

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 miniature version of a functional diagnostic tool, likely used for testing various components of a system. The charts are organized into several sections, each with a title in the top-left corner of the grid:

- SECTION 1 (Top Row):** Includes charts for "TESTING", "OPERATION", "REPAIR", "TROUBLESHOOTING", "DIAGNOSIS", "MAINTENANCE", "REPAIR", "TROUBLESHOOTING", "DIAGNOSIS", and "MAINTENANCE".
- SECTION 2 (Second Row):** Includes charts for "TESTING", "OPERATION", "REPAIR", "TROUBLESHOOTING", "DIAGNOSIS", "MAINTENANCE", "REPAIR", "TROUBLESHOOTING", "DIAGNOSIS", and "MAINTENANCE".
- SECTION 3 (Third Row):** Includes charts for "TESTING", "OPERATION", "REPAIR", "TROUBLESHOOTING", "DIAGNOSIS", "MAINTENANCE", "REPAIR", "TROUBLESHOOTING", "DIAGNOSIS", and "MAINTENANCE".
- SECTION 4 (Fourth Row):** Includes charts for "TESTING", "OPERATION", "REPAIR", "TROUBLESHOOTING", "DIAGNOSIS", "MAINTENANCE", "REPAIR", "TROUBLESHOOTING", "DIAGNOSIS", and "MAINTENANCE".
- SECTION 5 (Fifth Row):** Includes charts for "TESTING", "OPERATION", "REPAIR", "TROUBLESHOOTING", "DIAGNOSIS", "MAINTENANCE", "REPAIR", "TROUBLESHOOTING", "DIAGNOSIS", and "MAINTENANCE".
- SECTION 6 (Sixth Row):** Includes charts for "TESTING", "OPERATION", "REPAIR", "TROUBLESHOOTING", "DIAGNOSIS", "MAINTENANCE", "REPAIR", "TROUBLESHOOTING", "DIAGNOSIS", and "MAINTENANCE".
- SECTION 7 (Seventh Row):** Includes charts for "TESTING", "OPERATION", "REPAIR", "TROUBLESHOOTING", "DIAGNOSIS", "MAINTENANCE", "REPAIR", "TROUBLESHOOTING", "DIAGNOSIS", and "MAINTENANCE".
- SECTION 8 (Eighth Row):** Includes charts for "TESTING", "OPERATION", "REPAIR", "TROUBLESHOOTING", "DIAGNOSIS", "MAINTENANCE", "REPAIR", "TROUBLESHOOTING", "DIAGNOSIS", and "MAINTENANCE".
- SECTION 9 (Ninth Row):** Includes charts for "TESTING", "OPERATION", "REPAIR", "TROUBLESHOOTING", "DIAGNOSIS", "MAINTENANCE", "REPAIR", "TROUBLESHOOTING", "DIAGNOSIS", and "MAINTENANCE".
- SECTION 10 (Bottom Row):** Includes charts for "TESTING", "OPERATION", "REPAIR", "TROUBLESHOOTING", "DIAGNOSIS", "MAINTENANCE", "REPAIR", "TROUBLESHOOTING", "DIAGNOSIS", and "MAINTENANCE".

Each chart typically features a title, a set of instructions or a flowchart, and a grid of data points or test results. The text within the charts is small and difficult to read, but the overall layout is consistent across the entire page.

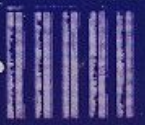
DEUNA

FUNCTIONAL DIAGNOSTIC
CZUABCO

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1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100
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IDENTIFICATION

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 DMI AFTER ISSUING A RESET TO PCSRO. FIX SELF TEST. UPDATE SELF TEST ERROR DESCRIPTIONS. USE LINE CLOCK AS TIMER INSTEAD OF SOFT WARE 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 ACCESSSES 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.

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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 "DDDDD".

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

EXAMPLE OF SWITCH USAGE:

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

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

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

	TESTS	PASS	FLAGS	EOP	UNITS
START	X	X	X	X	X

```

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

2.3 FLAGS

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

FLAG	EFFECT
HOE	HALT ON ERROR - CONTROL IS RETURNED TO RUNTIME SERVICES COMMAND MODE
LOE	LOOP ON ERROR
IER*	INHIBIT ALL ERROR REPORTS
IBE*	INHIBIT ALL ERROR REPORTS EXCEPT FIRST LEVEL (FIRST LEVEL CONTAINS ERROR TYPE, NUMBER, PC, TEST AND UNIT)
IXE*	INHIBIT EXTENDED ERROR REPORTS (THOSE CALLED BY PRINTX MACRO'S)
PRI	DIRECT MESSAGES TO LINE PRINTER
ONT	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 - DENUA FAILED TO RELINQUISH OWNERSHIP OF RDRB
 TIMEOUT ERROR - DENUA FAILED TO RELINQUISH OWNERSHIP OF TDRB
 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
 RCBI BIT FAILED TO SET
 WRITING ONE TO CLEAR RCBI BIT FAILED
 TIMEOUT ERROR - DENUA FAILED TO RELINQUISH OWNERSHIP OF FIRST TDRB
 TIMEOUT ERROR - DENUA FAILED TO RELINQUISH OWNERSHIP OF SECOND TDRB
 TIMEOUT ERROR - DENUA FAILED TO RELINQUISH OWNERSHIP OF THIRD TDRB
 TIMEOUT ERROR - DENUA FAILED TO RELINQUISH OWNERSHIP OF FIRST RDRB
 TIMEOUT ERROR - DENUA FAILED TO RELINQUISH OWNERSHIP OF SECOND RDRB
 TIMEOUT ERROR - DENUA 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 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 ?

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 NCMN 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 NCMN 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 PALETS
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 RYI
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 DESTINATION'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

J2

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$NAME::
      .ASCII /C/
      .ASCII /Z/
      .ASCII /U/
      .ASCII /A/
      .ASCII /B/
      .BYTE  C
      .BYTE  0
      .BYTE  0
L$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

L\$ENVI:: .WORD 340
L\$EXP1:: .WORD 0
L\$MREV:: .WORD 0
L\$LF:: .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 0
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

1214
1215

.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
LDISPATCH:;
.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

M₁

.SBTTL DEFAULT HARDWARE P TABLE

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

1243
1244
1245
1246
1247
1248
1249
1250
1251
1252 002214
002214 000002
002216
002216
1253
1263 002216 000000
1264 002220 000000
1265 002222
002222

BGNM' DFPTBL

.WORD L10000 L\$HW/2

L\$HW::
DFPTBL::

.WORD 0
.WORD 0
ENDHW

; PCSRD - UNIBUS ADDRESS
; DEUNA INTERRUPT VECTOR

L10000:

1267
 1268
 1269
 1270
 1271
 1272
 1273
 1274
 1275
 1276 002222
 002222 000001
 002224
 002224
 1277
 1285
 1286 002224 000000
 1287
 1288 002226
 002226
 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.
 ;

BGNSW SFPTBL

.WORD L10001-L\$SW/2

L\$SW::
 SFPTBL::

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
0C0040
000000
    
```

```

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

OPERATOR FLAG BITS

```

000004
0C0010
000C20
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
MOE.. 100000
    
```

```

1366
1367
1368
1369
1370
1371
1372
1373
1374
1375
1376
1377
1378
1379
1380
1381
1382
1383
1384
1385
1386
1387
1388
1389
1390
1391
1392
1393
1394
1395
1396
1397
1398
    
```

```

100000
00G200
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
ONI .. BIT11 ; DONE INTERRUPT
ONIB .. 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 CONSOLF 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 CLOCY ;MAC001

```

1442
1443
1444
1445
1446
1447
1448
1449
1450 002226 000000
1451 002230 000000
1452 002232 000000
1453 002234 000000
1454 002236 000000
1455
1456 002240 000000
1457 002242 000240
1458 002244 000000
1459
1460 002246
1461 002246 000000
1462 002250 000000
1463 002252 000000
1464 002254 000000
1465
1466 002256 000000
1467 002260 000000
1468 002262 000000
1469
1470
1471 002264
1472 002274
1473 002604
1474 002644
1475 002704
1476 003104
1477 003504
1478 004104
1479 004504
1480 005104
1481 005504
1482 006104
1483 006504
1484 007104
1485 007504
1486 010104
1487 010504
1488 011104
1489 011504
1490 012104
1491 012504
1492
1493
1494 013104 000000
1495 013106 000000
1496 013110 000000
1497 013112 000000
1498

.SBTTL GLOBAL DATA SECTION

```

***
; THE GLOBAL DATA SECTION CONTAINS DATA THAT ARE USED
; IN MORE THAN ONE TEST.
;--
; ADDRESSES FOR DEUNA UNDER TEST
;
PCSR0::      .WORD   0      ; ADDRESS OF PCSR0
PCSR1::      .WORD   0      ; ADDRESS OF PCSR1
PCSR2::      .WORD   0      ; ADDRESS OF PCSR2
PCSR3::      .WORD   0      ; ADDRESS OF PCSR3
PCSR0UB::    .WORD   0      ; ADDRESS OF THE UPPER BYTE OF PCSR0
;
INTVEC::     .WORD   0      ; ADDRESS OF DEUNA INTERRUPT VECTOR
UNAPRI::    .WORD  240     ; UNAP PRIORITY = 5
UNIT::      .WORD   0      ; UNIT NUMBER
;
CLKTAB::    .WORD   0      ; LINE CLOCK STATUS REGISTER
CLKCLR::    .WORD   0      ; LINE CLOCK PRIORITY
CLKBR::     .WORD   0      ; LINE CLOCK VECTOR
CLKVEC::    .WORD   0      ; LINE CLOCK FREQUENCY
CLKFRE::    .WORD   0
;
DEST::      .WORD   0      ; DESTINATION ADDRESS
            .WORD   0
            .WORD   0
;
; DATA STRUCTURES
PCBB::      .BLKW   4      ; PORT CONTROL BLOCK
UDCB::      .BLKW  100     ; UNIBUS DATA BLOCK
TDRB::      .BLKW   16     ; TRANSMIT DESCRIPTOR RING
RDRB::      .BLKW   16     ; RECEIVE DESCRIPTOR RING
TDRX::      .BLKW   64     ; EXTENDED TDRB FOR TEST19
TBUF::      .BLKW  128     ; TRANSMIT BUFFER
TBUF2::     .BLKW  128
TBUF3::     .BLKW  128
TBUF4::     .BLKW  128
TBUF5::     .BLKW  128
TBUF6::     .BLKW  128
TBUF7::     .BLKW  128
TBUF8::     .BLKW  128
RBUF::      .BLKW  128     ; RECEIVE BUFFER
RBUF2::     .BLKW  128
RBUF3::     .BLKW  128
RBUF4::     .BLKW  128
RBUF5::     .BLKW  128
RBUF6::     .BLKW  128
RBUF7::     .BLKW  128
RBUF8::     .BLKW  128
;
; DEFAULT PORT FUNCTIONS
NOPF::      .WORD   0      ; NOP FUNCTION
            .WORD   0
            .WORD   0
            .WORD   0
;

```

;MAC001
;MAC001
;MAC001
;MAC001
;MAC001

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			: RDEFA::	.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			: RDMULA::	.WORD	6	: READ MULTICAST ADDRESS LIST FUNCTION
1519	013154	000006		.WORD	U062	: 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 UDB8 ; ADDRESS OF UNIBUS DATA BLOCK BASE
1575 013310 000000 .WORD 0
1576 013312 000000 .WORD 0
1577 ;
1578 013314 000021 LDMMEM:: .WORD 21 ; LOAD INTERNAL MEMORY FUNCTION
1579 013316 002274 .WORD UDB8 ; 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
    
```

```

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
1672 013536 010104
1673 013540 100000
1674 013542 000000
1675
1676 013544 000200
1677 013546 007104
1678 013550 000000
1679 013552 000000
1680
1681
1682
1683 013554 000174
1684 013556 003104
1685 013560 101400
1686 013562 000000
1687
1688 013564 000174
1689 013566 003104
1690 013570 000000
1691 013572 000000
1692
1693 013574 000174
1694 013576 003104
1695 013600 000000
1696 013602 000000
1697
1698 013604 000174
1699 013606 003104
1700 013610 000000
1701 013612 000000
1702
1703 013614 000200
1704 013616 003104
1705 013620 101400
1706 013622 000000
1707
1708 013624 000200
1709 013626 003104
1710 013630 000000
1711 013632 000000
1712
1713 013634 000200
1714 013636 003104
1715 013640 000000
1716 013642 000000
1717
1718 013644 000200
1719 013646 003104
1720 013650 000000
1721 013652 000000
1722
1723 013654 000072
1724 013656 003104
1725 013660 101400
1726 013662 000000

```

```

;
; .WORD 256. ; SLEN = 256 BYTES
; .WORD RBUF3 ; SEGB = RBUF3
; .WORD 100000 ; OWN = UNA
; .WORD 0
;
; .WORD 128. ; SLEN = 128 BYTES
; .WORD RBUF ; SEGB = RBUF
; .WORD 0 ; OWN = PORT DRIVER
; .WORD 0
;
; DEFAULT TRANSMIT DESCRIPTOR RINGS
;
; TDRB1A::
; .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 0 ; OWN = PORT DRIVER
; .WORD 0
;
; .WORD 124. ; SLEN = 124 BYTES
; .WORD TBUF ; SEGB = TBUF
; .WORD 0 ; OWN = PORT DRIVER
; .WORD 0
;
; .WORD 124. ; SLEN = 124 BYTES
; .WORD TBUF ; SEGB = TBUF
; .WORD 0 ; OWN = PORT DRIVER
; .WORD 0
;
; TDRB15::
; .WORD 128. ; SLEN = 128 BYTES
; .WORD TBUF ; SEGB = TBUF
; .WORD 101400 ; OWN = UNA ; STP,ENP
; .WORD 0
;
; .WORD 128. ; SLEN = 128 BYTES
; .WORD TBUF ; SEGB = TBUF
; .WORD 0 ; OWN = PORT DRIVER
; .WORD 0
;
; .WORD 128. ; SLEN = 128 BYTES
; .WORD TBUF ; SEGB = TBUF
; .WORD 0 ; OWN = PORT DRIVER
; .WORD 0
;
; .WORD 128. ; SLEN = 128 BYTES
; .WORD TBUF ; SEGB = TBUF
; .WORD 0 ; OWN = PORT DRIVER
; .WORD 0
;
; TDRB1C::
; .WORD 58. ; SLEN = 58 BYTES (RUNT PACKET)
; .WORD TBUF ; SEGB = TBUF
; .WORD 101400 ; OWN = UNA ; STP,ENP
; .WORD 0

```

```

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
  
```

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 .WORD 0
1842 ;
1843 014154 000174 .WORD 124. ; SLEN = 124 BYTES
1844 014156 003104 .WORD TBUF ; SEGB = TBUF
1845 014160 101400 .WORD 101400 ; OWN = UNA ;STP ;ENP
1846 014162 000000 .WORD 0
1847 ;
1848 014164 000174 .WORD 124. ; SLEN = 124 BYTES
1849 014166 003104 .WORD TBUF ; SEGB = TBUF
1850 014170 101400 .WORD 101400 ; OWN = UNA ;STP ;ENP
1851 014172 000000 .WORD 0
1852 ;
1853 014174 000174 .WORD 124. ; SLEN = 124 BYTES
1854 014176 003104 .WORD TBUF ; SEGB = TBUF
1855 014200 101400 .WORD 101400 ; OWN = UNA ;STP ;ENP
1856 014202 000000 .WORD 0
1857 ;
1858 014204 000174 .WORD 124. ; SLEN = 124 BYTES
1859 014206 003104 .WORD TBUF ; SEGB = TBUF
1860 014210 101400 .WORD 101400 ; OWN = UNA ;STP ;ENP
1861 014212 000000 .WORD 0
1862 ;
1863 ;DEFAULT DATA FOR TEST10
1864 014214 000000 CRCH: .WORD 0 ; CRC STORAGE
1865 ;DEFAULT UDBB FOR TEST10
1866 014216 004000 UDB10A: .WORD 4000 ; FLEN = 1024 WORDS
1867 014220 007104 .WORD RBUF ; HDBB = RBUF
1868 014222 000000 .WORD 0
1869 014224 000000 .WORD 0
1870 ;ROM ADDRESS TABLE FOR TEST10
1871 014226 040000 MEM10A: .WORD 40000 ; ADDRESS OF ROM FIRST 1K
1872 014230 044000 .WORD 44000 ; SECOND 1K
1873 014232 050000 .WORD 50000 ; ETC
1874 014234 054000 .WORD 54000
1875 014236 060000 .WORD 60000
1876 014240 064000 .WORD 64000
1877 014242 070000 .WORD 70000
1878 014244 074000 .WORD 74000
1879 ;DEFAULT UDBB FOR TEST11 AND TST12
1880 014246 004000 UDB11A: .WORD 4000 ; FLEN = 1024 WORDS
1881 014250 000000 .WORD 0 ; HDBB = RBUF OR TBUF (LOADED BY TEST)
1882 014252 000000 .WORD 0
1883 014254 000000 .WORD 0 ; IDBB (LOADED BY TEST)
1884 ;WCS DOWNLINE LOAD ADDRESS TABLE FOR TEST11
1885 014256 014000 MEM11A: .WORD 14000 ; TOP 1K SECTION OF WCS
1886 ;LINK MEMORY ADDRESS TABLE FOR TEST13
1887 014260 100000 MEM13A: .WORD 100000 ; FIRST 1K BLOCK OF LINK MEMORY
1888 014262 104000 .WORD 104000
1889 014264 110000 .WORD 110000
1890 014266 114000 .WORD 114000
1891 014270 120000 .WORD 120000
1892 014272 124000 .WORD 124000
1893 014274 130000 .WORD 130000
1894 014276 134000 .WORD 134000
1895 014300 140000 .WORD 140000
1896 014302 144000 .WORD 144000
1897 014304 150000 .WORD 150000
    
```

1898	014306	154000	.WORD	154000	
1899	014310	160000	.WORD	160000	
1900	014312	164000	.WORD	164000	
1901	014314	170000	.WORD	170000	
1902	014316	174000	.WORD	174000	
1903					
1904	014320	125252	.WORD	125252	; PHYSICAL ADDRESSES FOR TEST 21
1905	014322	125252	.WORD	125252	ADR21:: ; DEFAULT PHYSICAL ADDRESS
1906	014324	125252	.WORD	125252	
1907	014326	052524	.WORD	52524	; COMPLEMENTED PHYSICAL ADDRESS
1908	014330	052525	.WORD	52525	
1909	014332	052525	.WORD	52525	
1910					
1911	014334	125253	.WORD	125253	; MULTICAST ADDRESS LIST FOR TEST 22
1912	014336	125252	.WORD	125252	MULTL:: ; MULTICAST ADDRESS LIST
1913	014340	125252	.WORD	125252	
1914	014342	125253	.WORD	125253	
1915	014344	052525	.WORD	052525	
1916	014346	125252	.WORD	125252	
1917	014350	125253	.WORD	125253	
1918	014352	125252	.WORD	125252	
1919	014354	052525	.WORD	052525	
1920	014356	125253	.WORD	125253	
1921	014360	177777	.WORD	177777	
1922	014362	052525	.WORD	052525	
1923	014364	125253	.WORD	125253	
1924	014366	000000	.WORD	000000	
1925	014370	125252	.WORD	125252	
1926	014372	177777	.WORD	177777	
1927	014374	000000	.WORD	000000	
1928	014376	177777	.WORD	177777	
1929	014400	177777	.WORD	177777	
1930	014402	052525	.WORD	052525	
1931	014404	125252	.WORD	125252	
1932	014406	177777	.WORD	177777	
1933	014410	125252	.WORD	125252	
1934	014412	052525	.WORD	052525	
1935	014414	177777	.WORD	177777	
1936	014416	000000	.WORD	000000	
1937	014420	052525	.WORD	052525	
1938	014422	177777	.WORD	177777	
1939	014424	177777	.WORD	177777	
1940	014426	125252	.WORD	125252	
1941	014430	052525	.WORD	052525	; COMPLEMENTED ADDRESS LIST
1942	014432	052525	.WORD	052525	
1943	014434	052525	.WORD	052525	
1944	014436	052525	.WORD	052525	
1945	014440	125252	.WORD	125252	
1946	014442	052525	.WORD	052525	
1947	014444	052525	.WORD	052525	
1948	014446	052525	.WORD	052525	
1949	014450	125252	.WORD	125252	
1950	014452	052525	.WORD	052525	
1951	014454	000000	.WORD	000000	
1952	014456	125252	.WORD	125252	
1953	014460	052525	.WORD	052525	
1954	014462	177777	.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					
1972	014524	000174	:DEFAULT EXPECTED DATA		
1973	014526	003104	TDR14A::	.WORD	124. ; EXPECTED TDRB FOR
1974	014530	021400		.WORD	TBUF ; TESTS 14
1975	014532	000000		.WORD	021400 ; MTCH,STP,ENP
1976	014534	000200	TDR15A::	.WORD	0
1977	014536	003104		.WORD	128. ; EXPECTED TDRB FOR
1978	014540	021400		.WORD	TBUF ; TESTS 15,16
1979	014542	000000		.WORD	021400 ; MTCH,STP,ENP
1980	014544	000174	TDR18A::	.WORD	0
1981	014546	003104		.WORD	124. ; FIRST TDRB FOR TEST18
1982	014550	001000		.WORD	TBUF ;
1983	014552	000000		.WORD	001000 ; STP
1984	014554	000174	TDR18B::	.WORD	0
1985	014556	003104		.WORD	124. ; SECOND TDRB FOR TEST18
1986	014560	041400		.WORD	TBUF ;
1987	014562	100000		.WORD	041400 ; ERRS,STP,ENP
1988	014564	000400	TDR20A::	.WORD	100000 ; BUFL
1989	014566	003104		.WORD	256. ; FIRST TDRB FOR TEST20
1990	014570	001000		.WORD	TBUF ;
1991	014572	000000		.WORD	001000 ; STP
1992	014574	000400	TDR20B::	.WORD	0
1993	014576	003504		.WORD	256. ; SECOND TDRB FOR TEST20
1994	014600	000000		.WORD	TBUF2 ;
1995	014602	000000		.WORD	0
1996	014604	000374	TDR20C::	.WORD	0
1997	014606	004104		.WORD	252. ; THIRD TDRB FOR TEST20
1998	014610	020400		.WORD	TBUF3 ;
1999	014612	000000		.WORD	020400 ; MTCH,ENP
2000	014614	000174	TDR21X::	.WORD	0
2001	014616	003104		.WORD	124. ; EXPECTED TDRB FOR
2002	014620	001400		.WORD	TBUF ; TESTS21,22
2003	014622	000000		.WORD	001400 ; STP,ENP
2004	014624	000072	TDR25A::	.WORD	0
2005	014626	003104		.WORD	58. ; EXPECTED TDRB FOR
2006	014630	021400		.WORD	TBUF ; TEST25
2007	014632	000000		.WORD	021400 ; MTCH,STP,ENP
2008	014634	000200	TDR14A::	.WORD	0
2009	014636	007104		.WORD	128. ; EXPECTED RDRB FOR
2010	014640	045400		.WORD	RBUF ; TESTS 14,16
2011	014642	000000		.WORD	045400 ; ERRS,CRC,STP,ENP
				.WORD	0

2012	014644	000200	RDR15A::	.WORD	128.	; EXPECTED RDRB FOR
2013	014646	000104		.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	; DMN = 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 = FROM,DTCR,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,INT
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

CRC238::

CRC258::

CRC27A::

MODE15::

MODE17::

MODE20::

MODE21::

MODE24::

MODE25::

MODE26::

UDB28A::

SMADDR::

:GLOBAL DATA AND FLAGS

EPCSR0::

EPCSR1::

ERDRB0::

ERDRB2::

ERDRB4::

ERDRB6::

XRDRB0::

XRDRB2::

XRDRB4::

XRDRB6::

ETDRB0::

ETDRB2::

ETDRB4::

ETDRB6::

XTDRB0::

XTDRB2::

XTDRB4::

XTDRB6::

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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

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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/
                .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#01#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
    
```

	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% PCSR0 = %06%N% 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% 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% EXPECTED TDRB.0 = %06%N% 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% EXPECTED TDRB.2 = %06%N% 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 / EN NA EXPECTED TDRB.4 * #06#NA 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 / EN NA EXPECTED TDRB.6 * #06#NA 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 / EN NA EXPECTED RDRB.0 * #06#NA 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 / NSA EXPECTED RDRB.2 * 06NSA 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 / NSA EXPECTED RDRB.4 * 06NSA 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 / NSA EXPECTED RDRB.6 * 06NSA 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			
2226	016411	066	000				
	016413	045	116	045	FRM013::	.ASCIZ /ENSA EXPECTED CRC = #06#NSA	#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			
2227	016470	066	000				
	016472	045	116	045	FRM014::	.ASCIZ /ENSA ACTUAL CRC = #06#NSA	#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			
2228	016547	066	000				
	016551	045	116	045	FRM015::	.ASCIZ /ENST/	
	016554	124	000				
2229	016556	045	116	045	FRM016::	.ASCIZ /ENSA ROM 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			

	016625	062	000			
2230	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

2237
2238
2239
2240
2241
2242
2243
2244
2245
2246

; 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.
;

2262 017036
017036
2263 017036
017036 010246
017040 012746 015324
017044 012746 000002
017050 010600
017052 104414
017054 062706 000006

BGNMSG MSG001
PRINTB #FRM001,R2

MSG001::
MOV R2,(SP)
MOV #FRM001,-(SP)
MOV #2,-(SP)
MOV SP,R0
TRAP C\$PNTB
ADD #6,SP

2264 017060
017060
017060 104423

ENDMSG

L10002:
TRAP C\$MSG

2265
2266 017062
017062
2267 017062
017062 010446
017064 010346
017066 012746 015361
017072 012746 000003
017076 010600
017100 104414
017102 062706 000010

BGNMSG MSG002
PRINTB #FRM002,R3,R4

MSG002::
MOV R4,-(SP)
MOV R3,-(SP)
MOV #FRM002,-(SP)
MOV #3,-(SP)
MOV SP,R0
TRAP C\$PNTB
ADD #10,SP

2268 017106
017106
017106 104423

ENDMSG

L10003:
TRAP C\$MSG

2269
2270 017110
017110
2271 017110
017110 013746 015142
017114 013746 015140
017120 012746 015442
017124 012746 000003
017130 010600
017132 104414
017134 062706 000010

BGNMSG MSG003
PRINTB #FRM003,EPCSR0,EPCSR1

MSG003::
MOV EPCSR1,-(SP)
MOV EPCSR0,-(SP)
MOV #FRM003,-(SP)
MOV #3,-(SP)
MOV SP,R0
TRAP C\$PNTB
ADD #10,SP

2272 017140
017140
017140 104423

ENDMSG

L10004:
TRAP C\$MSG

2273
2274 017142
017142
2275 017142
017142 013746 015220
017146 012746 015503
017152 012746 000002

BGNMSG MSG004
PRINTB #FRM004,ECODE

MSG004::
MOV ECODE,-(SP)
MOV #FRM004,-(SP)
MOV #2,-(SP)

017156	010600				MOV	SP,R0
017160	104414				TRAP	C#PNTB
017162	062706	000006			ADD	#6,SP
2276	017166			PRINTB	#FRM015,STMSG	
	017166	013746	031244		MOV	STMSG,-(SP,
	017172	012746	016551		MOV	#FRM015,-(SP)
	017176	012746	000002		MOV	#2,(SP)
	017202	010600			MOV	SP,R0
	017204	104414			TRAP	C#PNTB
	017206	062706	000006		ADD	#6,SP
2277	017212			ENDMSG		
	017212				L10005:	TRAP
	017212	104423				C#MSG
2278						
2279	017214			BGNMSG	MSG005	
	017214					MSG005::
2280	017214			PRINTB	#FRM005,XTDRB0,ETDRB0	
	017214	013746	015164		MOV	ETDRB0,-(SP)
	017220	013746	015174		MOV	XTDRB0,-(SP)
	017224	012746	015543		MOV	#FRM005,(SP)
	017230	012746	000003		MOV	#3,(SP)
	017234	010600			MOV	SP,R0
	017236	104414			TRAP	C#PNTB
	017240	062706	000010		ADD	#10,SP
2281	017244			PRINTB	#FRM006,XTDRB2,ETDRB2	
	017244	013746	015166		MOV	ETDRB2,-(SP)
	017250	013746	015176		MOV	XTDRB2,-(SP)
	017254	012746	015630		MOV	#FRM006,(SP)
	017260	012746	000003		MOV	#3,(SP)
	017264	010600			MOV	SP,R0
	017266	104414			TRAP	C#PNTB
	017270	062706	000010		ADD	#10,SP
2282	017274			PRINTB	#FRM007,XTDRB4,ETDRB4	
	017274	013746	015170		MOV	ETDRB4,(SP)
	017300	013746	015200		MOV	XTDRB4,-(SP)
	017304	012746	015715		MOV	#FRM007,(SP)
	017310	012746	000003		MOV	#3,-(SP)
	017314	010600			MOV	SP,R0
	017316	104414			TRAP	C#PNTB
	017320	062706	000010		ADD	#10,SP
2283	017324			PRINTB	#FRM008,XTDRB6,ETDRB6	
	017324	013746	015172		MOV	ETDRB6,(SP)
	017330	013746	015202		MOV	XTDRB6,-(SP)
	017334	012746	016002		MOV	#FRM008,(SP)
	017340	012746	000003		MOV	#3,-(SP)
	017344	010600			MOV	SP,R0
	017346	104414			TRAP	C#PNTB
	017350	062706	000010		ADD	#10,SP
2284	017354			ENDMSG		
	017354				L10006:	TRAP
	017354	104423				C#MSG
2285						
2286	017356			BGNMSG	MSG006	
	017356					MSG006::
2287	017356			PRINTB	#FRM009,XRDRB0,ERDRB0	
	017356	013746	015144		MOV	ERDRB0,(SP)
	017362	013746	015154		MOV	XRDRB0,(SP)

	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				
	017632						L10011:		
	017632	104423					TRAP	C\$MSG	
2301									
2302	017634				BGNMSG	MSG009			
	017634						MSG009::		
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				
	017754						L10012:		
	017754	104423					TRAP	C\$MSG	
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	ERROR08:: .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	
	020351	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	ERROR09:: .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	ERROR10:: .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 COMPANE 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	C15	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 - DENUA 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 RORB /
	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 DENUA 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 TDRE /
	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		
	021345	105	122	040		
2336	021350	123	124	117		.ASCIZ /STOP PORT COMMAND/
	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	127		
	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	
	022242	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	ERROR30:: .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	ERROR31:: .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	ERR039::	.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		
	023545	105	124	000		
2374	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		
	023600	105	040	000		
2375	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		
	023641	122	040	000		
2376	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		
	023705	000				
2377	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		

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	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 - LOUPBACK 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      012700 000240      MOV TRAP @PRI05,RO
2461 024542      104441      TRAP      @SPRI
2462 024550      012777 000100 155470      MOV @IE,BCLKCSR      ;ENABLE CLOCK INTERRUPTS
2463 024556      000207      RTS PC
2464
2465      ;*****
2466      ;
2467      ;THIS ROUTINE TURNS THE CLOCK OFF
2468      ;
2469      ;*****
2470
2471 024560      005077 155462      TIMOFF::CLR BCLKCSR      ;CLEAR INTERRUPT ENABLE
2472 024564      012700 000340      SETPRI @PRI07      ;PUT PRIORITY BACK UP
2473 024570      104441      MOV TRAP @PRI07,RO
2473 024572      000207      RTS PC      C@SPRI

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024574
024574 010046
024576 010146
024600 010446

012737 001364 015222
004737 024542
017704 155406
032704 004000
001015
104422
005737 015222
001367
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  
:  
: MACRO01; LOOP FOR APPROX 2 SEC  
: MACRO01 MOV #4,R1 ; INIT OUTER LOOP  
: MACRO0110+: CLR R0 ; INNER LOOP  
: MACRO0120+: MOV EPCSR0,R4 ; PCSRO -> R4  
: MACRO01 BIT #DNI,R4 ; DNI SET ?  
: MACRO01 BNE 30+ ; YES  
: MACRO01 DEC R0 ; INNER LOOP EXHAUSTED ?  
: MACRO01 BNE 20+ ; NO, CHECK FOR DNI AGAIN  
: MACRO01 DEC R1 ; OUTER LOOP EXHAUSTED ?  
: MACRO01 BNE 20+ ; NO, KEEP CHECKING FOR DNI  
: MACRO01  
: MACRO01 ; 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 EPCSR0,R4 ; GET PCSRO ;MAC001  
: BIT #DNI,R4 ; IS DNI SET? ;MAC001  
: BNE 30+ ; YES ;MAC001  
: BREAK ; NO, VISIT DRS FOR A MOMENT ;MAC001  
: ; TRAP C$BRK  
: TST METER ; HAS TIMER EXPIRED? ;MAC001  
: BNE 10+ ; NOT YET ;MAC001  
: MOV R4,EPCSR0 ; PCSRO -> EPCSR0
```

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2523	024642	017737	155362	015142	MOV	@PCSR1,EPCSR1	; PCSR1 > EPCSR1	
2524	024650	004737	024560		JSR	PC,TIMOFF	;TURN OFF THE *IMFR	;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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 2552 024676
 2553 024676 010346
 2554 024700 010446
 2555 024702 010503
 2556 024704 012304
 2557 024706 012304
 2558 024710 012304
 2559 024712 100002
 2560 024714 000261
 2561 024716 000401
 2562 024720 000241
 2563 024722 012604
 2564 024724 012603
 2565 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 ; OWN = 0 ?
    BPL 101 ; YES
    SEC ; NO, SET CARRY = 1
    BR 201
101: CLC ; CLEAR CARRY
201: MOV (SP), R4 ; RESTORE R4
    MOV (SP), R3 ; RESTORE R3
    RTS ; AND RETURN
    
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024730
024730 010046
024732 010146
024734 010446

024736 012737 000176 015222
024744 004737 024542
024750 017704 155252
024754 032704 002000
024760 001015
024762 104422

```
.....  
: SUBROUTINE  CHKRCCE  
: 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,CHKRCCE  
:.....
```

```
CHKRCCE::  
      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      @RCBI,R4   ; RCBI SET ?  
;MAC001 BNE      301        ; YES  
;MAC001 DEC      R0         ; INNER LOOP EXHAUSTED ?  
;MAC001 BNE      201        ; NO, CHECK FOR RCBI AGAIN  
;MAC001 DEC      R1         ; OUTER LOOP EXHAUSTED ?  
;MAC001 BNE      201        ; NO, KEEP CHECKING FOR RCBI  
;MAC001;  
;MAC001;  
;MAC001; LOOP EXHAUSTED AND NO RCBI  
;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      @RCBI,R4   ; IS RCBI SET? ; MAC001  
      BNE      301        ; YES ; MAC001  
      BREAK ;NO, VISIT DRS FOR A MOMENT ; MAC001  
                        TRAP ;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, EPCSR0		; PCSR0 -> EPCSR0		
2615	024776	017737	155226	015142	MOV	EPCSR1, 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
10$:    CMP      (R4)+, (R3)+ ; COMPARE RDRB TO EXPECTED DATA
        ; ERROR ?
        ; YES
        BNE     20$
        DEC     R0
        BNE     10$
        MOV     (R4), R0
        BIC     @TDRMSK, R0 ; MASK OUT TDR VALUE
        CMP     R0, (R3)
        ; COMPARE ERROR ?
        ; YES
        BNE     20$
        BR      30$
20$:    MOV      @ERDRB0, R3 ; R3 POINTS TO ACTUAL TABLE
  
```

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2675 025102 010504      MOV      R5,R4      ; R4 POINTS TO ACTUAL RDRS
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$
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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```

```
*****
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
;MAC001101: CLR    R0      ; INNER LOOP
;MAC001201: MOV    @PCSRO,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
2727 025140 012737 000176 015222   MOV    #2*SECOND,METER ;PUT SOME TIME IN THE TIMER ;MAC001
2728 025146 004737 024542           JSR    PC,TIMON       ;TURN ON THE LINE CLOCK ;MAC001
2729 025152 017704 155050 101:   MOV    @PCSRO,R4     ;GET PCSRO ;MAC001
2730 025156 032704 020000           BIT    @RXI,R4      ;IS RXI SET? ;MAC001
2731 025162 001015           BNE    30$          ;YES ;MAC001
2732 025164           BREAK          ;NO, VISIT DRS FOR A MOMENT ;MAC001
                                   TRAP
2733 025166 005737 015222           TST    METER       ;HAS TIMER EXPIRED? ;MAC001
2734 025172 001367           BNE    10$        ;NOT YET ;MAC001
2735 025174 010437 015140           MOV    R4,EPCSRO   ; PCSRO -> EPCSRO
2736 025200 017737 155024 015142   MOV    @PCSR1,EPCSR1 ; PCSR1 -> EPCSR1
2737 025206 004737 024560           JSR    PC,TIMOFF    ;TURN OFF THE TIMER ;MAC001
    
```

2738	025212	000261		SEC			; SET CARRY	
2739	025214	000403		BR	404			;MAC001
2740	025216	004737	024560	304: JSR	PC,TIMOFF		;TURN OFF THE TIMER	;MAC002
2741	025222	000241		CLC			; RXI SET SO CLEAR CARRY	
2742	025224	012604		404: 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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025234
025234 010046
025236 010446
025240 017704 154764
025244 042704 140377
025250 022704 000000
025254 001414

025256 005104
025260 042704 140377
025264 012700 000010
025270 006204
025272 005300
025274 001375
025276 010437 015220
025302 000261
025304 000401
025306 000241
025310 012604
025312 012600
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
COM R4 ;MAC001
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 ; 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 - CHKTD
:
: THIS SUBROUTINE COMPARES A TRANSMIT DESCRIPTOR RING ENTRY
: WITH EXPECTED DATA.
:
: INPUTS:      R5 = ADDRESS OF TDRB TO BE COMPARED
:
: IMPLICIT INPUTS:
: XTDRPO = 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,CHKTD
:
.....
    
```

```

CHKTD:
:
: SAVE R0
: SAVE R3
: SAVE R4
: DO FOUR COMPARES
: R3 POINTS TO EXPECTED DATA
: R4 POINTS TO ACTUAL TDRB
: COMPARE TDRB TO EXPECTED DATA
: ERROR ?
: YES
: NO, DONE COMPARING ?
: NO, KEEP ON COMPARING
:
: R3 POINTS TO ACTUAL TABLE
: R4 POINTS TO ACTUAL TDRB
: LOAD ACTUAL TABLE
:
: SET CARRY
:
: CLEAR CARRY
: RESTORE R4
: RESTORE R3
: RESTORE R0
: AND RETURN
    
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025404
 025404 010046
 025406 010146
 025410 010446

 025412 012737 000176 015222
 025420 034737 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;
;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

308: SEC
BR 408
JSR PC,TIMOFF
CLC
408: MOV (SP),R4
MOV (SP),R1
MOV (SP),R0
RTS PC

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

;MAC001
;MAC001

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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    10$              ;YES
        MOV     R4,EPCSRO        ;NO, SAVE PCSRO CONTENTS
        MOV     @PCSR1,EPCSR1    ;GET PCSR1 CONTENTS TOO
        SEC                    ;INDICATE NO SERI BIT
        BR     20$              ;LEAVE
10$:   CLC                    ;INDICATE SERI BIT SET
20$:   MOV     (SP)+,R4          ;RESTORE R4
        RTS     PC
    
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025546
 025546 010446
 025550 112777 000010 154460
 025556 017704 154444
 025562 032704 004000
 025566 001407
 025570 010437 015140
 025574 017737 154430 015142
 025602 000261
 025604 000401
 025606 000241
 025610 012604
 025612 000207

```

    .....
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
                PCSR0 -> EPCSR0
                PCSR1 -> EPCSR1

CALLING SEQUENCE:
                JSR      PC,CLRDNI
    .....
    
