5		; POINT TO EXPECTED CRC TABLE	
8677	062510	004737	027176			JSR	PC,LDXCRC		; LOAD INTO XCRC TABLE	
8678	062514	012705	007300			MOV	#RBUF+124.,R5		; CHECK CRC	
8679	062520	004737	026124			JSR	PC,CHPCRC		; ERRORS ?	
8680	062524	103006				BCC	550:		; NO	
8681	062526					ERRHRD	426.,ERR023,MSG008		; YES, REPORT ERROR	
	062526	104456							TRAP	C#ERRHRD
	062530	000652							.WORD	426
	062532	021603							.WORD	ERR023
	062534	017552							.WORD	MSG008
8682	062536				ESCAPE	TST		; AND ABORT TEST		
	062536	104410							TRAP	C#ESCAPE
	062540	000650							.WORD	L10055-.
8683										
8684	062542	012777	000017	117456	550:	MOV	#STOP,#PCSR0		; ISSUE STOP PORT COMMAND	
8685	062550	004737	024574			JSR	PC,CHKDNI		; DNI ?	
8686	062554	103006				BCC	560:		; YES	
8687	062556					ERRHRD	427.,ERR019,MSG003		; NO, REPORT ERROR	
	062556	104456							TRAP	C#ERRHRD
	062560	000653							.WORD	427
	062562	021312							.WORD	ERR019
	062564	017110							.WORD	MSG003
8688	062566				ESCAPE	TST		; AND ABORT TEST		
	062566	104410							TRAP	C#ESCAPE
	062570	000620							.WORD	L10055-.
8689										
8690	062572	004737	025546		560:	JSR	PC,CLRDNI		; WRITE ONE TO CLEAR DNI	
8691									; ERROR ?	
8692	062576	103006				BCC	565:		; NO	
8693	062600					ERRHRD	428.,ERR006,MSG003		; YES, REPORT ERROR	
	062600	104456							TRAP	C#ERRHRD
	062602	000654							.WORD	428
	062604	020202							.WORD	ERR006







8763	063132	103006		BCC	650:			; NO			
8764	063134			ERRHRD	436.	ERR016,MSG003		; YES, REPORT ERROR			
	063134	104456							TRAP	C#ERHRD	
	063136	000664							.WORD	436	
	063140	021044							.WORD	ERR016	
	063142	017110							.WORD	MSG003	
8765	063144			ESCAPE	TST			; AND ABORT TEST			
	063144	104410							TRAP	C#ESCAPE	
	063146	000242							.WORD	L10055-	
8766											
8767	063150	012705	002644		650:	MOV	#RDRB,R5	; CHECK RDRB OWNERSHIP			
8768	063154	004737	024676			JSR	PC,CHKOWN	; OWN = PORT DRIVER ?			
8769	063160	103006				BCC	660:	; YES			
8770	063162					ERRHRD	437.,ERR017	; NO, REPORT ERROR			
	063162	104456							TRAP	C#ERHRD	
	063164	000665							.WORD	437	
	063166	021112							.WORD	ERR017	
	063170	000000							.WORD	0	
8771	063172			ESCAPE	TST			; AND ABORT TEST			
	063172	104410							TRAP	C#ESCAPE	
	063174	000214							.WORD	L10055-	
8772											
8773	063176	012705	014634		660:	MOV	#RDR14A,R5	; POINT TO EXPECTED RDRB			
8774	063202	004737	027222			JSR	PC,LDRDR	; LOAD INTO XRDRBO TABLE			
8775	063206	012705	002644			MOV	#RDRB,R5	; CHECK RDRB			
8776	063212	004737	025032			JSR	PC,CHKRDR	; ERRORS ?			
8777	063216	103006				BCC	670:	; NO			
8778	063220					ERRHRD	438.,ERR021,MSG006	; YES, REPORT ERROR			
	063220	104456							TRAP	C#ERHRD	
	063222	000666							.WORD	438	
	063224	021453							.WORD	ERR021	
	063226	017356							.WORD	MSG006	
8779	063230			ESCAPE	TST			; AND ABORT TEST			
	063230	104410							TRAP	C#ESCAPE	
	063232	000156							.WORD	L10055-	
8780											
8781											
8782	063234	012705	000070		670:	MOV	#56.,R5	; COMPARE 56 WORDS OF DATA			
8783	063240	004737	026044			JSR	PC,CMPDAT	; DATA COMPARE ERROR ?			
8784	063244	103006				BCC	680:	; NO			
8785	063246					ERRHRD	439.,ERR022,MSG007	; YES, REPORT ERROR			
	063246	104456							TRAP	C#ERHRD	
	063250	000667							.WORD	439	
	063252	021534							.WORD	ERR022	
	063254	017520							.WORD	MSG007	
8786	063256			ESCAPE	TST			; AND ABORT TEST			
	063256	104410							TRAP	C#ESCAPE	
	063260	000130							.WORD	L10055-	
8787											
8788	063262	010305			680:	MOV	R3,R5	; POINT TO EXPECTED CRC TABLE			
8789	063264	004737	027176			JSR	PC,LDXCRC	; LOAD INTO XCRC TABLE			
8790	063270	012705	007300			MOV	#RBUF+124.,R5	; CHECK CRC			
8791	063274	004737	026124			JSR	PC,CHPCRC	; ERRORS ?			
8792	063300	103006				BCC	690:	; NO			
8793	063302					ERRHRD	440.,ERR023,MSG008	; YES, REPORT ERROR			
	063302	104456							TRAP	C#ERHRD	
	063304	000670							.WORD	440	

	063306	021603						.WORD	ERR023
	063310	017552						.WORD	MSG008
8794	063312				ESCAPE	TST			; AND ABORT TEST
	063312	104410						TRAP	C#ESCAPE
	063314	000074						.WORD	L10055-.
8795									
8796	063316	012777	000017	116702	i 690\$:	MOV	#STOP,#PCSR0		; ISSUE STOP PORT COMMAND
8797	063324	004737	024574			JSR	PC,CHKDNI		; DNI ?
8798	063330	103006				BCC	700\$		; YES
8799	063332					ERRHRD	441.,ERR019,MSG003		; NO, REPORT ERROR
	063332	104456						TRAP	C#ERHRD
	063334	000671						.WORD	441
	063336	021312						.WORD	ERR019
	063340	017110						.WORD	MSG003
8800	063342				ESCAPE	TST			; AND ABORT TEST
	063342	104410						TRAP	C#ESCAPE
	063344	000044						.WORD	L10055-.
8801									
8802	063346	004737	025546		i 700\$:	JSR	PC,CLRDN1		; WRITE ONE TO CLEAR DNI
8803									; ERROR ?
8804	063352	103006				BCC	710\$		; NO
8805	063354					ERRHRD	442.,ERR006,MSG003		; YES, REPORT ERROR
	063354	104456						TRAP	C#ERHRD
	063356	000672						.WORD	442
	063360	020202						.WORD	ERR006
	063362	017110						.WORD	MSG003
8806	063364				ESCAPE	TST			; AND ABORT TEST
	063364	104410						TRAP	C#ESCAPE
	063366	000022						.WORD	L10055-.
8807									
8808	063370	062702	000006		i 710\$:	ADD	#6,R2		; UPDATE R2
8809	063374	062703	000004			ADD	#4,R3		; UPDATE R3
8810	063400	005301				DEC	R1		; DONE TEN LOOPBACKS
8811	063402	001402				BEQ	900\$		; YES
8812	063404	000137	062650			JMP	570\$		; NO
8813									
8814	063410				i 900\$:	ENDTST			
8815	063410								
	063410								
	063410	104401						L10055:	TRAP C#ETST

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.SBTTL TEST 24: ENABLE ALL MULTICAST MODE TEST
*****
:
: THIS TEST VERIFIES THAT ENABLE ALL MULTICAST MODE
: IS OPERATIONAL.
: A WRITE MULTICAST ADDRESS LIST FUNCTION IS USED TO SET
: THE DEUNA'S MULTICAST ADDRESS LIST.
: INTERNAL LOOPBACKS ARE THEN PERFORMED WITH
: CURRENTLY ENABLED AND THEN CURRENTLY DISABLED
: MULTICAST DESTINATION ADDRESSES.
: ALL LOOPBACKS ARE VERIFIED FOR SUCCESSFUL RECEPTION.
:
: TEST SEQUENCE:
: 1. WRITE MODE REGISTER = INTERNAL LOOPBACK
: AND ENABLE ALL MULTICAST MODE
: 2. WRITE RING FORMAT
: 3. WRITE PHYSICAL ADDRESS
: 4. WRITE MULTICAST ADDRESS LIST
: 5. SET UP RINGS AND BUFFERS
: WITH DESTINATION ADDRESS = MULTICAST ADDRESS
: 6. ISSUE START
: 7. CHECK FOR ERRORS
: 8. ISSUE STOP
: 9. REPEAT STEPS 5 - 8 FOR ALL TEN LIST ENTRIES
: 10. SET UP RINGS AND BUFFERS
: WITH DESTINATION ADDRESS = COMPLIMENTED MULTICAST ADDRESS
: 11. ISSUE START
: 12. CHECK FOR ERRORS
: 13. ISSUE STOP
: 14. REPEAT STEPS 10 - 13 FOR ALL TEN ENTRIES
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8851 063412
      063412
8852 063412 004737 027446
8853 063416 103025
8854 063420 012777 000040 116600
8855 063426 004737 024574
8856 063432 103006
8857 063434
      063434 104456
      063436 000673
      063440 020102
      063442 017110
8858 063444
      063444 104410
      063446 002000
8859
8860 063450 004737 025546
8861
8862 063454 103006
8863 063456
      063456 104456
      063460 000674
      063462 020202

```

```

BGNTST
:
: T24::
: IS A DEVICE RESET NEEDED?
: NO
: YES, RESET DEUNA
: DNI ?
: YES
: NO, REPORT ERROR
:
: AND ABORT TEST
:
: WRITE ONE TO CLEAR DNI
: ERROR ?
: NO
: YES, REPORT ERROR
:
:

```

```

TRAP C#ERRRD
.WORD 443
.WORD ERR004
.WORD MSG003
TRAP C#ESCAPE
.WORD L10056-.
TRAP C#ERRRD
.WORD 444
.WORD ERR006

```

```

      063464 017110
8864 063466          ESCAPE TST          ; AND ABORT TEST          .WORD MSG003
      063466 104410          TRAP          C#ESCAPE
      063470 001756          .WORD          L10056-.

8865
8866 063472 004737 026772          ; 30$: JSR PC,LDPCSR          ; ADDRESS OF PCBB -> PCSR2!3
8867 063476 012777 000001 116522  MOV #GETPCB,#PCSR0          ; ISSUE GET_PCBB PORT COMMAND
8868 063504 004737 024574          JSR PC,CHKDNI          ; DNI?
8869 063510 103006          BCC 40$          ; YES
8870 063512          ERRHRD 445.,ERR009,MSG003          ; NO, REPORT ERROR          TRAP C#ERHRD
      063512 104456          .WORD          445
      063514 000675          .WORD          ERR009
      063516 020416          .WORD          MSG003
      063520 017110
8871 063522          ESCAPE TST          ; AND ABORT TEST          TRAP C#ESCAPE
      063522 104410          .WORD          L10056-.
      063524 001722

8872
8873 063526 004737 025546          ; 40$: JSR PC,CLRDNl          ; WRITE ONE TO CLEAR DNI
8874          BCC 50$          ; ERROR ?
8875 063532 103006          ERRHRD 446.,ERR006,MSG003          ; NO
8876 063534          .WORD          ; YES, REPORT ERROR          TRAP C#ERHRD
      063534 104456          .WORD          446
      063536 000676          .WORD          ERR006
      063540 020202          .WORD          MSG003
      063542 017110
8877 063544          ESCAPE TST          ; AND ABORT TEST          TRAP C#ESCAPE
      063544 104410          .WORD          L10056-.
      063546 001700

8878
8879          ;WRITE MODE REGISTER = INTERNAL LOOPBACK
8880          ; AND ENABLE ALL MULTICAST MODE
8881
8882 063550 012705 013244          ; 50$: MOV #WTMODE,R5          ; DEFAULT WRITE MODE FUNCTION
8883 063554 004737 026742          JSR PC,LDPCBB          ; LOAD FUNCTION -> PCBB
8884 063560 013737 015120 002266  MOV MODE24,PCBB+2          ; MODE = INTL LOOPBACK AND ENAL
8885 063566 012777 000002 116432  MOV #GETCMD,#PCSR0          ; ISSUE GET_CMD PORT COMMAND
8886 063574 004737 024574          JSR PC,CHKDNI          ; DNI ?
8887 063600 103006          BCC 60$          ; YES
8888 063602          ERRHRD 447.,ERR010,MSG003          ; NO, REPORT ERROR          TRAP C#ERHRD
      063602 104456          .WORD          447
      063604 000677          .WORD          ERR010
      063606 020502          .WORD          MSG003
      063610 017110
8889 063612          ESCAPE TST          ; AND ABORT TEST          TRAP C#ESCAPE
      063612 104410          .WORD          L10056-.
      063614 001632

8890
8891 063616 004737 025546          ; 60$: JSR PC,CLRDNl          ; WRITE ONE TO CLEAR DNI
8892          BCC 70$          ; ERROR ?
8893 063622 103006          ERRHRD 448.,ERR006,MSG003          ; NO
8894 063624          .WORD          ; YES, REPORT ERROR          TRAP C#ERHRD
      063624 104456          .WORD          448
      063626 000700          .WORD          ERR006
      063630 020202          .WORD          MSG003
      063632 017110
8895 063634          ESCAPE TST          ; AND ABORT TEST

```

063634	104410					TRAP	C#ESCAPE
063636	001610					.WORD	L10056-.
8896							
8897							
8898	063640	012705	013204				
8899	063644	004737	026742				
8900	063650	012705	013324				
8901	063654	012700	000006				
8902	063660	004737	027142				
8903	063664	012777	000002	116334			
8904	063672	004737	024574				
8905	063676	103006					
8906	063700						
	063700	104456				TRAP	C#ERRRD
	063702	000701				.WORD	449
	063704	020502				.WORD	ERR010
	063706	017110				.WORD	MSG003
8907	063710				ESCAPE TST		: AND ABORT TEST
	063710	104410				TRAP	C#ESCAPE
	063712	001534				.WORD	L10056-.
8908							
8909	063714	004737	025546				
8910							
8911	063720	103006					
8912	063722						
	063722	104456				TRAP	C#ERRRD
	063724	000702				.WORD	450
	063726	020202				.WORD	ERR006
	063730	017110				.WORD	MSG003
8913	063732				ESCAPE TST		: AND ABORT TEST
	063732	104410				TRAP	C#ESCAPE
	063734	001512				.WORD	L10056-.
8914							
8915							
8916	063736	012705	013144				
8917	063742	004737	026742				
8918	063746	012777	000002	116252			
8919	063754	004737	024574				
8920	063760	103006					
8921	063762						
	063762	104456				TRAP	C#ERRRD
	063764	000703				.WORD	451
	063766	020502				.WORD	ERR010
	063770	017110				.WORD	MSG003
8922	063772				ESCAPE TST		: AND ABORT TEST
	063772	104410				TRAP	C#ESCAPE
	063774	001452				.WORD	L10056-.
8923							
8924	063776	004737	025546				
8925							
8926	064002	103006					
8927	064004						
	064004	104456				TRAP	C#ERRRD
	064006	000704				.WORD	452
	064010	020202				.WORD	ERR006
	064012	017110				.WORD	MSG003
8928	064014				ESCAPE TST		: AND ABORT TEST

: WRITE RING FORMAT

70#: MOV #WTRNGS,R5  
 JSR PC,LDPCBB  
 MOV #RFRMT,R5  
 MOV #6,R0  
 JSR PC,LDUDBB  
 MOV #GETCMD,#PCSR0  
 JSR PC,CHKDNI  
 BCC 80#  
 ERRHRD 449.,ERR010,MSG003

: DEFAULT WRITE RING FORMAT FUNCTION  
 : LOAD FUNCTION -> PCBB  
 : DEFAULT RING FORMAT  
 : FORMAT = SIX WORDS  
 : LOAD RING FORMAT -> UDBB  
 : ISSUE GET\_CMD PORT COMMAND  
 : DNI ?  
 : YES  
 : NO, REPORT ERROR

ESCAPE TST

: AND ABORT TEST

80#:

JSR PC,CLRDN1  
 BCC 90#  
 ERRHRD 450.,ERR006,MSG003

: WRITE ONE TO CLEAR DNI  
 : ERROR ?  
 : NO  
 : YES, REPORT ERROR

ESCAPE TST

: AND ABORT TEST

: WRITE PHYSICAL ADDRESS

90#: MOV #WTPHYA,R5  
 JSR PC,LDPCBB  
 MOV #GETCMD,#PCSR0  
 JSR PC,CHKDNI  
 BCC 100#  
 ERRHRD 451.,ERR010,MSG003

: DEFAULT WRITE PHYSICAL ADDR FUNC  
 : LOAD FUNCTION -> PCBB  
 : ISSUE GET\_CMD PORT COMMAND  
 : DNI ?  
 : YES  
 : NO, REPORT ERROR

ESCAPE TST

: AND ABORT TEST

100#:

JSR PC,CLRDN1  
 BCC 102#  
 ERRHRD 452.,ERR006,MSG003

: WRITE ONE TO CLEAR DNI  
 : ERROR ?  
 : NO  
 : YES, REPORT ERROR

ESCAPE TST

: AND ABORT TEST

```

064014 104410 TRAP C#ESCAPE
064016 001430 .WORD L10056-.

