

DEUNA

FUNCTIONAL DIAG  
CZUABAO

AH-T366A-MC  
FICHE 1 OF 2

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The main body of the document is a large grid of approximately 15 columns and 25 rows of small, dense tables. Each individual table within the grid contains technical data, likely related to the functional diagnosis of the AH-T366A-MC component. The text within these tables is too small to be legible, but they appear to contain alphanumeric codes, numerical values, and possibly schematic references. The overall layout is highly organized and repetitive, typical of a technical manual's data section.

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A large grid of approximately 15 columns and 15 rows of small, illegible text or diagrams, likely representing a functional diagram or data table. The content is too small to read accurately.

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IDENTIFICATION

PRODUCT CODE: AC-T365A-MC  
PRODUCT NAME: CZUABA0 FUNCTIONAL DIAG  
PRODUCT DATE: JANUARY 1983  
MAINTAINER: DISTRIBUTED SYSTEMS DIAGNOSTIC ENGINEERING  
AUTHOR: BRUCE A. HALE

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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 HIERARCY 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.

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

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

## 2.2 SWITCHES

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

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

EXAMPLE OF SWITCH USAGE:

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

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

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

TESTS	PASS	FLAGS	EOP	UNITS
-------	------	-------	-----	-------

```

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

### 2.3 FLAGS

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

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

\*ERROR MESSAGES ARE DESCRIBED IN SECTION 3.1

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

/FLAGS:LOE:IER:BOE

## 2.4 HARDWARE QUESTIONS

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

WHAT IS THE PCSRO ADDRESS ?

THIS IS THE ADDRESS AT WHICH PCSRO RESIDES ON THE UNIBUS.  
THE ALLOWABLE RANGE IS 160000 - 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



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DEVICE WITH SEVERAL LINES, THIS BECOMES TEDIOUS SINCE MOST OF THE ANSWERS ARE REPETITIOUS.

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

# UNITS (D) ? 8<CR>

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

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

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

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

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

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

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

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

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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+)

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#### 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.

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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.

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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.

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## 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 SA0 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

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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

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#### 4. READ AND COMPARE MODE REGISTER

##### TEST 13: READ/WRITE LINK MEMORY TEST

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

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

##### TEST 14: INTERNAL LOOPBACK TEST

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

##### TEST SEQUENCE:

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

##### TEST 15: CRC CHECKING TEST

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



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

#### TEST 16: FORCE CRC ERROR TEST

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

##### TEST SEQUENCE:

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

#### TEST 17: DISABLE RECEIVE CHAINING TEST

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

##### TEST SEQUENCE:

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

#### TEST 18: TRANSMIT CHAINING ERROR TEST

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

##### TEST SEQUENCE:

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

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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 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

#### 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.

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## TEST SEQUENCE:

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

## TEST 22: MULTICAST ADDRESS TEST

THIS TEST VERIFIES THAT MULTICAST ADDRESSING IS OPERATIONAL.

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

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

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

## TEST SEQUENCE:

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

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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

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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

#### 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 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

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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

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1066  
1067  
1068  
1069  
1070  
1071  
1072  
1073 000000'  
1074  
1075  
1076  
1077  
1078  
1079  
1080 000000'  
1081  
1082  
1083 000000'  
1084 000000'  
1085 000000' 125  
1086 000001' 116  
1087 000002' 101  
1088 000003' 106  
1089 000004' 125  
1090 000005' 116  
1091 000006' 103  
1092 000007' 000  
1093 000010'  
1094 000010' 101  
1095 000011'  
1096 000011' 060  
1097 000012'  
1098 000012' 000000  
1099 000014'  
1100 000014' 000000  
1101 000016'  
1102 000016' 070774'  
1103 000020'  
1104 000020' 071106'  
1105 000022'  
1106 000022' 000216'  
1107 000024'  
1108 000024' 000224'  
1109 000026'  
1110 000026' 071210'  
1111 000030'  
1112 000030' 000000  
1113 000032'  
1114 000032' 000000  
1115 000034'  
1116 000034' 000000  
1117 000036'  
1118 000036' 000000  
1119 000040'  
1120 000040' 000124'  
1121 000042'

.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 UNAFUNC,A,0,0,0,340

L\$NAME::  
  .ASCII /U/  
  .ASCII /N/  
  .ASCII /A/  
  .ASCII /F/  
  .ASCII /U/  
  .ASCII /N/  
  .ASCII /C/  
  .BYTE 0  
L\$REV::  
  .ASCII /A/  
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::

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 PROGRAM HEADER

1122 000042' 000340  
 1123 000044'  
 1124 000044' 000000  
 1125 000046'  
 1126 000046' 000000  
 1127 000050'  
 1128 000050' 003  
 1129 000051' 003  
 1130 000052'  
 1131 000052' 000000  
 1132 000054' 000000  
 1133 000056'  
 1134 000056' 000000  
 1135 000060'  
 1136 000060' 013236'  
 1137 000062'  
 1138 000062' 025402'  
 1139 000064'  
 1140 000064' 000000  
 1141 000066'  
 1142 000066' 000000  
 1143 000070'  
 1144 000070' 025634'  
 1145 000072'  
 1146 000072' 025626'  
 1147 000074'  
 1148 000074' 000000  
 1149 000076'  
 1150 000076' 013244'  
 1151 000100'  
 1152 000100' 104035  
 1153 000102'  
 1154 000102' 013226'  
 1155 000104'  
 1156 000104' 025416'  
 1157 000106'  
 1158 000106' 025620'  
 1159 000110'  
 1160 000110' 025616'  
 1161 000112'  
 1162 000112' 025410'  
 1163 000114'  
 1164 000114' 000000  
 1165 000116'  
 1166 000116' 000000  
 1167 000120'  
 1168 000120' 000000  
 1169

L\$ENVI:: .WORD 340  
 L\$EXP1:: .WORD 0  
 L\$MREV:: .WORD 0  
 L\$EF:: .BYTE C\$REVISION  
 .BYTE C\$EDIT  
 L\$SPC:: .WORD 0  
 L\$DEVP:: .WORD 0  
 L\$REPP:: .WORD L\$DVTYP  
 L\$EXP4:: .WORD L\$RPT  
 L\$EXP5:: .WORD 0  
 L\$AUT:: .WORD 0  
 L\$DUT:: .WORD L\$AU  
 L\$LUN:: .WORD L\$DU  
 L\$DESP:: .WORD 0  
 L\$LOAD:: .WORD L\$DESC  
 EMT ESLOAD  
 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



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DISPATCH TABLE

1170  
1171  
1172  
1173  
1174  
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1177  
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1196  
1197  
1198  
1199  
1200  
1201  
1202  
1203  
1204  
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1206  
1207  
1208

.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

000122'  
000122' 000034  
000124'  
000124' 025700'  
000126' 025776'  
000130' 026076'  
000132' 026176'  
000134' 026276'  
000136' 026352'  
000140' 026426'  
000142' 032206'  
000144' 032502'  
000146' 032766'  
000150' 033316'  
000152' 034272'  
000154' 035036'  
000156' 036244'  
000160' 040142'  
000162' 041254'  
000164' 042366'  
000166' 043474'  
000170' 044472'  
000172' 045364'  
000174' 047160'  
000176' 052042'  
000200' 055116'  
000202' 060516'  
000204' 062554'  
000206' 064274'  
000210' 065606'  
000212' 067336'

.WORD 28  
L\$DISPATCH::  
.WORD T1  
.WORD T2  
.WORD T3  
.WORD T4  
.WORD T5  
.WORD T6  
.WORD T7  
.WORD T8  
.WORD T9  
.WORD T10  
.WORD T11  
.WORD T12  
.WORD T13  
.WORD T14  
.WORD T15  
.WORD T16  
.WORD T17  
.WORD T18  
.WORD T19  
.WORD T20  
.WORD T21  
.WORD T22  
.WORD T23  
.WORD T24  
.WORD T25  
.WORD T26  
.WORD T27  
.WORD T28

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DEFAULT HARDWARE P-TABLE

1209  
1210  
1211  
1212  
1213  
1214  
1215  
1216  
1217  
1218  
1219  
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1221  
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1223  
1224  
1225  
1226

000214'  
000214' 000002  
000216'  
000216'  
000216' 000000  
000220' 000000  
000222'  
000222'

.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.  
:--

BGNHW DFPTBL

.WORD L10000-L\$HW/2

L\$HW::  
DFPTBL::

.WORD 0  
.WORD 0  
ENDHW

: PCSRO - UNIBUS ADDRESS  
: DEUNA INTERRUPT VECTOR

L10000:

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SOFTWARE P-TABLE

1227  
1228  
1229  
1230  
1231  
1232  
1233  
1234  
1235  
1236  
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1238  
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1246  
1247

.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

000222'  
000222' 000001  
000224'  
000224'

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

000224' 000000

EXLOOP: .WORD 0 ; TEST20 EXTERNAL LOOPBACK FLAG

000226'  
000226'

.EVEN  
ENDSW

L10001:

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.TITLE GLOBAL AREAS  
.SBTTL GLOBAL EQUATES SECTION

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000226\*

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

EQUALS

: BIT DEFINITIONS

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

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```

1304      000340      PRI07== 340
1305      000300      PRI06== 300
1306      000240      PRI05== 240
1307      000200      PRI04== 200
1308      000140      PRI03== 140
1309      000100      PRI02== 100
1310      000040      PRI01== 40
1311      000000      PRI00== 0
1312
1313      ; OPERATOR FLAG BITS
1314      ;
1315      000004      EVL==      4
1316      000010      LOT==      10
1317      000020      ADR==      20
1318      000040      IDU==      40
1319      000100      ISR==     100
1320      000200      UAM==     200
1321      000400      BOE==     400
1322      001000      PNT==    1000
1323      002000      PRI==    2000
1324      004000      IXE==    4000
1325      010000      IBE==   10000
1326      020000      IER==   20000
1327      040000      LOE==   40000
1328      100000      HOE==  100000
1329      ;
1330      ; PCSR0 - PORT CONTROL AND STATUS REGISTER 0
1331      100000      SERI ==    BIT15      ; STATUS ERROR INTERRUPT
1332      040000      PCEI ==    BIT14      ; PORT COMMAND ERROR INTERRUPT
1333      020000      RXI  ==    BIT13      ; RECEIVE RING INTERRUPT
1334      010000      TXI  ==    BIT12      ; TRANSMIT RING INTERRUPT
1335      004000      DNI  ==    BIT11      ; DONE INTERRUPT
1336      002000      RCBI ==    BIT10      ; RECEIVE BUFFER UNAVAILABLE
1337      ;
1338      000400      FATI ==    BIT08      ; FATAL ERROR INTERERUPT
1339      000200      INTR ==    BIT07      ; INTERRUPT SUMMARY <15:08>
1340      000100      INTE ==    BIT06      ; INTERRUPT ENABLE
1341      000040      RSET ==    BIT05      ; UNA RESET
1342      ;
1343      ; PORT COMMANDS <03:00>
1344      000001      GETPCB ==    BIT00
1345      000002      GETCMD ==    BIT01
1346      000003      SLFT  ==    BIT00!BIT01
1347      000004      START ==    BIT02
1348      000006      PNOP  ==    BIT01!BIT02
1349      000010      PDMD  ==    BIT03
1350      000017      STOP  ==    BIT03!BIT02!BIT01!BIT00
1351      ;
1352      ; PCSR1 - PORT CONTROL AND STATUS REGISTER 1
1353      100000      XPWR  ==    BIT15      ; TRANSCIEVER POWER OK
1354      040000      ICAB  ==    BIT14      ; PORT/LINK CABLING OK
1355      ;
1356      ; SELF TEST ERROR CODE <13:08>
1357      140377      STMASK ==    140377      ; SELF TEST MASK
1358      ;
1359      000200      PCTO  ==    BIT07      ; PORT COMMAND TIMEOUT

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```

1360          000010          ;RMTC    ==    BIT03          ; REMOTE CONSOLE RESERVED
1361
1362          ;
1363          ;PORT STATE <G2:00>
1364          177770          SMASK    ==    177770          ; STATE MASK
1365          ;
1366          000000          RESET    ==    0          ;
1367          000001          PRILD    ==    BIT00          ; PRIMARY LOAD STATE
1368          000002          READY    ==    BIT01
1369          000003          RUN      ==    BIT00!BIT01
1370          000005          UNIHLT   ==    BIT00!BIT02
1371          000006          NIHLT    ==    BIT01!BIT02
1372          000007          NIUNI    ==    BIT00!BIT01!BIT02
1373          ;
1374          ;DESCRIPTOR RING DEFINITIONS
1375          100000          OWN      ==    BIT15
1376          040000          ERRS     ==    BIT14
1377          001000          STP      ==    BIT09
1378          000400          ENP      ==    BIT08
1379          ;
1380          100000          BUFL     ==    BIT15
1381          ;GLOBAL EQUATES
1382          000000          ZERO     ==    0
1383          177777          ONES     ==    177777
1384          177400          TIMASK   ==    177400          ; UPPER BYTE = ONES
1385          000000          GOODST   ==    0          ; SUCCESSFUL SELF TEST CODE
1386          175015          CMODE1   ==    175015          ; ALL SETABLE MODE BITS = ONES
1387          007777          TDRMSK   ==    7777          ; TDR MASK
1388          002540          DTYPE    ==    2540          ; DIAGNOSTIC TYPE FIELD
1389          ;
1390          000000          INITH     ==    0          ; INITIAL CRC VALUE
1391          120001          POLYH     ==    120001          ; CRC POLYNOMIAL
1392          ;
1393          020000          SIZ4K     ==    20000          ; 4K WORDS
1394          040000          SIZ8K     ==    SIZ4K*2          ; 8K WORDS

```

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```

1395      .SBTTL  GLOBAL DATA SECTION
1396
1397      :++
1398      : THE GLOBAL DATA SECTION CONTAINS DATA THAT ARE USED
1399      : IN MORE THAN ONE TEST.
1400
1401      :--
1402      : ADDRESSES FOR DEUNA UNDER TEST
1403      PCSRO::      .WORD  0      ; ADDRESS OF PCSRO
1404      PCSR1::      .WORD  0      ; ADDRESS OF PCSR1
1405      PCSR2::      .WORD  0      ; ADDRESS OF PCSR2
1406      PCSR3::      .WORD  0      ; ADDRESS OF PCSR3
1407
1408      INTVEC::     .WORD  0      ; ADDRESS OF DEUNA INTERRUPT VECTOR
1409      UNAPRI::     .WORD 240     ; UNA PRIORITY = 5
1410      UNIT::       .WORD  0      ; UNIT NUMBER
1411
1412      DEST::       .WORD  0      ; DESTINATION ADDRESS
1413      .WORD  0
1414      .WORD  0
1415
1416      : DATA STRUCTURES
1417      PCBB::       .BLKW  4      ; PORT CONTROL BLOCK
1418      UDDB::       .BLKW 100.    ; UNIBUS DATA BLOCK
1419      TDRB::       .BLKW 16.    ; TRANSMIT DESCRIPTOR RING
1420      RDRB::       .BLKW 16.    ; RECEIVE DESCRIPTOR RING
1421      TDRX::       .BLKW 64.    ; EXTENDED TDRB FOR TEST19
1422      TBUF::       .BLKW 128.   ; TRANSMIT BUFFER
1423      TBUF2::      .BLKW 128.
1424      TBUF3::      .BLKW 128.
1425      TBUF4::      .BLKW 128.
1426      TBUF5::      .BLKW 128.
1427      TBUF6::      .BLKW 128.
1428      TBUF7::      .BLKW 128.
1429      TBUF8::      .BLKW 128.
1430      RBUF::       .BLKW 128.   ; RECEIVE BUFFER
1431      RBUF2::      .BLKW 128.
1432      RBUF3::      .BLKW 128.
1433      RBUF4::      .BLKW 128.
1434      RBUF5::      .BLKW 128.
1435      RBUF6::      .BLKW 128.
1436      RBUF7::      .BLKW 128.
1437      RBUF8::      .BLKW 128.
1438
1439      : DEFAULT PORT FUNCTIONS
1440      NOPF::       .WORD  0      ; NOP FUNCTION
1441      .WORD  0
1442      .WORD  0
1443      .WORD  0
1444
1445      LSMA::       .WORD  1      ; LOAD AND START MICROADDRESS FUNCTION
1446      .WORD 177777 ; STARTING INTERNAL ADDRESS OF SELFTEST
1447      .WORD  0
1448      .WORD  0
1449
1450      RDDEFA::     .WORD  2      ; READ DEFAULT PHYSICAL ADDRESS FUNCTION

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1451	011114'	000000	.WORD	0	
1452	011116'	000000	.WORD	0	
1453	011120'	000000	.WORD	0	
1454					
1455	011122'	000004	.WORD	4	; READ PHYSICAL ADDRESS FUNCTION
1456	011124'	000000	.WORD	0	
1457	011126'	000000	.WORD	0	
1458	011130'	000000	.WORD	0	
1459					
1460	011132'	000005	.WORD	5	; WRITE PHYSICAL ADDRESS
1461	011134'	000000	.WORD	0	; PHYADR
1462	011136'	000010	.WORD	10	; PHYADR
1463	011140'	000000	.WORD	0	; PHYADR
1464					
1465	011142'	000006	.WORD	6	; READ MULTICAST ADDRESS LIST FUNCTION
1466	011144'	000262'	.WORD	UDBB	; ADDRESS OF UNIBUS DATA BLOCK BASE
1467	011146'	005000	.WORD	5000	; MULTICAST ADDR TABLE LENGTH= 10(10)
1468	011150'	000000	.WORD	0	
1469					
1470	011152'	000007	.WORD	7	; WRITE MULTICAST ADDRESS LIST FUNCTION
1471	011154'	000262'	.WORD	UDBB	; ADDRESS OF UNIBUS DATA BLOCK BASE
1472	011156'	005000	.WORD	5000	; MULTICAST ADDR TABLE LENGTH= 10(10)
1473	011160'	000000	.WORD	0	
1474					
1475	011162'	000010	.WORD	10	; READ RING FORMAT FUNCTION
1476	011164'	000262'	.WORD	UDBB	; ADDRESS OF UNIBUS DATA BLOCK BASE
1477	011166'	000000	.WORD	0	
1478	011170'	000000	.WORD	0	
1479					
1480	011172'	000011	.WORD	11	; WRITE RING FORMAT FUNCTION
1481	011174'	000262'	.WORD	UDBB	; ADDRESS OF UNIBUS DATA BLOCK BASE
1482	011176'	000000	.WORD	0	
1483	011200'	000000	.WORD	0	
1484					
1485	011202'	000012	.WORD	12	; READ COUNTERS FUNCTION
1486	011204'	000262'	.WORD	UDBB	; ADDRESS OF UNIBUS DATA BLOCK BASE
1487	011206'	000000	.WORD	0	
1488	011210'	000040	.WORD	40	; COUNTERS LIST LENGTH= 32(10)
1489					
1490	011212'	000013	.WORD	13	; READ AND CLEAR COUNTERS FUNCTION
1491	011214'	000262'	.WORD	UDBB	; ADDRESS OF UNIBUS DATA BLOCK BASE
1492	011216'	000000	.WORD	0	
1493	011220'	000040	.WORD	40	; COUNTERS LIST LENGTH= 32(10)
1494					
1495	011222'	000014	.WORD	14	; READ MODE FUNCTION
1496	011224'	000000	.WORD	0	
1497	011226'	000000	.WORD	0	
1498	011230'	000000	.WORD	0	
1499					
1500	011232'	000015	.WORD	15	; WRITE MODE FUNCTION
1501	011234'	100004	.WORD	100004	; PROM AND INTERNAL LOOPBACK MODE
1502	011236'	000000	.WORD	0	
1503	011240'	000000	.WORD	0	
1504	011242'	000015	.WORD	15	; WRITE MODE FUNCTION
1505	011244'	104004	.WORD	104004	; PROM AND INTERN LOOPBACK AND ENABL COLL TEST
1506	011246'	000000	.WORD	0	



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```

1507 011250' 000000          .WORD 0
1508
1509 011252' 000016          .WORD 16      ; READ STATUS FUNCTION
1510 011254' 000000          .WORD 0
1511 011256' 000000          .WORD 0
1512 011260' 000000          .WORD 0
1513
1514 011262' 000017          .WORD 17      ; READ AND CLEAR STATUS FUNCTION
1515 011264' 000000          .WORD 0
1516 011266' 000000          .WORD 0
1517 011270' 000000          .WORD 0
1518
1519 011272' 000020          .WORD 20      ; DUMP INTERNAL MEMORY FUNCTION
1520 011274' 000262'          .WORD UDBB    ; ADDRESS OF UNIBUS DATA BLOCK BASE
1521 011276' 000000          .WORD 0
1522 011300' 000000          .WORD 0
1523
1524 011302' 000021          .WORD 21      ; LOAD INTERNAL MEMORY FUNCTION
1525 011304' 000262'          .WORD UDBB    ; ADDRESS OF UNIBUS DATA BLOCK BASE
1526 011306' 000000          .WORD 0
1527 011310' 000000          .WORD 0
1528
1529      ;: DEFAULT RING FORMATS
1530
1531 011312' 000572'          .WORD TDRB    ; TRANSMIT DESCRIPTOR RING ADDRESS
1532 011314' 002000          .WORD 2000    ; TELEN = 4
1533 011316' 000004          .WORD 4        ; TRLEN = 4
1534 011320' 000632'          .WORD RDRB    ; RECEIVE DESCRIPTOR RING ADDRESS
1535 011322' 002000          .WORD 2000    ; RELEN = 4
1536 011324' 000004          .WORD 4        ; RRLEN = 4
1537
1538 011326' 000672'          .WORD TDRX    ; TRANSMIT DESCRIPTOR RING ADDRESS
1539 011330' 002000          .WORD 2000    ; TELEN = 4
1540 011332' 000020          .WORD 16      ; TRLEN = 16
1541 011334' 000632'          .WORD RDRB    ; RECEIVE DESCRIPTOR RING ADDRESS
1542 011336' 002000          .WORD 2000    ; RELEN = 4
1543 011340' 000004          .WORD 4        ; RRLEN = 4
1544
1545      ;: DEFAULT RECEIVE DESCRIPTOR RINGS
1546
1547 011342' 000200          .WORD 128.    ; SLEN = 128 BYTES
1548 011344' 005072'          .WORD RBUF    ; SEGB = RBUF
1549 011346' 100000          .WORD 100000  ; OWN = UNA
1550 011350' 000000          .WORD 0
1551      ;
1552 011352' 000200          .WORD 128.    ; SLEN = 128 BYTES
1553 011354' 005072'          .WORD RBUF    ; SEGB = RBUF
1554 011356' 000000          .WORD 0        ; OWN = PORT DRIVER
1555 011360' 000000          .WORD 0
1556      ;
1557 011362' 000200          .WORD 128.    ; SLEN = 128 BYTES
1558 011364' 005072'          .WORD RBUF    ; SEGB = RBUF
1559 011366' 000000          .WORD 0        ; OWN = PORT DRIVER
1560 011370' 000000          .WORD 0
1561      ;
1562 011372' 000200          .WORD 128.    ; SLEN = 128 BYTES