```

```

CLRDNI::
MOV      R4, -(SP)           ; SAVE R4
MOVB    @DNI, @PCSR0UB      ; WRITE ONE TO CLEAR DNI BIT ;RSJ001
MOV      @PCSR0, R4         ; PCSR0 -> R4
BIT     @DNI, R4            ; DNI = 0 ?
BEQ     10f                 ; YES
MOV     R4, EPCSR0          ; NO, PCSR0 -> EPCSR0
MOV     @PCSR1, EPCSR1      ; PCSR1 -> EPCSR1
SEC                       ; SET CARRY
BR      20f

10f:    CLC                 ; CLEAR CARRY
20f:    MOV     (SP), R4     ; RESTORE R4
        RTS                ; AND RETURN
    
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```

.....
SUBROUTINE CLRCE

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,CLRCE
.....
  
```

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    101                 ; YES
MOV    R4, EPCSRO         ; NO, PCSRO -> EPCSRO
MOV    @PCSR1, @EPCSR1    ; PCSR1 -> EPCSR1
SEC                     ; SET CARRY
BR     201
101:   CLC                 ; CLEAR CARRY
201:   MOV    (SP)+, R4    ; RESTORE R4
RTS    PC                 ; AND RETURN
  
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 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, @PCSR0UB    ; WRITE ONE TO CLEAR RXI BIT ;RSJ001
MOV      @PCSR0, 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                ; AND RETURN
    
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025730
025730 010446
025732 112777 000020 154276
025740 017704 154262
025744 032764 010000
025750 001407
025752 010437 015140
025756 017737 154246 015142
025764 000261
025766 000401
025770 000241
025772 012604
025774 000207

```
.....
:
: 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
:
:.....
```

```
CLRTXI::
MOV R4,-(SP) ; SAVE R4
MOVB @TXIB,@PCSROUB ; WRITE ONE TO CLEAR TXI BIT ;RSJ001
MOV @PCSRO,R4 ; PCSRO -> R4
BIT @TXI,R4 ; TXI = 0 ?
BEQ 100 ; YES
MOV R4,EPCSRO ; NO, PCSRO -> EPCSRO
MOV @PCSR1,@EPCSR1 ; PCSR1 -> EPCSR1
SEC ; SET CARRY
BR 200
100: CLC ; CLEAR CARRY
200: 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 IT'S 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
 3112 026000
 3113 026006
 3114 026012
 3115 026016
 3116 026020
 3117 026024
 3118 026032
 3119 026034
 3120 026036
 3121 026040
 3122 026042

010446
 112777 000200 154230
 017704 154214
 032704 100000
 001407
 010437 015140
 017737 154200 015142
 000261
 000401
 000241
 012604
 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
    
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 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
    
```

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    .....
```

SUBROUTINE CMPCRC

THIS SUBROUTINE COMPARES A CRC VALUE WITH AN EXPECTED CRC VALUE.

INPUTS: R5 = ADDRESS OF ACTUAL CRC VALUE TO BE COMPARED.

IMPLICIT 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

```

3195 026124
3196 026124 010346
3197 026126 010446
3198 026130 012703 015214
3199 026134 010504
3200 026136 022324
3201 026140 001004
3202 026142 022324
3203 026144 001002
3204 026146 000241
3205 026150 000406
3206 026152 012703 015210
3207 026156 010504
3208 026160 012423
3209 026162 012423
3210 026164 000261
3211 026166 012604
3212 026170 012603
3213 026172 000207
```

```

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 104 ; NO
    CMP (R3)+,(R4)+ ; SECOND CRC WORD COMPARE ?
    BNE 104 ; NO
    CLC ; YES. CLEAR CARRY
    BR 204
104: MOV @ECRC,R3 ; POINT TO ERROR TABLE
    MOV R5,R4 ; POINT TO ACTUAL DATA
    MOV (R4)+,(R3)+ ; LOAD ECRC TABLE
    MOV (R4)+,(R3)+
    SEC ; AND SET CARRY
204: MOV (SP)+,R4 ; RESTORE R4
    MOV (SP)+,R3 ; RESTORE R3
    RTS ; AND RETURN
    PC
```

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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
  
```

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 3290 026274
 3291 026276
 3292 026300
 3293 026302
 3294 026304
 3295 026306
 3296 026312
 3297 026316
 3298 026320
 3299 026322
 3300 026324
 3301 026326
 3302 026330
 3303 026332

010046
 010346
 010446
 010500
 012703 000000
 012704 007176
 020324
 001003
 005300
 001374
 000406
 010337 015206
 014437 015204
 000261
 000401
 000241
 012604
 012603
 012600
 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      RC            ; 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
    
```

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 3325 026334 010046
 3326 026336 010146
 3327 026340 010246
 3328 026342 010346
 3329 026344 010546
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 3331 026346 012702 007104
 3332 026352 012703 004000
 3333 026356 013704 014214
 3334 026362 012705 120001
 3335
 3336 026365 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

;
18:    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
;
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
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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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026514
026514 010146
026516 013701 073172
026522 042701 177417
026526 006201
026530 006201
026532 006201
026534 006201
026536 062701 073263
026542 111137 073173
026546 012601
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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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
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026600
 026600 010146
 026602 010346
 026604 010446
 026606 012701 002000
 026612 011504
 026614 012703 003104
 026620 010423
 026622 062704 000002
 026626 005301
 026630 001373
 026632 012604
 026634 012603
 026636 012601
 026640 000207

```

.....
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
.....
    
```

```

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
    
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 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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 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
  
```

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026742
026742 010346
026744 010446
026746 012703 002264
026752 010504
026754 012423
026756 012423
026760 012423
026762 012423
026764 012604
026766 012603
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.
```

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```
.....  
: 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  
:.....
```

3611 026772
3612 026772 012777 002264 153232
3613 027000 012777 000000 153226
3614 027006 000207

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

3616
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 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
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 3651
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 3658
 3659
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 3661
 3662
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 3664
 3665 027046
 3666 027046 010046
 3667 027050 010346
 3668 027052 010446
 3669 027054 012700 000020
 3670 027060 012703 002604
 3671 027064 010504
 3672 027066 012423
 3673 027070 005300
 3674 027072 001375
 3675 027074 012604
 3676 027076 012603
 3677 027100 012600
 3678 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        ; F.3 = 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
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 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

```

    .....
    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
    .....
    
```

```

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
    
```

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 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
:                  R0 = 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
    
```

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3761 027176
3762 027176
3763 027200
3764 027202
3765 027206
3766 027210
3767 027212
3768 027214
3769 027216
3770 027220

010346
010446
012704 015214
010503
012324
012324
012604
012603
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
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027222
027222 010346
027224 010446
027226 012704 015154
027232 010503
027234 012324
027236 012324
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
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3808
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3828

027252
027252 010346
027254 010446
027256 012704 015174
027262 C10503
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
```

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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 100 ; YES  
MOV R4,EPCSRO ; NO, PCSRO -> EPCSRO  
MOV @PCSR1,EPCSR1 ; PCSR1 -> EPCSR1  
SEC ; SET CARRY  
BR 200  
100: CLC ; CLEAR CARRY  
200: MOV (SP)+,R4 ; RESTORE R4  
RTS PC ; AND RETURN
```

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027342
027342 010046
027344 010346
027346 010546
027350 012703 007104
027354 012700 002000
027360 005023
027362 005300
027364 001375
027366 012705 002256
027372 012703 003104
027376 012523
027400 012523
027402 012523
027404 012705 002256
027410 012523
027412 012523
027414 012523
027416 005023
027420 012700 001771
027424 012705 015232
027430 011523
027432 005300
027434 001375
027436 012605
027440 012603
027442 012600
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
```

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 3945 027446
 3946 027446 010446
 3947 027450 112777 000377 152560
 3948 027456 105077 152544
 3949 027462 105077 152540
 3950 027466 012746 000062
 3951 027472
 3952 027472 005316
 3953 027474 003376
 3954 027476 005726
 3955 027500 017704 152522
 3956 027504 001011
 3957 027506 017704 152516
 3958 027512 042704 177770
 3959 027516 022704 000002
 3960 027522 001002
 3961
 3962 027524 000241
 3963 027526 000401
 3964
 3965 027530 000261
 3966 027532 012604
 3967 027534 000207
 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 DELTA STATE
     CMP @READY, R4 ; STATE = READY ?
     BNE 100 ; NO, A RESET IS REQUIRED

     ; NO RESET REQUIRED CLEAR CARRY
     CLC
     BR 200

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


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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

L1RPT:

EXIT RPT

.WORD JSJMP
.WORD L10013-2

.EVEN

ENDRPT

L10013:
TRAP CSRPT

.SBTTL PROTECTION TABLE

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

4051
4052
4053
4054
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4056
4057
4058 027544
027544
4059
4060 027544 177777
4061 027546 177777
4062 027550 177777
4063
4064 027552
4065

BGNPROT

L#PROT::

-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$REFG
4115 027560          BCCOMplete          30$          ; 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$REFG
4117          ;MAC001 BCCOMplete          30$          ; YES, LEAVE INIT CODE
4118 027570          BNCOMplete          2$          ; NO
027570 103007          BCC          ;MAC001
4119          ;
4120          ; DELAY A PERIOD OF TIME (APPROX 25 SECS ) FOR SELF TEST TO FINISH
4121          ;
4122 027572 012701 000150          MOV          @150,R1          ; INIT OUTER LOOP
4123 027576 005000          CLR          R0          ; INIT INNER LOOP
4124 027600          3$: DEC          R0          ;MAC001
4125 027602 001376          BNE          3$          ;MAC001
4126 027604 005301          DEC          R1          ;MAC001
4127 027606 001374          BNE          3$          ;MAC001
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          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          ;MAC001
027644 104462          TRAP          C$CLK          @L,R0
027646 010001          MOV          R0,R1          ;MAC001
4135 027650          BCCOMplete          1$          ;
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$PRINTF
027666 062706 000004          ADD          @4,SP
4137 027672 000504          BR          20$          ; CANNOT CONTINUE

```


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4191 030156
030156
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4200 030156
030156
030156 104461

.SBTTL AUTODROP SECTION

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

BGNAUTO

L\$AUTO::

ENDAUTO

L10016:

TRAP C\$AUTO

.SBTTL CLEANUP CODING SECTION

4202
4203
4204
4205
4206
4207
4208
4209 030160
030160
4210
4219
4220 030160
030160 104432
030162 000002
4221
4233
4234
4235
4236 030164
030164
030164 104412

; 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
4239
4240
4241
4242
4243
4244
4245
4246
4255
4256
4257
4269
4270
4271
4272

030166
030166
030166 000167
030170 000000
030172
030172
030172 104453

.SBTTL DROP UNIT SECTION

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

BGNDU

L\$DJ.:

EXIT DU

.WORD J\$JMP
.WORD L10020 2 .

.EVEN

ENDDU

L10020:
TRAP C\$DU

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
4314
4315
4316
4317
4318
4319
4320
4321
4322
4323
4324
4325
4326
4327
4328

```
.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:
L:0022: RTI
```

4330
4331
4332
4333
4334
4335
4336
4337
4338
4339
4340
4341
4342
4343
4344
4345
4346
4347
4348
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 DESLRIPTION:
;
;   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
;.....
ISRDN1:
MOV     R4, -(SP)           ; SAVE R4
MOV     @PCSR0, R4         ; PCSRO -> R4
BIT     @DNI, R4           ; DNI SET?
BEQ     101                ; NO, EXIT
MOV     @1, DNIFLG        ; YES, SET DNIFLG FLAG
MOV     (SP)+, R4         ; RESTORE R4
ENDSRV
;.....
L10023- RTI
```

```

4354 ;*****
4355 ;
4356 ;FUNCTIONAL DESCRIPTION:
4357 ;
4358 ;       THIS ROUTINE COUNTS A PRESET NUMBER OF CLOCK TICKS THEN IT
4359 ;       TURNS THE CLOCK OFF
4360 ;
4361 ;INPUTS: METER
4362 ;
4363 ;OUTPUTS: METER
4364 ;
4365 ;ROUTINES CALLED: NONE
4366 ;
4367 ;*****
4358 ;
4369 ;

```

```

4370 030240 BGNSRV CLKSrv
4371 030240 005737 015222          TST    METER          CLKSrv:
4372 030244 001402                BEQ    201          ;HAS THE METER EXPIRED?
4373 030246 005337 015222          DEC    METER          ;YES, STOP COUNTING
4374 030252                201:          ;COUNT TICKS
4375 030252 ENDSRV
4376 030252 000002                L10024:
                                     RTI

```

4379
 4390
 4457
 4458
 4459
 4460
 4461
 4462
 4463
 4464
 4465
 4466
 4467
 4468
 4469 030254
 030254
 4470 030254
 030254 012746 000340
 030260 012746 030202
 030264 012746 000004
 030270 012746 000003
 030274 104437
 030276 062706 000010
 4471 030302 005037 015224
 4472 030306 005002
 4473 030310 017701 151712
 4474 030314 005737 015224
 4475 030320 001410
 4476 030322
 030322 104455
 030324 000001
 030326 017756
 030330 017030
 4477 030332
 030332 013700 002244
 030336 104451
 4478 030340
 030340 104444
 4479 030342
 030342 012700 000004
 030346 104436
 4480 030350
 030350
 030350 104401
 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
:*****
  
```

BGNTST

SETVEC #4, #ISRDNM, #PRI07

```

; SET UP TIMEOUT TRAP VECTOR
;
; T1:
;
; MOV #PRI07, -(SP)
; MOV #ISRDNM, -(SP)
; MOV #4, -(SP)
; MOV #3, -(SP)
; TRAP C$VEC
; ADD #10, SP
  
```

```

CLR NEXMEM
CLR R2
MOV #PCSRO, R1
TST NEXMEM
BEQ 104
ERRDF 001, ERRO01, MSG001
  
```

```

; CLEAR NDM TIMEOUT FLAG
; R2 = WHICH PCSR IS BEING TESTED
; DOES PCSR EXIST?
  
```

```

; YES
; NO, PRINT DEVICE FATAL ERROR MESSAGE
;
; TRAP C$ERDF
; .WORD 1
; .WORD ERRO01
; .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

```

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, #ISRNXH, #PRI07

```

T2::
: SET UP TIMEOUT TRAP VECTOR
MOV #PRI07, -(SP)
MOV #ISRNXH, -(SP)
MOV #4, -(SP)
MOV #3, -(SP)
TRAP C#VEC
ADD #10, SP

```

```

CLR NEXMEM ; CLEAR NXM TIMEOUT FLAG
MOV #1, R2 ; R2 = WHICH PCSR IS BEING TESTED
MOV #PCSR1, R1 ; DOES PCSR EXIST?
TST NEXMEM
BEQ 104 ; YES
ERRDF 002, ERR001, MSG001 ; 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

```

```

104: CLRVEC #4
MOV #4, R0
TRAP C#CVEC

```

```

ENDTST
L10026: TRAP C#ETST

```

.SBTTL TEST 3: PCSR2 READ ACCESS TEST

4508
 4509
 4510
 4511
 4512
 4513
 4514
 4515
 4516
 4517
 4518
 4519

```

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

4520	030452			BGNTST		
	030452					
4521	030452			SETVEC #4, #ISRNXM, #PRIO7	; SET UP TIMEOUT TRAP VECTOR	
	030452	012746	000340			MOV #PRIO7, -(SP)
	030456	012746	030202			MOV #ISRNXM, -(SP)
	030462	012746	000004			MOV #4, -(SP)
	030466	012746	000003			MOV #3, -(SP)
	030472	104437				TRAP C#SVEC
	030474	062706	000010			ADD #10, SP
4522	030500	005037	015224	CLR NEXMEM	; CLEAR NXM TIMEOUT FLAG	
4523	030504	012702	000002	MOV #2, R2	; R2 = WHICH PCSR IS BEING TESTED	
4524	030510	017701	151516	MOV #PCSR2, R1	; DOES PCSR EXIST?	
4525	030514	005737	015224	TST NEXMEM		
4526	030520	001410		BEQ 104	; YES	
4527	030522			ERRDF 003, ERR001, MSG001	; NO, PRINT DEVICE FATAL ERROR MESSAGE	
	030522	104455				TRAP C#ERRDF
	030524	000003				.WORD 3
	030526	017756				.WORD ERR001
	030530	017036				.WORD MSG001
4528	030532			D0DU UNIT	; DROP UNIT	
	030532	013700	002244			MOV UNIT, R0
	030536	104451				TRAP C#D0DU
4529	030540			G0CLN	; AND ABORT PASS	
	030540	104444				TRAP C#DCLN
4530	030542			104: CLRVEC #4		
	030542	012700	000004			MOV #4, R0
	030546	104436				TRAP C#CVEC
4531	030550			ENDTST		
	030550					L10027: TRAP C#ETST
	030550	104401				

.SBTTL TEST 4: PCRS3 READ ACCESS TEST

4533
 4534
 4535
 4536
 4537
 4538
 4539
 4540
 4541
 4542
 4543
 4544 030552
 030552
 4545 030552
 030552 012746 000340
 030556 012746 030202
 030562 012746 000004
 030566 012746 000003
 030572 104437
 030574 062706 000010
 4546 030600 005037 015224
 4547 030604 012702 000003
 4548 030610 017701 151420
 4549 030614 005737 015224
 4550 030620 001410
 4551 030622
 030622 104455
 030624 000004
 030626 017756
 030630 017036
 4552 030632
 030632 013700 002244
 030636 104451
 4553 030640
 030640 104444
 4554 030642
 030642 012700 000004
 030646 104436
 4555 030650
 030650
 030650 104401

```

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

```

BGNTST
SETVEC #4,#ISRNXM,#PRI07      ; SET UP TIMEOUT TRAP VECTOR
                                T4::
                                MOV #PRI07,-(SP)
                                MOV #ISRNXM,-(SP)
                                MOV #4,-(SP)
                                MOV #3,-(SP)
                                TRAP C$VEC
                                ADD #10,SP
CLR NEXMEM                    ; CLEAR NXM TIMEOUT FLAG
MOV #3,R2                     ; R2 = WHICH PCRS IS BEING TESTED
MOV #PCRS3,R1                 ; DOES PCRS EXIST?
TST NEXMEM
BEQ 10:                        ; YES
ERRDF 004,ERR001,MSG001      ; NO, PRINT DEVICE FATAL ERROR MESSAGE
                                TRAP C$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$VEC
ENDTST
                                L10030:
                                TRAP C$ETST
  
```

4557
 4558
 4559
 4560
 4561
 4562
 4563
 4564
 4565
 4566
 4567
 4568
 4569
 4570
 4571
 4572
 4573
 4574
 4575
 4576
 4577
 4578
 4579
 4580
 4581
 4582
 4583
 4584
 4585
 4586
 4587
 4588
 4589
 4590
 4591
 4592
 4593
 4594
 4595
 4596

.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::
                                ; GET ADDRESS OF DATA PATTERNS
                                ; COUNT 4 PATTERNS (PASSES)
                                ; DATA PATTERN -> R3
104:  MOV    #PATRN1,R1
                                MOV    #4,R5
                                MOV    (R1),R3
                                BGNSEG
                                TRAP    C18SEG
                                MOV    R3,BPCSR2
                                MOV    BPCSR2,R4
                                BIC    #1,R3
                                CMP    R3,R4
                                SEQ    201
                                ; DATA PATTERN -> PCSR2
                                ; READ PCSR2
                                ; MASK BIT00
                                ; DATA COMPARE?
                                ; YES. CONTINUE
                                ; NO. REPORT ERROR
                                ERRHRD 005,ERR002,MSG002
                                TRAP    C12HRD
                                .WORD 5
                                .WORD ERR002
                                .WORD MSG002
                                201:  ENDSEG
                                100004: TRAP    C1ESEG
                                DEC    R5
                                BNE    101
                                ; DONE?
                                ; NO
                                ENDTST
                                L10031: TRAP    C1ETST
    
```

```

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
    
```


4639
4640
4641
4642
4643
4644
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4646
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4651
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4654
4655
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4657
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4662
4663
4664
4665
4666
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4668
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4670
4671
4672
4673
4674
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

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,CLRDMI ; 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

```

4683          ;MAC001
4684 031070 012737 001364 015222 MOV    #12.*SECOND,METER ; LOOP EXHAUSTED AND NO DNI
4685 031076 004737 024542          JSR    PC,TIMON ; PREPARE TIMER FOR 12 SEC COUNT ;MAC001
4686 031102 017704 151120          MOV    @PCSR0,R4 ; TURN ON THE CLOCK ;MAC001
4687 031106 032704 004000 26+:  BIT    @DNI,R4 ; GET PCSRO ;MAC001
4688 031112 001020          BNE   29+ ; IS DNI SET? ;MAC001
4689 031114          BREAK ; YES. STOP THE CLOCK ;MAC001
          ; NO. VISIT THE DRS ;MAC001
          TRAP C$BRK
4690 031116 005737 015222          TST    METER ; HAS THE COUNT EXPIRED? ;MAC001
4691 031122 001367          BNE   26+ ; NOT YET ;MAC001
4692 031124 004737 024560          JSR    PC,TIMOFF ; YES, TURN OFF THE TIMER ;MAC001
4693 031130 010437 015140          MOV    R4,EPCSR0 ; PCSRO -> EPCSR0
4694 031134 017737 151070 015142 MOV    @PCSR1,EPCSR1 ; PCSR1 -> EPCSR1
4695 031142          ERRHRD 009.,ERR045,MSG003 ; NO. REPORT ERROR
          TRAP C$ERHRD
          .WORD 9
          .WORD ERR045
          .WORD MSG003
4696 031152 000402          BR     30+ ; AND CHECK SELF TEST RESULT ;MAC001
4697          ; AND ABORT TEST
          ;MAC001
4698 031154 004737 024560 29+: JSR    PC,TIMOFF
4699 031160 004737 025234 30+: JSR    PC,CHKSTR ; SELF TEST SUCCESSFUL ?
4700 031164 103015          BCC   40+ ; YES
4701 031166 013704 015220          MOV    ECODE,R4 ; NO. SET UP TO PRINT ERROR
4702 031172 006304          ASL   R4 ; SHIFT CODE FOR INDEX
4703 031174 062704 031246          ADD   @STBL,R4 ; INDEX INTO SELF TEST TABLE
4704 031200 011437 031244          MOV    (R4),STMSG ; LOAD INTO SELF TEST MESSAGE
4705 031204          ERRHRD 010.,ERR005,MSG004 ; REPORT SELF TEST FAILURE
          TRAP C$ERHRD
          .WORD 10
          .WORD ERR005
          .WORD MSG004
4706 031214          ESCAPE TST ; AND ABORT TEST
          TRAP C$ESCAPE
          .WORD L10033
4707
4708 031220 004737 025546          JSR    PC,CLRDN ; WRITE ONE TO CLEAR DNI
4709          ; ERROR?
4710 031224 103006          BCC   50+ ; NO
4711 031226          ERRHRD 011.,ERR006,MSG003 ; YES. REPORT ERROR
          TRAP C$ERHRD
          .WORD 11
          .WORD ERR006
          .WORD MSG003
4712 031236          ESCAPE TST ; AND ABORT
          TRAP C$ESCAPE
          .WORD L10033
4713 031242          50+:
4714 031242          ENDTST
          L10033: TRAP C$ETST
          731242 104401
  
```

Address	Local Storage For Test 7	Self Test Message Address
4716		
4717	031244	000000
4718		
4719	031246	031446
4720	031250	031472
4721	031252	031521
4722	031254	031534
4723	031256	031573
4724	031260	031636
4725	031262	031671
4726	031264	031742
4727	031266	032014
4728	031270	032070
4729	031272	032117
4730	031274	032134
4731	031276	032170
4732	031300	032204
4733	031302	032220
4734	031304	032234
4735	031306	032250
4736	031310	032273
4737	031312	032307
4738	031314	032323
4739	031316	032337
4740	031320	032353
4741	031322	032367
4742	031324	032403
4743	031326	032417
4744	0313 0	032474
4745	031332	032546
4746	031334	032621
4747	031336	032665
4748	031340	032736
4749	031342	033001
4750	031344	033052
4751	031346	033115
4752	031350	033205
4753	031352	033272
4754	031354	033360
4755	031356	033437
4756	031360	033523
4757	031362	033601
4758	031364	033615
4759	031366	033631
4760	031370	033717
4761	031372	034002
4762	031374	034066
4763	031376	034143
4764	031400	034225
4765	031402	034301
4766	031404	034315
4767	031406	034331
4768	031410	034354
4769	031412	034407
4770	031414	034442
4771	031416	034471
4772	031420	034504

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 MESSAGES			
					SMSG00::	.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	SMSG26::	.ASCII	/UNDEFINED/
	032372	105	106	111			
	032375	116	105	104			
4829	032400	015	012	000		.ASCIZ	<15><12>
4830	032403	125	116	104	SMSG27::	.ASCII	/UNDEFINED/
	032406	105	106	111			
	032411	116	105	104			
4831	032414	015	012	000		.ASCIZ	<15><12>
4832	032417	114	117	103	SMSG30::	.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	SMSG31::	.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	SMSG32::	.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	SMSG33::	.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		.ASCIZ <15><12>
4840	032665	114	117	103	MSG34::	.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		.ASCIZ <15><12>
4842	032736	114	117	103	MSG35::	.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		.ASCIZ <15><12>
4844	033001	114	117	103	MSG36::	.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		.ASCIZ <15><12>
4846	033052	114	117	103	MSG37::	.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	?	125	106				
	033377	06	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							
4881	034351	015	012	000		.ASCIZ	<15><12>		
4882	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	MSG71::	.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		.ASCIZ	<15><12>
4900	034645	105	130	124	MSG72::	.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		.ASCIZ	<15><12>
4902	034671	125	116	104	MSG73::	.ASCII	/UNDEFINED/
	034674	105	106	111			
	034677	116	105	104			
4903	034702	015	012	000		.ASCIZ	<15><12>
4904	034705	125	116	104	MSG74::	.ASCII	/UNDEFINED/
	034710	105	106	111			
	034713	116	105	104			
4905	034716	015	012	000		.ASCIZ	<15><12>
4906	034721	125	116	104	MSG75::	.ASCII	/UNDEFINED/
	034724	105	106	111			
	034727	116	105	104			
4907	034732	015	012	000		.ASCIZ	<15><12>
4908	034735	125	116	104	MSG76::	.ASCII	/UNDEFINED/
	034740	105	106	111			
	034743	116	105	104			
4909	034746	015	012	000		.ASCIZ	<15><12>
4910	034751	103	117	115	MSG77::	.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

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*****
:
: 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 03500C 103025          BCC    25$              ; NO
4938 035010 012777 000040 145210  MOV    #RSET,#PCSR0     ; 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$: JSR    PC,CLRDN1     ; WRITE ONE TO CLEAR DNI
4945
4946 035044 103006          BCC    25$              ; NO
4947 035046          ERRHRD 013.,ERR006,MSG003 ; YES, REPORT ERROR
      035046 104456          TRAP   C$ERHRD
      035050 000015          .WORD 13
      035052 020202          .WORD ERR006
      035054 017110          .WORD MSG003
4948 035056          ESCAPE TST          ; AND ABORT
      035056 104410          TRAP   C$ESCAPE
      035060 000214          .WORD L10034
4949
4950 035062 012777 000006 145136 ; 25$: MOV    #PNOP,#PCSR0     ; ISSUE A NOP PORT COMMAND
4951 035070 004737 024574      JSR    PC,CHKDNI        ; DNI ?
4952 035074 103006          BCC    30$              ; 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		ERRMRD	019..ERR006,MSG003	; YES, REPORT ERROR	TRAP	C1ERRMRD
	035260	104456				.WORD	19
	035262	000023				.WORD	ERR006
	035264	020202				.WORD	MSG003
	035266	017110					
4987	035270		ESCAPE	TST	; AND ABORT TEST	TRAP	C1ESCAPE
	035270	104410				.WORD	L10034
	035272	000002					
4988	035274			804:			
4989	035274		ENDTST				
	035274				L10034:	TRAP	C1ETST
	035274	104401					

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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 258 ; NO
MOV @RSET,BPCSR0 ; YES, RESET DEUNA
JSR PC.CHKDNI ; DNI ?
BCC 208 ; YES
ERRHRD 020.,ERR004,MSG003 ; NO, REPORT ERROR

TRAP C1ERRRD
.WORD 20
.WORD ERR004
.WORD MSG003

ESCAPE TST ; AND ABORT TEST

TRAP C1ESCAPE
.WORD L10035

208: JSR PC.CLRDNI ; WRITE ONE TO CLEAR DNI
; ERROR
BCC 258 ; NO
ERRHRD 021.,ERR006,MSG003 ; YES, REPORT ERROR

TRAP C1ERRRD
.WORD 21
.WORD ERR006
.WORD MSG003

ESCAPE TST ; AND ABORT

TRAP C1ESCAPE
.WORD L10035

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

MOV UNAPRI,-(SP)
MOV @ISRDN1,-(SP)
MOV INTVEC,(SP)
MOV #3,-(SP)
TRAP C1SVEC
ADD #10,SP

SETPRI @PRI04 ; SET CPU PRIORITY = 4

MOV @PRI04,R0
TRAP C1SPRI

408: CLR DNIFLG ; CLEAR DNI INTERRUPT FLAG
; ISSUE GET PCBB PORT COMMAND WITH INTERRUPTS ENABLED
MOV @INTE,BPCSR0 ; ENABLE INTERRUPTS
MOV @NOPF,R5 ; POINT TO DEFAULT NOP FUNCTION

5027	035430	004737	026742		JSR	PC,LDPCBB		; LOAD FUNCTION INTO PCBB	
5028	035434	004737	026772		JSR	PC,LDPCSR		; ADDRESS OF PCBB -> PCSR2!3	
5029	035440	012777	000101	144560	MOV	@GETPCB!INTE,@PCSR0		; ISSUE A GETPCBB PORT COPY AND	
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?	C!SPRI
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?	C!BRK
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,PO
	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	INTVEC,RO
	035552	012700	000340						C!CVEC
	035556	104441							MOV
5059	035560	004737	025546		JSR	PC,CLRDNI		; WRITE ONE TO CLEAR DNI	@PRI07,RO
5060									TRAP
5061	035564	103006			BCC	801		; ERROR?	C!SPRI
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				
	035576	104410						
	035600	000002						
5064	035602		801:					
5065	035602			ENDTST				
	035602					L10035:		
	035602	104401					TRAP	C#ETST

AND ABORT

TRAP
.WORD C#ESCAPE
L10035 .

L10035:

.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
*****

```

```

5086 035604          BGNTST
5087 035604 004737 027446          JSR    PC,TINIT          ; IS A DEVICE RESET NEEDED?
5088 035610 103025          BCC    301              ; NO
5089 035612 012777 000040 144406   MOV    @RSET,@PCSR0     ; YES, RESET DEJNA
5090 035620 004737 024574          JSR    PC,CHKDNI        ; DNI ?
5091 035624 103006          BCC    201              ; YES
5092 035626          ERRHRD 024.,ERR004,MSG003 ; NO, REPORT ERROR
:                                     TRAP  C$ERRRD
:                                     .WORD 24
:                                     .WORD ERR004
:                                     .WORD MSG003
5093 035636          ESCAPE TST          ; AND ABORT TEST
:                                     TRAP  C$ESCAPE
:                                     .WORD L10036
5094
5095 035642 004737 025546          ;
5096 201: JSR    PC,CLRDN1          ; WRITE ONE TO CLEAR DNI
5097 035646 103006          BCC    301              ; ERROR ?
5098 035650          ERRHRD 025.,ERR006,MSG003 ; NO
:                                     ; YES, REPORT ERROR
:                                     TRAP  C$ERRRD
:                                     .WORD 25
:                                     .WORD ERR006
:                                     .WORD MSG003
5099 035660          ESCAPE TST          ; AND ABORT TEST
:                                     TRAP  C$ESCAPE
:                                     .WORD L10036
5100
5101 035664 004737 026772          ;
5102 035670 012777 000001 144330   ;
5103 035676 004737 024574          ;
5104 035702 103006          ;
5105 035704          ERRHRD 026.,ERR009,MSG003 ; ADDRESS OF PCBB -> PCSR2!3
:                                     ; ISSUE GET_PCBB PORT COMMAND
:                                     ; DNI ?
:                                     ; YES
:                                     ; NO, REPORT ERROR
:                                     TRAP  C$ERRRD
:                                     .WORD 26
:                                     .WORD ERR009
:                                     .WORD MSG003
5106 035714          ESCAPE TST          ; AND ABORT TEST

```


5144 036076 004737 026334
5145 036102 010437 014214
5146 036106 077042
5147
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5149 036110 005737 014214
5150 036114 001406
5151 036116
036116 104456
036120 000036
036122 021530
036124 000000
5152 036126
036126 104410
036130 000002
5153 036132
5154 036132
036132
036132 104401

801: JSR PC,CRCBLK
MOV R4,CRCH
SOB R0,601

;VERIFY CRC
TST CRCH
BEQ 951
ERRHRD 030.,ERR024

ESCAPE TST

951: ENDTST

; CALCULATE CRC ON 1K RBUF
; CRC -> CRCH
; DO ALL BK BY 1K BLOCKS

; CRC = 0 ?
; YES
; NO, ROM CRC ERROR, REPORT ERROR

TRAP C#ERRR0
.WORD 30
.WORD ERR024
.WORD 0

; AND ABORT TEST

TRAP C#ESCAPE
.WORD L1003E

L10036:

TRAP C#ETST

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.SBTTL 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 DOWNLIN 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

```

5178 036134 004737 027446          BGNTST
5179 036140 103025                JSR    PC,TINIT          ; IS A DEVICE RESET NEEDED?
5180 036142 012777 000040 144056  BCC    304              ; NO
5181 036150 004737 024574          MOV    @RSET,@PCSR0     ; YES, RESET DEUNA
5182 036154 103006                JSR    PC,CHKDNI        ; DNI ?
5183 036156 104456                BCC    204              ; YES
5184 036166 104410                ERRHRD 031.,ERR004,MSG003 ; NO, REPORT ERROR
5185 036166 000037                TRAP   C$ERRRD         ;
5186 036166 020102                .WORD 31              ;
5187 036164 017110                .WORD ERR004         ;
5188 036166 000716                .WORD MSG003         ;
5189 036172 004737 025546          ESCAPE TST              ; AND ABORT TEST
5190 036172 104410                TRAP   C$ESCAPE      ;
5191 036172 000716                .WORD L10037         ;
5192 036172 004737 025546          ;
5193 036172 004737 025546          ; 204: JSR    PC,CLRDN1    ; WRITE ONE TO CLEAR DNI
5194 036172 103006                ; ERROR ?
5195 036200 104456                BCC    304              ; NO
5196 036200 000040                ERRHRD 032.,ERR006,MSG003 ; YES, REPORT ERROR
5197 036202 104456                TRAP   C$ERRRD         ;
5198 036202 000040                .WORD 32              ;
5199 036204 020202                .WORD ERR006         ;
5200 036206 017110                .WORD MSG003         ;
5201 036210 104410                ESCAPE TST              ; AND ABORT TEST
5202 036210 000674                TRAP   C$ESCAPE      ;
5203 036210 000674                .WORD L10037         ;
5204 036214 004737 026772          ;
5205 036220 012777 000001 144000  ; 304: JSR    PC,LDPCSR    ; ADDRESS OF PCBB -> PCSR2!3
5206 036226 004737 024574          MOV    @GETPCB,@PCSR0  ; ISSUE GET_PCBB PORT COMMAND
5207 036232 103006                JSR    PC,CHKDNI        ; DNI ?
5208 036234 104456                BCC    404              ; YES
5209 036234 000041                ERRHRD 033.,ERR009,MSG003 ; NO, REPORT ERROR
5210 036236 000041                TRAP   C$ERRRD         ;
5211 036240 020416                .WORD 33              ;
5212 036240 020416                .WORD ERR009         ;
  
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5197 036242 017110                ESCAPE TST                ; AND ABORT TEST                .WORD MSG003
      036244                ;                                TRAP C$ESCAPE
      036244 104410                ;                                .WORD L10037
      036246 000640                ;                                .WORD

5198 036250 C04737 025546          ;                                ; WRITE ONE TO CLEAR DNI
5199 036250 C04737 025546          ;                                ; ERROR ?
5200 036250 C04737 025546          ;                                ; NO
5201 036254 103006                ;                                ; YES, REPORT ERROR
5202 036256                ;                                TRAP C$ERRRD
      036256 104456                ;                                .WORD 34
      036260 000042                ;                                .WORD ERR006
      036262 020202                ;                                .WORD MSG003
      036264 017110                ;                                .WORD

5203 036266                ESCAPE TST                ; AND ABORT TEST                TRAP C$ESCAPE
      036266 104410                ;                                .WORD L10037
      036270 000616                ;                                .WORD

5204 ;WRITE TOP 1K DOWNLINE LOAD WCS WITH DATA = ADDRESS
5205 50$: MOV #MEM11A,R3                ; R3 POINTS TO WCS ADDRESS TABLE
5206 036272 012703 014256          ;
5207 ;WRITE TBUF WITH DATA = ADDRESS
5208 60$: MOV R3,R5                ; R5 POINTS TO ADDRESS
5209 036276 010305                ; LOAD TBUF WITH ADDRESS DATA PATTERN
5210 036300 004737 026600          ;
5211 ;LOAD INTERNAL WCS MEMORY
5212 036304 012705 013314          ; DEFAULT LOAD INTERNAL MEMORY
5213 036310 004737 026742          ; LOAD FUNCTION -> PCBB
5214 036314 012705 014246          ; DEFAULT UDBB
5215 036320 012700 000C04          ; FOUR WORDS
5216 036324 004737 027142          ; LOAD INTO UDBB
5217 036330 012737 003104 002276  ; LOAD TBUF ADDRESS -> UDBB+2
5218 036336 011337 002302          ; LOAD WCS ADDRESS -> UDBB+6
5219 036342 012777 000002 143656  ; ISSUE GET COMMAND PORT COMMAND
5220 036350 004737 024574          ; DNI ?
5221 036354 103006                ; YES
5222 036356                ; NO, REPORT ERROR
      036356 104456                ;                                TRAP C$ERRRD
      036360 000043                ;                                .WORD 35
      036362 020502                ;                                .WORD ERPC10
      036364 017110                ;                                .WORD MSG003

5223 036366                ESCAPE TST                ; AND ABORT TEST                TRAP C$ESCAPE
      036366 104410                ;                                .WORD L10037
      036370 000516                ;                                .WORD

5224 ;WRITE ONE TO CLEAR DNI
5225 036372 004737 025546          ;                                ; ERROR ?
5226 036372 004737 025546          ;                                ; NO
5227 036376 103006                ;                                ; YES, REPORT ERROR
5228 036400                ;                                TRAP C$ERRRD
      036400 104456                ;                                .WORD 36
      036402 000044                ;                                .WORD ERR006
      036404 020202                ;                                .WORD MSG003
      036406 017110                ;                                .WORD

5229 036410                ESCAPE TST                ; AND ABORT TEST                TRAP C$ESCAPE
      036410 104410                ;                                .WORD L10037
      036412 000474                ;                                .WORD

5230 ;READ TOP 1K DOWNLINE LOAD WCS AND COMPARE DATA
5231 80$: MOV #MEM11A,R3                ; R3 POINTS TO WCS ADDRESS TABLE
5232 036414 012703 014256          ;