8929 ;
8930 ;WRITE MULTICAST ADDRESS LIST
8931 064020 012705 013164 102#: MOV #HTMULA,R5 ; DEFAULT WRITE MULTICAST ADDR FUNC
8932 064024 004737 026742 JSR PC,LDPBB ; LOAD FUNCTION -> PCBB
8933 064030 012705 014334 MOV #MULTL,R5 ; LOAD LIST INTO UDBB
8934 064034 012700 000036 MOV #30.,R0 ; LOAD 30 ENTRIES
8935 064040 004737 027142 JSR PC,LDUDBB ; MULTICAST LIST -> UDBB
8936 064044 012777 000002 116154 MOV #GETCMD,@PCSR0 ; ISSUE GET_CMD PORT COMMAND
8937 064052 004737 024574 JSR PC,CHKDNI ; DNI ?
8938 064056 103006 BCC 104# ; YES
8939 064060 ERRHRD 453.,ERR010,MSG003 ; NO, REPORT ERROR
064060 104456 TRAP C#ERHRD
064062 000705 .WORD 453
064064 020502 .WORD ERR010
064066 017110 .WORD MSG003

8940 ESCAPE TST ; AND ABORT TEST TRAP C#ESCAPE
064070 104410 .WORD L10056-.
064072 001354

8941 ;
8942 064074 004737 025546 104#: JSR PC,CLRDN1 ; WRITE ONE TO CLEAR DNI
8943 BCC 106# ; ERROR ?
8944 064100 103006 ; NO
8945 064102 ERRHRD 454.,ERR006,MSG003 ; YES, REPORT ERROR
064102 104456 TRAP C#ERHRD
064104 000706 .WORD 454
064106 020202 .WORD ERR006
064110 017110 .WORD MSG003

8946 ESCAPE TST ; AND ABORT TEST TRAP C#ESCAPE
064112 104410 .WORD L10056-.
064114 001332

8947 ;
8948 ;DO TEN LOOPS WITH DEST ADDR = MULTICAST ADDRESS
8949 ;
8950 064116 012701 000012 106#: MOV #10.,R1 ; DO LOOP = TEN
8951 064122 012702 014334 MOV #MULTL,R2 ; R2 POINTS TO MULTICAST LIST
8952 064126 012703 014754 MOV #CRC22A,R3 ; R3 POINTS TO EXPECTED CRC TABLE
8953 ;
8954 ;SET UP RINGS FOR ONE BUFFER LOOPBACK
8955 064132 012705 013554 110#: MOV #TORB1A,R5 ; DEFAULT ONE BUFFER TRANSMIT RING
8956 064136 004737 027046 JSR PC,LDTDRB ; LOAD TDRB
8957 064142 012705 013354 MOV #RDRB1A,R5 ; DEFAULT ONE BUFFER RECEIVE RING
8958 064146 004737 027010 JSR PC,LDRDRB ; LOAD RDRB
8959 ;
8960 ;SET UP BUFFERS AND START
8961 064152 010205 MOV R2,R5 ; POINT TO DESTINATION ADDRESS
8962 064154 004737 026714 JSR PC,LDDDEST ; LOAD DEST
8963 064160 004737 027342 JSR PC,SETBUF ; SET UP BUFFERS
8964 064164 012777 000004 116034 MOV #START,@PCSR0 ; ISSUE START PORT COMMAND
8965 064172 004737 024574 JSR PC,CHKDNI ; DNI?
8966 064176 103006 BCC 120# ; YES
8967 064200 ERRHRD 455.,ERR012,MSG003 ; NO, REPORT ERROR
064200 104456 TRAP C#ERHRD
064202 000707 .WORD 455
064204 020633 .WORD ERR012
064206 017110 .WORD MSG003

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8968	064210			ESCAPE	TST		; AND ABORT TEST		
	064210	104410						TRAP	C#ESCAPE
	064212	001234						.WORD	L10056-.
8969									
8970	064214	004737	025546	i	120#:	JSR	PC,CLRDN1		; WRITE ONE TO CLEAR DNI
8971									; ERROR ?
8972	064220	103006				BCC	130#		; NO
8973	064222					ERRHRD	456.,ERR006,MSG003		; YES, REPORT ERROR
	064222	104456						TRAP	C#ERHRD
	064224	000710						.WORD	456
	064226	020202						.WORD	ERR006
	064230	017110						.WORD	MSG003
8974	064232					ESCAPE	TST		; AND ABORT TEST
	064232	104410						TRAP	C#ESCAPE
	064234	001212						.WORD	L10056-.
8975									
8976	064236	004737	025404	i	130#:	JSR	PC,CHKTXI		; TXI ?
8977	064242	103006				BCC	140#		; YES
8978	064244					ERRHRD	457.,ERR013,MSG003		; NO, REPORT ERROR
	064244	104456						TRAP	C#ERHRD
	064246	000711						.WORD	457
	064250	020714						.WORD	ERR013
	064252	017110						.WORD	MSG003
8979	064254					ESCAPE	TST		; AND ABORT TEST
	064254	104410						TRAP	C#ESCAPE
	064256	001170						.WORD	L10056-.
8980									
8981	064260	004737	025730	i	140#:	JSR	PC,CLRTXI		; WRITE ONE TO CLEAR TXI
8982									; ERROR ?
8983	064264	103006				BCC	150#		; NO
8984	064266					ERRHRD	458.,ERR014,MSG003		; YES, REPORT ERROR
	064266	104456						TRAP	C#ERHRD
	064270	000712						.WORD	458
	064272	020745						.WORD	ERR014
	064274	017110						.WORD	MSG003
8985	064276					ESCAPE	TST		; AND ABORT TEST
	064276	104410						TRAP	C#ESCAPE
	064300	001146						.WORD	L10056-.
8986									
8987	064302	012705	002604	i	150#:	MOV	#TDRB,R5		; CHECK TDRB OWNERSHIP
8988	064306	064737	024676			JSR	PC,CHKOWN		; OWN = PORT DRIVER ?
8989	064312	103006				BCC	160#		; YES
8990	064314					ERRHRD	459.,ERR018		; NO, REPORT ERROR
	064314	104456						TRAP	C#ERHRD
	064316	000713						.WORD	459
	064320	021212						.WORD	ERR018
	064322	000000						.WORD	0
8991	064324					ESCAPE	TST		; AND ABORT TEST
	064324	104410						TRAP	C#ESCAPE
	064326	001120						.WORD	L10056-.
8992									
8993	064330	012705	014524	i	160#:	MOV	#TDR14A,R5		; POINT TO EXPECTED TDRB
8994	064334	004737	027252			JSR	PC,LDXTDR		; LOAD INTO XTDRBO TABLE
8995	064340	012705	002604			MOV	#TDRB,R5		; CHECK TDRB
8996	064344	004737	025316			JSR	PC,CHKTDR		; ERRORS ?
8997	064350	103006				BCC	170#		; NO
8998	064352					ERRHRD	460.,ERR020,MSG005		; YES, REPORT ERROR





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9026                                     ;COMPARE RBUF WITH TBUF
9027 064516 012705 000070          210$: MOV    #56.,R5                ; COMPARE 56 WORDS OF DATA
9028 064522 064737 026044          JSR    PC,CMPDAT           ; DATA COMPARE ERROR ?
9029 064526 103006                  BCC    220$                ; NO
9030 064530                               ERRHRD 465.,ERR022,MSG007    ; YES, REPORT ERROR
                                TRAP    C$ERHRD
                                .WORD   465
                                .WORD   ERR022
                                .WORD   MSG007
                                .WORD
9031 064540                               ESCAPE TST                ; AND ABORT TEST
                                TRAP    C$ESCAPE
                                .WORD   L10056-.
9032                                     ;
9033 064544 010305                  ; 220$: MOV    R3,R5                ; POINT TO EXPECTED CRC TABLE
9034 064546 004737 027176          JSR    PC,LDXCRC           ; LOAD INTO XCRC TABLE
9035 064552 012705 007300          MOV    #RBUF+124.,R5      ; CHECK CRC
9036 064556 004737 026124          JSR    PC,CMPCRC           ; ERRORS ?
9037 064562 103006                  BCC    230$                ; NO
9038 064564                               ERRHRD 466.,ERR023,MSG008    ; YES, REPORT ERROR
                                TRAP    C$ERHRD
                                .WORD   466
                                .WORD   ERR023
                                .WORD   MSG008
                                .WORD
9039 064574                               ESCAPE TST                ; AND ABORT TEST
                                TRAP    C$ESCAPE
                                .WORD   L10056-.
9040                                     ;
9041 064600 012777 000017 115420 230$: MOV    #STOP,@PCSR0        ; ISSUE STOP PORT COMMAND
9042 064606 004737 024574          JSR    PC,CHKDNI           ; DNI ?
9043 064612 103006                  BCC    240$                ; YES
9044 064614                               ERRHRD 467.,ERR019,MSG003    ; NO, REPORT ERROR
                                TRAP    C$ERHRD
                                .WORD   467
                                .WORD   ERR019
                                .WORD   MSG003
                                .WORD
9045 064624                               ESCAPE TST                ; AND ABORT TEST
                                TRAP    C$ESCAPE
                                .WORD   L10056-.
9046                                     ;
9047 064630 004737 025546          ; 240$: JSR    PC,CLR DNI        ; WRITE ONE TO CLEAR DNI
9048                                     ; ERROR ?
9049 064634 103006                  BCC    245$                ; NO
9050 064636                               ERRHRD 468.,ERR006,MSG003    ; YES, REPORT ERROR
                                TRAP    C$ERHRD
                                .WORD   468
                                .WORD   ERR006
                                .WORD   MSG003
                                .WORD
9051 064646                               ESCAPE TST                ; AND ABORT TEST
                                TRAP    C$ESCAPE
                                .WORD   L10056-.
9052                                     ;
9053 064652 062702 000006          ; 245$: ADD    #6,R2                ; UPDATE R2
9054 064656 062703 000004          ADD    #4,R3                ; UPDATE R3
9055 064662 005301                  DEC    R1                    ; DONE TEN LOOPBACKS
9056 064664 001402                  BEQ    246$                ; YES
9057 064666 000137 064132          JMP    110$                ; NO
9058                                     ;

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9059      ;DO TEN LOOPS WITH DEST ADDRESS = COMPLIMENTED MULTICAST ADDRESS
9060
9061      ;
9062 064672 012701 000012      246$:  MOV    #10.,R1          ; DO LOOP = TEN
9063 064676 012702 014430      MOV    #MULTLC,R2        ; R2 POINTS TO COMPLIMENTED LIST
9064 064702 012703 015024      MOV    #CRC22B,R3       ; R3 POINTS TO EXPECTED CRC LIST
9065
9066      ;SET UP RINGS FOR ONE BUFFER LOOPBACK
9067 064706 012705 013554      250$:  MOV    #TDRB1A,R5    ; DEFAULT ONE BUFFER TRANSMIT RING
9068 064712 004737 027046      JSR    PC,LDTDRB        ; LOAD TDRB
9069 064716 012705 013354      MOV    #RDRB1A,R5     ; DEFAULT ONE BUFFER RECEIVE RING
9070 064722 004737 027010      JSR    PC,LDRDRB        ; LOAD RDRB
9071
9072      ;SET UP BUFFERS AND START
9073 064726 010205              MOV    R2,R5           ; POINT TO COMPLEMENTED ADDRESS
9074 064730 004737 026714      JSR    PC,LDDDEST      ; LOAD DEST
9075 064734 004737 027342      JSR    PC,SETBUF       ; SET UP BUFFERS
9076 064740 012777 000004      MOV    #START,@PCSR0   ; ISSUE START PORT COMMAND
9077 064746 004737 024574      JSR    PC,CHKDNI       ; DNI?
9078 064752 103006              BCC    260$            ; YES
9079 064754              ERRHRD 469.,ERR012,MSG003 ; NO, REPORT ERROR
          064754 104456              TRAP   C$ERHRD
          064756 000725              .WORD 469
          064760 020633              .WORD ERR012
          064762 017110              .WORD MSG003
9080 064764              ESCAPE TST                ; AND ABORT TEST
          064764 104410              TRAP   C$ESCAPE
          064766 000460              .WORD L10056-.
9081
9082 064770 004737 025546      260$:  JSR    PC,CLRDN1     ; WRITE ONE TO CLEAR DNI
9083
9084 064774 103006              BCC    270$            ; ERROR ?
9085 064776              ERRHRD 470.,ERR006,MSG003 ; NO
          064776 104456              ; YES, REPORT ERROR
          065000 000726              TRAP   C$ERHRD
          065002 020202              .WORD 470
          065004 017110              .WORD ERR006
          065006 104410              .WORD MSG003
9086 065006              ESCAPE TST                ; AND ABORT TEST
          065006 104410              TRAP   C$ESCAPE
          065010 000436              .WORD L10056-.
9087
9088 065012 004737 025404      270$:  JSR    PC,CHKTXI     ; TXI ?
9089 065016 103006              BCC    280$            ; YES
9090 065020              ERRHRD 471.,ERR013,MSG003 ; NO, REPORT ERROR
          065020 104456              TRAP   C$ERHRD
          065022 000727              .WORD 471
          065024 020714              .WORD ERR013
          065026 017110              .WORD MSG003
9091 065030              ESCAPE TST                ; AND ABORT TEST
          065030 104410              TRAP   C$ESCAPE
          065032 000414              .WORD L10056-.
9092
9093 065034 004737 025730      280$:  JSR    PC,CLRTXI     ; WRITE ONE TO CLEAR TXI
9094
9095 065040 103006              BCC    290$            ; ERROR ?
9096 065042              ERRHRD 472.,ERR014,MSG003 ; NO
          065042 104456              ; YES, REPORT ERROR
          TRAP   C$ERHRD

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	065044	000730					.WORD	472
	065046	020745					.WORD	ERR014
	065050	017110					.WORD	MSG003
9097	065052			ESCAPE	TST			; AND ABORT TEST
	065052	104410					TRAP	C#ESCAPE
	065054	000372					.WORD	L10056-.
9098								
9099	065056	012705	002604	i	290:	MOV	#TDRB,R5	; CHECK TDRB OWNERSHIP
9100	065062	004737	024676			JSR	PC,CHKOWN	; OWN = PORT DRIVER ?
9101	065066	103006				BCC	300:	; YES
9102	065070					ERRHRD	473.,ERR018	; NO, REPORT ERROR
	065070	104456						TRAP
	065072	000731					.WORD	C#ERRHD
	065074	021212					.WORD	473
	065076	000000					.WORD	ERR018
9103	065100			ESCAPE	TST			0
	065100	104410					TRAP	C#ESCAPE
	065102	000344					.WORD	L10056-.
9104								
9105	065104	012705	014524	i	300:	MOV	#TDR14A,R5	; POINT TO EXPECTED TDRB
9106	065110	004737	027252			JSR	PC,LDXTDR	; LOAD INTO XTDRBO TABLE
9107	065114	012705	002604			MOV	#TDRB,R5	; CHECK TDRB
9108	065120	004737	025316			JSR	PC,CHKTDR	; ERRORS ?
9109	065124	103006				BCC	420:	; NO
9110	065126					ERRHRD	474.,ERR020,MSG005	; YES, REPORT ERROR
	065126	104456						TRAP
	065130	000732					.WORD	C#ERRHD
	065132	021372					.WORD	474
	065134	017214					.WORD	ERR020
9111	065136			ESCAPE	TST			MSG005
	065136	104410					TRAP	C#ESCAPE
	065140	000306					.WORD	L10056-.
9112								
9113	065142	004737	025132	i	420:	JSR	PC,CHKRXI	; RXI ?
9114	065146	103006				BCC	430:	; YES
9115	065150					ERRHRD	475.,ERR015,MSG003	; NO, REPORT ERROR
	065150	104456						TRAP
	065152	000733					.WORD	C#ERRHD
	065154	021013					.WORD	475
	065156	017110					.WORD	ERR015
9116	065160			ESCAPE	TST			MSG003
	065160	104410					TRAP	C#ESCAPE
	065162	000264					.WORD	L10056-.
9117								
9118	065164	004737	025662	i	430:	JSR	PC,CLRRXI	; WRITE ONE TO CLEAR RXI
9119								; ERROR ?
9120	065170	103006				BCC	440:	; NO
9121	065172					ERRHRD	476.,ERR016,MSG003	; YES, REPORT ERROR
	065172	104456						TRAP
	065174	000734					.WORD	C#ERRHD
	065176	021044					.WORD	476
	065200	017110					.WORD	ERR016
9122	065202			ESCAPE	TST			MSG003
	065202	104410					TRAP	C#ESCAPE
	065204	000242					.WORD	L10056-.
9123								
9124	065206	012705	002644	i	440:	MOV	#RDRB,R5	; CHECK RDRB OWNERSHIP

9125	065212	004737	024676		JSR	PC,CHKOWN		: OWN = PORT DRIVER ?		
9126	065216	103006			BCC	450:		: YES		
9127	065220				ERRHRD	477.,ERR017		: NO, REPORT ERROR		
	065220	104456							TRAP	C#ERRHRD
	065222	000735							.WORD	477
	065224	021112							.WORD	ERR017
	065226	000000							.WORD	0
9128	065230				ESCAPE	TST		: AND ABORT TEST		
	065230	104410							TRAP	C#ESCAPE
	065232	000214							.WORD	L10056-.
9129										
9130	065234	012705	014634		450:	MOV	#RDR14A,R5	: POINT TO EXPECTED RDRB		
9131	065240	004737	027222			JSR	PC,LDRDR	: LOAD INTO XRDRBO TABLE		
9132	065244	012705	002644			MOV	#RDRB,R5	: CHECK RDRB		
9133	065250	004737	025032			JSR	PC,CHKRDR	: ERRORS ?		
9134	065254	103006				BCC	460:	: NO		
9135	065256					ERRHRD	478.,ERR021,MSG006	: YES, REPORT ERROR		
	065256	104456							TRAP	C#ERRHRD
	065260	000736							.WORD	478
	065262	021453							.WORD	ERR021
	065264	017356							.WORD	MSG006
9136	065266				ESCAPE	TST		: AND ABORT TEST		
	065266	104410							TRAP	C#ESCAPE
	065270	000156							.WORD	L10056-.
9137										
9138										
9139	065272	012705	000070							
9140	065276	004737	026044		460:	MOV	#56.,R5	: COMPARE 56 WORDS OF DATA		
9141	065302	103006				JSR	PC,CHPDAT	: DATA COMPARE ERROR ?		
9142	065304					BCC	470:	: NO		
	065304	104456				ERRHRD	479.,ERR022,MSG007	: YES, REPORT ERROR		
	065306	000737							TRAP	C#ERRHRD
	065310	021534							.WORD	479
	065312	017520							.WORD	ERR022
9143	065314				ESCAPE	TST		: AND ABORT TEST		
	065314	104410							TRAP	C#ESCAPE
	065316	000130							.WORD	L10056-.
9144										
9145	065320	010305			470:	MOV	R3,R5	: POINT TO EXPECTED CRC TABLE		
9146	065322	004737	027176			JSR	PC,LDXCRC	: LOAD INTO XCRC TABLE		
9147	065326	012705	007300			MOV	#RBUF*124.,R5	: CHECK CRC		
9148	065332	004737	026124			JSR	PC,CHPCRC	: ERRORS ?		
9149	065336	103006				BCC	480:	: NO		
9150	065340					ERRHRD	480.,ERR023,MSG008	: YES, REPORT ERROR		
	065340	104456							TRAP	C#ERRHRD
	065342	000740							.WORD	480
	065344	021603							.WORD	ERR023
	065346	017552							.WORD	MSG008
9151	065350				ESCAPE	TST		: AND ABORT TEST		
	065350	104410							TRAP	C#ESCAPE
	065352	000074							.WORD	L10056-.
9152										
9153	065354	012777	000017	114644	480:	MOV	#STOP,#PCSR0	: ISSUE STOP PORT COMMAND		
9154	065362	004737	024574			JSR	PC,CHKDNI	: DNI ?		
9155	065366	103006				BCC	490:	: YES		
9156	065370					ERRHRD	481.,ERR019,MSG003	: NO, REPORT ERROR		
	065370	104456							TRAP	C#ERRHRD

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065372 000741 .WORD 481
065374 021312 .WORD ERR019
065376 017110 .WORD MSG003
9157 065400 ESCAPE TST ; AND ABORT TEST
065400 104410 TRAP C#ESCAPE
065402 000044 .WORD L10056-.
9158
9159 065404 004737 025546 ;490: JSR PC,CLRDNI ; WRITE ONE TO CLEAR DNI
9160 ; ERROR ?
9161 065410 103006 BCC 495: ; NO
9162 065412 ERRHRD 482.,ERR006,MSG003 ; YES, REPORT ERROR
065412 104456 TRAP C#ERRRD
065414 000742 .WORD 482
065416 020202 .WORD ERR006
065420 017110 .WORD MSG003
9163 065422 ESCAPE TST ; AND ABORT TEST
065422 104410 TRAP C#ESCAPE
065424 000022 .WORD L10056-.
9164
9165 065426 062702 000006 ;495: ADD #6,R2 ; UPDATE R2
9166 065432 062703 000004 ADD #4,R3 ; UPDATE R3
9167 065436 005301 DEC R1 ; DONE TEN LOOPBACKS ?
9168 065440 001402 BEQ 500: ; YES
9169 065442 000137 064706 JMP 250: ; NO
9170
9171 065446 ;500:
9172 065446 ENDTST
065446 104401 L10056: TRAP C#ETST