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1563	011374'	005072'	.WORD	RBUF	: SEGB = RBUF
1564	011376'	000000	.WORD	0	: OWN = PORT DRIVER
1565	011400'	000000	.WORD	0	
1566					
1567	011402'	000200			
1568	011404'	005072'	.WORD	128.	: SLEN = 128 BYTES
1569	011406'	000000	.WORD	RBUF	: SEGB = RBUF
1570	011410'	000000	.WORD	0	: OWN = PORT DRIVER
1571			.WORD	0	
1572	011412'	000200			
1573	011414'	005072'	.WORD	128.	: SLEN = 128 BYTES
1574	011416'	000000	.WORD	RBUF	: SEGB = RBUF
1575	011420'	000000	.WORD	0	: OWN = PORT DRIVER
1576			.WORD	0	
1577	011422'	000200			
1578	011424'	005072'	.WORD	128.	: SLEN = 128 BYTES
1579	011426'	000000	.WORD	RBUF	: SEGB = RBUF
1580	011430'	000000	.WORD	0	: OWN = PORT DRIVER
1581			.WORD	0	
1582	011432'	000200			
1583	011434'	005072'	.WORD	128.	: SLEN = 128 BYTES
1584	011436'	000000	.WORD	RBUF	: SEGB = RBUF
1585	011440'	000000	.WORD	0	: OWN = PORT DRIVER
1586			.WORD	0	
1587	011442'	000100			
1588	011444'	005072'	.WORD	64.	: SLEN = 64 BYTES
1589	011446'	100000	.WORD	RBUF	: SEGB = RBUF
1590	011450'	000000	.WORD	100000	: OWN = UNA
1591			.WORD	0	
1592	011452'	000100			
1593	011454'	005472'	.WORD	64.	: SLEN = 64 BYTES
1594	011456'	100000	.WORD	RBUF2	: SEGB = RBUF2
1595	011460'	000000	.WORD	100000	: OWN = UNA
1596			.WORD	0	
1597	011462'	000200			
1598	011464'	005072'	.WORD	128.	: SLEN = 128 BYTES
1599	011466'	000000	.WORD	RBUF	: SEGB = RBUF
1600	011470'	000000	.WORD	0	: OWN = PORT DRIVER
1601			.WORD	0	
1602	011472'	000200			
1603	011474'	005072'	.WORD	128.	: SLEN = 128 BYTES
1604	011476'	000000	.WORD	RBUF	: SEGB = RBUF
1605	011500'	000000	.WORD	0	: OWN = PORT DRIVER
1606			.WORD	0	
1607	011502'	000400			
1608	011504'	005072'	.WORD	256.	: SLEN = 256 BYTES
1609	011506'	100000	.WORD	RBUF	: SEGB = RBUF
1610	011510'	000000	.WORD	100000	: OWN = UNA
1611			.WORD	0	
1612	011512'	000400			
1613	011514'	005472'	.WORD	256.	: SLEN = 256 BYTES
1614	011516'	100000	.WORD	RBUF2	: SEGB = RBUF2
1615	011520'	000000	.WORD	100000	: OWN = UNA
1616			.WORD	0	
1617	011522'	000400			
1618	011524'	006072'	.WORD	256.	: SLEN = 256 BYTES
			.WORD	RBUF3	: SEGB = RBUF3

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1619 011526' 100000      .WORD 100000 ; OWN = UNA
1620 011530' 000000      .WORD 0
1621      ;
1622 011532' 000200      .WORD 128.  ; SLEN = 128 BYTES
1623 011534' 005072'     .WORD RBUF  ; SEGB = RBUF
1624 011536' 000000      .WORD 0      ; OWN = PORT DRIVER
1625 011540' 000000      .WORD 0
1626      ;
1627      ;:DEFAULT TRANSMIT DESCRIPTOR RINGS
1628      ;
1629 011542' 000174      TDRB1A:: .WORD 124.  ; SLEN = 124 BYTES
1630 011544' 001072'     .WORD TBUF  ; SEGB = TBUF
1631 011546' 101400      .WORD 101400 ; OWN = UNA ;STP,ENP
1632 011550' 000000      .WORD 0
1633      ;
1634 011552' 000174      .WORD 124.  ; SLEN = 124 BYTES
1635 011554' 001072'     .WORD TBUF  ; SEGB = TBUF
1636 011556' 000000      .WORD 0      ; OWN = PORT DRIVER
1637 011560' 000000      .WORD 0
1638      ;
1639 011562' 000174      .WORD 124.  ; SLEN = 124 BYTES
1640 011564' 001072'     .WORD TBUF  ; SEGB = TBUF
1641 011566' 000000      .WORD 0      ; OWN = PORT DRIVER
1642 011570' 000000      .WORD 0
1643      ;
1644 011572' 000174      .WORD 124.  ; SLEN = 124 BYTES
1645 011574' 001072'     .WORD TBUF  ; SEGB = TBUF
1646 011576' 000000      .WORD 0      ; OWN = PORT DRIVER
1647 011600' 000000      .WORD 0
1648      ;
1649 011602' 000200      TDRB1B:: .WORD 128.  ; SLEN = 128 BYTES
1650 011604' 001072'     .WORD TBUF  ; SEGB = TBUF
1651 011606' 101400      .WORD 101400 ; OWN = UNA ;STP,ENP
1652 011610' 000000      .WORD 0
1653      ;
1654 011612' 000200      .WORD 128.  ; SLEN = 128 BYTES
1655 011614' 001072'     .WORD TBUF  ; SEGB = TBUF
1656 011616' 000000      .WORD 0      ; OWN = PORT DRIVER
1657 011620' 000000      .WORD 0
1658      ;
1659 011622' 000200      .WORD 128.  ; SLEN = 128 BYTES
1660 011624' 001072'     .WORD TBUF  ; SEGB = TBUF
1661 011626' 000000      .WORD 0      ; OWN = PORT DRIVER
1662 011630' 000000      .WORD 0
1663      ;
1664 011632' 000200      .WORD 128.  ; SLEN = 128 BYTES
1665 011634' 001072'     .WORD TBUF  ; SEGB = TBUF
1666 011636' 000000      .WORD 0      ; OWN = PORT DRIVER
1667 011640' 000000      .WORD 0
1668      ;
1669 011642' 000072      TDRB1C:: .WORD 58.  ; SLEN = 58 BYTES (RUNT PACKET)
1670 011644' 001072'     .WORD TBUF  ; SEGB = TBUF
1671 011646' 101400      .WORD 101400 ; OWN = UNA ;STP,ENP
1672 011650' 000000      .WORD 0
1673      ;
1674 011652' 000174      .WORD 124.  ; SLEN = 124 BYTES

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1675	011654'	001072'	.WORD	TBUF	: SEGB = TBUF
1676	011656'	000000	.WORD	0	: OWN = PORT DRIVER
1677	011660'	000000	.WORD	0	
1678			:		
1679	011662'	000174	.WORD	124.	: SLEN = 124 BYTES
1680	011664'	001072'	.WORD	TBUF	: SEGB = TBUF
1681	011666'	000000	.WORD	0	: OWN = PORT DRIVER
1682	011670'	000000	.WORD	0	
1683			:		
1684	011672'	000174	.WORD	124.	: SLEN = 124 BYTES
1685	011674'	001072'	.WORD	TBUF	: SEGB = TBUF
1686	011676'	000000	.WORD	0	: OWN = PORT DRIVER
1687	011700'	000000	.WORD	0	
1688			:		
1689	011702'	000174	.WORD	124.	: SLEN = 124 BYTES
1690	011704'	001072'	.WORD	TBUF	: SEGB = TBUF
1691	011706'	101000	.WORD	101000	: OWN = UNA ;STP
1692	011710'	000000	.WORD	0	
1693			:		
1694	011712'	000174	.WORD	124.	: SLEN = 124 BYTES
1695	011714'	001072'	.WORD	TBUF	: SEGB = TBUF
1696	011716'	101400	.WORD	101400	: OWN = UNA ;STP ;ENP
1697	011720'	000000	.WORD	0	
1698			:		
1699	011722'	000174	.WORD	124.	: SLEN = 124 BYTES
1700	011724'	001072'	.WORD	TBUF	: SEGB = TBUF
1701	011726'	000000	.WORD	0	: OWN = PORT DRIVER
1702	011730'	000000	.WORD	0	
1703			:		
1704	011732'	000174	.WORD	124.	: SLEN = 124 BYTES
1705	011734'	001072'	.WORD	TBUF	: SEGB = TBUF
1706	011736'	000000	.WORD	0	: OWN = PORT DRIVER
1707	011740'	000000	.WORD	0	
1708			:		
1709	011742'	000400	.WORD	256.	: SLEN = 256 BYTES
1710	011744'	001072'	.WORD	TBUF	: SEGB = TBUF
1711	011746'	101000	.WORD	101000	: OWN = UNA ;STP
1712	011750'	000000	.WORD	0	
1713			:		
1714	011752'	000400	.WORD	256.	: SLEN = 256 BYTES
1715	011754'	001472'	.WORD	TBUF2	: SEGB = TBUF2
1716	011756'	100000	.WORD	100000	: OWN = UNA
1717	011760'	000000	.WORD	0	
1718			:		
1719	011762'	000374	.WORD	252.	: SLEN = 252 BYTES
1720	011764'	002072'	.WORD	TBUF3	: SEGB = TBUF3
1721	011766'	100400	.WORD	100400	: OWN = UNA ;ENP
1722	011770'	000000	.WORD	0	
1723			:		
1724	011772'	000174	.WORD	124.	: SLEN = 124 BYTES
1725	011774'	001072'	.WORD	TBUF	: SEGB = TBUF
1726	011776'	000000	.WORD	0	: OWN = PORT DRIVER
1727	012000'	000000	.WORD	0	
1728			:		
1729	012002'	000174	.WORD	124.	: SLEN = 124 BYTES
1730	012004'	001072'	.WORD	TBUF	: SEGB = TBUF

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1731	012006	101400	.WORD	101400	; OWN = UNA ;STP ;ENP
1732	012010	000000	.WORD	0	
1733			:		
1734	012012	000174	.WORD	124.	; SLEN = 124 BYTES
1735	012014	001072	.WORD	TBUF	; SEGB = TBUF
1736	012016	101400	.WORD	101400	; OWN = UNA ;STP ;ENP
1737	012020	000000	.WORD	0	
1738			:		
1739	012022	000174	.WORD	124.	; SLEN = 124 BYTES
1740	012024	001072	.WORD	TBUF	; SEGB = TBUF
1741	012026	101400	.WORD	101400	; OWN = UNA ;STP ;ENP
1742	012030	000000	.WORD	0	
1743			:		
1744	012032	000174	.WORD	124.	; SLEN = 124 BYTES
1745	012034	001072	.WORD	TBUF	; SEGB = TBUF
1746	012036	101400	.WORD	101400	; OWN = UNA ;STP ;ENP
1747	012040	000000	.WORD	0	
1748			:		
1749	012042	000174	.WORD	124.	; SLEN = 124 BYTES
1750	012044	001072	.WORD	TBUF	; SEGB = TBUF
1751	012046	101400	.WORD	101400	; OWN = UNA ;STP ;ENP
1752	012050	000000	.WORD	0	
1753			:		
1754	012052	000174	.WORD	124.	; SLEN = 124 BYTES
1755	012054	001072	.WORD	TBUF	; SEGB = TBUF
1756	012056	101400	.WORD	101400	; OWN = UNA ;STP ;ENP
1757	012060	000000	.WORD	0	
1758			:		
1759	012062	000174	.WORD	124.	; SLEN = 124 BYTES
1760	012064	001072	.WORD	TBUF	; SEGB = TBUF
1761	012066	101400	.WORD	101400	; OWN = UNA ;STP ;ENP
1762	012070	000000	.WORD	0	
1763			:		
1764	012072	000174	.WORD	124.	; SLEN = 124 BYTES
1765	012074	001072	.WORD	TBUF	; SEGB = TBUF
1766	012076	101400	.WORD	101400	; OWN = UNA ;STP ;ENP
1767	012100	000000	.WORD	0	
1768			:		
1769	012102	000174	.WORD	124.	; SLEN = 124 BYTES
1770	012104	001072	.WORD	TBUF	; SEGB = TBUF
1771	012106	101400	.WORD	101400	; OWN = UNA ;STP ;ENP
1772	012110	000000	.WORD	0	
1773			:		
1774	012112	000174	.WORD	124.	; SLEN = 124 BYTES
1775	012114	001072	.WORD	TBUF	; SEGB = TBUF
1776	012116	101400	.WORD	101400	; OWN = UNA ;STP ;ENP
1777	012120	000000	.WORD	0	
1778			:		
1779	012122	000174	.WORD	124.	; SLEN = 124 BYTES
1780	012124	001072	.WORD	TBUF	; SEGB = TBUF
1781	012126	101400	.WORD	101400	; OWN = UNA ;STP ;ENP
1782	012130	000000	.WORD	0	
1783			:		
1784	012132	000174	.WORD	124.	; SLEN = 124 BYTES
1785	012134	001072	.WORD	TBUF	; SEGB = TBUF
1786	012136	101400	.WORD	101400	; OWN = UNA ;STP ;ENP

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1787 012140' 000000          .WORD 0
1788
1789 012142' 000174          .WORD 124.      ; SLEN = 124 BYTES
1790 012144' 001072'        .WORD TBUF      ; SEGB = TBUF
1791 012146' 101400          .WORD 101400   ; OWN = UNA ;STP ;ENP
1792 012150' 000000          .WORD 0
1793
1794 012152' 000174          .WORD 124.      ; SLEN = 124 BYTES
1795 012154' 001072'        .WORD TBUF      ; SEGB = TBUF
1796 012156' 101400          .WORD 101400   ; OWN = UNA ;STP ;ENP
1797 012160' 000000          .WORD 0
1798
1799 012162' 000174          .WORD 124.      ; SLEN = 124 BYTES
1800 012164' 001072'        .WORD TBUF      ; SEGB = TBUF
1801 012166' 101400          .WORD 101400   ; OWN = UNA ;STP ;ENP
1802 012170' 000000          .WORD 0
1803
1804 012172' 000174          .WORD 124.      ; SLEN = 124 BYTES
1805 012174' 001072'        .WORD TBUF      ; SEGB = TBUF
1806 012176' 101400          .WORD 101400   ; OWN = UNA ;STP ;ENP
1807 012200' 000000          .WORD 0
1808
1809                          ;DEFAULT DATA FOR TEST10
1810 012202' 000000          CRCH::          .WORD 0          ; CRC STORAGE
1811                          ;DEFAULT UDBB FOR TEST10
1812 012204' 004000          UDB10A::        .WORD 4000      ; FLEN = 1024 WORDS
1813 012206' 005072'        .WORD RBUF      ; HDBB = RBUF
1814 012210' 000000          .WORD 0
1815 012212' 000000          .WORD 0
1816                          ;ROM ADDRESS TABLE FOR TEST10
1817 012214' 040000          MEM10A::        .WORD 40000     ; ADDRESS OF ROM FIRST 1K
1818 012216' 044000          .WORD 44000     ; SECOND 1K
1819 012220' 050000          .WORD 50000     ; ETC
1820 012222' 054000          .WORD 54000
1821 012224' 060000          .WORD 60000
1822 012226' 064000          .WORD 64000
1823 012230' 070000          .WORD 70000
1824 012232' 074000          .WORD 74000
1825                          ;DEFAULT UDBB FOR TEST11 AND TST12
1826 012234' 004000          UDB11A::        .WORD 4000      ; FLEN = 1024. WORDS
1827 012236' 000000          .WORD 0          ; HDBB = RBUF OR TBUF (LOADED BY TEST)
1828 012240' 000000          .WORD 0
1829 012242' 000000          .WORD 0          ; IDBB (LOADED BY TEST)
1830                          ;WCS DOWNLINE LOAD ADDRESS TABLE FOR TEST11
1831 012244' 014000          MEM11A::        .WORD 14000     ; TOP 1K SECTION OF WCS
1832                          ;LINK MEMORY ADDRESS TABLE FOR TEST13
1833 012246' 100000          MEM13A::        .WORD 100000    ; FIRST 1K BLOCK OF LINK MEMORY
1834 012250' 104000          .WORD 104000
1835 012252' 110000          .WORD 110000
1836 012254' 114000          .WORD 114000
1837 012256' 120000          .WORD 120000
1838 012260' 124000          .WORD 124000
1839 012262' 130000          .WORD 130000
1840 012264' 134000          .WORD 134000
1841 012266' 140000          .WORD 140000
1842 012270' 144000          .WORD 144000

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1843	012272*	150000	.WORD	150000	
1844	012274*	154000	.WORD	154000	
1845	012276*	160000	.WORD	160000	
1846	012300*	164000	.WORD	164000	
1847	012302*	170000	.WORD	170000	
1848	012304*	174000	.WORD	174000	
1849					
1850	012306*	125252	;PHYSICAL ADDRESSES FOR TEST 21		
1851	012310*	125252	ADR21::	.WORD	125252 ; DEFAULT PHYSICAL ADDRESS
1852	012312*	125252		.WORD	125252
1853	012314*	052524	ADR21C::	.WORD	52524 ; COMPLEMENTED PHYSICAL ADDRESS
1854	012316*	052525		.WORD	52525
1855	012320*	052525		.WORD	52525
1856			;MULTICAST ADDRESS LIST FOR TEST 22		
1857	012322*	125253	MULTL::	.WORD	125253 ; MULTICAST ADDRESS LIST
1858	012324*	125252		.WORD	125252
1859	012326*	125252		.WORD	125252
1860	012330*	125253		.WORD	125253
1861	012332*	052525		.WORD	052525
1862	012334*	125252		.WORD	125252
1863	012336*	125253		.WORD	125253
1864	012340*	125252		.WORD	125252
1865	012342*	052525		.WORD	052525
1866	012344*	125253		.WORD	125253
1867	012346*	177777		.WORD	177777
1868	012350*	052525		.WORD	052525
1869	012352*	125253		.WORD	125253
1870	012354*	000000		.WORD	000000
1871	012356*	125252		.WORD	125252
1872	012360*	177777		.WORD	177777
1873	012362*	000000		.WORD	000000
1874	012364*	177777		.WORD	177777
1875	012366*	177777		.WORD	177777
1876	012370*	052525		.WORD	052525
1877	012372*	125252		.WORD	125252
1878	012374*	177777		.WORD	177777
1879	012376*	125252		.WORD	125252
1880	012400*	052525		.WORD	052525
1881	012402*	177777		.WORD	177777
1882	012404*	000000		.WORD	000000
1883	012406*	052525		.WORD	052525
1884	012410*	177777		.WORD	177777
1885	012412*	177777		.WORD	177777
1886	012414*	125252		.WORD	125252
1887	012416*	052525	MULTLC::	.WORD	052525 ; COMPLEMENTED ADDRESS LIST
1888	012420*	052525		.WORD	052525
1889	012422*	052525		.WORD	052525
1890	012424*	052525		.WORD	052525
1891	012426*	125252		.WORD	125252
1892	012430*	052525		.WORD	052525
1893	012432*	052525		.WORD	052525
1894	012434*	052525		.WORD	052525
1895	012436*	125252		.WORD	125252
1896	012440*	052525		.WORD	052525
1897	012442*	000000		.WORD	000000
1898	012444*	125252		.WORD	125252

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1899	012446*	052525	.WORD	052525	
1900	012450*	177777	.WORD	177777	
1901	012452*	052525	.WORD	052525	
1902	012454*	000001	.WORD	000001	
1903	012456*	000000	.WORD	000000	
1904	012460*	000000	.WORD	000000	
1905	012462*	000001	.WORD	000001	
1906	012464*	125252	.WORD	125252	
1907	012466*	052525	.WORD	052525	
1908	012470*	000001	.WORD	000001	
1909	012472*	052525	.WORD	052525	
1910	012474*	125252	.WORD	125252	
1911	012476*	000001	.WORD	000001	
1912	012500*	177777	.WORD	177777	
1913	012502*	125252	.WORD	125252	
1914	012504*	000001	.WORD	000001	
1915	012506*	000000	.WORD	000000	
1916	012510*	052525	.WORD	052525	
1917					
1918	012512*	000174	:DEFAULT EXPECTED DATA		
1919	012514*	001072	TDR14A::	.WORD 124.	: EXPECTED TDRB FOR
1920	012516*	021400		.WORD TBUF	: TESTS 14
1921	012520*	000000		.WORD 021400	: MTCH,STP,ENP
1922	012522*	000200	TDR15A::	.WORD 0	
1923	012524*	001072		.WORD 128.	: EXPECTED TDRB FOR
1924	012526*	021400		.WORD TBUF	: TESTS 15,16
1925	012530*	000000		.WORD 021400	: MTCH,STP,ENP
1926	012532*	000174	TDR18A::	.WORD 0	
1927	012534*	001072		.WORD 124.	: FIRST TDRB FOR TEST18
1928	012536*	001000		.WORD TBUF	:
1929	012540*	000000		.WORD 001000	: STP
1930	012542*	000174	TDR18B::	.WORD 0	
1931	012544*	001072		.WORD 124.	: SECOND TDRB FOR TEST18
1932	012546*	041400		.WORD TBUF	:
1933	012550*	100000		.WORD 041400	: ERRS,STP,ENP
1934	012552*	000400	TDR20A::	.WORD 100000	: BUFL
1935	012554*	001072		.WORD 256.	: FIRST TDRB FOR TEST20
1936	012556*	001000		.WORD TBUF	:
1937	012560*	000000		.WORD 001000	: STP
1938	012562*	000400	TDR20B::	.WORD 0	
1939	012564*	001472		.WORD 256.	: SECOND TDRB FOR TEST20
1940	012566*	000000		.WORD TBUF2	:
1941	012570*	000000		.WORD 0	
1942	012572*	000374	TDR20C::	.WORD 0	
1943	012574*	002072		.WORD 252.	: THIRD TDRB FOR TEST20
1944	012576*	020400		.WORD TBUF3	:
1945	012600*	000000		.WORD 020400	: MTCH,ENP
1946	012602*	000174	TDR21X::	.WORD 0	
1947	012604*	001072		.WORD 124.	: EXPECTED TDRB FOR
1948	012606*	001400		.WORD TBUF	: TESTS21,22
1949	012610*	000000		.WORD 001400	: STP,ENP
1950	012612*	000072	TDR25A::	.WORD 0	
1951	012614*	001072		.WORD 58.	: EXPECTED TDRB FOR
1952	012616*	021400		.WORD TBUF	: TEST25
1953	012620*	000000		.WORD 021400	: MTCH,STP,ENP
1954	012622*	000200	RDR14A::	.WORD 0	
				.WORD 128.	: EXPECTED RDRB FOR



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1955	012624	005072	.WORD	RBUF	: TESTS 14,16
1956	012626	045400	.WORD	045400	: ERRS,CRC,STP,ENP
1957	012630	000000	.WORD	0	
1958	012632	000200	.WORD	128.	: EXPECTED RDRB FOR
1959	012634	005072	.WORD	RBUF	: TESTS 15
1960	012636	001400	.WORD	001400	: STP,ENP
1961	012640	000000	.WORD	0	
1962	012642	000100	.WORD	64.	: FIRST RDRB FOR TEST17
1963	012644	005072	.WORD	RBUF	
1964	012646	041400	.WORD	041400	: ERRS,STP,ENP
1965	012650	120000	.WORD	120000	: BUFL,NCHN
1966	012652	000100	.WORD	64.	: SECOND RDRB FOR TEST17
1967	012654	005472	.WORD	RBUF2	
1968	012656	100000	.WORD	100000	: OWN = DEUNA
1969	012660	000000	.WORD	0	
1970	012662	000400	.WORD	256.	: FIRST RDRB FOR TEST20
1971	012664	005072	.WORD	RBUF	
1972	012666	001000	.WORD	001000	: STP
1973	012670	000000	.WORD	0	
1974	012672	000400	.WORD	256.	: SECOND RDRE FOR TEST20
1975	012674	005472	.WORD	RBUF2	
1976	012676	000000	.WORD	0	
1977	012700	000000	.WORD	0	
1978	012702	000400	.WORD	256.	: THIRD RDRB FOR TEST20
1979	012704	006072	.WORD	RBUF3	
1980	012706	044400	.WORD	044400	: ERRS, CRC, ENP
1981	012710	000000	.WORD	0	
1982	012712	036474	.WORD	6474	: EXPECTED CRC FOR TEST 14
1983	012714	131527	.WORD	131527	
1984	012716	006474	.WORD	6474	: GOOD CRC VALUE FOR TEST15
1985	012720	131527	.WORD	131527	
1986	012722	000000	.WORD	0	: BAD CRC VALUE FOR TEST16
1987	012724	000000	.WORD	0	
1988	012726	106101	.WORD	106101	: EXPECTED CRC FOR TEST20
1989	012730	101153	.WORD	101153	
1990	012732	065161	.WORD	65161	: EXPECTED CRC'S FOR TEST 21
1991	012734	050063	.WORD	50063	
1992	012736	065223	.WORD	65223	
1993	012740	025351	.WORD	25351	
1994	012742	056142	.WORD	056142	: CRC TABLE FOR TEST 22
1995	012744	171072	.WORD	171072	
1996	012746	111710	.WORD	111710	
1997	012750	043441	.WORD	043441	
1998	012752	066722	.WORD	066722	
1999	012754	111422	.WORD	111422	
2000	012756	025213	.WORD	025213	
2001	012760	044464	.WORD	044464	
2002	012762	152221	.WORD	152221	
2003	012764	116407	.WORD	116407	
2004	012766	152243	.WORD	152243	
2005	012770	176367	.WORD	176367	
2006	012772	100525	.WORD	100525	
2007	012774	130346	.WORD	130346	
2008	012776	077517	.WORD	077517	
2009	013000	062325	.WORD	062325	
2010	013002	173674	.WORD	173674	