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5233								
5234								
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						
5261								
5262								
5263								
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						
5269								
5270								
5271								

```

5272      ;WRITE TOP 1K DOWNLINE LOAD WCS WITH DATA = COMPLIMENT OF ADDRESS
5273 036600 012703 014256 1404: MOV @MEM11A,R3 ; R3 POINTS TO WCS ADDRESS TABLE
5274      ;
5275      ;WRITE RBUF WITH DATA = ADDRESS
5276 036604 010305 1604: 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 @DMPMEM,R5 ; DEFAULT LOAD INTERNAL MEMORY
5280 036616 004737 026742 JSR PC,LDPCBB ; 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 024514 JSR PC,CHKDNI ; DNI ?
5288 036662 103006 BCC 1704 ; YES
5289 036664 ERRHRD 040.,ERR010,MSG003 ; NO, REPORT ERROR
          TRAP C$ERRRD
          .WORD 40
          .WORD ERR010
          .WORD MSG003
5290 036674 ESCAPE TST ; AND ABORT TEST
          TRAP C$ESCAPE
          .WORD L10037
5291      ;
5292 036700 004737 025546 1704: JSR PC,CLR DNI ; WRITE ONE TO CLEAR DNI
5293      ; ERPOR ?
5294 036704 103006 BCC 1804 ; NO
5295 036706 ERRHRD 041.,ERR006,MSG003 ; YES, REPORT ERROR
          TRAP C$ERRRD
          .WORD 41
          .WORD ERR006
          .WORD MSG003
5296 036716 ESCAPE TST ; AND ABORT TEST
          TRAP C$ESCAPE
          .WORD L10037
5297      ;
5298      ;READ TOP 1K DOWNLINE LOAD WCS AND COMPARE DATA
5299 036722 012703 014256 1804: MOV @MEM11A,R3 ; R3 POINTS TO WCS ADDRESS TABLE
5300      ;
5301      ;SETUP TBUF FOR DATA COMPARE
5302 036726 010305 2004: 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 2104: CLR (R4)+
5308 036746 077002 SOB R0,2104
5309      ;DUMP INTERNAL WCS MEMORY INTO RBUF
5310 036750 012705 013304 MOV @DMPMEM,R5 ; DEFAULT DUMP INTERNAL MEMORY
5311 036754 004737 026742 JSR PC,LDPCBB ; 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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.SBTTL 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

BGNTST

T12::

037110
037110 004737 027446
037114 103025
037116 012777 000040 143102
037124 004737 024574
037130 103006
037132 104456
037134 000055
037136 020102
037140 017110
037142 104410
037144 000506
037146 004737 025546
037152 103006
037154 104456
037156 000056
037160 020202
037162 017110
037164 104410
037166 000464
037170 004737 026772
037174 012777 000001 143024
037202 004737 024574
037206 103006
037210 104456
037212 000057
037214 020416
037216 017110
037220 104410
037222 000430
037224 004737 025546

143102
20:
30:
40:

```
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 045.,ERR004,MSG003 ; NO, REPORT ERROR  
  
ESCAPE TST ; AND ABORT TEST  
  
20$: JSR PC,CLRDNI ; WRITE ONE TO CLEAR DNI  
; ERROR ?  
BCC 30$ ; NO  
ERRHRD 046.,ERR006,MSG003 ; YES, REPORT ERROR  
  
ESCAPE TST ; AND ABORT TEST  
  
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 047.,ERR009,MSG003 ; NO, REPORT ERROR  
  
ESCAPE TST ; AND ABORT TEST  
  
40$: JSR PC,CLRDNI ; WRITE ONE TO CLEAR DNI  
; ERROR ?
```

TRAP C\$ERHRD
.WORD 45
.WORD ERR004
.WORD MSG003
TRAP C\$ESCAPE
.WORD L10040
TRAP C\$ERHRD
.WORD 46
.WORD ERR006
.WORD MSG003
TRAP C\$ESCAPE
.WORD L10040
TRAP C\$ERHRD
.WORD 47
.WORD ERR009
.WORD MSG003
TRAP C\$ESCAPE
.WORD L10040

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5378 037230 103006          BCC      501
5379 037232          ERRHRD   048.,ERR006,MSG003      ; NO
                                           ; YES, REPORT ERROR
                                           TRAP      C1ERRRD
                                           .WORD    48
                                           .WORD    ERR006
                                           .WORD    MSG003
5380 037242          ESCAPE   TST                ; AND ABORT TEST
                                           TRAP      C1ESCAPE
                                           .WORD    L10040
5381
5382          ; WRITE SETABLE MODE REGISTER BITS WITH ONES
5383 037246 012705 013244 501:  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      601
5389 037300          ERRHRD   049.,ERR010,MSG003      ; NO, REPORT ERROR
                                           TRAP      C1ERRRD
                                           .WORD    49
                                           .WORD    ERR010
                                           .WORD    MSG003
5390 037310          ESCAPE   TST                ; AND ABORT TEST
                                           TRAP      C1ESCAPE
                                           .WORD    L10040
5391
5392 037314 004737 025546 601:  JSR      PC,CLRDN1      ; WRITE ONE TO CLEAR DNI
5393          ; ERROR ?
5394 037320 103006          BCC      701
5395 037322          ERRHRD   050.,ERR006,MSG003      ; YES, REPORT ERROR
                                           TRAP      C1ERRRD
                                           .WORD    50
                                           .WORD    ERR006
                                           .WORD    MSG003
5396 037332          ESCAPE   TST                ; AND ABORT TEST
                                           TRAP      C1ESCAPE
                                           .WORD    L10040
5397
5398          ; READ AND COMPARE MODE REGISTER
5399 037336 012705 013234 701:  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      801
5404 037362          ERRHRD   051.,ERR010,MSG003      ; NO, REPORT ERROR
                                           TRAP      C1ERRRD
                                           .WORD    51
                                           .WORD    ERR010
                                           .WORD    MSG003
5405 037372          ESCAPE   TST                ; AND ABORT TEST
                                           TRAP      C1ESCAPE
                                           .WORD    L10040
5406
5407 037376 004737 025546 801:  JSR      PC,CLRDN1      ; WRITE ONE TO CLEAR DNI
5408          ; ERROR ?
5409 037402 103006          BCC      901
5410 037404          ERRHRD   052.,ERR006,MSG003      ; YES, REPORT ERROR
    
```

037404	104456						TRAP	C1ERRRD
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							
5414	03742C	012703	175015					
5415	037424	013704	002266					
5416	037430	020304						
5417	037432	001406						
5418	037434							
	037434	104456					TRAP	C1ERRRD
	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					
5424	037454	004737	026742					
5425	037460	012737	000000	002266				
5426	037466	012777	000002	142532				
5427	037474	004737	024574					
5428	037500	103006						
5429	037502							
	037502	104456					TRAP	C1ERRRD
	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					
5433								
5434	037522	103006						
5435	037524							
	037524	104456					TRAP	C1ERRRD
	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					
5440	037544	004737	026742					
5441	037550	012777	000002	142450				
5442	037556	004737	024574					
5443	037562	103006						


```

5444 037564          ERRMRD 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,CLRDMI      ; WRITE ONE TO CLEAR DMI
5448
5449 037604 103006          BCC      1901      ; ERROR ?
5450 037606          ERRMRD 057.,ERR006,MSG003      ; NO
      037606 104456
      037610 000071
      037612 020202
      037614 017110
      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          ERRMRD 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
      C37652 104401
                                     L10040: TRAP   C$ETST

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TRAP   C$ERRMRD
.WORD  56
.WORD  ERR010
.WORD  MSG003
TRAP   C$ESCAPE
.WORD  L10040
TRAP   C$ERRMRD
.WORD  57
.WORD  ERR006
.WORD  MSG003
TRAP   C$ESCAPE
.WORD  L10040
TRAP   C$ERRMRD
.WORD  58
.WORD  ERR011
.WORD  MSG002
TRAP   C$ESCAPE
.WORD  L10040

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.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			T13::	
5491	037660	103025		BCC	301			: IS A DEVICE RESET NEEDED?	
5492	037662	012777	000040	MOV	#RSET,#PCSR0	142336		: NO	
5493	037670	004737	024574	JSR	PC,CHKDNI			: YES, RESET DEUNA	
5494	037674	103006		BCC	201			: DNI ?	
5495	037676			ERRHRD	059.,ERR004,MSG003			: YES	
	037676	104456						: NO, REPORT ERROR	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	201:	JSR	PC,CLADNI		: WRITE ONE TO CLEAR DNI	
5499								: ERROR ?	
5500	037716	103006		BCC	301			: NO	
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	301:	JSR	PC,LDPCSR		: ADDRESS OF PCBB -> PCSR2!3	
5505	037740	012777	000001	MOV	#GETPCB,#PCSR0	142260		: ISSUE GET_PCBB PORT COMMAND	
5506	037746	004737	024574	JSR	PC,CHKDNI			: DNI ?	
5507	037752	103006		BCC	401			: YES	

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5508 037754          ERRHRD 061.,ERR009,MSG003      ; NO, REPORT ERROR
      037754 104456          TRAP C$ERRRD
      037756 000075          .WORD 61
      037760 020416          .WORD ERR009
      037762 017110          .WORD MSG003
5509 037764          ESCAPE TST                    ; AND ABORT TEST
      037764 104410          TRAP C$ESCAPE
      037766 001072          .WORD L10041
5510
5511 037770 004737 025546 408: JSR PC,CLRDN1        ; WRITE ONE TO CLEAR DNI
5512
5513 037774 103006          BCC 408      ; ERROR ?
5514 037776          ERRHRD 062.,ERR006,MSG003      ; NO
      037776 104456          ; YES, REPORT ERROR
      040000 000076          TRAP C$ERRRD
      040002 020202          .WORD 62
      040004 017110          .WORD ERR006
      040006          .WORD MSG003
5515 040006          ESCAPE TST                    ; AND ABORT TEST
      040006 104410          TRAP C$ESCAPE
      040010 001050          .WORD L10041
5516
5517 ;WRITE MODE REGISTER = INTERNAL LOOPBACK TO TURN OFF LINK MEMORY
5518
5519 040012 012705 013244 458: MOV @WTRMODE,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 478      ; YES
5524 040036          ERRHRD 063.,ERR010,MSG003      ; NO, REPORT ERROR
      040036 104456          TRAP C$ERRRD
      040040 000077          .WORD 63
      040042 020502          .WORD ERR010
      040044 017110          .WORD MSG003
5525 040046          ESCAPE TST                    ; AND ABORT TEST
      040046 104410          TRAP C$ESCAPE
      040050 001010          .WORD L10041
5526
5527 040052 004737 025546 478: JSR PC,CLRDN1        ; WRITE ONE TO CLEAR DNI
5528
5529 040056 103006          BCC 508      ; ERROR ?
5530 040060          ERRHRD 064.,ERR006,MSG003      ; NO
      040060 104456          ; YES, REPORT ERROR
      040062 000100          TRAP C$ERRRD
      040064 020202          .WORD 64
      040066 017110          .WORD ERR006
      040070          .WORD MSG003
5531 040070          ESCAPE TST                    ; AND ABORT TEST
      040070 104410          TRAP C$ESCAPE
      040072 000766          .WORD L10041
5532
5533 ;WRITE 16K LINK MEMORY WITH DATA = ADDRESS BY 1K BLOCKS
5534 040074 012703 014260 508: 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          608: MOV R3,R5          ; R5 POINTS TO ADDRESS
5539 040106 004737 026600 JSR PC,LDBUF      ; LOAD TBUF WITH ADDRESS DATA PATTERN
5540

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5541 ;LOAD INTERNAL LINK MEMORY
5542 040112 012705 013314      MOV      #LDMEM,R5      ; DEFAULT LOAD INTERNAL MEMORY
5543 040116 004737 026742      JSR      PC,LDPCCBB     ; 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      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      MOV      #3774,UDBB   ; YES, ONLY WRITE 1022. WORDS
5553 ;
5554 040164 012777 000002      MOV      @GETCMD,@PCSR0 ; ISSUE GET COMMAND PORT COMMAND
5555 040172 004737 024574      JSR      PC,CHKDNI    ; DNI ?
5556 040176 103006                BCC      70$           ; YES
5557 040200                ERRMRD  065.,ERR010,MSG003 ; NO, REPORT ERROR
                    TRAP      C$ERRMRD
                    .WORD     65
                    .WORD     ERR010
                    .WORD     MSG003
5558 040210                ESCAPE  TST           ; AND ABORT TEST
                    TRAP      C$ESCAPE
                    .WORD     L10041
5559 ;
5560 040214 004 37 025546      JSR      PC,CLRDN1    ; WRITE ONE TO CLEAR DNI
5561 ;
5562 040220 103006                BCC      80$           ; ERROR ?
5563 040222                ERRMRD  066.,ERR006,MSG003 ; NO
                    ; YES, REPORT ERROR
                    TRAP      C$ERRMRD
                    .WORD     66
                    .WORD     ERR006
                    .WORD     MSG003
5564 040232                ESCAPE  TST           ; AND ABORT TEST
                    TRAP      C$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      #MEM15A,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,LDPCCBB  ; LOAD FUNCTION -> PCBB
5585 040304 012705 014246      MOV      #UDB11A,R5  ; DEFAULT UDBB
    
```

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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    (R5),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,SPCSR0 ; 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#ERRRD
                    .WORD   67
                    .WORD   ERR010
                    .WORD   MSG003
                    TRAP    C#ESCAPE
                    .WORD   L10041
5599 040372      FESCAPE TST      ; AND ABORT TEST
                    TRAP    C#ESCAPE
                    .WORD   L10041
5600
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#ERRRD
                    .WORD   68
                    .WORD   ERR006
                    .WORD   MSG003
                    TRAP    C#ESCAPE
                    .WORD   L10041
5605 040414      ESCAPE TST      ; AND ABORT TEST
                    TRAP    C#ESCAPE
                    .WORD   L10041
5606
5607      ;COMPARE RBUF WITH TBUF
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,CHPMEM ; DATA COMPARE ERROR ?
5616 040444 103006      BCC    140#       ; NO
5617 040446      ERRHRD 069.,ERR043,MSG007 ; YES, REPORT ERROR
                    TRAP    C#ERRRD
                    .WORD   69
                    .WORD   ERR043
                    .WORD   MSG007
                    TRAP    C#ESCAPE
                    .WORD   L10041
5618 040456      ESCAPE TST      ; AND ABORT TEST
                    TRAP    C#ESCAPE
                    .WORD   L10041
5619
5620 040462 005301 140# : DEC    R1          ; DONE 16 READS ?
5621 040464 001272      BNE    100#
5622
5623      ;REPEAT TEST WITH COMPLEMENTED DATA PATTERN
5624

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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,BPCSR0  ; 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$ERRRD        ;
5650 040574 000106              .WORD  70              ;
5650 040576 020502              .WORD  ERR010          ;
5650 040600 017110              .WORD  MSG003          ;
5650 040602              ESCAPE  TST            ; AND ABORT TEST
5650 040602 104410              TRAP    C$ESCAPE      ;
5650 040604 000254              .WORD  L10041         ;
5651 ;
5652 040606 004737 025546      170#: JSR      PC,CLRDN1  ; WRITE ONE TO CLEAR DNI
5653 ;
5654 040612 103006              BCC      180#           ; NO
5655 040614              ERRHRD  071.,ERR006,MSG003 ; YES, REPORT ERROR
5655 040614 104456              TRAP    C$ERRRD        ;
5655 040616 000107              .WORD  71              ;
5655 040620 020202              .WORD  ERR006          ;
5655 040622 017110              .WORD  MSG003          ;
5656 040624              ESCAPE  TST            ; AND ABORT TEST
5656 040624 104410              TRAP    C$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			SQB	R0,210:			
5673									
5674					:				
5675	040666	012705	013304		:	DUMP INTERNAL LINK MEMORY INTO RBUF			
5676	040672	004737	026742		MOV	#DMPMEM,R5			: DEFAULT DUMP INTERNAL MEMORY
5677	040676	012705	014246		JSR	PC,LDPCCB			: LOAD FUNCTION -> PCBB
5678	040702	012700	000004		MOV	#UDB11A,R5			: DEFAULT UDBB
5679	040706	004737	027142		MOV	#4,R0			: FOUR WORDS
5680	040712	012737	007104	002276	JSR	PC,LDUDBB			: LOAD INTO UDBB
5681	040720	012337	002302		MOV	#RBUF,UDBB*2			: LOAD RBUF ADDRESS -> UDBB*2
5682					MOV	(R3),UDBB*6			: LOAD LINK ADDRESS -> UDBB*6
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
	040754	104456						TRAP	C\$ERRHRD
	040756	000110						.WORD	72
	040760	020502						.WORD	ERR010
	040762	017110						.WORD	MSG003
5691	040764				ESCAPE	TST			: AND ABORT TEST
	040764	104410						TRAP	C\$ESCAPE
	040766	000072						.WORD	L10041
5692					:				
5693	040770	004737	025546		220:	JSR	PC,CLRDN1		: WRITE ONE TO CLEAR DNI
5694									: ERROR ?
5695	040774	103006			BCC	230:			: NO
5696	040776				ERRHRD	073.,ERR006,MSG003			: YES, REPORT ERROR
	040776	104456						TRAP	C\$ERRHRD
	041000	000111						.WORD	73
	041002	020202						.WORD	ERR006
	041004	017110						.WORD	MSG003
5697	041006				ESCAPE	TST			: AND ABORT TEST
	041006	104410						TRAP	C\$ESCAPE
	041010	000050						.WORD	L10041
5698					:				
5699					:	COMPARE RBUF WITH TBUF			
5700					:				
5701	041012	022701	000001		230:	CMP	#1,R1		: IS THIS THE LAST 1K BLOCK ?
5702	041016	001003			BNE	235:			: NO
5703	041020	012705	001776		MOV	#1022.,R5			: YES, ONLY COMPARE 1022. WORDS
5704	041024	000402			BR	236:			
5705					:				
5706	041026	012795	002000		235:	MOV	#1024.,R5		: COMPARE 1024. WORDS OF DATA
5707	041032	004737	026174		236:	JSR	PC,CMEMEM		: DATA COMPARE ERROR ?
5708	041036	103006			BCC	240:			: NO
5709	041040				ERRHRD	074.,ERR043,MSG007			: YES, REPORT ERROR
	041040	104456						TRAP	C\$ERRHRD
	041042	000112						.WORD	74
	041044	023644						.WORD	ERR043
	041046	017520						.WORD	MSG007
5710	041050				ESCAPE	TST			: AND ABORT TEST

```

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

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;
2404: DEC R1
      BNE 2004
;
      ENDTST

```

; DONE 16 READS ?

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TRAP   C8ESCAPE
.WORD  L10041

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L10041: TRAP   C8ETST

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.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

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

5744	041062			BGNTST					
	041062							T14::	
5745	041062			BGNSUB ;#1				T14.1:	
	041062	104402						TRAP	C#BSUB
5746									
5747	041064	004737	027446	JSR	PC.TINIT				: IS A DEVICE RESET NEEDED?
5748	041070	103025		BCC	304				: NO
5749	041072	012777	000040 141126	MOV	#RSET,#PCSR0				: YES, RESET DEUNA
5750	041100	004737	024574	JSR	PC,CHKDNI				: DNI ?
5751	041104	103006		BCC	204				: YES
5752	041106			ERRMRD	075.,ERR004,MSG003				: NO, REPORT ERROR
	041106	104456						TRAP	C#ERRMRD
	041110	000113						.WORD	75
	041112	020102						.WORD	ERR004
	041114	017110						.WORD	MSG003
5753	041116			ESCAPE	TST				: AND ABORT TEST
	041116	104410						TRAP	C#ESCAPE
	041120	001714						.WORD	L10042
5754									
5755	041122	004737	025546	JSR	PC,CLRDN1				: WRITE ONE TO CLEAR DNI
5756									: ERROR ?
5757	041126	103006		BCC	304				: NO
5758	041130			ERRMRD	076.,ERR006,MSG003				: YES, REPORT ERROR
	041130	104456						TRAP	C#ERRMRD
	041132	000114						.WORD	76
	041134	020202						.WORD	ERR006
	041136	017110						.WORD	MSG003
5759	041140			ESCAPE	TST				: AND ABORT TEST
	041140	104410						TRAP	C#ESCAPE

```

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$ERRHRD
                                .WORD   77
                                .WORD   ERR009
                                .WORD   MSG003
041164 104456
041166 000115
041170 020416
041172 017110
5766 041174          ESCAPE TST          ; AND ABORT TEST
                                TRAP    C$ESCAPE
                                .WORD   L10042
041174 104410
041176 001636
5767
5768 041200 004737 025546          i 40$: JSR    PC CLR DNI      ; WRITE ONE TO CLEAR DNI
5769                                ; ERROR ?
5770 041204 103006          BCC    50$           ; NO
5771 041206          ERRHRD 078.,ERR006,MSG003 ; YES, REPORT ERROR
                                TRAP    C$ERRHRD
                                .WORD   78
                                .WORD   ERR006
                                .WORD   MSG003
041206 104456
041210 000116
041212 020202
041214 017110
5772 041216          ESCAPE TST          ; AND ABORT TEST
                                TRAP    C$ESCAPE
                                .WORD   L10042 .
041216 104410
041220 001614
5773
5774          ;WRITE MODE REGISTER = INTERNAL LOOPBACK AND PROM MODE
5775 041222 012705 013244          i 50$: MOV    @WTRMODE,R5      ; DEFAULT WRITE MODE FUNCTION
5776 041226 004737 026742          JSR    PC,LDPCCBB     ; LOAD FUNCTION -> PCBB
5777 041232 012777 000002 140766  MOV    @CETCHD,@PCSR0 ; ISSUE GET_CMD PORT COMMAND
5778 041240 004737 024574          JSR    PC,CHKDNI      ; DNI ?
5779 041244 103006          BCC    60$           ; YES
5780 041246          ERRHRD 079.,ERR010,MSG003 ; NO, REPORT ERROR
                                TRAP    C$ERRHRD
                                .WORD   79
                                .WORD   ERR010
                                .WORD   MSG003
041246 104456
041250 000117
041252 020502
041254 017110
5781 041256          ESCAPE TST          ; AND ABORT TEST
                                TRAP    C$ESCAPE
                                .WORD   L10042
041256 104410
041260 001554
5782
5783 041262 004737 025546          i 60$: JSR    PC,CLR DNI      ; WRITE ONE TO CLEAR DNI
5784                                ; ERROR ?
5785 041266 103006          BCC    70$           ; NO
5786 041270          ERRHRD 080.,ERR006,MSG003 ; YES, REPORT ERROR
                                TRAP    C$ERRHRD
                                .WORD   80
                                .WORD   ERR006
                                .WORD   MSG003
041270 104456
041272 000120
041274 020202
041276 017110
5787 041300          ESCAPE TST          ; AND ABORT TEST
                                TRAP    C$ESCAPE
                                .WORD   L10042 .
041300 104410
041302 001532
5788
5789          ;WRITE RING FORMAT
5790 041304 012705 013204          i 70$: MOV    @WTRNGS,R5      ; DEFAULT WRITE RING FORMAT FUNCTION
5791 041310 004737 026742          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      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$: JSR      PC,CLRDN1 ; WRITE ONE TO CLEAR DNI
5802              ; ERROR ?
5803 041364 103006              BCC      90$          ; 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              ;WRITE PHYSICAL ADDRESS
5808 041402 012705 013144      ;90$: MOV      @WTPHYA,R5 ; DEFAULT WRITE PHYSICAL ADDR FUNC
5809 041406 004737 026742      JSR      PC,LDPCCB     ; LOAD FUNCTION -> PCBB
5810 041412 012777 000002      MOV      @GETCMD,@PCSR0 ; ISSUE GET_CMD PORT COMMAND
5811 041420 004737 024574      JSR      PC,CHKDNI     ; DNI ?
5812 041424 103006              BCC      100$         ; 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$: JSR     PC,CLRDN1 ; WRITE ONE TO CLEAR DNI
5817              ; ERROR ?
5818 041446 103006              BCC      110$         ; 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              ;SET UP RINGS FOR ONE BUFFER LOOPBACK
5823 041464 012705 013554      ;110$: 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	012705	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	1204		: YES		
5835	041534				ERRHRD	085.,ERR012,MSG003		: NO, REPORT ERROR		
	041534	104456							TRAP	C#ERRRD
	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		: 1204:	JSR	PC,CLRDN1		: WRITE ONE TO CLEAR DNI	
5839									: ERROR ?	
5840	041554	103006			BCC	1304		: NO		
5841	041556				ERRHRD	086.,ERR006,MSG003		: YES, REPORT ERROR		
	041556	104456							TRAP	C#ERRRD
	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		: 1304:	JSR	PC,CHKTXI		: TXI ?	
5845	041576	103006			BCC	1404		: YES		
5846	041600				ERRHRD	087.,ERR013,MSG003		: NO, REPORT ERROR		
	041600	104456							TRAP	C#ERRRD
	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		: 1404:	JSR	PC,CLRTXI		: WRITE ONE TO CLEAR TXI	
5850									: ERROR ?	
5851	041620	103006			BCC	1504		: NO		
5852	041622				ERRHRD	088.,ERR014,MSG003		: YES, REPORT ERROR		
	041622	104456							TRAP	C#ERRRD
	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		: 1504:	MOV	#TDRB,R5		: CHECK TDRB OWNERSHIP	
5856	041642	004737	024676		JSR	PC,CHKOWN		: OWN = PORT DRIVER ?		
5857	041646	103006			BCC	1604		: YES		

5858	041650			ERRMRD	089.,ERR018	:	NO, REPORT ERROR		
	041650	104456						TRAP	C#ERRMRD
	041652	000131						.WORD	89
	041654	021212						.WORD	ERR018
	041656	000000						.WORD	0
5859	041660			ESCAPE	TST	:	AND ABORT TEST		
	041660	104410						TRAP	C#ESCAPE
	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				ERRMRD	090.,ERR020,MSG005	:	YES, REPORT ERROR	
	041706	104456						TRAP	C#ERRMRD
	041710	000132						.WORD	90
	041712	021372						.WORD	ERR020
	041714	017214						.WORD	MSG005
5867	041716			ESCAPE	TST	:	AND ABORT TEST		
	041716	104410						TRAP	C#ESCAPE
	041720	001114						.WORD	L10042
5868									
5869	041722	004737	025132	170:	JSR	PC,CHKRXI	:	RXI ?	
5870	041726	103006			BCC	180:	:	YES	
5871	041730				ERRMRD	091.,ERR015,MSG003	:	NO, REPORT ERROR	
	041730	104456						TRAP	C#ERRMRD
	041732	000133						.WORD	91
	041734	021013						.WORD	ERR015
	041736	017110						.WORD	MSG003
5872	041740			ESCAPE	TST	:	AND ABORT TEST		
	041740	104410						TRAP	C#ESCAPE
	041742	001072						.WORD	L10042
5873									
5874	041744	004737	025662	180:	JSR	PC,CLRAXI	:	WRITE ONE TO CLEAR RXI	
5875									
5876	041750	103006			BCC	190:	:	NO	
5877	041752				ERRMRD	092.,ERR016,MSG003	:	YES, REPORT ERROR	
	041752	104456						TRAP	C#ERRMRD
	041754	000134						.WORD	92
	041756	021044						.WORD	ERR016
	041760	017110						.WORD	MSG003
5878	041762			ESCAPE	TST	:	AND ABORT TEST		
	041762	104410						TRAP	C#ESCAPE
	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				ERRMRD	093.,ERR017	:	NO, REPORT ERROR	
	042000	104456						TRAP	C#ERRMRD
	042002	000135						.WORD	93
	042004	021112						.WORD	ERR017
	042006	000000						.WORD	0
5884	042010			ESCAPE	TST	:	AND ABORT TEST		
	042010	104410						TRAP	C#ESCAPE
	042012	001022						.WORD	L10042

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5885
5886 042014 012705 014634      ; 2001: MOV    @RDR14A,R5      ; POINT TO EXPECTED RDRB
5887 042020 004737 027222      ; JSR    PC,LDXRDR          ; LOAD INTO XRDRBO TABLE
5888 042024 012705 002644      ; MOV    @RDRB,R           ; CHECK RDRB
5889 042030 004737 025032      ; JSR    PC, MKRDR         ; ERRORS ?
5890 042034 103006              ; DCC    210               ; NO
5891 042036              ; ERRMRD 094.,ERR021,MSG006 ; YES, REPORT ERROR
                    104456      ; TRAP   C1ERRRD
                    042040 000136 ; .WORD  94
                    042042 021453 ; .WORD  ERR021
                    042044 017356 ; .WORD  MSG006
5892 042046              ; ESCAPE TST                ; AND ABORT TEST
                    104410      ; TRAP   C1ESCAPE
                    042050 000764 ; .WORD  L10042
5893
5894      ; COMPARE RBUF WITH TBUF
5895 042052 012705 000070      ; 2101: MOV    @56.,R5       ; COMPARE 56 WORDS OF DATA
5896 042056 004737 026044      ; JSR    PC,CHPDAT         ; DATA COMPARE ERROR ?
5897 042062 103005              ; BCC    220               ; NO
5898 042064              ; ERRMRD 095.,ERR022,MSG007 ; YES, REPORT ERROR
                    104456      ; TRAP   C1ERRRD
                    042066 000137 ; .WORD  95
                    042070 021534 ; .WORD  ERR022
                    042072 017520 ; .WORD  MSG007
5899 042074              ; ESCAPE TST                ; AND ABORT TEST
                    104410      ; TRAP   C1ESCAPE
                    042076 000736 ; .WORD  L10042
5900
5901 042100 012705 014724      ; 2201: 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    230               ; NO
5906 042122              ; ERRMRD 096.,ERR023,MSG008 ; YES, REPORT ERROR
                    104456      ; TRAP   C1ERRRD
                    042124 000140 ; .WORD  96
                    042126 021603 ; .WORD  ERR023
                    042130 017552 ; .WORD  MSG008
5907 042132              ; ESCAPE TST                ; AND ABORT TEST
                    104410      ; TRAP   C1ESCAPE
                    042134 000700 ; .WORD  L10042
5908
5909 042136 012777 000017 140062 ; 2301: MOV    @STOP,@PCSR0  ; ISSUE STOP PORT COMMAND
5910 042144 004737 024574      ; JSR    PC,CHKDNI         ; DNI ?
5911 042150 103006              ; BCC    240               ; YES
5912 042152              ; ERRMRD 097.,ERR019,MSG003 ; NO, REPORT ERROR
                    104456      ; TRAP   C1ERRRD
                    042154 000141 ; .WORD  97
                    042156 021312 ; .WORD  ERR019
                    042160 017110 ; .WORD  MSG003
5913 042162              ; ESCAPE TST                ; AND ABORT TEST
                    104410      ; TRAP   C1ESCAPE
                    042164 000650 ; .WORD  L10042
5914
5915 042166 004737 025546      ; 2401: JSR    PC,CLRDNI     ; WRITE ONE TO CLEAR DNI
5916              ; BCC    250               ; ERROR ?
5917 042172 103006              ; BCC    250               ; 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          2504: ENDSUB ;#1
5921 042210
      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      2554
      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          ESCAPE TST                    ; ABORT TEST
      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 PC88 -> PCSR2:3
      042314      104456
      042316      001115
      042320      020416
      042322      017110
5944 042324          MOV      %GETPCB,%PCSR0       ; ISSUE GET_PCB8 PORT COMMAND
      042324      104410
      042326      000506
5945
5946 042330      004737 025546
2534: JSR      PC,CLRDN1             ; GO CLEAR DNI
  
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5947	042334	103006			BCC	255:			;OK			;RSJ003
5948	042336				ERRHRD	590.	,ERR006,MSG003		;ERROR TRYING TO CLEAR DNI			;RSJ003
	042336	104456								TRAP		C1ERRHRD
	042340	001116								WORD		590
	042342	020202								WORD		ERR006
	042344	0171'0								WORD		MSG003
5949	042346				ESCAPE	TST			;ABORT TEST			;RSJ003
	042346	104410								TRAP		C1ESCAPE
	042350	000464								WORD		L10042 .
5950												
5951												
5952	042352	012705	013254		255:	MOV	@WTRMOD1,R5		; POINT TO WRITE MODE FUNCTION			
5953	042356	004737	026742			JSR	PC,LDPCCB		; 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			
	042376	104456								TRAP		C1ERRHRD
	042400	000145								WORD		101
	042402	020502								WORD		ERR010
	042404	017110								WORD		MSG003
5958	042406				ESCAPE	TST			; AND ABORT TEST			
	042406	104410								TRAP		C1ESCAPE
	042410	000424								WORD		L10042 .
5959												
5960	042412	004737	025546		260:	JSR	PC,CLRDNI		; WRITE ONE TO CLEAR DNI			
5961									; ERROR ?			
5962	042416	103006				BCC	270:		; NO			
5963	042420					ERRHRD	102.,ERR006,MSG003		; YES, REPORT ERROR			
	042420	104456								TRAP		C1ERRHRD
	042422	000146								WORD		102
	042424	020202								WORD		ERR006
	042426	017110								WORD		MSG003
5964	042430				ESCAPE	TST			; AND ABORT TEST			
	042430	104410								TRAP		C1ESCAPE
	042432	000402								WORD		L10042 .
5965												
5966												
5967												
5968	042434	012705	013554		270:	MOV	@TDRB1A,R5		; DEFAULT ONE BUFFER TRANSMIT RING			
5969	042440	004737	027046			JSR	PC,LDTDRB		; LOAD TDRB			
5970	042444	012705	013354			MOV	@RDRB1A,R5		; DEFAULT ONE BUFFER RECEIVE RING			
5971	042450	004737	027010			JSR	PC,LDRDRB		; LOAD RDRB			
5972												
5973												
5974												
5975	042454	012705	002266			MOV	@PCBB+2,R5		; POINT TO DESTINATION ADDRESS			
5976	042460	004737	026714			JSR	PC,LDDDEST		; LOAD DEST			
5977	042464	004737	027342			JSR	PC,SETBUF		; SET UP BUFFERS			
5978	042470	012777	000004	137530		MOV	@START,@PCSR0		; ISSUE START PORT COMMAND			
5979	042476	004737	024574			JSR	PC,CHKDNI		; DNI?			
5980	042502	103006				BCC	280:		; YES			
5981	042504					ERRHRD	103.,ERR012,MSG003		; NO, REPORT ERROR			
	042504	104456								TRAP		C1ERRHRD
	042506	000147								WORD		103
	042510	020633								WORD		ERR012
	042512	017110								WORD		MSG003

5982	042514			ESCAPE	TST		; AND ABORT TEST		
	042514	104410						TRAP	C\$ESCAPE
	042516	000316						.WORD	L10042 .
5983									
5984	042520	004737	025546	280:	JSR	PC,CLRDN1	; WRITE ONE TO CLEAR DNI		
5985							; ERROR ?		
5986	042524	103006			BCC	290:	; NO		
5987	042526				ERRHRD	104.,ERR006,MSG003	; YES, REPORT ERROR		
	042526	104456						TRAP	C\$ERRHRD
	042530	000150						.WORD	104
	042532	020202						.WORD	ERR006
	042534	017110						.WORD	MSG003
5988	042536				ESCAPE	TST	; AND ABORT TEST		
	042536	104410						TRAP	C\$ESCAPE
	042540	000274						.WORD	L10042 .
5989									
5990	042542	004737	025404	290:	JSR	PC,CHKTXI	; TXI ?		
5991	042546	103006			BCC	300:	; YES		
5992	042550				ERRHRD	105.,ERR013,MSG003	; NO, REPORT ERROR		
	042550	104456						TRAP	C\$ERRHRD
	042552	000151						.WORD	105
	042554	020714						.WORD	ERR013
	042556	017110						.WORD	MSG003
5993	042560				ESCAPE	TST	; AND ABORT TEST		
	042560	104410						TRAP	C\$ESCAPE
	042562	000252						.WORD	L10042 .
5994									
5995	042564	004737	025730	300:	JSR	PC,CLRXTI	; WRITE ONE TO CLEAR TXI		
5996							; ERROR ?		
5997	042570	103006			BCC	310:	; NO		
5998	042572				ERRHRD	106.,ERR014,MSG003	; YES, REPORT ERROR		
	042572	104456						TRAP	C\$ERRHRD
	042574	000152						.WORD	106
	042576	020745						.WORD	ERR014
	042600	017110						.WORD	MSG003
5999	042602				ESCAPE	TST	; AND ABORT TEST		
	042602	104410						TRAP	C\$ESCAPE
	042604	000230						.WORD	L10042 .
6000									
6001	042606	004737	02513?	310:	JSR	PC,CHKRXI	; RXI ?		
6002	042612	103006			BCC	320:	; YES		
6003	042614				ERRHRD	107.,ERR015,MSG003	; NO, REPORT ERROR		
	042614	104456						TRAP	C\$ERRHRD
	042616	000153						.WORD	107
	042620	021013						.WORD	ERR015
	042622	017110						.WORD	MSG003
6004	042624				ESCAPE	TST	; AND ABORT TEST		
	042624	104410						TRAP	C\$ESCAPE
	042626	000206						.WORD	L10042 .
6005									
6006	042630	004737	025662	320:	JSR	PC,CLRRXI	; WRITE ONE TO CLEAR RXI		
6007							; ERROR ?		
6008	042634	103006			BCC	330:	; NO		
6009	042636				ERRHRD	108.,ERR016,MSG003	; YES, REPORT ERROR		
	042636	104456						TRAP	C\$ERRHRD
	042640	000154						.WORD	108
	042642	021044						.WORD	ERR016

6010	042644	017110				ESCAPE TST			: AND ABOR TEST	.WORD	MSG003
	042646									TRAP	C#ESCAPE
	042646	104410								.WORD	L10042
	042650	000164									
6011											
6012	042652	004737	025506			3304: JSP	PC,CHKSER		:SERI?		
6013	042656	103005				BCC	3404		:YES		
6014	042660					ERRHRD	109.,ERR048.,MSG003		:NO, REPORT NO SERI BIT SET!		
	042660	104456								TRAP	C#ERRHRD
	042662	000155								.WORD	109
	042664	024252								.WORD	ERR048.
	042666	017110								.WORD	MSG003
6015	042670	000411				BR	3504		:GO READ PURT STATUS		
6016	042672	004737	025776			3404: JSR	PC,CLRSER		:WRITE ONE TO CLEAR SERI BIT		
6017									:ERROR?		
6018	042676	103006				BCC	3504		:NO		
6019	042700					ERRHRD	110.,ERR049.,MSG003		:YES, REPORT SERI BIT DID NOT CLEAR		
	042700	104456								TRAP	C#ERRHRD
	042702	000156								.WORD	110
	042704	024304								.WORD	ERR049.
	042706	017110								.WORD	MSG003
6020	042710					ESCAPE TST			:ABORT TEST		
	042710	104410								TRAP	C#ESCAPE
	042712	000122								.WORD	L10042
6021											
6022	042714	012705	013264			3504: MOV	#RDSTA,R5		:READ PORT STATUS FUNCTION		
6023	042720	004737	026742			JSR	PC,LDPCCB		:LOAD FUNCTION INTO PCBB		
6024	042724	012777	000002	137274		MOV	#GETCMD,BPCSR0		:ISSUE GET COMMAND PORT COMMAND		
6025	042732	004737	024574			JSR	PC,CHKDNI		:DNI?		
6026	042736	103006				BCC	3604		:YES		
6027	042740					ERRHRD	111.,ERR010,MSG003		:NO, REPORT ERROR		
	042740	104456								TRAP	C#ERRHRD
	042742	000157								.WORD	111
	042744	020502								.WORD	ERR010
	042746	017110								.WORD	MSG003
6028	042750					ESCAPE TST			:ABORT TEST		
	042750	104410								TRAP	C#ESCAPE
	042752	000062								.WORD	L10042
6029											
6030	042754	032737	100000	002266		3604: BIT	#BIT15,PCBB+2		:ERROR SUMMARY BIT SHOULD BE SET		
6031	042762	001004				BNE	3704		:OK		
6032	042764					ERRHRD	112.,ERR050,MSG009		:PRINT ERROR INFORMATION		
	042764	104456								TRAP	C#ERRHRD
	042766	000160								.WORD	112
	042770	024353								.WORD	ERR050
	042772	017634								.WORD	MSG009
6033	042774	032737	010000	002266		3704: BIT	#BIT12,PCBB+2		:COLLISION TEST ERROR SHOULD BE SET		
6034	043002	001004				BNE	3804		:OK		
6035	043004					ERRHRD	113.,ERR051,MSG009		:PRINT ERROR INFORMATION		
	043004	104456								TRAP	C#ERRHRD
	043006	000161								.WORD	113
	043010	024443								.WORD	EPR051
	043012	017634								.WORD	MSG009
6036	043014	004737	025546			3804: JSR	PC,CLRDN1		:GC CLEAR DNI		
6037	043020	103004				BCC	3904		:OK		
6038	043022					ERRHRD	114.,ERR006,MSG003		:DNI BIT DID NOT CLEAR!		
	043022	104456								TRAP	C#ERRHRD

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 ERR006
.WORD MSG003

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

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.SBTTL TEST 15: CRC CHECKING TEST

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*****
:
: 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
:
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043036
043036 004737 027446
043042 103025
043044 012777 000040 137154
043052 004737 024574
043056 103006
043060 104456
043052 000163
043064 020102
043066 017110
043070
043070 104410
043072 001054
043074 004737 025546
043100 103006
043102
043102 104456
043104 000164
043106 020202
043110 017110
043112
043112 104410
043114 001032
043116 004737 026772
043122 012777 000001 137076
043130 004737 024574
043134 103006
043136 104456
    
```

```

BGNTST
:
: T15:
: IS A DEVICE RESET NEEDED?
JSR PC,TINIT ; NO
BCC 30# ; YES, RESET DEUNA
MOV @RSET,@PCSR0 ; DNI ?
JSR PC,CHKDNI ; YES
BCC 20# ; NO, REPORT ERROR
ERRHRD 115.,ERR004,MSG003 TRAP C$ERRRD
: .WORD 115
: .WORD ERR004
: .WORD MSG003
:
ESCAPE TST ; AND ABORT TEST TRAP C$ESCAPE
: .WORD L10045
:
: 20#:
JSR PC,CLRDNI ; WRITE ONE TO CLEAR DNI
: ERROR ?
BCC 30# ; NO
ERRHRD 116.,ERR006,MSG003 ; YES, REPORT ERROR TRAP C$ERRRD
: .WORD 116
: .WORD ERR006
: .WORD MSG003
:
ESCAPE TST ; AND ABORT TEST TRAP C$ESCAPE
: .WORD L10045-
:
: 30#:
JSR PC,LDPCSR ; ADDRESS OF PCB8 -> PCSR2:3
MOV @GETPCB,@PCSR0 ; ISSUE GET_PCB8 PORT COMMAND
JSR PC,CHKDNI ; DNI?
BCC 40# ; YES
ERRHRD 117.,ERR009,MSG003 ; NO, REPORT ERROR TRAP C$ERRRD
    
```