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065450 004737 027446  
065454 173025  
065456 012777 000040 114542  
065464 004737 024574  
065470 103006  
065472 104456  
065474 000743  
065476 020102  
065500 017110  
065502 104410  
065504 001462  
065506 004737 025546  
065512 103006  
065514 104456  
065516 000744  
065520 020202  
065522 017110

.SBTTL TEST 25: PAD RUNT PACKETS TEST

\*\*\*\*\*  
: THIS TEST VERIFIES THAT PAD RUNT PACKET MODE IS OPERATIONAL.  
: THIS TEST WILL  
: FIRST, ATTEMPT TO TRANSMIT A RUNT PACKET  
: WHEN NOT IN PAD RUNT PACKET MODE AND VERIFY THAT A  
: BUFL ERROR IN TDRB+6 OCCURS.  
: SECOND, TRANSMIT A RUNT PACKET  
: WHEN IN PAD RUNT PACKET MODE AND VERIFY  
: SUCCESSFUL TRANSMISSION AS WELL AS PADDING OCCURS.  
:  
: TEST SEQUENCE:  
: 1. WRITE MODE REGISTER = INTERNAL LOOPBACK, PROM MODE  
: 2. WRITE RING FORMAT  
: 3. WRITE PHYSICAL ADDRESS  
: 4. SET UP RINGS AND BUFFERS  
: WITH THE TRANSMIT BUFFER = RUNT PACKET  
: 5. ISSUE START  
: 6. CHECK FOR BUFL ERROR IN TDRB+6  
: 7. ISSUE STOP  
: 8. WRITE MODE REGISTER = INTERNAL LOOPBACK, PROM  
: AND PAD RUNT PACKET MODE  
: 9. SET UP RINGS AND BUFFERS  
: WITH THE TRANSMIT BUFFER = RUNT PACKET  
: 10. ISSUE START  
: 11. CHECK FOR ERRORS  
: 12. VERIFY PACKET HAS BEEN PADDED  
: 13. ISSUE STOP  
: \*\*\*\*\*

BGNTST

JSR PC,TINIT ; IS A DEVICE RESET NEEDED?  
BCC 304 ; NO  
MOV #RSET,SPCSR0 ; YES, RESET DEUNA  
JSR PC,CHKDNI ; DNI ?  
BCC 204 ; YES  
ERRHRD 483.,ERR004,MSG003 ; NO, REPORT ERROR  
ESCAPE TST ; AND ABORT TEST  
JSR PC,CLRDNI ; WRITE ONE TO CLEAR DNI  
BCC 304 ; ERROR ?  
ERRHRD 484.,ERR006,MSG003 ; NO  
YES, REPORT ERROR

T25::  
TRAP C\$ERHRD  
.WORD 483  
.WORD ERR004  
.WORD MSG003  
TRAP C\$ESCAPE  
.WORD L1C057-.  
TRAP C\$ERHRD  
.WORD 484  
.WORD ERR006  
.WORD MSG003

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9220 065524          ESCAPE TST          ; AND ABORT TEST          TRAP C#ESCAPE
      065524 104410          .WORD L10057-.
      065526 001440
9221
9222 065530 004737 026772          ; 30$: JSR PC,LDPCSR          ; ADDRESS OF PCBB -> PCSR2!3
9223 065534 012777 000001 114464  ; MOV #GETPCB,@PCSR0          ; ISSUE GET_PCBB PORT COMMAND
9224 065542 004737 024574          ; JSR PC,CHKDNI          ; DNI?
9225 065546 103006          ; BCC 40$          ; YES
9226 065550          ERRHRD 485.,ERR009,MSG003          ; NO, REPORT ERROR
      065550 104456          TRAP C#ERHRD
      065552 000745          .WORD 485
      065554 020416          .WORD ERR009
      065556 017110          .WORD MSG003
9227 065560          ESCAPE TST          ; AND ABORT TEST          TRAP C#ESCAPE
      065560 104410          .WORD L10057-.
      065562 001404
9228
9229 065564 004737 025546          ; 40$: JSR PC,CLRDNI          ; WRITE ONE TO CLEAR DNI
9230
9231 065570 103006          ; BCC 50$          ; ERROR ?
9232 065572          ERRHRD 486.,ERR006,MSG003          ; NO
      065572 104456          ; YES, REPORT ERROR          TRAP C#ERHRD
      065574 000746          .WORD 486
      065576 020202          .WORD ERR006
      065600 017110          .WORD MSG003
9233 065602          ESCAPE TST          ; AND ABORT TEST          TRAP C#ESCAPE
      065602 104410          .WORD L10057-.
      065604 001362
9234
9235          ;WRITE MODE REGISTER = INTERNAL LOOPBACK AND PROM MODE
9236 065606 012705 013244          ; 50$: MOV #WTHMODE,R5          ; DEFAULT WRITE MODE FUNCTION
9237 065612 004737 026742          ; JSR PC,LDPCBB          ; LOAD FUNCTION -> PCBB
9238 065616 012777 000002 114402  ; MOV #GETCMD,@PCSR0          ; ISSUE GET_CMD PORT COMMAND
9239 065624 004737 024574          ; JSR PC,CHKDNI          ; DNI ?
9240 065630 103006          ; BCC 60$          ; YES
9241 065632          ERRHRD 487.,ERR010,MSG003          ; NO, REPORT ERROR
      065632 104456          TRAP C#ERHRD
      065634 000747          .WORD 487
      065636 020502          .WORD ERR010
      065640 017110          .WORD MSG003
9242 065642          ESCAPE TST          ; AND ABORT TEST          TRAP C#ESCAPE
      065642 104410          .WORD L10057-.
      065644 001322
9243
9244 065646 004737 025546          ; 60$: JSR PC,CLRDNI          ; WRITE ONE TO CLEAR DNI
9245
9246 065652 103006          ; BCC 70$          ; ERROR ?
9247 065654          ERRHRD 488.,ERR006,MSG003          ; NO
      065654 104456          ; YES, REPORT ERROR          TRAP C#ERHRD
      065656 000750          .WORD 488
      065660 020202          .WORD ERR006
      065662 017110          .WORD MSG003
9248 065664          ESCAPE TST          ; AND ABORT TEST          TRAP C#ESCAPE
      065664 104410          .WORD L10057-.
      065666 001300
9249
9250          ;WRITE RING FORMAT
    
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9251 065670 012705 013204          70$:  MOV    #WTRNGS,R5          ; DEFAULT WRITE RING FORMAT FUNCTION
9252 065674 004737 026742          JSR    PC,LDPCCB          ; LOAD FUNCTION -> PCBB
9253 065700 012705 013324          MOV    #RFRMT,R5         ; DEFAULT RING FORMAT
9254 065704 012700 000006          MOV    #6,R0              ; FORMAT = SIX WORDS
9255 065710 004737 027142          JSR    PC,LDUDBB          ; LOAD RING FORMAT -> UDBB
9256 065714 012777 000302          MOV    #GETCMD,#PCSR0    ; ISSUE GET_CMD PORT COMMAND
9257 065722 004737 024574          JSR    PC,CHKDNI         ; DNI ?
9258 065726 103006                   BCC    80$                ; YES
9259 065730                   ERRHRD 489.,ERR010,MSG003 ; NO, REPORT ERROR
                                TRAP    C#ERHRD
                                .WORD   489
                                .WORD   ERR010
                                .WORD   MSG003
9260 065740                   ESCAPE TST                ; AND ABORT TEST
                                TRAP    C#ESCAPE
                                .WORD   L10057-.
9261 065744 004737 025546          ;
9262 065744 004737 025546          ;80$:  JSR    PC,CLRDN1         ; WRITE ONE TO CLEAR DNI
9263 065750 103006                   BCC    90$                ; ERROR ?
9264 065752 104456                   ERRHRD 490.,ERR006,MSG003 ; NO
9265 065752 104456                   ERRHRD 490.,ERR006,MSG003 ; YES, REPORT ERROR
                                TRAP    C#ERHRD
                                .WORD   490
                                .WORD   ERR006
                                .WORD   MSG003
9266 065762 104410                   ESCAPE TST                ; AND ABORT TEST
                                TRAP    C#ESCAPE
                                .WORD   L10057-.
9267 065764 001202                   ;
9268 065766 012705 013144          ;WRITE PHYSICAL ADDRESS
9269 065772 004737 026742          90$:  MOV    #WTPHYA,R5     ; DEFAULT WRITE PHYSICAL ADDR FUNC
9270 065776 012777 000002          JSR    PC,LDPCCB          ; LOAD FUNCTION -> PCBB
9271 066004 004737 024574          MOV    #GETCMD,#PCSR0    ; ISSUE GET_CMD PORT COMMAND
9272 066010 103006                   JSR    PC,CHKDNI         ; DNI ?
9273 066012 104456                   BCC    100$               ; YES
9274 066014 000753                   ERRHRD 491.,ERR010,MSG003 ; NO, REPORT ERROR
                                TRAP    C#ERHRD
                                .WORD   491
                                .WORD   ERR010
                                .WORD   MSG003
9275 066022 104410                   ESCAPE TST                ; AND ABORT TEST
                                TRAP    C#ESCAPE
                                .WORD   L10057-.
9276 066026 004737 025546          ;
9277 066032 103006                   ;100$: JSR    PC,CLRDN1     ; WRITE ONE TO CLEAR DNI
9278 066034 104456                   BCC    110$               ; ERROR ?
9279 066036 000754                   ERRHRD 492.,ERR006,MSG003 ; NO
9280 066040 020202                   ERRHRD 492.,ERR006,MSG003 ; YES, REPORT ERROR
                                TRAP    C#ERHRD
                                .WORD   492
                                .WORD   ERR006
                                .WORD   MSG003
9281 066042 017110                   ESCAPE TST                ; AND ABORT TEST
                                TRAP    C#ESCAPE
                                .WORD   L10057-.
9282 066044 104410                   ;
9283 066046 001120                   ;SET UP RINGS FOR ONE BUFFER LOOPBACK (RUNT PACKET)

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9284 066050 012705 013654      1104:  MOV    @TDRB1C,R5      ; DEFAULT ONE BUFFER (RUNT PACKET)
9285 066054 004737 027046      JSR    PC,LDTDRB      ; LOAD TDRB
9286 066060 012705 013354      MOV    @RDRB1A,R5    ; DEFAULT ONE BUFFER RECEIVE RING
9287 066064 004737 027010      JSR    PC,LDRDRB      ; LOAD RDRB
9288
9289      ;SET UP BUFFERS AND START
9290 066070 012705 002266      MOV    @PCBB+2,R5    ; POINT TO DESTINATION ADDRESS
9291 066074 004737 026714      JSR    PC,LDDDEST    ; LOAD DEST
9292 066100 004737 027342      JSR    PC,SETBUF     ; SET UP BUFFERS
9293 066104 012777 000004 114114  MOV    @START,@PCSR0 ; ISSUE START PORT COMMAND
9294 066112 004737 024574      JSR    PC,CHKDNI     ; DNI?
9295 066116 103006      BCC    1204          ; YES
9296 066120      ERRHRD 493.,ERR012,MSG003 ; NO, REPORT ERROR
          066120 104456      TRAP   C#ERHRD
          066122 000755      .WORD 493
          066124 020633      .WORD ERR012
          066126 017110      .WORD MSG003
9297 066130      ESCAPE TST          ; AND ABORT TEST
          066130 104410      TRAP   C#ESCAPE
          066132 001034      .WORD L10057-.
9298
9299 066134 004737 025546      ;1204: JSR    PC,CLRDN1    ; WRITE ONE TO CLEAR DNI
9300      BCC    1304          ; ERROR ?
9301 066140 103006      BCC    1304          ; NO
9302 066142      ERRHRD 494.,ERR006,MSG003 ; YES, REPORT ERROR
          066142 104456      TRAP   C#ERHRD
          066144 000756      .WORD 494
          066146 020202      .WORD ERR006
          066150 017110      .WORD MSG003
9303      ESCAPE TST          ; AND ABORT TEST
          066152 104410      TRAP   C#ESCAPE
          066154 001012      .WORD L10057-.
9304
9305 066156 004737 025404      ;1304: JSR    PC,CHKTXI    ; TXI ?
9306 066162 103006      BCC    1404          ; YES
9307 066164      ERRHRD 495.,ERR013,MSG003 ; NO, REPORT ERROR
          066164 104456      TRAP   C#ERHRD
          066166 000757      .WORD 495
          066170 020714      .WORD ERR013
          066172 017110      .WORD MSG003
9308      ESCAPE TST          ; AND ABORT TEST
          066174 104410      TRAP   C#ESCAPE
          066176 000770      .WORD L10057-.
9309
9310 066200 004737 025730      ;1404: JSR    PC,CLRTXI    ; WRITE ONE TO CLEAR TXI
9311      BCC    1504          ; ERROR ?
9312 066204 103006      BCC    1504          ; NO
9313 066206      ERRHRD 496.,ERR014,MSG003 ; YES, REPORT ERROR
          066206 104456      TRAP   C#ERHRD
          066210 000760      .WORD 496
          066212 020745      .WORD ERR014
          066214 017110      .WORD MSG003
9314      ESCAPE TST          ; AND ABORT TEST
          066216 104410      TRAP   C#ESCAPE
          066220 000746      .WORD L10057-.
9315
9316      ;CHECK FOR BUFL ERROR IN TDRB+6

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9317 066222 012705 002612      150$:  MOV    #TDRB+6,R5      ; R5 POINTS TO TDRB+6
9318 066226 011504              MOV    (R5),R4        ; R4 = TDRB+6
9319 066230 032704 100000      BIT    @BUFL,R4       ; BUFL SET ?
9320 066234 001006              BNE    160$           ; YES
9321 066236              ERRHRD 497.,ERR040    ; NO, REPORT ERROR
                                TRAP    C#ERHRD
                                .WORD   497
                                .WORD   ERR040
                                .WORD   0
9322 066246              ESCAPE TST
                                TRAP    C#ESCAPE
                                .WORD   L10057-.
9323 066252 012777 000017 113746 ; 160$: MOV    #STOP,@PCSR0    ; ISSUE STOP PORT COMMAND
9324 066252 012777 000017 113746 ; JSR    PC,CHKDNI     ; DNI ?
9325 066260 004737 024574      BCC    170$           ; YES
9326 066264 103006              ERRHRD 498.,ERR019,MSG003 ; NO, REPORT ERROR
                                TRAP    C#ERHRD
                                .WORD   498
                                .WORD   ERR019
                                .WORD   MSG003
9327 066266 104456              ESCAPE TST
                                ; AND ABORT TEST
                                TRAP    C#ESCAPE
                                .WORD   L10057-.
9328 066276 104410              ; 170$: JSR    PC,CLR DNI    ; WRITE ONE TO CLEAR DNI
9329 066302 004737 025546      BCC    180$           ; ERROR ?
9330 066302 004737 025546      ; NO
9331 066306 103006              ERRHRD 499.,ERR006,MSG003 ; YES, REPORT ERROR
                                TRAP    C#ERHRD
                                .WORD   499
                                .WORD   ERR006
                                .WORD   MSG003
9332 066310 104456              ESCAPE TST
                                ; AND ABORT TEST
                                TRAP    C#ESCAPE
                                .WORD   L10057-.
9333 066310 104456              ; PART 2 - VERIFY PAD RUNT PACKET MODE
9334 066312 000763              ; WRITE MODE REGISTER = INTERNAL LOOPBACK , PROM
9335 066314 020202              ; AND PAD RUNT PACKET MODE
9336 066316 017110              ;
9337 066320 104410              ; 180$: MOV    @WMODE,R5    ; DEFAULT WRITE MODE FUNCTION
9338 066322 000644              .JSR   PC,LDP CBB     ; LOAD FUNCTION -> PCBB
9339 066324 012705 013244      MOV    MODE25,PCBB+2  ; PROM, TPAD AND INTL MODE
9340 066330 004737 026742      MOV    #GETCMD,@PCSR0 ; ISSUE GET_CMD PORT COMMAND
9341 066334 013737 015122 002266 ; JSR    PC,CHKDNI     ; DNI ?
9342 066342 012777 000002 113656 ; BCC    190$           ; YES
9343 066350 004737 024574      ERRHRD 500.,ERR010,MSG003 ; NO, REPORT ERROR
                                TRAP    C#ERHRD
                                .WORD   500
                                .WORD   ERR010
                                .WORD   MSG003
9344 066354 103006              ESCAPE TST
                                ; AND ABORT TEST
                                TRAP    C#ESCAPE
                                .WORD   L10057-.
9345 066356 104456              ;
9346 066360 000764              ;
9347 066362 020502              ;
9348 066364 017110              ;
9349 066366 104410              ;
9350 066370 000576              ;

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9350 066372 004737 025546      190$: JSR      PC,CLRDNI      ; WRITE ONE TO CLEAR DNI
9351                               ; ERROR ?
9352 066376 103006             BCC      200$      ; NO
9353 066400                     ERRHRD   501.,ERR006,MSG003 ; YES, REPORT ERROR
                                TRAP      C#ERHRD
                                .WORD    501
                                .WORD    ERR006
                                .WORD    MSG003
9354 066410                     ESCAPE   TST        ; AND ABORT TEST
                                TRAP      C#ESCAPE
                                .WORD    L10057-.
    066400 104456
    066402 000765
    066404 020202
    066406 017110
    066410 104410
    066412 000554

9355                               ; SET UP RINGS FOR ONE BUFFER LOOPBACK (RUNT PACKET)
9356                               ;
200$: MOV      #TDRB1C,R5      ; DEFAULT BUFFER = RUNT PACKET
9357 066414 012705 013654      JSR      PC,LDTDRB    ; LOAD TDRB
9358 066420 004737 027046      MOV      #RDRB1A,R5  ; DEFAULT ONE BUFFER RECEIVE RING
9359 066424 012705 013354      JSR      PC,LDRDRB    ; LOAD RDRB
9360 066430 004737 027010
9361                               ; SET UP BUFFERS AND START
9362                               ;
9363 066434 012705 013146      MOV      #WTPHYA+2,R5 ; POINT TO DESTINATION ADDRESS
9364 066440 004737 026714      JSR      PC,LDDDEST   ; LOAD DEST
9365 066444 004737 027342      JSR      PC,SETBUF    ; SET UP BUFFERS
9366 066450 012777 000004 113550 MOV      #START,#PCSR0 ; ISSUE START PORT COMMAND
9367 066456 004737 024574      JSR      PC,CHKDNI    ; DNI?
9368 066462 103006             BCC      210$      ; YES
9369 066464                     ERRHRD   502.,ERR012,MSG003 ; NO, REPORT ERROR
                                TRAP      C#ERHRD
                                .WORD    502
                                .WORD    ERR012
                                .WORD    MSG003
    066466 000766
    066470 020633
    066472 017110
9370 066474                     ESCAPE   TST        ; AND ABORT TEST
                                TRAP      C#ESCAPE
                                .WORD    L10057-.
    066474 104410
    066476 000470

9371                               ;
9372 066500 004737 025546      210$: JSR      PC,CLRDNI      ; WRITE ONE TO CLEAR DNI
9373                               ; ERROR ?
9374 066504 103006             BCC      220$      ; NO
9375 066506                     ERRHRD   503.,ERR006,MSG003 ; YES, REPORT ERROR
                                TRAP      C#ERHRD
                                .WORD    503
                                .WORD    ERR006
                                .WORD    MSG003
    066506 104456
    066510 000767
    066512 020202
    066514 017110
9376 066516                     ESCAPE   TST        ; AND ABORT TEST
                                TRAP      C#ESCAPE
                                .WORD    L10057-.
    066516 104410
    066520 000446