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2011	013004*	005750	.WORD	005750	
2012	013006*	004646	.WORD	004646	
2013	013010*	157733	.WORD	157733	
2014	013012*	063264	.WORD	063264	
2015	013014*	006474	.WORD	006474	
2016	013016*	124436	.WORD	124436	
2017	013020*	134047	.WORD	134047	
2018	013022*	053404	.WORD	053404	
2019	013024*	066024	.WORD	066024	
2020	013026*	010135	.WORD	010135	
2021	013030*	133062	.WORD	133062	
2022	013032*	167107	.WORD	167107	
2023	013034*	061001	.WORD	061001	
2024	013036*	020737	.WORD	020737	
2025	013040*	133352	.WORD	133352	
2026	013042*	135603	.WORD	135603	
2027	013044*	047740	.WORD	047740	
2028	013046*	042631	.WORD	042631	
2029	013050*	115723	.WORD	115723	
2030	013052*	146552	.WORD	146552	
2031	013054*	172356	.WORD	172356	
2032	013056*	031560	.WORD	031560	
2033	013060*	020335	.WORD	020335	
2034	013062*	050247	.WORD	050247	
2035	013064*	127465	.WORD	127465	
2036	013066*	072767	.WORD	072767	: EXPECTED CRC FOR TEST25
2037	013070*	162562	.WORD	162562	
2038	013072*	005116	.WORD	005116	: EXPECTED CRC FOR TEST27
2039	013074*	171012	.WORD	171012	
2040	013076*	100014	.WORD	100014	: MODE = PROM,DTCR,INTL
2041	013100*	120004	.WORD	120004	: MODE = PROM,DRDC,INTL
2042	013102*	100000	.WORD	100000	: MODE = PROM
2043	013104*	000004	.WORD	4	: INTL LOOPBACK ONLY
2044	013106*	040004	.WORD	040004	: MODE = ENAL,INTL
2045	013110*	110004	.WORD	110004	: MODE = PROM,TPAD,INTL
2046	013112*	000005	.WORD	5	: MODE = INTL,HDUP
2047	013114*	000002	.WORD	2	: UDBB FOR TEST28
2048	013116*	000000	.WORD	0	:
2049	013120*	000000	.WORD	0	:
2050	013122*	000000	.WORD	0	:
2051	013124*	021040	.WORD	21040	: SWITCH PACK ADDRESS
2052					
2053					
2054	013126*	000000	.WORD	0	: PCSR0 AT TIME OF ERROR
2055	013130*	000000	.WORD	0	: PCSR1 AT TIME OF ERROR
2056	013132*	000000	.WORD	0	: RDRB+0 AT TIME OF ERROR
2057	013134*	000000	.WORD	0	: RDRB+2 AT TIME OF ERROR
2058	013136*	000000	.WORD	0	: RDRB+4 AT TIME OF ERROR
2059	013140*	000000	.WORD	0	: RDRB+6 AT TIME OF ERROR
2060	013142*	000000	.WORD	0	: EXPECTED RDRB+0 AT TIME OF ERROR
2061	013144*	000000	.WORD	0	: EXPECTED RDRB+2 AT TIME OF ERROR
2062	013146*	000000	.WORD	0	: EXPECTED RDRB+4 AT TIME OF ERROR
2063	013150*	000000	.WORD	0	: EXPECTED RDRB+6 AT TIME OF ERROR
2064	013152*	000000	.WORD	0	: TDRB+0 AT TIME OF ERROR
2065	013154*	000000	.WORD	0	: TDRB+2 AT TIME OF ERROR
2066	013156*	000000	.WORD	0	: TDRB+4 AT TIME OF ERROR

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2067	013160'	000000	ETDRB6::	.WORD	0	; TDRB+6 AT TIME OF ERROR
2068	013162'	000000	XTDRB0::	.WORD	0	; EXPECTED TDRB+0 AT TIME OF ERROR
2069	013164'	000000	XTDRB2::	.WORD	0	; EXPECTED TDRB+2 AT TIME OF ERROR
2070	013166'	000000	XTDRB4::	.WORD	0	; EXPECTED TDRB+4 AT TIME OF ERROR
2071	013170'	000000	XTDRB6::	.WORD	0	; EXPECTED TDRB+6 AT TIME OF ERROR
2072	013172'	000000	EDAT::	.WORD	0	; ACTUAL DATA AT TIME OF ERROR
2073	013174'	000000	XDAT::	.WORD	0	; EXPECTED DATA AT TIME OF ERROR
2074	013176'	000000	ECRC::	.WORD	0	; ACTUAL CRC VALUE AT TIME OF ERROR
2075	013200'	000000	ECRCB::	.WORD	0	
2076	013202'	000000	XCRC::	.WORD	0	; EXPECTED CRC VALUE AT TIME OF ERROR
2077	013204'	000000	XCRCB::	.WORD	0	
2078			.			
2079	013206'	000000	ECODE::	.WORD	0	; SELF TEST ERROR CODE SHIFTED RIGHT
2080			.			
2081	013210'	000000	NEXMEM::	.WORD	0	; NXM TIMEOUT FLAG
2082	013212'	000000	DNIFLG::	.WORD	0	; DNI INTERRUPT FLAG
2083	013214'	000000	FRSTIM::	.WORD	0	; FIRST TIME FLAG
2084			.			
2085	013216'	177777	PATRN1::	.WORD	177777	; SA0_SA1 TEST PATTERN
2086	013220'	000000		.WORD	0	
2087	013222'	052525		.WORD	52525	
2088	013224'	125252		.WORD	125252	
2089						
2090	013226'		ERRTBL			
2091	013226'					L\$ERRTBL::
2092	013226'	000000	ERRTYP::	.WORD	0	
2093	013230'	000000	ERRNBR::	.WORD	0	
2094	013232'	000000	ERRMSG::	.WORD	0	
2095	013234'	000000	ERRBLK::	.WORD	0	

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 CZUABA.MAC 10-JAN-83 12:46 GLOBAL TEXT SECTION

```

2096          .SBTTL  GLOBAL TEXT SECTION
2097
2098          :++
2099          : THE GLOBAL TEXT SECTION CONTAINS FORMAT STATEMENTS,
2100          : MESSAGES, AND ASCII INFORMATION THAT ARE USED IN
2101          : MORE THAN ONE TEST.
2102          :--
2103
2104          :
2105          : NAMES OF DEVICES SUPPORTED BY PROGRAM
2106          :
2107          :          DEVTYP  <DEUNA>
2108
2109          :
2110          :          :          L$DVITYP::
2111          :          :          :          .ASCIZ  /DEUNA/
2112          :          :          :          .EVEN
2113
2114          : TEST DESCRIPTION
2115          :
2116          :          DESCRIPT    <DEUNA - PDP11 FUNCTIONAL DIAGNOSTIC BASE LEVEL 5.1>
2117          :          :          :          L$DESC::
2118          :          :          :          .ASCIZ  /DEUNA - PDP11 F
2119
2120          :
2121          :
2122          :
2123          :
2124          :
2125          :
2126          :          :          .EVEN
2127
2128          :
2129          :
2130          :
2131          :          :          :          :          :          :
2132          :          :          :          :          :          :
2133          :          :          :          :          :          :
2134          :          :          :          :          :          :
2135          :          :          :          :          :          :
2136          :          :          :          :          :          :
2137          :          :          :          :          :          :
2138          :          :          :          :          :          :
2139          :          :          :          :          :          :
2140          :          :          :          :          :          :
2141          :          :          :          :          :          :
2142          :          :          :          :          :          :
2143          :          :          :          :          :          :
2144          :          :          :          :          :          :
2145          :          :          :          :          :          :
2146          :          :          :          :          :          :
2147          :          :          :          :          :          :
2148          :          :          :          :          :          :
2149          :          :          :          :          :          :
2150          :          :          :          :          :          :
2151          :          :          :          :          :          :

```

013236' 042504 047125 000101  
 013236'  
 013236'  
 013236'  
 013244' 042504 047125 020101  
 013244'  
 013244' 042504 047125 020101  
 013252' 020055 042120 030520  
 013260' 020061 052506 041516  
 013266' 044524 047117 046101  
 013274' 042040 040511 047107  
 013302' 051517 044524 020103  
 013310' 040502 042523 046040  
 013316' 053105 046105 032440  
 013324' 030456 000  
 013330'  
 013330' 047045 040445 041520  
 013336' 051123 042045 022461  
 013344' 020101 047504 051505  
 013352' 047040 052117 042440  
 013360' 044530 052123 000  
 013365' 045 022516 020101  
 013372' 054105 042520 052103  
 013400' 042105 042040 052101  
 013406' 020101 020075 047445  
 013414' 022466 022516 020101  
 013422' 041501 052524 046101  
 013430' 042040 052101 020101  
 013436' 020075 020040 047445  
 013444' 000066  
 013446' 047045 040445 050040

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 CZUABA.MAC 10-JAN-83 12:46 GLOBAL TEXT SECTION

2152	013454*	051503	030122	036440		
2153	013462*	022440	033117	047045		
2154	013470*	040445	050040	051503		
2155	013476*	030522	036440	022440		
2156	013504*	033117	000			
2157	013507*	045	022516	020101	FRM004::	.ASCIZ /%N% SELF TEST ERROR CODE = %02/
2158	013514*	042523	043114	052040		
2159	013522*	051505	020124	051105		
2160	013530*	047522	020122	047503		
2161	013536*	042504	036440	022440		
2162	013544*	031117	000			
2163	013547*	045	022516	020101	FRM005::	.ASCIZ /%N% EXPECTED TDRB+0 = %06%N% ACTUAL TDRB+0 = %06/
2164	013554*	054105	042520	052103		
2165	013562*	042105	052040	051104		
2166	013570*	025502	020060	020075		
2167	013576*	047445	022466	022516		
2168	013604*	020101	041501	052524		
2169	013612*	046101	052040	051104		
2170	013620*	025502	020060	020075		
2171	013626*	020040	047445	000066		
2172	013634*	047045	040445	042440	FRM006::	.ASCIZ /%N% EXPECTED TDRB+2 = %06%N% ACTUAL TDRB+2 = %06/
2173	013642*	050130	041505	042524		
2174	013650*	020104	042124	041122		
2175	013656*	031053	036440	022440		
2176	013664*	033117	047045	040445		
2177	013672*	040440	052103	040525		
2178	013700*	020114	042124	041122		
2179	013706*	031053	036440	020040		
2180	013714*	022440	033117	000		
2181	013721*	045	022516	020101	FRM007::	.ASCIZ /%N% EXPECTED TDRB+4 = %06%N% ACTUAL TDRB+4 = %06/
2182	013726*	054105	042520	052103		
2183	013734*	042105	052040	051104		
2184	013742*	025502	020064	020075		
2185	013750*	047445	022466	022516		
2186	013756*	020101	041501	052524		
2187	013764*	046101	052040	051104		
2188	013772*	025502	020064	020075		
2189	014000*	020040	047445	000066		
2190	014006*	047045	040445	042440	FRM008::	.ASCIZ /%N% EXPECTED TDRB+6 = %06%N% ACTUAL TDRB+6 = %06/
2191	014014*	050130	041505	042524		
2192	014022*	020104	042124	041122		
2193	014030*	033053	036440	022440		
2194	014036*	033117	047045	040445		
2195	014044*	040440	052103	040525		
2196	014052*	020114	042124	041122		
2197	014060*	033053	036440	020040		
2198	014066*	022440	033117	000		
2199	014073*	045	022516	020101	FRM009::	.ASCIZ /%N% EXPECTED RDRB+0 = %06%N% ACTUAL RDRB+0 = %06/
2200	014100*	054105	042520	052103		
2201	014106*	042105	051040	051104		
2202	014114*	025502	020060	020075		
2203	014122*	047445	022466	022516		
2204	014130*	020101	041501	052524		
2205	014136*	046101	051040	051104		
2206	014144*	025502	020060	020075		
2207	014152*	020040	047445	000066		

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2208	014160*	047045	040445	042440	FRM010::	.ASCIZ	/%N%A EXPECTED RDRB+2 = %06%N%A	ACTUAL RDRB+2 =	%06/
2209	014166*	050130	041505	042524					
2210	014174*	020104	042122	041122					
2211	014202*	031053	036440	022440					
2212	014210*	033117	047045	040445					
2213	014216*	040440	052103	040525					
2214	014224*	020114	042122	041122					
2215	014232*	031053	036440	020040					
2216	014240*	022440	033117	000					
2217	014245*	045	022516	020101	FRM011::	.ASCIZ	/%N%A EXPECTED RDRB+4 = %06%N%A	ACTUAL RDRB+4 =	%06/
2218	014252*	054105	042520	052103					
2219	014260*	042105	051040	051104					
2220	014266*	025502	020064	020075					
2221	014274*	047445	022466	022516					
2222	014302*	020101	041501	052524					
2223	014310*	046101	051040	051104					
2224	014316*	025502	020064	020075					
2225	014324*	020040	047445	000066					
2226	014332*	047045	040445	042440	FRM012::	.ASCIZ	/%N%A EXPECTED RDRB+6 = %06%N%A	ACTUAL RDRB+6 =	%06/
2227	014340*	050130	041505	042524					
2228	014346*	020104	042122	041122					
2229	014354*	033053	036440	022440					
2230	014362*	033117	047045	040445					
2231	014370*	040440	052103	040525					
2232	014376*	020114	042122	041122					
2233	014404*	033053	036440	020040					
2234	014412*	022440	033117	000					
2235	014417*	045	022516	020101	FRM013::	.ASCIZ	/%N%A EXPECTED CRC = %06%N%A		%06/
2236	014424*	054105	042520	052103					
2237	014432*	042105	041440	041522					
2238	014440*	036440	022440	033117					
2239	014446*	047045	040445	020040					
2240	014454*	020040	020040	020040					
2241	014462*	020040	020040	020040					
2242	014470*	020040	047445	000066					
2243	014476*	047045	040445	040440	FRM014::	.ASCIZ	/%N%A ACTUAL CRC = %06%N%A		%06/
2244	014504*	052103	040525	020114					
2245	014512*	051103	020103	020040					
2246	014520*	020075	047445	022466					
2247	014526*	022516	020101	020040					
2248	014534*	020040	020040	020040					
2249	014542*	020040	020040	020040					
2250	014550*	022440	033117	000					
2251	014555*	045	022516	000124	FRM015::	.ASCIZ	/%N%T/		
2252	014562*	047045	040445	047522	FRM016::	.ASCIZ	/%N%AROM MICROCODE VERSION (DECIMAL): %D2/		
2253	014570*	020115	044515	051103					
2254	014576*	041517	042117	020105					
2255	014604*	042526	051522	047511					
2256	014612*	020116	042050	041505					
2257	014620*	046511	046101	035051					
2258	014626*	022440	031104	000					
2259	014633*	045	022516	051501	FRM017::	.ASCIZ	/%N%ASWITCH PACK = %06/		
2260	014640*	044527	041524	020110					
2261	014646*	040520	045503	036440					
2262	014654*	022440	033117	000					
2263	014661*	045	022516	050101	FRM018::	.ASCIZ	/%N%APORT STATUS WORD 1: %06/		

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 CZUABA.MAC 10-JAN-83 12:46 GLOBAL TEXT SECTION

2264	014666'	051117	020124	052123			
2265	014674'	052101	051525	053440			
2266	014702'	051117	020104	035061			
2267	014710'	022440	033117	000			
2268	014715'	045	022516	020101	FRM019::	.ASCIZ /%NZA	WORD 2: %06/
2269	014722'	020040	020040	020040			
2270	014730'	020040	020040	053440			
2271	014736'	051117	020104	035062			
2272	014744'	022440	033117	000			
2273	014751'	045	022516	020101	FRM020::	.ASCIZ /%NZA	WORD 3: %06/
2274	014756'	020040	020040	020040			
2275	014764'	020040	020040	053440			
2276	014772'	051117	020104	035063			
2277	015000'	022440	033117	000			
2278	015005'	045	022516	020101	FRM021::	.ASCIZ /%NZA	WORD 4: %06/
2279	015012'	020040	020040	020040			
2280	015020'	020040	020040	053440			
2281	015026'	051117	020104	035064			
2282	015034'	022440	033117	000			
2283	015042'				.EVEN		

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GLOBAL ERROR REPORT SECTION

.SBTTL GLOBAL ERROR REPORT SECTION

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

```

2284
2285
2286
2287
2288
2289
2290
2291
2292
2293
2294 015042'          BGNMSG MSG001
2295 015042'          PRINTB #FRM001,R2          MSG001::
2296 015042'
2297 015042' 010246
2298 015044' 012746 013330'
2299 015050' 012746 000002
2300 015054' 010600
2301 015056' 104414
2302 015060' 062706 000006
2303 015064'          ENDMSG
2304 015064'
2305 015064' 104423          L10002: TRAP C$MSG
2306
2307 015066'          BGNMSG MSG002
2308 015066'          PRINTB #FRM002,R3,R4      MSG002::
2309 015066'
2310 015066' 010446
2311 015070' 010346
2312 015072' 012746 013365'
2313 015076' 012746 000003
2314 015102' 010600
2315 015104' 104414
2316 015106' 062706 000010
2317 015112'          ENDMSG
2318 015112'
2319 015112' 104423          L10003: TRAP C$MSG
2320
2321 015114'          BGNMSG MSG003
2322 015114'          PRINTB #FRM003,EPCSR0,EPCSR1  MSG003::
2323 015114'
2324 015114' 013746 013130'
2325 015120' 013746 013126'
2326 015124' 012746 013446'
2327 015130' 012746 000003
2328 015134' 010600
2329 015136' 104414
2330 015140' 062706 000010
2331 015144'          ENDMSG
2332 015144'
2333 015144' 104423          L10004: TRAP C$MSG
2334
2335 015146'          BGNMSG MSG004
2336 015146'          PRINTB #FRM004,ECODE      MSG004::
2337 015146'
2338 015146' 013746 013206'
2339 015152' 012746 013507'

```

```

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

```

```

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

```

```

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

```

```

MOV ECODE,-(SP)
MOV #FRM004,-(SP)

```



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GLOBAL ERROR REPORT SECTION

2340 015156' 012746 000002  
 2341 015162' 010600  
 2342 015164' 104414  
 2343 015166' 062706 000006  
 2344 015172'  
 2345 015172' 013746 026656'  
 2346 015176' 012746 014555'  
 2347 015202' 012746 000002  
 2348 015206' 010600  
 2349 015210' 104414  
 2350 015212' 062706 000006  
 2351 015216'  
 2352 015216'  
 2353 015216' 104423  
 2354  
 2355 015220'  
 2356 015220'  
 2357 015220'  
 2358 015220' 013746 013152'  
 2359 015224' 013746 013162'  
 2360 015230' 012746 013547'  
 2361 015234' 012746 000003  
 2362 015240' 010600  
 2363 015242' 104414  
 2364 015244' 062706 000010  
 2365 015250'  
 2366 015250' 013746 013154'  
 2367 015254' 013746 013164'  
 2368 015260' 012746 013634'  
 2369 015264' 012746 000003  
 2370 015270' 010600  
 2371 015272' 104414  
 2372 015274' 062706 000010  
 2373 015300'  
 2374 015300' 013746 013156'  
 2375 015304' 013746 013166'  
 2376 015310' 012746 013721'  
 2377 015314' 012746 000003  
 2378 015320' 010600  
 2379 015322' 104414  
 2380 015324' 062706 000010  
 2381 015330'  
 2382 015330' 013746 013166'  
 2383 015334' 013746 013170'  
 2384 015340' 012746 014006'  
 2385 015344' 012746 000003  
 2386 015350' 010600  
 2387 015352' 104414  
 2388 015354' 062706 000010  
 2389 015360'  
 2390 015360'  
 2391 015360' 104423  
 2392  
 2393 015362'  
 2394 015362'  
 2395 015362'

PRINTB #FRM015,STMSG

ENDMSG

BGNMSG MSG005

PRINTB #FRM005,XTDRB0,ETDRB0

PRINTB #FRM006,XTDRB2,ETDRB2

PRINTB #FRM007,XTDRB4,ETDRB4

PRINTB #FRM008,XTDRB6,ETDRB6

ENDMSG

BGNMSG MSG006

PRINTB #FRM009,XRDRB0,ERDRB0

MOV #2,-(SP)  
 MOV SP,RO  
 TRAP C\$PNTB  
 ADD #6,SP

MOV STMSG,-(SP)  
 MOV #FRM015,-(SP)  
 MOV #2,-(SP)  
 MOV SP,RO  
 TRAP C\$PNTB  
 ADD #6,SP

L10005: TRAP C\$MSG

MSG005::

MOV ETDRB0,-(SP)  
 MOV XTDRB0,-(SP)  
 MOV #FRM005,-(SP)  
 MOV #3,-(SP)  
 MOV SP,RO  
 TRAP C\$PNTB  
 ADD #10,SP

MOV ETDRB2,-(SP)  
 MOV XTDRB2,-(SP)  
 MOV #FRM006,-(SP)  
 MOV #3,-(SP)  
 MOV SP,RO  
 TRAP C\$PNTB  
 ADD #10,SP

MOV ETDRB4,-(SP)  
 MOV XTDRB4,-(SP)  
 MOV #FRM007,-(SP)  
 MOV #3,-(SP)  
 MOV SP,RO  
 TRAP C\$PNTB  
 ADD #10,SP

MOV ETDRB6,-(SP)  
 MOV XTDRB6,-(SP)  
 MOV #FRM008,-(SP)  
 MOV #3,-(SP)  
 MOV SP,RO  
 TRAP C\$PNTB  
 ADD #10,SP

L10006: TRAP C\$MSG

MSG006::

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GLOBAL ERROR REPORT SECTION

2396 015362' 013746 013132'  
 2397 015366' 013746 013142'  
 2398 015372' 012746 014073'  
 2399 015376' 012746 000003  
 2400 015402' 010600  
 2401 015404' 104414  
 2402 015406' 062706 000010  
 2403 015412'  
 2404 015412' 013746 013134'  
 2405 015416' 013746 013144'  
 2406 015422' 012746 014160'  
 2407 015426' 012746 000003  
 2408 015432' 010600  
 2409 015434' 104414  
 2410 015436' 062706 000010  
 2411 015442'  
 2412 015442' 013746 013136'  
 2413 015446' 013746 013146'  
 2414 015452' 012746 014245'  
 2415 015456' 012746 000003  
 2416 015462' 010600  
 2417 015464' 104414  
 2418 015466' 062706 000010  
 2419 015472'  
 2420 015472' 013746 013140'  
 2421 015476' 013746 013150'  
 2422 015502' 012746 014332'  
 2423 015506' 012746 000003  
 2424 015512' 010600  
 2425 015514' 104414  
 2426 015516' 062706 000010  
 2427 015522'  
 2428 015522'  
 2429 015522' 104423  
 2430  
 2431 015524'  
 2432 015524'  
 2433 015524'  
 2434 015524' 013746 013172'  
 2435 015530' 013746 013174'  
 2436 015534' 012746 013365'  
 2437 015540' 012746 000003  
 2438 015544' 010600  
 2439 015546' 104414  
 2440 015550' 062706 000010  
 2441 015554'  
 2442 015554'  
 2443 015554' 104423  
 2444  
 2445 015556'  
 2446 015556'  
 2447 015556'  
 2448 015556' 013746 013204'  
 2449 015562' 013746 013202'  
 2450 015566' 012746 014417'  
 2451 015572' 012746 000003

PRINTB #FRM010,XRDRB2,ERDRB2

PRINTB #FRM011,XRDRB4,ERDRB4

PRINTB #FRM012,XRDRB6,ERDRB6

ENDMSG

BGNMSG MSG007

PRINTB #FRM002,XDAT,EDAT

ENDMSG

BGNMSG MSG008

PRINTB #FRM013,XCRC,XCRCB

MOV ERDRB0,-(SP)  
 MOV XRDRB0,-(SP)  
 MOV #FRM009,-(SP)  
 MOV #3,-(SP)  
 MOV SP,R0  
 TRAP C\$PNTB  
 ADD #10,SP

MOV ERDRB2,-(SP)  
 MOV XRDRB2,-(SP)  
 MOV #FRM010,-(SP)  
 MOV #3,-(SP)  
 MOV SP,R0  
 TRAP C\$PNTB  
 ADD #10,SP

MOV ERDRB4,-(SP)  
 MOV XRDRB4,-(SP)  
 MOV #FRM011,-(SP)  
 MOV #3,-(SP)  
 MOV SP,R0  
 TRAP C\$PNTB  
 ADD #10,SP

MOV ERDRB6,-(SP)  
 MOV XRDRB6,-(SP)  
 MOV #FRM012,-(SP)  
 MOV #3,-(SP)  
 MOV SP,R0  
 TRAP C\$PNTB  
 ADD #10,SP

L10007: TRAP C\$MSG

MSG007::

MOV EDAT,-(SP)  
 MOV XDAT,-(SP)  
 MOV #FRM002,-(SP)  
 MOV #3,-(SP)  
 MOV SP,R0  
 TRAP C\$PNTB  
 ADD #10,SP

L10010: TRAP C\$MSG

MSG008::