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043140 000165 .WORD 117
043142 020416 .WORD ERR009
043144 017110 .WORD MSG003
6086 043146          ESCAPE TST          ; AND ABORT TEST          TRAP C$ESCAPE
043146 104410          .WORD L10045
043150 000776
6087
6088 043152 004737 025546 40: JSR PC,CLRDN1          ; WRITE ONE TO CLEAR DNI
6089          .WORD          ; ERROR ?
6090 043156 103006          BCC 50:          ; NO
6091 043150          ERRHRD 118.,ERR006,MSG003 ; YES, REPORT ERROR
043160 104456          TRAP C$ERRRD
043162 000166          .WORD 118
043164 020202          .WORD ERR006
043166 017110          .WORD MSG003
6092 043170          ESCAPE TST          ; AND ABORT TEST          TRAP C$ESCAPE
043170 104410          .WORD L10045-
043172 000754
6093          ;WRITE MODE REGISTER = INTERNAL LOOPBACK, PROM AND DISABLE XMIT CRC MODE
6094 043174 012705 013244 50: MOV #WTRNGS,R5          ; DEFAULT WRITE MODE FUNCTION
6095 043200 004737 026742          JSR PC,LDPCCB          ; LOAD FUNCTION -> PCBB
6096 043204 013737 015110 002266          MOV MODE15,PCBB+2          ; LOAD MODE REGISTER
6097 043212 012777 000002 137006          MOV #GETCMD,BPCSR0          ; ISSUE GET_CMD PORT COMMAND
6098 043220 004737 024574          JSR PC,CHKDNI          ; DNI ?
6099 043224 103006          BCC 60:          ; YES
6100 043226          ERRHRD 119.,ERR010,MSG003 ; NO, REPORT ERROR
043226 104456          TRAP C$ERRRD
043230 000167          .WORD 119
043232 020502          .WORD ERR010
043234 017110          .WORD MSG003
6101 043236          ESCAPE TST          ; AND ABORT TEST          TRAP C$ESCAPE
043236 104410          .WORD L10045
043240 000706
6102
6103 043242 004737 025546 60: JSR PC,CLRDN1          ; WRITE ONE TO CLEAR DNI
6104          .WORD          ; ERROR ?
6105 043246 103006          BCC 70:          ; NO
6106 043250          ERRHRD 120.,ERR006,MSG003 ; YES, REPORT ERROR
043250 104456          TRAP C$ERRRD
043252 000170          .WORD 120
043254 020202          .WORD ERR006
043256 017110          .WORD MSG003
6107 043260          ESCAPE TST          ; AND ABORT TEST          TRAP C$ESCAPE
043260 104410          .WORD L10045
043262 000664
6108          ;WRITE RING FORMAT
6109 043264 012705 013204 70: MOV #WTRNGS,R5          ; DEFAULT WRITE RING FORMAT FUNCTION
6110 043270 004737 026742          JSR PC,LDPCCB          ; LOAD FUNCTION -> PCBB
6111 043274 012705 013324          MOV #RFRMT,R5          ; DEFAULT RING FORMAT
6112 043300 012700 000006          MOV #6,R0          ; FORMAT = SIX WORDS
6113 043304 004737 027142          JSR PC,LDUDBB          ; LOAD RING FORMAT -> UDBB
6114 043310 012777 000002 136710          MOV #GETCMD,BPCSR0          ; ISSUE GET_CMD PORT COMMAND
6115 043316 004737 024574          JSR PC,CHKDNI          ; DNI ?
6116 043322 103006          BCC 80:          ; YES
6117 043324          ERRHRD 121.,ERR010,MSG003 ; NO, REPORT ERROR
043324 104456          TRAP C$ERRRD
043326 000171          .WORD 121
  
```

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043330 020502 .WORD ERR010
043332 017110 .WORD MSG003
6118 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$ERRRD
043350 000172 .WORD 122
043352 020202 .WORD ERR006
043354 017110 .WORD MSG003
6124 043356 ESCAPE TST ; AND ABORT TEST
043356 104410 TRAP C$ESCAPE
043360 000566 .WORD L10045-.
6125 ;WRITE PHYSICAL ADDRESS
6126 043362 012705 013144 90$: MOV #WTPHYA,R5 ; DEFAULT WRITE PHYSICAL ADDR FUNC
6127 043366 004737 026742 JSR PC,LDPCCB ; LOAD FUNCTION -> PCBB
6128 043372 012777 000002 136626 MOV #GETCMD,BPCSR0 ; ISSUE GET_CMD PORT COMMAND
6129 043400 004737 024574 JSR PC,CHKDNI ; DNI ?
6130 043404 103006 BCC 100$ ; YES
6131 043406 ERRHRD 123.,ERR010,MSG003 ; NO, REPORT ERROR
043406 104456 TRAP C$ERRRD
043410 000173 .WORD 123
043412 020502 .WORD ERR010
043414 017110 .WORD MSG003
6132 043416 ESCAPE TST ; AND ABORT TEST
043416 104410 TRAP C$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$ERRRD
043432 000174 .WORD 124
043434 020202 .WORD ERR006
043436 017110 .WORD MSG003
6138 043440 ESCAPE TST ; AND ABORT TEST
043440 104410 TRAP C$ESCAPE
043442 000504 .WORD L10045 .
6139 ;SET UP RINGS FOR ONE BUFFER LOOPBACK
6140 043444 012705 013614 110$: MOV #TDRB1B,R5 ; DEFAULT ONE BUFFER TRANSMIT RING
6141 043450 004737 027046 JSR PC,LDTDRB ; LOAD TDRB
6142 043454 012705 013354 MOV #RDRB1A,R5 ; DEFAULT ONE BUFFER RECEIVE RING
6143 043460 004737 027010 JSR PC,LDRDRB ; LOAD RDRB
6144 ;SET UP BUFFERS AND START
6145 043464 012705 002266 MOV #PCBB+2,R5 ; POINT TO DESTINATION ADDRESS
6146 043470 004737 026714 JSR PC,LDDDEST ; LOAD DEST
6147 043474 004737 027342 JSR PC,SETBUF ; SET UP BUFFERS
6148 043500 013737 014730 003300 MOV CRC15H,TBUF+124. ; APPEND GOOD CRC VALUE
6149 043506 013737 014732 003302 MOV CRC15L,TBUF+126. ; TO TRANSMIT DATA
6150 043514 012777 000004 136504 MOV #START,BPCSR0 ; ISSUE START PORT COMMAND
6151 043522 004737 024574 JSR PC,CHKDNI ; DNI?
6152 043526 103006 BCC 120$ ; YES
  
```

M14

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,CHKTDR		; ERRORS ?		
6183	043700	103006			BCC	170\$; NO		
6184	043702				ERRHRD	130.,ERR020,MSG005		; YES, REPORT ERROR		
	043702	104456							TRAP	C\$ERHPD
	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	JSR	PC,CHKRXI		; RXI ?		
6188	043722	103006		170\$:	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	JSR	PC,CLRRXI		; WRITE ONE TO CLEAR RXI		
6193				180\$:				; 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	MOV	#RDRB,R5		; CHECK RDRB OWNERSHIP		
6199	043766	004737	024676	190\$:	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	MOV	#RDR15A,R5		; POINT TO EXPECTED RDRB		
6205	044014	004737	027222	200\$:	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

6210	044040	017356			ESCAPE TST		; AND ABORT TEST	.WORD	MSG006
	044042	104410						TRAP	C#ESCAPE
	044044	000102						.WORD	L10045 .
6211					;COMPARE RBUF WITH TBUF				
6212	044046	012705	000070		2104: MOV #56.,R5		; COMPARE 56 WORDS OF DATA		
6213	044052	004737	026044		JSR PC,CMPDAT		; DATA COMPARE ERROR ?		
6214	044056	103006			BCC 2304		; NO		
6215	044060				ERRMRD 135.,ERR022,MSG007		; YES, REPORT ERROR		
	044060	104456						TRAP	C#ERRMRD
	044062	000207						.WORD	135
	044064	021534						.WORD	ERR022
	044066	017520						.WORD	MSG007
6216	044070				ESCAPE TST		; AND ABORT TEST		
	044070	104410						TRAP	C#ESCAPE
	044072	000054						.WORD	L10045 .
6217									
6218	044074	012777	000017	136124	2304: MOV #STOP,BPCSR0		; ISSUE STOP PORT COMMAND		
6219	044107	004737	024574		JSR PC,CHKDNI		; DNI ?		
6220	044106	103006			BCC 2404		; YES		
6221	044110				ERRMRD 136.,ERR019,MSG003		; NO, REPORT ERROR		
	044110	104456						TRAP	C#ERRMRD
	044112	000210						.WORD	136
	044114	021312						.WORD	ERR019
	044116	017110						.WORD	MSG003
6222	044120				ESCAPE TST		; AND ABORT TEST		
	044120	104410						TRAP	C#ESCAPE
	044122	000024						.WORD	L10045 .
6223									
6224	044124	004737	025546		2404: JSR PC,CLRDN1		; WRITE ONE TO CLEAR DNI		
6225							; ERROR ?		
6226	044130	103006			BCC 2504		; NO		
6227	044132				ERRMRD 137.,ERR006,MSG003		; YES, REPORT ERROR		
	044132	104456						TRAP	C#ERRMRD
	044134	000211						.WORD	137
	044136	020202						.WORD	ERR006
	044140	017110						.WORD	MSG003
6228	044142				ESCAPE TST		; AND ABORT TEST		
	044142	104410						TRAP	C#ESCAPE
	044144	000002						.WORD	L10045 .
6229	044146				2504: ENDTST				
6230	044146								
	044146								
	044146	104401						L10045: TRAP	C#ETST

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.SBTTL TEST 16: FORCE CRC ERROR TEST

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:
: 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
:
.....
    
```

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        BGNTST
        JSR    PC,TINIT           ; IS A DEVICE RESET NEEDED?
        BCC   301                ; NO
        MOV   @RSET,@PCSR0       ; YES, RESET DEUNA
        JSR   PC,CHKDNI          ; DNI ?
        BCC   201                ; YES
        ERHRD 138.,ERR004,MSG003 ; NO, REPORT ERROR
                                TRAP  C1ERHRD
                                .WORD 138
                                .WORD ERR004
                                .WORD MSG003
        ESCAPE TST              ; AND ABORT TEST
                                TRAP  C1ESCAPE
                                .WORD L10046-.
        ;
        ; 201:
        JSR   PC,CLR0NI         ; WRITE ONE TO CLEAR DNI
                                ; ERROR ?
        BCC   301                ; NO
        ERHRD 139.,ERR006,MSG003 ; YES, REPORT ERROR
                                TRAP  C1ERHRD
                                .WORD 139
                                .WORD ERR006
                                .WORD MSG003
        ESCAPE TST              ; AND ABORT TEST
                                TRAP  C1ESCAPE
                                .WORD L10046-.
        ;
        ; 301:
        JSR   PC,LDPCSR         ; ADDRESS OF PCBB -> PCSR2!3
        MOV   @GETPCB,@PCSR0    ; ISSUE GET_PCBB PORT COMMAND
        JSR   PC,CHKDNI          ; DNI?
        BCC   401                ; YES
        ERHRD 140.,ERR009,MSG003 ; NO, REPORT ERROR
                                TRAP  C1ERHRD
                                .WORD 140
                                .WORD ERR009
                                .WORD MSG003
    
```

044150 044150 004737 027446
 044154 103025
 044156 012777 000040 136042
 044164 004737 024574
 044170 103006
 044172 104456
 044174 000212
 044176 020102
 044200 017110
 044202 104410
 044204 001054
 044206 004737 025546
 044212 103006
 044214 104456
 044216 000213
 044220 020202
 044222 017110
 044224 104410
 044226 001032
 044230 004737 026772
 044234 012777 000001 135764
 044242 004737 024574
 044246 103006
 044250 104456

044442	020502								.WORD	ERR010
044444	017110								.WORD	MSG003
6307	044446			ESCAPE	TST					; AND ABORT TEST
	044446	104410							TRAP	C#ESCAPE
	044450	000610							.WORD	L10046
6308										
6309	044452	004737	025546	80:	JSR	PC,CLRDNI				; WRITE ONE TO CLEAR DNI
6310										; ERROR ?
6311	044456	103006			BCC	90:				; NO
5312	044460				ERRHRD	145.,ERR006,MSG003				; YES, REPORT ERROR
	044460	104456							TRAP	C#ERRHRD
	044462	000221							.WORD	145
	044464	020202							.WORD	ERR006
	044466	017110							.WORD	MSG003
6313	044470				ESCAPE	TST				; AND ABORT TEST
	044470	104410							TRAP	C#ESCAPE
	044472	000566							.WORD	L10046.
6314										
6315	044474	012705	013144							; WRITE PHYSICAL ADDRESS
6316	044500	004737	026742	90:	MOV	#WTPHYA,R5				; DEFAULT WRITE PHYSICAL ADDR FUNC
6317	044504	012777	000002	135514	JSR	PC,LDPCCB				; LOAD FUNCTION -> PCBB
6318	044512	004737	024574		MOV	#GETCMD,#PCSR0				; ISSUE GET_CMD PORT COMMAND
6319	044516	103006			JSR	PC,CHKDNI				; DNI ?
6320	044520				BCC	100:				; YES
	044520	104456			ERRHRD	146.,ERR010,MSG003				; NO, REPORT ERROR
	044522	000222							TRAP	C#ERRHRD
	044524	020502							.WORD	146
	044526	017110							.WORD	ERR01C
6321	044530				ESCAPE	TST				; AND ABORT TEST
	044530	104410							TRAP	C#ESCAPE
	044532	000526							.WORD	L10046.
6322										
6323	044534	004737	025546	100:	JSR	PC,CLRDNI				; WRITE ONE TO CLEAR DNI
6324										; ERROR ?
6325	044540	103006			BCC	110:				; NO
6326	044542				ERRHRD	147.,ERR006,MSG003				; YES, REPORT ERROR
	044542	104456							TRAP	C#ERRHRD
	044544	000223							.WORD	147
	044546	020202							.WORD	ERR006
	044550	017110							.WORD	MSG003
6327	044552				ESCAPE	TST				; AND ABORT TEST
	044552	104410							TRAP	C#ESCAPE
	044554	000504							.WORD	L10046.
6328										
6329	044556	012705	013614							; SET UP RINGS FOR ONE BUFFER LOOPBACK
6330	044562	004737	027046	110:	MOV	#TDRB1B,R5				; DEFAULT ONE BUFFER TRANSMIT RING
6331	044566	012705	013354		JSR	PC,LDTDRB				; LOAD TDRB
6332	044572	004737	027010		MOV	#RDRB1A,R5				; DEFAULT ONE BUFFER RECEIVE RING
6333					JSR	PC,LDRDRB				; LOAD RDRB
6334	044576	012705	002266							; POINT TO DESTINATION ADDRESS
6335	044602	004737	026714		MOV	#PCBB+2,R5				; LOAD DEST
6336	044606	004737	027342		JSR	PC,LDOEST				; SET UP BUFFERS
6337	044612	013737	014734	003300	JSR	PC,SETBUF				; APPEND BAD CRC VALUE
6338	044620	013737	014736	003302	MOV	CRC16H,TBUF+124.				; TO TRANSMIT DATA
6339	044626	012777	000004	135372	MOV	CRC16L,TBUF+126.				; ISSUE START PORT COMMAND
6340	044634	004737	024574		MOV	#START,#PCSR0				; DNI?
6341	044640	103006			JSR	PC,CHKDNI				; YES
					BCC	120:				

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

6369	044776	004737	027252		JSR	PC,LDXTDR		; LOAD INTO XTDRBO TABLE		
6370	045002	012705	02604		MOV	#TDRB,R5		; CHECK TDRB		
6371	045006	004737	025316		JSR	PC,CHKTD		; ERRORS ?		
6372	045012	103006			BCC	170		; 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	JSR	PC,CHKRXI		; RXI ?		
6377	045034	103006		170:	BCC	180		; 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	JSR	PC,CLRXI		; WRITE ONE TO CLEAR RXI		
6382				180:				; ERROR ?		
6383	045056	103006			BCC	190		; 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	MOV	#RDRB,R5		; CHECK RDRB OWNERSHIP		
6388	045100	004737	024676	190:	JSR	PC,CHKOWN		; OWN = PORT DRIVER ?		
6389	045104	103006			BCC	200		; 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	MOV	#RDR14A,R5		; POINT TO EXPECTED RDRB		
6394	045126	004737	027222	200:	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	210		; 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\$ERRHRD
	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\$ERRHRD
	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,CLR0NI		; 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\$ERRHRD
	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 PING.
:
: 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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BGNTST

T17::

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045262 004737 027446 JSR PC.TINIT ; IS A DEVICE RESET NEEDED?
045262 103025 BCC 304 ; NO
045270 012777 000040 134730 MOV @RSET,@PCSR0 ; YES, RESET DEUNA
045276 004737 024574 JSR PC.CHKONI ; DNI ?
045302 103006 BCC 204 ; YES
045304 104456 ERRHRD 161.,ERR004,MSG003 ; NO, REPORT ERROR
045304 000241 TRAP C$ERRHRD
045310 020102 .WORD 161
045312 017110 .WORD ERR004
045314 104410 ESCAPE TST ; AND ABORT TEST
045314 001050 .WORD C$ESCAPE
045316 L10047 .
045320 004737 025546 204: JSR PC.CLRDNI ; WRITE ONE TO CLEAR DNI
045324 103006 BCC 304 ; ERROR ?
045326 104456 ERRHRD 162.,ERR006,MSG003 ; NO
045326 000242 TRAP C$ERRHRD
045330 020202 .WORD 162
045332 017110 .WORD ERR006
045334 ESCAPE TST ; AND ABORT TEST
045336 104410 .WORD C$ESCAPE
045340 001026 .WORD L10047 .
045342 004737 026772 304: JSR PC.LDPCSR ; ADDRESS OF PCBB > PCSR2!3
045346 012777 000001 134652 MOV @GETPCB,@PCSR0 ; ISSUE GET_PCBB PORT COMMAND
045354 004737 024574 JSR PC.CHKONI ; DNI?
045360 103006 BCC 404 ; YES
045362 104456 ERRHRD 163.,ERR009,MSG003 ; NO, REPORT ERROR
045362 000243 TRAP C$ERRHRD
045364 020416 .WORD 163
045366 .WORD ERR009
  
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6462 045370 017110                ESCAPE TST                ; AND ABORT TEST                .WORD MSG003
      045372                ;                                TRAP C$ESCAPE
      045372 104410                ;                                .WORD L10047
      045374 000772                ;                                .WORD

6463
6464 045376 004737 025546        ;01: 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
      045412 017110                ;                                .WORD

6468 045414                ESCAPE TST                ; AND ABORT TEST                TRAP C$ESCAPE
      045414 104410                ;                                .WORD L10047
      045416 000750                ;                                .WORD

6469
6470                                ;WRITE MODE REGISTER = INTERNAL LOOPBACK, PROM AND
6471                                ;DISABLE RECEIVE DATA CHAINING MODE
6472 045420 012705 013244        ;01: 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,@PCSRO         ; 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
      045460 017110                ;                                .WORD

6479 045462                ESCAPE TST                ; AND ABORT TEST                TRAP C$ESCAPE
      045462 104410                ;                                .WORD L10047
      045464 000702                ;                                .WORD

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
      045502 017110                ;                                .WORD

6485 045504                ESCAPE TST                ; AND ABORT TEST                TRAP C$ESCAPE
      045504 104410                ;                                .WORD L10047-
      045506 000660                ;                                .WORD

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 @RFRMT,R5              ; DEFAULT RING FORMAT
6491 045524 012700 000006        MOV #6,R0                   ; FORMAT = SIX WORDS
6492 045530 004737 027142        JSR PC,LDDUDB              ; LOAD RING FORMAT -> UDBB
6493 045534 012777 000002 134464 MOV @GETCMD,@PCSRO         ; 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                ;                                .WORD
    
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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		004:	JSR	PC,CLRDN1	; WRITE ONE TO CLEAR DNI
6500							; ERROR ?
6501 045570	103006				BCC	904	; NO
6502 045572					ERRHRD	168.,ERR006,MSG003	; YES, REPORT ERROR
045572	104456						TRAP
045574	000250					.WORD	C#ERRHRD
045576	020202					.WORD	168
045600	017110					.WORD	ERR006
						.WORD	MSG003
6503 045602				ESCAPE	TST		; AND ABORT TEST
045602	104410					TRAP	C#ESCAPE
045604	000562					.WORD	L10047 .
6504							
6505							
6506 045606	012705	013144					; WRITE PHYSICAL ADDRESS
6507 045612	004737	026742		904:	MOV	#WTPHYA,R5	; DEFAULT WRITE PHYSICAL ADDR FUNC
6508 045616	012777	000002	134402		JSR	PC,LDPCCB	; LOAD FUNCTION -> PCBB
6509 045624	004737	024574			MOV	#GETCMD,#PCSR0	; ISSUF GET_CMD PORT COMMAND
6510 045630	103006				JSR	PC,CHKDNI	; DNI ?
6511 045632					BCC	1004	; YES
045632	104456				ERRHRD	169.,ERR010,MSG003	; NO, REPORT ERROR
045634	000251						TRAP
045636	020502					.WORD	C#ERRHRD
045640	017110					.WORD	169
6512 045642				ESCAPE	TST		; AND ABORT TEST
045642	104410					TRAP	C#ESCAPE
045644	000522					.WORD	L10047 .
6513							
6514 045646	004737	025546		1004:	JSR	PC,CLRDN1	; WRITE ONE TO CLEAR DNI
6515							; ERROR ?
6516 045652	103006				BCC	1104	; NO
6517 045654					ERRHRD	170.,ERR006,MSG003	; YES, REPORT ERROR
045654	104456						TRAP
045656	000252					.WORD	C#ERRHRD
045660	020202					.WORD	170
045662	017110					.WORD	ERR006
6518 045664				ESCAPE	TST		; AND ABORT TEST
045664	104410					TRAP	C#ESCAPE
045666	000500					.WORD	L10047 .
6519							
6520							
6521 045670	012705	013554					; SET UP RINGS FOR 100PBACK
6522 045674	004737	027046		1104:	MOV	#TDRB1A,R5	; DEFAULT ONE BUFFER TRANSMIT RING
6523 045700	012705	013454			JSR	PC,LDTDRB	; LOAD TDRB
6524 045704	004737	027010			MOV	#RDRB2A,R5	; DEFAULT CHAINED RECEIVE RING
6525					JSR	PC,LDRDRB	; LOAD RDRB
6526							
6527 045710	012705	002266					; SET UP BUFFERS AND START
6528 045714	004737	026714			MOV	#PCBB+2,R5	; POINT TO DESTINATION ADDRESS
6529 045720	004737	027342			JSR	PC,LDEST	; LOAD DEST
6530 045724	012777	000004	134274		JSR	PC,SETBUF	; SET UP BUFFERS
					MOV	#START,#PCSR0	; ISSUE START PORT COMMAND

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\$; I'0		
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,CLR TXI		; 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,RS		; 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

6558									
6559	046070	012705	014524	160\$:	MOV	#TDR,4A,R5	:	POINT TO EXPECTED TDRB	
6560	046074	004737	027252		JSR	PC,LJXTDR	:	LOAD INTO XTDRBO TABLE	
6561	046100	012705	002604		MOV	#TDRB,R5	:	CHECK TDRB	
6562	046104	004737	025316		JSR	PC,CHKTDR	:	ERRORS ?	
6563	046110	103006			BCC	170\$:	NO	
6564	046112				ERRHRD	176.,ERR020,MSG005	:	YES, REPORT ERROR	
	046112	104456						TRAP	C\$ERHRD
	046114	000260						.WORD	176
	046116	021372						.WORD	ERR020
	046120	017214						.WORD	MSG005
6565	046122				ESCAPE	TST	:	AND ABORT TEST	
	046122	104410						TRAP	C\$ESCAPE
	046124	000242						.WORD	L10047 .
6566									
6567	046126	004737	025132	170\$:	JSR	PC,CHKRXI	:	RXI ?	
6568	046132	103006			BCC	180\$:	YES	
6569	046134				ERRHRD	177.,ERR015,MSG003	:	NO, REPORT ERROR	
	046134	104456						TRAP	C\$ERHRD
	046136	000261						.WORD	177
	046140	021013						.WORD	ERR015
	046142	017110						.WORD	MSG003
6570	046144				ESCAPE	TST	:	AND ABORT TEST	
	046144	104410						TRAP	C\$ESCAPE
	046146	000220						.WORD	L10047 .
6571									
6572	046150	004737	025662	180\$:	JSR	PC,CLRRXI	:	WRITE ONE TO CLEAR RXI	
6573								ERROR ?	
6574	046154	103006			BCC	190\$:	NO	
6575	046156				ERRHRD	178.,ERR016,MSG003	:	YES, REPORT ERROR	
	046156	104456						TRAP	C\$ERHRD
	046160	000262						.WORD	178
	046162	021044						.WORD	ERR016
	046164	017110						.WORD	MSG003
6576	046166				ESCAPE	TST	:	AND ABORT TEST	
	046166	104410						TRAP	C\$ESCAPE
	046170	000176						.WORD	L10047 .
6577									
6578	046172	012705	002644						
6579	046176	004737	024676	190\$:	MOV	#RDRB,R5	:	CHECK RDRB OWNERSHIP	
6580	046202	103006			JSR	PC,CHKOWN	:	OWN = PORT DRIVER ?	
6581	046204				BCC	200\$:	YES	
	046204	104456			ERRHRD	179.,ERR030	:	NO, REPORT ERROR	
	046206	000263						TRAP	C\$ERHRD
	046210	022313						.WORD	179
	046212	000000						.WORD	ERR030
	046212	000000						.WORD	0
6582	046214				ESCAPE	TST	:	AND ABORT TEST	
	046214	104410						TRAP	C\$ESCAPE
	046216	000150						.WORD	L10047 .
6583									
6584	046220	012705	014654	200\$:	MOV	#RDR17A,R5	:	POINT TO EXPECTED RDRB	
6585	046224	004737	027222		JSR	PC,LDXRDR	:	LOAD INTO XRDRBO TABLE	
6586	046230	012705	002644		MOV	#RDRB,R5	:	CHECK RDRB	
6587	046234	004737	025032		JSR	PC,CHKRDR	:	ERRORS ?	
6588	046240	103006			BCC	210\$:	NO	
6589	046242				ERRHRD	180.,ERR036,MSG006	:	YES, REPORT ERROR	
	046242	104456						TRAP	C\$ERHRD

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				
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,BPCSR0		:	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	182	
	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,CLRDNI		:	WRITE ONE TO CLEAR DNI
6607								:	ERROR ?	
6608	046350	103006			BCC	250\$:	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							L10047:		
	046366	104401						TRAP	C\$ETST	

CB:TL TEST 18: TRANSMIT CHAINING ERROR TEST

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```

*****
:
: 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
 6636 046370 004737 027446
 6637 046374 103025
 6638 046376 012777 000040 133622
 6639 046404 004737 024574
 6640 046410 103006
 6641 046412
 046412 104456
 046414 000270
 046416 020102
 046420 017110
 6642 046422
 046422 104410
 046424 000740
 6643
 6644 046426 004737 025546
 6645
 6646 046432 103006
 6647 046434
 046434 104456
 046436 000271
 046440 020202
 046442 017110
 6648 046444
 046444 104410
 046446 000716
 6649
 6650 046450 004737 026772
 6651 046454 012777 000001 133544
 6652 046462 004737 024574
 6653 046466 103006
 6654 046470
 046470 104456
 046472 000272
 046474 020416

BGNTST

```

:
: T18::
: IS A DEVICE RESET NEEDED?
: NO
: YES, RESET DEUNA
: DNI ?
: YES
: NO, REPORT ERROR
:
: TRAP C:ERHRD
: .WORD 184
: .WORD ERRO04
: .WORD MSG003
:
: AND ABORT TEST
:
: TRAP C:ESCAPE
: .WORD L10050
:
: 201: JSR PC,CLRDNI
: WRITE ONE TO CLEAR DNI
: ERROR ?
: NO
: YES, REPORT ERROR
:
: TRAP C:ERHRD
: .WORD 185
: .WORD ERRO06
: .WORD MSG003
:
: AND ABORT TEST
:
: TRAP C:ESCAPE
: .WORD L10050
:
: 301: JSR PC,LDPCSR
: ADDRESS OF PCBB -> PCSR2!3
: MOV #GETPCB,BPCSR0
: ISSUE GET_PCBB PORT COMMAND
: JSR PC,CHKDNI
: DNI?
: YES
: NO, REPORT ERROR
:
: TRAP C:ERHRD
: .WORD 186
: .WORD ERRO09
    
```

Line No.	Address	Offset	Label	Instruction	Comments	Trap	Msg
6655	046476	017110		ESCAPE TST	: AND ABORT TEST	.WORD	MSG003
	046500					TRAP	C#ESCAPE
	046500	104410				.WORD	L10050
	046502	000662					
6656							
6657	046504	004737	025546	401: JSR PC,CLRDMI	: WRITE ONE TO CLEAR DMI		
6658					: ERROR ?		
6659	046510	103006		BCC 501	: NO		
6660	046512			ERRMRD 187.,ERR006,MSG003	: YES, REPORT ERROR	TRAP	C#ERRMRD
	046512	104456				.WORD	187
	046514	000273				.WORD	ERR006
	046516	020202				.WORD	MSG003
	046520	017110					
6661	046522			ESCAPE TST	: AND ABORT TEST	TRAP	C#ESCAPE
	046522	104410				.WORD	L10050
	046524	000640					
6662							
6663							
6664	046526	012705	013244	501: MOV @WTRNGS,R5	: WRITE MODE REGISTER = INTERNAL LOOPBACK AND PROM MODE		
6665	046532	004737	026742	JSR PC,LDPCCB	: DEFAULT WRITE MODE FUNCTION		
6666	046536	012777	000002	MOV @GETCMD,@PCSRO	: LOAD FUNCTION -> PCBB		
6667	046544	004737	024574	JSR PC,CHKDNI	: ISSUE GET_CMD PORT COMMAND		
6668	046550	103006		BCC 601	: DNI ?		
6669	046552			ERRMRD 188.,ERR010,MSG003	: YES	TRAP	C#ERRMRD
	046552	104456			: NO, REPORT ERROR	.WORD	188
	046554	000274				.WORD	ERR010
	046556	020502				.WORD	MSG003
	046560	017110					
6670	046562			ESCAPE TST	: AND ABORT TEST	TRAP	C#ESCAPE
	046562	104410				.WORD	L10050-
	046564	000600					
6671							
6672	046566	004737	025546	601: JSR PC,CLRDMI	: WRITE ONE TO CLEAR DMI		
6673					: ERROR ?		
6674	046572	103006		BCC 701	: NO		
6675	046574			ERRMRD 189.,ERR006,MSG003	: YES, REPORT ERROR	TRAP	C#ERRMRD
	046574	104456				.WORD	189
	046576	000275				.WORD	ERR006
	046600	020202				.WORD	MSG003
	046602	017110					
6676	046604			ESCAPE TST	: AND ABORT TEST	TRAP	C#ESCAPE
	046604	104410				.WORD	L10050
	046606	000556					
6677							
6678							
6679	046610	012705	013204	701: MOV @WTRNGS,R5	: WRITE RING FORMAT		
6680	046614	004737	026742	JSR PC,LDPCCB	: DEFAULT WRITE RING FORMAT FUNCTION		
6681	046620	012705	013324	MOV @RFRMT,R5	: LOAD FUNCTION -> PCBB		
6682	046624	012700	000006	MOV #6,R0	: DEFAULT RING FORMAT		
6683	046630	004737	027142	JSR PC,LDDUDB	: FORMAT = SIX WORDS		
6684	046634	012777	000002	MOV @GETCMD,@PCSRO	: LOAD RING FORMAT -> UDDB		
6685	046642	004737	024574	JSR PC,CHKDNI	: ISSUE GET_CMD PORT COMMAND		
6686	046646	103006		BCC 801	: DNI ?		
6687	046650			ERRMRD 190.,ERR010,MSG003	: YES	TRAP	C#ERRMRD
	046650	104456			: NO, REPORT ERROR	.WORD	190
	046652	000276				.WORD	ERR010
	046654	020502					

L10

6724	04704C			ERRHRD	194.,ERR012,MSG003	:	NO, REPORT ERROR		
	047040	104456						TRAP	C\$ERRHRD
	047042	000302						.WORD	194
	047044	020633						.WORD	ERR012
	047046	017110						.WORD	MSG003
6725	047050			ESCAPE	TST	:	AND ABORT TEST		
	G17050	104410						TRAP	C\$ESCAPE
	047052	000312						.WORD	L10050 .
6726									
6727	047054	004737	025546	1204:	JSR	PC,CLRDN1	:	WRITE ONE TO CLEAR DNI	
6728									
6729	047060	103006			BCC	1304	:	ERROR ?	
6730	047062				ERRHRD	195.,ERR006,MSG003	:	NO	
	047062	104456							
	047064	000303						TRAP	C\$ERRHRD
	047066	020202						.WORD	195
	047070	017110						.WORD	ERR006
	047070	017110						.WORD	MSG003
6731	047072			ESCAPE	TST	:	AND ABORT TEST		
	047072	104410						TRAP	C\$ESCAPE
	047074	000270						.WORD	L10050-.
6732									
6733	047076	004737	025404	1304:	JSR	PC,CHKTXI	:	TXI ?	
6734	047102	103006			BCC	1404	:	YES	
6735	047104				ERRHRD	196.,ERR013,MSG003	:	NO, REPORT ERROR	
	047104	104456							
	047106	000304						TRAP	C\$ERRHRD
	047110	020714						.WORD	196
	047112	017110						.WORD	ERR013
	047112	017110						.WORD	MSG003
6736	047114			ESCAPE	TST	:	AND ABORT TEST		
	047114	104410						TRAP	C\$ESCAPE
	047116	000246						.WORD	L10050-.
6737									
6738	047120	004737	025730	1404:	JSR	PC,CLRTXI	:	WRITE ONE TO CLEAR TXI	
6739									
6740	047124	103006			BCC	1504	:	ERROR ?	
6741	047126				ERRHRD	197.,ERR014,MSG003	:	NO	
	047126	104456							
	047130	000305						TRAP	C\$ERRHRD
	047132	020745						.WORD	197
	047134	017110						.WORD	ERR014
	047134	017110						.WORD	MSG003
6742	047136			ESCAPE	TST	:	AND ABORT TEST		
	047136	104410						TRAP	C\$ESCAPE
	047140	000224						.WORD	L10050-.
6743									
6744	047142	012705	002604	1504:	MOV	#TDRB,R5	:	CHECK TDRB OWNERSHIP	
6745	047146	004737	024676		JSR	PC,CHKOWN	:	OWN = PORT DRIVER ?	
6746	047152	103006			BCC	1604	:	YES	
6747	047154				ERRHRD	198.,ERR027	:	NO, REPORT ERROR	
	047154	104456							
	047156	000306						TRAP	C\$ERRHRD
	047160	021773						.WORD	198
	047162	000000						.WORD	ERR027
	047162	000000						.WORD	0
6748	047164			ESCAPE	TST	:	AND ABORT TEST		
	047164	104410						TRAP	C\$ESCAPE
	047166	000176						.WORD	L10050 .
6749									
6750	047170	012705	014544	1604:	MOV	#TDR18A,R5	:	POINT TO EXPECTED TDRB	