9377                               ;
9378 066522 004737 025404      220$: JSR      PC,CHKTXI     ; TXI ?
9379 066526 103006             BCC      230$      ; YES
9380 066530                     ERRHRD   504.,ERR013,MSG003 ; NO, REPORT ERROR
                                TRAP      C#ERHRD
                                .WORD    504
                                .WORD    ERR013
                                .WORD    MSG003
    066530 104456
    066532 000770
    066534 020714
    066536 017110
9381 066540                     ESCAPE   TST        ; AND ABORT TEST
                                TRAP      C#ESCAPE
                                .WORD    L10057-.
    066540 104410
    066542 000424
9382                               ;
    
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9383 066544 004737 025730      230$: JSR    PC,CLRTXI      ; WRITE ONE TO CLEAR TXI
9384                                ; ERROR ?
9385 066550 103006            BCC    240$
9386 066552 104456            ERRHRD 505.,ERR014,MSG003 ; YES, REPORT ERROR
                                TRAP   C#ERHRD
                                .WORD  505
                                .WORD  ERR014
                                .WORD  MSG003
                                ; AND ABORT TEST
9387 066562 104410            ESCAPE TST                    ; AND ABORT TEST
                                TRAP   C#ESCAPE
                                .WORD  L10057-.
9388                                ; CHECK TDRB OWNERSHIP
9389 066566 012705 002604      ; 240$: MOV    #TDRB,R5      ; CHECK TDRB OWNERSHIP
9390 066572 004737 024676      JSR    PC,CHKOWN           ; OWN = PORT DRIVER ?
9391 066576 103006            BCC    250$
9392 066600 104456            ERRHRD 506.,ERR018        ; YES
                                ; NO, REPORT ERROR
                                TRAP   C#ERHRD
                                .WORD  506
                                .WORD  ERR018
                                .WORD  0
                                ; AND ABORT TEST
9393 066610 104410            ESCAPE TST                    ; AND ABORT TEST
                                TRAP   C#ESCAPE
                                .WORD  L10057-.
9394                                ; POINT TO EXPECTED TDRB
9395 066614 012705 014624      ; 250$: MOV    #TDR25A,R5   ; POINT TO EXPECTED TDRB
9396 066620 004737 027252      JSR    PC,LDXTDR          ; LOAD INTO XTDRBO TABLE
9397 066624 012705 002604      MOV    #TDRB,R5          ; CHECK TDRB
9398 066630 004737 025316      JSR    PC,CHKTDR          ; ERRORS ?
9399 066634 103006            BCC    260$
9400 066636 104456            ERRHRD 507.,ERR020,MSG005 ; YES, REPORT ERROR
                                TRAP   C#ERHRD
                                .WORD  507
                                .WORD  ERR020
                                .WORD  MSG005
                                ; AND ABORT TEST
9401 066646 104410            ESCAPE TST                    ; AND ABORT TEST
                                TRAP   C#ESCAPE
                                .WORD  L10057-.
9402                                ; RXI ?
9403 066652 004737 025132      ; 260$: JSR    PC,CHKRXI    ; RXI ?
9404 066656 103006            BCC    270$
9405 066660 104456            ERRHRD 508.,ERR015,MSG003 ; YES
                                ; NO, REPORT ERROR
                                TRAP   C#ERHRD
                                .WORD  508
                                .WORD  ERR015
                                .WORD  MSG003
                                ; AND ABORT TEST
9406 066670 104410            ESCAPE TST                    ; AND ABORT TEST
                                TRAP   C#ESCAPE
                                .WORD  L10057-.
9407                                ; WRITE ONE TO CLEAR RXI
9408 066674 004737 025662      ; 270$: JSR    PC,CLRRXI    ; WRITE ONE TO CLEAR RXI
9409                                ; ERROR ?
9410 066700 103006            BCC    280$
9411 066702 104456            ERRHRD 509.,ERR016,MSG003 ; YES, REPORT ERROR
                                TRAP   C#ERHRD
                                .WORD  509
                                .WORD  ERR016
                                .WORD  MSG003
066704 000775
066706 021044
066710 017110

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9412	066712			ESCAPE TST		; AND ABORT TEST		
	066712	104410					TRAP	C#ESCAPE
	066714	000252					.WORD	L10057-.
9413								
9414	066716	012705	002644	i 280\$:	MOV	#RDRB,R5		; CHECK RDRB OWNERSHIP
9415	066722	004737	024676		JSR	PC,CHKOWN		; OWN = PORT DRIVER ?
9416	066726	103006			BCC	290\$		; YES
9417	066730				ERRHRD	510.,ERR017		; NO, REPORT ERROR
	066730	104456					TRAP	C#ERHRD
	066732	000776					.WORD	510
	066734	021112					.WORD	ERR017
	066736	000000					.WORD	0
9418	066740			ESCAPE TST		; AND ABORT TEST		
	066740	104410					TRAP	C#ESCAPE
	066742	000224					.WORD	L10057-.
9419								
9420	066744	012705	014634	i 290\$:	MOV	#RDR14A,R5		; POINT TO EXPECTED RDRB
9421	066750	004737	027222		JSR	PC,LDXRDR		; LOAD INTO XRDRBO TABLE
9422	066754	012705	002644		MOV	#RDRB,R5		; CHECK RDRB
9423	066760	004737	025032		JSR	PC,CHKRDR		; ERRORS ?
9424	066764	103006			BCC	300\$		; NO
9425	066766				ERRHRD	511.,ERR021,MSG006		; YES, REPORT ERROR
	066766	104456					TRAP	C#ERHRD
	066770	000777					.WORD	511
	066772	021453					.WORD	ERR021
	066774	017356					.WORD	MSG006
9426	066776			ESCAPE TST		; AND ABORT TEST		
	066776	104410					TRAP	C#ESCAPE
	067000	000166					.WORD	L10057-.
9427								
9428								
9429	067002	012705	000027	i				; COMPARE RBUF WITH DEFAULT PADDED RUNT PACKET
9430	067006	004737	026044	300\$:	MOV	#23.,R5		; COMPARE 23 WORDS OF DATA
9431	067012	103006			JSR	PC,CMPDAT		; DATA COMPARE ERROR ?
9432	067014				BCC	310\$		; NO
	067014	104456			ERRHRD	512.,ERR022,MSG007		; YES, REPORT ERROR
	067016	001000					TRAP	C#ERHRD
	067020	021534					.WORD	512
	067022	017520					.WORD	ERR022
							.WORD	MSG007
9433	067024			ESCAPE TST		; AND ABORT TEST		
	067024	104410					TRAP	C#ESCAPE
	067026	000140					.WORD	L10057-.
9434								
9435								
9436	067030	012705	000001	i				; CHECK FOR PADDING
9437	067034	004737	026254	310\$:	MOV	#1.,R5		; COMPARE 1 WORD OF DATA PADDING
9438	067040	103006			JSR	PC,CMPRNT		; DATA COMPARE ERROR ?
9439	067042				BCC	320\$		; NO
	067042	104456			ERRHRD	513.,ERR041,MSG007		; YES, REPORT ERROR
	067044	001001					TRAP	C#ERHRD
	067046	023550					.WORD	513
	067050	017520					.WORD	ERR041
							.WORD	MSG007
9440	067052			ESCAPE TST		; AND ABORT TEST		
	067052	104410					TRAP	C#ESCAPE
	067054	000112					.WORD	L10057-.
9441								
9442	067056	012705	015100	i 320\$:	MOV	#CRC258,R5		; POINT TO EXPECTED CRCB

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9443 067062 004737 027176      JSR    PC,LDXCRC      ; LOAD INTO XCRC TABLE
9444 067066 012705 007200      MOV    #RBUF+60.,R5  ; CHECK CRC
9445 067072 004737 026124      JSR    PC,CMPCRC     ; ERRORS ?
9446 067076 103006              BCC    330$          ; NO
9447 067100              ERRHRD 514.,ERR023,MSG008 ; YES, REPORT ERROR
                                TRAP    C#ERRHRD
                                .WORD   514
                                .WORD   ERR023
                                .WORD   MSG008
9448 067110              ESCAPE TST           ; AND ABORT TEST
                                TRAP    C#ESCAPE
                                .WORD   L10057-.
9449 067114 012777 000017 113104 330$: MOV    #STOP,@PCSR0  ; ISSUE STOP PORT COMMAND
9450 067122 004737 024574      JSR    PC,CHKDNI     ; DNI ?
9451 067126 103006              BCC    340$          ; YES
9452 067130              ERRHRD 515.,ERR019,MSG003 ; NO, REPORT ERROR
                                TRAP    C#ERRHRD
                                .WORD   515
                                .WORD   ERR019
                                .WORD   MSG003
9453 067130 104456              ESCAPE TST           ; AND ABORT TEST
                                TRAP    C#ESCAPE
                                .WORD   L10057-.
9454 067140 104410              ESCAPE TST           ; AND ABORT TEST
                                TRAP    C#ESCAPE
                                .WORD   L10057-.
9455 067144 004737 025546 340$: JSR    PC,CLR DNI  ; WRITE ONE TO CLEAR DNI
9456 067150 103006              BCC    350$          ; ERROR ?
9457 067152 104456              ERRHRD 516.,ERR006,MSG003 ; NO
9458 067152 104456              BCC    350$          ; YES, REPORT ERROR
                                TRAP    C#ERRHRD
                                .WORD   516
                                .WORD   ERR006
                                .WORD   MSG003
9459 067154 001004              ESCAPE TST           ; AND ABORT TEST
                                TRAP    C#ESCAPE
                                .WORD   L10057-.
9460 067162 104410              ESCAPE TST           ; AND ABORT TEST
                                TRAP    C#ESCAPE
                                .WORD   L10057-.
9461 067166 000002              ENDTST
9462 067166 104401              L10057: TRAP    C#ETST

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.SBTTL TEST 26: HALF DUPLEX TEST

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:
: THIS TEST VERIFIES THAT HALF DUPLEX MODE IS OPERATIONAL.
: WHILE IN HALF DUPLEX MODE,
: A WRITE PHYSICAL ADDRESS FUNCTION IS USED TO SET
: THE DEUNA'S PHYSICAL ADDRESS.
: INTERNAL LOOPBACKS ARE THEN PERFORMED WITH A
: CURRENTLY ENABLED AND THEN A CURRENTLY DISABLED
: DESTINATION ADDRESS.
:
: TEST SEQUENCE:
:   1. WRITE MODE REGISTER - INTERNAL LOOPBACK AND
:     HALF DUPLEX MODES
:   2. WRITE RING FORMAT
:   3. WRITE PHYSICAL ADDRESS
:   4. SET UP RINGS AND BUFFERS
:     WITH DESTINATION ADDRESS = PHYSICAL ADDRESS
:   5. ISSUE START
:   6. CHECK FOR ERRORS (MATCH BIT SHOULD BE SET)
:   7. CHECK FOR NO RXI
:   8. ISSUE STOP
:   9. SET UP RINGS AND BUFFERS
:     WITH DESTINATION ADDRESS NOT = PHYSICAL ADDRESS
:  10. ISSUE START
:  11. CHECK FOR ERRORS (MATCH BIT SHOULD NOT BE SET)
:  12. CHECK FOR NO RXI
:  13. ISSUE STOP
:
*****
    
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          067170          BGNTST
          067170          T26::
9497 067170 004737 027446 JSR PC,TINIT ; IS A DEVICE RESET NEEDED?
9498 067174 103025 BCC 30$ ; NO
9499 067176 012777 000040 113022 MOV #RSET,@PCSR0 ; YES, RESET DEUNA
9500 067204 004737 024574 JSR PC,CHKDNI ; DNI ?
9501 067210 103006 BCC 20$ ; YES
9502 067212 ERRHRD 517.,ERR004,MSG003 ; NO, REPORT ERROR
          067212 104456 TRAP C$ERHRD
          067214 001005 .WORD 517
          067216 020102 .WORD ERR004
          067220 017110 .WORD MSG003
9503 067222 ESCAPE TST ; AND ABORT TEST
          067222 104410 TRAP C$ESCAPE
          067224 001254 .WORD L10060-.
9504
9505 067226 004737 025546 20$: JSR PC,CLRDN1 ; WRITE ONE TO CLEAR DNI
9506 BCC 30$ ; ERROR ?
9507 067232 103006 BCC 30$ ; NO
9508 067234 ERRHRD 518.,ERR006,MSG003 ; YES, REPORT ERROR
          067234 104456 TRAP C$ERHRD
          067236 001006 .WORD 518
          067240 020202 .WORD ERR006
          067242 017110 .WORD MSG003
9509 067244 ESCAPE TST ; AND ABORT TEST
    
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067244 104410
067246 001232
9510
9511 067250 004737 026772 112744 ; 30: JSR PC,LDPCSR ; ADDRESS OF PCBB -> PCSR2!3
9512 067254 012777 000001 112744 MOV @GETPCB,@PCSR0 ; ISSUE GET_PCBB PORT COMMAND
9513 067262 004737 024574 JSR PC,CHKDNI ; DNI?
9514 067266 103006 BCC 40: ; YES
9515 067270 ERRHRD 519.,ERR009,MSG003 ; NO, REPORT ERROR
067270 104456 TRAP C!ERRHRD
067272 001007 .WORD 519
067274 020416 .WORD ERR009
067276 017110 .WORD MSG003
9516 067300 ESCAPE TST ; AND ABORT TEST
067300 104410 TRAP C!ESCAPE
067302 001176 .WORD L10060-.
9517
9518 067304 004737 025546 ; 40: JSR PC,CLRDNI ; WRITE ONE TO CLEAR DNI
9519 BCC 50: ; ERROR ?
9520 067310 103006 ERRHRD 520.,ERR006,MSG003 ; NO
9521 067312 104456 TRAP C!ERRHRD
067312 001010 .WORD 520
067314 020202 .WORD ERR006
067316 017110 .WORD MSG003
9522 067322 ESCAPE TST ; AND ABORT TEST
067322 104410 TRAP C!ESCAPE
067324 001154 .WORD L10060-.
9523
9524 ;WRITE MODE REGISTER = INTERNAL LOOPBACK AND HALF DUPLEX MODE
9525 067326 012705 013244 ; 50: MOV @WTHODE,R5 ; DEFAULT WRITE MODE FUNCTION
9526 067332 004737 026742 JSR PC,LDPCBB ; LOAD FUNCTION -> PCBB
9527 067336 013737 015124 002266 MOV MODE26,PCBB+2 ; MODE = INTL, HDUP
9528 067344 012777 000002 112654 MOV @GETCMD,@PCSR0 ; ISSUE GET_CMD PORT COMMAND
9529 067352 004737 024574 JSR PC,CHKDNI ; DNI ?
9530 067356 103006 BCC 60: ; YES
9531 067360 ERRHRD 521.,ERR010,MSG003 ; NO, REPORT ERROR
067360 104456 TRAP C!ERRHRD
067362 001011 .WORD 521
067364 020502 .WORD ERR010
067366 017110 .WORD MSG003
9532 067370 ESCAPE TST ; AND ABORT TEST
067370 104410 TRAP C!ESCAPE
067372 001106 .WORD L10060-.
9533
9534 067374 004737 025546 ; 60: JSR PC,CLRDNI ; WRITE ONE TO CLEAR DNI
9535 BCC 70: ; ERROR ?
9536 067400 103006 ERRHRD 522.,ERR006,MSG003 ; NO
9537 067402 104456 TRAP C!ERRHRD
067402 001012 .WORD 522
067404 020202 .WORD ERR006
067406 017110 .WORD MSG003
9538 067412 ESCAPE TST ; AND ABORT TEST
067412 104410 TRAP C!ESCAPE
067414 001064 .WORD L10060-.
9539
9540 ;WRITE RING FORMAT

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9541 067416 012705 013204      701:  MOV    @WTRNGS,R5      ; DEFAULT WRITE RING FORMAT FUNCTION
9542 067422 004737 026742      JSR    PC,LDPCBB      ; LOAD FUNCTION -> PCBB
9543 067426 012705 013324      MOV    @RFRMT,R5     ; DEFAULT RING FORMAT
9544 067432 012700 000006      MOV    @6,R0         ; FORMAT = SIX WORDS
9545 067436 004737 027142      JSR    PC,LDUDBB     ; LOAD RING FORMAT -> UDBB
9546 067442 012777 000002      MOV    @GETCMD,@PCSR0 ; ISSUE GET_CMD PORT COMMAND
9547 067450 004737 024574      JSR    PC,CHKDNI     ; DNI ?
9548 067454 103006      BCC    801           ; YES
9549 067456      ERRHRD 523.,ERR010,MSG003 ; NO, REPORT ERROR
      067456 104456      TRAP   C1ERHRD
      067460 001013      .WORD 523
      067462 020502      .WORD ERR010
      067464 017110      .WORD MSG003
9550 067466      ESCAPE TST          ; AND ABORT TEST
      067466 104410      TRAP   C1ESCAPE
      067470 001010      .WORD L10060-.
9551      ;
9552 067472 004737 025546      ;801: JSR    PC,CLRDN1     ; WRITE ONE TO CLEAR DNI
9553      BCC    901           ; ERROR ?
9554 067476 103006      ERRHRD 524.,ERR006,MSG003 ; NO
9555 067500      ESCAPE TST          ; YES, REPORT ERROR
      067500 104456      TRAP   C1ERHRD
      067502 001014      .WORD 524
      067504 020202      .WORD ERR006
      067506 017110      .WORD MSG003
9556 067510      ESCAPE TST          ; AND ABORT TEST
      067510 104410      TRAP   C1ESCAPE
      067512 000766      .WORD L10060-.
9557      ;
9558      ;WRITE PHYSICAL ADDRESS
9559 067514 012705 013144      ;901: MOV    @WTPHYA,R5 ; DEFAULT WRITE PHYSICAL ADDR FUNC
9560 067520 004737 026742      JSR    PC,LDPCBB     ; LOAD FUNCTION -> PCBB
9561      ;LOAD DEFAULT PHYSICAL ADDRESS
9562 067524 012703 014320      MOV    @ADR21,R3     ; POINT TO PHYSICAL ADDRESS
9563 067530 012704 002266      MOV    @PCBB+2,R4    ; POINT TO PCBB + 2
9564 067534 012324      MOV    (R3),.(R4).   ; LOAD ADDRESS
9565 067536 012324      MOV    (R3),.(R4).
9566 067540 012324      MOV    (R3),.(R4).
9567 067542 012777 000002      MOV    @GETCMD,@PCSR0 ; ISSUE GET_CMD PORT COMMAND
9568 067550 004737 024574      JSR    PC,CHKDNI     ; DNI ?
9569 067554 103006      BCC    1001          ; YES
9570 067556      ERRHRD 525.,ERR010,MSG003 ; NO, REPORT ERROR
      067556 104456      TRAP   C1ERHRD
      067560 001015      .WORD 525
      067562 020502      .WORD ERR010
      067564 017110      .WORD MSG003
9571 067566      ESCAPE TST          ; AND ABORT TEST
      067566 104410      TRAP   C1ESCAPE
      067570 000710      .WORD L10060-.
9572      ;
9573 067572 004737 025546      ;1001: JSR    PC,CLRDN1 ; WRITE ONE TO CLEAR DNI
9574      BCC    1101          ; ERROR ?
9575 067576 103006      ERRHRD 526.,ERR006,MSG003 ; NO
9576 067600      ESCAPE TST          ; YES, REPORT ERROR
      067600 104456      TRAP   C1ERHRD
      067602 001016      .WORD 526
      067604 020202      .WORD ERR006