MOV XCRCB,-(SP)  
 MOV XCRC,-(SP)  
 MOV #FRM013,-(SP)  
 MOV #3,-(SP)

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2452 015576\* 010600  
 2453 015600\* 104414  
 2454 015602\* 062706 000010  
 2455 015606\*  
 2456 015606\* 013746 013200\*  
 2457 015612\* 013746 013176\*  
 2458 015616\* 012746 014476\*  
 2459 015622\* 012746 000003  
 2460 015626\* 010600  
 2461 015630\* 104414  
 2462 015632\* 062706 000010  
 2463 015636\*  
 2464 015636\*  
 2465 015636\* 104423  
 2466  
 2467 015640\*  
 2468 015640\*  
 2469 015640\*  
 2470 015640\* 013746 000252\*  
 2471 015644\* 012746 014661\*  
 2472 015650\* 012746 000002  
 2473 015654\* 010600  
 2474 015656\* 104414  
 2475 015660\* 062706 000006  
 2476 015664\*  
 2477 015664\* 013746 000254\*  
 2478 015670\* 012746 014715\*  
 2479 015674\* 012746 000002  
 2480 015700\* 010600  
 2481 015702\* 104414  
 2482 015704\* 062706 000006  
 2483 015710\*  
 2484 015710\* 013746 000256\*  
 2485 015714\* 012746 014751\*  
 2486 015720\* 012746 000002  
 2487 015724\* 010600  
 2488 015726\* 104414  
 2489 015730\* 062706 000006  
 2490 015734\*  
 2491 015734\* 013746 000260\*  
 2492 015740\* 012746 015005\*  
 2493 015744\* 012746 000002  
 2494 015750\* 010600  
 2495 015752\* 104414  
 2496 015754\* 062706 000006  
 2497 015760\*  
 2498 015760\*  
 2499 015760\* 104423  
 2500  
 2501 015762\* 005015 042522 044507  
 2502 015770\* 052123 051105 040440  
 2503 015776\* 041503 051505 020123  
 2504 016004\* 051105 047522 000122  
 2505 016012\* 005015 040504 040524  
 2506 016020\* 041440 046517 040520  
 2507 016026\* 042522 042440 051122

ENDMSG

BGNMSG MSG009

PRINTB #FRM014,ECRC,ECRCB

PRINTB #FRM018,PCBB

PRINTB #FRM019,PCBB+2

PRINTB #FRM020,PCBB+4

PRINTB #FRM021,PCBB+6

ENDMSG

ERR001:: .ASCIZ <15><12>/REGISTER ACCESS ERROR/

ERR002:: .ASCIZ <15><12>/DATA COMPARE ERROR IN PCSR2/

MOV SP,RO  
 TRAP C\$PNTB  
 ADD #10,SP  
 MOV ECRCB,-(SP)  
 MOV ECRC,-(SP)  
 MOV #FRM014,-(SP)  
 MOV #3,-(SP)  
 MOV SP,RO  
 TRAP C\$PNTB  
 ADD #10,SP

L10011: TRAP C\$MSG

MSG009::  
 MOV PCBB,-(SP)  
 MOV #FRM018,-(SP)  
 MOV #2,-(SP)  
 MOV SP,RO  
 TRAP C\$PNTB  
 ADD #6,SP  
 MOV PCBB+2,-(SP)  
 MOV #FRM019,-(SP)  
 MOV #2,-(SP)  
 MOV SP,RO  
 TRAP C\$PNTB  
 ADD #6,SP

MOV PCBB+4,-(SP)  
 MOV #FRM020,-(SP)  
 MOV #2,-(SP)  
 MOV SP,RO  
 TRAP C\$PNTB  
 ADD #6,SP  
 MOV PCBB+6,-(SP)  
 MOV #FRM021,-(SP)  
 MOV #2,-(SP)  
 MOV SP,RO  
 TRAP C\$PNTB  
 ADD #6,SP

L10012: TRAP C\$MSG

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2508	016034*	051117	044440	020116		
2509	016042*	041520	051123	000062		
2510	016050*	005015	040504	040524	ERR003::	.ASCIZ <15><12>/DATA COMPARE ERROR IN PCSR3/
2511	016056*	041440	046517	040520		
2512	016064*	042522	042440	051122		
2513	016072*	051117	044440	020116		
2514	016100*	041520	051123	000063		
2515	016106*	005015	047104	020111	ERR004::	.ASCII <15><12>/DNI BIT FAILED TO SET AFTER /
2516	016114*	044502	020124	040506		
2517	016122*	046111	042105	052040		
2518	016130*	020117	042523	020124		
2519	016136*	043101	042524	020122		
2520	016144*	042504	044526	042503		.ASCIZ /DEVICE RESET /
2521	016152*	051040	051505	052105		
2522	016160*	000040				
2523	016162*	005015	042523	043114	ERR005::	.ASCIZ <15><12>/SELF TEST FAILURE/
2524	016170*	052040	051505	020124		
2525	016176*	040506	046111	051125		
2526	016204*	000105				
2527	016206*	005015	051127	052111	ERR006::	.ASCIZ <15><12>/WRITING ONE TO CLEAR DNI BIT FAILED/
2528	016214*	047111	020107	047117		
2529	016222*	020105	047524	041440		
2530	016230*	042514	051101	042040		
2531	016236*	044516	041040	052111		
2532	016244*	043040	044501	042514		
2533	016252*	000104				
2534	016254*	005015	047516	042040	ERR007::	.ASCII <15><12>/NO DNI INTERRUPT OCCURED /
2535	016262*	044516	044440	052116		
2536	016270*	051105	052522	052120		
2537	016276*	047440	041503	051125		
2538	016304*	042105	040			
2539	016307*	101	052106	051105		.ASCIZ /AFTER GET PCBB PORT COMMAND/
2540	016314*	043440	052105	050040		
2541	016322*	041103	020102	047520		
2542	016330*	052122	041440	046517		
2543	016336*	040515	042116	000		
2544	016343*	015	042012	044516	ERR008::	.ASCII <15><12>/DNI BIT FAILED TO SET AFTER /
2545	016350*	041040	052111	043040		
2546	016356*	044501	042514	020104		
2547	016364*	047524	051440	052105		
2548	016372*	040440	052106	051105		
2549	016400*	040				
2550	016401*	116	050117	050040		.ASCIZ /NOP PORT COMMAND/
2551	016406*	051117	020124	047503		
2552	016414*	046515	047101	000104		
2553	016422*	005015	047104	020111	ERR009::	.ASCII <15><12>/DNI BIT FAILED TO SET AFTER /
2554	016430*	044502	020124	040506		
2555	016436*	046111	042105	052040		
2556	016444*	020117	042523	020124		
2557	016452*	043101	042524	020122		
2558	016460*	042507	020124	041520		.ASCIZ /GET PCBB PORT COMMAND/
2559	016466*	041102	050040	051117		
2560	016474*	020124	047503	046515		
2561	016502*	047101	000104			
2562	016506*	005015	047104	020111	ERR010::	.ASCII <15><12>/DNI BIT FAILED TO SET AFTER /
2563	016514*	044502	020124	040506		

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2564	016522*	046111	042105	052040	
2565	016530*	020117	042523	020124	
2566	016536*	043101	042524	020122	
2567	016544*	042507	020124	046503	.ASCIZ /GET CMD PORT COMMAND/
2568	016552*	020104	047520	052122	
2569	016560*	041440	046517	040515	
2570	016566*	042116	000		
2571	016571*	015	042012	052101	ERR011:: .ASCIZ <15><12>/DATA COMPARE ERROR IN MODE REGISTER/
2572	016576*	020101	047503	050115	
2573	016604*	051101	020105	051105	
2574	016612*	047522	020122	047111	
2575	016620*	046440	042117	020105	
2576	016626*	042522	044507	052123	
2577	016634*	051105	000		
2578	016637*	015	042012	044516	ERR012:: .ASCII <15><12>/DNI BIT FAILED TO SET AFTER /
2579	016644*	041040	052111	043040	
2580	016652*	044501	042514	020104	
2581	016660*	047524	051440	052105	
2582	016666*	040440	052106	051105	
2583	016674*	040			
2584	016675*	123	040524	052122	.ASCIZ /START PORT COMMAND/
2585	016702*	050040	051117	020124	
2586	016710*	047503	046515	047101	
2587	016716*	000104			
2588	016720*	005015	054124	020111	ERR013:: .ASCIZ <15><12>/TXI BIT FAILED TO SET /
2589	016726*	044502	020124	040506	
2590	016734*	046111	042105	052040	
2591	016742*	020117	042523	020124	
2592	016750*	000			
2593	016751*	015	053412	044522	ERR014:: .ASCIZ <15><12>/WRITING ONE TO CLEAR TXI BIT FAILED/
2594	016756*	044524	043516	047440	
2595	016764*	042516	052040	020117	
2596	016772*	046103	040505	020122	
2597	017000*	054124	020111	044502	
2598	017006*	020124	040506	046111	
2599	017014*	042105	000		
2600	017017*	015	051012	044530	ERR015:: .ASCIZ <15><12>/RXI BIT FAILED TO SET /
2601	017024*	041040	052111	043040	
2602	017032*	044501	042514	020104	
2603	017040*	047524	051440	052105	
2604	017046*	000040			
2605	017050*	005015	051127	052111	ERR016:: .ASCIZ <15><12>/WRITING ONE TO CLEAR RXI BIT FAILED/
2606	017056*	047111	020107	047117	
2607	017064*	020105	047524	041440	
2608	017072*	042514	051101	051040	
2609	017100*	044530	041040	052111	
2610	017106*	043040	044501	042514	
2611	017114*	000104			
2612	017116*	005015	044524	042515	ERR017:: .ASCII <15><12>/TIMEOUT ERROR - DENUA FAILED TO /
2613	017124*	052517	020124	051105	
2614	017132*	047522	020122	020055	
2615	017140*	042504	052516	020101	
2616	017146*	040506	046111	042105	
2617	017154*	052040	020117		
2618	017160*	042522	044514	050516	.ASCIZ /RELINQUISH OWNERSHIP OF RDRB /
2619	017166*	044525	044123	047440	

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2620	017174*	047127	051105	044123		
2621	017202*	050111	047440	020106		
2622	017210*	042122	041122	000040		
2623	017216*	005015	044524	042515	ERR018::	.ASCII <15><12>/TIMEOUT ERROR - DENUA FAILED TO /
2624	017224*	052517	020124	051105		
2625	017232*	047522	020122	020055		
2626	017240*	042504	052516	020101		
2627	017246*	040506	046111	042105		
2628	017254*	052040	020117			
2629	017260*	042522	044514	050516		.ASCIZ /RELINQUISH OWNERSHIP OF TDRB /
2630	017266*	044525	044123	047440		
2631	017274*	047127	051105	044123		
2632	017302*	050111	047440	020106		
2633	017310*	042124	041122	000040		
2634	017316*	005015	047104	020111	ERR019::	.ASCII <15><12>/DNI BIT FAILED TO SET AFTER /
2635	017324*	044502	020124	040506		
2636	017332*	046111	042105	052040		
2637	017340*	020117	042523	020124		
2638	017346*	043101	042524	020122		
2639	017354*	052123	050117	050040		.ASCIZ /STOP PORT COMMAND/
2640	017362*	051117	020124	047503		
2641	017370*	046515	047101	000104		
2642	017376*	005015	040504	040524	ERR020::	.ASCII <15><12>/DATA COMPARE ERROR IN /
2643	017404*	041440	046517	040520		
2644	017412*	042522	042440	051122		
2645	017420*	051117	044440	020116		
2646	017426*	051124	047101	046523		.ASCIZ /TRANSMIT DESCRIPTOR RING/
2647	017434*	052111	042040	051505		
2648	017442*	051103	050111	047524		
2649	017450*	020122	044522	043516		
2650	017456*	000				
2651	017457*	015	042012	052101	ERR021::	.ASCII <15><12>/DATA COMPARE ERROR IN /
2652	017464*	020101	047503	050115		
2653	017472*	051101	020105	051105		
2654	017500*	047522	020122	047111		
2655	017506*	020040				
2656	017510*	042522	042503	053111		.ASCIZ /RECEIVE DESCRIPTOR RING/
2657	017516*	020105	042504	041523		
2658	017524*	044522	052120	051117		
2659	017532*	051040	047111	000107		
2660	017540*	005015	051124	047101	ERR022::	.ASCIZ <15><12>/TRANSMIT-RECEIVE DATA COMPARE ERROR /
2661	017546*	046523	052111	051055		
2662	017554*	041505	044505	042526		
2663	017562*	042040	052101	020101		
2664	017570*	047503	050115	051101		
2665	017576*	020105	051105	047522		
2666	017604*	020122	000			
2667	017607*	015	041412	041522	ERR023::	.ASCIZ <15><12>/CRC COMPARE ERROR /
2668	017614*	041440	046517	040520		
2669	017622*	042522	042440	051122		
2670	017630*	051117	000040			
2671	017634*	005015	047111	042524	ERR024::	.ASCIZ <15><12>/INTERNAL ROM CRC COMPARE ERROR /
2672	017642*	047122	046101	051040		
2673	017650*	046517	041440	041522		
2674	017656*	041440	046517	040520		
2675	017664*	042522	042440	051122		

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2676	017672*	051117	000040			
2677	017676*	005015	041522	044502	ERR025::	.ASCIZ <15><12>/RCBI BIT FAILED TO SET /
2678	017704*	041040	052111	043040		
2679	017712*	044501	042514	020104		
2680	017720*	047524	051440	052105		
2681	017726*	000040				
2682	017730*	005015	051127	052111	ERR026::	.ASCIZ <15><12>/WRITING ONE TO CLEAR RCBI BIT FAILED/
2683	017736*	047111	020107	047117		
2684	017744*	020105	047524	041440		
2685	017752*	042514	051101	051040		
2686	017760*	041103	020111	044502		
2687	017766*	020124	040506	046111		
2688	017774*	042105	000			
2689	017777*	015	052012	046511	ERR027::	.ASCII <15><12>/TIMEOUT ERROR - DENUA FAILED TO RELINQUISH/
2690	020004*	047505	052125	042440		
2691	020012*	051122	051117	026440		
2692	020020*	042040	047105	040525		
2693	020026*	043040	044501	042514		
2694	020034*	020104	047524	051040		
2695	020042*	046105	047111	052521		
2696	020050*	051511	110			
2697	020053*	040	053517	042516		.ASCIZ / OWNERSHIP OF FIRST TDRB/
2698	020060*	051522	044510	020120		
2699	020066*	043117	043040	051111		
2700	020074*	052123	052040	051104		
2701	020102*	000102				
2702	020104*	005015	044524	042515	ERR028::	.ASCII <15><12>/TIMEOUT ERROR - DENUA FAILED TO RELINQUISH/
2703	020112*	052517	020124	051105		
2704	020120*	047522	020122	020055		
2705	020126*	042504	052516	020101		
2706	020134*	040506	046111	042105		
2707	020142*	052040	020117	042522		
2708	020150*	044514	050516	044525		
2709	020156*	044123				
2710	020160*	047440	047127	051105		.ASCIZ / OWNERSHIP OF SECOND TDRB/
2711	020166*	044123	050111	047440		
2712	020174*	020106	042523	047503		
2713	020202*	042116	052040	051104		
2714	020210*	000102				
2715	020212*	005015	044524	042515	ERR029::	.ASCII <15><12>/TIMEOUT ERROR - DENUA FAILED TO RELINQUISH/
2716	020220*	052517	020124	051105		
2717	020226*	047522	020122	020055		
2718	020234*	042504	052516	020101		
2719	020242*	040506	046111	042105		
2720	020250*	052040	020117	042522		
2721	020256*	044514	050516	044525		
2722	020264*	044123				
2723	020266*	047440	047127	051105		.ASCIZ / OWNERSHIP OF THIRD TDRB/
2724	020274*	044123	050111	047440		
2725	020302*	020106	044124	051111		
2726	020310*	020104	042124	041122		
2727	020316*	000				
2728	020317*	015	052012	046511	ERR030::	.ASCII <15><12>/TIMEOUT ERROR - DENUA FAILED TO RELINQUISH/
2729	020324*	047505	052125	042440		
2730	020332*	051122	051117	026440		
2731	020340*	042040	047105	040525		

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2732	020346*	043040	044501	042514	
2733	020354*	020104	047524	051040	
2734	020362*	046105	047111	052521	
2735	020370*	051511	110		
2736	020373*	040	053517	042516	.ASCIZ / OWNERSHIP OF FIRST RDRB/
2737	020400*	051522	045510	020120	
2738	020406*	043117	043040	051111	
2739	020414*	052123	051040	051104	
2740	020422*	000102			
2741	020424*	005015	044524	042515	ERR031::
2742	020432*	052517	020124	051105	.ASCII <15><12>/TIMEOUT ERROR - DENUA FAILED TO RELINQUISH/
2743	020440*	047522	020122	020055	
2744	020446*	042504	052516	020101	
2745	020454*	040506	046111	042105	
2746	020462*	052040	020117	042522	
2747	020470*	044514	050516	044525	
2748	020476*	044123			
2749	020500*	047440	047127	051105	.ASCIZ / OWNERSHIP OF SECOND RDRB/
2750	020506*	044123	050111	047440	
2751	020514*	020106	042523	047503	
2752	020522*	042116	051040	051104	
2753	020530*	000102			
2754	020532*	005015	044524	042515	ERR032::
2755	020540*	052517	020124	051105	.ASCII <15><12>/TIMEOUT ERROR - DENUA FAILED TO RELINQUISH/
2756	020546*	047522	020122	020055	
2757	020554*	042504	052516	020101	
2758	020562*	040506	046111	042105	
2759	020570*	052040	020117	042522	
2760	020576*	044514	050516	044525	
2761	020604*	044123			
2762	020606*	047440	047127	051105	.ASCIZ / OWNERSHIP OF THIRD RDRB/
2763	020614*	044123	050111	047440	
2764	020622*	020106	044124	051111	
2765	020630*	020104	042122	041122	
2766	020636*	000			
2767	020637*	015	042012	052101	ERR033::
2768	020644*	020101	047503	050115	.ASCII <15><12>/DATA COMPARE ERROR IN /
2769	020652*	051101	020105	051105	
2770	020660*	047522	020122	047111	
2771	020666*	040			
2772	020667*	106	051111	052123	.ASCIZ /FIRST TRANSMIT DESCRIPTOR RING/
2773	020674*	052040	040522	051516	
2774	020702*	044515	020124	042504	
2775	020710*	041523	044522	052120	
2776	020716*	051117	051040	047111	
2777	020724*	000107			
2778	020726*	005015	040504	040524	ERR034::
2779	020734*	041440	046517	040520	.ASCII <15><12>/DATA COMPARE ERROR IN /
2780	020742*	042522	042440	051122	
2781	020750*	051117	044440	020116	
2782	020756*	042523	047503	042116	.ASCIZ /SECOND TRANSMIT DESCRIPTOR RING/
2783	020764*	052040	040522	051516	
2784	020772*	044515	020124	042504	
2785	021000*	041523	044522	052120	
2786	021006*	051117	051040	047111	
2787	021014*	000107			



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2788	021016*	005015	040504	040524	ERR035::	.ASCII <15><12>/DATA COMPARE ERROR IN /
2789	021024*	041440	046517	040520		
2790	021032*	042522	042440	051122		
2791	021040*	051117	044440	020116		
2792	021046*	044124	051111	020104		.ASCIZ /THIRD TRANSMIT DESCRIPTOR RING/
2793	021054*	051124	047101	046523		
2794	021062*	052111	042040	051505		
2795	021070*	051103	050111	047524		
2796	021076*	020122	044522	043516		
2797	021104*	000				
2798	021105*	015	042012	052101	ERR036::	.ASCII <15><12>/DATA COMPARE ERROR IN /
2799	021112*	020101	047503	050115		
2800	021120*	051101	020105	051105		
2801	021126*	047522	020122	047111		
2802	021134*	040				
2803	021135*	106	051111	052123		.ASCIZ /FIRST RECEIVE DESCRIPTOR RING/
2804	021142*	051040	041505	044505		
2805	021150*	042526	042040	051505		
2806	021156*	051103	050111	047524		
2807	021164*	020122	044522	043516		
2808	021172*	000				
2809	021173*	015	042012	052101	ERR037::	.ASCII <15><12>/DATA COMPARE ERROR IN /
2810	021200*	020101	047503	050115		
2811	021206*	051101	020105	051105		
2812	021214*	047522	020122	047111		
2813	021222*	040				
2814	021223*	123	041505	047117		.ASCIZ /SECOND RECEIVE DESCRIPTOR RING/
2815	021230*	020104	042522	042503		
2816	021236*	053111	020105	042504		
2817	021244*	041523	044522	052120		
2818	021252*	051117	051040	047111		
2819	021260*	000107				
2820	021262*	005015	040504	040524	ERR038::	.ASCII <15><12>/DATA COMPARE ERROR IN /
2821	021270*	041440	046517	040520		
2822	021276*	042522	042440	051122		
2823	021304*	051117	044440	020116		
2824	021312*	044124	051111	020104		.ASCIZ /THIRD RECEIVE DESCRIPTOR RING/
2825	021320*	042522	042503	053111		
2826	021326*	020105	042504	041523		
2827	021334*	044522	052120	051117		
2828	021342*	051040	047111	000107		
2829	021350*	005015	051105	047522	ERR039::	.ASCII <15><12>/ERROR - LOOPBACK SUCCESSFUL WITH/
2830	021356*	020122	020055	047514		
2831	021364*	050117	040502	045503		
2832	021372*	051440	041525	042503		
2833	021400*	051523	052506	020114		
2834	021406*	044527	044124			
2835	021412*	005015	047111	040526		.ASCIZ <15><12>/INVALID DESTINATION ADDRESS /
2836	021420*	044514	020104	042504		
2837	021426*	052123	047111	052101		
2838	021434*	047511	020116	042101		
2839	021442*	051104	051505	020123		
2840	021450*	000				
2841	021451*	015	041012	043125	ERR040::	.ASCII <15><12>/BUFL BIT FAILED TO SET /
2842	021456*	020114	044502	020124		
2843	021464*	040506	046111	042105		

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2844	021472*	052040	020117	042523	
2845	021500*	020124			
2846	021502*	044127	047105	040440	.ASCIZ /WHEN ATTEMPTING TO TRANSMIT A RUNT PACKET/
2847	021510*	052124	046505	052120	
2848	021516*	047111	020107	047524	
2849	021524*	052040	040522	051516	
2850	021532*	044515	020124	020101	
2851	021540*	052522	052116	050040	
2852	021546*	041501	042513	000124	
2853	021554*	005015	040520	020104	ERR041:: .ASCIZ <15><12>/PAD RUNT PACKET FAILURE /
2854	021562*	052522	052116	050040	
2855	021570*	041501	042513	020124	
2856	021576*	040506	046111	051125	
2857	021604*	020105	000		
2858	021607*	015	053412	051503	ERR042:: .ASCIZ <15><12>/WCS MEMORY DATA COMPARE ERROR /
2859	021614*	046440	046505	051117	
2860	021622*	020131	040504	040524	
2861	021630*	041440	046517	040520	
2862	021636*	042522	042440	051122	
2863	021644*	051117	000040		
2864	021650*	005015	044514	045516	ERR043:: .ASCIZ <15><12>/LINK MEMORY DATA COMPARE ERROR /
2865	021656*	046440	046505	051117	
2866	021664*	020131	040504	040524	
2867	021672*	041440	046517	040520	
2868	021700*	042522	042440	051122	
2869	021706*	051117	000040		
2870	021712*	005015	047104	020111	ERR044:: .ASCII <15><12>/DNI BIT FAILED TO SET AFTER /
2871	021720*	044502	020124	040506	
2872	021726*	046111	042105	052040	
2873	021734*	020117	042523	020124	
2874	021742*	043101	042524	020122	
2875	021750*	042522	042101	041440	.ASCIZ /READ COUNTERS PORT COMMAND/
2876	021756*	052517	052116	051105	
2877	021764*	020123	047520	052122	
2878	021772*	041440	046517	040515	
2879	022000*	042116	000		
2880	022003*	015	042012	044516	ERR045:: .ASCII <15><12>/DNI BIT FAILED TO SET AFTER /
2881	022010*	041040	052111	043040	
2882	022016*	044501	042514	020104	
2883	022024*	047524	051440	052105	
2884	022032*	040440	052106	051105	
2885	022040*	040			
2886	022041*	123	046105	020106	.ASCIZ /SELF TEST PORT COMMAND/
2887	022046*	042524	052123	050040	
2888	022054*	051117	020124	047503	
2889	022062*	046515	047101	000104	
2890	022070*	005015	051105	047522	ERR046:: .ASCII <15><12>/ERROR - LOOPBACK SUCCESSFUL WITH/
2891	022076*	020122	020055	047514	
2892	022104*	050117	040502	045503	
2893	022112*	051440	041525	042503	
2894	022120*	051523	052506	020114	
2895	022126*	044527	044124		
2896	022132*	005015	040510	043114	.ASCIZ <15><12>/HALF DUPLEX MODE SET /
2897	022140*	042040	050125	042514	
2898	022146*	020130	047515	042504	
2899	022154*	051440	052105	000040	