6751	047174	004737	027252		JSR	PC,LDXTDR		; LOAD INTO XTDRB0 TABLE		
6752	047200	012705	002604		MOV	#TDRB,R5		; CHECK TDRB		
6753	047204	004737	025316		JSR	PC,CHKTDR		; ERRORS ?		
6754	047210	103006			BCC	162		; NO		
6755	047212				ERRHRD	199.,ERR033,MSG005		; YES, REPORT ERROR		
	047212	104456							TRAP	C#ERRHRD
	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		162:	MOV	#TDRB+8.,R5		; CHECK TDRB OWNERSHIP	
6759	047232	004737	024676		JSR	PC,CHKOWN		; OWN = PORT DRIVER ?		
6760	047236	103006			BCC	164		; YES		
6761	047240				ERRHRD	200.,ERR02A		; NO, REPORT FRROR		
	047240	104456							TRAP	C#ERRHRD
	047242	000310							.WORD	200
	047244	022100							.WORD	ERR02B
	047246	000000							.WORD	0
6762	047250				ESCAPE	TST		; AND ABORT TEST		
	047250	104410							TRAP	C#ESCAPE
	047252	000112							.WORD	L10050
6763										
6764	047254	012705	014554		164:	MOV	#TDR188,R5		; POINT TO EXPECTED TDRB	
6765	047260	004737	027252		JSR	PC,LDXTDR		; LOAD INTO XTDRB0 TABLE		
6766	047264	012705	002614		MOV	#TDRB+8.,R5		; CHECK TDRB		
6767	047270	004737	025316		JSR	PC,CHKTDR		; ERRORS ?		
6768	047274	103006			BCC	230		; NO		
6769	047276				ERRHRD	201.,ERR034,MSG005		; YES, REPORT ERROR		
	047276	104456							TRAP	C#ERRHRD
	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										
6772	047312	012777	000017	132706	230:	MOV	#STOP,BPCSR0		; ISSUE STOP PORT COMMAND	
6773	047320	004737	024574		JSR	PC,CHKDNI		; DNI ?		
6774	047324	103006			BCC	240		; YES		
6775	047326				ERRHRD	202.,ERR019,MSG003		; NO, REPORT ERROR		
	047326	104456							TRAP	C#ERRHRD
	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										
6778	047342	004737	025546		240:	JSR	PC,CLRDN1		; WRITE ONE TO CLEAR DNI	
6779									; ERROR ?	
6780	047346	103006			BCC	250		; NO		
6781	047350				ERRHRD	203.,ERR006,MSG003		; YES, REPORT ERROR		
	047350	104456							TRAP	C#ERRHRD
	047352	000313							.WORD	203

047354 020202
047356 017110
6782 047360
047360 104410
047362 000002
6783 047364
6784 047364
047364
047364 104401

ESCAPE TST
2504:
ENDTST

, AND ABORT TEST

L10050:

.WORD ERRO06
.WORD MSG003
TRAP C#ESCAPE
.WORD L10050 .
TRAP C#ETST

6786
 6787
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.SBTTL 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 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
    |
    *****
    
```

```

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$ERRHRD
        047412 000314          .WORD 204
        047414 020102          .WORD ERR004
        047416 017110          .WORD MSG003
6815 047420          ESCAPE TST          ; AND ABORT TEST
        047420 104410          TRAP   C$ESCAPE
        047422 000634          .WORD L10051 .
6816
6817 047424 004737 025546          ; 20$: JSR    PC,CLRDN1      ; WRITE ONE TO CLEAR DNI
6818
6819 047430 103006          BCC    30$              ; NO
6820 047432          ERRHRD 205.,ERR006,MSG003 ; YES, REPORT ERROR
        047432 104456          TRAP   C$ERRHRD
        047434 000315          .WORD 205
        047436 020202          .WORD ERR006
        047440 017110          .WORD MSG003
6821 047442          ESCAPE TST          ; AND ABORT TEST
        047442 104410          TRAP   C$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$ERRHRD
        047470 000316          .WORD 206
    
```



```

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 ;80: JSR PC,CLRDN1 ; 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$: JSR PC,CLRDN1 ; WRITE ONE TO CLEAR DNI
6879 ; ERROR ?
6880 047750 103006 BCC 110$ ; 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,LDTDRX ; 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
    
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6896	050030	004737	024574		JSR	PC,CHKDNI		; DNI?		
6897	050034	103006			BCC	1204		; 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		
	05004E	104410							TRAP	C\$ESCAPE
	050050	000206							.WORD	L10051 .
6900										
6901	050052	004737	025546		JSR	PC,CLPDNI		; WRITE ONE TO CLEAR DNI		
6902								; ERROR ?		
6903	050056	103006			BCC	1304		; 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		JSR	PC,CHKTXI		; TXI ?		
6908	050100	103006			BCC	1404		; 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		JSR	PC,CLRTXI		; WRITE ONE TO CLEAR TXI		
6913								; ERROR ?		
6914	050122	103006			BCC	1704		; 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		JSR	PC,CHKRCE		; RCBI ?		
6921	050144	103006			BCC	1804		; 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$: JSR PC,CLRRCE ; WRITE ONE TO CLEAR RCFI
6926 ; ERROR ?
6927 050166 103006 BCC 230$ ; 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$: MOV #STOP,BPCSR0 ; ISSUE STOP PORT COMMAND
6932 050212 004737 024574 JSR PC,CHKDNI ; DNI ?
6933 050216 103006 BCC 240$ ; 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$: JSR PC,CLRDN1 ; WRITE ONE TO CLEAR DNI
6938 ; ERROR ?
6939 050240 103006 BCC 250$ ; 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$:
6943 050256 ENDTST
050256 L10051: TRAP C$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$ERHRD
        050304 000336          .WORD 222
        050306 020102          .WORD ER004
        050310 017110          .WORD MSG003
6975 050312          ESCAPE TST ; AND ABORT TEST
        050312 104410          TRAP C$ESCAPE
        050314 001536          .WORD L10052 .
6976
6977 050316 004737 025546 20$: JSR PC.CLRDNI ; WRITE ONE TO CLEAR DNI
6978          BCC 30$ ; ERROR ?
6979 050322 103006          BCC 30$ ; NO
6980 050324          ERRHRD 223.,ERR006,MSG003 ; YES, REPORT ERROR
        050324 104456          TRAP C$ERHRD
        050326 000337          .WORD 223
        050330 020202          .WORD ER006
        050332 017110          .WORD MSG003
6981 050334          ESCAPE TST ; AND ABORT TEST
        050334 104410          TRAP C$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 ABORT TEST
	050370	104410					TRAP	C#ESCAPE
	050372	001460					.WORD	L10052
6989								
6990	050374	004737	025546	40:	JSR	PC,CLRDN1		; WRITE ONE TO CLEAR DNI
6991								; ERROR ?
6992	050400	103006			BCC	50:		; NO
6993	050402				ERRHRD	225.,ERR006,MSG003		; YES, REPORT ERROR
	050402	104456					TRAP	C#ERRHRD
	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								
6997	050416	005737	002224	50:	TST	EXLOOP		; EXTERNAL LOOPBACK SELECTED ?
6998	050422	071005			BNE	55:		; YES
6999								
7000								
7001	050424	012705	013244		MOV	#WTRNGS,R5		; DEFAULT WRITE MODE FUNCTION
7002	050430	004737	026742		JSR	PC,L0PCBB		; LOAD FUNCTION -> PCBB
7003	050434	000407			BR	56:		
7004								
7005	050436	012705	013244		MOV	#WTRNGS,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	56:	#GETCMD,#PCSR0		; ISSUE GET_CMD PORT COMMAND
7009	050462	004737	024574		JSR	PC,CHKDNI		; DNI ?
7010	050466	103006			BCC	60:		; YES
7011	050470				ERRHRD	226.,ERR010,MSG003		; NO, REPORT ERROR
	050470	104456					TRAP	C#ERRHRD
	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	60:	JSR	PC,CLRDN1		; WRITE ONE TO CLEAR DNI
7015								; ERROR ?
7016	050510	103006			BCC	70:		; NO
7017	050512				ERRHRD	227.,ERR005,MSG003		; YES, REPORT ERROR
	050512	104456					TRAP	C#ERRHRD
	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								
7021	050526	012705	013204	70:	MOV	#WTRNGS,R5		; DEFAULT WRITE RING FORMAT FUNCTION

7022	050532	004737	026742		JSR	PC,LDP CBB		; LOAD FUNCTION -> PCBB		
7023	050536	012705	013324		MOV	#RFRMT,R5		; DEFAULT RING FORMAT		
7024	050542	012705	000006		MOV	#6,R0		; FORMAT = SIX WORDS		
7025	050546	004737	027142		JSR	PC,LDU CBB		; LOAD RING FORMAT -> UDSB		
7026	050552	012777	000002	131446	MOV	#GETCMD,BPCSR0		; 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	TRAP	C#ERRHRD
	050566	104456							.WORD	228
	050570	000344							.WORD	ERR010
	050572	020502							.WORD	MSG003
	050574	017110								
7030	050576				ESCAPE	TST		; AND ABORT TEST	TRAP	C#ESCAPE
	050576	104410							.WORD	L10052
	050600	001252								
7031										
7032	050602	004737	025546		JSR	PC,CLR DNI		; WRITE ONE TO CLEAR DNI		
7033								; ERROR ?		
7034	050606	103006			BCC	90#		; NO		
7035	050610				ERRHRD	229.,ERR006,MSG003		; YES, REPORT ERROR	TRAP	C#ERRHRD
	050610	104456							.WORD	229
	050612	000345							.WORD	ERR006
	050614	020202							.WORD	MSG003
	050616	017110								
7036	050620				ESCAPE	TST		; AND ABORT TEST	TRAP	C#ESCAPE
	050620	104410							.WORD	L10052
	050622	001230								
7037										
7038										
7039	050624	012705	013144		MOV	#WTPHYA,R5		; DEFAULT WRITE PHYSICAL ADDR FUNC		
7040	050630	004737	026742		JSR	PC,LDP CBB		; LOAD FUNCTION -> PCBB		
7041	050634	012777	000002	131364	MOV	#GETCMD,BPCSR0		; 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	TRAP	C#ERRHRD
	050650	104456							.WORD	230
	050652	000346							.WORD	ERR010
	050654	020502							.WORD	MSG003
	050656	017110								
7045	050660				ESCAPE	TST		; AND ABORT TEST	TRAP	C#ESCAPE
	050660	104410							.WORD	L10052
	050662	001170								
7046										
7047	050664	004737	025546		JSR	PC,CLR DNI		; WRITE ONE TO CLEAR DNI		
7048								; ERROR ?		
7049	050670	103006			BCC	110#		; NO		
7050	050672				ERRHRD	231.,ERR006,MSG003		; YES, REPORT ERROR	TRAP	C#ERRHRD
	050672	104456							.WORD	231
	050674	000347							.WORD	ERR006
	050676	020202							.WORD	MSG003
	050700	017110								
7051	050702				ESCAPE	TST		; AND ABORT TEST	TRAP	C#ESCAPE
	050702	104410							.WORD	L10052
	050704	001146								
7052										
7053										
7054	050706	012705	013754		MOV	#TDRB3A,R5		; SET UP RINGS FOR THREE BUFFERS CHAINED LOOPBACK		
								; DEFAULT THREE BUFFER TRANSMIT RING		

Address	OpCode	Operand 1	Operand 2	Comment	Trap	Trap Word
7055	JSR	PC,LDIRB	027046	; LOAD TDRB		
7056	MOV	#RDRB3A,R5	013514	; DEFAULT THREE BUFFER RECEIVE RING		
7057	JSR	PC,LDRDRB	027010	; LOAD RDRB		
7058						
7059		;SET UP BUFFERS AND START				
7060	MOV	#PCBB-2,R5	002266	; POINT TO DESTINATION ADDRESS		
7061	JSR	PC,LDEST	026714	; LOAD DEST		
7062	JSR	PC,SETBUF	027342	; SET UP BUFFERS		
7063		;LOAD TYPE FIELD = DIAGNOSTIC TYPE				
7064	MOV	#TBUF+12,R5	003120	; POINT TO TYPE FIELD		
7065	MOV	#0TYPE,(R5)	002540	; LOAD DIAGNOSTIC TYPE		
7066						
7067	MOV	#START,#PCSR0	000004 131246	; ISSUE START PORT COMMAND		
7068	JSR	PC,CHKDNI	024574	; DNI?		
7069	BCC	120#		; YES		
7070	ERRHRD	232.,ERR012,MSG003		; NO, REPORT ERROR	TRAP	C#ERRRD 232
					.WORD	ERR012
					.WORD	MSG003
7071	ESCAPE	TST		; AND ABORT TEST	TRAP	C#ESCAPE L10052-
					.WORD	
7072						
7073	JSR	PC,CLRDN1	025546	; WRITE ONE TO CLEAR DNI		
7074				; ERROR ?		
7075	BCC	130#		; NO		
7076	ERRHRD	233.,ERR006,MSG003		; YES, REPORT ERROR	TRAP	C#ERRRD 233
					.WORD	ERR006
					.WORD	MSG003
7077	ESCAPE	TST		; AND ABORT TEST	TRAP	C#ESCAPE L10052-
					.WORD	
7078						
7079	JSR	PC,CHKTXI	025404	; TXI ?		
7080	BCC	140#		; YES		
7081	ERRHRD	234.,ERR013,MSG003		; NO, REPORT ERROR	TRAP	C#ERRRD 234
					.WORD	ERR013
					.WORD	MSG003
7082	ESCAPE	TST		; AND ABORT TEST	TRAP	C#ESCAPE L10052-
					.WORD	
7083						
7084	JSR	PC,CLRTXI	025730	; WRITE ONE TO CLEAR TXI		
7085				; ERROR ?		
7086	BCC	150#		; NO		
7087	ERRHRD	235.,ERR014,MSG003		; YES, REPORT ERROR	TRAP	C#ERRRD 235
					.WORD	ERR014
					.WORD	MSG003
7088	ESCAPE	TST		; AND ABORT TEST	TRAP	C#ESCAPE

7089	051066	000764						.WORD	L10052
7090	051070	012705	002604	;CHECK FIRST RING ENTRY	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	;CHECK SECOND RING ENTRY	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									
7104	051154	012705	002614	;CHECK SECOND RING ENTRY	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	;CHECK SECOND RING ENTRY	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									
7118	051240	012705	002624	;CHECK THIRD RING ENTRY	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	i168:	MOV	#TDR20C,R5	; POINT TO EXPECTED TDRB		
7125	051272	004737	027252		JSR	PC,LDXTDR	; LOAD INTO XTDRB0 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	004757	025132	i170:	JSR	PC,CHKRXI	; RXI ?		
7133	051330	103006			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	i180:	JSR	PC,CLRAXI	; WRITE ONE TO CLEAR RXI		
7138							; 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	i182:	TST	EXLOOP	; EXTERNAL LOOPBACK		
7144	051374	001431			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          BNE      184$          ; NO, CHECK TYPE FIELD
7155 051422 000137 051460    JMP      190$          ; SCR = DST, GO CHECK RINGS
7156                                ;SOURCE NOT EQUAL TO DESTINATION
7157                                ;CHECK IF DIAGNOSTIC TYPE
7158 051426 012704 007120    184$:  MOV     @RBUF+12.,R4    ; POINT TO TYPE FIELD RECEIVED
7159 051432 022714 002540    CMP     @DTYPE,(R4)        ; DIAGNOSTIC TYPE ?
7160 051436 001402          BEQ     186$          ; YES, REPORT ERROR
7161 051440 000137 050260    JMP     1$              ; NO, RESTART TEST
7162 051444          186$:  ERRHRD 244.,ERR0-7    ; REPORT ERROR
                                TRAP      C$ERRHRD
                                .WORD     244
                                .WORD     ERR047
                                .WORD     0
7163 051454          ESCAPE TST          ; AND ABORT TEST
                                TRAP      C$ESCAPE
                                .WORD     L10052
7164                                ;
7165                                ;CHECK FIRST RING ENTRY
7166 051460 012705 002644    190$:  MOV     @RDRB,R5          ; CHECK RDRB OWNERSHIP
7167 051464 004737 024676    JSR     PC,CHKOWN        ; OWN = PORT DRIVER ?
7168 051470 107J06          BCC     200$          ; YES
7169 051472          ERRHRD 245.,ERR030    ; NO, REPORT ERROR
                                TRAP      C$ERRHRD
                                .WORD     245
                                .WORD     ERR030
                                .WORD     0
7170 051502          ESCAPE TST          ; AND ABORT TEST
                                TRAP      C$ESCAPE
                                .WORD     L10052-
7171                                ;
7172 051506 012705 014674    200$:  MOV     @RDR:0A,R_    ; POINT TO EXPECTED RDRB
7173 051512 004737 027222    JSR     F.,LDXRDR        ; LOAD INTO XRDRB0 TABLE
7174 051516 012705 002644    MOV     @RDRB,R5        ; CHECK RDRB
7175 051522 004737 025032    JSR     PC,CHKRDR        ; ERRORS ?
7176 051526 103006          BCC     202$          ; NO
7177 051530          ERRHRD 246.,ERR036,MSG006 ; YES, REPORT ERROR
                                TRAP      C$ERRHRD
                                .WORD     246
                                .WORD     ERR036
                                .WORD     MSG006
7178 051540          ESCAPE TST          ; AND ABORT TEST
                                TRAP      C$ESCAPE
                                .WORD     L10052-
7179                                ;CHECK SECOND RING ENTRY
7180 051544 012705 002654    202$:  MOV     @RDRB+8.,R5    ; CHECK RDRB OWNERSHIP
7181 051550 004737 024676    JSR     PC,CHKOWN        ; OWN = PORT DRIVER ?
7182 051554 103006          BCC     204$          ; YES
7183 051556          ERRHRD 247.,ERR031    ; NO, REPORT ERROR
                                TRAP      C$ERRHRD
                                .WORD     247
                                .WORD     ERR031
                                .WORD     0
7184 051566          ESCAPE TST          ; AND ABORT TEST
                                TRAP      C$ESCAPE
                                .WORD     L10052-
7185                                ;
7186 051572 012705 014704    204$:  MOV     @RDR208,R5    ; 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.CHRDR	:	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									
7194	051630	012705	002664	206:	MOV	#RDRB+16.,R5	:	CHECK RDRB OWNERSHIP	
7195	051634	004737	024676	JSR	PC.CHRDR	:	OWN = PORT DRIVER ?		
7196	051640	103006		BCC	208:	:	YES		
7197	051642			ERRHRD	249.,ERR032	:	NO, REPORT ERROR	TRAP	C#ERHRD
	051642	104456						.WORD	219
	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									
7200	051656	012705	014714	208:	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.CHRDR	:	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									
7208									
7209	051714	012705	000570	210:	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									
7215	051742	012705	014740	220:	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$: MOV #STOP,SPCSR0      ; ISSUE STOP PORT COMMAND
7224 052006 004737 024574 JSR PC,CHKDNI          ; DNI ?
7225 052012 103006 BCC 240$              ; 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 000000
7234 052052          ENDTST
7235 052052          L10052: TRAP C#ETST
      052052 104401

```

```

TRAP C#ERRRD
.WORD 252
.WORD ERR023
.WORD MSG008
TRAP C#ESCAPE
.WORD L10052
TRAP C#ERRRD
.WORD 253
.WORD ERR019
.WORD MSG003
TRAP C#ESCAPE
.WORD L10052
TRAP C#ERRRD
.WORD 254
.WORD ERR006
.WORD MSG003
TRAP C#ESCAPE
.WORD L10052
L10052: TRAP C#ETST

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.SBTTL 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
:
*****

```

BGNTST

```

:
: T21::
: IS 1 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 255.,ERR004,MSG003 ; NO, REPORT ERROR
:
: AND ABORT TEST
ESCAPE TST ; AND ABORT TEST
:
: WRITE ONE TO CLEAR DNI
: ERROR ?
: NO
: YES, REPORT ERROR
JSR PC,CLRDN ; WRITE ONE TO CLEAR DNI
BCC 30$ ; NO
ERRHRD 256.,ERR006,MSG003 ; YES, REPORT ERROR
:

```

```

052054
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

```

```

TRAP C$ERHRD
.WORD 255
.WORD ERR004
.WORD MSG003
TRAP C$ESCAPE
.WORD L10053-.
TRAP C$ERHRD
.WORD 256
.WORD ERR006
.WORD MSG003

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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 130060 30$: JSR      PC,LDPCSR          ; ADDRESS OF PCBB -> PCSR2!3
7286 052140 012777 000001          MOV      #GETPCB,#PCSR0      ; ISSUE GET PCBB PORT COMMAND
7287 052146 004737 024574          JSR      PC,CHKDNI          ; DNI?
7288 052152 103006          BCC     40$                ; YES
7289 052154          ERRHRD 257.,ERR009,MSG003 ; NO, REPORT ERROR          TRAP      C$ERHRD
      052154 104456          .WORD      257
      052156 000471          .WORD      ERR009
      052160 020416          .WORD      MSG003
      052162 017110

7290 052164          ESCAPE TST          ; AND ABORT TEST          TRAP      C$ESCAPE
      052164 104410          .WORD      L10053-.
      052166 002546

7291
7292 052170 004737 025546          40$: JSR      PC,CLRDN1          ; WRITE ONE TO CLEAR DNI
7293                                ; ERROR ?
7294 052174 103006          BCC     50$                ; NO
7295 052176          ERRHRD 258.,ERR006,MSG003 ; YES, REPORT ERROR          TRAP      C$ERHRD
      052176 104456          .WORD      258
      052200 000402          .WORD      ERR006
      052202 020202          .WORD      MSG003
      052204 017110

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$: MOV      #WTMODE,R5          ; DEFAULT WRITE MODE + JUNCTION
7300 052216 004737 026742          JSR      PC,LDPCBB          ; LOAD FUNCTION -> PCBB
7301 052222 013737 015116 002266  MOV      MODE21,PCBB+2      ; MODE = INTL LOOPBACK ONLY
7302 052230 012777 000002 127770  MOV      #GETCMD,#PCSR0      ; ISSUE GET_CMD PORT COMMAND
7303 052236 004737 024574          JSR      PC,C.KDNI          ; DNI ?
7304 052242 103006          BCC     60$                ; YES
7305 052244          ERRHRD 259.,ERR010,MSG003 ; NO, REPORT ERROR          TRAP      C$ERHRD
      052244 104456          .WORD      259
      052246 000403          .WORD      ERR010
      052250 020502          .WORD      MSG003
      052252 017110

7306 052254          ESCAPE TST          ; AND ABORT TEST          TRAP      C$ESCAPE
      052254 104410          .WORD      L10053 .
      052256 002456

7307
7308 052260 004737 025546          60$: JSR      PC,CLRDN1          ; WRITE ONE TO CLEAR DNI
7309                                ; ERROR ?
7310 052264 103006          BCC     70$                ; NO
7311 052266          ERRHRD 260.,ERR006,MSG003 ; YES, REPORT ERROR          TRAP      C$ERHRD
      052266 104456          .WORD      260
      052270 000404          .WORD      ERR006
      052272 020202          .WORD      MSG003
      052274 017110

7312 052276          ESCAPE TST          ; AND ABORT TEST          TRAP      C$ESCAPE
      052276 104410          .WORD      L10053-.
      052300 002434

7313
    
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7314								
7315	052302	012705	013204					
7316	052306	004737	026742					
7317	052312	012705	013324					
7318	052316	012700	000006					
7319	052322	004737	027142					
7320	052326	012777	000002	127672				
7321	052334	004737	024574					
7322	052340	103006						
7323	052342							
	052342	104456						
	052344	000405						
	052346	020502						
	052350	017110						
7324	052352							
	052352	104410						
	052354	002360						
7325								
7326	052356	004737	025546					
7327								
7328	052362	103006						
7329	052364							
	052364	104456						
	052366	000406						
	052370	020202						
	052372	017110						
7330	052374							
	052374	104410						
	052376	002336						
7331								
7332								
7333	052400	012705	013144					
7334	052404	004737	026742					
7335								
7336	052410	012703	014320					
7337	052414	012704	002266					
7338	052420	012324						
7339	052422	012324						
7340	052424	012324						
7341	052426	012777	000002	127572				
7342	052434	004737	024574					
7343	052440	103006						
7344	052442							
	052442	104456						
	052444	000407						
	052446	020502						
	052450	017110						
7345	052452							
	052452	104410						
	052454	002260						
7346								
7347	052456	004737	025546					
7348								
7349	052462	103006						
7350	052464							
	052464	104456						
	052466	000410						

```

;WRITE RING FORMAT
70$: MOV @WTRNGS,R5
      JSR PC,LDPCCB
      MOV @RFRMT,R5
      MOV @6,R0
      JSR PC,LDUDBB
      MOV @GETCMD,@PCSR0
      JSR PC,CHKDNI
      BCC 80$
      ERRHRD 261.,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
    
```

```

TRAP C$ERHRD
WORD 261
.WORD ERR010
.WORD MSG003
    
```

```

ESCAPE TST
    
```

```

; AND ABORT TEST
    
```

```

TRAP C$ESCAPE
.WORD L10053-.
    
```

```

;
80$: JSR PC,CLRDN1
      BCC 90$
      ERRHRD 262.,ERR006,MSG003
    
```

```

; WRITE ONE TO CLEAR DNI
; ERROR ?
; NO
; YES, REPORT ERROR
    
```

```

TRAP C$ERHRD
.WORD 262
.WORD ERR006
.WORD MSG003
    
```

```

ESCAPE TST
    
```

```

; AND ABORT TEST
    
```

```

TRAP C$ESCAPE
.WORD L10053-.
    
```

```

;WRITE PHYSICAL ADDRESS
90$: MOV @WTPHYA,R5
      JSR PC,LDPCCB
;LOAD DEFAULT PHYSICAL ADDRESS
      MOV @ADR21,R3
      MOV @PCBB+2,R4
      MOV (R3)+,(R4)+
      MOV (R3)+,(R4)+
      MOV (R3)+,(R4)+
      MOV @GETCMD,@PCSR0
      JSR PC,CHKDNI
      BCC 100$
      ERRHRD 263.,ERR010,MSG003
    
```

```

; DEFAULT WRITE PHYSICAL ADDR FUNC
; LOAD FUNCTION -> PCBB
; POINT TO PHYSICAL ADDRESS
; POINT TO PCBB + 2
; LOAD ADDRESS
    
```

```

; ISSUE GET_CMD PORT COMMAND
; DNI ?
; YES
; NO, REPORT ERROR
    
```

```

TRAP C$ERHRD
WORD 263
.WORD ERR010
.WORD MSG003
    
```

```

ESCAPE TST
    
```

```

; AND ABORT TEST
    
```

```

TRAP C$ESCAPE
.WORD L10053 .
    
```

```

;
100$: JSR PC,CLRDN1
       BCC 110$
       ERRHRD 264.,ERR006,MSG003
    
```

```

; WRITE ONE TO CLEAR DNI
; ERROR ?
; NO
; YES, REPORT ERROR
    
```

```

TRAP C$ERHRD
WORD 264
    
```

	052470	020202					.WORD	ERR006
	052472	017110					.WORD	MSG003
7351	052474			ESCAPE TST				: AND ABORT TEST
	052474	104410					TRAP	C#ESCAPE
	052476	002236					.WORD	L10053
7352								
7353				:SET UP RINGS FOR ONE BUFFER LOOPBACK				
7354	052500	012705	013554	110\$: MOV #TDRB1A,R5				: DEFAULT ONE BUFFER TRANSMIT RING
7355	052504	004737	027046	JSR PC,LDTDRB				: LOAD TDRB
7356	052510	012705	013354	MOV #RDRB1A,R5				: DEFAULT ONE BUFFER RECEIVE RING
7357	052514	004737	027010	JSR PC,LDRDRB				: LOAD RDRB
7358								
7359				:SET UP BUFFERS AND START				
7360	052520	012705	002266	MOV #PCBB+2,R5				: POINT TO DESTINATION ADDRESS
7361	052524	004737	026714	JSR PC,LDEST				: LOAD DEST
7362	052530	004737	027342	JSR PC,SETBUF				: SET UP BUFFERS
7363	052534	012777	000004	MOV #START,#PCSR0	127464			: ISSUE START PORT COMMAND
7364	052542	004737	024574	JSR PC,CHKDNI				: DNI?
7365	052546	103006		BCC 120\$: YES
7366	052550			ERRHRD 265.,ERR012,MSG003				: NO, REPORT ERROR
	052550	104456					TRAP	C#ERHRD
	052552	000411					.WORD	265
	052554	020633					.WORD	ERR012
	052556	017110					.WORD	MSG003
7367	052560			ESCAPE TST				: AND ABORT TEST
	052560	104410					TRAP	C#ESCAPE
	052562	002152					.WORD	L10053-
7368								
7369	052564	004737	025546	120\$: JSR PC,CLRDN1				: WRITE ONE TO CLEAR DNI
7370								: ERROR ?
7371	052570	103006		BCC 130\$: NO
7372	052572			ERRHRD 266.,ERR006,MSG003				: YES, REPORT ERROR
	052572	104456					TRAP	C#ERHRD
	052574	000412					.WORD	266
	052576	020202					.WORD	ERR006
	052600	017110					.WORD	MSG003
7373	052602			ESCAPE TST				: AND ABORT TEST
	052602	104410					TRAP	C#ESCAPE
	052604	002130					.WORD	L10053-
7374								
7375	052606	004737	025404	130\$: JSR PC,CHKTXI				: TXI ?
7376	052612	103006		BCC 140\$: YES
7377	052614			ERRHRD 267.,ERR013,MSG003				: NO, REPORT ERROR
	052614	104456					TRAP	C#ERHRD
	052616	000413					.WORD	267
	052620	020714					.WORD	ERR013
	052622	017110					.WORD	MSG003
7378	052624			ESCAPE TST				: AND ABORT TEST
	052624	104410					TRAP	C#ESCAPE
	052626	002106					.WORD	L10053
7379								
7380	052630	004737	025730	140\$: JSR PC,CLRTXI				: WRITE ONE TO CLEAR TXI
7381								: ERROR ?
7382	052634	103006		BCC 150\$: NO
7383	052636			ERRHRD 268.,ERR014,MSG003				: YES, REPORT ERROR
	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	i150\$:	MOV	#TDRB,R5		: CHECK TDRB OWNERSHIP
7387	052656	004737	024676		JSR	PC,CHKOWN		: OWN = PORT DRIVER ?
7388	052662	103006			BCC	160\$: YES
7389	052664				ERR 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	i160\$:	MOV	#TDR14A,R5		: POINT TO EXPECTED TDRB
7393	052704	004737	027252		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	i170\$:	JSR	PC,CHKRXI		: RXI ?
7401	052742	103006			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	i180\$:	JSR	PC,CLRRXI		: WRITE ONE TO CLEAR RXI
7406								: 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	i190\$:	MOV	#RDRB,R5		: CHECK RDRB OWNERSHIP
7412	053006	004737	024676		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	000970		210:	MOV	#56.,R5		; COMPARE 56 WORDS OF DATA			
7427	053072	004737	026044			JSR	PC,CMPOAT		; 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	001627								.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,#PCSR0		; 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	

	053172	021312					.WORD	ERR019
	053174	017110					.WORD	MSG003
7444	053176			ESCAPE	TST			; AND ABORT TEST
	053176	104410					TRAP	C#ESCAPE
	053200	001534					.WORD	L10053
7445								
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
	053210	104456					TRAP	C#ERRHRD
	053212	000426					.WORD	278
	053214	020202					.WORD	ERR006
	053216	017110					.WORD	MSG003
7450	053220			ESCAPE	TST			; AND ABORT TEST
	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,#PCSHO		; ISSUE START PORT COMMAND
7465	053256	004737	024574		JSR	PC,CHKDNI		; DNI?
7466	053272	103006			BCC	260:		; YES
7467	053274				ERRHRD	279.,ERR012,MSG003		; NO, REPORT ERROR
	053274	104456					TRAP	C#ERRHRD
	053276	000427					.WORD	279
	053300	020633					.WORD	ERR012
	053302	017110					.WORD	MSG003
7468	053304			ESCAPE	TST			; AND ABORT TEST
	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
	053316	104456					TRAP	C#ERRHRD
	053320	020430					.WORD	280
	053322	020202					.WORD	ERR006
	053324	017110					.WORD	MSG003
7474	053326			ESCAPE	TST			; AND ABORT TEST
	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 BC 330: ; YES
7509 053520 ER PD 286.,ERR019,MSG003 ; NO, REPORT ERROR
; TRAP C$ERRRD
; .WORD 286
; .WORD ERR019
; .WORD MSG003
7510 053530 ESCAPE TST ; AND ABORT TEST
; TRAP C$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$ERRRD
; .WORD 287
; .WORD ERR006
; .WORD MSG003
7515 053546 020202 ESCAPE TST ; AND ABORT TEST
7516 053550 017110 ; TRAP C$ESCAPE
7516 053552 104410 ; .WORD L10053-
7516 053554 001160
;
; REPEAT WITH COMPLEMENTED PHYSICAL ADDRESS
;
; WRITE PHYSICAL ADDRESS
340: MOV #WTPHYA,R5 ; DEFAULT WRITE PHYSICAL ADDR FUNC
JSR PC,LDPCCB ; LOAD FUNCTION -> PCBB
; LOAD COMPLEMENTED PHYSICAL ADDRESS
7521 053556 012705 013144 MOV #ADR21C,R3 ; POINT TO PHYSICAL ADDRESS
7522 053562 004737 026742 JSR PC,LDPCCB ; POINT TO PCBB + 2
7523 ; LOAD ADDRESS
7524 053566 012703 014326 MOV #PCBB+2,R4
7525 053572 012704 002266 MOV (R3)+,(R4)+
7526 053576 012324 MOV (R3)+,(R4)+
7527 053600 012324 MOV (R3)+,(R4)+
7528 053602 012324 MOV (R3)+,(R4)+
7529 053604 012777 000002 126414 MOV #GETCMD,BPCSR0 ; ISSUE GET_CMD PORT COMMAND
7530 053612 004737 024574 JSR PC,CHKDNI ; DNI ?
7531 053616 103006 BCC 350: ; YES
7532 053620 ER PD 288.,ERR010,MSG003 ; NO, REPORT ERROR
; TRAP C$ERRRD
; .WORD 288
; .WORD ERR010
; .WORD MSG003
7533 053630 ESCAPE TST ; AND ABORT TEST
; TRAP C$ESCAPE
; .WORD L10053-
7534 053632 104410
7535 053634 004737 025546 ;350: JSR PC,CLRDN1 ; WRITE ONE TO CLEAR DNI
7536 ; ERROR ?
7537 053640 103006 BCC 360: ; NO
7538 053642 104456 ERR:RD 289.,ERR006,MSG003 ; YES, REPORT ERROR
; TRAP C$ERRRD
; .WORD 289
; .WORD ERR006
; .WORD MSG003
7539 053650 017110 ESCAPE TST ; AND ABORT TEST
7539 053652 104410 ; TRAP C$ESCAPE
    
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Address	Code	Label	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 ; ERRHRD 294.,ERR018 ; NO, REPORT ERROR		
7575	054034	004737 024676			
7576	054040	103006			
7577	054042				
	054042	104456		TRAP C\$ERRHRD	
	054044	000446		.WORD 294	
	054046	021212		.WORD ERR018	
	054050	000000		.WORD 0	
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,CHKTCP ; 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				
	054100	104456		TRAP C\$ERRHRD	
	054102	000447		.WORD 295	
	054104	021372		.WORD ERR020	
	054106	017214		.WORD MSG005	
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				
	054122	104456			TRAP C\$ERRHRD
	054124	000450		.WORD 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,CLRFXI ; WRITE ONE TO CLEAR RXI ; BCC 440\$; ERROR ? ; ERRHRD 297.,ERR016,MSG003 ; NO ; YES, REPORT ERROR		
7594					
7595	054142	103006			
7596	054144				
	054144	104456			TRAP C\$ERRHRD
	054146	000451			.WORD 297
	054150	021044		.WORD ERR016	
	054152	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				
	054172	104456			TRAP C\$ERRHRD
	054174	000452		.WORD 298	

	054176	021112					.WORD	ERR017
	054200	000000					.WORD	0
7603	054202			ESCAPE	TST			; AND ABORT TEST
	054202	104410					TRAP	C#ESCAPE
	054204	000530					.WORD	L10053
7604								
7605	054206	012705	014634					; POINT TO EXPECTED RDRB
7606	054212	004737	027222					; LOAD INTO XRDRBO TABLE
7607	054216	012705	002644					; CHECK RDRB
7608	054222	004737	025032					; ERRORS ?
7609	054226	103006						; NO
7610	054230							; YES, REPORT ERROR
	054230	104456					TRAP	C#ERRRD
	054232	000453					.WORD	299
	054234	021453					.WORD	ERR021
	054236	017356					.WORD	MSG006
7611	054240			ESCAPE	TST			; AND ABORT TEST
	054240	104410					TRAP	C#ESCAPE
	054242	000472					.WORD	L10053
7612								
7613								
7614	054244	012705	000070					; COMPARE RBUF WITH TBUF
7615	054250	004737	026044					; COMPARE 56 WORDS OF DATA
7616	054254	103006						; DATA COMPARE ERROR ?
7617	054256							; NO
	054256	104456						; YES, REPORT ERROR
	054260	000454					TRAP	C#ERRRD
	054262	021534					.WORD	300
	054264	017520					.WORD	ERR022
7618	054266			ESCAPE	TST			; AND ABORT TEST
	054266	104410					TRAP	C#ESCAPE
	054270	000444					.WORD	L10053
7619								
7620	054272	012705	014750					; POINT TO EXPECTED CRCB
7621	054276	004737	027176					; LOAD INTO XCRC TABLE
7622	054302	012705	007300					; CHECK CRC
7623	054306	004737	026124					; ERRORS ?
7624	054312	103006						; NO
7625	054314							; YES, REPORT ERROR
	054314	104456					TRAP	C#ERRRD
	054316	000455					.WORD	301
	054320	021603					.WORD	ERR023
	054322	017552					.WORD	MSG008
7626	054324			ESCAPE	TST			; AND ABORT TEST
	054324	104410					TRAP	C#ESCAPE
	054326	000406					.WORD	L10053
7627								
7628	054330	012777	000017					; ISSUE STOP PORT COMMAND
7629	054336	004737	024574					; DNI ?
7630	054342	103006						; YES
7631	054344							; NO, REPORT ERROR
	054344	104456					TRAP	C#ERRRD
	054346	000456					.WORD	302
	054350	021312					.WORD	ERR019
	054352	017110					.WORD	MSG003
7632	054354			ESCAPE	TST			; AND ABORT TEST
	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
7640                                           ; DESTINATION ADDRESS NOT = PHYSICAL ADDRESS
7641
7642                                           ; SET UP RINGS FOR ONE BUFFER LOOPBACK
7643 054402 012705 013554                    500$: MOV    #TDRB1A,R5    ; DEFAULT ONE BUFFER TRANSMIT RING
7644 054406 004737 027046                    JSR    PC,LDTDRB          ; LOAD TDRB
7645 054412 012705 013354                    MOV    #RDRB1A,R5        ; DEFAULT ONE BUFFER RECEIVE RING
7646 054416 004737 027010                    JSR    PC,LDRDRB          ; LOAD RDRB
7647
7648                                           ; SET UP BUFFERS AND START
7649 054422 012705 014320                    MOV    #ADR21,R5          ; COMPLIMENT DESTINATION ADDRESS
7650 054426 004737 026714                    JSR    PC,LDDEST          ; LOAD DEST
7651 054432 004737 027342                    JSR    PC,SETBUF          ; SET UP PUFFERS
7652 054436 012777 000004 125562             MOV    #START,$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#ERRHRD
	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#ERRHRD
	054570	000464						.WORD	308
	054572	021212						.WORD	ERR018
	054574	000000						.WORD	0
7679	054576				ESCAPE TST		; AND ABORT TEST		
	054578	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#ERRHRD
	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#ERRHRD
	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	000217 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
054700 000467
054702 021312
054704 017110
7698 054706 104410
054710 000024
7699
7700 054712 004737 025546
7701
7702 054716 103006
7703 054720
054720 104456
054722 000470
054724 020202
054726 017110
7704 054730
054730 104410
054732 000002
7705 054734
7706 054734
054734 104401

          ESCAPE TST
          ; AND ABORT TEST

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

          ESCAPE TST
          ; AND ABORT TEST

          ENDTST

          L10053: TRAP C#ETST

          580$: JSR PC,CLRDNI
          BCC 590$
          ERRHRD 312.,ERR006,MSG003

          590$:

```

```

TRAP C#ERHRD
.WORD 311
.WORD ERR019
.WORD MSG003

TRAP C#ESCAPF
.WORD L10053

TRAP C#ERHRD
.WORD 312
.WORD ERR006
.WORD MSG003

TRAP C#ESCAPE
.WORD L10053-.