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9577	067606	017110		ESCAPE TST		: AND ABORT TEST	.WORD	MSG003
	067610						TRAP	C#ESCAPE
	067610	104410					.WORD	L10060-.
	067612	000666						
9578								
9579				: SET UP RINGS FOR ONE BUFFER LOOPBACK				
9580	067614	012705	013554	1104: MOV @TDRB1A,R5		: DEFAULT ONE BUFFER TRANSMIT RING		
9581	067620	004737	027046	JSR PC,LDTDRB		: LOAD TDRB		
9582	067624	012705	013354	MOV @RDRB1A,R5		: DEFAULT ONE BUFFER RECEIVE RING		
9583	067630	004737	027010	JSR PC,LDRDRB		: LOAD RDRB		
9584								
9585				: SET UP BUFFERS AND START				
9586	067634	012705	002266	MOV @PCBB+2,R5		: POINT TO DESTINATION ADDRESS		
9587	067640	004737	026714	JSR PC,LDDDEST		: LOAD DEST		
9588	067644	004737	027342	JSR PC,SETBUF		: SET UP BUFFERS		
9589	067650	012777	000004	MOV @START,@PCSR0	112350	: ISSUE START PORT COMMAND		
9590	067656	004737	024574	JSR PC,CHKDNI		: DNI?		
9591	067662	103006		BCC 1204		: YES		
9592	067664			ERRHRD 527.,ERR012,MSG003		: NO, REPORT ERROR		
	067664	104456					TRAP	C#ERRRD
	067666	001017					.WORD	527
	067670	020633					.WORD	ERR012
	067672	017110					.WORD	MSG003
9593	067674			ESCAPE TST		: AND ABORT TEST		
	067674	104410					TRAP	C#ESCAPE
	067676	000602					.WORD	L10060-.
9594								
9595	067700	004737	025546	1204: JSR PC,CLRDN1		: WRITE ONE TO CLEAR DNI		
9596						: ERROR ?		
9597	067704	103006		BCC 1304		: NO		
9598	067706			ERRHRD 528.,ERR006,MSG003		: YES, REPORT ERROR		
	067706	104456					TRAP	C#ERRRD
	067710	001020					.WORD	528
	067712	020202					.WORD	ERR006
	067714	017110					.WORD	MSG003
9599	067716			ESCAPE TST		: AND ABORT TEST		
	067716	104410					TRAP	C#ESCAPE
	067720	000560					.WORD	L10060-.
9600								
9601	067722	004737	025404	1304: JSR PC,CHKTXI		: TXI ?		
9602	067726	103006		BCC 1404		: YES		
9603	067730			ERRHRD 529.,ERR013,MSG003		: NO, REPORT ERROR		
	067730	104456					TRAP	C#ERRRD
	067732	001021					.WORD	529
	067734	020714					.WORD	ERR013
	067736	017110					.WORD	MSG003
9604	067740			ESCAPE TST		: AND ABORT TEST		
	067740	104410					TRAP	C#ESCAPE
	067742	000536					.WORD	L10060-.
9605								
9606	067744	004737	025730	1404: JSR PC,CLRTXI		: WRITE ONE TO CLEAR TXI		
9607						: ERROR ?		
9608	067750	103006		BCC 1504		: NO		
9609	067752			ERRHRD 530.,ERR014,MSG003		: YES, REPORT ERROR		
	067752	104456					TRAP	C#ERRRD
	067754	001022					.WORD	530
	067756	020745					.WORD	ERR014

9610	067760	017110				ESCAPE	TST		; AND ABORT TEST	.WORD	MSG003
	067762	104410								TRAP	C#ESCAPE
	067764	000514								.WORD	L10060-
9611											
9612	067766	012705	002604		i 150:	MOV	#TDRB,R5		; CHECK TDRB OWNERSHIP		
9613	067772	004737	024676			JSR	PC,CHKOWN		; OWN = PORT DRIVER ?		
9614	067776	103006				BCC	160:		; YES		
9615	070000					ERRHRD	531.,ERR018		; NO, REPORT ERROR		
	070000	104456								TRAP	C#ERRHRD
	070002	001023								.WORD	531
	070004	021212								.WORD	ERR018
	070006	000000								.WORD	0
9616	070010					ESCAPE	TST		; AND ABORT TEST		
	070010	104410								TRAP	C#ESCAPE
	070012	000466								.WORD	L10060-
9617											
9618	070014	012705	014524		i 160:	MOV	#TDR14A,R5		; POINT TO EXPECTED TDRB		
9619	070020	004737	027252			JSR	PC,LDXTDR		; LOAD INTO XTDRBO TABLE		
9620	070024	012705	002604			MOV	#TDRB,R5		; CHECK TDRB		
9621	070030	004737	025316			JSR	PC,CHKTDR		; ERRORS ?		
9622	070034	103006				BCC	170:		; NO		
9623	070036					ERRHRD	532.,ERR020,MSG005		; YES, REPORT ERROR		
	070036	104456								TRAP	C#ERRHRD
	070040	001024								.WORD	532
	070042	021372								.WORD	ERR020
	070044	017214								.WORD	MSG005
9624	070046					ESCAPE	TST		; AND ABORT TEST		
	070046	104410								TRAP	C#ESCAPE
	070050	000430								.WORD	L10060-
9625											
9626	070052	004737	027302		i 170:	JSR	PC,NORXI		; RXI ?		
9627	070056	103006				BCC	180:		; NO		
9628	070060					ERRHRD	533.,ERR046		; YES, REPORT ERROR		
	070060	104456								TRAP	C#ERRHRD
	070062	001025								.WORD	533
	070064	024064								.WORD	ERR046
	070066	000000								.WORD	0
9629	070070					ESCAPE	TST		; AND ABORT TEST		
	070070	104410								TRAP	C#ESCAPE
	070072	000406								.WORD	L10060-
9630											
9631	070074	012777	000017	112124	i 180:	MOV	#STOP,#PCSR0		; ISSUE STOP PORT COMMAND		
9632	070102	004737	024574			JSR	PC,CHKDNI		; DNI ?		
9633	070106	103006				BCC	240:		; YES		
9634	070110					ERRHRD	534.,ERR019,MSG003		; NO, REPORT ERROR		
	070110	104456								TRAP	C#ERRHRD
	070112	001026								.WORD	534
	070114	021312								.WORD	ERR019
	070116	017110								.WORD	MSG003
9635	070120					ESCAPE	TST		; AND ABORT TEST		
	070120	104410								TRAP	C#ESCAPE
	070122	000356								.WORD	L10060-
9636											
9637	070124	004737	025546		i 240:	JSR	PC,CLRDN1		; WRITE ONE TO CLEAR DNI		
9638									; ERROR ?		
9639	070130	103006				BCC	250:		; NO		

```

9640 070132          ERRHRD 535.,ERR006,MSG003      ; YES, REPORT ERROR
      070132 104456
      070134 001027
      070136 020202
      070140 017110
9641 070142          ESCAPE TST                    ; AND ABORT TEST
      070142 104410
      070144 000334
9642
9643                ; DESTINATION ADDRESS NOT = PHYSICAL ADDRESS
9644
9645                ; SET UP RINGS FOR ONE BUFFER LOOPBACK
9646 070146 012705 013554 250$: MOV #TDRB1A,R5      ; DEFAULT ONE BUFFER TRANSMIT RING
9647 070152 004737 027046      JSR PC,LDTDRB      ; LOAD TDRB
9648 070156 012705 013354      MOV #RDRB1A,R5     ; DEFAULT ONE BUFFER RECEIVE RING
9649 070162 004737 027010      JSR PC,LDRDRB     ; LOAD RDRB
9650
9651                ; SET UP BUFFERS AND START
9652 070166 012705 014326      MOV #ADR21C,R5    ; POINT TO COMPLEMENTED ADDRESS
9653 070172 004737 026714      JSR PC,LDDDEST   ; LOAD DEST
9654 070176 004737 027342      JSR PC,SETBUF    ; SET UP BUFFERS
9655 070202 012777 000004 112016 MOV #START,SPCSRO ; ISSUE START PORT COMMAND
9656 070210 004737 024574      JSR PC,CHKDNI    ; DNI?
9657 070214 103006
9658 070216          ERRHRD 536.,ERR012,MSG003     ; NO, REPORT ERROR
      070216 104456
      070220 001030
      070222 020633
      070224 017110
9659 070226          ESCAPE TST                    ; AND ABORT TEST
      070226 104410
      070230 000250
9660
9661 070232 004737 025546 260$: JSR PC,CLRDN1      ; WRITE ONE TO CLEAR DNI
9662
9663 070236 103006          BCC 270$           ; ERROR ?
9664 070240          ERRHRD 537.,ERR006,MSG003     ; NO
      070240 104456
      070242 001031
      070244 020202
      070246 017110
9665 070250          ESCAPE TST                    ; AND ABORT TEST
      070250 104410
      070252 000226
9666
9667 070254 004737 025404 270$: JSR PC,CHKTXI      ; TXI ?
9668 070260 103006          BCC 280$           ; YES
9669 070262          ERRHRD 538.,ERR013,MSG003     ; NO, REPORT ERROR
      070262 104456
      070264 001032
      070266 020714
      070270 017110
9670 070272          ESCAPE TST                    ; AND ABORT TEST
      070272 104410
      070274 000204
9671
9672 070276 004737 025730 280$: JSR PC,CLRTXI      ; WRITE ONE TO CLEAR TXI
    
```

```

TRAP C#ERRHRD
.WORD 535
.WORD ERR006
.WORD MSG003

TRAP C#ESCAPE
.WORD L10060-.

TRAP C#ERRHRD
.WORD 536
.WORD ERR012
.WORD MSG003

TRAP C#ESCAPE
.WORD L10060-.

TRAP C#ERRHRD
.WORD 537
.WORD ERR006
.WORD MSG003

TRAP C#ESCAPE
.WORD L10060-.

TRAP C#ERRHRD
.WORD 538
.WORD ERR013
.WORD MSG003

TRAP C#ESCAPE
.WORD L10060-.
    
```



	070452	104410					TRAP	C#ESCAPE
	070454	000024					.WORD	L10060-
9702								
9703	070456	004737	025546	330:	JSR	PC,CLRDNI		
9704								
9705	070462	103006			BCC	340:		
9706	070464				ERRHRD	544.,ERR006,MSG003		
	070464	104456					TRAP	C#ERHRD
	070466	001040					.WORD	544
	070470	020202					.WORD	ERR006
	070472	017110					.WORD	MSG003
9707	070474				ESCAPE	TST		
	070474	104410						
	070476	000002					TRAP	C#ESCAPE
							.WORD	L10060-
9708								
9709	070500			340:				
9710	070500				ENDTST			
	070500						L10060:	
	070500	104401					TRAP	C#ETST

.SBTTL TEST 27: SIMULTANEOUS OPERATIONS TEST

9712  
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*****
:
: THIS TEST VERIFIES THAT SIMULTANEOUS OPERATIONS CAN BE PERFORMED.
: A CHAINED INTERNAL LOOPBACK WILL BE PERFORMED SIMULTANEOUSLY
: WITH A READ COUNTERS PORT FUNCTION.
:
: TEST SEQUENCE:
: 1. WRITE MODE REGISTER = PROM AND INTERNAL LOOPBACK MODE
: 2. WRITE RING FORMAT
: 3. WRITE PHYSICAL ADDRESS
: 4. SET UP RINGS AND BUFFERS
:   THREE TRANSMIT AND RECEIVE BUFFERS
: 5. SET UP READ COUNTERS FUNCTION
: 6. ISSUE START
: 7. ISSUE GET COMMAND PORT COMMAND
: 8. CHECK FOR ERRORS
: 9. ISSUE STOP
:
*****

```