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2900	022162*	005015	051105	047522	ERR047::	.ASCII <15><12>/ERROR - DIAGNOSTIC TYPE PACKET /
2901	022170*	020122	020055	044504		
2902	022176*	043501	047516	052123		
2903	022204*	041511	052040	050131		
2904	022212*	020105	040520	045503		
2905	022220*	052105	040			
2906	022223*	122	041505	044505		.ASCIZ /RECEIVED FROM ANOTHER NODE/
2907	022230*	042526	020104	051106		
2908	022236*	046517	040440	047516		
2909	022244*	044124	051105	047040		
2910	022252*	042117	000105			
2911	022256*	005015	042523	044522	ERR048::	.ASCIZ <15><12>/SERI BIT FAILED TO SET /
2912	022264*	041040	052111	043040		
2913	022272*	044501	042514	020104		
2914	022300*	047524	051440	052105		
2915	022306*	000040				
2916	022310*	005015	051127	052111	ERR049::	.ASCIZ <15><12>/WRITING ONE TO CLEAR SERI BIT FAILED/
2917	022316*	047111	020107	047117		
2918	022324*	020105	047524	041440		
2919	022332*	042514	051101	051440		
2920	022340*	051105	020111	044502		
2921	022346*	020124	040506	046111		
2922	022354*	042105	000			
2923	022357*	015	042412	051122	ERR050::	.ASCII <15><12>/ERROR SUMMARY BIT FAILED TO SET IN /
2924	022364*	051117	051440	046525		
2925	022372*	040515	054522	041040		
2926	022400*	052111	043040	044501		
2927	022406*	042514	020104	047524		
2928	022414*	051440	052105	044440		
2929	022422*	020116				
2930	022424*	047520	052122	051440		.ASCIZ /PORT STATUS WORD 2/
2931	022432*	040524	052524	020123		
2932	022440*	047527	042122	031040		
2933	022446*	000				
2934	022447*	015	041412	046117	ERR051::	.ASCII <15><12>/COLLISION TEST ERROR BIT FAILED TO SET IN /
2935	022454*	044514	044523	047117		
2936	022462*	052040	051505	020124		
2937	022470*	051105	047522	020122		
2938	022476*	044502	020124	040506		
2939	022504*	046111	042105	052040		
2940	022512*	020117	042523	020124		
2941	022520*	047111	040			
2942	022523*	120	051117	020124		.ASCIZ /PORT STATUS WORD 2/
2943	022530*	052123	052101	051525		
2944	022536*	053440	051117	020104		
2945	022544*	000062				
2946						.EVEN

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GLOBAL SUBROUTINES SECTION

.SBTTL GLOBAL SUBROUTINES SECTION

```

*****
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 -> EPSCRO
              PCSR1 -> EPCSR1
CALLING SEQUENCE:
              JSR      PC,CHKDNI
*****

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2970 022546'
2971 022546' 010046
2972 022550' 010146
2973 022552' 010446
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2976 022554' 012701 000004
2977 022560' 005000
2978 022562' 017704 155440
2979 022566' 032704 004000
2980 022572' 001013
2981 022574' 005300
2982 022576' 001371
2983 022600' 005301
2984 022602' 001367
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2986
2987 022604' 010437 013126'
2988 022610' 017737 155414 013130'
2989 022616' 000261
2990 022620' 000401
2991 022622' 000241
2992 022624' 012604
2993 022626' 012601
2994 022630' 012600
2995 022632' 000207

```

```

CHKDNI::
MOV      R0,-(SP)      ; SAVE R0
MOV      R1,-(SP)      ; SAVE R1
MOV      R4,-(SP)      ; SAVE R4
;
; LOOP FOR APPROX 2 SEC
10$:    MOV      #4,R1      ; INIT OUTER LOOP
        CLR      R0        ; INNER LOOP
20$:    MOV      @PCSRO,R4   ; PCSRO -> R4
        BIT      #DNI,R4   ; DNI SET ?
        BNE     30$        ; YES
        DEC     R0        ; INNER LOOP EXHAUSTED ?
        BNE     20$        ; NO, CHECK FOR DNI AGAIN
        DEC     R1        ; OUTER LOOP EXHAUSTED ?
        BNE     20$        ; NO, KEEP CHECKING FOR DNI
;
; LOOP EXHAUSTED AND NO DNI
MOV      R4,EPCSR0     ; PCSRO -> EPCSR0
MOV      @PCSR1,EPCSR1 ; PCSR1 -> EPCSR1
SEC      ; SET CARRY
BR      40$
30$:    CLC
40$:    MOV      (SP)+,R4   ; DNI SET SO CLEAR CARRY
        MOV      (SP)+,R1   ; RESTORE R4
        MOV      (SP)+,R1   ; RESTORE R1
        MOV      (SP)+,R0   ; RESTORE R0
        RTS      PC        ; AND RETURN

```

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022634\*  
022634\* 010346  
022636\* 010446  
022640\* 010503  
022642\* 012304  
022644\* 012304  
022646\* 012304  
022650\* 100002  
022652\* 000261  
022654\* 000401  
022656\* 000241  
022650\* 012604  
022662\* 012603  
022664\* 000207

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

```
CHKOWN::
MOV R3,-(SP)      ; SAVE R3
MOV R4,-(SP)      ; SAVE R4
MOV R5,R3         ; R3 POINTS TO DESCRIPTOR RING
MOV (R3)+,R4      ; INDEX TO THIRD RING ENTRY
MOV (R3)+,R4
MOV (R3)+,R4
BPL 10$           ; OWN = 0 ?
SEC              ; YES
BR 20$           ; NO, SET CARRY = 1
10$: CLC          ; CLEAR CARRY
20$: MOV (SP)+,R4 ; RESTORE R4
MOV (SP)+,R3     ; RESTORE R3
RTS PC          ; AND RETURN
```

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022666\*  
 022666\* 010046  
 022670\* 010146  
 022672\* 010446  
 022674\* 012701 000003  
 022700\* 005000  
 022702\* 017704 155320  
 022706\* 032704 002000  
 022712\* 001013  
 022714\* 005300  
 022716\* 001371  
 022720\* 005301  
 022722\* 001367  
 022724\* 010437 013126\*  
 022730\* 017737 155274 013130\*  
 022736\* 000261  
 022740\* 000401  
 022742\* 000241  
 022744\* 012604  
 022746\* 012601  
 022750\* 012600  
 022752\* 000207

```

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

```

CHKRCE::
        MOV     R0,-(SP)           ; SAVE R0
        MOV     R1,-(SP)           ; SAVE R1
        MOV     R4,-(SP)           ; SAVE R4
        ;
        ; LOOP FOR APPROX 2 SEC
        MOV     #3,R1              ; INIT OUTER LOOP
10$:    CLR     R0                  ; INNER LOOP
20$:    MOV     @PCSRO,R4          ; PCSRO -> R4
        BIT     #RCBI,R4          ; RCBI SET ?
        BNE    30$                 ; YES
        DEC    R0                  ; INNER LOOP EXHAUSTED ?
        BNE    20$                 ; NO, CHECK FOR RCBI AGAIN
        DEC    R1                  ; OUTER LOOP EXHAUSTED ?
        BNE    20$                 ; NO, KEEP CHECKING FOR RCBI
        ;
        ; LOOP EXHAUSTED AND NO RCBI
        MOV     R4,EPCSR0          ; PCSRO -> EPCSR0
        MOV     @PCSR1,EPCSR1      ; PCSR1 -> EPCSR1
        SEC     R0                  ; SET CARRY
        BR     40$
30$:    CLC                        ; RCBI SET SO CLEAR CARRY
40$:    MOV     (SP)+,R4           ; RESTORE R4
        MOV     (SP)+,R1           ; RESTORE R1
        MOV     (SP)+,R0           ; RESTORE R0
        RTS     PC                 ; AND RETURN
    
```

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022754\*  
022754\* 010046  
022756\* 010346  
022760\* 010446  
022762\* 012700 000003  
022766\* 012703 013142\*  
022772\* 010504  
022774\* 022423  
  
022776\* 001010  
023000\* 005300  
023002\* 001374  
023004\* 011400  
023006\* 042700 007777  
023012\* 020013  
023014\* 001001  
023016\* 000411  
023020\* 012703 013132\*  
023024\* 010504  
023026\* 012423  
023030\* 012423  
023032\* 012423  
023034\* 012423  
023036\* 000261  
023040\* 000401

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

```
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$:   CMP      (R4)+,(R3)+      ; COMPARE RDRB TO EXPECTED DATA
      BNE     20$                ; ERROR ?
      DEC     R0                 ; YES
      BNE     10$                ; NO, DONE COMPARING ?
      MOV     (R4),R0            ; NO, KEEP ON COMPARING
      RLC     #TDRMSK,R0        ; RDRB+6 -> R0
      CMP     R0,(R3)           ; MASK OUT TDR VALUE
      BNE     20$                ; COMPARE ERROR ?
      BR      30$                ; YES
20$:   MOV      #ERDRB0,R3       ; R3 POINTS TO ACTUAL TABLE
      MOV      R5,R4             ; R4 POINTS TO ACTUAL RDRB
      MOV     (R4)+,(R3)+       ; LOAD ACTUAL TABLE
      MOV     (R4)+,(R3)+
      MOV     (R4)+,(R3)+
      MOV     (R4)+,(R3)+
      SEC
      BR      40$                ; SET CARRY
```

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CZUABA.MAC 10-JAN-83 12:46 GLOBAL SUBROUTINES SECTION

3132	023042*	000241	30\$:	CLC		:	CLEAR CARRY
3133	023044*	012604	40\$:	MOV	(SP)+,R4	:	RESTORE R4
3134	023046*	012603		MOV	(SP)+,R3	:	RESTORE R3
3135	023050*	012600		MOV	(SP)+,R0	:	RESTORE R0
3136	023052*	000207		RTS	PC	:	AND RETURN



GLOBAL AREAS  
CZUABA.MACMACY11 30(1046)  
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GLOBAL SUBROUTINES SECTION3137  
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3184023054\*  
023054\* 010046  
023056\* 010146  
023060\* 010446  
  
023062\* 012701 000003  
023066\* 005000  
023070\* 017704 155132  
023074\* 032704 020000  
023100\* 001013  
023102\* 005300  
023104\* 001371  
023106\* 005301  
023110\* 001367  
  
023112\* 010437 013126\*  
023116\* 017737 155106 013130\*  
023124\* 000261  
023126\* 000401  
023130\* 000241  
023132\* 012604  
023134\* 012601  
023136\* 012600  
023140\* 000207

```

*****
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 -> EPCRO
              PCSR1 -> EPCSR1

CALLING SEQUENCE:
              JSR      PC,CHKRXI
*****

CHKRXI::
              MOV     R0,-(SP)          ; SAVE R0
              MOV     R1,-(SP)          ; SAVE R1
              MOV     R4,-(SP)          ; SAVE R4
              ;
              ; LOOP FOR APPROX 2 SEC
              MOV     #3,R1             ; INIT OUTER LOOP
10$:          CLR     R0                 ; INNER LOOP
20$:          MOV     @PCSRO,R4         ; PCSRO -> R4
              BIT     #RXI,R4          ; RXI SET ?
              BNE    30$                ; YES
              DEC     R0                 ; INNER LOOP EXHAUSTED ?
              BNE    20$                ; NO, CHECK FOR RXI AGAIN
              DEC     R1                 ; OUTER LOOP EXHAUSTED ?
              BNE    20$                ; NO, KEEP CHECKING FOR RXI
              ;
              ; LOOP EXHAUSTED AND NO RXI
              MOV     R4,EPCRO          ; PCSRO -> EPCRO
              MOV     @PCSR1,EPCSR1    ; PCSR1 -> EPCSR1
              SEC     BR                 ; SET CARRY
              BR      40$
30$:          CLC
40$:          MOV     (SP)+,R4          ; RXI SET SO CLEAR CARRY
              MOV     (SP)+,R1          ; RESTORE R4
              MOV     (SP)+,R0          ; RESTORE R1
              MOV     (SP)+,R0          ; RESTORE R0
              RTS     PC                 ; AND RETURN

```

GLOBAL AREAS  
CZUABA.MAC

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GLOBAL SUBROUTINES SECTION

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023142' 010046 155056  
023144' 010446 140377  
023146' 017704 000000  
023152' 042704  
023156' 022704  
023162' 001412  
023164' 012700 000010  
023170' 006204  
023172' 005300  
023174' 001375  
023176' 005104  
023200' 010437 013206'  
023204' 000261  
023206' 000401  
023210' 000241  
023212' 012604  
023214' 012600  
023216' 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
      ; SHIFT CODE RIGHT
5$:   MOV      #8.,R0
      ASR      R4
      DEC      R0
      BNE      5$
      COM      R4           ; MATCH THE LED'S
      MOV      R4,ECODE    ; SHIFTED CODE -> ECODE
      SEC
      BR       20$
10$:  CLC
20$:  MOV      (SP)+,R4     ; SELF TEST PASSED CLEAR CARRY
      MOV      (SP)+,R0     ; RESTORE R4
      RTS      PC          ; RESTORE R0
                          ; AND RETURN
```

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023220\*  
023220\* 010046  
023222\* 010346  
023224\* 010446  
023226\* 012700 000004  
023232\* 012703 013162\*  
023236\* 010504  
023240\* 022423  
  
023242\* 001003  
023244\* 005300  
023246\* 001374  
023250\* 000411  
023252\* 012703 013152\*  
023256\* 010504  
023260\* 012423  
023262\* 012423  
023264\* 012423  
023266\* 012423  
023270\* 000261  
023272\* 000401  
023274\* 000241  
023276\* 012604  
023300\* 012603  
023302\* 012600

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

```
CHKTDR::
MOV      R0,-(SP)          ; SAVE R0
MOV      R3,-(SP)          ; SAVE R3
MOV      R4,-(SP)          ; SAVE R4
MOV      #4,R0             ; DO FOUR COMPARES
MOV      #XTDRB0,R3        ; R3 POINTS TO EXPECTED DATA
MOV      R5,R4             ; R4 POINTS TO ACTUAL TDRB
10$:    CMP      (R4)+,(R3)+ ; COMPARE TDRB TO EXPECTED DATA
                          ; ERROR ?
                          ; YES
                          ; NO, DONE COMPARING ?
                          ; NO, KEEP ON COMPARING
BNE      20$
DEC      R0
BNE      10$
BR       30$
20$:    MOV      #ETDRB0,R3 ; R3 POINTS TO ACTUAL TABLE
MOV      R5,R4             ; R4 POINTS TO ACTUAL TDRB
MOV      (R4)+,(R3)+      ; LOAD ACTUAL TABLE
MOV      (R4)+,(R3)+
MOV      (R4)+,(R3)+
SEC
BR       40$
30$:    CLC
40$:    MOV      (SP)+,R4    ; CLEAR CARRY
MOV      (SP)+,R3          ; RESTORE R4
MOV      (SP)+,R0          ; RESTORE R3
MOV      (SP)+,R0          ; RESTORE R0
```

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3283 023304' 000207

RTS PC

; AND RETURN

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CZUABA.MAC 10-JAN-83 12:46 GLOBAL SUBROUTINES SECTION

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023306'  
023306' 010046  
023310' 010146  
023312' 010446  
  
023314' 012701 000003  
023320' 005000  
023322' 017704 154700  
023326' 032704 010000  
023332' 001013  
023334' 005300  
023336' 001371  
023340' 005301  
023342' 001367  
  
023344' 010437 013126'  
023350' 017737 154654 013130'  
023356' 000261  
023360' 000401  
023362' 000241  
023364' 012604  
023366' 012601  
023370' 012600  
023372' 000207

```
*****
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
;
; LOOP FOR APPROX 2 SEC
MOV      #3,R1          ; INIT OUTER LOOP
10$:     CLR      R0      ; INNER LOOP
20$:     MOV      @PCSRO,R4 ; PCSRO -> R4
        BIT      #TXI,R4 ; TXI SET ?
        BNE     30$      ; YES
        DEC     R0      ; INNER LOOP EXHAUSTED ?
        BNE     20$      ; NO, CHECK FOR TXI AGAIN
        DEC     R1      ; OUTER LOOP EXHAUSTED ?
        BNE     20$      ; NO, KEEP CHECKING FOR TXI
;
; LOOP EXHAUSTED AND NO TXI
MOV      R4,EPCSR0     ; PCSRO -> EPCSR0
MOV      @PCSR1,EPCSR1 ; PCSR1 -> EPCSR1
SEC      ; SET CARRY
BR       40$
30$:     CLC          ; TXI SET SO CLEAR CARRY
40$:     MOV      (SP)+,R4 ; RESTORE R4
        MOV      (SP)+,R1 ; RESTORE R1
        MOV      (SP)+,R0 ; RESTORE R0
        RTS      PC      ; AND RETURN
```

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CZUABA.MAC 10-JAN-83 12:46 GLOBAL SUBROUTINES SECTION

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023374' 010446  
023376' 017704 154624  
023402' 032704 100000  
023406' 001007  
023410' 010437 013126'  
023414' 017737 154610 013130'  
023422' 000261  
023424' 000401  
023426' 000241  
023430' 012604  
023432' 000207

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

```
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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CZUABA.MAC 10-JAN-83 12:46 GLOBAL SUBROUTINES SECTION

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023434'  
023434' 010446  
023436' 012777 004000 154562  
023444' 017704 154556  
023450' 032704 004000  
023454' 001407  
023456' 010437 013126'  
023462' 017737 154542 013130'  
023470' 000261  
023472' 000401  
023474' 000241  
023476' 012604  
023500' 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
                PCSRO -> EPCSRO
                PCSR1 -> EPCSR1

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

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

GLOBAL AREAS  
CZUABA.MAC

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GLOBAL SUBROUTINES SECTION

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023502' 010446  
023504' 012777 002000 154514  
023512' 017704 154510  
023516' 032704 002000  
023522' 001407  
023524' 010437 013126'  
023530' 017737 154474 013130'  
023536' 000261  
023540' 000401  
023542' 000241 10\$:  
023544' 012604 20\$:  
023546' 000207

```
*****
SUBROUTINE - CLRRCE

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

INPUTS: NONE

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

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

CALLING SEQUENCE:
                JSR      PC,CLRRCE
*****
```

```
CLRRCE::
MOV      R4,-(SP)           ; SAVE R4
MOV      #RCBI,@PCSRO      ; WRITE ONE TO CLEAR RCBI BIT
MOV      @PCSRO,R4         ; PCSRO -> R4
BIT      #RCBI,R4         ; RCBI = 0 ?
BEQ      10$              ; YES
MOV      R4,EPCSRO        ; NO, PCSRO -> EPCSRO
MOV      @PCSR1,EPCSR1    ; PCSR1 -> EPCSR1
SEC                     ; SET CARRY
BR       20$

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



GLOBAL AREAS  
CZUABA.MAC

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GLOBAL SUBROUTINES SECTION

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```

*****
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
*****

```

```

3458 023550'
3459 023550' 010446
3460 023552' 012777 020000 154446
3461 023560' 017704 154442
3462 023564' 032704 020000
3463 023570' 001407
3464 023572' 010437 013126'
3465 023576' 017737 154426 013130'
3466 023604' 000261
3467 023606' 000401
3468 023610' 000241
3469 023612' 012604
3470 023614' 000207

```

```

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

```

GLOBAL AREAS  
CZUABA.MAC

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GLOBAL SUBROUTINES SECTION

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023616'  
023616' 010446  
023620' 012777 010000 154400  
023626' 017704 154374  
023632' 032704 010000  
023636' 001407  
023640' 010437 013126'  
023644' 017737 154360 013130'  
023652' 000261  
023654' 000401  
023656' 000241 10\$:  
023660' 012604 20\$:  
023662' 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
MOV    #TXI,@PCSRO       ; WRITE ONE TO CLEAR TXI BIT
MOV    @PCSRO,R4         ; PCSRO -> R4
BIT    #TXI,R4           ; TXI = 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
```

GLOBAL AREAS  
CZUABA.MAC

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GLOBAL SUBROUTINES SECTION

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023664\*  
023664\* 010446  
023666\* 012777 100000 154332  
023674\* 017704 154326  
023700\* 032704 100000  
023704\* 001407  
023706\* 010437 013126\*  
023712\* 017737 154312 013130\*  
023720\* 000261  
023722\* 000401  
023724\* 000241 10\$:  
023726\* 012604 20\$:  
023730\* 000207

\*\*\*\*\*  
SUBROUTINE - CLRSER  
THIS SUBROUTINE PERFORMS A WRITE ONE TO CLEAR OPERATION ON  
THE SERI BIT AND VERIFIES ITS SUCCESS.  
INPUTS: NONE  
OUTPUTS: IF SUCCESSFUL ( SERI = 0 )  
THEN CARRY = 0  
IF UNSUCCESSFUL ( SERI = 1 )  
THEN CARRY = 1  
PCSR0 -> EPCSR0  
PCSR1 -> EPCSR1  
CALLING SEQUENCE:  
JSR PC,CLRSER  
\*\*\*\*\*

CLRSER::  
MOV R4,-(SP) ; SAVE R4  
MOV #SERI,@PCSR0 ; WRITE ONE TO CLEAR SERI BIT  
MOV @PCSR0,R4 ; PCSRO -> R4  
BIT #SERI,R4 ; SERI = 0 ?  
BEQ 10\$ ; YES  
MOV R4,EPCSR0 ; NO, PCSRO -> EPCSR0  
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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GLOBAL SUBROUTINES SECTION

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023732'  
023732' 010046  
023734' 010346  
023736' 010446  
023740' 010500  
023742' 012703 001106'  
023746' 012704 005106'  
023752' 022324  
023754' 001003  
023756' 005300  
023760' 001374  
023762' 000406  
023764' 014337 013174'  
023770' 014437 013172'  
023774' 000261  
023776' 000401  
024000' 000241  
024002' 012604  
024004' 012603  
024006' 012600  
024010' 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 ?
        BNC      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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GLOBAL SUBROUTINES SECTION

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024012'  
024012' 010346  
024014' 010446  
024016' 012703 013202'  
024022' 010504  
024024' 022324  
024026' 001004  
024030' 022324  
024032' 001002  
024034' 000241  
024036' 000406  
024040' 012703 013176'  
024044' 010504  
024046' 012423  
024050' 012423  
024052' 000261  
024054' 012604  
024056' 012603  
024060' 000207

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

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

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024062\*  
024062\* 010046  
024064\* 010346  
024066\* 010446  
024070\* 010500  
024072\* 012703 001072\*  
024076\* 012704 005072\*  
024102\* 022324  
024104\* 001003  
024106\* 005300  
024110\* 001374  
024112\* 000406  
024114\* 014337 013174\*  
024120\* 014437 013172\*  
024124\* 000261  
024126\* 000401  
024130\* 000241  
024132\* 012604  
024134\* 012603  
024136\* 012600  
024140\* 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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024142' 010046  
024142' 010346  
024144' 010446  
024146' 010500  
024150' 012703 000000  
024152' 012704 005164'  
024156' 020324  
024162' 001003  
024164' 005300  
024166' 001374  
024170' 000406  
024172' 010337 013174'  
024174' 014437 013172'  
024200' 000261  
024204' 000401  
024206' 000241  
024210' 012604  
024212' 012603  
024214' 012600  
024216' 000207  
024220'

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

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

GLOBAL AREAS  
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GLOBAL SUBROUTINES SECTION

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024222\*  
024222\* 010046  
024224\* 010146  
024226\* 010246  
024230\* 010346  
024232\* 010546  
  
024234\* 012702 005072\*  
024240\* 012703 004000  
024244\* 013704 012202\*  
024250\* 012705 120001  
  
024254\* 112200  
024256\* 042700 177400  
024262\* 074004  
024264\* 012701 000010  
024270\* 000241  
024272\* 006004  
024274\* 103001  
024276\* 074504  
024300\* 077105  
024302\* 077314  
  