TRAP C#ETST

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.SBTTL 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 VALUES
16. REPEAT STEPS 5 - 14
*****

```

BGNTST

T22::

004737 027446

```

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 313.,ERR004,MSG003 ; NO, REPCRT ERROR

```

```

TRAP C$ERHRD
.WCRD 313
.WORD ERR004
.WORD MSG003

```

054770 104410
054772 003016

ESCAPE TST ; AND ABORT TEST

```

TRAP C$ESCAPE
.WORD L10054-.

```

054774 004737 025546

20\$:

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JSR PC,CLRDNI ; WRITE ONE TO CLEAR DNI
; ERROR ?
BCC 30$ ; NO
ERRHRD 314.,ERR006,MSG003 ; YES, REPORT ERROR

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TRAP C\$ERHRD

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055004 000472 .WORD 3:4
055006 020202 .WORD LRR006
055010 017110 .WORD MSG003
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$ERHRD
055036 104456 .WORD 315
055040 000473 .WORD ERR009
055042 020416 .WORD MSG003
055044 017110
7764 055046 ESCAPE TST ; AND ABORT TEST TRAP C$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$: MOV #WTMODE,R5 ; DEFAULT WRITE MODE FUNCTION
7774 055100 004737 026742 JSR PC,LDP CBB ; LOAD FUNCTION -> PCBB
7775 055104 013737 015116 002266 MOV MODE21,PCBB+2 ; MODE = INTL LOOPBACK ONLY
7776 055112 012777 000002 125176 MOV #GETCMD,@PCSR0 ; ISSUE GET_CMD PORT COMMAND
7777 055120 004737 024574 JSR PC,CHKDNI ; DNI ?
7778 055124 103006 BCC 60$ ; YES
7779 055126 ERRHRD 317.,ERR010,MSG003 ; NO, REPORT ERROR TRAP C$ERHRD
055126 104456 .WORD 317
055130 000475 .WORD EPR010
055132 020502 .WORD MSG003
055134 017110
7780 055136 ESCAPE TST ; AND ABORT TEST TRAP C$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

```

055160	104410					TRAP	C\$ESCAPE
055162	002626					.WORD	L10054
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				TRAP	C\$ERHRD
	055226	000477				.WORD	319
	055230	020502				.WORD	ERR010
	055232	017110				.WORD	MSG003
7798	055234				ESCAPE TST		
	055234	104410				TRAP	C\$ESCAPE
	055236	002552				.WORD	L10054
7799							
7800	055240	004737	025546				
7801							
7802	055244	103006					
7803	055246						
	055246	104456				TRAP	C\$ERHRD
	055250	000500				.WORD	320
	055252	020202				.WORD	ERR006
	055254	017110				.WORD	MSG003
7804	055256				ESCAPE TST		
	055256	104410				TRAP	C\$ESCAPE
	055260	002530				.WORD	L10054
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				TRAP	C\$ERHRD
	055310	000501				.WORD	321
	055312	020502				.WORD	ERR010
	055314	017110				.WORD	MSG003
7813	055316				ESCAPE TST		
	055316	104410				TRAP	C\$ESCAPE
	055320	002470				.WORD	L10054
7814							
7815	055322	004737	025546				
7816							
7817	055326	103006					
7818	055330						
	055330	104456				TRAP	C\$ERHRD
	055332	000502				.WORD	322
	055334	020202				.WORD	ERR006
	055336	017110				.WORD	MSG003
7819	055340				ESCAPE TST		

```

;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
  
```

```

ESCAPE TST ; AND ABORT TEST
80$: JSR PC,CLRDN ; WRITE ONE TO CLEAR DNI
      BCC 90$ ; ERROR ?
      ERRHRD 320.,ERR006,MSG003 ; NO
      ; YES, REPORT ERROR
  
```

```

ESCAPE TST ; AND ABORT TEST
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
  
```

```

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

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055340 104410
055342 002446
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
055406 000503
055410 020502
055412 017110
7831 055414
055414 104410
055416 002372
7832
7833 055420 004737 025546
7834
7835 055424 103006
7836 055426
055426 104456
055430 000504
055432 020202
055434 017110
7837 055436
055436 104410
055440 002350
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7841 055442 012701 000012
7842 055446 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
055526 000505
055530 020633
055532 017110
;
;WRITE MULTICAST ADDRESS LIST
1028: MOV #WTMLA,R5 ; DEFAULT WRITE MULTICAST ADDR FUNC
JSR PC.LDPCBB ; LOAD FUNCTION -> PCBB
MOV #MULTL,R5 ; LOAD LIST INTO UDBB
MOV #30.,R0 ; LOAD 30 ENTRIES
JSR PC.LDUDBB ; MULTICAST LIST -> UDBB
MOV #GETCMD,BPCSR0 ; ISSUE GET_CMD PORT COMMAND
JSR PC.CMKDNI ; DNI ?
BCC 1048 ; YES
ERRHRD 323.,ERR010,MSG003 ; NO, REPORT ERROR
TRAP C1ERRRD
.WORD 323
.WORD ERR010
.WORD MSG003
ESCAPE TST ; AND ABORT TEST
TRAP C1ESCAPE
.WORD L10054-.
;
;1048: JSR PC.CLRDNI ; WRITE ONE TO CLEAR DNI
; ERRGR ?
; NO
; YES, REPORT ERROR
TRAP C1ERRRD
.WORD 324
.WORD ERR006
.WORD MSG003
ESCAPE TST ; AND ABORT TEST
TRAP C1ESCAPE
.WORD L10054.
;
;DO TEN LOOPS WITH DEST ADDR = MULTICAST ADDRESS
;
;1068: MOV #10.,R1 ; DO LOOP = TEN
MOV #MULTL,R2 ; R2 POINTS TO MULTICAST LIST
MOV #CRC22A,R3 ; R3 POINTS TO EXPECTED CRC TABLE
;
;SET UP RINGS FOR ONE BUFFER LOOPBACK
1108: MOV #TDRB1A,R5 ; DEFAULT ONE BUFFER TRANSMIT RING
JSR PC.LDTRB ; LOAD TRB
MOV #RDRB1A,R5 ; DEFAULT ONE BUFFER RECEIVE RING
JSR PC.LDRRB ; LOAD RRB
;
;SET UP BUFFERS AND START
MOV R2,R5 ; POINT TO DESTINATION ADDRESS
JSR PC.LDDEST ; LOAD DEST
JSR PC.SETBUF ; SET UP BUFFERS
MOV #START,BPCSR0 ; ISSUE START PORT COMMAND
JSR PC.CMKDNI ; DNI?
BCC 1208 ; YES
ERRHRD 325.,ERR012,MSG003 ; NO, REPORT ERROR
TRAP C1ERRRD
.WORD 325
.WORD ERR012
.WORD MSG003

```

[3]

7859	055534			ESCAPE	TST			; AND ABORT TEST		
	055534	104410							TRAP	C#ESCAPE
	055536	002252							.WORD	L10054..
7860										
7861	055540	004737	025546	120:	JSR	PC,CLRDN1		; WRITE ONE TO CLEAR DNI		
7862								; ERROR ?		
7863	055544	103006			BCC	130:		; NO		
7864	055546				ERRHRD	326..,ERR006,MSG003		; YES, REPORT ERROR		
	055547	104456							TRAP	C#ERRHRD
	055550	000506							.WORD	326
	055552	020202							.WORD	ERR006
	055554	017110							.WORD	MSG003
7865	055556				ESCAPE	TST		; AND ABORT TEST		
	055556	104410							TRAP	C#ESCAPE
	055560	002230							.WORD	L10054..
7866										
7867	055562	004737	025404	130:	JSR	PC,CHKTXI		; TXI ?		
7868	055566	103006			BCC	140:		; YES		
7869	055570				ERRHRD	327..,ERR013,MSG003		; NO, REPORT ERROR		
	055570	104456							TRAP	C#ERRHRD
	055572	000507							.WORD	327
	055574	020714							.WORD	ERR013
	055576	017110							.WORD	MSG003
7870	055600				ESCAPE	TST		; AND ABORT TEST		
	055600	104410							TRAP	C#ESCAPE
	055602	002206							.WORD	L10054..
7871										
7872	055604	004737	025730	140:	JSR	PC,CLRTXI		; WRITE ONE TO CLEAR TXI		
7873								; ERROR ?		
7874	055610	103006			BCC	150:		; NO		
7875	055612				ERRHRD	328..,ERR014,MSG003		; YES, REPORT ERROR		
	055612	104456							TRAP	C#ERRHRD
	055614	000510							.WORD	328
	055616	020745							.WORD	ERR014
	055620	017110							.WORD	MSG003
7876	055622				ESCAPE	TST		; AND ABORT TEST		
	055622	104410							TRAP	C#ESCAPE
	055624	002164							.WORD	L10054..
7877										
7878	055626	012705	002604	150:	MOV	#TDRB,R5		; CHECK TDRB OWNERSHIP		
7879	055632	004737	024676		JSR	PC,CHKOWN		; OWN = PORT DRIVER ?		
7880	055636	103006			BCC	160:		; YES		
7881	055640				ERRHRD	329..,ERR018		; NO, REPORT ERROR		
	055640	104456							TRAP	C#ERRHRD
	055642	000511							.WORD	329
	055644	021212							.WORD	ERR018
	055646	000000							.WORD	0
7882	055650				ESCAPE	TST		; AND ABORT TEST		
	055650	104410							TRAP	C#ESCAPE
	055652	002136							.WORD	L10054..
7883										
7884	055654	012705	014524	160:	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	170:		; NO		
7889	055676				ERRHRD	330..,ERR020,MSG005		; YES, REPORT ERROR		


```

7917                                     ;COMPARE RBUF WITH TBUF
7918 056042 012705 000070                210$: MOV      #56.,R5                   ; COMPARE 56 WORDS OF DATA
7919 056046 004737 026044                JSR      PC,CMPCAT                    ; DATA COMPARE ERROR ?
7920 056052 103006                        BCC      220$                          ; NO
7921 056054                                     ERRHRD  335.,ERR022,MSG007              ; YES, REPORT ERROR
                                           TRAP                                C$ERRHRD
                                           .WORD                               335
                                           .WORD                               ERR022
                                           .WORD                               MSG007
                                           ESCAPE  TST                          ; AND ABORT TEST
                                           TRAP                                C$ESCAPE
                                           .WORD                               L10054-.

7922 056064                                     ESCAPE  TST                          ; AND ABORT TEST
                                           TRAP                                C$ESCAPE
                                           .WORD                               L10054-.

7923                                     ;
7924 056070 010305                220$: MOV      R3,R5                   ; POINT TO EXPECTED CRC TABLE
7925 056072 004737 027176                JSR      PC,LDXCRC                    ; LOAD INTO XCRC TABLE
7926 056076 012705 007300                MOV      #RBUF+124.,R5                ; CHECK CRC
7927 056102 004737 026124                JSR      PC,CMPCRC                    ; ERRORS ?
7928 056106 103006                        BCC      230$                          ; NO
7929 056110                                     ERRHRD  336.,ERR023,MSG006              ; YES, REPORT ERROR
                                           TRAP                                C$ERRHRD
                                           .WORD                               336
                                           .WORD                               ERR023
                                           .WORD                               MSG006
                                           ESCAPE  TST                          ; AND ABORT TEST
                                           TRAP                                C$ESCAPE
                                           .WORD                               L10054-.

7930 056120                                     ESCAPE  TST                          ; AND ABORT TEST
                                           TRAP                                C$ESCAPE
                                           .WORD                               L10054-.

7931                                     ;
7932 056124 012777 000017 124074        230$: MOV      #STOP,#PCSR0              ; ISSUE STOP PORT COMMAND
7933 056132 004737 024574                JSR      PC,CHKDNI                    ; DNI ?
7934 056136 103006                        BCC      240$                          ; YES
7935 056140                                     ERRHRD  337.,ERR019,MSG003              ; NO, REPORT ERROR
                                           TRAP                                C$ERRHRD
                                           .WORD                               337
                                           .WORD                               ERR019
                                           .WORD                               MSG003
                                           ESCAPE  TST                          ; AND ABORT TEST
                                           TRAP                                C$ESCAPE
                                           .WORD                               L10054-.

7936 056150                                     ESCAPE  TST                          ; AND ABORT TEST
                                           TRAP                                C$ESCAPE
                                           .WORD                               L10054-.

7937                                     ;
7938 056154 004737 025546                240$: JSR      PC,CLRDN1                ; WRITE ONE TO CLEAR DNI
7939                                     ; ERROR ?
7940 056160 103006                        BCC      245$                          ; NO
7941 056162                                     ERRHRD  338.,ERR006,MSG003              ; YES, REPORT ERROR
                                           TRAP                                C$ERRHRD
                                           .WORD                               338
                                           .WORD                               ERR006
                                           .WORD                               MSG003
                                           ESCAPE  TST                          ; AND ABORT TEST
                                           TRAP                                C$ESCAPE
                                           .WORD                               L10054-.

7942 056172                                     ESCAPE  TST                          ; AND ABORT TEST
                                           TRAP                                C$ESCAPE
                                           .WORD                               L10054-.

7943                                     ;
7944 056176 062702 000006                245$: ADD      #6,R2                   ; UPDATE R2
7945 056202 062703 000004                ADD      #4,R3                       ; UPDATE R3
7946 056206 005301                        DEC      R1                           ; DONE TEN LOOPBACKS
7947 056210 001402                        BEQ      246$                          ; YES
7948 056212 000137 055456                JMP      110$                          ; NO
7949                                     ;

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7950                                     ; DO TEN LOOPS WITH DEST ADDRESS = COMPLEMENTED MULTICAST ADDRESS
7951                                     ;
7952                                     ;
7953 056216 012701 000012                246$: MOV    #10.,R1                ; DO LOOP = TEN
7954 056222 012702 014430                MOV    #MULTLC,R2                ; R2 POINTS TO COMPLEMENTED LIST
7955                                     ;
7956                                     ; SET UP RINGS FOR ONE BUFFER LOOPBACK
7957 056226 012705 013554                250$: MOV    #TDRB1A,R5            ; DEFAULT ONE BUFFER TRANSMIT RING
7958 056232 004737 027046                JSR    PC,LDTDRB                ; LOAD TDRB
7959 056236 012705 013354                MOV    #RDRB1A,R5            ; DEFAULT ONE BUFFER RECEIVE RING
7960 056242 004737 027010                JSR    PC,LDRDRB                ; LOAD RDRB
7961                                     ;
7962                                     ; SET UP BUFFERS AND START
7963 056246 010205                        MOV    R2,R5                    ; POINT TO COMPLEMENTED ADDRESS
7964 056250 004737 026714                JSR    PC,LDDDEST                ; LOAD DEST
7965 056254 004737 027342                JSR    PC,SETBUF                ; SET UP BUFFERS
7966 056260 012777 000004                MOV    #START,BPCSR0           ; ISSUE START PORT COMMAND
7967 056266 004737 024574                JSR    PC,CHKDNI                ; DNI?
7968 056272 103006                        BCC    260$                     ; YES
7969 056274                        ERRHRD 339.,ERR012,MSG003        ; NO, REPORT ERROR
                                           TRAP   C#ERRRD
                                           .WORD 339
                                           .WORD ERR012
                                           .WORD MSG003
7970 056304                        ESCAPE TST                        ; AND ABORT TEST
                                           TRAP   C#ESCAPE
                                           .WORD L10054-.
7971                                     ;
7972 056310 004737 025546                260$: JSR    PC,CLRDN1           ; WRITE ONE TO CLEAR DNI
7973                                     ; ERROR ?
7974 056314 103006                        BCC    270$                     ; NO
7975 056316                        ERRHRD 340.,ERR006,MSG003        ; YES, REPORT ERROR
                                           TRAP   C#ERRRD
                                           .WORD 340
                                           .WORD ERR006
                                           .WORD MSG003
7976 056326                        ESCAPE TST                        ; AND ABORT TEST
                                           TRAP   C#ESCAPE
                                           .WORD L10054-.
7977                                     ;
7978 056332 004737 025404                270$: JSR    PC,CHKTXI           ; TXI ?
7979 056336 103006                        BCC    280$                     ; YES
7980 056340                        ERRHRD 341.,ERR013,MSG003        ; NO, REPORT ERROR
                                           TRAP   C#ERRRD
                                           .WORD 341
                                           .WORD ERR013
                                           .WORD MSG003
7981 056350                        ESCAPE TST                        ; AND ABORT TEST
                                           TRAP   C#ESCAPE
                                           .WORD L10054-.
7982                                     ;
7983 056354 004737 025730                280$: JSR    PC,CLRTXI           ; WRITE ONE TO CLEAR TXI
7984                                     ; ERROR ?
7985 056360 103006                        BCC    290$                     ; NO
7986 056362                        ERRHRD 342.,ERR014,MSG003        ; YES, REPORT ERROR
                                           TRAP   C#ERRRD
                                           .WORD 342
  
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8016 056540 103006          BCC 355$          ; NO
8017 056542          ERRHRD 347.,ERR006,MSG003 ; YES, REPORT ERROR
      056542 104456          TRAP C$ERRHRD
      056544 060533          .WORD 347
      056546 020202          .WORD ERR006
      056550 017110          .WORD MSG003
8018 056552          ESCAPE TST          ; AND ABORT TEST
      056552 104410          TRAP C$ESCAPE
      056554 001234          .WORD L10054
8019
8020 056556 062702 000006    ;355$: ADD #6,R2          ; UPDATE R2
8021 056562 005301          DEC R1           ; DONE 10 LOOPBACKS
8022 056564 001220          BNE 250$        ; NO
8023
8024          ;REPEAT WITH COMPLEMENTED MULTICAST ADDRESS LIST
8025          ;
8026          ;WRITE MULTICAST ADDRESS LIST
8027 056566 012705 013164    340$: MOV #HTMULA,R5      ; DEFAULT WRITE MULTICAST ADDR FUNC
8028 056572 004737 026742    JSR PC,LDPCCB    ; LOAD FUNCTION -> PCBB
8029 056576 012705 014430    MOV #MULTLC,R5  ; LOAD LIST INTO UDBB
8030 056602 012700 000036    MOV #30.,R0     ; LOAD 30 ENTRIES
8031 056606 004737 027142    JSR PC,LDUDBB   ; MULTICAST LIST -> UDBB
8032 056612 012777 000002 123406 MOV #GETCMD,@PCSR0 ; ISSUE GET_CMD PORT COMMAND
8033 056620 004737 024574    JSR PC,CHKDNI  ; DNI ?
8034 056624 103006          BCC 350$        ; YES
8035 056626          ERRHRD 348.,ERR010,MSG003 ; NO, REPORT ERROR
      056626 104456          TRAP C$ERRHRD
      056630 000534          .WORD 348
      056632 020502          .WORD ERR010
      056634 017110          .WORD MSG003
8036 056636          ESCAPE TST          ; AND ABORT TEST
      056636 104410          TRAP C$ESCAPE
      056640 001150          .WORD L10054 .
8037
8038 056642 004737 025546    ;350$: JSR PC,CLR DNI ; WRITE ONE TO CLEAR DNI
8039
8040 056646 103006          BCC 355$        ; NO
8041 056650          ERRHRD 349.,ERR006,MSG003 ; YES, REPORT ERROR
      056650 104456          TRAP C$ERRHRD
      056652 000535          .WORD 349
      056654 020202          .WORD ERR006
      056656 017110          .WORD MSG003
8042 056660          ESCAPE TST          ; AND ABORT TEST
      056660 104410          TRAP C$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 PING
8054 056714 004737 027010    JSR PC,LDRDRB  ; LOAD RDRB
  
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8055
8056      ;SET UP BUFFERS AND START
8057 056720 010205      MOV      R2,R5      ; POINT TO DESTINATION ADDRESS
8058 056722 004737 G26714 JSR      PC,LDDEST  ; LOAD DEST
8059 056726 004737 027342 JSR      PC,SETBUF  ; SET UP BUFFERS
8060 056732 012777 000004 123266 MOV      @START,@PCSR0 ; ISSUE START PORT COMMAND
8061 056740 004737 024574 JSR      PC,CHKDNI  ; DNI?
8062 056744 103006      BCC      370$      ; YES
8063 056746      ERRHRD 350.,ERR012,MSG003 ; NO, REPORT ERROR
      TRAP      C$ERRHRD
      .WORD      350
      .WORD      ERR012
      .WORD      MSG003
      056746 104456
      056750 000536
      056752 020633
      056754 017110
8064 056756      ESCAPE TST      ; AND ABORT TEST
      TRAP      C$ESCAPE
      .WORD      L10054
      056756 104410
      056760 001030
8065
8066 056762 004737 025546      ;370$: JSR      PC,CLRDN1 ; WRITE ONE TO CLEAR DNI
8067      BCC      380$      ; ERROR ?
8068 056766 103006      BCC      380$      ; NO
8069 056770      ERRHRD 351.,ERRC06,MSG003 ; YES, REPORT ERROR
      TRAP      C$ERRHRD
      .WORD      351
      .WORD      ERR006
      .WORD      MSG003
      056770 104456
      056772 000537
      056774 020202
      056776 017110
8070 057000      ESCAPE TST      ; AND ABORT TEST
      TRAP      C$ESCAPE
      .WORD      L10054
      057000 104410
      057002 001006
8071
8072 057004 004737 025404      ;380$: JSR      PC,CHKTXI ; TXI ?
8073 057010 103006      BCC      390$      ; YES
8074 057012      ERRHRD 352.,ERR013,MSG003 ; NO, REPORT ERROR
      TRAP      C$ERRHRD
      .WORD      352
      .WORD      ERR013
      .WORD      MSG003
      057012 104456
      057014 000540
      057016 020714
      057020 017110
8075 057022      ESCAPE TST      ; AND ABORT TEST
      TRAP      C$ESCAPE
      .WORD      L10054
      057022 104410
      057024 000764
8076
8077 057026 004737 025730      ;390$: JSR      PC,CLRTXI ; WRITE ONE TO CLEAR TXI
8078      BCC      400$      ; ERROR ?
8079 057032 103006      BCC      400$      ; NO
8080 057034      ERRHRD 353.,ERR014,MSG003 ; YES, REPORT ERROR
      TRAP      C$ERRHRD
      .WORD      353
      .WORD      ERR014
      .WORD      MSG003
      057034 104456
      057036 000541
      057040 020745
      057042 017110
8081 057044      ESCAPE TST      ; AND ABORT TEST
      TRAP      C$ESCAPE
      .WORD      L10054
      057044 104410
      057046 000742
8082
8083 057050 012705 002604      ;400$: MOV      @TDRB,R5 ; CHECK TDRB OWNERSHIP
8084 057054 004737 G24676 JSR      PC,CHKOWN ; OWN = PORT DRIVER ?
8085 057060 103006      BCC      410$      ; YES
8086 057062      ERRHRD 354.,ERR018 ; NO, REPORT ERROR
      TRAP      C$ERRHRD
      057062 104456
  
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	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 XTDRB0 TABLE
8091	057106	012705	002604		MOV	@TDRB,R5		; CHECK TDRB
8092	057112	004737	025316		JSR	PC,CHKTDR		; ERPGNS ?
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	000544					.WORD	L10054
8113								
9114	057226	012705	014634	i 450:	MOV	@RDR14A,R5		; POINT TO EXPECTED RDRB

8115	057232	004737	027222		JSR	PC,LDXRDR		; LOAD INTO XRDRBO TABLE		
8116	057236	012705	002644		MOV	#RDRB,R5		; CHECK RDRB		
8117	057242	004737	025032		JSR	PC,CHKRDR		; ERRORS ?		
8118	057246	103006			BCC	460\$; NO		
8119	057250				ERRHRD	359.,ERR021,MSG006		; YES, REPORT ERROR		
	057250	104456							TRAP	C#ERHRD
	057252	000547							.WORD	359
	057254	021453							.WORD	ERR021
	057256	017356							.WORD	MSG006
8120	057260				ESCAPE	TST		; AND ABORT TEST		
	057260	104410							TRAP	C#ESCAPE
	057262	000526							.WORD	L10054
8121										
8122										
8123	057264	012705	000070							
8124	057270	004737	026044		460\$:	MOV	#56.,R5	; COMPARE 56 WORDS OF DATA		
8125	057274	103006				JSR	PC,CMPDAT	; DATA COMPARE ERROR ?		
8126	057276					BCC	470\$; NO		
	057276	104456				ERRHRD	360.,ERR022,MSG007	; YES, REPORT ERROR		
	057300	000550							TRAP	C#ERHRD
	057302	021534							.WORD	360
	057304	017520							.WORD	ERR022
8127	057306				ESCAPE	TST		; AND ABORT TEST		
	057306	104410							TRAP	C#ESCAPE
	057310	000500							.WORD	L10054-
8128										
8129	057312	010305			470\$:	MOV	R3,R5	; POINT TO EXPECTED CRC TABLE		
8130	057314	004737	027176			JSR	PC,LDXCRC	; LOAD INTO XCRC TABLE		
8131	057320	012705	007300			MOV	#RBUF+124.,R5	; CHECK CRC		
8132	057324	004737	026124			JSR	PC,CMPCRC	; ERRORS ?		
8133	057330	103006				BCC	480\$; NO		
8134	057332					ERRHRD	361.,ERR023,MSG008	; YES, REPORT ERROR		
	057332	104456							TRAP	C#ERHRD
	057334	000551							.WORD	361
	057336	021603							.WORD	ERR023
	057340	017552							.WORD	MSG008
8135	057342				ESCAPE	TST		; AND ABORT TEST		
	057342	104410							TRAP	C#ESCAPE
	057344	000444							.WORD	L10054-
8136										
8137	057346	012777	000017	122652	480\$:	MOV	#STOP,#PCSR0	; ISSUE STOP PORT COMMAND		
8138	057354	004737	024574			JSR	PC,CHKDNI	; DNI ?		
8139	057360	103006				BCC	490\$; YES		
8140	057362					ERRHRD	362.,ERR019,MSG003	; NO, REPORT ERROR		
	057362	104456							TRAP	C#ERHRD
	057364	000552							.WORD	362
	057366	021312							.WORD	ERR019
	057370	017110							.WORD	MSG003
8141	057372				ESCAPE	TST		; AND ABORT TEST		
	057372	104410							TRAP	C#ESCAPE
	057374	000414							.WORD	L10054-
8142										
8143	057376	004737	025546		490\$:	JSR	PC,CLRDN1	; WRITE ONE TO CLEAR DNI		
8144								; ERROR ?		
8145	057402	103006				BCC	495\$; NO		
8146	057404					ERRHRD	363.,ERR006,MSG003	; YES, REPORT ERROR		
	057404	104456							TRAP	C#ERHRD

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						; UPDATE R2
8150	057424	062703	000004	495:	ADD	#6,R2			; UPDATE R3
8151	057430	005301			ADD	#4,R3			; DONE TEN LOOPBACKS ?
8152	057432	001402			DEC	R1			YES
8153	057434	000137	056700		BEQ	496:			; NO
8154					JMP	360:			
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,LDDDEST			; 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								; 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								; 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 ?

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8214 057740 103006          BCC      580$      ; YES
8215 057742          ERRHRD  371.,ERR019,MSG003 ; NO, REPORT ERROR
      057742 104456          ;
      057744 000563          TRAP      C$ERRHRD
      057746 021312          .WORD    371
      057750 017110          .WORD    ERR019
      057752          .WORD    MSG003
8216 057752          ESCAPE  TST      ; AND ABORT TEST
      057752 104410          TRAP      C$ESCAPE
      057754 000034          .WORD    L10054
8217          ;
8218 057756 004737 025546 580$: JSR      PC.CLRDNI ; WRITE ONE TO CLEAR DNI
8219          ; ERROR ?
8220 057762 103006          BCC      590$      ; NO
8221 057764          ERRHRD  372.,ERR006,MSG003 ; YES, REPORT ERROR
      057764 104456          TRAP      C$ERRHRD
      057766 000564          .WORD    372
      057770 020202          .WORD    ERR006
      057772 017110          .WORD    MSG003
8222 057774          ESCAPE  TST      ; AND ABORT TEST
      057774 104410          TRAP      C$ESCAPE
      057776 000012          .WORD    L10054
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          ENDTST
      060010          L10054: TR. P   C$ETST
      060010 104401          ;
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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
:
:.....

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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

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BGNTST

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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

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

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ESCAPE TST ; AND ABORT TEST


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8313 060214 103006      BCC      704      ; NO
8314 060216      ERRHRD  378.,ERR006,MSG003 ; YES, REPORT ERROR
      060216 104456      TRAP      C1ERRRD
      060220 000572      .WORD    378
      060222 020202      .WORD    ERR006
      060224 017110      .WORD    MSG003
8315 060226      ESCAPE  TST      ; AND ABORT TEST
      060226 104410      TRAP      C1ESCAPE
      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 020742      JSR      PC,LDPCCB ; 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      C1ERRRD
      060274 000573      .WORD    379
      060276 020502      .WORD    ERR010
      060300 017110      .WORD    MSG003
8327 060302      ESCAPE  TST      ; AND ABORT TEST
      060302 104410      TRAP      C1ESCAPE
      060304 003104      .WORD    L10055-.

8328
8329 060306 004737 025546 804:  JSR      PC,CLRDN1 ; WRITE ONE TO CLEAR DNI
8330
8331 060312 103006      BCC      904      ; ERROR ?
8332 060314      ERRHRD  380.,ERR006,MSG003 ; NO
      060314 104456      ; YES, REPORT ERROR
      060316 000574      TRAP      C1ERRRD
      060320 020202      .WORD    380
      060322 017110      .WORD    ERR006
      060322 017110      .WORD    MSG003
8333 060324      ESCAPE  TST      ; AND ABORT TEST
      060324 104410      TRAP      C1ESCAPE
      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,LDPCCB ; 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      C1ERRRD
      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      1004: JSR      PC,CLRDN1      ; WRITE ONE TO CLEAR DNI
8351                                     ; ERROR ?
8352 060412 103006          BCC      1024      ; NO
8353 060414          ERRHRD 382.,ERR006,MSG003 ; YES, REPORT ERROR
      060414 104456          TRAP          C#ERRRD
      060416 000576          .WORD          382
      060420 020202          .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      1024: 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      1044      ; YES
8365 060470          ERRHRD 383.,ERR010,MSG003 ; NO, REPORT ERROR
      060470 104456          TRAP          C#ERRRD
      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      1044: JSR      PC,CLRDN1      ; WRITE ONE TO CLEAR DNI
8369                                     ; ERROR ?
8370 060510 103006          BCC      1104      ; NO
8371 060512          ERRHRD 384.,ERR006,MSG003 ; YES, REPORT ERROR
      060512 104456          TRAP          C#ERRRD
      060514 000600          .WORD          384
      060516 020202          .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      1104: 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,LDDDEST      ; LOAD DEST

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8385	060556	004737	027342		JSR	PC,SETBUF		; SET UP BUFFERS		
8386	060562	012777	000004	121436	MOV	#START,BPCSR0		; 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#ERRHRD
	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#ERRHRD
	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#ERRHRD
	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#ERRHRD
	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#ERRHRD
	060714	000605							.WORD	389
	060716	021212							.WORD	ERR018
	060720	000000							.WORD	0
8413	060722				ESCAPE	TST		; AND ABORT TEST		

	060722	104410					TRAP	C#ESCAPE
	060724	002464					WORD	L10055
8414				i				
8415	06072E	012705	014524	160:	MOV	#TDR14A,R5		: POINT TO EXPECTED TDRB
8416	060732	004737	027252		JSR	PC,LDX1DR		: LOAD INTO XTDRBC 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				i				
8423	060764	004737	025132	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				i				
8428	061006	004737	025662	180:	JSR	PC,CLRXXI		: WRITE ONE TO CLEAR RXI
8429								: ERROR ?
8430	061012	103006			BCC	190:		: NO
8431	061014				ERRHRD	392.,ERR016,MSG003		: YES, REPORT ERROR
	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				i				
8434	061030	012705	002644	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				i				
8440	061056	012705	014634	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		
	061100	104456					TRAP	C#ERRHRD
	061102	000612					.WORD	394
	061104	021453					.WORD	ERR021
	061106	017356					.WORD	MSG006
8446	061110			ESCAPE	TST	; AND ABORT TEST		
	061110	104410					TRAP	C#ESCAPE
	061112	002276					.WORD	L10055
8447								
8448								
8449	061114	012705	000070					
8450	061120	004737	026044	210#:	MOV #55.,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		
	061130	000613					TRAP	C#ERRHRD
	061132	021534					.WORD	395
	061134	017520					.WORD	ERR022
8453	061136			ESCAPE	TST	; AND ABORT TEST		
	061136	104410					TRAP	C#ESCAPE
	061140	002250					.WORD	L10055-
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		
	061164	104456					TRAP	C#ERRHRD
	061166	000614					.WORD	396
	061170	021603					.WORD	ERR023
	061172	017552					.WORD	MSG008
8461	061174			ESCAPE	TST	; AND ABORT TEST		
	061174	104410					TRAP	C#ESCAPE
	061176	002212					.WORD	L10055
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		
	061214	104456					TRAP	C#ERRHRD
	061216	000615					.WORD	397
	061220	021312					.WORD	ERR019
	061222	017110					.WORD	MSG003
8467	061224			ESCAPE	TST	; AND ABORT TEST		
	061224	104410					TRAP	C#ESCAPE
	061226	002162					.WORD	L10055
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		
	061236	104456					TRAP	C#ERRHRD
	061240	000616					.WORD	398
	061242	020202					.WORD	ERR006
	061244	017110					.WORD	MSG003
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	002034					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							
	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							
	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

; DESTINATION ADDRESS NOT = PHYSICAL ADDRESS

; SET UP RINGS FOR ONE BUFFER LOOPBACK

250\$: MOV #TDRB1A,R5 ; DEFAULT ONE BUFFER TRANSMIT RING
 JSR PC,LDTDRB ; LOAD TDRB
 MOV #RDRB1A,R5 ; DEFAULT ONE BUFFER RECEIVE RING
 JSR PC,LDRDRB ; LOAD RDRB

; SET UP BUFFERS AND START

MOV #ADR2LC,R5 ; POINT TO COMPLEMENTED ADDRESS
 JSR PC,LDDDEST ; LOAD DEST
 JSR PC,SETBUF ; SET UP BUFFERS
 MOV #START,PCSR0 ; ISSUE START PORT COMMAND
 JSR PC,CHKDNI ; DNI?
 BCC 260\$; YES
 ERRHRD 399.,ERR012,MSG003 ; NO, REPORT ERROR

TRAP C#ERRRD
 .WORD 399
 .WORD ERR012
 .WORD MSG003

ESCAPE TST ; AND ABORT TEST

TRAP C#ESCAPE
 .WORD L10055 .

260\$: JSR PC,CLRDN1 ; WRITE ONE TO CLEAR DNI
 ; ERROR ?
 BCC 270\$; NO
 ERRHRD 400.,ERR006,MSG003 ; YES, REPORT ERROR

TRAP C#ERRRD
 .WORD 400
 .WORD ERR006
 .WORD MSG003

ESCAPE TST ; AND ABORT TEST

TRAP C#ESCAPE
 .WORD L10055 .

270\$: JSR PC,CHKTXI ; TXI ?
 BCC 280\$; YES
 ERRHRD 401.,ERR013,MSG003 ; NO, REPORT ERROR

TRAP C#ERRRD
 .WORD 401
 .WORD ERR013
 .WORD MSG003

ESCAPE TST ; AND ABORT TEST

TRAP C#ESCAPE
 .WORD L10055 .

280\$: JSR PC,CLRTXI ; WRITE ONE TO CLEAR TXI
 ; ERROR ?
 BCC 290\$; NO
 ERRHRD 402.,ERR014,MSG003 ; YES, REPORT ERROR

TRAP C#ERRRD
 .WORD 402
 .WORD ERR014


```

      061416 01711C
8508 061420          ESCAPE TST          ; AND ABORT TEST          .WORD MSG003
      061420 104410          TRAP          C#ESCAPE
      061422 001766          .WORD          L10055 .