```

9734 070502          BGNTST
      070502
9735 070502 004737 027446          JSR    PC,TINIT          ; IS A DEVICE RESET NEEDED?
9736 070506 103025          BCC    30$              ; NO
9737 070510 012777 000040 111510  MOV    @RSET,@PCSR0     ; YES, RESET DEUNA
9738 070516 004737 024574          JSR    PC,CHKDNI        ; DNI ?
9739 070522 103006          BCC    20$              ; YES
9740 070524          ERRHRD  545.,ERR004,MSG003 ; NO, REPORT ERROR
      070524 104456          TRAP   C$ERHRD
      070526 001041          .WORD  545
      070530 020102          .WORD  ERR004
      070532 017110          .WORD  MSG003
9741 070534          ESCAPE  TST          ; AND ABORT TEST
      070534 104410          TRAP   C$ESCAPE
      070536 001472          .WORD  L10061-.
9742
9743 070540 004737 025546          ; 20$: JSR    PC,CLRDN1     ; WRITE ONE TO CLEAR DNI
9744          ; ERROR ?
9745 070544 103006          BCC    30$              ; NO
9746 070546          ERRHRD  546.,ERR006,MSG003 ; YES, REPORT ERROR
      070546 104456          TRAP   C$ERHRD
      070550 001042          .WORD  546
      070552 020202          .WORD  ERR006
      070554 017110          .WORD  MSG003
9747 070556          ESCAPE  TST          ; AND ABORT TEST
      070556 104410          TRAP   C$ESCAPE
      070560 001450          .WORD  L10061-.
9748
9749 070562 004737 026772          ; 30$: JSR    PC,LDPCSR     ; ADDRESS OF PCBB -> PCSR2!3
9750 070566 012777 000001 111432  MOV    @GETPCB,@PCSP0  ; ISSUE GET_PCBB PORT COMMAND
9751 070574 004737 024574          JSR    PC,CHKDNI        ; DNI?
9752 070600 103006          BCC    40$              ; YES
9753 070602          ERRHRD  547.,ERR009,MSG003 ; NO, REPORT ERROR
      070602 104456          TRAP   C$ERHRD
      070604 001043          .WORD  547

```

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070606 020416 .WORD ERR009
070610 017110 .WORD MSG003
9754 070612 ESCAPE TST ; AND ABORT TEST TRAP C#ESCAPE
070612 104410 .WORD L10061-.
070614 001414
9755 ;
9756 070616 004737 025546 40$: JSR PC,CLRDNI ; WRITE ONE TO CLEAR DNI
9757 ; ERROR ?
9758 070622 103006 BCC 50$ ; NO
9759 070624 ERRHRD 548.,ERR006,MSG003 ; YES, REPORT ERROR TRAP C#ERHRD
070624 104456 .WORD 548
070626 001044 .WORD ERR006
070630 020202 .WORD MSG003
070632 017110
9760 070634 ESCAPE TST ; AND ABORT TEST TRAP C#ESCAPE
070634 104410 .WORD L10061-.
070636 001372
9761 ;
9762 ;WRITE MODE REGISTER = INTERNAL LOOPBACK AND PROM MODE
9763 070640 012705 013244 50$: MOV #WTHODE,R5 ; DEFAULT WRITE MODE FUNCTION
9764 070644 004737 026742 JSR PC,LDP CBB ; LOAD FUNCTION -> PCBB
9765 070650 012777 000002 111350 MOV #GETCMD,BPCSR0 ; ISSUE GET_CMD PORT COMMAND
9766 070656 004737 024574 JSR PC,CHKDNI ; DNI ?
9767 070662 103006 BCC 60$ ; YES
9768 070664 ERRHRD 549.,ERR010,MSG003 ; NO, REPORT ERROR TRAP C#ERHRD
070664 104456 .WORD 549
070666 001045 .WORD ERR010
070670 020502 .WORD MSG003
070672 017110
9769 070674 ESCAPE TST ; AND ABORT TEST TRAP C#ESCAPE
070674 104410 .WORD L10061-.
070676 001332
9770 ;
9771 070700 004737 025546 60$: JSR PC,CLRDNI ; WRITE ONE TO CLEAR DNI
9772 ; ERROR ?
9773 070704 103006 BCC 70$ ; NO
9774 070706 ERRHRD 550.,ERR006,MSG003 ; YES, REPORT ERROR TRAP C#ERHRD
070706 104456 .WORD 550
070710 001046 .WORD ERR006
070712 020202 .WORD MSG003
070714 017110
9775 070716 ESCAPE TST ; AND ABORT TEST TRAP C#ESCAPE
070716 104410 .WORD L10061-.
070720 001310
9776 ;
9777 ;WRITE RING FORMAT
9778 070722 012705 013204 70$: MOV #WTRNGS,R5 ; DEFAULT WRITE RING FORMAT FUNCTION
9779 070726 004737 026742 JSR PC,LDP CBB ; LOAD FUNCTION -> PCBB
9780 070732 012705 013324 MOV #RFRMT,R5 ; DEFAULT RING FORMAT
9781 070736 012700 000006 MOV #6,R0 ; FORMAT = SIX WORDS
9782 070742 004737 027142 JSR PC,LDUDBB ; LOAD RING FORMAT -> UDBB
9783 070746 012777 000002 111252 MOV #GETCMD,BPCSR0 ; ISSUE GET_CMD PORT COMMAND
9784 070754 004737 024574 JSR PC,CHKDNI ; DNI ?
9785 070760 103006 BCC 80$ ; YES
9786 070762 ERRHRD 551.,ERR010,MSG003 ; NO, REPORT ERROR TRAP C#ERHRD
070762 104456 .WORD 551
070764 001047

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9787	070766	020502						.WORD	ERR010
	070770	017110						.WORD	MSG003
	070772	104410			ESCAPE	TST			; AND ABORT TEST
	070774	001234						TRAP	C#ESCAPE
								.WORD	L10061-
9788									
9789	070776	004737	025546		80#:	JSR	PC,CLRDN1		; WRITE ONE TO CLEAR DNI
9790									; ERROR ?
9791	071002	103006				BCC	90#		; NO
9792	071004	104456				ERRHRD	552.,ERR006,MSG003		; YES, REPORT ERROR
	071006	001050						TRAP	C#ERHRD
	071010	020202						.WORD	552
	071012	017110						.WORD	ERR006
9793	071014	104410			ESCAPE	TST		.WORD	MSG003
	071016	001212							; AND ABORT TEST
								TRAP	C#ESCAPE
								.WORD	L10061-
9794									
9795									
9796	071020	012705	013144						; WRITE PHYSICAL ADDRESS
9797	071024	004737	026742		90#:	MOV	#WTPHYA,R5		; DEFAULT WRITE PHYSICAL ADDR FUNC
9798	071030	012777	000002	111170		JSR	PC,LDPCCB		; LOAD FUNCTION -> PCBB
9799	071036	004737	024574			MOV	#GETCMD,#PCSR0		; ISSUE GET_CMD PORT COMMAND
9800	071042	103006				JSR	PC,CHKDNI		; DNI ?
9801	071044	104456				BCC	100#		; YES
	071046	001051				ERRHRD	553.,ERR010,MSG003		; NO, REPORT ERROR
	071050	020502						TRAP	C#ERHRD
	071052	017110						.WORD	553
9802	071054	104410			ESCAPE	TST		.WORD	ERR010
	071056	001152						.WORD	MSG003
									; AND ABORT TEST
								TRAP	C#ESCAPE
								.WORD	L10061-
9803									
9804	071060	004737	025546		100#:	JSR	PC,CLRDN1		; WRITE ONE TO CLEAR DNI
9805									; ERROR ?
9806	071064	103006				BCC	110#		; NO
9807	071066	104456				ERRHRD	554.,ERR006,MSG003		; YES, REPORT ERROR
	071070	001052						TRAP	C#ERHRD
	071072	020202						.WORD	554
	071074	017110						.WORD	ERR006
9808	071076	104410			ESCAPE	TST		.WORD	MSG003
	071078	001130							; AND ABORT TEST
								TRAP	C#ESCAPE
								.WORD	L10061-
9809									
9810									
9811	071102	012705	013754						; SET UP RINGS FOR THREE BUFFERS CHAINED LOOPBACK
9812	071106	004737	027046		110#:	MOV	#TDRB3A,R5		; DEFAULT THREE BUFFER TRANSMIT RING
9813	071112	012705	013514			JSR	PC,LDTDRB		; LOAD TDRB
9814	071116	004737	027010			MOV	#RDRB3A,R5		; DEFAULT THREE BUFFER RECEIVE RING
9815						JSR	PC,LDRDRB		; LOAD RDRB
9816									
9817	071122	012705	002266						; SET UP BUFFERS
9818	071126	004737	026714			MOV	#PCBB+2,R5		; POINT TO DESTINATION ADDRESS
9819	071132	004737	027342			JSR	PC,LDEST		; LOAD DEST
9820						JSR	PC,SETBUF		; SET UP BUFFERS
9821									
									; SET UP READ COUNTERS FUNCTION



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071302 001057
071304 020714
071306 017110
9854 071310          ESCAPE TST          ; AND ABORT TEST          .WORD 559
071310 104410          ; AND ABORT TEST          .WORD ERR013
071312 000716          ; AND ABORT TEST          .WORD MSG003
9855 071314 004737 025730          ; WRITE ONE TO CLEAR TXI
9856 071314 004737 025730          ; ERROR ?
9857 071314 004737 025730          ; NO
9858 071320 103006          BCC 150$          ; YES, REPORT ERROR
9859 071322 104456          ERRHRD 560.,ERR014,MSG003          TRAP C$ERHRD
071322 104456          .WORD 560
071324 001060          .WORD ERR014
071326 020745          .WORD MSG003
071330 017110          ESCAPE TST          ; AND ABORT TEST
9860 071332          ; AND ABORT TEST          TRAP C$ESCAPE
071332 104410          .WORD L10051-.
071334 000674          ;CHECK FIRST RING ENTRY
9861 071336 012705 002604          150$: MOV #TDRB,R5          ; CHECK TDRB OWNERSHIP
9862 071336 012705 002604          JSR PC,CHKOWN          ; OWN = PORT DRIVER ?
9863 071342 004737 024676          BCC 160$          ; YES
9864 071342 004737 024676          ERRHRD 561.,ERR027          ; NO, REPORT ERROR
9865 071350 104456          TRAP C$ERHRD
071350 104456          .WORD 561
071352 001061          .WORD ERR027
071354 021773          .WORD 0
071356 000000          ESCAPE TST          ; AND ABORT TEST
9866 071360          ; AND ABORT TEST          TRAP C$ESCAPE
071360 104410          .WORD L10061-.
071362 000646          ;CHECK SECOND RING ENTRY
9867 071364 012705 014564          160$: MOV #TDR20A,R5          ; POINT TO EXPECTED TDRB
9868 071364 012705 014564          JSR PC,LDXTDR          ; LOAD INTO XTDRBO TABLE
9869 071370 004737 027252          MOV #TDRB,R5          ; CHECK TDRB
9870 071370 004737 027252          JSR PC,CHKTDR          ; ERRORS ?
9871 071374 012705 002604          BCC 162$          ; NO
9872 071400 004737 025316          ENRHRD 562.,ERR033,MSG005          ; YES, REPORT ERROR
9873 071406 104456          TRAP C$ERHRD
071406 104456          .WORD 562
071410 001062          .WORD ERR033
071412 022633          .WORD MSG005
071414 017214          ESCAPE TST          ; AND ABORT TEST
9874 071416          ; AND ABORT TEST          TRAP C$ESCAPE
071416 104410          .WORD L10061-.
071420 000610          ;CHECK SECOND RING ENTRY
9875 071422 012705 002614          162$: MOV #TDRB+8.,R5          ; CHECK TDRB OWNERSHIP
9876 071422 012705 002614          JSR PC,CHKOWN          ; OWN = PORT DRIVER ?
9877 071426 004737 024676          BCC 164$          ; YES
9878 071432 103006          ERRHRD 563.,ERR028          ; NO, REPORT ERROR
9879 071434 104456          TRAP C$ERHRD
071434 104456          .WORD 563
071436 001063          .WORD ERR028
071440 022100          .WORD 0
071442 000000          ESCAPE TST          ; AND ABORT TEST
9880 071444          ; AND ABORT TEST          TRAP C$ESCAPE
071444 104410          .WORD L10061-.
071446 000562          ;
9881

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9882 071450 012705 014574      164$:  MOV      #TDR20B,R5      ; POINT TO EXPECTED TDRB
9883 071454 004737 027252      JSR      PC,LDXTDR      ; LOAD INTO XTDRB0 TABLE
9884 071460 012705 002614      MOV      #TDRB+8.,R5    ; CHECK TDRB
9885 071464 004737 025316      JSR      PC,CHKTDR      ; ERRORS ?
9886 071470 103006                BCC      166$           ; NO
9887 071472                ERRHRD   564.,ERR034,MSG005 ; YES, REPORT ERROR
                                TRAP      C$ERHRD
                                .WORD     564
                                .WORD     ERR034
                                .WORD     MSG005
                                071472 104456
                                071474 001064
                                071476 022722
                                071500 017214
9888 071502                ESCAPE   TST            ; AND ABORT TEST
                                TRAP      C$ESCAPE
                                .WORD     L10061-.
                                071502 104410
                                071504 000524
                                ;CHECK THIRD RING ENTRY
9889                                166$:  MOV      #TDRB+16.,R5    ; CHECK TDRB OWNERSHIP
9890 071506 012705 002624      JSR      PC,CHKOWN      ; OWN = PORT DRIVER ?
9891 071512 004737 024676      BCC      168$           ; YES
9892 071516 103006                ERRHRD   565.,ERR029    ; NO, REPORT ERROR
                                TRAP      C$ERHRD
                                .WORD     565
                                .WORD     ERR029
                                .WORD     0
                                071520 104456
                                071522 001065
                                071524 022206
                                071526 000000
9894 071530                ESCAPE   TST            ; AND ABORT TEST
                                TRAP      C$ESCAPE
                                .WORD     L10061-.
                                071530 104410
                                071532 000476
9895                                ;
9896 071534 012705 014604      ; 168$:  MOV      #TDR20C,R5    ; POINT TO EXPECTED TDRB
9897 071540 004737 027252      JSR      PC,LDXTDR      ; LOAD INTO XTDRB0 TABLE
9898 071544 012705 002624      MOV      #TDRB+16.,R5    ; CHECK TDRB
9899 071550 004737 025316      JSR      PC,CHKTDR      ; ERRORS ?
9900 071554 103006                BCC      170$           ; NO
9901 071556                ERRHRD   566.,ERR035,MSG005 ; YES, REPORT ERROR
                                TRAP      C$ERHRD
                                .WORD     566
                                .WORD     ERR035
                                .WORD     MSG005
                                071556 104456
                                071560 001066
                                071562 023012
                                071564 017214
9902 071566                ESCAPE   TST            ; AND ABORT TEST
                                TRAP      C$ESCAPE
                                .WORD     L10061-.
                                071566 104410
                                071570 000440
9903                                ;
9904 071572 004737 025132      ; 170$:  JSR      PC,CHKRXI      ; RXI ?
9905 071576 103006                BCC      180$           ; YES
9906 071600                ERRHRD   567.,ERR015,MSG003 ; NO, REPORT ERROR
                                TRAP      C$ERHRD
                                .WORD     567
                                .WORD     ERR015
                                .WORD     MSG003
                                071600 104456
                                071602 001067
                                071604 021013
                                071606 017110
9907 071610                ESCAPE   TST            ; AND ABORT TEST
                                TRAP      C$ESCAPE
                                .WORD     L10061-.
                                071610 104410
                                071612 000416
9908                                ;
9909 071614 004737 025662      ; 180$:  JSR      PC,CLRRXI      ; WRITE ONE TO CLEAR RXI
9910                                ; ERROR ?
9911 071620 103006                BCC      190$           ; NO
9912 071622                ERRHRD   568.,ERR016,MSG003 ; YES, REPORT ERROR
                                TRAP      C$ERHRD
                                .WORD     568
                                071622 104456
                                071624 001070

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	071626	021044				.WORD	ERR016
	071630	017110				.WORD	MSG003
9913	071632			ESCAPE TST			: AND ABORT TEST
	071632	104410				TRAP	C#ESCAPE
	071634	000374				.WORD	L10061-.
9914				;CHECK FIRST RING ENTRY			
9915	071636	012705	002644	1904: MOV @RDRB,R5			: CHECK RDRB OWNERSHIP
9916	071642	004737	024676	JSR PC,CHKOWN			: OWN = PORT DRIVER ?
9917	071646	10300C		BCC 2004			: YES
9918	071650			ERRHRD 569.,ERR030			: NO, REPORT ERROR
	071650	104456				TRAP	C#ERRRD
	071652	001071				.WORD	569
	071654	022313				.WORD	ERR030
	071656	000000				.WORD	0
9919	071660			ESCAPE TST			: AND ABORT TEST
	071660	104410				TRAP	C#ESCAPE
	071662	000346				.WORD	L10061-.
9920				; 2004:			
9921	071664	012705	014674	MOV @RDR20A,R5			: POINT TO EXPECTED RDRB
9922	071670	004737	027222	JSR PC,LDXRDR			: LOAD INTO XRDRB0 TABLE
9923	071674	012705	002644	MOV @RDRB,R5			: CHECK RDRB
9924	071700	004737	025032	JSR PC,CHKRDR			: ERRORS ?
9925	071704	103006		BCC 2024			: NO
9926	071706			ERRHRD 570.,ERR036,MSG006			: YES, REPORT ERROR
	071706	104456				TRAP	C#ERRRD
	071710	001072				.WORD	570
	071712	023101				.WORD	ERR036
	071714	017356				.WORD	MSG006
9927	071716			ESCAPE TST			: AND ABORT TEST
	071716	104410				TRAP	C#ESCAPE
	071720	000310				.WORD	L10061-.
9928				;CHECK SECOND RING ENTRY			
9929	071722	012705	002654	2024: MOV @RDRB+8.,R5			: CHECK RDRB OWNERSHIP
9930	071726	004737	024676	JSR PC,CHKOWN			: OWN = PORT DRIVER ?
9931	071732	103006		BCC 2044			: YES
9932	071734			ERRHRD 571.,ERR031			: NO, REPORT ERROR
	071734	104456				TRAP	C#ERRRD
	071736	001073				.WORD	571
	071740	022420				.WORD	ERR031
	071742	000000				.WORD	0
9933	071744			ESCAPE TST			: AND ABORT TEST
	071744	104410				TRAP	C#ESCAPE
	071746	000262				.WORD	L10061-.
9934				; 2044:			
9935	071750	012705	014704	MOV @RDR20B,R5			: POINT TO EXPECTED RDRB
9936	071754	004737	027222	JSR PC,LDXRDR			: LOAD INTO XRDRB0 TABLE
9937	071760	012705	002654	MOV @RDRB+8.,R5			: CHECK RDRB
9938	071764	004737	025032	JSR PC,CHKRDR			: ERRORS ?
9939	071770	103006		BCC 2064			: NO
9940	071772			ERRHRD 572.,ERR037,MSG006			: YES, REPORT ERROR
	071772	104456				TRAP	C#ERRRD
	071774	001074				.WORD	572
	071776	023167				.WORD	ERR037
	072000	017356				.WORD	MSG006
9941	072002			ESCAPE TST			: AND ABORT TEST
	072002	104410				TRAP	C#ESCAPE
	072004	000224				.WORD	L10061-.

```

9942          ;CHECK THIRD RING ENTRY
9943 072006 012705 002664 206:  MOV  @RDRB+16.,R5      ; CHECK RDRB OWNERSHIP
9944 072012 004737 024676      JSR  PC,CHKOWN      ; OWN = PORT DRIVER ?
9945 072016 103006              BCC  208:          ; YES
9946 072020              ERRHRD 573.,ERR032      ; NO, REPORT ERROR
          ;
          TRAP  C#ERRHRD
          .WORD 573
          .WORD ERR032
          .WORD 0
9947 072030              ESCAPE TST          ; AND ABORT TEST
          TRAP  C#ESCAPE
          .WORD L10061-.
          ;
          ;
9948          ;
9949 072034 012705 014714 208:  MOV  @RDR20C,R5      ; POINT TO EXPECTED RDRB
9950 072040 004737 027222      JSR  PC,LDXRDR      ; LOAD INTO XRDRBO TABLE
9951 072044 012705 002664      MOV  @RDRB+16.,R5      ; CHECK RDRB
9952 072050 004737 025032      JSR  PC,CHKRDR      ; ERRORS ?
9953 072054 103006              BCC  210:          ; NO
9954 072056              ERRHRD 574.,ERR038,MSG006 ; YES, REPORT ERROR
          ;
          TRAP  C#ERRHRD
          .WORD 574
          .WORD ERR038
          .WORD MSG006
9955 072066              ESCAPE TST          ; AND ABORT TEST
          TRAP  C#ESCAPE
          .WORD L10061-.
          ;
          ;
9956          ;
9957          ;COMPARE RBUF WITH TBUF
9958 072072 012705 000570 210:  MOV  @376.,R5      ; COMPARE 376 WORDS OF DATA
9959 072076 004737 026044      JSR  PC,CHPDAT      ; DATA COMPARE ERROR ?
9960 072102 103006              BCC  220:          ; NO
9961 072104              ERRHRD 575.,ERR022,MSG007 ; YES, REPORT ERROR
          ;
          TRAP  C#ERRHRD
          .WORD 575
          .WORD ERR022
          .WORD MSG007
9962 072114              ESCAPE TST          ; AND ABORT TEST
          TRAP  C#ESCAPE
          .WORD L10061-.
          ;
          ;
9963          ;
9964 072120 012705 015104 220:  MOV  @CRC27A,R5      ; POINT TO EXPECTED CRC
9965 072124 004737 027176      JSR  PC,LDXCRC      ; LOAD INTO XCRC TABLE
9966 072130 012705 010500      MOV  @RBUF+764.,R5      ; CHECK CRC
9967 072134 004737 026124      JSR  PC,CHPCRC      ; ERRORS ?
9968 072140 103006              BCC  230:          ; NO
9969 072142              ERRHRD 576.,ERR023,MSG008 ; YES, REPORT ERROR
          ;
          TRAP  C#ERRHRD
          .WORD 576
          .WORD ERR023
          .WORD MSG008
9970 072152              ESCAPE TST          ; AND ABORT TEST
          TRAP  C#ESCAPE
          .WORD L10061-.
          ;
          ;
9971          ;
9972 072156 012777 000017 110042 230:  MOV  @STOP,BPCSR0    ; ISSUE STOP PORT COMMAND
9973 072164 004737 024574      JSR  PC,CHKDNI      ; DNI ?
9974 072170 103006              BCC  240:          ; YES

```

```

9975 072172          ERRHRD 577.,ERR019,MSG003      ; NO, REPORT ERROR
      072172 104456
      072174 001101
      072176 021312
      072200 017110
9976 072202          ESCAPE TST                    ; AND ABORT TEST
      072202 104410
      072204 000024
9977
9978 072206 004737 025546      ; 240: JSR PC,CLRDNI      ; WRITE ONE TO CLEAR DNI
9979
9980 072212 103006          BCC 250:          ; ERROR ?
9981 072214          ERRHRD 578.,ERR006,MSG003      ; NO
      072214 104456
      072216 001102
      072220 020202
      072222 017110
9982 072224          ESCAPE TST                    ; AND ABORT TEST
      072224 104410
      072226 000002
9983 072230          ; 250:
9984 072230          ENDTST
      072230 104401
                                     L10061: TRAP C#ETST

```

```

TRAP C#ERRHRD
.WORD 577
.WORD ERR019
.WORD MSG003

TRAP C#ESCAPE
.WORD L10061-.

TRAP C#ERRHRD
.WORD 578
.WORD ERR006
.WORD MSG003

TRAP C#ESCAPE
.WORD L10061-.

TRAP C#ETST

```

.SBTTL TEST 28: PRINT DEVICE PARAMETERS TEST

```

:*****
:
: THIS TEST PRINTS THE DEFAULT PHYSICAL ADDRESS, THE MICROCODE
: REVISION AND THE SWITCH PACK SETTINGS.
:
: TEST SEQUENCE:
:   1. READ DEFAULT PHYSICAL ADDRESS
:   2. READ MICROCODE REVISION
:   3. READ SWITCH PACK SETTINGS
:   4. PRINT
:*****

```

```

10000
10001 072232          BGNTST
      072232
10002 072232 005737 015230          TST      FRSTIM          ; RUN THIS TEST ?
10003 072236 001002          BNE      54             ; YES
10004 072240          EXIT      TST             ; NO, EXIT
      072240 104432          ;
      072242 000710          ; TRAP      C#EXIT
      ;                               .WORD     L10062-.
10005
10006 072244 004737 027446          ; 54:   JSR      PC,TINIT          ; IS A DEVICE RESET NEEDED?
10007 072250 103025          BCC      304           ; NO
10008 072252 012777 000040 107746  MOV      @RSET,@PCSR0  ; YES, RESET DEUNA
10009 072260 004737 024574          JSR      PC,CHKDNI     ; DNI ?
10010 072264 103006          BCC      204           ; YES
10011 072266          ERRHRD  579.,ERR004,MSG003 ; NO, REPORT ERROR
      ;                               TRAP      C#ERHRD
      ;                               .WORD     579
      ;                               .WORD     ERRO04
      ;                               .WORD     MSG003
      072266 104456          ;
      072270 001103          ;
      072272 020102          ;
      072274 017110          ;
10012 072276          ESCAPE  TST             ; AND ABORT TEST
      072276 104410          ; TRAP      C#ESCAPE
      072300 000652          ; .WORD     L10062-.
10013
10014 072302 004737 025546          ; 204:  JSR      PC,CLRDN1          ; WRITE ONE TO CLEAR DNI
10015                                ; ERROR ?
10016 072306 103006          BCC      304           ; NO
10017 072310          ERRHRD  580.,ERR006,MSG003 ; YES, REPORT ERROR
      ;                               TRAP      C#ERHRD
      ;                               .WORD     580
      ;                               .WORD     ERRO06
      ;                               .WORD     MSG003
      072310 104456          ;
      072312 001104          ;
      072314 020202          ;
      072316 017110          ;
10018 072320          ESCAPE  TST             ; AND ABORT TEST
      072320 104410          ; TRAP      C#ESCAPE
      072322 000630          ; .WORD     L10062-.
10019
10020 072324 004737 026772          ; 304:  JSR      PC,LDPCSR          ; ADDRESS OF PCBB -> PCSR2!3
10021 072330 012777 000001 107670  MOV      @GETPCB,@PCSR0 ; ISSUE GET_PCBB PORT COMMAND
10022 072336 004737 024574          JSR      PC,CHKDNI     ; DNI?
10023 072342 103006          BCC      404           ; YES
10024 072344          ERRHRD  581.,ERR009,MSG003 ; NO, REPORT ERROR
      ;                               TRAP      C#ERHRD
      ;                               .WORD     581
      ;                               .WORD     ERRO09
      072344 104456          ;
      072346 001105          ;
      072350 020416          ;

```



10025	072352	017110			ESCAPE TST	; AND ABORT TEST	.WORD	MSG003
	072354	104410					TRAP	C#ESCAPE
	072354	104410					.WORD	L10062-
	072356	000574						
10026								
10027	072360	004737	025546		40#: JSR PC,CLRDNI	; WRITE ONE TO CLEAR DNI		
10028						; ERROR ?		
10029	072364	103006			BCC 50#	; NO		
10030	072366				ERRHRD 582.,ERR006,MSG003	; YES, REPORT ERROR		
	072366	104456					TRAP	C#ERHRD
	072370	001106					.WORD	582
	072372	020202					.WORD	ERR006
	072374	017110					.WORD	MSG003
10031	072376				ESCAPE TST	; AND ABORT TEST		
	072376	104410					TRAP	C#ESCAPE
	072400	000552					.WORD	L10062-
10032								
10033					; READ DEFAULT PHYSICAL ADDRESS			
10034	072402	012705	013124		50#: MOV #RDDEFA,R5	; READ DEFAULT PHYA FUNCTION		
10035	072406	004737	026742		JSR PC,LDPCCB	; LOAD FUNCTION -> PCBB		
10036	072412	012777	000002	107606	MOV #GETCMD,SPCSRO	; ISSUE GET_CMD PORT COMMAND		
10037	072420	004737	024574		JSR PC,CHKDNI	; DNI ?		
10038	072424	103006			BCC 60#	; YES		
10039	072426				ERRHRD 583.,ERR010,MSG003	; NO, REPORT ERROR		
	072426	104456					TRAP	C#ERHRD
	072430	001107					.WORD	583
	072432	020502					.WORD	ERR010
	072434	017110					.WORD	MSG003
10040	072436				ESCAPE TST	; AND ABORT TEST		
	072436	104410					TRAP	C#ESCAPE
	072440	000512					.WORD	L10062-
10041								
10042	072442	004737	025546		60#: JSR PC,CLRDNI	; WRITE ONE TO CLEAR DNI		
10043						; ERROR ?		
10044	072446	103006			BCC 70#	; NO		
10045	072450				ERRHRD 584.,ERR006,MSG003	; YES, REPORT ERROR		
	072450	104456					TRAP	C#ERHRD
	072452	001110					.WORD	584
	072454	020202					.WORD	ERR006
	072456	017110					.WORD	MSG003
10046	072460				ESCAPE TST	; AND ABORT TEST		
	072460	104410					TRAP	C#ESCAPE
	072462	000470					.WORD	L10062-
10047					; MOVE DEFAULT PHYSICAL ADDRESS FROM PCBB -> DPA			
10048	072464	013737	002266	073154	70#: MOV PCBB+2,DPA			
10049	072472	013737	002270	073156	MOV PCBB+4,DPA+2			
10050	072500	013737	002272	073160	MOV PCBB+6,DPA+4			
10051					; LOAD ASCII MESSAGE (DEFADR)			
10052	072506	004737	026432		JSR PC,HEXDPA	; CONVERT TO ASCII HEX		
10053					; READ MICROCODE REVISION			
10054	072512	012705	013264		100#: MOV #RDSTA,R5	; READ PORT STATUS FUNCTION		
10055	072516	004737	026742		JSR PC,LDPCCB	; LOAD FUNCTION -> PCBB		
10056	072522	012777	000002	107476	MOV #GETCMD,SPCSRO	; ISSUE GET_CMD PORT COMMAND		
10057	072530	004737	024574		JSR PC,CHKDNI	; DNI ?		
10058	072534	103006			BCC 110#	; YES		
10059	072536				ERRHRD 585.,ERR010,MSG003	; NO, REPORT ERROR		
	072536	104456					TRAP	C#ERHRD