024304\* 012605  
024306\* 012603  
024310\* 012602  
024312\* 012601  
024314\* 012600  
024316\* 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
;
1$:     MOVB    (R2)+,R0    ; GET NEXT BYTE
        BIC    #^C377,R0  ; CLEAR HIGH BYTE
        XOR    R0,R4      ; MERGE BYTE WITH OLD CRC
        MOV    #8.,R1     ; LOOP COUNT
2$:     CLC          ; CLEAR CARRY
        ROR    R4        ; SHIFT RIGHT THE CRC
        BCC    3$       ; SKIP IF BIT ZERO NOT SET
        XOR    R5,R4     ; EXCLUSIVE OR IN THE POLY
        SOB   R1,2$     ; AND LOOP ON ALL 8 BITS
3$:     SOB   R3,1$
;
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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024320\*  
024320\* 010046  
024322\* 010346  
024324\* 010546  
  
024326\* 012700 000006  
024332\* 012703 070343\*  
024336\* 012705 070260\*  
  
024342\* 112537 070276\*  
024346\* 004737 024402\*  
024352\* 113723 070277\*  
024356\* 004737 024440\*  
024362\* 113723 070277\*  
024366\* 105723  
024370\* 077014  
  
024372\* 012605  
024374\* 012603  
024376\* 012600  
024400\* 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
;
10$:  MOVB     (R5)+,HEXDAT       ; LOAD BYTE FOR CONVERSION
      JSR     PC,HEXH            ; CONVERT HIGH NIBBLE
      MOVB   HEXVAL,(R3)+        ; LOAD INTO ASCII MESSAGE
      JSR     PC,HEXL            ; CONVERT LOW NIBBLE
      MOVB   HEXVAL,(R3)+        ; LOAD INTO ASCII MESSAGE
      TSTB   (R3)+              ; SKIP OVER HYPHEN IN MESSAGE
      SOB    R0,10$             ; 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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024402'  
024402' 010146  
024404' 013701 070276'  
024410' 042701 177417  
024414' 006201  
024416' 006201  
024420' 006201  
024422' 006201  
024424' 062701 070367'  
024430' 111137 070277'  
024434' 012601  
024436' 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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024440'  
024440' 010146  
024442' 013701 070276'  
024446' 042701 177760  
024452' 062701 070367'  
024456' 111137 070277'  
024462' 012601  
024464' 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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024466\*  
024466\* 010146  
024470\* 010346  
024472\* 010446  
024474\* 012701 002000  
024500\* 011504  
024502\* 012703 001072\*  
024506\* 010423  
024510\* 062704 000002  
024514\* 005301  
024516\* 001373  
024520\* 012604  
024522\* 012603  
024524\* 012601  
024526\* 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
10$:    MOV      R4,(R3)+ ; LOAD TBUF
        ADD      #2,R4   ; ADD 2 TO DATA
        DEC      R1      ; DONE 1K BLOCK ?
        BNE     10$      ; NO
        MOV     (SP)+,R4  ; RESTORE R4
        MOV     (SP)+,R3  ; RESTORE R3
        MOV     (SP)+,R1  ; RESTORE R1
        RTS      PC      ; AND RETURN
```

GLOBAL AREAS  
CZUABA.MAC

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GLOBAL SUBROUTINES SECTION

3907  
3908  
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3941  
3942

024530\*  
024530\* 010146  
024532\* 010246  
024534\* 010346  
024536\* 010446  
024540\* 012701 002000  
024544\* 011504  
024546\* 012703 001072\*  
024552\* 010402  
024554\* 005102  
024556\* 010223  
024560\* 062704 000002  
024564\* 005301  
024566\* 001371  
024570\* 012604  
024572\* 012603  
024574\* 012602  
024576\* 012601  
024600\* 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 = COMPLIMENTTED 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
10$:    MOV      R4,R2
        COM      R2      ; COMPLIMENT DATA
        MOV      R2,(R3)+ ; LOAD TBUF
        ADD      #2,R4    ; ADD 2 TO DATA
        DEC      R1      ; DONE 1K BLOCK ?
        BNE     10$      ; 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
    
```

GLOBAL AREAS  
CZUABA.MAC

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GLOBAL SUBROUTINES SECTION

3943  
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3967  
3968  
3969  
3970

024602'  
024602' 010346  
024604' 010446  
024606' 010504  
024610' 012703 000244'  
024614' 012423  
024616' 012423  
024620' 012423  
024622' 012604  
024624' 012603  
024626' 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
```

GLOBAL AREAS  
CZUABA.MAC

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GLOBAL SUBROUTINES SECTION

3971  
3972  
3973  
3974  
3975  
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3988  
3989  
3990  
3991  
3992  
3993  
3994  
3995  
3996  
3997  
3998  
3999

024630'  
024630' 010346  
024632' 010446  
024634' 012703 000252'  
024640' 010504  
024642' 012423  
024644' 012423  
024646' 012423  
024650' 012423  
024652' 012604  
024654' 012603  
024656' 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
```

GLOBAL AREAS  
CZUABA.MAC

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GLOBAL SUBROUTINES SECTION

4000  
4001  
4002  
4003  
4004  
4005  
4006  
4007  
4008  
4009  
4010  
4011  
4012  
4013  
4014  
4015  
4016  
4017  
4018  
4019  
4020

024660\*  
024660\* 012777 000252\* 153344  
024666\* 012777 000000 153340  
024674\* 000207

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

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



GLOBAL AREAS  
CZUABA.MAC

MACY11 30(1046)  
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GLOBAL SUBROUTINES SECTION

4021  
4022  
4023  
4024  
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4032  
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4035  
4036  
4037

```

*****
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
*****

```

```

4038 024676'
4039 024676' 010046
4040 024700' 010346
4041 024702' 010446
4042 024704' 012700 000020
4043 024710' 012703 000632'
4044 024714' 010504
4045 024716' 012423
4046 024720' 005300
4047 024722' 001375
4048 024724' 012604
4049 024726' 012603
4050 024730' 012600
4051 024732' 000207

```

```

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

```

GLOBAL AREAS  
CZUABA.MAC

MACY11 30(1046)  
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11-JAN-83 12:03 PAGE 89  
GLOBAL SUBROUTINES SECTION

4052  
4053  
4054  
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4081  
4082

024734'  
024734' 010046  
024736' 010346  
024740' 010446  
024742' 012700 000020  
024746' 012703 000572'  
024752' 010504  
024754' 012423  
024756' 005300  
024760' 001375  
024762' 012604  
024764' 012603  
024766' 012600  
024770' 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         ; 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
```

GLOBAL AREAS  
CZUABA.MAC

MACY11 30(1046)  
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GLOBAL SUBROUTINES SECTION

4083  
4084  
4085  
4086  
4087  
4088  
4089  
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4092  
4093  
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4097  
4098  
4099

```

*****
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
*****

```

```

4100 024772'
4101 024772' 010046
4102 024774' 010346
4103 024776' 010446
4104 025000' 012700 000100
4105 025004' 012703 000672'
4106 025010' 010504
4107 025012' 012423
4108 025014' 005300
4109 025016' 001375
4110 025020' 012604
4111 025022' 012603
4112 025024' 012600
4113 025026' 000207

```

```

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

```

GLOBAL AREAS  
CZUABA.MAC

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GLOBAL SUBROUTINES SECTION

4114  
4115  
4116  
4117  
4118  
4119  
4120  
4121  
4122  
4123  
4124  
4125  
4126  
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4128  
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4139  
4140  
4141  
4142  
4143  
4144  
4145

025030'  
025030' 010146  
025032' 010346  
025034' 010446  
025036' 010001  
025040' 012703 000262'  
025044' 010504  
025046' 012423  
025050' 005301  
025052' 001375  
025054' 012604  
025056' 012603  
025060' 012601  
025062' 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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4146  
4147  
4148  
4149  
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4166  
4167  
4168  
4169  
4170  
4171

025064\*  
025064\* 010346  
025066\* 010446  
025070\* 012704 013202\*  
025074\* 010503  
025076\* 012324  
025100\* 012324  
025102\* 012604  
025104\* 012603  
025106\* 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
```

4172  
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4197  
4198  
4199

025110'  
025110' 010346  
025112' 010446  
025114' 012704 013142'  
025120' 010503  
025122' 012324  
025124' 012324  
025126' 012324  
025130' 012324  
025132' 012604  
025134' 012603  
025136' 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
```

GLOBAL AREAS  
CZUABA.MACMACY11 30(1046)  
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GLOBAL SUBROUTINES SECTION4200  
4201  
4202  
4203  
4204  
4205  
4206  
4207  
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4210  
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4218  
4219  
4220  
4221  
4222  
4223  
4224  
4225  
4226  
4227025140'  
025140' 010346  
025142' 010446  
025144' 012704 013162'  
025150' 010503  
025152' 012324  
025154' 012324  
025156' 012324  
025160' 012324  
025162' 012604  
025164' 012603  
025166' 000207

```

*****
SUBROUTINE - LDXTDR
THIS SUBROUTINE LOADS XTDRB0 WITH EXPECTED TDRB DATA.
INPUTS:      R5 = ADDRESS OF EXPECTED DATA
OUTPUTS:     XTDRB0 TABLE = EXPECTED TDRB DATA
CALLING SEQUENCE:
              JSR      PC,LDXTDR
*****

```

```

LDXTDR::
MOV      R3,-(SP)      ; SAVE R3
MOV      R4,-(SP)      ; SAVE R4
MOV      #XTDRB0,R4    ; R4 POINTS TO XTDRB0
MOV      R5,R3         ; R3 POINTS TO DATA
MOV      (R3)+,(R4)+   ; LOAD XTDRB0 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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4228  
4229  
4230  
4231  
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4250  
4251  
4252  
4253  
4254  
4255  
4256  
4257  
4258  
4259  
4260  
4261

025170'  
025170' 010446  
025172' 017704 153030  
025176' 032704 020000  
025202' 001407  
025204' 010437 013126'  
025210' 017737 153014 013130'  
025216' 000261  
025220' 000401  
025222' 000241  
025224' 012604  
025226' 000207

```
*****
SUBROUTINE - NORXI
THIS SUBROUTINE VERIFIES THE RXI BIT IS NOT SET.
INPUTS: NONE
OUTPUTS:      IF RXI NOT SET ( RXI = 0 )
                THEN CARRY = 0

                IF RXI IS SET ( RXI = 1 )
                THEN CARRY = 1
                PCSRO -> EPCSRO
                PCSR1 -> EPCSR1

CALLING SEQUENCE:
                JSR      PC,NORXI
*****
```

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



GLOBAL AREAS  
CZUABA.MACMACY11 30(1046)  
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GLOBAL SUBROUTINES SECTION

4262  
4263  
4264  
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4279  
4280  
4281  
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4283  
4284  
4285 025230\*  
4286 025230\* 010046  
4287 025232\* 010346  
4288 025234\* 010546  
4289  
4290 025236\* 012703 005072\*  
4291 025242\* 012700 002000  
4292 025246\* 005023  
4293 025250\* 005300  
4294 025252\* 001375  
4295  
4296  
4297 025254\* 012705 000244\*  
4298 025260\* 012703 001072\*  
4299 025264\* 012523  
4300 025266\* 012523  
4301 025270\* 012523  
4302  
4303 025272\* 012705 000244\*  
4304 025276\* 012523  
4305 025300\* 012523  
4306 025302\* 012523  
4307  
4308 025304\* 005023  
4309  
4310 025306\* 012700 001771  
4311 025312\* 012705 013216\*  
4312 025316\* 011523  
4313 025320\* 005300  
4314 025322\* 001375  
4315 025324\* 012605  
4316 025326\* 012603  
4317 025330\* 012600

```

*****
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
10$:   CLR      (R3)+            ; CLEAR BUFFER
      DEC      R0                ; DONE ?
      BNE     10$                ; 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
20$:   MOV      (R5),(R3)+       ; LOAD DATA PATTERN
      DEC      R0                ; DONE ?
      BNE     20$                ; NO
      MOV      (SP)+,R5          ; YES, RESTORE R5
      MOV      (SP)+,R3          ; RESTORE R3
      MOV      (SP)+,R0          ; RESTORE R0

```

GLOBAL AREAS MACY11 30(1046) 11-JAN-83 12:03 PAGE 97  
CZUABA.MAC 10-JAN-83 12:46 GLOBAL SUBROUTINES SECTION

4318 025332\* 000207

RTS PC

; AND RESTORE

GLOBAL AREAS  
CZUABA.MAC

MACY11 30(1046)  
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GLOBAL SUBROUTINES SECTION

4319  
4320  
4321  
4322  
4323  
4324  
4325  
4326  
4327  
4328  
4329  
4330  
4331  
4332  
4333  
4334  
4335  
4336  
4337  
4338  
4339  
4340  
4341  
4342  
4343  
4344  
4345  
4346  
4347  
4348  
4349  
4350  
4351  
4352  
4353  
4354  
4355  
4356  
4357

025334\*  
025334\* 010446  
025336\* 012777 177400 152662  
025344\* 017704 152656  
025350\* 001011  
025352\* 017704 152652  
025356\* 042704 177770  
025362\* 022704 000002  
025366\* 001002  
:  
025370\* 000241  
025372\* 000401  
:  
025374\* 000261  
025376\* 012604  
025400\* 000207

```

*****
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
MOV    #TIMASK,@PCSR0   ; ATTEMPT TO CLEAR PCSRO
MOV    @PCSR0,R4        ; PCSRO = 0 ?
BNE    10$              ; NO, A RESET IS REQUIRED
MOV    @PCSR1,R4        ; PCSR1 -> R4
BIC    #SMASK,R4        ; MASK DEUNA STATE
CMP    #READY,R4        ; STATE = READY ?
BNE    10$              ; NO, A RESET IS REQUIRED
;
CLC                                ; NO RESET REQUIRED CLEAR CARRY
BR     20$
;
10$:  SEC                  ; A RESET IS REQUIRED SET CARRY
20$:  MOV    (SP)+,R4     ; RESTORE R4
      RTS    PC          ; AND RETURN
    
```

MISCELLANEOUS SECTIONS MACY11 30(1046)  
CZUABA.MAC 10-JAN-83 12:46

11-JAN-83 12:03 PAGE 99  
GLOBAL SUBROUTINES SECTION

.TITLE MISCELLANEOUS SECTIONS  
.SBTTL REPORT CODING SECTION

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

4358  
4359  
4360  
4361  
4362  
4363  
4364  
4365  
4366  
4367  
4368 025402'  
4369 025402'  
4370  
4371  
4372 025402'  
4373 025402' 000167  
4374 025404' 000000  
4375  
4376  
4377  
4378  
4379 025406'  
4380 025406'  
4381 025406' 104425

BGNRPT

L\$RPT::

EXIT RPT

.WORD JSJMP  
.WORD L10013-2-

.EVEN

ENDRPT

L10013: TRAP C\$RPT

MISCELLANEOUS SECTIONS MACY11 30(1046) 11-JAN-83 12:03 PAGE 100  
CZUABA.MAC 10-JAN-83 12:46 PROTECTION TABLE

.SBTTL PROTECTION TABLE

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

4382  
4383  
4384  
4385  
4386  
4387  
4388  
4389  
4390  
4391  
4392  
4393  
4394  
4395  
4396  
4397

025410'  
025410'  
  
025410' 177777  
025412' 177777  
025414' 177777  
  
025416'

BGNPROT  
  
-1  
-1  
-1  
  
ENDPROT

L\$PROT::  
  
:OFFSET INTO P-TABLE FOR CSR ADDRESS  
:OFFSET INTO P-TABLE FOR MASSBUS ADDRESS  
:OFFSET INTO P-TABLE FOR DRIVE NUMBER

MISCELLANEOUS SECTIONS MACY11 30(1046) 11-JAN-83 12:03 PAGE 101  
CZUABA.MAC 10-JAN-83 12:46 INITIALIZE SECTION

.SBTTL INITIALIZE SECTION

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

```

4398
4399
4400
4401
4402
4403
4404
4405 025416'          BGNINIT
4406 025416'
4407
4408
4409
4410 025416'          READEF #EF.CONTINUE          ;WAS A CONTINUE COMMAND ENTERED?
4411 025416' 012700 000036          MOV #EF.CONTINUE,RO
4412 025422' 104447          TRAP CSREFG
4413 025424'          BCOMPLETE          30$          ;YES, LEAVE INIT CODE
4414 025424' 103473          READEF #EF.PWR          ;WAS THERE A POWER FAILURE?
4415 025426'          BCOMPLETE          30$          BCS 30$
4416 025426' 012700 000034          MOV #EF.PWR,RO
4417 025432' 104447          TRAP CSREFG
4418 025434'          BCOMPLETE          30$          ;YES, LEAVE INIT CODE
4419 025434' 103467          READEF #EF.NEW          ;NEW PASS ?
4420 025436'          BCOMPLETE          30$          BCS 30$
4421 025436' 012700 000035          MOV #EF.NEW,RO
4422 025442' 104447          TRAP CSREFG
4423 025444'          BNCOMPLETE          10$          ;NO
4424 025444' 103016          READEF #EF.START          ;START ?
4425 025446'          BNCOMPLETE          10$          BCC 10$
4426 025446' 012700 000040          MOV #EF.START,RO
4427 025452' 104447          TRAP CSREFG
4428 025454'          BNCOMPLETE          5$          ;NO
4429 025454' 103005          BCC 5$
4430 025456' 000005          RESET          ;CLEAR THE WORLD
4431 025460' 012737 000001 013214'  MOV #1,FRSTIM          ;SET FIRST TIME FLAG
4432 025466' 000402          BR 6$
4433 025470' 005037 013214' 5$: CLR FRSTIM          ;CLEAR FIRST TIME FLAG
4434 025474' 012737 177777 000242' 6$: MOV #-1,UNIT          ;YES, INITIALIZE UNIT NUMBER
4435 025502' 005237 000242' 10$: INC UNIT          ;SET UP FOR NEXT UNIT
4436 025506' 023737 000242' 000012' CMP UNIT,LSUNIT          ;TESTED ALL AVAILABLE UNITS?
4437 025514' 003034          BGT 20$          ;YES, LEAVE
4438 025516'          GPHARD UNIT,R1          ;GET P-TABLE POINTER FOR THIS UNIT
4439 025516' 013700 000242'          MOV UNIT,RO
4440 025522' 104442          TRAP CS$GPHRD
4441 025524' 010001          MOV RO,R1
4442 025526'          BNCOMPLETE          10$          ;THIS ONE IS NOT AVAILABLE
4443 025526' 103365          BCC 10$
4444 025530' 012137 000226'          MOV (R1)+,PCSR0          ;SAVE PCSRO
4445 025534' 012137 000236'          MOV (R1)+,INTVEC          ;SAVE VECTOR
4446
4447 025540' 013737 000226' 000230'          MOV PCSRO,PCSR1          ;SET UP PCSR1
4448 025546' 062737 000002 000230'          ADD #2,PCSR1
4449 025554' 013737 000230' 000232'          MOV PCSR1,PCSR2          ;SET UP PCSR2
4450 025562' 062737 000002 000232'          ADD #2,PCSR2
4451 025570' 013737 000232' 000234'          MOV PCSR2,PCSR3          ;SET UP PCSR3
4452 025576' 062737 000002 000234'          ADD #2,PCSR3
4453 025604' 000403          BR 30$          ;LEAVE

```

MISCELLANEOUS SECTIONS MACY11 30(1046) 11-JAN-83 12:03 PAGE 102  
CZUABA.MAC 10-JAN-83 12:46 INITIALIZE SECTION

4454 025606' 005037 013214'  
4455 025612'  
4456 025612' 104444  
4457 025614'  
4458 025614'  
4459 025614' 104411  
4460

20\$: CLR FRSTIM  
DOCLN  
30\$: ENDINIT  
.EVEN

:CLEAR FIRST TIME FLAG  
:ABORT PASS

TRAP CSDCLN  
L10015:  
TRAP C\$INIT

MISCELLANEOUS SECTIONS MACY11 30(1046) 11-JAN-83 12:03 PAGE 103  
CZUABA.MAC 10-JAN-83 12:46 AUTODROP SECTION

4461  
4462  
4463  
4464  
4465  
4466  
4467  
4468  
4469  
4470  
4471  
4472  
4473  
4474  
4475  
4476

025616'  
025616'  
  
025616'  
025616'  
025616' 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

LSAUTO::

ENDAUTO

L10016: TRAP CSAUTO



MISCELLANEOUS SECTIONS MACY11 30(1046) 11-JAN-83 12:03 PAGE 104  
 CZUABA.MAC 10-JAN-83 12:46 CLEANUP CODING SECTION

```

4477
4478
4479
4480
4481
4482
4483
4484 025620'          BGNCLN
4485 025620'
4486
4487
4488 025620'          EXIT  CLN
4489 025620' 104432
4490 025622' 000002          TRAP  C$EXIT
4491
4492
4493
4494
4495 025624'          ENDCLN
4496 025624'
4497 025624' 104412          L10017: TRAP  C$CLEAN

.SBTTL  CLEANUP CODING SECTION

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

L$CLEAN::

C$EXIT
L10017-.
```

MISCELLANEOUS SECTIONS MACY11 30(1046)  
CZUABA.MAC 10-JAN-83 12:46

11-JAN-83 12:03 PAGE 105  
DROP UNIT SECTION

.SBTTL DROP UNIT SECTION

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

4498							
4499							
4500							
4501							
4502							
4503							
4504							
4505	025626'		BGNDU			LSDU::	
4506	025626'						
4507							
4508							
4509	025626'		EXIT DU				
4510	025626'	000167				.WORD JSJMP	
4511	025630'	000000				.WORD L10020-2-	
4512							
4513							
4514			.EVEN				
4515							
4516	025632'		ENDDU				
4517	025632'						
4518	025632'	104453				L10020: TRAP CSDU	

MISCELLANEOUS SECTIONS MACY11 30(1J46) 11-JAN-83 12:03 PAGE 106  
CZUABA.MAC 10-JAN-83 12:46 ADD UNIT SECTION

4519  
4520  
4521  
4522  
4523  
4524  
4525  
4526  
4527 025634'  
4528 025634'  
4529  
4530  
4531 025634'  
4532 025634' 000167  
4533 025636' 000000  
4534  
4535  
4536  
4537  
4538 025640'  
4539 025640'  
4540 025640' 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

LSAU::

EXIT AU

.WORD JSJMP  
.WORD L10021-2-

.EVEN

ENDAU

L10021:  
TRAP CSAU

GLOBAL INTERRUPT SERVICE ROUTINES  
CZUABA.MAC 10-JAN-83 12:46

MACY11 30(1046) 11-JAN-83 12:03 PAGE 107  
ADD UNIT SECTION

4541  
4542  
4543  
4544  
4545  
4546  
4547  
4548  
4549  
4550  
4551  
4552  
4553  
4554  
4555  
4556  
4557  
4558  
4559  
4560  
4561

025642'  
025642'  
025642' 012737 000001 013210'  
025650'  
025650'  
025650' 000002

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

GLOBAL INTERRUPT SERVICE ROUTINES  
CZUABA.MAC 10-JAN-83 12:46

MACY11 30(1046) 11-JAN-83 12:03 PAGE 108  
ISRNXM - NON-EXISTANT MEMORY INTERRUPT SERVICE ROUTINE

.SBTTL ISRDN I - DNI INTERRUPT SERVICE ROUTINE

```

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

```

```

4562
4563
4564
4565
4566
4567
4568
4569
4570
4571
4572
4573
4574
4575 025652'
4576 025652'
4577
4578 025652' 010446
4579 025654' 017704 152346
4580 025660' 032704 004000
4581 025664' 001403
4582 025666' 012737 000001 013212'
4583 025674' 012604 10$:
4584
4585 025676'
4586 025676'
4587 025676' 000002

```

BGNSRV ISRDN I

ISRDN I::

```

MOV R4,-(SP)
MOV @PCSR0,R4
BIT #DNI,R4
BEQ 10$
MOV #1,DNIFLG
MOV (SP)+,R4

```

```

: SAVE R4
: PCSRO -> R4
: DNI SET?
: NO, EXIT
: YES, SET DNIFLG FLAG
: RESTORE R4

```

ENDSRV

L10023: RTI

HARDWARE TESTS MACY11 30(1046)  
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ISRDN1 - DNI INTERRUPT SERVICE ROUTINE

.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  
\*\*\*\*\*

4588  
4589  
4590  
4591  
4592  
4593  
4594  
4595  
4596  
4597  
4598  
4599  
4600  
4601  
4602 025700\*  
4603 025700\*  
4604 025700\*  
4605 025700\* 012746 000340  
4606 025704\* 012746 025642\*  
4607 025710\* 012746 000004  
4608 025714\* 012746 000003  
4609 025720\* 104437  
4610 025722\* 062706 000010  
4611 025726\* 005037 013210\*  
4612 025732\* 005002  
4613 025734\* 017701 152266  
4614 025740\* 005737 013210\*  
4615 025744\* 001410  
4616 025746\*  
4617 025746\* 104455  
4618 025750\* 000001  
4619 025752\* 015762\*  
4620 025754\* 015042\*  
4621 025756\*  
4622 025756\* 013700 000242\*  
4623 025762\* 104451  
4624 025764\*  
4625 025764\* 104444  
4626 025766\*  
4627 025766\* 012700 000004  
4628 025772\* 104436  
4629 025774\*  
4630 025774\*  
4631 025774\* 104401  
4632