8509
8510 061424 012705 002604      ;290: MOV      #TDRB,R5          ; CHECK TDRB OWNERSHIP
8511 061430 004737 024676      JSR      PC,CHKOWN          ; OWN = PORT DRIVER ?
8512 061434 103006          BCC     300$              ; YES
8513 061436          ERRHRD 403.,ERR018      ; NO, REPORT ERROR
      061436 104456          TRAP          C#ERRHD
      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      ;300: MOV      #TDR14A,R5      ; POINT TO EXPECTED TDRB
8517 061456 004737 027252      JSR      PC,LDXTDR         ; LOAD INTO XTDRB0 TABLE
8518 061462 012705 002604      MOV      #TDRB,R5         ; CHECK TDRB
8519 061466 004737 025316      JSR      PC,CHKTDR         ; ERRORS ?
8520 061472 103006          BCC     310$              ; NO
8521 061474          ERRHRD 404.,ERR020,MSG005 ; YES, REPORT ERROR
      061474 104456          TRAP          C#ERRHD
      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      ;310: JSR      PC,CHKRXI      ; RXI ?
8525 061514 103006          BCC     320$              ; YES
8526 061516          ERRHRD 405.,ERR015,MSG003 ; NO, REPORT ERROR
      061516 104456          TRAP          C#ERRHD
      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      ;320: JSR      PC,CLRXXI      ; WRITE ONE TO CLEAR RXI
8530                                ; ERROR ?
8531                                BCC     330$              ; NO
8532 061536 103006          ERRHRD 406.,ERR016,MSG003 ; YES, REPORT ERROR
      061540 104456          TRAP          C#ERRHD
      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      ;330: MOV      #RDRB,R5          ; CHECK RDRB OWNERSHIP
8536 061560 004737 024676      JSR      PC,CHKOWN          ; OWN = PORT DRIVER ?
8537 061564 103006          BCC     340$              ; YES

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8538	061566			ERRHRD	407.,ERR017	:	NO, REPORT ERROR		
	061566	104456						TRAP	C#ERRHRD
	061570	000627						.WORD	407
	061572	021112						.WORD	ERR017
	061574	000000						.WORD	0
8539	061576			ESCAPE	TST	:	AND ABORT TEST		
	061576	104410						TRAP	C#ESCAPE
	061600	001610						.WORD	L10055 .
8540									
8541	061602	012705	014634		340\$: MOV		POINT TO EXPECTED RDRB		
8542	061606	004737	027222		JSR	PC,LDXRDR	LOAD INTO XRDRBO TABLE		
8543	061612	012705	002644		MOV	#RDRB,R5	CHECK RDRB		
8544	061616	004737	025032		JSR	PC,CHKRDR	ERRORS ?		
8545	061622	103006			BCC	350\$	NO		
8546	061624				ERRHRD	408.,ERR021,MSG006	YES, REPORT ERROR		
	061624	104456						TRAP	C#ERRHRD
	061626	000630						.WORD	408
	061630	021453						.WORD	ERR021
	061632	017356						.WORD	MSG006
8547	061634			ESCAPE	TST	:	AND ABORT TEST		
	061634	104410						TRAP	C#ESCAPE
	061636	001552						.WORD	L10055 .
8548									
8549									
8550	061640	012705	000070		350\$: MOV	#56.,R5	COMPARE 56 WORDS OF DATA		
8551	061644	004737	026044		JSR	PC,CMPDAT	DATA COMPARE ERROR ?		
8552	061650	103006			BCC	360\$	NO		
8553	061652				ERRHRD	409.,ERR022,MSG007	YES, REPORT ERROR		
	061652	104456						TRAP	C#ERRHRD
	061654	000631						.WORD	409
	061656	021537						.WORD	ERR022
	061660	017520						.WORD	MSG007
8554	061662			ESCAPE	TST	:	AND ABORT TEST		
	061662	104410						TRAP	C#ESCAPE
	061664	001524						.WORD	L10035 .
8555									
8556	061666	012705	015074		360\$: MOV	#CRC23B,R5	POINT TO EXPECTED CRC		
8557	061672	004737	027176		JSR	PC,LDXCRC	LOAD INTO XCRC TABLE		
8558	061676	012705	007300		MOV	#RBUF+124.,R5	CHECK CRC		
8559	061702	004737	026124		JSR	PC,CHPCRC	ERRORS ?		
8560	061706	103006			BCC	370\$	NO		
8561	061710				ERRHRD	410.,ERR023,MSG008	YES, REPORT ERROR		
	061710	104456						TRAP	C#ERRHRD
	061712	000632						.WORD	410
	061714	021603						.WORD	ERR023
	061716	017552						.WORD	MSG008
8562	061720			ESCAPE	TST	:	AND ABORT TEST		
	061720	104410						TRAP	C#ESCAPE
	061722	001466						.WORD	L10055 .
8563									
8564	061724	012777	000017	120274	370\$: MOV	#STOP,#PCSR0	ISSUE STOP PORT COMMAND		
8565	061732	004737	024574		JSR	PC,CHKDNI	DNI ?		
8566	061736	103006			BCC	380\$	YES		
8567	061740				ERRHRD	411.,ERR019,MSG003	NO, REPORT ERROR		
	061740	104456						TRAP	C#ERRHRD
	061742	000633						.WORD	411
	061744	021312						.WORD	ERR019

8604	062114	010205			MOV	R2,R5		; POINT TO DESTINATION ADDRESS			
8605	062116	004737	026714		JSR	PC,LDDDEST		; 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			
	062142	104456							TRAP	C#ERHRD	
	062144	000637							.WORD	415	
	062146	020633							.WORD	ERR012	
	062150	017110							.WORD	MSG003	
8611	062152				ESCAPE	TST		; AND ABORT TEST			
	062152	104410							TRAP	C#ESCAPE	
	062154	001234							.WORD	L10055	
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			
	062164	104456							TRAP	C#ERHRD	
	062166	000640							.WORD	416	
	062170	020202							.WORD	ERR006	
	062172	017110							.WORD	MSG003	
8617	062174				ESCAPE	TST		; AND ABORT TEST			
	062174	104410							TRAP	C#ESCAPE	
	062176	001212							.WORD	L10055-	
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			
	062206	104456							TRAP	C#ERHRD	
	062210	000641							.WORD	417	
	062212	020714							.WORD	ERR013	
	062214	017110							.WORD	MSG003	
8622	062216				ESCAPE	TST		; AND ABORT TEST			
	062216	104410							TRAP	C#ESCAPE	
	062220	001170							.WORD	L10055	
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			
	062230	104456							TRAP	C#ERHRD	
	062232	000642							.WORD	418	
	062234	020745							.WORD	ERR014	
	062236	017110							.WORD	MSG003	
8628	062240				ESCAPE	TST		; AND ABORT TEST			
	062240	104410							TRAP	C#ESCAPE	
	062242	001146							.WORD	L10055	
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			
	062256	104456							TRAP	C#ERHRD	
	062260	000643							.WORD	419	
	062262	021212							.WORD	ERR018	

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	MOV #TDR14A,R5	: POINT TO EXPECTED TDRB		
8637	062276	004737	027252	480\$:	JSR PC,LDXTDR	: LOAD INTO XTDRB0 TABLE		
8638	062302	012705	002604		MOV #TDRB,R5	: CHECK TDRB		
8639	062306	004737	025310		JSR PC,CHKTDR	: ERRORS ?		
8640	062312	103006			BCC 490\$: NO		
8641	062314				ERRHRD 420.,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	JSR PC,CHKRXI	: RXI ?		
8645	062334	103006		490\$:	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	JSR PC,CLRRXI	: WRITE ONE TO CLEAR RXI		
8650				500\$:		: 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	MOV #RDRB,R5	: CHECK RDRB OWNERSHIP		
8656	062400	004737	024676	510\$:	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	MOV #RDR14A,R5	: POINT TO EXPECTED RDRB		
8662	062426	004737	027222	520\$:	JSR PC,LDXRDR	: LOAD INTO XRDRB0 TABLE		
8663	062432	012705	002644		MOV #RDRB,R5	: CHECK RDRB		


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      062606 017110
8694 06261C          ESCAPE TST          ; AND ABORT TEST          .WORD MSG003
      06261C 104410
      062612 000576          ; TRAP C1ESCAPE
      ;
8695          ;
8696 062614 062702 000006          565:  ADD    #6,R2          ; UPDATE R2
8697 062620 062703 000004          ADD    #4,R3          ; UPDATE R3
8698 062624 005301          DEC    R1             ; DONE TEN LOOPBACKS
8699 062626 001402          BEQ   566:            ; YES
8700 062630 000137 062074          JMP   420:            ; NO
      ;
      ; DO TEN LOOPS WITH DEST ADDRESS - COMPLIMENTED MULTICAST ADDRESS
      ;
8705 062634 012701 000012          566:  MOV    #10.,R1     ; DO LOOP = TEN
8706 062640 012702 014430          MOV    #MUL.TLC,R2   ; R2 POINTS TO COMPLIMENTED LIST
8707 062644 012703 015024          MOV    #CRC228,R3    ; R3 POINTS TO CRC TABLE
      ;
      ; SET UP RINGS FOR ONE BUFFER LOOPBACK
8710 062650 012705 013554          570:  MOV    #TDRB1A,R5   ; DEFAULT ONE BUFFER TRANSMIT RING
8711 062654 004737 027046          JSR   PC,LDTRB        ; LOAD TDRB
8712 062660 012705 013354          MOV    #RDRB1A,R5    ; DEFAULT ONE BUFFER RECEIVE RING
8713 062664 004737 027010          JSR   PC,LCRDRB       ; LOAD RDRB
      ;
      ; SET UP BUFFERS AND START
8716 062670 010205          MOV    R2,P5          ; POINT TO COMPLEMENTED ADDRESS
8717 062672 004737 026714          JSR   PC,LDDDEST      ; LOAD DEST
8718 062676 004737 027342          JSR   PC,SETBUF       ; SET UP BUFFERS
8719 062702 012777 000004 117316  MOV    #START,BPCSR0  ; ISSUE START PORT COMMAND
8720 062710 004737 024574          JSR   PC,CHKDNI       ; DNI?
8721 062714 103006          BCC   580:            ; YES
8722 062716          ERRHRD 429.,ERR012,MSG003 ; NO, REPORT ERROR
      ;
      ; TRAP C1ERRRD 429
      ; .WORD ERR012
      ; .WORD MSG003
      ;
8723 062726          ESCAPE TST          ; AND ABORT TEST          .WORD C1ESCAPE
      062726 104410          ; TRAP L10055
      062730 000460          ; .WORD
      ;
8724          ;
8725 062732 004737 025546          580:  JSR   PC,CLRDN1      ; WRITE ONE TO CLEAR DNI
8726          ; ERROR ?
8727 062736 103006          BCC   590:            ; NO
8728 062740          ERRHRD 430.,ERR006,MSG003 ; YES, REPORT ERROR
      ;
      ; TRAP C1ERRRD 430
      ; .WORD ERR006
      ; .WORD MSG003
      ;
8729 062750          ESCAPE TST          ; AND ABORT TEST          .WORD C1ESCAPE
      062750 104410          ; TRAP L10055
      062752 000436          ; .WORD
      ;
8730          ;
8731 062754 004737 025404          590:  JSR   PC,CHKTXI     ; TXI ?
8732 062760 103006          BCC   600:            ; YES
8733 062762          ERRHRD 431.,ERR013,MSG003 ; NO, REPORT ERROR
      ;
      ; TRAP C1ERRRD 431
      ; .WORD

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8763	063132	103006		BCC	650:			; NO			
8764	063134			ERRHRD	436.	ERR016,MSG003		; YES, REPORT ERROR			
	063134	104456							TRAP	C#ERRHRD	
	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	560:	; YES			
8770	063162					ERRHRD	437.,ERR017	; NO, REPORT ERROR			
	063162	104456							TRAP	C#ERRHRD	
	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 FDRB			
8774	063202	004737	027222			JSR	PC,LDXRDR	; LOAD INTO XRDRBC 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#ERRHRD	
	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#ERRHRD	
	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#ERRHRD	
	063304	000670							.WORD	440	

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.SBTTL TEST 24: ENABLE ALL MULTICAST MODE TEST

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*****
:
: 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::
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 443.,ERR004,MSG003 ; NO, REPORT ERROR
: TRAP C$ERRRD
: .WORD 443
: .WORD ERR004
: .WORD MSG003
ESCAPE TST ; AND ABORT TEST
: TRAP C$ESCAPE
: .WORD L10056
:
: 20$:
JSR PC,CLRDN1 ; WRITE ONE TO CLEAR DNI
: ERROR ?
BCC 30$ ; NO
ERRHRD 444.,ERR006,MSG003 ; YES, REPORT ERROR
: TRAP C$ERRRD
: .WORD 444
: .WORD ERR006

```

```

      063464 017110
8864 063466          ESCAPE TST          ; AND ABORT TEST          .WORD MSG003
      063466 104410          TRAP          C$ESCAPE
      063470 001756          .WORD          L10056
8865
8866 063472 004737 026772          ; 301: JSR PC,LDPCSR          ; ADDRESS OF PCBB -> PCSR2!3
8867 063476 012777 000001 116522 MOV #GETPCB,BPCSR0          ; ISSUE GET_PCBB PORT COMMAND
8868 063504 004737 024574 JSR PC,CHKDNI          ; DNI?
8869 063510 103006 BCC 401          ; YES
8870 063512          ERRHRD 445.,ERR009,MSG003          ; NO, REPORT ERROR
      063512 104456          TRAP          C$ERHRD
      063514 000675          .WORD          445
      063516 020416          .WORD          ERR009
      063520 017110          .WORD          MSG003
8871 063522          ESCAPE TST          ; AND ABORT TEST          TRAP          C$ESCAPE
      063522 104410          .WORD          L10056
      063524 001722
8872
8873 063526 004737 025546          ; 401: JSR PC,CLRDN1          ; WRITE ONE TO CLEAR DNI
8874 BCC 501          ; ERROR ?
8875 063532 103006 ERRHRD 446.,ERR006,MSG003          ; NO
8876 063534          ; YES, REPORT ERROR          TRAP          C$ERHRD
      063534 104456          .WORD          446
      063536 000676          .WORD          ERR006
      063540 020202          .WORD          MSG003
      063542 017110
8877 063544          ESCAPE TST          ; AND ABORT TEST          TRAP          C$ESCAPE
      063544 104410          .WORD          L10056-.
      063546 001700
8878
8879          ; WRITE MODE REGISTER = INTERNAL LOOPBACK
8880          ; AND ENABLE ALL MULTICAST MODE
8881
8882 063550 012705 013244          ; 501: MOV #WTHMODE,R5          ; DEFAULT WRITE MODE FUNCTION
8883 063554 004737 026742 JSR PC,LDPCCB          ; LOAD FUNCTION -> PCBB
8884 063560 013737 015120 002266 MOV MODE24,PCBB+2          ; MODE = INTL LOOPBACK AND ENAL
8885 063566 012777 000002 116432 MOV #GETCMD,BPCSR0          ; ISSUE GET_CMD PORT COMMAND
8886 063574 004737 024574 JSR PC,CHKDNI          ; DNI ?
8887 063600 103006 BCC 601          ; YES
8888 063602          ERRHRD 447.,ERR010,MSG003          ; NO, REPORT ERROR          TRAP          C$ERHRD
      063602 104456          .WORD          447
      063604 000677          .WORD          ERR010
      063606 020502          .WORD          MSG003
      063610 017110
8889 063612          ESCAPE TST          ; AND ABORT TEST          TRAP          C$ESCAPE
      063612 104410          .WORD          L10056-.
      063614 001632
8890
8891 063616 004737 025546          ; 601: JSR PC,CLRDN1          ; WRITE ONE TO CLEAR DNI
8892 BCC 701          ; ERROR ?
8893 063622 103006 ERRHRD 448.,ERR006,MSG003          ; NO
8894 063624          ; YES, REPORT ERROR          TRAP          C$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							
8899	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		
	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		
	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		
	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		

```

064014 104410
064016 001430
;
;WRITE MULTICAST ADDRESS LIST
1024: MOV #1TMULA,R5 ; DEFAULT WRITE MULTICAST ADDR FUNC
      JSR PC,LDPCCB ; LOAD FUNCTION -> PCBB
      MOV #MULTL,R5 ; LOAD LIST INTO UDBB
      MOV #30.,R0 ; LOAD 30 ENTRIES
      JSR PC,LDUDBB ; MULTICAST LIST -> UDBB
      MOV #GETCMD,@PCSR0 ; ISSUE GET_CMD PORT COMMAND
      JSR PC,CHKDNI ; DNI ?
      BCC 1044 ; YES
      ERRHRU 453.,ERR010,MSG003 ; NO. REPORT ERROR
;
; AND ABORT TEST
TRAP C#ERHRD
.WORD 453
.WORD ERR010
.WORD MSG003
ESCAPE TST ; AND ABORT TEST
TRAP C#ESCAPE
.WORD L10055
;
;
1044: JSR PC,CLRDN1 ; WRITE ONE TO CLEAR DNI
; ERROR ?
; NO
; YES, REPORT ERROR
TRAP C#ERHRD
.WORD 454
.WORD ERR006
.WORD MSG003
ESCAPE TST ; AND ABORT TEST
TRAP C#ESCAPE
.WORD L10056
;
;DO TEN LOOPS WITH DEST ADDR = MULTICAST ADDRESS
;
1064: MOV #10.,R1 ; DO LOOP = TEN
      MOV #MULTL,R2 ; R2 POINTS TO MULTICAST LIST
      MOV #CRC22A,R3 ; R3 POINTS TO EXPECTED CRC TABLE
;
;SET UP RINGS FOR ONE BUFFER LOOPBACK
1104: MOV #TORB1A,R5 ; DEFAULT ONE BUFFER TRANSMIT RING
      JSR PC,LDTDRB ; LOAD TDRB
      MOV #RDRB1A,R5 ; DEFAULT ONE BUFFER RECEIVE RING
      JSR PC,LDRDRB ; LOAD RDRB
;
;SET UP BUFFERS AND START
MOV R2,R5 ; POINT TO DESTINATION ADDRESS
JSR PC,LDDDEST ; LOAD DEST
JSR PC,SETBUF ; SET UP BUFFERS
MOV #START,@PCSR0 ; ISSUE START PORT COMMAND
JSR PC,CHKDNI ; DNI?
BCC 1204 ; YES
ERRHRD 455.,ERR012,MSG003 ; NO. REPORT ERROR
TRAP C#ERHRD
.WORD 455
.WORD ERR012
.WORD MSG003

```

116154

116034

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,CLRDNI		; 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#ERRHRD
	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#ERRHRD
	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#ERRHRD
	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#ERRHRD
	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 XTDRB0 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$: MOV    #56.,R5                ; COMPARE 56 WORDS OF DATA
9028 064522 064737 026044          JSR    PC,CMPCDAT           ; DATA COMPARE ERROR ?
9029 064526 103006                  BCC    220$                ; NO
9030 064530                               ERRHRD 465.,ERR022,MSG007    ; YES, REPORT ERROR
                                TRAP    C$ERHRD
                                .WORD   465
                                .WORD   ERR022
                                .WORD   MSG007
9030 064530 104456
9030 064532 000721
9030 064534 021534
9030 064536 017520
9031 064540                               ESCAPE TST                ; AND ABORT TEST
                                TRAP    C$ESCAPE
                                .WORD   L10056 .
9031 064540 104410
9031 064542 000704
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$ERHRD
                                .WORD   466
                                .WORD   ERR023
                                .WORD   MSG008
9038 064564 104456
9038 064566 000722
9038 064570 021603
9038 064572 017552
9039 064574                               ESCAPE TST                ; AND ABORT TEST
                                TRAP    C$ESCAPE
                                .WORD   L10056 .
9039 064574 104410
9039 064576 000650
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$ERHRD
                                .WORD   467
                                .WORD   ERR019
                                .WORD   MSG003
9044 064614 104456
9044 064616 000723
9044 064620 021312
9044 064622 017110
9045 064624                               ESCAPE TST                ; AND ABORT TEST
                                TRAP    C$ESCAPE
                                .WORD   L10056 .
9045 064624 104410
9045 064626 000620
9046                                     ;
9047 064630 004737 025546          ;240$: JSR    PC,CLRDN1      ; WRITE ONE TO CLEAR DNI
9048                                     ; ERROR ?
9049 064634 103006                  BCC    245$                ; NO
9050 064636                               ERRHRD 468.,ERR006,MSG003    ; YES, REPORT ERROR
                                TRAP    C$ERHRD
                                .WORD   468
                                .WORD   ERR006
                                .WORD   MSG003
9050 064636 104456
9050 064640 000724
9050 064642 020202
9050 064644 017110
9051 064646                               ESCAPE TST                ; AND ABORT TEST
                                TRAP    C$ESCAPE
                                .WORD   L10056 .
9051 064646 104410
9051 064650 000576
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 COMPLIMENTED ADDRESS
9074 064730 004737 026714 JSR PC,LDDDEST ; LOAD DEST
9075 064734 004737 027342 JSR PC,SETBUF ; SET UP BUFFERS
9076 064740 012777 000004 115260 MOV #START,SPCSRO ; 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
          TRAP C$ERHRD
          .WORD 469
          .WORD ERR012
          .WORD MSG003
9080 064764 ESCAPE TST ; AND ABORT TEST
          TRAP C$ESCAPE
          .WORD L10056
          064764 104410
          064766 000460
9081
9082 064770 004737 025546 260$: JSR PC,CLRDN1 ; WRITE ONE TO CLEAR DNI
9083 ; ERROR ?
9084 064774 103006 BCC 270$ ; NO
9085 064776 ERRHRD 470.,ERR006,MSG003 ; YES, REPORT ERROR
          TRAP C$ERHRD
          .WORD 470
          .WORD ERR006
          .WORD MSG003
9086 065006 ESCAPE TST ; AND ABORT TEST
          TRAP C$ESCAPE
          .WORD L10056
          065006 104410
          065010 000436
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
          TRAP C$ERHRD
          .WORD 471
          .WORD ERR013
          .WORD MSG003
9091 065030 ESCAPE TST ; AND ABORT TEST
          TRAP C$ESCAPE
          .WORD L10056
          065030 104410
          065032 000414
9092
9093 065034 004737 025730 280$: JSR PC,CLRTXI ; WRITE ONE TO CLEAR TXI
9094 ; ERROR ?
9095 065040 103006 BCC 290$ ; NO
9096 065042 ERRHRD 472.,ERR014,MSG003 ; YES, REPORT ERROR
          TRAP C$ERHRD
          065042 104456
    
```

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 TEST 24: ENABLE ALL MULTICAST MODE TEST

SEQ 273

	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					ERRMRD	473.,ERR018	; NO, REPORT ERROR
	065070	104456					TRAP	C#ERRMRD
	065072	000731					.WORD	473
	065074	021212					.WORD	ERR018
	065076	000000					.WORD	0
9103	065100			ESCAPE	TST			; AND ABORT TEST
	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 XTDRRO 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					ERRMRD	474.,ERR020,MSG005	; YES, REPORT ERROR
	065126	104456					TRAP	C#ERRMRD
	065130	000732					.WORD	474
	065132	021372					.WORD	ERR020
	065134	017214					.WORD	MSG005
9111	065136			ESCAPE	TST			; AND ABORT TEST
	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					ERRMRD	475.,ERR015,MSG003	; NO, REPORT ERROR
	065150	104456					TRAP	C#ERRMRD
	065152	000733					.WORD	475
	065154	021013					.WORD	ERR015
	065156	017110					.WORD	MSG003
9116	065160			ESCAPE	TST			; AND ABORT TEST
	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					ERRMRD	476.,ERR016,MSG003	; YES, REPORT ERROR
	065172	104456					TRAP	C#ERRMRD
	065174	000734					.WORD	476
	065176	021044					.WORD	ERR016
	065200	017110					.WORD	MSG003
9122	065202			ESCAPE	TST			; AND ABORT TEST
	065202	104410					TRAP	C#ESCAPE
	065204	000242					.WORD	L10056
9123								
9124	065206	012705	002644	i	440:	MOV	#RDRB,R5	; CHECK RDRB OWNERSHIP


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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 065410 103006 ; ERROR ?
9161 065412 104456 BCC 495: ; NO
9162 065414 000742 ERHRD 482.,ERR006,MSG003 ; YES, REPORT ERROR
065416 020202
065420 017110
9163 065422 ESCAPE TST ; AND ABORT TEST
065422 104410 TRAP C#ERHRD
065424 000022 .WORD 482
. WORD ERR006
. WORD MSG003
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
065472 104456
065474 000743
065476 02C102
065500 017110
065502
065502 104410
065504 00146c
065506 004737 025546
065512 103006
065514
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,BPCSR0 ; YES, RESET DEUNA
JSR PC,CHKDNI ; DNI ?
BCC 204 ; YES
ERRHRD 483.,ERR004,MSG003 ; NO, REPORT ERROR

TRAP C\$ERHRD
.WORD 483
.WORD ERR004
.WORD MSG003

ESCAPE TST ; AND ABORT TEST

TRAP C\$ESCAPE
.WORD L1C057-

204: JSR PC,CLRDN1 ; WRITE ONE TO CLEAR DNI
; ERROR ?
BCC 304 ; NO
ERRHRD 484.,ERR006,MSG003 ; YES, REPORT ERROR

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,BPCSR0          ; 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          TRAP C$ERRRD
      065550 104456          .WORD 485
      065552 000745          .WORD ERR009
      065554 020416          .WORD MSG003
      065556 017110
9227 065560          ESCAPE TST          ; AND ABORT TEST          TRAP C$ESCAPE
      065560 104410          .WORD L10057 .
      065562 001404
9228
9229 065564 004737 025546          ; 40$: JSR PC,CLRDNI          ; WRITE ONE TO CLEAR DNI
9230          ; BCC 50$          ; ERROR ?
9231 065570 103006          ; ERRHRD 486.,ERR006,MSG003          ; NO
9232 065572          ; YES, REPORT ERROR          TRAP C$ERRRD
      065572 104456          .WORD 486
      065574 000746          .WORD ERR006
      065576 020202          .WORD MSG003
      065600 017110
9233 065602          ESCAPE TST          ; AND ABORT TEST          TRAP C$ESCAPE
      065602 104410          .WORD L10057-.
      065604 001362
9234
9235          ; WRITE MODE REGISTER = INTERNAL LOOPBACK AND PROM MODE
9236 065606 012705 013244          ; 50$: MOV #WTHODE,R5          ; DEFAULT WRITE MODE FUNCTION
9237 065612 004737 026742          ; JSR PC,LDPCCB          ; LOAD FUNCTION -> PCBB
9238 065616 012777 000002 114402 ; MOV #GETCMD,BPCSR0          ; ISSUE GET_CMD PORT COMMAND
9239 065624 004737 024574          ; JSR PC,CHKDNI          ; DNI ?
9240 065630 103006          ; BCC 60$          ; YES
9241 065632          ERRHRD 487.,ERR010,MSG003          ; NO, REPORT ERROR          TRAP C$ERRRD
      065632 104456          .WORD 487
      065634 000747          .WORD ERR010
      065636 020502          .WORD MSG003
      065640 017110
9242 065642          ESCAPE TST          ; AND ABORT TEST          TRAP C$ESCAPE
      065642 104410          .WORD L10057-.
      065644 001322
9243
9244 065646 004737 025546          ; 60$: JSR PC,CLRDNI          ; WRITE ONE TO CLEAR DNI
9245          ; BCC 70$          ; ERROR ?
9246 065652 103006          ; ERRHRD 488.,ERR006,MSG003          ; NO
9247 065654          ; YES, REPORT ERROR          TRAP C$ERRRD
      065654 104456          .WORD 488
      065656 000750          .WORD ERR006
      065660 020202          .WORD MSG003
      065662 017110
9248 065664          ESCAPE TST          ; AND ABORT TEST          TRAP C$ESCAPE
      065664 104410          .WORD L10057-.
      065666 001300
9249
9250          ; WRITE RING FORMAT

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9251 065670 012705 013204          70$:  MOV    #WTRNGS,R5          ; DEFAULT WRITE RING FORMAT FUNCTION
9252 065674 004737 026742          JSR    PC,LDPCCB          ; LOAD FUNCTION -> PCBB
9253 065700 012705 013324          MOV    #RFRMT,R5         ; DEFAULT RING FORMAT
9254 065704 012700 000006          MOV    #6,R0             ; FORMAT = SIX WORDS
9255 065710 004737 027142          JSR    PC,LDUDBB         ; LOAD RING FORMAT > UDBB
9256 065714 012777 000302          MOV    #GETCMD,@PCSP0    ; ISSUE GET_CMD PORT COMMAND
9257 065722 004737 024574          JSR    PC,CHKDNI         ; DNI ?
9258 065726 103006                   BCC    80$               ; YES
9259 065730                   ERRHRD 489.,ERR010,MSG003 ; NO, REPORT ERROR
                                TRAP    C$ERRRD
                                .WORD   489
                                .WORD   ERR010
                                .WORD   MSG003
9260 065740                   ESCAPE TST                ; AND ABORT TEST
                                TRAP    C$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 103006                   ERRHRD 490.,ERR006,MSG003 ; NO
9265 065752 104456                   ; YES, REPORT ERROR
                                TRAP    C$ERRRD
                                .WORD   490
                                .WORD   ERR006
                                .WORD   MSG003
9266 065762 104410                   ESCAPE TST                ; AND ABORT TEST
                                TRAP    C$ESCAPE
                                .WORD   L10057
9267 065764 001202                   ;
9268 065766 012705 013144          ;WRITE PHYSICAL ADDRESS
9269 065772 004737 026742          90$:  MOV    #WTPHYA,R5     ; DEFAULT WRITE PHYSICAL ADDR FUNC
9270 065776 012777 000002          JSR    PC,LDPCCB         ; LOAD FUNCTION > PCBB
9271 066004 004737 024574          MOV    #GETCMD,@PCSP0    ; ISSUE GET_CMD PORT COMMAND
9272 066010 103006                   JSR    PC,CHKDNI         ; DNI ?
9273 066012 104456                   BCC    100$              ; YES
9274 066014 000753                   ERRHRD 491.,ERR010,MSG003 ; NO, REPORT ERROR
                                TRAP    C$ERRRD
                                .WORD   491
                                .WORD   ERR010
                                .WORD   MSG003
9275 066022 104410                   ESCAPE TST                ; AND ABORT TEST
                                TRAP    C$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                   ; YES, REPORT ERROR
                                TRAP    C$ERRRD
                                .WORD   492
                                .WORD   ERR006
                                .WORD   MSG003
9281 066042 017110                   ESCAPE TST                ; AND ABORT TEST
                                TRAP    C$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,R1	:	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	0C5070	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	000C04	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#ERRHRD
	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	0C1034							.WORD	L10057.
9298										
9299	066134	004737	025546		1204:	JSR	PC,CLRDN1	:	WRITE ONE TO CLEAR DNI	
9300								:	ERROR ?	
9301	066140	103006			BCC	1304	:	NO		
9302	066142				ERRHRD	494.,ERR006,MSG003	:	YES, REPORT ERROR		
	066142	104456							TRAP	C#ERRHRD
	066144	000756							.WORD	494
	066146	020202							.WORD	ERR006
	066150	017110							.WORD	MSG003
9303	066152				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#ERRHRD
	066166	000757							.WORD	495
	066170	020714							.WORD	ERR013
	066172	017110							.WORD	MSG003
9308	066174				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								:	ERROR ?	
9312	066204	103006			BCC	1504	:	NO		
9313	066206				ERRHRD	496.,ERR014,MSG003	:	YES, REPORT ERROR		
	066206	104456							TRAP	C#ERRHRD
	066210	000760							.WORD	496
	066212	020745							.WORD	ERR014
	066214	017110							.WORD	MSG003
9314	066216				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$ERHRD
                                .WORD   498
                                .WORD   ERR019
                                .WORD   MSG003
9327 066266              ESCAPE TST              ; AND ABORT TEST
                                TRAP    C$ESCAPE
                                .WORD   L10057
9328 066276              ESCAPE TST              ; AND ABORT TEST
                                TRAP    C$ESCAPE
                                .WORD   L10057
9329 066302 004737 025546      170$:  JSR    PC,CLRDN1     ; WRITE ONE TO CLEAR DNI
9330 066302 004737 025546      BCC    180$            ; ERROR ?
9331 066306 103006              ERRHRD 499.,ERR006,MSG003 ; NO
9332 066306 103006              ERRHRD 499.,ERR006,MSG003 ; YES, REPORT ERROR
                                TRAP    C$ERHRD
                                .WORD   499
                                .WORD   ERR006
                                .WORD   MSG003
9333 066310              ESCAPE TST              ; AND ABORT TEST
                                TRAP    C$ESCAPE
                                .WORD   L10057
9334 066320              ESCAPE TST              ; AND ABORT TEST
                                TRAP    C$ESCAPE
                                .WORD   L10057
9335 066322 000644              ;
9336 066322 000644              ;PART 2 - VERIFY PAD RUNT PACKET MODE
9337 066322 000644              ;
9338 066322 000644              ;WRITE MODE REGISTER = INTERNAL LOOPBACK , PROM
9339 066322 000644              ; AND PAD RUNT PACKET MODE
9340 066322 000644              ;
9341 066324 012705 013244      180$:  MOV    #WTMODE,R5     ; DEFAULT WRITE MODE FUNCTION
9342 066330 004737 026742      ISR    PC,LDPCCB      ; LOAD FUNCTION -> PCBB
9343 066334 013737 015122 002266 MOV    MODE25,PCBB+2  ; PROM, TPAD AND INTL MODE
9344 066342 012777 000002 113656 MOV    #GETCMD,$PCSR0 ; ISSUE GET_CMD PORT COMMAND
9345 066350 004737 024574      JSR    PC,CHKDNI       ; DNI ?
9346 066354 103006              BCC    190$            ; YES
9347 066356              ERRHRD 500.,ERR010,MSG003 ; NO, REPORT ERROR
                                TRAP    C$ERHRD
                                .WORD   500
                                .WORD   ERR010
                                .WORD   MSG003
9348 066366              ESCAPE TST              ; AND ABORT TEST
                                TRAP    C$ESCAPE
                                .WORD   L10057
9349 066370 000576              ;

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9350 066372 004737 025546      1904:  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
9355                                ; SET UP RINGS FOR ONE BUFFER LOOPBACK (RUNT PACKET)
9356                                ;
200$:  MOV      @TDRB1C,R5      ; DEFAULT BUFFER = RUNT PACKET
9357 066414 012705 013654      JSR      PC,LDTRB            ; LOAD TDRB
9358 066420 004737 027046      JSR      PC,LDTRB            ; LOAD TDRB
9359 066424 012705 013354      MOV      @RDRB1A,R5         ; DEFAULT ONE BUFFER RECEIVE RING
9360 066430 004737 027010      JSR      PC,LDRDRB          ; LOAD RDRB
9361                                ; SET UP BUFFERS AND START
9362                                ;
9363 066434 012705 013146      MOV      @WTPHYA+2,R5       ; POINT TO DESTINATION ADDRESS
9364 066440 004737 026714      JSR      PC,LDDEST          ; LOAD DEST
9365 066444 004737 027342      JSR      PC,SETBUF          ; SET UP BUFFERS
9366 066450 012777 000004      MOV      @START,@PCSR0      ; ISSUE START PORT COMMAND
9367 066456 004737 024574      JSR      PC,CHKDNI          ; DNI?
9368 066462 103006              BCC      210$                ; YES
9369 066464                        ERRHRD   502.,ERR012,MSG003    ; NO, REPORT ERROR
                                TRAP      C$ERHRD
                                .WORD     502
                                .WORD     ERR012
                                .WORD     MSG003
9370 066474                        ESCAPE   TST                  ; AND ABORT TEST
                                TRAP      C$ESCAPE
                                .WORD     L10057
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$ERHRD
                                .WORD     503
                                .WORD     ERR006
                                .WORD     MSG003
9376 066516                        ESCAPE   TST                  ; AND ABORT TEST
                                TRAP      C$ESCAPE
                                .WORD     L10057
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$ERHRD
                                .WORD     504
                                .WORD     ERR013
                                .WORD     MSG003
9381 066540                        ESCAPE   TST                  ; AND ABORT TEST
                                TRAP      C$ESCAPE
                                .WORD     L10057
9382                                ;

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113550

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9383	066544	004737	025730	230:	JSR	PC,CLRTXI	; WRITE ONE TO CLEAR TXI		
9384							; ERROR ?		
9385	066550	103006			BCC	240:	; NO		
9386	066552				ERRHRD	505.,ERR014,MSG003	; YES, REPORT ERROR		
	066552	104456						TRAP	C#ERHRD
	066554	000771						.WORD	505
	066556	020745						.WORD	ERR014
	066560	017110						.WORD	MSG003
9387	066562				ESCAPE	TST	; AND ABORT TEST		
	066562	104410						TRAP	C#ESCAPE
	066564	000402						.WORD	L10057 .
9388				i					
9389	066566	012705	002604	240:	MOV	#TDRB,R5	; CHECK TDRB OWNERSHIP		
9390	066572	004737	024676		JSR	%C,CHKOWN	; OWN = PORT DRIVER ?		
9391	066576	103006			BCC	250:	; YES		
9392	066600				ERRHRD	506.,ERR018	; NO, REPORT ERROR		
	066600	104456						TRAP	C#ERHRD
	066602	000772						.WORD	506
	066604	021212						.WORD	ERR018
	066606	000000						.WORD	0
9393	066610				ESCAPE	TST	; AND ABORT TEST		
	066610	104410						TRAP	C#ESCAPE
	066612	000354						.WORD	L10057-.
9394				i					
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:	; NO		
9400	066636				ERRHRD	507.,ERR020,MSG005	; YES, REPORT ERROR		
	066636	104456						TRAP	C#ERHRD
	066640	07773						.WORD	507
	066642	021372						.WORD	ERR020
	066644	017214						.WORD	MSG005
9401	066646				ESCAPE	TST	; AND ABORT TEST		
	066646	104410						TRAP	C#ESCAPE
	066650	000316						.WORD	L10057 .
9402				i					
9403	066652	004737	025132	260:	JSR	PC,CHKRXI	; RXI ?		
9404	066656	103006			BCC	270:	; YES		
9405	066660				ERRHRD	508.,ERR015,MSG003	; NO, REPORT ERROR		
	066660	104456						TRAP	C#ERHRD
	066662	000774						.WORD	508
	066664	021013						.WORD	ERR015
	066666	017110						.WORD	MSG003
9406	066670				ESCAPE	TST	; AND ABORT TEST		
	066670	104410						TRAP	C#ESCAPE
	066672	000274						.WORD	L10057 .
9407				i					
9408	066674	004737	025662	270:	JSR	PC,CLRRXI	; WRITE ONE TO CLEAR RXI		
9409							; ERROR ?		
9410	066700	103006			BCC	280:	; NO		
9411	066702				ERRHRD	509.,ERR016,MSG003	; YES, REPORT ERROR		
	066702	104456						TRAP	C#ERHRD
	066704	000775						.WORD	509
	066706	021044						.WORD	ERR016
	066710	017110						.WORD	MSG003

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9412 066712          ESCAPE TST          ; AND ABORT TEST          TRAP C$ESCAPE
      066712 104410          .WORD L10057 .
      066714 000252
9413
9414 066716 012705 002644 ; 280$: MOV #RDRB,R5          ; CHECK RDRB OWNERSHIP
9415 066722 004737 024676 JSR PC,CHKOWN          ; OWN = PORT DRIVER ?
9416 066726 103C06 BCC 290$              ; YES
9417 066730 ERRHRD 510.,ERR017 ; NO, REPORT ERROR
      066730 104456          TRAP C$ERRHRD
      066732 00 776          .WORD 510
      066734 021112          .WORD ERR017
      066736 000000          .WORD 0
9418 066740          ESCAPE TST          ; AND ABORT TEST          TRAP C$ESCAPE
      066740 104410          .WORD L10057 .
      066742 000224
9419
9420 066744 012705 014634 ; 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$ERRHRD
      066770 000777          .WORD 511
      066772 021453          .WORD ERR021
      066774 017356          .WORD MSG006
9426 066776          ESCAPE TST          ; AND ABORT TEST          TRAP C$ESCAPE
      066776 104410          .WORD L10057-.
      067000 000166
9427
9428
9429 067002 012705 000027 ; 300$: MOV #23.,R5          ; COMPARE 23 WORDS OF DATA
9430 067006 004737 026044 JSR PC,CHPDAT          ; DATA COMPARE ERROR ?
9431 067012 103006 BCC 310$              ; NO
9432 067014 ERRHRD 512.,ERR022,MSG007 ; YES, REPORT ERROR
      067014 104456          TRAP C$ERRHRD
      067016 001000          .WORD 512
      067020 021534          .WORD ERR022
      067022 017520          .WORD MSG007
9433 067024          ESCAPE TST          ; AND ABORT TEST          TRAP C$ESCAPE
      067024 104410          .WORD L10057 .
      067026 000140
9434
9435
9436 067030 012705 000001 ; 310$: MOV #1.,R5          ; COMPARE 1 WORD OF DATA PADDING
9437 067034 004737 026254 JSR PC,CHPRT          ; DATA COMPARE ERROR ?
9438 067040 103006 BCC 320$              ; NO
9439 067042 ERRHRD 513.,ERR041,MSG007 ; YES, REPORT ERROR
      067042 104456          TRAP C$ERRHRD
      067044 001001          .WORD 513
      067046 023550          .WORD ERR041
      067050 017520          .WORD MSG007
9440 067052          ESCAPE TST          ; AND ABORT TEST          TRAP C$ESCAPE
      067052 10441C          .WORD L10057 .
      067054 000112
9441
9442 067056 012705 015100 ; 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$ERHRD
                                .WORD   514
                                .WORD   ERR023
                                .WORD   MSG008
9448 067110              ESCAPE TST          ; AND ABORT TEST
                                TRAP    C$ESCAPE
                                .WORD   L10057
9449 067114 012777 000017 113104 330$: MOV    #STOP,SPCSRO  ; ISSUE STOP PORT COMMAND
9450 067122 004737 024574      JSR    PC,CHKDNI     ; DNI ?
9451 067126 103006              BCC    340$          ; YES
9452 067130              ERRHRD 515.,ERR019,MSG003 ; NO, REPORT ERROR
                                TRAP    C$ERHRD
                                .WORD   515
                                .WORD   ERR019
                                .WORD   MSG003
9453 067130 104456              ESCAPE TST          ; AND ABORT TEST
                                TRAP    C$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              ERRHRD 516.,ERR006,MSG003 ; NO
9458 067152 104456              BCC    350$          ; YES, REPORT ERROR
9459 067154 001004              ERRHRD 516.,ERR006,MSG003 ; YES, REPORT ERROR
                                TRAP    C$ERHRD
                                .WORD   516
                                .WORD   ERR006
                                .WORD   MSG003
9460 067162              ESCAPE TST          ; AND ABORT TEST
                                TRAP    C$ESCAPE
                                .WORD   L10057
9461 067166 000002              ENDTST
9462 067166              L10057: TRAP    C$ETST
067166 104401

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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
*****