```

10094 072732 012700 000013          MOV    #11.,R0          ; SHIFT BIT FOR INDEX
10095 072736 006204          160$: ASR    R4
10096 072740 005300          DEC    R0
10097 072742 001375          BNE   160$
10098 072744 062704 073304          ADD    #LPTBL,R4       ; INDEX INTO LOOP TABLE
10099 072750 011437 073166          MOV    (R4),LPMSG      ; LOAD INTO LOOP MESSAGE
10100 072754 013704 073164          170$: MOV    SWPACK,R4   ; SWITCH PACK -> R4
10101 072760 042704 171777          BIC   #171777,R4      ; MASK BITS 10 AND 11
10102 072764 012700 000011          MOV    #9.,R0         ; SHIFT BITS FOR INDEX
10103 072770 006204          180$: ASR    R4
10104 072772 005300          DEC    R0
10105 072774 001375          BNE   180$
10106 072776 062704 073310          ADD    #BTBL,R4       ; INDEX INTO BOOT TABLE
10107 073002 011437 073170          MOV    (R4),BTMSG     ; LOAD INTO BOOT MESSAGE
10108
10109          ; PRINT
10110          ;
10111 073006          PRINTB #FRM015,#DEFHDR ; PRINT DEFAULT PHYSICAL ADDRESS
          MOV    #DEFHDR,-(SP)
          073006 012746 073174          MOV    #FRM015,-(SP)
          073012 012746 016551          MOV    #2,-(SP)
          073016 012746 000002          MOV    SP,R0
          073022 010600          TRAP  C#PNTB
          073024 104414          ADD    #6,SP
10112 073026 062706 000006          PRINTB #FRM016,RREV   ; PRINT MICROCODE REV
          MOV    RREV,-(SP)
          073032 013746 073162          MOV    #FRM016,-(SP)
          073036 012746 016556          MOV    #2,-(SP)
          073042 012746 000002          MOV    SP,R0
          073046 010600          TRAP  C#PNTB
          073050 104414          ADD    #6,SP
10113 073052 062706 000006          PRINTB #FRM015,#SWHDR ; PRINT SWITCH PACK HEADER
          MOV    #SWHDR,-(SP)
          073056 012746 073320          MOV    #FRM015,-(SP)
          073062 012746 016551          MOV    #2,-(SP)
          073066 012746 000002          MOV    SP,R0
          073072 010600          TRAP  C#PNTB
          073074 104414          ADD    #6,SP
10114 073076 062706 000006          PRINTB #FRM015,LPMSG  ; PRINT LOOPBACK MESSAGE
          MOV    LPMSG,-(SP)
          073102 013746 073166          MOV    #FRM015,-(SP)
          073106 012746 016551          MOV    #2,-(SP)
          073112 012746 000002          MOV    SP,R0
          073116 010600          TRAP  C#PNTB
          073120 104414          ADD    #6,SP
10115 073122 062706 000006          PRINTB #FRM015,BTMSG  ; PRINT BOOT MESSAGE
          MOV    BTMSG,-(SP)
          073126 013746 073170          MOV    #FRM015,-(SP)
          073132 012746 016551          MOV    #2,-(SP)
          073136 012746 000002          MOV    SP,R0
          073142 010600          TRAP  C#PNTB
          073144 104414          ADD    #6,SP
          073146 062706 000006
10116
10117 073152          ; 250$:
10118 073152          ENDTST
          073152          L10062: TRAP  C#ETST
          073152 104401

```

```

10120          ;LOCAL STORAGE FOR TEST 28
10121 073154 000000 DPA::          .WORD 0          ; DEFAULT PHYSICAL ADDRESS (15:00)
10122 073156 000000          .WORD 0          ; DEFAULT PHYSICAL ADDRESS (31:16)
10123 073160 000000          .WORD 0          ; DEFAULT PHYSICAL ADDRESS (47:32)
10124          ;
10125 073162 000000 RREV::        .WORD 0          ; MICROCODE REVISION
10126          ;
10127 073164 000000 SWPACK::       .WORD 0          ; SWITCH PACK CONTENTS
10128 073166 000000 LPMMSG::      .WORD 0          ; LOOPBACK MESSAGE ADDRESS
10129 073170 000000 BTMSG::       .WORD 0          ; BOOT MESSAGE ADDRESS
10130          ;
10131 073172      000          ;HEXDAT::      .BYTE 0          ; HEX DATA FOR CONVERSION
10132 073173      000          HEXVAL::      .BYTE 0          ; ASCII HEX VALUE
10133          ;
10134 073174      015      012      105 DEFHDR::    .ASCII <15><12>/ETHERNET DEFAULT ADDRESS (HEX): /
          073177      124      110      105
          073202      122      116      105
          073205      124      040      104
          073210      105      106      101
          073213      125      114      124
          073216      040      101      104
          073221      104      122      105
          073224      123      123      040
          073227      050      110      105
          073232      130      051      072
          073235      040      040
10135 073237      040      040          DEFADR::    .ASCII / /
10136 073241      055          .ASCII /- /
10137 073242      040      040          .ASCII / /
10138 073244      055          .ASCII /- /
10139 073245      040      040          .ASCII / /
10140 073247      055          .ASCII /- /
10141 073250      040      040          .ASCII / /
10142 073252      055          .ASCII /- /
10143 073253      040      040          .ASCII / /
10144 073255      055          .ASCII /- /
10145 073256      040      040          .ASCII / /
10146 073260      015      012      000          .ASCIZ <15><12>
10147          ;
10148 073263      060          ;HEXTBL::    .ASCII /0/
10149 073264      061          .ASCII /1/
10150 073265      062          .ASCII /2/
10151 073266      063          .ASCII /3/
10152 073267      064          .ASCII /4/
10153 073270      065          .ASCII /5/
10154 073271      066          .ASCII /6/
10155 073272      067          .ASCII /7/
10156 073273      070          .ASCII /8/
10157 073274      071          .ASCII /9/
10158 073275      101          .ASCII /A/
10159 073276      102          .ASCII /B/
10160 073277      103          .ASCII /C/
10161 073300      104          .ASCII /D/
10162 073301      105          .ASCII /E/
10163 073302      106          .ASCII /F/
10164          ;
10165          ;

```

```

10166                                     ;LOOP MESSAGE TABLE
10167 073304 073352 LPTBL::          .WORD  LPMSG0
10168 073306 073411                                     .WORD  LPMSG1
10169                                     ;BOOT MESSAGE TABLE
10170 073310 073447 BTTBL::          .WORD  BTMSG0
10171 073312 073505                                     .WORD  BTMSG1
10172 073314 073540                                     .WORD  BTMSG2
10173 073316 073604                                     .WORD  BTMSG3
10174                                     ;ASCII MESSAGES
10175 073320      015      012      123 SMDR::          .ASCII  <15><12>/SWITCH PACK SET FOR :/
      073323      127      111      124
      073326      103      110      040
      073331      120      101      103
      073334      113      040      123
      073337      105      124      040
      073342      106      117      122
      073345      040      072
10176 073347      015      012      000 LPMMSGO::       .ASCIZ  <15><12>
10177 073352      040      040      040 .ASCII  /      SELF TEST LOOP DISABLED/
      073355      040      040      123
      073360      105      114      106
      073363      040      124      105
      073366      123      124      040
      073371      114      117      117
      073374      120      040      104
      073377      111      123      101
      073402      102      114      105
      073405      104
10178 073406      015      012      000 LPMMSG1::       .ASCIZ  <15><12>
10179 073411      040      040      040 .ASCII  /      SELF TEST LOOP ENABLED/
      073414      040      040      123
      073417      105      114      106
      073422      040      124      105
      073425      123      124      040
      073430      114      117      117
      073433      120      040      105
      073436      116      101      102
      073441      114      105      104
10180 073444      015      012      000 BTMSGO::       .ASCIZ  <15><12>
10181 073447      040      040      040 .ASCII  /      NO REMOTE BOOT ENABLED/
      073452      040      040      116
      073455      117      040      122
      073460      105      115      117
      073463      124      105      040
      073466      102      117      117
      073471      124      040      105
      073474      116      101      102
      073477      114      105      104
10182 073502      015      012      000 BTMSG1::       .ASCIZ  <15><12>
10183 073505      040      040      040 .ASCII  /      REMOTE BOOT ENABLED/
      073510      040      040      122
      073513      105      115      117
      073516      124      105      040
      073521      102      117      117
      073524      124      040      105
      073527      116      101      102
      073532      114      105      104
    
```

10184	073535	015	012	000			
10185	073540	040	040	040	BTMSG2::	.ASCIZ <15><12>	
	073543	040	040	122		.ASCII /	REMOTE BOOT ENABLED WITH ROM/
	073546	105	115	117			
	073551	124	105	040			
	073554	102	117	117			
	073557	124	040	105			
	073562	116	101	102			
	073565	114	105	104			
	073570	040	127	111			
	073573	124	110	040			
	073576	122	117	115			
10186	073601	015	012	000		.ASCIZ <15><12>	
10187	073604	040	040	040	BTMSG3::	.ASCII /	REMOTE BOOT AND POWER UP BOOT BOTH ENABLED/
	073607	040	040	122			
	073612	105	115	117			
	073615	124	105	040			
	073620	102	117	117			
	073623	124	040	101			
	073626	116	104	040			
	073631	120	117	127			
	073634	105	122	040			
	073637	125	120	040			
	073642	102	117	117			
	073645	124	040	102			
	073650	117	121	110			
	073653	040	105	116			
	073656	101	102	114			
10188	073663	015	012	000		.ASCIZ <15><12>	
10189						.EVEN	

10192  
10203  
10204  
10232  
10233  
10234  
10235  
10236  
10237  
10238  
10239  
10240  
10241  
10242  
10243  
10244 073666  
073666 000010  
073670  
10245  
10255 073670  
073670 000021  
073672 073710  
073674 160000  
073676 177776  
10256 073700  
073700 001021  
073702 073743  
073704 000000  
073706 000776  
10257 073710  
073710  
10258  
10265 073710 127 110 101  
073713 124 040 111  
073716 123 040 124  
073721 110 105 040  
073724 120 103 123  
073727 122 060 040  
073732 101 104 104  
073735 122 105 123  
073740 123 077 000  
10266 073743 127 110 101  
073746 124 040 111  
073751 123 040 124  
073754 110 105 040  
073757 126 105 103  
073762 124 117 122  
073765 040 101 104  
073770 104 122 105  
073773 123 123 077  
073776 000  
10267

.TITLE PARAMETER CODING

.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.
; --

```

BGNHRD

.WORD L10063-L#HARD/2

L#HARD::

GPRMA ASKCSR,0,0,160000,177776,NO

;FIRST P-TABLE QUESTION

```

.WORD T#CODE
.WORD ASKCSR
.WORD T#LOLIM
.WORD T#HILIM

```

GPRMA ASKVEC,2,0,0,776,NO

;SECOND P-TABLE QUESTION

```

.WORD T#CODE
.WORD ASK'EC
.WORD T#LOLIM
.WORD T#HILIM

```

ENDHRD

.EVEN

L10063:

ASKCSR: .ASCIZ /WHAT IS THE PCSRO ADDRESS?/

ASKVEC: .ASCIZ /WHAT IS THE VECTOR ADDRESS?/

.EVEN

.SBTTL SOFTWARE PARAMETER CODING SECTION

10269  
10270  
10271  
10272  
10273  
10274  
10275  
10276  
10277  
10278  
10279

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; THE SOFTWARE 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.  
;--

10280 074000  
074000 000003  
074002

BGNSFT

.WORD L10064-L\$SOFT/2  
L\$SOFT::

10281  
10290 074002  
074002 000130  
074004 074010  
074006 000001

GPRML ASKEXT,0,1,YES

.WORD T\$CODE  
.WORD ASKEXT  
.WORD 1

10291  
10292  
10293 074010

.EVEN

ENDSFT

L10064: .EVEN

10294 074010  
10295  
10302

10303 074010 122 125 116  
074013 040 124 105  
074016 123 124 040  
074021 062 060 040  
074024 111 116 040  
074027 105 130 124  
074032 105 122 116  
074035 101 114 040  
074040 114 117 117  
074043 120 102 101  
074046 103 113 040  
074051 115 117 104  
074054 105 040 077  
074057 000

ASKEXT: .ASCIZ /RUN TEST 20 IN EXTERNAL LOOPBACK MODE ?/

10304  
10305  
10306 074060  
10307 074060  
10308  
10315  
10316 074100

.EVEN

\$PATCH::  
.BLKW 10

LASTAD

.EVEN  
.WORD 0  
.WORD 0

074100 000000  
074102 000000  
074104  
10317 074104  
10318 000001

L\$LAST::  
ENDMOD

.END



PARAMETER CODING  
SYMBOL TABLE

ADR = 000020 G  
ADR21 014320 G  
ADR21C 014326 G  
ASKCSR 073710  
ASKEXT 074010  
ASKVEC 073743  
ASSEMB= 000010  
BIT0 = 000001 G  
BIT00 = 000001 G  
BIT01 = 000002 G  
BIT02 = 000004 G  
BIT03 = 000010 G  
BIT04 = 000020 G  
BIT05 = 000040 G  
BIT06 = 000100 G  
BIT07 = 000200 G  
BIT08 = 000400 G  
BIT09 = 001000 G  
BIT1 = 000002 G  
BIT10 = 002000 G  
BIT11 = 004000 G  
BIT12 = 010000 G  
BIT13 = 020000 G  
BIT14 = 040000 G  
BIT15 = 100000 G  
BIT2 = 000004 G  
BIT3 = 000010 G  
BIT4 = 000020 G  
BIT5 = 000040 G  
BIT6 = 000100 G  
BIT7 = 000200 G  
BIT8 = 000400 G  
BIT9 = 001000 G  
BOE = 000400 G  
BTMSG 073170 G  
BTMSG0 073447 G  
BTMSG1 073505 G  
BTMSG2 073540 G  
BTMSG3 073604 G  
BTTBL 073310 G  
BUFL = 100000 G  
CHKDNI 024574 G  
CHKOWN 024676 G  
CHKRCE 024730 G  
CHKRDR 025032 G  
CHKRXI 025132 G  
CHKSER 025506 G  
CHKSTR 025234 G  
CHKTDR 025316 G  
CHKTXI 025404 G  
CLKBR 002250 G  
CLKCSR 002246 G  
CLKFRE 002254 G  
CLKSRV 030240 G  
CLKTAB 002246 G  
CLKVEC 002252 G  
CLRCNT 013224 G

CLRDNI 025546 G  
CLRRCE 025614 G  
CLRRXI 025662 G  
CLRSER 025776 G  
CLRSTA 013274 G  
CLRTXI 025730 G  
CMODE1= 175015 G  
CMPCRC 026124 G  
CMPDAT 026044 G  
CMPMEM 026174 G  
CMPRNT 026254 G  
CRCBLK 026334 G  
CRCH 014214 G  
CRC14A 014724 G  
CRC15H 014730 G  
CRC15L 014732 G  
CRC16H 014734 G  
CRC16L 014736 G  
CRC20A 014740 G  
CRC21A 014744 G  
CRC21B 014750 G  
CRC22A 014754 G  
CRC22B 015024 G  
CRC23B 015074 G  
CRC25B 015107 G  
CRC27A 015104 G  
C#AU = 000052  
C#AUTO= 000061  
C#BRK = 000022  
C#BSEG= 000004  
C#BSUB= 000002  
C#CEFG= 000045  
C#CLK= 000062  
C#CLEA= 000012  
C#CLOS= 000035  
C#CLP1= 000006  
C#CVEC= 000036  
C#DCLN= 000044  
C#DODU= 000051  
C#DRPT= 000024  
C#DU = 000053  
C#EDIT= 000003  
C#ERDF= 000055  
C#ERHR= 000056  
C#ERRO= 000060  
C#ERSF= 000054  
C#ERSO= 000057  
C#ESCA= 000010  
C#ESEG= 000005  
C#ESUB= 000003  
C#ETST= 000001  
C#EXIT= 000032  
C#GETB= 000026  
C#GETW= 000027  
C#GMAN= 000043  
C#GPHR= 000042  
C#GPLO= 000030