BGNTST  
SETVEC #4,#ISRNXM,#PRI07 ; SET UP TIMEOUT TRAP VECTOR  
T1::  
MOV #PRI07,-(SP)  
MOV #ISRNXM,-(SP)  
MOV #4,-(SP)  
MOV #3,-(SP)  
TRAP C\$SVEC  
ADD #10,SP  
CLR NEXMEM ; CLEAR NXM TIMEOUT FLAG  
CLR R2 ; R2 = WHICH PCSR IS BEING TESTED  
MOV @PCSRO,R1 ; DOES PCSR EXIST?  
TST NEXMEM  
BEQ 10\$ ; YES  
ERRDF 001,ERR001,MSG001 ; NO, PRINT DEVICE FATAL ERROR MESSAGE  
TRAP C\$SERDF  
.WORD 1  
.WORD ERR001  
.WORD MSG001  
DODU UNIT ; DROP UNIT  
MOV UNIT,R0  
TRAP C\$DODU  
DOCLN ; AND ABORT PASS  
TRAP C\$DCLN  
10\$: CLRVEC #4  
MOV #4,R0  
TRAP C\$CVEC  
ENDTST  
L10024:  
TRAP C\$SETST

HARDWARE TESTS MACY11 30(1046)  
CZUABA.MAC 10-JAN-83 12:46

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TEST 2: PCRS1 READ ACCESS TEST

4633  
4634  
4635  
4636  
4637  
4638  
4639  
4640  
4641  
4642  
4643  
4644  
4645 025776\*  
4646 025776\*  
4647 025776\*  
4648 025776\* 012746 000340  
4649 026002\* 012746 025642\*  
4650 026006\* 012746 000004  
4651 026012\* 012746 000003  
4652 026016\* 104437  
4653 026020\* 062706 000010  
4654 026024\* 005037 013210\*  
4655 026030\* 012702 000001  
4656 026034\* 017701 152170  
4657 026040\* 005737 013210\*  
4658 026044\* 001410  
4659 026046\*  
4660 026046\* 104455  
4661 026050\* 000002  
4662 026052\* 015762\*  
4663 026054\* 015042\*  
4664 026056\*  
4665 026056\* 013700 000242\*  
4666 026062\* 104451  
4667 026064\*  
4668 026064\* 104444  
4669 026066\*  
4670 026066\* 012700 000004  
4671 026072\* 104436  
4672 026074\*  
4673 026074\*  
4674 026074\* 104401

.SBTTL TEST 2: PCRS1 READ ACCESS TEST

```

*****
THIS TEST WILL VERIFY THAT A DEVICE IS PRESENT AT THE PCRS1
UNIBUS ADDRESS SPECIFIED.

TEST SEQUENCE:
  1. READ PCRS1
*****

```

BGNTST

```

SETVEC #4,#ISRNXM,#PRI07 ; SET UP TIMEOUT TRAP VECTOR
                                T2::
                                MOV #PRI07,-(SP)
                                MOV #ISRNXM,-(SP)
                                MOV #4,-(SP)
                                MOV #3,-(SP)
                                TRAP C$SVEC
                                ADD #10,SP

CLR NEXMEM ; CLEAR NXM TIMEOUT FLAG
MOV #1,R2 ; R2 = WHICH PCRS IS BEING TESTED
MOV @PCSR1,R1 ; DOES PCRS EXIST?
TST NEXMEM
BEQ 10$ ; YES
ERRDF 002,ERR001,MSG001 ; NO, PRINT DEVICE FATAL ERROR MESSAGE
                                TRAP C$ERDF
                                .WORD 2
                                .WORD ERR001
                                .WORD MSG001

DODU UNIT ; DROP UNIT
                                MOV UNIT,R0
                                TRAP C$DODU

DOCLN ; AND ABORT PASS
                                TRAP C$DCLN

10$: CLRVEC #4
                                MOV #4,R0
                                TRAP C$CVEC

                                L10025:
                                TRAP C$SETST

```

ENDTST

HARDWARE TESTS MACY11 30(1046) 11-JAN-83 12:03 PAGE 111  
CZUABA.MAC 10-JAN-83 12:46

TEST 3: PCSR2 READ ACCESS TEST

.SBTTL TEST 3: PCSR2 READ ACCESS TEST

```

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

TEST SEQUENCE:
  1. READ PCSR2
*****

```

```

4675
4676
4677
4678
4679
4680
4681
4682
4683
4684
4685
4686
4687 026076*
4688 026076*
4689 026076*
4690 026076* 012746 000340
4691 026102* 012746 025642*
4692 026106* 012746 000004
4693 026112* 012746 000003
4694 026116* 104437
4695 026120* 062706 000010
4696 026124* 005037 013210*
4697 026130* 012702 000002
4698 026134* 017701 152072
4699 026140* 005737 013210*
4700 026144* 001410
4701 026146*
4702 026146* 104455
4703 026150* 000003
4704 026152* 015762*
4705 026154* 015042*
4706 026156*
4707 026156* 013700 000242*
4708 026162* 104451
4709 026164*
4710 026164* 104444
4711 026166*
4712 026166* 012700 000004
4713 026172* 104436
4714 026174*
4715 026174*
4716 026174* 104401

```

```

BGNTST
SETVEC #4,#ISRNXM,#PRI07 ; SET UP TIMEOUT TRAP VECTOR
                                T3::
                                MOV #PRI07,-(SP)
                                MOV #ISRNXM,-(SP)
                                MOV #4,-(SP)
                                MOV #3,-(SP)
                                TRAP C$SVEC
                                ADD #10,SP
CLR NEXMEM ; CLEAR NXM TIMEOUT FLAG
MOV #2,R2 ; R2 = WHICH PCSR IS BEING TESTED
MOV @PCSR2,R1 ; DOES PCSR EXIST?
TST NEXMEM
BEQ 10$ ; YES
ERRDF 003,ERR001,MSG001 ; NO, PRINT DEVICE FATAL ERROR MESSAGE
                                TRAP C$ERDF
                                .WORD 3
                                .WORD ERR001
                                .WORD MSG001
DODU UNIT ; DROP UNIT
                                MOV UNIT,R0
                                TRAP C$DODU
DOCLN ; AND ABORT PASS
                                TRAP C$DCLN
10$: CLRVEC #4
                                MOV #4,R0
                                TRAP C$CVEC
ENDTST
                                L10026:
                                TRAP C$SETST

```



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TEST 4: PCSR3 READ ACCESS TEST

.SBTTL TEST 4: PCSR3 READ ACCESS TEST

```

*****
THIS TEST WILL VERIFY THAT A DEVICE IS PRESENT AT THE PCSR3
UNIBUS ADDRESS SPECIFIED.

TEST SEQUENCE:
1. READ PCSR3
*****

```

```

4717
4718
4719
4720
4721
4722
4723
4724
4725
4726
4727
4728 026176*
4729 026176*
4730 026176*
4731 026176* 012746 000340
4732 026202* 012746 025642*
4733 026206* 012746 000004
4734 026212* 012746 000003
4735 026216* 104437
4736 026220* 062706 000010
4737 026224* 005037 013210*
4738 026230* 012702 000003
4739 026234* 017701 151774
4740 026240* 005737 013210*
4741 026244* 001410
4742 026246*
4743 026246* 104455
4744 026250* 000004
4745 026252* 015762*
4746 026254* 015042*
4747 026256*
4748 026256* 013700 000242*
4749 026262* 104451
4750 026264*
4751 026264* 104444
4752 026266*
4753 026266* 012700 000004
4754 026272* 104436
4755 026274*
4756 026274*
4757 026274* 104401

```

```

*****
BGNTST
SETVEC #4,#ISRNXM,#PRIO7 ; SET UP TIMEOUT TRAP VECTOR
                                T4::
                                MOV #PRIO7,-(SP)
                                MOV #ISRNXM,-(SP)
                                MOV #4,-(SP)
                                MOV #3,-(SP)
                                TRAP C$SVEC
                                ADD #10,SP
CLR NEXMEM ; CLEAR NXM TIMEOUT FLAG
MOV #3,R2 ; R2 = WHICH PCSR IS BEING TESTED
MOV @PCSR3,R1 ; DOES PCSR EXIST?
TST NEXMEM
BEQ 10$ ; 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$CVEC
ENDTST
                                L10027:
                                TRAP C$SETST

```

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TEST 5: PCSR2 STATIC BIT TEST

.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
*****

```

```

4758
4759
4760
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4762
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4764
4765
4766
4767
4768
4769
4770
4771
4772
4773
4774
4775
4776 026276'          BGNTST
4777 026276'
4778
4779 026276' 012701 013216'          T5::
4780 026302' 012705 000004          MOV #PATRN1,R1      ; GET ADDRESS OF DATA PATTERNS
4781 026306' 012103          10$: MOV #4,R5           ; COUNT 4 PATTERNS (PASSES)
4782                                     MOV (R1)+,R3       ; DATA PATTERN -> R3
4783 026310'          BGNSEG
4784 026310' 104404          TRAP C$BSEG
4785
4786 026312' 010377 151714          MOV R3,@PCSR2      ; DATA PATTERN -> PCSR2
4787 026316' 017704 151710          MOV @PCSR2,R4      ; READ PCSR2
4788 026322' 042703 000001          BIC #1,R3          ; MASK BIT00
4789 026326' 020304          CMP R3,R4          ; DATA COMPARE?
4790 026330' 001404          BEQ 20$           ; YES, CONTINUE
4791
4792 026332'          ERRHRD 005,ERR002,MSG002 ; NO, REPORT ERROR
4793 026332' 104456          TRAP C$ERHRD
4794 026334' 000005          .WORD 5
4795 026336' 016012'          .WORD ERR002
4796 026340' 015066'          .WORD MSG002
4797
4798 026342'          20$:
4799 026342'          ENDSEG
4800
4801 026342' 104405          10000$: TRAP C$ESEG
4802 026344' 005305          DEC R5
4803 026346' 001357          BNE 10$           ; DONE?
4804                                     ; NO
4805 026350'          ENDTST
4806 026350'
4807 026350' 104401          L10030: TRAP C$ETST

```

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TEST 6: PCRS3 STATIC BIT TEST

.SBTTL TEST 6: PCRS3 STATIC BIT TEST

```

*****
THIS TEST WILL CHECK PCRS3 FOR ALL SA0 AND SA1 ERRORS.
THE HOST WILL WRITE PATTERNS TO PCRS3 AND READ THEM
BACK TO VERIFY.

NOTE: PCRS3 BIT02 THRU BIT15 SHOULD ALWAYS BE A ZERO.
      THESE BITS WILL BE MASKED BEFORE DOING THE COMPARE.

TEST SEQUENCE:
  1. WRITE PATTERN TO PCRS3
  2. COMPARE MASKED PATTERN WITH PCRS3 CONTENTS
  3. REPEAT STEPS 1 AND 2 FOR ALL PATTERNS
*****

```

4808  
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4851  
4852  
4853  
4854  
4855  
4856  
4857

```

026352*
026352*
026352* 012701 013216*
026356* 012705 000004
026362* 012103
026364*
026364* 104404
026366* 010377 151642
026372* 017704 151636
026376* 042703 177774
026402* 020304
026404* 001404
026406*
026406* 104456
026410* 000006
026412* 016050*
026414* 015066*
026416*
026416*
026416*
026416* 104405
026420* 005305
026422* 001357
026424*
026424*
026424* 104401

```

```

BGNTST
T6::
10$: MOV #PATRN1,R1 ; GET ADDRESS OF DATA PATTERNS
      MOV #4,R5 ; COUNT 4 PATTERNS (PASSES)
      MOV (R1)+,R3 ; DATA PATTERN -> R3

BGNSEG
TRAP C$BSEG
      MOV R3,@PCSR3 ; DATA PATTERN -> PCRS3
      MOV @PCSR3,R4 ; READ PCRS3
      BIC #177774,R3 ; MASK BIT02 THRU BIT15
      CMP R3,R4 ; DATA COMPARE?
      BEQ 20$ ; YES, CONTINUE

ERRHRD 006,ERR003,MSG002 ; NO, REPORT ERROR
TRAP C$ERHRD
      .WORD 6
      .WORD ERR003
      .WORD MSG002

20$: ENDSEG
10000$: TRAP C$ESEG
      DEC R5 ; DONE?
      BNE 10$ ; NO

ENDTST
L10031: TRAP C$ETST

```

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4858  
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4860  
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4903  
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4907  
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4909  
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4911  
4912  
4913

.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  
: \*\*\*\*\*

026426' 004737 025334'  
026426' 103025  
026432' 012777 000040 151564  
026442' 004737 022546'  
026446' 103006  
026450' 104456  
026452' 000007  
026454' 016106'  
026456' 015114'  
026460' 104410  
026462' 000172  
026464' 004737 023434'  
026470' 103006  
026472' 104456  
026474' 000010  
026476' 016206'  
026500' 015114'  
026502' 104410  
026504' 000150  
026506' 012777 000003 151512  
026514' 012701 000034  
026520' 005000  
026522' 017704 151500  
026526' 032704 004000  
026532' 001017  
026534' 005300  
026536' 001371  
026540' 005301  
026542' 001367

```

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$ERHRD
; .WORD 7
; .WORD ERR004
; .WORD MSG003
ESCAPE TST ; AND ABORT TEST
; TRAP C$ESCAPE
; .WORD L10032-.
20$: JSR PC,CLR DNI ; WRITE ONE TO CLEAR DNI
; ERROR
; NO
; YES, REPORT ERROR
; TRAP C$ERHRD
; .WORD 8
; .WORD ERR006
; .WORD MSG003
ESCAPE TST ; AND ABORT
; TRAP C$ESCAPE
; .WORD L10032-.
25$: MOV #SLFT,@PCSR0 ; RUN SELF TEST
; WAIT FOR SELF TEST DNI
; LOOP FOR APPROX 20 SEC (11/24 CPU)
26$: MOV #28.,R1 ; INIT OUTER LOOP
; INNER LOOP
27$: MOV @PCSR0,R4 ; PCSRO -> R4
; DNI SET ?
; YES
; INNER LOOP EXHAUSTED ?
; NO, CHECK FOR DNI AGAIN
; OUTER LOOP EXHAUSTED ?
; NO, KEEP CHECKING FOR DNI
; DEC R0
; DEC R1
; BNE 30$
; BNE 27$
; BNE 27$
```

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```

4914
4915
4916 026544' 010437 013126'
4917 026550' 017737 151454 013130'
4918 026556'
4919 026556' 104456
4920 026560' 000011
4921 026562' 022003'
4922 026564' 015114'
4923 026566'
4924 026566' 104410
4925 026570' 000064
4926
4927 026572' 004737 023142'
4928 026576' 103015
4929 026600' 013704 013206'
4930 026604' 006304
4931 026606' 062704 026660'
4932 026612' 011437 026656'
4933 026616'
4934 026616' 104456
4935 026620' 000012
4936 026622' 016162'
4937 026624' 015146'
4938 026626'
4939 026626' 104410
4940 026630' 000024
4941
4942 026632' 004737 023434'
4943
4944 026636' 103006
4945 026640'
4946 026640' 104456
4947 026642' 000013
4948 026644' 016206'
4949 026646' 015114'
4950 026650'
4951 026650' 104410
4952 026652' 000002
4953 026654'
4954 026654'
4955 026654'
4956 026654' 104401

```

```

:
MOV R4,EPCSR0
MOV @PCSR1,EPCSR1
ERRHRD 009.,ERR045,MSG003
: LOOP EXHAUSTED AND NO DNI
: PCSRO -> EPCSR0
: PCSR1 -> EPCSR1
: NO, REPORT ERROR
TRAP C$ERHRD
.WORD 9
.WORD ERR045
.WORD MSG003
ESCAPE TST
: AND ABORT TEST
TRAP C$ESCAPE
.WORD L10032-.

30$: JSR PC,CHKSTR
BCC 40$
MOV ECODE,R4
ASL R4
ADD #STTBL,R4
MOV (R4),STMSG
ERRHRD 010.,ERR005,MSG004
: SELF TEST SUCCESSFUL ?
: YES
: NO, SET UP TO PRINT ERROR
: SHIFT CODE FOR INDEX
: INDEX INTO SELF TEST TABLE
: LOAD INTO SELF TEST MESSAGE
: REPORT SELF TEST FAILURE
TRAP C$ERHRD
.WORD 10
.WORD ERR005
.WORD MSG004
ESCAPE TST
: AND ABORT TEST
TRAP C$ESCAPE
.WORD L10032-.

40$: JSR PC,CLRDN1
BCC 50$
ERRHRD 011.,ERR006,MSG003
: WRITE ONE TO CLEAR DNI
: ERROR?
: NO
: YES, REPORT ERROR
TRAP C$ERHRD
.WORD 11
.WORD ERR006
.WORD MSG003
ESCAPE TST
: AND ABORT
TRAP C$ESCAPE
.WORD L10032-.

50$: ENDTST
L10032: TRAP C$ETST

```

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4957  
4958 026656' 000000  
4959  
4960 026660' 027060'  
4961 026662' 027110'  
4962 026664' 027137'  
4963 026666' 027152'  
4964 026670' 027211'  
4965 026672' 027240'  
4966 026674' 027303'  
4967 026676' 027336'  
4968 026700' 027354'  
4969 026702' 027406'  
4970 026704' 027421'  
4971 026706' 027436'  
4972 026710' 027452'  
4973 026712' 027466'  
4974 026714' 027502'  
4975 026716' 027516'  
4976 026720' 027532'  
4977 026722' 027555'  
4978 026724' 027571'  
4979 026726' 027605'  
4980 026730' 027621'  
4981 026732' 027635'  
4982 026734' 027651'  
4983 026736' 027665'  
4984 026740' 027701'  
4985 026742' 027756'  
4986 026744' 030030'  
4987 026746' 030103'  
4988 026750' 030147'  
4989 026752' 030220'  
4990 026754' 030263'  
4991 026756' 030334'  
4992 026760' 030377'  
4993 026762' 030467'  
4994 026764' 030554'  
4995 026766' 030642'  
4996 026770' 030721'  
4997 026772' 031005'  
4998 026774' 031063'  
4999 026776' 031077'  
5000 027000' 031113'  
5001 027002' 031201'  
5002 027004' 031264'  
5003 027006' 031350'  
5004 027010' 031425'  
5005 027012' 031507'  
5006 027014' 031563'  
5007 027016' 031577'  
5008 027020' 031613'  
5009 027022' 031626'  
5010 027024' 031651'  
5011 027026' 031665'  
5012 027030' 031714'

:LOCAL STORAGE FOR TEST 7  
STMSG:: .WORD 0  
:SELF TEST MESSAGE TABLE  
STTBL:: .WORD SMSG00  
.WORD SMSG01  
.WORD SMSG02  
.WORD SMSG03  
.WORD SMSG04  
.WORD SMSG05  
.WORD SMSG06  
.WORD SMSG07  
.WORD SMSG10  
.WORD SMSG11  
.WORD SMSG12  
.WORD SMSG13  
.WORD SMSG14  
.WORD SMSG15  
.WORD SMSG16  
.WORD SMSG17  
.WORD SMSG20  
.WORD SMSG21  
.WORD SMSG22  
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.WORD SMSG45  
.WORD SMSG46  
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.WORD SMSG52  
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.WORD SMSG54  
.WORD SMSG55  
.WORD SMSG56  
.WORD SMSG57  
.WORD SMSG60  
.WORD SMSG61  
.WORD SMSG62  
.WORD SMSG63  
.WORD SMSG64

; SELF TEST MESSAGE ADDRESS

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5013	027032'	031730'				.WORD	SMSG65
5014	027034'	031751'				.WORD	SMSG66
5015	027036'	031765'				.WORD	SMSG67
5016	027040'	032001'				.WORD	SMSG70
5017	027042'	032022'				.WORD	SMSG71
5018	027044'	032055'				.WORD	SMSG72
5019	027046'	032101'				.WORD	SMSG73
5020	027050'	032115'				.WORD	SMSG74
5021	027052'	032131'				.WORD	SMSG75
5022	027054'	032145'				.WORD	SMSG76
5023	027056'	032161'				.WORD	SMSG77
5024							
5025	027060'	047503	050115	042514		:ASCII MESSAGES	
5026	027066'	042524	020104	020055		SMSG00::	.ASCII /COMPLETED - NO ERRORS/
5027	027074'	047516	042440	051122			
5028	027102'	051117	123				
5029	027105'	015	000012			.ASCIZ	<15><12>
5030	027110'	050103	020125	047111	SMSG01::	.ASCII	/CPU INSTRUCTION TEST/
5031	027116'	052123	052522	052103			
5032	027124'	047511	020116	042524			
5033	027132'	052123					
5034	027134'	005015	000			.ASCIZ	<15><12>
5035	027137'	122	046517	052040	SMSG02::	.ASCII	/ROM TEST/
5036	027144'	051505	124				
5037	027147'	015	000012			.ASCIZ	<15><12>
5038	027152'	051127	052111	040505	SMSG03::	.ASCII	/WRITEABLE CONTROL STORE TEST/
5039	027160'	046102	020105	047503			
5040	027166'	052116	047522	020114			
5041	027174'	052123	051117	020105			
5042	027202'	042524	052123				
5043	027206'	005015	000			.ASCIZ	<15><12>
5044	027211'	120	054510	044523	SMSG04::	.ASCII	/PHYSICAL ADDRESS ROM/
5045	027216'	040503	020114	042101			
5046	027224'	051104	051505	020123			
5047	027232'	047522	115				
5048	027235'	015	000012			.ASCIZ	<15><12>
5049	027240'	030524	020061	047125	SMSG05::	.ASCII	/T11 UNIBUS ADDRESS REGISTER TEST/
5050	027246'	041111	051525	040440			
5051	027254'	042104	042522	051523			
5052	027262'	051040	043505	051511			
5053	027270'	042524	020122	042524			
5054	027276'	052123					
5055	027300'	005015	000			.ASCIZ	<15><12>
5056	027303'	122	041505	044505	SMSG06::	.ASCII	/RECEIVER UNIBUS DMA TEST/
5057	027310'	042526	020122	047125			
5058	027316'	041111	051525	042040			
5059	027324'	040515	052040	051505			
5060	027332'	124					
5061	027333'	015	000012			.ASCIZ	<15><12>
5062	027336'	047125	041111	051525	SMSG07::	.ASCII	/UNIBUS TEST/
5063	027344'	052040	051505	124			
5064	027351'	015	000012			.ASCIZ	<15><12>
5065	027354'	044515	051103	050117	SMSG10::	.ASCII	/MICROPROCESSOR DMA TEST/
5066	027362'	047522	042503	051523			
5067	027370'	051117	042040	040515			
5068	027376'	052040	051505	124			