```

BGNTST

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JSR PC,TINIT ; IS A DEVICE RESET NEEDED?
BCC 30$ ; NO
MOV #RSET,SPCSRO ; YES, RESET DEUNA
JSR PC,CHKDNI ; DNI ?
BCC 20$ ; YES
ERRHRD 517.,ERR004,MSG003 ; NO, REPORT ERROR

```

```

TRAP C$ERHRD
.WORD 517
.WORD ERR004
.WORD MSG003

```

ESCAPE TST ; AND ABORT TEST

```

TRAP C$ESCAPE
.WORD L10060

```

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20$: JSR PC,CLRDN1 ; WRITE ONE TO CLEAR DNI
      ; ERROR ?
      ; NO
      ; YES, REPORT ERROR
ERRHRD 518.,ERR006,MSG003

```

```

TRAP C$ERHRD
.WORD 518
.WORD ERR006
.WORD MSG003

```

ESCAPE TST ; AND ABORT TEST

```

067170
067170
067170 004737 027446
067174 103025
067176 012777 000040 113022
067204 004737 024574
067210 103006
067212 104456
067214 001005
067216 020102
067220 017110
067222
067222 104410
067224 001254
067226 004737 025546
067232 103006
067234 104456
067236 001006
067240 020202
067242 017110
067244

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067244 104410
067246 001232
9510
9511 067250 004737 026772 112744 ; 301: JSR PC,LDPCSR ; ADDRESS OF PCBB -> PCSR2:3
9512 067254 012777 000001 ; MOV @GETPCB,BPCSR0 ; ISSUE GET_PCBB PORT COMMAND
9513 067262 004737 024574 ; JSR PC,CHKDNI ; DNI?
9514 067266 103006 ; BCC 401 ; YES
9515 067270 ; ERRHRD 519.,ERR009,MSG003 ; NO, REPORT ERROR
067270 104456 ; TRAP C1ERRRD
067272 001007 ; .WORD 519
067274 020416 ; .WORD ERR009
067276 017110 ; .WORD MSG003
9516 067300 ; ESCAPE TST ; AND ABORT TEST
067300 104410 ; TRAP C1ESCAPE
067302 001176 ; .WORD L10060
9517
9518 067304 004737 025546 ; 401: JSR PC,CLRDNI ; WRITE ONE TO CLEAR DNI
9519 ; BCC 501 ; ERROR ?
9520 067310 103006 ; ERRHRD 520.,ERR006,MSG003 ; NO
9521 067312 104456 ; .WORD 520
067314 001010 ; .WORD ERR006
067316 020202 ; .WORD MSG003
067320 017110 ; ESCAPE TST ; AND ABORT TEST
9522 067322 ; TRAP C1ERRRD
067322 104410 ; .WORD 520
067324 001154 ; .WORD ERR006
9523 ; .WORD MSG003
9524 ; ;WRITE MODE REGISTER = INTERNAL LOOPBACK AND HALF DUPLEX MODE
9525 067326 012705 013244 ; 501: MOV @WTHODE,RS ; 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,BPCSR0 ; ISSUE GET_CMD PORT COMMAND
9529 067352 004737 024574 ; JSR PC,CHKDNI ; DNI ?
9530 067356 103006 ; BCC 601 ; YES
9531 067360 ; ERRHRD 521.,ERR010,MSG003 ; NO, REPORT ERROR
067360 104456 ; TRAP C1ERRRD
067362 001011 ; .WORD 521
067364 020502 ; .WORD ERR010
067366 017110 ; .WORD MSG003
9532 067370 ; ESCAPE TST ; AND ABORT TEST
067370 104410 ; TRAP C1ESCAPE
067372 001106 ; .WORD L10060
9533
9534 067374 004737 025546 ; 601: JSR PC,CLRDNI ; WRITE ONE TO CLEAR DNI
9535 ; BCC 701 ; ERROR ?
9536 067400 103006 ; ERRHRD 522.,ERR006,MSG003 ; NO
9537 067402 104456 ; .WORD 522
067404 001012 ; .WORD ERR006
067406 020202 ; .WORD MSG003
067410 017110 ; ESCAPE TST ; AND ABORT TEST
9538 067412 ; TRAP C1ERRRD
067412 104410 ; .WORD 522
067414 001064 ; .WORD ERR006
9539 ; .WORD MSG003
9540 ; ;WRITE RING FORMAT

```


9541	067416	012705	013204	701:	MOV	@WTRNGS,R5	:	DEFAULT WRITE RING FORMAT FUNCTION				
9542	067422	004737	026742		JSR	PC,LDPCCB	:	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	112556	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	C1ERRHRD		
	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							:	ERROR ?				
9554	067476	103006			BCC	901	:	NO				
9555	067500				ERRHRD	524.,ERR006,MSG003	:	YES, REPORT ERROR				
	067500	104456							TRAP	C1ERRHRD		
	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												
9559	067514	012705	013144	901:	MOV	@WTRNGS,R5	:	DEFAULT WRITE PHYSICAL ADDR FUNC				
9560	067520	004737	026742		JSR	PC,LDPCCB	:	LOAD FUNCTION -> PCBB				
9561							:	POINT TO PHYSICAL ADDRESS				
9562	067524	012703	014320		MOV	@ADR21,R3	:	POINT TO PCBB + 2				
9563	067530	012704	002266		MOV	@PCBB+2,R4	:	LOAD ADDRESS				
9564	067534	012324			MOV	(R3),,(R4).	:					
9565	067536	012324			MOV	(R3),,(R4).	:					
9566	067540	012324			MOV	(R3),,(R4).	:					
9567	067542	012777	000002	112456	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	C1ERRHRD		
	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							:	ERROR ?				
9575	067576	103006			BCC	1101	:	NO				
9576	067600				ERRHRD	526.,ERR006,MSG003	:	YES, REPORT ERROR				
	067600	104456							TRAP	C1ERRHRD		
	067602	001016							.WORD	526		
	067604	020202							.WORD	ERR006		

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	1101: 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 1201		: 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	1201: JSR PC,CLRDN1		: WRITE ONE TO CLEAR DNI		
9596						: ERROR ?		
9597	067704	103006		BCC 1301		: 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	1301: JSR PC,CHKTXI		: TXI ?		
9602	067726	103006		BCC 1401		: 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	1401: JSR PC,CLRTXI		: WRITE ONE TO CLEAR TXI		
9607						: ERROR ?		
9608	067750	103006		BCC 1501		: NO		
9609	067752			ERRHRD 530.,ERR014,MSG003		: YES, REPORT ERROR		
	067752	104456					TRAP	C#ERRRD
	067754	001022					.WORD	530
	067756	020745					.WORD	ERR014

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          067760 017110
9610 067762          ESCAPE TST          ; AND ABORT TEST          .WORD MSG003
      067762 104410          TRAP C#ESCAPE
      067764 000514          .WORD L10060 .

9611
9612 067766 012705 002604          ; 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          TRAP L#ERRRD
      070000 104456          .WORD 531
      070002 001023          .WORD ERR018
      070004 021212          .WORD 0
      070006 000000          ESCAPE TST          ; AND ABORT TEST          TRAP C#ESCAPE
9616 070010          .WORD L10060 .
      070010 104410
      070012 000466

9617
9618 070014 012705 014524          ; 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          TRAP C#ERRRD
      070036 104456          .WORD 532
      070040 001024          .WORD ERR020
      070042 021372          .WORD MSG005
      070044 017214          ESCAPE TST          ; AND ABORT TEST          TRAP C#ESCAPE
9624 070046          .WORD L10060-.
      070046 104410
      070050 000430

9625
9626 070052 004737 027302          ; 170#: JSR PC,NORXI          ; RXI ?
9627 070056 103006          BCC 180#          ; NO
9628 070060          ERRHRD 533.,ERR046          ; YES, REPORT ERROR          TRAP C#ERRRD
      070060 104456          .WORD 533
      070062 001025          .WORD ERR046
      070064 024064          .WORD 0
      070066 000000          ESCAPE TST          ; AND ABORT TEST          TRAP C#ESCAPE
9629 070070          .WORD L10060-.
      070070 104410
      070072 000406

9630
9631 070074 012777 000017 112124          ; 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          TRAP C#ERRRD
      070110 104456          .WORD 534
      070112 001026          .WORD ERR019
      070114 021312          .WORD MSG003
      070116 017110          ESCAPE TST          ; AND ABORT TEST          TRAP C#ESCAPE
9635 070120          .WORD L10060-.
      070120 104410
      070122 000356

9636
9637 070124 004737 025546          ; 240#: JSR PC,CLR0NI          ; WRITE ONE TO CLEAR DNI
9638          BCC 250#          ; ERROR ?
9639 C70130 103006          ; NO

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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$: MOV    #TDRB1A,R5      ; DEFAULT ONE BUFFER TRANSMIT RING
9647 070152 004737 027046      JSR    PC,LDRB      ; LOAD TDRB
9648 070156 012705 013354      MOV    #RDRB1A,R5   ; DEFAULT ONE BUFFER RECEIVE RING
9649 070162 004737 027010      JSR    PC,LDRDRB   ; LOAD RDRB
9650
9651                ; SET UP BUFFERS AND START
9652 070166 012705 014326      MOV    #ADR21C,R5   ; POINT TO COMPLEMENTED ADDRESS
9653 070172 004737 026714      JSR    PC,LDEST    ; LOAD DEST
9654 070176 004737 027342      JSR    PC,SETBUF   ; SET UP BUFFERS
9655 070202 012777 000004 112016 MOV    #START,@PCSR0 ; ISSUE START PORT COMMAND
9656 070210 004737 024574      JSR    PC,CHKDNI   ; DNI?
9657 070214 103006          BCC    260$        ; YES
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
    
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F


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          070452 104410
          070454 000024
9702
9703 070456 004737 025546      ; 3304: JSR PC,CLRDNI      ; WRITE ONE TO CLEAR DMI
9704                                     ; ERROR ?
9705 070462 103006             ; BCC 3404
9706 070464 ERRHRD 544.,ERR006,MSG003 ; YES. REPORT ERROR
          070464 104456
          070466 001040
          070470 020202
          070472 017110
9707 070474 ESCAPE TST          ; AND ABORT TEST
          070474 104410
          070476 000002
9708
9709 070500      ; 3404:
9710 070500      ENDTST
          070500
          070500 104401
                                     L10060: TRAP C#ETST
                                     .WORD
                                     .WORD
                                     .WORD
                                     TRAP C#ERRRD
                                     .WORD 544
                                     .WORD ERR006
                                     .WORD MSG003
                                     TRAP C#ESCAPE
                                     .WORD L10060
                                     TRAP C#ESCAPE
                                     .WORD L10060
```

.SBTTL TEST 27: SIMULTANEOUS OPERATIONS TEST

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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
:
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9734 070502          BGNTST
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
:                                     TRAP   C$ERRHRD
:                                     .WORD  545
:                                     .WORD  ERR004
:                                     .WORD  MSG003
9741 070534          ESCAPE  TST          ; AND ABORT TEST
:                                     TRAP   C$ESCAPE
:                                     .WORD  L10061
9742
9743 070540 004737 025546          ; 20$: JSR    PC,CLRDN1     ; WRITE ONE TO CLEAR DNI
9744          BCC    30$              ; ERROR ?
9745 070544 103006          ERRHRD  546.,ERR006,MSG003 ; YES, REPORT ERROR
:                                     TRAP   C$ERRHRD
:                                     .WORD  546
:                                     .WORD  ERR006
:                                     .WORD  MSG003
9746 070546          ESCAPE  TST          ; AND ABORT TEST
:                                     TRAP   C$ESCAPE
:                                     .WORD  L10061
9747 070556          ; 30$: JSR    PC,LDPCSR     ; ADDRESS OF PCBB -> PCSR2!3
9748          MOV    @GETPCB,@PCSP0 ; ISSUE GET_PCBB PORT COMMAND
9749 070562 004737 026772          JSR    PC,CHKDNI        ; DNI?
9750 070566 012777 000001 111432  BCC    40$              ; YES
9751 070574 004737 024574          ERRHRD  547.,ERR009,MSG003 ; NO, REPORT ERROR
9752 070600 103006          ;                                     TRAP   C$ERRHRD
9753 070602          ;                                     .WORD  547
:                                     .WORD  104456
:                                     .WORD  001043
  
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070606 020416 .WORD ERR009
070610 017110 .WORD MSGC03
9754 070612 ESCAPE TST ; AND ABORT TEST TRAP C#ESCAPE
070612 104410 .WORD L10061 .
070614 001414
9755 ;
9756 070616 004737 025546 40#: JSR PC,CLRDN1 ; 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,CLRDN1 ; 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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070766 020502 .WORD ERRO10
070770 017110 .WORD MSG003
9787 070772 ESCAPE TST ; AND ABORT TEST
070772 104410 TRAP C#ESCAPE
070774 001234 .WORD L10061
9788
9789 070776 004737 025546 ; 80$: JSR PC,CLRDNI ; WRITE ONE TO CLEAR DNI
9790 ; ERROR ?
9791 071002 103006 BCC 90$ ; NO
9792 071004 ERRHRD 552.,ERR006,MSG003 ; YES, REPORT ERROR
071004 104456 TRAP C#ERHRD
071006 001050 .WORD 552
071010 020202 .WORD ERR006
071012 017110 .WORD MSG003
9793 071014 ESCAPE TST ; AND ABORT TEST
071014 104410 TRAP C#ESCAPE
071016 001212 .WORD L10061
9794
9795 ;WRITE PHYSICAL ADDRESS
9796 071020 012705 013144 90$: MOV #WTPHYA,R5 ; DEFAULT WRITE PHYSICAL ADDR FUNC
9797 071024 004737 026742 JSR PC,LDPCCB ; LOAD FUNCTION -> PCBB
9798 071030 012777 000002 111170 MOV #GETCMD,SPCSRO ; ISSUE GET_CMD PORT COMMAND
9799 071036 004737 024574 JSR PC,CHKDNI ; DNI ?
9800 071042 103006 BCC 100$ ; YES
9801 071044 ERRHRD 553.,ERR010,MSG003 ; NO, REPORT ERROR
071044 104456 TRAP C#ERHRD
071046 001051 .WORD 553
071050 020502 .WORD ERRO10
071052 017110 .WORD MSG003
9802 071054 ESCAPE TST ; AND ABORT TEST
071054 104410 TRAP C#ESCAPE
071056 001152 .WORD L10061
9803
9804 071060 004737 025546 ; 100$: JSR PC,CLRDNI ; WRITE ONE TO CLEAR DNI
9805 ; ERROR ?
9806 071064 103006 BCC 110$ ; NO
9807 071066 ERRHRD 554.,ERR006,MSG003 ; YES, REPORT ERROR
071066 104456 TRAP C#ERHRD
071070 001052 .WORD 554
071072 020202 .WORD ERR006
071074 017110 .WORD MSG003
9808 071076 ESCAPE TST ; AND ABORT TEST
071076 104410 TRAP C#ESCAPE
071100 001130 .WORD L10061
9809
9810 ;SET UP RINGS FOR THREE BUFFERS CHAINED LOOPBACK
9811 071102 012705 013754 110$: MOV #TDRB3A,R5 ; DEFAULT THREE BUFFER TRANSMIT RING
9812 071106 004737 027046 JSR PC,LDTDRB ; LOAD TDRB
9813 071112 012705 013514 MOV #RDRB3A,R5 ; DEFAULT THREE BUFFER RECEIVE RING
9814 071116 004737 027010 JSR PC,LDRDRB ; LOAD RDRB
9815
9816 ;SET UP BUFFERS
9817 071122 012705 002266 MOV #PCBB+2,R5 ; POINT TO DESTINATION ADDRESS
9818 071126 004737 026714 JSR PC,LDDEST ; LOAD DEST
9819 071132 004737 027342 JSR PC,SETBUF ; SET UP BUFFERS
9820
9821 ;SET UP READ COUNTERS FUNCTION

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9822 071136 012705 013214          MOV  #RDCNT,R5          ; DEFAULT READ COUNTERS FUNCTION
9823 071142 004737 026742          JSR  PC,LDPCCB         ; LOAD FUNCTION -> PCBB
9824
9825                                ;ISSUE START
9826 071146 012777 000004 111052  MOV  #START,#PCSR0     ; ISSUE START PORT COMMAND
9827 071154 004737 024574          JSR  PC,CHKDNI         ; DNI?
9828 071160 103006          BCC  115$              ; YES
9829 071162          ERRHRD 555.,ERR012,MSG003 ; NO, REPORT ERROR
      071162 104456          TRAP C$ERRRD
      071164 001053          .WORD 555
      071166 020633          .WORD ERR012
      071170 017110          .WORD MSG003
9830 071172          ESCAPE TST          ; AND ABORT TEST
      071172 104410          TRAP C$ESCAPE
      071174 0C1034          .WORD L10061
9831
9832 071176 004737 025546 115$: JSR  PC,CLRDN1         ; WRITE ONE TO CLEAR DNI
9833                                ; ERROR ?
9834 071202 103006          BCC  120$              ; NO
9835 071204          ERRHRD 556.,ERR006,MSG003 ; YES, REPORT ERROR
      071204 104456          TRAP C$ERRRD
      071206 001054          .WORD 556
      071210 020202          .WORD ERR006
      071212 017110          .WORD MSG003
9836 071214          ESCAPE TST          ; AND ABORT TEST
      071214 104410          TRAP C$ESCAPE
      071216 001012          .WORD L10061
9837
9838                                ;ISSUE GET COMMAND FOR READ COUNTERS FUNCTION
9839 071220 012777 000002 111000 120$: MOV  #GETCMD,#PCSR0     ; ISSUE GET_CMD PORT COMMAND
9840 071226 004737 024574          JSR  PC,CHKDNI         ; DNI ?
9841 07123: 103006          BCC  125$              ; YES
9842 07123:          ERRHRD 557.,ERR044,MSG003 ; NO, REPORT ERROR
      07123: 104456          TRAP C$ERRRD
      07:236 001055          .WORD 557
      071240 023706          .WORD ERR044
      071242 017110          .WORD MSG003
9843 071244          ESCAPE TST          ; AND ABORT TEST
      071244 104410          TRAP C$ESCAPE
      071246 000762          .WORD L10061-
9844
9845 071250 004737 025546 125$: JSR  PC,CLRDN1         ; WRITE ONE TO CLEAR DNI
9846                                ; ERROR ?
9847 071254 103006          BCC  130$              ; NO
9848 071256          ERRHRD 558.,ERR006,MSG003 ; YES, REPORT ERROR
      071256 104456          TRAP C$ERRRD
      071260 001056          .WORD 558
      071262 020202          .WORD ERR006
      071264 017110          .WORD MSG003
9849 071266          ESCAPE TST          ; AND ABORT TEST
      071266 104410          TRAP C$ESCAPE
      071270 000740          .WORD L10061-
9850
9851 071272 004737 025404 130$: JSR  PC,CHKTXI         ; TXI ?
9852 071276 103006          BCC  140$              ; YES
9853 071300          ERRHRD 559.,ERR013,MSG003 ; NO, REPORT ERROR
      071300 104456          TRAP C$ERRRD

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071302 001057 .WORD 559
071304 020714 .WORD ERR013
071306 017110 .WORD MSG003
9854 071310 ESCAPE TST ; AND ABORT TEST TRAP C$ESCAPE
071310 104410 .WORD L10051
071312 000716
9855 ;
9856 071314 004737 025730 140$: JSR PC,CLRTXI ; WRITE ONE TO CLEAR TXI
9857 ; ERROR ?
9858 071320 103006 BCC 150$ ; NO
9859 071322 ERRHRD 560.,ERR014,MSG003 ; YES, REPORT ERROR TRAP C$ERRHRD
071322 104456 .WORD 560
071324 001060 .WORD ERR014
071326 020745 .WORD MSG003
071330 017110
9860 071332 ESCAPE TST ; AND ABORT TEST TRAP C$ESCAPE
071332 104410 .WORD L10061
071334 000674
9861 ;CHECK FIRST RING ENTRY
9862 071336 012705 002604 150$: MOV #TDRB,R5 ; CHECK TDRB OWNERSHIP
9863 071342 004737 024676 JSR PC,CHKOWN ; OWN = PORT DRIVER ?
9864 071346 103006 BCC 160$ ; YES
9865 071350 ERRHRD 561.,ERR027 ; NO, REPORT ERROR TRAP C$ERRHRD
071350 104456 .WORD 561
071352 001061 .WORD ERR027
071354 021773 .WORD 0
071356 000000
9866 071360 ESCAPE TST ; AND ABORT TEST TRAP C$ESCAPE
071360 104410 .WORD L10061
071362 000646
9867 ;
9868 071364 012705 014564 160$: MOV #TDR20A,R5 ; POINT TO EXPECTED TDRB
9869 071370 004737 027252 JSR PC,LDXTDR ; LOAD INTO XTDRBO TABLE
9870 071374 012705 002604 MOV #TDRB,R5 ; CHECK TDRB
9871 071400 004737 025316 JSR PC,CHKTDR ; ERRORS ?
9872 071404 103006 BCC 162$ ; NO
9873 071406 ERRHRD 562.,ERR033,MSG005 ; YES, REPORT ERROR TRAP C$ERRHRD
071406 104456 .WORD 562
071410 001062 .WORD ERR033
071412 022633 .WORD MSG005
071414 017214
9874 071416 ESCAPE TST ; AND ABORT TEST TRAP C$ESCAPE
071416 104410 .WORD L10061
071420 000610
9875 ;CHECK SECOND RING ENTRY
9876 071422 012705 002614 162$: MOV #TDRB+8.,R5 ; CHECK TDRB OWNERSHIP
9877 071426 004737 024676 JSR PC,CHKOWN ; OWN = PORT DRIVER ?
9878 071432 103006 BCC 164$ ; YES
9879 071434 ERRHRD 563.,ERR028 ; NO, REPORT ERROR TRAP C$ERRHRD
071434 104456 .WORD 563
071436 001063 .WORD ERR028
071440 022100 .WORD 0
071442 000000
9880 071444 ESCAPE TST ; AND ABORT TEST TRAP C$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 XTDRBO 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		
	071472	104456							TRAP	C\$ERHRD
	071474	001064							.WORD	564
	071476	022722							.WORD	ERR034
	071500	017214							.WORD	MSG005
9888	071502				ESCAPE	TST	:	AND ABORT TEST		
	071502	104410							TRAP	C\$ESCAPE
	071504	000524							.WORD	L10061
9889										
9890	071506	012705	002624		166\$:	MOV	#TDRB+16.,R5	:	CHECK TDRB OWNERSHIP	
9891	071512	004737	024676		JSR	PC,CHKOWN	:	OWN = PORT DRIVER ?		
9892	071516	103006			BCC	168\$:	YES		
9893	071520				ERRHRD	565.,ERR029	:	NO, REPORT ERROR		
	071520	104456							TRAP	C\$ERHRD
	071522	001065							.WORD	565
	071524	022206							.WORD	ERR029
	071526	000000							.WORD	0
9894	071530				ESCAPE	TST	:	AND ABORT TEST		
	071530	104410							TRAP	C\$ESCAPE
	071532	000476							.WORD	L10061
9895										
9896	071534	012705	014604		168\$:	MOV	#TDR20C,R5	:	POINT TO EXPECTED TDRB	
9897	071540	004737	027252		JSR	PC,LDXTDR	:	LOAD INTO XTDRBO 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		
	071556	104456							TRAP	C\$ERHRD
	071560	001066							.WORD	566
	071562	023012							.WORD	ERR035
	071564	017214							.WORD	MSG005
9902	071566				ESCAPE	TST	:	AND ABORT TEST		
	071566	104410							TRAP	C\$ESCAPE
	071570	000440							.WORD	L10061
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		
	071600	104456							TRAP	C\$ERHRD
	071602	001067							.WORD	567
	071604	021013							.WORD	ERR015
	071606	017110							.WORD	MSG003
9907	071610				ESCAPE	TST	:	AND ABORT TEST		
	071610	104410							TRAP	C\$ESCAPE
	071612	000416							.WORD	L10061-
9908										
9909	071614	004737	025662		180\$:	JSR	PC,CLRRXI	:	WRITE ONE TO CLEAR RXI	
9910										
9911	071620	103006			BCC	190\$:	NO		
9912	071622				ERRHRD	568.,ERR016,MSG003	:	YES, REPORT ERROR		
	071622	104456							TRAP	C\$ERHRD
	071624	001070							.WORD	568

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	190:	MOV	#RDRB,R5	; CHECK RDRB OWNERSHIP
9916	071642	004737	024676		JSR	PC,CHKOWN	; OWN = PORT DRIVER ?
9917	071646	103006			BCC	200:	; 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				i			
9921	071664	012705	014674	200:	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	202:	; 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				i			
9929	071722	012705	002654	202:	MOV	#RDRB+8.,R5	; CHECK RDRB OWNERSHIP
9930	071726	004737	024676		JSR	PC,CHKOWN	; OWN = PORT DRIVER ?
9931	071732	103006			BCC	204:	; 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				i			
9935	071750	012705	014704	204:	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	206:	; 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										
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
	072020	104456								TRAP
	072022	001075								.WORD
	072024	022526								.WORD
	072026	000000								.WORD
						ESCAPE	TST			: AND ABORT TEST
9947	072030									TRAP
	072030	104410								.WORD
	072032	000176								C#ESCAPE
										L10061..
9948										
9949	072034	012705	014714		208:	MOV	#RDR20C,R5			: POINT TO EXPECTED RDRB
9950	072040	004737	027222			JSR	PC,LDXRDR			: LOAD INTO XRDRB0 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
	072056	104456								TRAP
	072060	001076								.WORD
	072062	023256								.WORD
	072064	017356								.WORD
						ESCAPE	TST			: AND ABORT TEST
9955	072066									TRAP
	072066	104410								.WORD
	072070	000140								C#ESCAPE
										L10061..
9956										
9957										
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
	072104	104456								TRAP
	072106	001077								.WORD
	072110	021534								.WORD
	072112	017520								.WORD
						ESCAPE	TST			: AND ABORT TEST
9962	072114									TRAP
	072114	104410								.WORD
	072116	000112								C#ESCAPE
										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
	072142	104456								TRAP
	072144	001100								.WORD
	072146	021603								.WORD
	072150	017552								.WORD
						ESCAPE	TST			: AND ABORT TEST
9970	072152									TRAP
	072152	104410								.WORD
	072154	000054								C#ESCAPE
										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

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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      ; 2401: JSR      PC,CLRDNI      ; WRITE ONE TO CLEAR DNI
9979
9980 072212 103006          BCC      2501          ; 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          ; 2501:
9984 072230          ENDTST
      072230 104401
                                     L10061:
                                     TRAP      C#ETST

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TRAP      C#ERRRD
WORD      577
WORD      ERR019
WORD      MSG003
TRAP      C#ESCAPE
WORD      L10061
TRAP      C#ERRRD
WORD      578
WORD      ERR006
WORD      MSG003
TRAP      C#ESCAPE
WORD      L10061
TRAP      C#ETST

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9996
9997
9998
9999
10000
10001
10002
10003
10004
10005
10006
10007
10008
10009
10010
10011
10012
10013
10014
10015
10016
10017
10018
10019
10020
10021
10022
10023
10024

072232
072232
072232 005737 015230
072236 001002
072240
072240 104432
072242 000710
072244 004737 027446
072250 103025
072252 012777 000040 107746
072260 004737 024574
072264 103006
072266 104456
072270 001103
072272 020102
072274 017110
072276 104410
072300 000652
072302 004737 025546
072306 103006
072310 104456
072312 001104
072314 020202
072316 017110
072320 104410
072322 000630
072324 004737 026772
072330 012777 000001 107670
072336 004737 024574
072342 103006
072344 104456
072346 001105
072350 020416

.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
:

BGNTST

T28::
TST FRSTIM ; RUN THIS TEST ?
BNE 54 ; YES
EXIT TST ; NO, EXIT
TRAP C#EXIT
.WORD L10062-
54: JSR PC,TINIT ; IS A DEVICE RESET NEEDED?
BCC 304 ; NO
MOV @RSET,@PCSR0 ; YES, RESET DEUNA
JSR PC,CHKDNI ; DNI ?
BCC 204 ; YES
ERRHRD 579.,ERR004,MSG003 ; NO, REPORT ERROR
TRAP C#ERRRD
.WORD 579
.WORD ERRO04
.WORD MSG003
ESCAPE TST ; AND ABORT TEST
TRAP C#ESCAPE
.WORD L10062-
204: JSR PC,CLRDN1 ; WRITE ONE TO CLEAR DNI
; ERROR ?
BCC 304 ; NO
ERRHRD 580.,ERR006,MSG003 ; YES, REPORT ERROR
TRAP C#ERRRD
.WORD 580
.WORD ERRO06
.WORD MSG003
ESCAPE TST ; AND ABORT TEST
TRAP C#ESCAPE
.WORD L10062-
304: JSR PC,LDPCSR ; ADDRESS OF PCBB -> PCSR2!3
MOV @GETPCB,@PCSR0 ; ISSUE GET_PCBB PORT COMMAND
JSR PC,CHKDNI ; DNI?
BCC 404 ; YES
ERRHRD 581.,ERR009,MSG003 ; NO, REPORT ERROR
TRAP C#ERRRD
.WORD 581
.WORD ERRO09


```

10025 072352 017110          ESCAPE TST          ; AND ABORT TEST          .WORD  MSG003
      072354                ;                               TRAP  C#ESCAPE
      072354 104410                ;                               .WORD  L10062
      072356 000574                ;

10026 072360 004737 025546      ;40#: JSR      PC,CLRDNI      ; WRITE ONE TO CLEAR DNI
10027 072360 004737 025546      ;                               ; ERROR ?
10028 072364 103006                ;                               ; NO
10029 072364 103006                ;                               ; YES, REPORT ERROR
10030 072366 104456                ;                               TRAP  C#ERRRD
      072366 104456                ;                               .WORD  582
      072370 001106                ;                               .WORD  ERR006
      072372 020202                ;                               .WORD  MSG003
10031 072374 017110          ESCAPE TST          ; AND ABORT TEST          TRAP  C#ESCAPE
      072376 104410                ;                               .WORD  L10062
      072400 000552                ;

10032 072402 012705 013124      ;READ DEFAULT PHYSICAL ADDRESS
10033 072402 012705 013124      50#: MOV      #RDDEFA,R5      ; READ DEFAULT PHYA FUNCTION
10034 072402 012705 013124      ;                               ; LOAD FUNCTION -> PCBB
10035 072406 004737 026742      JSR      PC,LDPCCB          ; ISSUE GET_CMD PORT COMMAND
10036 072412 012777 000002 107606  MOV      #GETCMD,SPCSRO
10037 072420 004737 024574      JSR      PC,CHKDNI          ; DNI ?
10038 072424 103006                ;                               ; YES
10039 072426 104456                ;                               ; NO, REPORT ERROR
      072426 104456                ;                               TRAP  C#ERRRD
      072430 001107                ;                               .WORD  583
      072432 020502                ;                               .WORD  ERR010
      072434 017110                ;                               .WORD  MSG003
10040 072436 104410          ESCAPE TST          ; AND ABORT TEST          TRAP  C#ESCAPE
      072436 104410                ;                               .WORD  L10062
      072440 000512                ;

10041 072442 004737 025546      ;60#: JSR      PC,CLRDNI      ; WRITE ONE TO CLEAR DNI
10042 072442 004737 025546      ;                               ; ERROR ?
10043 072446 103006                ;                               ; NO
10044 072446 103006                ;                               ; YES, REPORT ERROR
10045 072450 104456                ;                               TRAP  C#ERRRD
      072450 104456                ;                               .WORD  584
      072452 001110                ;                               .WORD  ERR006
      072454 020202                ;                               .WORD  MSG003
10046 072456 017110          ESCAPE TST          ; AND ABORT TEST          TRAP  C#ESCAPE
      072460 104410                ;                               .WORD  L10062
      072462 000470                ;

10047 072464 013737 002266 073154 ;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 072506 004737 026432      ;LOAD ASCII MESSAGE (DEFADR)
      JSR      PC,HEXDPA          ; CONVERT TO ASCII HEX
10052 072506 004737 026432      ;READ MICROCODE REVISION
10053 072512 012705 013264      100#: MOV      #RDSTA,R5      ; READ PORT STATUS FUNCTION
10054 072512 012705 013264      ;                               ; LOAD FUNCTION -> PCBB
10055 072516 004737 026742      JSR      PC,LDPCCB          ; ISSUE GET_CMD PORT COMMAND
10056 072522 012777 000002 107476  MOV      #GETCMD,SPCSRO
10057 072530 004737 024574      JSR      PC,CHKDNI          ; DNI ?
10058 072534 103006                ;                               ; YES
10059 072536 104456                ;                               ; NO, REPORT ERROR
      072536 104456                ;                               TRAP  C#ERRRD

```


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								
10110								
10111	073006							
	073006	012746	073174		PRINTB	#FRM015,#DEFHDR		; PRINT DEFAULT PHYSICAL ADDRESS
	073012	012746	016551				MOV	#DEFHDR,-(SP)
	073016	012746	000002				MOV	#FRM015,-(SP)
	073022	010600					MOV	#2,-(SP)
	073024	104414					MOV	SP,R0
	073026	062706	000006				TRAP	C#PNTB
							ADD	#6,SP
10112	073032				PRINTB	#FRM016,RREV		; PRINT MICROCODE REV
	073032	013746	073162				MOV	RREV,-(SP)
	073036	012746	016556				MOV	#FRM016,-(SP)
	073042	012746	000002				MOV	#2,-(SP)
	073046	010600					MOV	SP,R0
	073050	104414					TRAP	C#PNTB
	073052	062706	000006				ADD	#6,SP
10113	073056				PRINTB	#FRM015,#SWHDR		; PRINT SWITCH PACK HEADER
	073056	012746	073320				MOV	#SWHDR,-(SP)
	073062	012746	016551				MOV	#FRM015,-(SP)
	073066	012746	000002				MOV	#2,-(SP)
	073072	010600					MOV	SP,R0
	073074	104414					TRAP	C#PNTB
	073076	062706	000006				ADD	#6,SP
10114	073102				PRINTB	#FRM015,LPMSG		; PRINT LOOPBACK MESSAGE
	073102	013746	073166				MOV	LPMSG,-(SP)
	073106	012746	016551				MOV	#FRM015,-(SP)
	073112	012746	000002				MOV	#2,-(SP)
	073116	010600					MOV	SP,R0
	073120	104414					TRAP	C#PNTB
	073122	062706	000006				ADD	#6,SP
10115	073126				PRINTB	#FRM015,BTMSG		; PRINT BOOT MESSAGE
	073126	013746	073170				MOV	BTMSG,-(SP)
	073132	012746	016551				MOV	#FRM015,-(SP)
	073136	012746	000002				MOV	#2,-(SP)
	073142	010600					MOV	SP,R0
	073144	104414					TRAP	C#PNTB
	073146	062706	000006				ADD	#6,SP
10116								
10117	073152			250:				
10118	073152				ENDTST			
	073152							
	073152	104401					L10062:	TRAP C#ETST

```

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          ;NEXTBL:: .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		.ASCIZ	<15><12>
10177	073352	040	040	040	LPMSG0::	.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		.ASCIZ	<15><12>
10179	073411	040	040	040	LPMSG1::	.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		.ASCIZ	<15><12>
10181	073447	040	040	040	BTMSG0::	.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		.ASCIZ	<15><12>
10183	073505	040	040	040	BTMSG1 :	.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
	073543	040	040	122
	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
10187	073604	040	040	040
	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	073661	105	104	
10189	073663	015	012	000

BTMSG2:: .ASCIZ <15><12>
.ASCII / REMOTE BOOT ENABLED WITH ROM/

BTMSG3:: .ASCIZ <15><12>
.ASCII / REMOTE BOOT AND POWER UP BOOT BOTH ENABLED/

.ASCIZ <15><12>
.EVEN

TEST 28: PRINT DEVICE PARAMETERS TEST

.TITLE PARAMETER CODING

.SBTTL HARDWARE PARAMETER CODING SECTION

10192
10203
10204
10232
10233
10234
10235
10236
10237
10238
10239
10240
10241
10242
10243

;;
; 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.
;

10244 073666
073665 000010
073670

BGNHRD

.WORD L10063-L#HARD/2

L#HARD::

10245 073670
10255 073670 000021
073672 073710
073674 160000
073676 177776

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

;FIRST P-TABLE QUESTION

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

10256 073700
073700 001021
073702 073743
073704 000000
073706 000776

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

;SECOND P-TABLE QUESTION

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

10257 073710

ENDHRD

.EVEN

L10063:

10258 073710

10265 073710 127 110 101 ASKCSR: .ASCIZ /WHAT IS THE PCSRO ADDRESS?/
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 ASKVEC: .ASCIZ /WHAT IS THE VECTOR ADDRESS?/
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

.EVEN

10267

.SBTTL SOFTWARE PARAMETER CODING SECTION

10269
10270
10271
10272
10273
10274
10275
10276
10277
10278
10279
10280 074000
074000 000003
074002

```

***
; 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.
;

```

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

074010

.EVEN

ENDSFT

.EVEN
L10064:

10294
10295
10302
10303 074010

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

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

.EVEN

10304
10305
10306 074060
10307 074060
10308
10315
10316 074100

\$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
 CHKRC = 024730 G
 CHKRRD = 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 = 015104 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#GIO = 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
 ECODE = 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
 EPCSR0 = 015140 G
 EPCSR1 = 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
 ERRTP = 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 = 024054 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#DELH = 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#PRML= 000000
G#RADA= 000140
G#RADB= 000000
G#RADD= 000040
G#RADL= 000120
G#RADO= 000020
G#XFER= 000004
G#YES = 000010
HELP = 000000
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
ISRDN1 030212 G
ISRDNM 030202 G
IXE = 004000 G
I#AJ = 000041
I#AUTO= 000041
I#CLN = 000041
I#CU = 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
LDEST 026714 G
LDMEM 013314 G
LDPCBR 026742 G
LDPCSR 026772 G
LDRDRB 027010 G
LDTDRB 027046 G

LDTDRX 027101 G
LDUDBB 027142 G
LDXCRC 027176 G
LDXRDR 027222 G
LDXTDR 027252 G
LDE = 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#DTP 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#EXPS 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#PREV 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 014260 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#BGRS= 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
PDM = 000010 G
PNOP = 000006 G
PNT = 001000 G

POLYM = 120001 G
PRI = 002000 G
PRILD = 000001 G
PRIO0 = 000000 G
PRIO1 = 000040 G
PRIO2 = 000100 G
PRIO3 = 000140 G
PRIO4 = 000200 G
PRIO5 = 000240 G
PRIO6 = 000300 G
PRIO7 = 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
RDCFA 013124 G
RDMODE 013234 G
RDMLA 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
 SVCTBL = 000000
 SVCINS = 000001
 SVCSUB = 000001
 SVCTAG = 000001
 SVCTST = 000001
 SMADDR 015136 G
 SMADR 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 = 000001
 TLOLI = 000000
 TLSYM = 010000
 TLTNO = 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
 THSW = 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
 UDB 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
 XALWA = 000000
 XFALS = 000040
 XOFFS = 000400
 XTRUE = 000020
 ZEPO = 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