C#GPRI= 000040  
C#INIT= 000011  
C#INLP= 000020  
C#MANI= 000050  
C#MEM = 000031  
C#MSG = 000023  
C#OPEN= 000034  
C#PNTB= 000014  
C#PNTF= 000017  
C#PNTS= 000016  
C#PNTX= 000015  
C#QIO = 000377  
C#RDBU= 000007  
C#REFG= 000047  
C#RESE= 000033  
C#REVI= 000003  
C#RFLA= 000021  
C#RPT = 000025  
C#SEFG= 000046  
C#SPRI= 000041  
C#SVEC= 000037  
C#TPRI= 000013  
DEFADR 073237 G  
DEFHDR 073174 G  
DEST 002256 G  
DFPTBL 002216 G  
DIAGMC= 000000  
DMPMEM 013304 G  
DNI = 004000 G  
DNIB = 000010 G  
DNIFLG 015226 G  
DPA 073154 G  
DTYPE = 002540 G  
ECCODE 015220 G  
ECRC 015210 G  
ECRCB 015212 G  
EDAT 015204 G  
EF.CON= 000036 G  
EF.NEW= 000035 G  
EF.PWR= 000034 G  
EF.RES= 000037 G  
EF.STA= 000040 G  
ENP = 000400 G  
EPCSRO 015140 G  
EPCSRI 015142 G  
ERDRB0 015144 G  
ERDRB2 015146 G  
ERDRB4 015150 G  
ERDRB6 015152 G  
ERRBLK 015250 G  
ERRMSG 015246 G  
ERRNBR 015244 G  
ERRS = 040000 G  
ERRTYP 015242 G  
ERR001 017756 G  
ERR002 020006 G  
ERR003 020044 G

ERR004 020102 G  
ERR005 020156 G  
ERR006 020202 G  
ERR007 020250 G  
ERR008 020357 G  
ERR009 020416 G  
ERR010 020502 G  
ERR011 020565 G  
ERR012 020633 G  
ERR013 020714 G  
ERR014 020745 G  
ERR015 021013 G  
ERR016 021044 G  
ERR017 021112 G  
ERR018 021212 G  
ERR019 021312 G  
ERR020 021372 G  
ERR021 021453 G  
ERR022 021534 G  
ERR023 021603 G  
ERR024 021630 G  
ERR025 021672 G  
ERR026 021724 G  
ERR027 021773 G  
ERR028 022100 G  
ERR029 022206 G  
ERR030 022313 G  
ERR031 022420 G  
ERR032 022526 G  
ERR033 022633 G  
ERR034 022722 G  
ERR035 023012 G  
ERR036 023101 G  
ERR037 023167 G  
ERR038 023256 G  
ERR039 023344 G  
ERR040 023445 G  
ERR041 023550 G  
ERR042 023603 G  
ERR043 023644 G  
ERR044 023706 G  
ERR045 023777 G  
ERR046 024064 G  
ERR047 024156 G  
ERR048 024252 G  
ERR049 024304 G  
ERR050 024353 G  
ERR051 024443 G  
ETDRB0 015164 G  
ETDRB2 015166 G  
ETDRB4 015170 G  
ETDRB6 015172 G  
EVL = 000004 G  
EXLOOP 002224  
E#END = 002100  
E#LOAD= 000035  
FATI = 000400 G

FATIB = 000001 G  
FRM001 015324 G  
FRM002 015361 G  
FRM003 015442 G  
FRM004 015503 G  
FRM005 015543 G  
FRM006 015630 G  
FRM007 015715 G  
FRM008 016002 G  
FRM009 016067 G  
FRM010 016154 G  
FRM011 016241 G  
FRM012 016326 G  
FRM013 016413 G  
FRM014 016472 G  
FRM015 016551 G  
FRM016 016556 G  
FRM017 016627 G  
FRM018 016655 G  
FRM019 016711 G  
FRM020 016745 G  
FRM021 017001 G  
FRSTIM 015230 G  
F#AU = 000015  
F#AUTO= 000020  
F#BGN = 000040  
F#CLEA= 000007  
F#DU = 000016  
F#END = 000041  
F#HARD= 000004  
F#HW = 000013  
F#INIT= 000006  
F#JMP = 000050  
F#MOD = 000000  
F#MSG = 000011  
F#PROT= 000021  
F#PWR = 000017  
F#RPT = 000012  
F#SEG = 000003  
F#SOFT= 000005  
F#SRV = 000010  
F#SUB = 000002  
F#SW = 000014  
F#TEST= 000001  
GETCMD= 000002 G  
GETPCB= 000001 G  
GOODST= 000000 G  
G#CNT0= 000200  
G#DELM= 000372  
G#DISP= 000003  
G#EXCP= 000400  
G#HILI= 000002  
G#LOLI= 000001  
G#NO = 000000  
G#OFFS= 000400  
G#OFSI= 000376  
G#PRMA= 000001

PARAMETER CODING  
SYMBOL TABLE

G#PRND= 000002  
 G#PRNL= 000000  
 G#RADA= 000140  
 G#RADB= 000000  
 G#RADD= 000040  
 G#RADL= 000120  
 G#RADO= 000020  
 G#XFER= 000004  
 G#YES = 000010  
 HELP = 000000  
 HEXDAT 073172 G  
 HEXDPA 026432 G  
 HEXH 026514 G  
 HEXL 026552 G  
 HEXTBL 073263 G  
 HEXVAL 073173 G  
 HOE = 100000 G  
 IBE = 010000 G  
 ICAB = 040000 G  
 IDU = 000040 G  
 IE = 000100 G  
 IER = 020000 G  
 INITH = 000000 G  
 INTE = 000100 G  
 INTR = 000200 G  
 INTVEC 002240 G  
 ISR = 000100 G  
 ISRDNI 030212 G  
 ISRDNI 030202 G  
 IXE = 004000 G  
 I#AU = 000041  
 I#AUTO= 000041  
 I#CLN = 000041  
 I#DU = 000041  
 I#RD = 000041  
 I#NIT= 000041  
 I#MOD = 000041  
 I#MSG = 000041  
 I#PROT= 000040  
 I#PTAB= 000041  
 I#PWR = 000041  
 I#RPT = 000041  
 I#SEG = 000041  
 I#SETU= 000041  
 I#SFT = 000041  
 I#SRV = 000041  
 I#SUB = 000041  
 I#TST = 000041  
 J#JMP = 000167  
 LDBUF 026600 G  
 LDBUFC 026642 G  
 LDDEST 026714 G  
 LDNEH 013314 G  
 LDPCBR 026742 G  
 LDPCSR 026772 G  
 LDRDRB 027010 G  
 LDRDRB 027046 G

LDTDRX 027104 G  
 LDUDBB 027142 G  
 LDXCRC 027176 G  
 LDXRDR 027222 G  
 LDXTDR 027252 G  
 LOE = 040000 G  
 LOT = 000010 G  
 LPMMSG 073166 G  
 LPMMSG0 073352 G  
 LPMMSG1 073411 G  
 LPTBL 073304 G  
 LSMA 013114 G  
 L#ACP 002110 G  
 L#APT 002036 G  
 L#AU 030174 G  
 L#AUT 002070 G  
 L#AUTO 030156 G  
 L#CCP 002106 G  
 L#CLEA 030160 G  
 L#CO 002032 G  
 L#DEPO 002011 G  
 L#DESC 015260 G  
 L#DESP 002076 G  
 L#DEVP 002060 G  
 L#DISP 002124 G  
 L#DLY 002116 G  
 L#DTP 002040 G  
 L#DTYP 002034 G  
 L#DU 030166 G  
 L#DUT 002072 G  
 L#DVTY 015252 G  
 L#EF 002052 G  
 L#ENVI 002044 G  
 L#ERRT 015242 G  
 L#ETP 002102 G  
 L#EXP1 002046 G  
 L#EXP4 002064 G  
 L#EXP5 002066 G  
 L#HARD 073670 G  
 L#HME 002120 G  
 L#HPCP 002016 G  
 L#HPTP 002022 G  
 L#HM 002216 G  
 L#ICP 002104 G  
 L#INIT 027552 G  
 L#LADP 002026 G  
 L#LAST 074104 G  
 L#LOAD 002100 G  
 L#LUN 002074 G  
 L#MREV 002050 G  
 L#NAME 002000 G  
 L#PRIO 002042 G  
 L#PROT 027544 G  
 L#PRT 002112 G  
 L#REPP 002062 G  
 L#REV 002010 G  
 L#RPT 027536 G

L#SOFT 074002 G  
 L#SPC 002056 G  
 L#SPCP 002020 G  
 L#SPTP 002024 G  
 L#STA 002030 G  
 L#SW 002224 G  
 L#TEST 002114 G  
 L#TIML 002014 G  
 L#UNIT 002012 G  
 L10000 002222  
 L10001 002226  
 L10002 017060  
 L10003 017106  
 L10004 017140  
 L10005 017212  
 L10006 017354  
 L10007 017516  
 L10010 017550  
 L10011 017632  
 L10012 017754  
 L10013 027542  
 L10015 030112  
 L10016 030156  
 L10017 030164  
 L10020 030172  
 L10021 030200  
 L10022 030210  
 L10023 030236  
 L10024 030252  
 L10025 030350  
 L10026 030450  
 L10027 030550  
 L10030 030650  
 L10031 030724  
 L10032 031000  
 L10033 031242  
 L10034 035274  
 L10035 035602  
 L10036 036132  
 L10037 037106  
 L10040 037652  
 L10041 041060  
 L10042 043034  
 L10043 042210  
 L10044 043032  
 L10045 044146  
 L10046 045260  
 L10047 046366  
 L10050 047364  
 L10051 050256  
 L10052 052052  
 L10053 054734  
 L10054 060010  
 L10055 063410  
 L10056 065446  
 L10057 067166  
 L10060 070500

L10061 072230  
 L10062 073152  
 L10063 073710  
 L10064 074010  
 MEM10A 014226 G  
 MEM11A 014256 G  
 MEM13A C14260 G  
 METER 015222 G  
 MODE15 015110 G  
 MODE17 015112 G  
 MODE20 015114 G  
 MODE21 015116 G  
 MODE24 015120 G  
 MODE25 015122 G  
 MODE26 015124 G  
 MSG001 017036 G  
 MSG002 017062 G  
 MSG003 017110 G  
 MSG004 017142 G  
 MSG005 017214 G  
 MSG006 017356 G  
 MSG007 017520 G  
 MSG008 017552 G  
 MSG009 017634 G  
 MULT 014334 G  
 MULTC 014430 G  
 NEXMEM 015224 G  
 NIHLT = 000006 G  
 NIUNI = 000007 G  
 NOCLK 030114 G  
 NOPF 013104 G  
 NORXI 027302 G  
 ONEFIL= 000001  
 ONES = 177777 G  
 OWN = 100000 G  
 O#APTS= 000000  
 O#AU = 000001  
 O#BGR= 000001  
 O#BNS= 000001  
 O#DU = 000001  
 O#ERRT= 000001  
 O#GNSW= 000001  
 O#POIN= 000001  
 O#SETU= 000000  
 PATRN1 015232 G  
 PCBB 002264 G  
 PCEI = 040000 G  
 PCEIB = 000100 G  
 PCSR0 002226 G  
 PCSR0U 002236 G  
 PCSR1 002230 G  
 PCSR2 002232 G  
 PCSR3 002234 G  
 PCTO = 000200 G  
 PDMD = 000010 G  
 PNOP = 000006 G  
 PNT = 001000 G

POLYM = 120001 G  
 PRI = 002000 G  
 PRIID = 000001 G  
 PRI00 = 000000 G  
 PRI01 = 000040 G  
 PRI02 = 000100 G  
 PRI03 = 000140 G  
 PRI04 = 000200 G  
 PRI05 = 000240 G  
 PRI06 = 000300 G  
 PRI07 = 000340 G  
 RBUF 007104 G  
 RBUF2 007504 G  
 RBUF3 010104 G  
 RBUF4 010504 G  
 RBUF5 011104 G  
 RBUF6 011504 G  
 RBUF7 012104 G  
 RBUF8 012504 G  
 RCBI = 002000 G  
 RCBIB = 000004 G  
 RDCNT 013214 G  
 RDCEFA 013124 G  
 RDMODE 013234 G  
 RDMILA 013154 G  
 RDPHYA 013134 G  
 RDRB 002644 G  
 RDRB1A 013354 G  
 RDRB1B 013414 G  
 RDRB2A 013454 G  
 RDRB3A 013514 G  
 RDRNGS 013174 G  
 RDR14A 014634 G  
 RDR15A 014644 G  
 RDR17A 014654 G  
 RDR17B 014664 G  
 RDR20A 014674 G  
 RDR20B 014704 G  
 RDR20C 014714 G  
 RDSTA 013264 G  
 READY = 000002 G  
 RESET = 000000 G  
 RFRMT 013324 G  
 RFRMTX 013340 G  
 RHTC = 000010 G  
 RREV 073162 G  
 RSET = 000040 G  
 RUN = 000003 G  
 RXI = 020000 G  
 RXIB = 000040 G  
 SECOND= 000077 G  
 SERI = 100000 G  
 SERIB = 000200 G  
 SETBUF 027342 G  
 SFPTBL 002224 G  
 SIZ4K = 020000 G  
 SIZ8K = 040000 G

PARAMETER CODING SYMBOL TABLE

SLFT = 000003 G  
 SMASK = 177770 G  
 SMSG00 031446 G  
 SMSG01 031472 G  
 SMSG02 031521 G  
 SMSG03 031534 G  
 SMSG04 031573 G  
 SMSG05 031636 G  
 SMSG06 031671 G  
 SMSG07 031742 G  
 SMSG10 032014 G  
 SMSG11 032070 G  
 SMSG12 032117 G  
 SMSG13 032134 G  
 SMSG14 032170 G  
 SMSG15 032204 G  
 SMSG16 032220 G  
 SMSG17 032234 G  
 SMSG20 032250 G  
 SMSG21 032273 G  
 SMSG22 032307 G  
 SMSG23 032323 G  
 SMSG24 032337 G  
 SMSG25 032353 G  
 SMSG26 032367 G  
 SMSG27 032403 G  
 SMSG30 032417 G  
 SMSG31 032474 G  
 SMSG32 032546 G  
 SMSG33 032621 G  
 SMSG34 032665 G  
 SMSG35 032736 G  
 SMSG36 033001 G  
 SMSG37 033052 G  
 SMSG40 033115 G  
 SMSG41 033205 G  
 SMSG42 033272 G  
 SMSG43 033360 G  
 SMSG44 033437 G  
 SMSG45 033523 G  
 SMSG46 033601 G  
 SMSG47 033615 G  
 SMSG50 033631 G  
 SMSG51 033717 G

SMSG52 034002 G  
 SMSG53 034066 G  
 SMSG54 034143 G  
 SMSG55 034225 G  
 SMSG56 034301 G  
 SMSG57 034315 G  
 SMSG60 034331 G  
 SMSG61 034354 G  
 SMSG62 034407 G  
 SMSG63 034442 G  
 SMSG64 034471 G  
 SMSG65 034504 G  
 SMSG66 034525 G  
 SMSG67 034546 G  
 SMSG70 034571 G  
 SMSG71 034612 G  
 SMSG72 034645 G  
 SMSG73 034671 G  
 SMSG74 034705 G  
 SMSG75 034721 G  
 SMSG76 034735 G  
 SMSG77 034751 G  
 START = 000004 G  
 STMASK = 140377 G  
 STMSG 031244 G  
 STOP = 000017 G  
 STP = 001000 G  
 STTBL 031246 G  
 SVCCBL = 000000  
 SVCINS = 000001  
 SVCSUB = 000001  
 SVCTAG = 000001  
 SVCTST = 000001  
 SHADDR 015136 G  
 SHADR 073320 G  
 SMPACK 073164 G  
 SLSYM = 010000  
 TBUF 003104 G  
 TBUF2 003504 G  
 TBUF3 004104 G  
 TBUF4 004504 G  
 TBUF5 005104 G  
 TBUF6 005504 G

TBUF7 006104 G  
 TBUF8 006504 G  
 TDRB 002604 G  
 TDRBXX 014014 G  
 TDRB1A 013554 G  
 TDRB1B 013614 G  
 TDRB1C 013654 G  
 TDRB2A 013714 G  
 TDRB3A 013754 G  
 TDRMSK = 007777 G  
 TDRX 002704 G  
 TDR14A 014524 G  
 TDR15A 014534 G  
 TDR18A 014544 G  
 TDR18B 014554 G  
 TDR20A 014564 G  
 TDR20B 014574 G  
 TDR20C 014604 G  
 TDR21X 014614 G  
 TDR25A 014624 G  
 TIMASK = 000377 G  
 TIMOFF 024560 G  
 TIMON 024542 G  
 TINIT 027446 G  
 TXI = 010000 G  
 TXIB = 000020 G  
 TARGC = 000002  
 TCODE = 000130  
 TERRN = 001114  
 TEXCP = 000000  
 TFLAG = 000040  
 TGMAN = 000000  
 THILI = 000776  
 TLAST = 000031  
 TLOLI = 000000  
 TLSYM = 010000  
 TLTND = 000034  
 TNEST = 177777  
 TNSO = 000000  
 TNS1 = 000005  
 TNS2 = 000002  
 TPTNU = 000000  
 TSAVL = 177777

TSEGL = 177777  
 TSEKO = 010000  
 TSUBN = 000000  
 TAGL = 177777  
 TAGN = 010065  
 TEMP = 000000  
 TEST = 000034  
 TSTM = 177777  
 TSTS = 000001  
 TAU = 010021  
 TAUT = 010016  
 TCLE = 010017  
 TDU = 010020  
 THAR = 010063  
 THM = 010000  
 THINI = 010015  
 THMSG = 010012  
 THPRO = 010014  
 THRPT = 010013  
 THSEG = 010000  
 THSOF = 010064  
 THSRV = 010024  
 THSUB = 010044  
 THSM = 010001  
 THTES = 010062  
 T1 030254 G  
 T10 035604 G  
 T11 036134 G  
 T12 037110 G  
 T13 037654 G  
 T14 041062 G  
 T14.1 041062  
 T14.2 042212  
 T15 043036 G  
 T16 044150 G  
 T17 045262 G  
 T18 046370 G  
 T19 047366 G  
 T2 030352 G  
 T20 050260 G  
 T21 052054 G  
 T22 054736 G  
 T23 060012 G

T24 063412 G  
 T25 065450 G  
 T26 067170 G  
 T27 070502 G  
 T28 072232 G  
 T3 030452 G  
 T4 030552 G  
 T5 030652 G  
 T6 030726 G  
 T7 031002 G  
 T8 035002 G  
 T9 035276 G  
 UAM = 000200 G  
 UDBB 002274 G  
 UDB10A 014216 G  
 UDB11A 014246 G  
 UDB28A 015126 G  
 UNAPRI 002242 G  
 UNHLT = 000005 G  
 UNIT 002244 G  
 WTHODE 013244 G  
 WTHOD1 013254 G  
 WTHULA 013164 G  
 WTPHYA 013144 G  
 WTRNGS 013204 G  
 XCRC 015214 G  
 XCRCB 015216 G  
 XDAT 015206 G  
 XPMR = 100000 G  
 XRDRB0 015154 G  
 XRDRB2 015156 G  
 XRDRB4 015160 G  
 XRDRB6 015162 G  
 XTDRB0 015174 G  
 XTDRB2 015176 G  
 XTDRB4 015200 G  
 XTDRB6 015202 G  
 XALMA = 000000  
 XFALS = 000040  
 XOFFS = 000400  
 XTRUE = 000020  
 ZERO = 000000 G  
 PATCH 074060 G

. ABS. 074104 000  
 000000 001  
 ERRORS DETECTED: 0

VIRTUAL MEMORY USED: 28702 WORDS ( 113 PAGES)  
 DYNAMIC MEMORY: 20060 WORDS ( 77 PAGES)  
 ELAPSED TIME: 00:42:59  
 CZUABCO,CZUABCO/-SP-SVC34R/ML,CZUABCO.MAC