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5069	027403'	015	000012			.ASCIZ	<15><12>
5070	027406'	051503	020122	042524	MSG11::	.ASCII	/CSR TEST/
5071	027414'	052123					
5072	027416'	005015	000			.ASCIZ	<15><12>
5073	027421'	124	046511	051105	MSG12::	.ASCII	/TIMER TEST/
5074	027426'	052040	051505	124			
5075	027433'	015	000012			.ASCIZ	<15><12>
5076	027436'	047125	042504	044506	MSG13::	.ASCII	/UNDEFINED/
5077	027444'	042516	104				
5078	027447'	015	000012			.ASCIZ	<15><12>
5079	027452'	047125	042504	044506	MSG14::	.ASCII	/UNDEFINED/
5080	027460'	042516	104				
5081	027463'	015	000012			.ASCIZ	<15><12>
5082	027466'	047125	042504	044506	MSG15::	.ASCII	/UNDEFINED/
5083	027474'	042516	104				
5084	027477'	015	000012			.ASCIZ	<15><12>
5085	027502'	047125	042504	044506	MSG16::	.ASCII	/UNDEFINED/
5086	027510'	042516	104				
5087	027513'	015	000012			.ASCIZ	<15><12>
5088	027516'	047125	042504	044506	MSG17::	.ASCII	/UNDEFINED/
5089	027524'	042516	104				
5090	027527'	015	000012			.ASCIZ	<15><12>
5091	027532'	044514	045516	046440	MSG20::	.ASCII	/LINK MEMORY TEST/
5092	027540'	046505	051117	020131			
5093	027546'	042524	052123				
5094	027552'	005015	000			.ASCIZ	<15><12>
5095	027555'	125	042116	043105	MSG21::	.ASCII	/UNDEFINED/
5096	027562'	047111	042105				
5097	027566'	005015	000			.ASCIZ	<15><12>
5098	027571'	125	042116	043105	MSG22::	.ASCII	/UNDEFINED/
5099	027576'	047111	042105				
5100	027602'	005015	000			.ASCIZ	<15><12>
5101	027605'	125	042116	043105	MSG23::	.ASCII	/UNDEFINED/
5102	027612'	047111	042105				
5103	027616'	005015	000			.ASCIZ	<15><12>
5104	027621'	125	042116	043105	MSG24::	.ASCII	/UNDEFINED/
5105	027626'	047111	042105				
5106	027632'	005015	000			.ASCIZ	<15><12>
5107	027635'	125	042116	043105	MSG25::	.ASCII	/UNDEFINED/
5108	027642'	047111	042105				
5109	027646'	005015	000			.ASCIZ	<15><12>
5110	027651'	125	042116	043105	MSG26::	.ASCII	/UNDEFINED/
5111	027656'	047111	042105				
5112	027662'	005015	000			.ASCIZ	<15><12>
5113	027665'	125	042116	043105	MSG27::	.ASCII	/UNDEFINED/
5114	027672'	047111	042105				
5115	027676'	005015	000			.ASCIZ	<15><12>
5116	027701'	114	041517	046101	MSG30::	.ASCII	/LOCAL LOOPBACK TEST - TRANSMITTER TIMEOUT/
5117	027706'	046040	047517	041120			
5118	027714'	041501	020113	042524			
5119	027722'	052123	026440	020040			
5120	027730'	051124	047101	046523			
5121	027736'	052111	042524	020122			
5122	027744'	044524	042515	052517			
5123	027752'	124					
5124	027753'	015	000012			.ASCIZ	<15><12>



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5125	027756*	047514	040503	020114	MSG31::	.ASCII	/LOCAL LOOPBACK TEST - RECEIVER TIMEOUT/
5126	027764*	047514	050117	040502			
5127	027772*	045503	052040	051505			
5128	030000*	020124	020055	051040			
5129	030006*	041505	044505	042526			
5130	030014*	020122	044524	042515			
5131	030022*	052517	124				
5132	030025*	015	000012			.ASCIZ	<15><12>
5133	030030*	047514	040503	020114	MSG32::	.ASCII	/LOCAL LOOPBACK TEST - BUFFER COMPARSION/
5134	030036*	047514	050117	040502			
5135	030044*	045503	052040	051505			
5136	030052*	020124	020055	041040			
5137	030060*	043125	042506	020122			
5138	030066*	047503	050115	051101			
5139	030074*	044523	047117				
5140	030100*	005015	000			.ASCIZ	<15><12>
5141	030103*	114	041517	046101	MSG33::	.ASCII	/LOCAL LOOPBACK TEST - BYTE COUNT/
5142	030110*	046040	047517	041120			
5143	030116*	041501	020113	042524			
5144	030124*	052123	026440	020040			
5145	030132*	054502	042524	041440			
5146	030140*	052517	052116				
5147	030144*	005015	000			.ASCIZ	<15><12>
5148	030147*	114	041517	046101	MSG34::	.ASCII	/LOCAL LOOPBACK TEST - RECEIVER STATUS/
5149	030154*	046040	047517	041120			
5150	030162*	041501	020113	042524			
5151	030170*	052123	026440	020040			
5152	030176*	042522	042503	053111			
5153	030204*	051105	051440	040524			
5154	030212*	052524	123				
5155	030215*	015	000012			.ASCIZ	<15><12>
5156	030220*	047514	040503	020114	MSG35::	.ASCII	/LOCAL LOOPBACK TEST - CRC ERROR/
5157	030226*	047514	050117	040502			
5158	030234*	045503	052040	051505			
5159	030242*	020124	020055	041440			
5160	030250*	041522	042440	051122			
5161	030256*	051117					
5162	030260*	005015	000			.ASCIZ	<15><12>
5163	030263*	114	041517	046101	MSG36::	.ASCII	/LOCAL LOOPBACK TEST - MATCH BIT ERROR/
5164	030270*	046040	047517	041120			
5165	030276*	041501	020113	042524			
5166	030304*	052123	026440	020040			
5167	030312*	040515	041524	020110			
5168	030320*	044502	020124	051105			
5169	030326*	047522	122				
5170	030331*	015	000012			.ASCIZ	<15><12>
5171	030334*	047514	040503	020114	MSG37::	.ASCII	/LOCAL LOOPBACK TEST - TDR ERROR/
5172	030342*	047514	050117	040502			
5173	030350*	045503	052040	051505			
5174	030356*	020124	020055	052040			
5175	030364*	051104	042440	051122			
5176	030372*	051117					
5177	030374*	005015	000			.ASCIZ	<15><12>
5178	030377*	124	040522	051516	MSG40::	.ASCII	/TRANSMITTER BUFFER ADDRESS TEST - TRANSMITTER TIMEOUT/
5179	030404*	044515	052124	051105			
5180	030412*	041040	043125	042506			

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5181	030420*	020122	042101	051104		
5182	030426*	051505	020123	042524		
5183	030434*	052123	026440	052040		
5184	030442*	040522	051516	044515		
5185	030450*	052124	051105	052040		
5186	0456*	046511	047505	052125		
5187	030464*	005015	000			
5188	030467*	124	040522	051516	MSG41::	.ASCIZ <15><12> .ASCII /TRANSMITTER BUFFER ADDRESS TEST - RECEIVER TIMEOUT/
5189	030474*	044515	052124	051105		
5190	030502*	041040	043125	042506		
5191	030510*	020122	042101	051104		
5192	030516*	051505	020123	042524		
5193	030524*	052123	026440	051040		
5194	030532*	041505	044505	042526		
5195	030540*	020122	044524	042515		
5196	030546*	052517	124			
5197	030551*	015	000012			
5198	030554*	051124	047101	046523	MSG42::	.ASCIZ <15><12> .ASCII /TRANSMITTER BUFFER ADDRESS TEST - BUFFER COMPARISON/
5199	030562*	052111	042524	020122		
5200	030570*	052502	043106	051105		
5201	030576*	040440	042104	042522		
5202	030604*	051523	052040	051505		
5203	030612*	020124	020055	052502		
5204	030620*	043106	051105	041440		
5205	030626*	046517	040520	051522		
5206	030634*	047511	116			
5207	030637*	015	000012			
5208	030642*	051124	047101	046523	MSG43::	.ASCIZ <15><12> .ASCII /TRANSMITTER BUFFER ADDRESS TEST - BYTE COUNT/
5209	030650*	052111	042524	020122		
5210	030656*	052502	043106	051105		
5211	030664*	040440	042104	042522		
5212	030672*	051523	052040	051505		
5213	030700*	020124	020055	054502		
5214	030706*	042524	041440	052517		
5215	030714*	052116				
5216	030716*	005015	000			
5217	030721*	124	040522	051516	MSG44::	.ASCIZ <15><12> .ASCII /TRANSMITTER BUFFER ADDRESS TEST - RECEIVER STATUS/
5218	030726*	044515	052124	051105		
5219	030734*	041040	043125	042506		
5220	030742*	020122	042101	051104		
5221	030750*	051505	020123	042524		
5222	030756*	052123	026440	051040		
5223	030764*	041505	044505	042526		
5224	030772*	020122	052123	052101		
5225	031000*	051525				
5226	031002*	005015	000			
5227	031005*	124	040522	051516	MSG45::	.ASCIZ <15><12> .ASCII /TRANSMITTER BUFFER ADDRESS TEST - CRC ERROR/
5228	031012*	044515	052124	051105		
5229	031020*	041040	043125	042506		
5230	031026*	020122	042101	051104		
5231	031034*	051505	020123	042524		
5232	031042*	052123	026440	041440		
5233	031050*	041522	042440	051122		
5234	031056*	051117				
5235	031060*	005015	000			
5236	031063*	125	042116	043105	MSG46::	.ASCIZ <15><12> .ASCII /UNDEFINED/

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5237	031070*	047111	042105				
5238	031074*	005015	000			.ASCIZ	<15><12>
5239	031077*	125	042116	043105	MSG47::	.ASCII	/UNDEFINED/
5240	031104*	047111	042105				
5241	031110*	005015	000			.ASCIZ	<15><12>
5242	031113*	122	041505	044505	MSG50::	.ASCII	/RECEIVER BUFFER ADDRESS TEST - TRANSMITTER TIMEOUT/
5243	031120*	042526	020122	052502			
5244	031126*	043106	051105	040440			
5245	031134*	042104	042522	051523			
5246	031142*	052040	051505	020124			
5247	031150*	020055	052040	040522			
5248	031156*	051516	044515	052124			
5249	031164*	051105	052040	046511			
5250	031172*	047505	052125				
5251	031176*	005015	000			.ASCIZ	<15><12>
5252	031201*	122	041505	044505	MSG51::	.ASCII	/RECEIVER BUFFER ADDRESS TEST - RECEIVER TIMEOUT/
5253	031206*	042526	020122	052502			
5254	031214*	043106	051105	040440			
5255	031222*	042104	042522	051523			
5256	031230*	052040	051505	020124			
5257	031236*	020055	051040	041505			
5258	031244*	044505	042526	020122			
5259	031252*	044524	042515	052517			
5260	031260*	124					
5261	031261*	015	000012			.ASCIZ	<15><12>
5262	031264*	042522	042503	053111	MSG52::	.ASCII	/RECEIVER BUFFER ADDRESS TEST - BUFFER COMPARSION/
5263	031272*	051105	041040	043125			
5264	031300*	042506	020122	042101			
5265	031306*	051104	051505	020123			
5266	031314*	042524	052123	026440			
5267	031322*	020040	052502	043106			
5268	031330*	051105	041440	046517			
5269	031336*	040520	051522	047511			
5270	031344*	116					
5271	031345*	015	000012			.ASCIZ	<15><12>
5272	031350*	042522	042503	053111	MSG53::	.ASCII	/RECEIVER BUFFER ADDRESS TEST - BYTE COUNT/
5273	031356*	051105	041040	043125			
5274	031364*	042506	020122	042101			
5275	031372*	051104	051505	020123			
5276	031400*	042524	052123	026440			
5277	031406*	020040	054502	042524			
5278	031414*	041440	052517	052116			
5279	031422*	005015	000			.ASCIZ	<15><12>
5280	031425*	122	041505	044505	MSG54::	.ASCII	/RECEIVER BUFFER ADDRESS TEST - RECEIVER STATUS/
5281	031432*	042526	020122	052502			
5282	031440*	043106	051105	040440			
5283	031446*	042104	042522	051523			
5284	031454*	052040	051505	020124			
5285	031462*	020055	051040	041505			
5286	031470*	044505	042526	020122			
5287	031476*	052123	052101	051525			
5288	031504*	005015	000			.ASCIZ	<15><12>
5289	031507*	122	041505	044505	MSG55::	.ASCII	/RECEIVER BUFFER ADDRESS TEST - CRC ERROR/
5290	031514*	042526	020122	052502			
5291	031522*	043106	051105	040440			
5292	031530*	042104	042522	051523			

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5293	031536*	052040	051505	020124			
5294	031544*	020055	041440	041522			
5295	031552*	042440	051122	051117			
5296	031560*	005015	000			.ASCIZ	<15><12>
5297	031563*	125	042116	043105	MSG56::	.ASCII	/UNDEFINED/
5298	031570*	047111	042105				
5299	031574*	005015	000			.ASCIZ	<15><12>
5300	031577*	125	042116	043105	MSG57::	.ASCII	/UNDEFINED/
5301	031604*	047111	042105				
5302	031610*	005015	000			.ASCIZ	<15><12>
5303	031613*	103	041522	052040	MSG60::	.ASCII	/CRC TEST/
5304	031620*	051505	124				
5305	031623*	015	000012			.ASCIZ	<15><12>
5306	031626*	052522	052116	050040	MSG61::	.ASCII	/RUNT PACKET TEST/
5307	031634*	041501	042513	020124			
5308	031642*	042524	052123				
5309	031646*	005015	000			.ASCIZ	<15><12>
5310	031651*	125	042116	043105	MSG62::	.ASCII	/UNDEFINED/
5311	031656*	047111	042105				
5312	031662*	005015	000			.ASCIZ	<15><12>
5313	031665*	117	042526	051522	MSG63::	.ASCII	/OVERSIZE PACKET TEST/
5314	031672*	055111	020105	040520			
5315	031700*	045503	052105	052040			
5316	031706*	051505	124				
5317	031711*	015	000012			.ASCIZ	<15><12>
5318	031714*	047125	042504	044506	MSG64::	.ASCII	/UNDEFINED/
5319	031722*	042516	104				
5320	031725*	015	000012			.ASCIZ	<15><12>
5321	031730*	047503	046114	051511	MSG65::	.ASCII	/COLLISION TEST/
5322	031736*	047511	020116	042524			
5323	031744*	052123					
5324	031746*	005015	000			.ASCIZ	<15><12>
5325	031751*	125	042116	043105	MSG66::	.ASCII	/UNDEFINED/
5326	031756*	047111	042105				
5327	031762*	005015	000			.ASCIZ	<15><12>
5328	031765*	125	042116	043105	MSG67::	.ASCII	/UNDEFINED/
5329	031772*	047111	042105				
5330	031776*	005015	000			.ASCIZ	<15><12>
5331	032001*	115	046125	044524	MSG70::	.ASCII	/MULTICAST TEST/
5332	032006*	040503	052123	052040			
5333	032014*	051505	124				
5334	032017*	015	000012			.ASCIZ	<15><12>
5335	032022*	042101	051104	051505	MSG71::	.ASCII	/ADDRESS RECOGNITION TEST/
5336	032030*	020123	042522	047503			
5337	032036*	047107	052111	047511			
5338	032044*	020116	042524	052123			
5339	032052*	005015	000			.ASCIZ	<15><12>
5340	032055*	105	052130	051105	MSG72::	.ASCII	/EXTERNAL LOOPBACK/
5341	032062*	040516	020114	047514			
5342	032070*	050117	040502	045503			
5343	032076*	005015	000			.ASCIZ	<15><12>
5344	032101*	125	042116	043105	MSG73::	.ASCII	/UNDEFINED/
5345	032106*	047111	042105				
5346	032112*	005015	000			.ASCIZ	<15><12>
5347	032115*	125	042116	043105	MSG74::	.ASCII	/UNDEFINED/
5348	032122*	047111	042105				

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5349	032126*	005015	000			.ASCIZ	<15><12>
5350	032131*	125	042116	043105	MSG75::	.ASCII	/UNDEFINED/
5351	032136*	047111	042105				
5352	032142*	005015	000			.ASCIZ	<15><12>
5353	032145*	125	042116	043105	MSG76::	.ASCII	/UNDEFINED/
5354	032152*	047111	042105				
5355	032156*	005015	000			.ASCIZ	<15><12>
5356	032161*	116	053105	051105	MSG77::	.ASCII	/NEVER GOT STARTED/
5357	032166*	043440	052117	051440			
5358	032174*	040524	052122	042105			
5359	032202*	005015	000			.ASCIZ	<15><12>
5360	032206*					.EVEN	

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CZUABA.MAC 10-JAN-83 12:46 TEST 8: PORT COMMAND TEST

.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
*****

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032206'      BGNTST
032206'
032206' 004737 025334'      JSR    PC,TINIT      ; IS A DEVICE RESET NEEDED?
032212' 103025      BCC    25$           ; NO
032214' 012777 000040 146004  MOV    #RSET,@PCSR0   ; YES, RESET DEUNA
032222' 004737 022546'      JSR    PC,CHKDNI     ; DNI ?
032226' 103006      BCC    20$           ; YES
032230'      ERRHRD 012.,ERR004,MSG003 ; NO, REPORT ERROR
032230' 104456      TRAP  C$ERHRD
032232' 000014      .WORD 12
032234' 016106'      .WORD ERR004
032236' 015114'      .WORD MSG003
032240'      ESCAPE TST      ; AND ABORT TEST
032240' 104410      TRAP  C$ESCAPE
032242' 000236      .WORD L10033-.
032244' 004737 023434' 20$: JSR    PC,CLRDNI     ; WRITE ONE TO CLEAR DNI
032250' 103006      ; ERROR
032252'      BCC    25$           ; NO
032252' 104456      ERRHRD 013.,ERR006,MSG003 ; YES, REPORT ERROR
032254' 000015      TRAP  C$ERHRD
032256' 016206'      .WORD 13
032260' 015114'      .WORD ERR006
032262'      .WORD MSG003
032262' 104410      ESCAPE TST      ; AND ABORT
032264' 000214      TRAP  C$ESCAPE
032266' 012777 000006 145732 25$: MOV    #PNOP,@PCSR0   ; ISSUE A NOP PORT COMMAND
032274' 004737 022546'      JSR    PC,CHKDNI     ; DNI ?
032300' 103006      BCC    30$           ; YES
032302'      ERRHRD 014.,ERR008,MSG003 ; NO, REPORT ERROR
032302' 104456      TRAP  C$ERHRD
032304' 000016      .WORD 14
032306' 016343'      .WORD ERR008

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 CZUABA.MAC 10-JAN-83 12:46 TEST 8: PORT COMMAND TEST

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5417 032310' 015114'
5418 032312'          ESCAPE TST          : AND ABORT TEST          .WORD  MSG003
5419 032312' 104410
5420 032314' 000164          TRAP          C$ESCAPE
5421                                     .WORD          L10033-.
5422 032316' 004737 023434'      30$: JSR      PC,CLRDNI          : WRITE ONE TO CLEAR DNI
5423                                     : ERROR
5424 032322' 103006          BCC      40$          : NO
5425 032324'          ERRHRD  015.,ERR006,MSG003 : YES, REPORT ERROR
5426 032324' 104456          TRAP          C$ERHRD
5427 032326' 000017          .WORD          15
5428 032330' 016206'          .WORD          ERR006
5429 032332' 015114'          .WORD          MSG003
5430 032334'          ESCAPE TST          : AND ABORT
5431 032334' 104410          TRAP          C$ESCAPE
5432 032336' 000142          .WORD          L10033-.
5433
5434 032340' 012705 011072'      40$: MOV      #NOPF,R5          : POINT TO DEFAULT NOP FUNCTION
5435 032344' 004737 024630'      JSR      PC,LDPCBB          : LOAD FUNCTION INTO PCBB
5436 032350' 004737 024660'      JSR      PC,LDPCSR          : ADDRESS OF PCBB -> PCSR2!3
5437 032354' 012777 000001 145644 : MOV      #GETPCB,@PCSR0    : ISSUE A GETPCBB PORT COMMAND
5438 032362' 004737 022546'      JSR      PC,CHKDNI          : DNI?
5439 032366' 103006          BCC      50$          : YES
5440 032370'          ERRHRD  016.,ERR009,MSG003 : NO, REPORT ERROR
5441 032370' 104456          TRAP          C$ERHRD
5442 032372' 000020          .WORD          16
5443 032374' 016422'          .WORD          ERR009
5444 032376' 015114'          .WORD          MSG003
5445 032400'          ESCAPE TST          : AND ABORT TEST
5446 032400' 104410          TRAP          C$ESCAPE
5447 032402' 000076          .WORD          L10033-.
5448
5449 032404' 004737 023434'      50$: JSR      PC,CLRDNI          : WRITE ONE TO CLEAR DNI
5450                                     : ERROR ?
5451 032410' 103006          BCC      60$          : NO
5452 032412'          ERRHRD  017.,ERR006,MSG003 : YES, REPORT ERROR
5453 032412' 104456          TRAP          C$ERHRD
5454 032414' 000021          .WORD          17
5455 032416' 016206'          .WORD          ERR006
5456 032420' 015114'          .WORD          MSG003
5457 032422'          ESCAPE TST          : AND ABORT TEST
5458 032422' 104410          TRAP          C$ESCAPE
5459 032424' 000054          .WORD          L10033-.
5460
5461 032426' 012777 000002 145572 60$: MOV      #GETCMD,@PCSR0    : ISSUE A GETCMD PORT COMMAND
5462 032434' 004737 022546'      JSR      PC,CHKDNI          : DNI ?
5463 032440' 103006          BCC      70$          : YES
5464 032442'          ERRHRD  018.,ERR010,MSG003 : NO, REPORT ERROR
5465 032442' 104456          TRAP          C$ERHRD
5466 032444' 000022          .WORD          18
5467 032446' 016506'          .WORD          ERR010
5468 032450' 015114'          .WORD          MSG003
5469 032452'          ESCAPE TST          : AND ABORT TEST
5470 032452' 104410          TRAP          C$ESCAPE
5471 032454' 000024          .WORD          L10033-.
5472

```

HARDWARE TESTS MACY11 30(1046) 11-JAN-83 12:03 PAGE 127  
CZUABA.MAC 10-JAN-83 12:46 TEST 8: PORT COMMAND TEST

```

5473 032456* 004737 023434*      70$: JSR PC,CLRDNI      ; WRITE ONE TO CLEAR DNI
5474                                     ; ERROR ?
5475 032462* 103006                BCC 80$      ; NO
5476 032464*                        ERRHRL 019.,ERR006,MSG003 ; YES, REPORT ERROR
5477 032464* 104456                TRAP C$ERHRD
5478 032466* 000023                .WORD 19
5479 032470* 016206*                .WORD ERR006
5480 032472* 015114*                .WORD MSG003
5481 032474*                        ESCAPE TST      ; AND ABORT TEST
5482 032474* 104410                TRAP C$ESCAPE
5483 032476* 000002                .WORD L10033-.
5484 032500*                        80$:
5485 032500*                        ENDTST
5486 032500*                        L10033:
5487 032500* 104401                TRAP C$ETST

```



HARDWARE TESTS MACY11 30(1046) CZUABA.MAC 10-JAN-83 12:46

11-JAN-83 12:03 PAGE 128 TEST 9: INTERRUPT LOGIC TEST

.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
*****

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```

032502'
032502'
032502' 004737 025334'
032506' 103025
032510' 012777 000040 145510
032516' 004737 022546'
032522' 103006
032524' 104456
032526' 000024
032530' 016106'
032532' 015114'
032534'
032534' 104410
032536' 000226
032540' 004737 023434'
032544' 103006
032546'
032546' 104456
032550' 000025
032552' 016206'
032554' 015114'
032556'
032556' 104410
032560' 000204
032562'
032562' 013746 000240'
032566' 012746 025652'
032572' 013746 000236'
032576' 012746 000003
032602' 104437
032604' 062706 000010
032610'
032610' 012700 000200
032614' 104441
032616' 005037 013212'
032622' 012777 000100 145376

```

```

BGNTST
T9::
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 020.,ERR004,MSG003 ; NO, REPORT ERROR
TRAP C$ERHRD
.WORD 20
.WORD ERR004
.WORD MSG003
ESCAPE TST ; AND ABORT TEST
TRAP C$ESCAPE
.WORD L10034-.
20$: JSR PC,CLRDN1 ; WRITE ONE TO CLEAR DNI
; ERROR
; NO
ERRHRD 021.,ERR006,MSG003 ; YES, REPORT ERROR
TRAP C$ERHRD
.WORD 21
.WORD ERR006
.WORD MSG003
ESCAPE TST ; AND ABORT
TRAP C$ESCAPE
.WORD L10034-.
;SET UP INTERRUPT VECTOR
25$: SETVEC INTVEC,#ISRDN1,UNAPRI
MOV UNAPRI,-(SP)
MOV #ISRDN1,-(SP)
MOV INTVEC,-(SP)
MOV #3,-(SP)
TRAP C$$VEC
ADD #10,SP
SETPRI #PRI04 ; SET CPU PRIORITY = 4
MOV #PRI04,RO
TRAP C$SPRI
CLR DNIFLG ; CLEAR DNI INTERRUPT FLAG
;ISSUE GET PCBB PORT COMMAND WITH INTERRUPTS ENABLED
40$: MOV #INTE,@PCSR0 ; ENABLE INTERRUPTS

```

HARDWARE TESTS MACY11 30(1046) 11-JAN-83 12:03 PAGE 129  
 CZUABA.MAC 10-JAN-83 12:46 TEST 9: INTERRUPT LOGIC TEST

```

5544 032630' 012705 011072'      MOV      #NOPF,R5      ; POINT TO DEFAULT NOP FUNCTION
5545 032634' 004737 024630'      JSR      PC,LDPCBB    ; LOAD FUNCTION INTO PCBB
5546 032640' 004737 024660'      JSR      PC,LDPCSR    ; ADDRESS OF PCBB -> PCSR2!3
5547 032644' 012777 000101 145354  MOV      #GETPCB!INTE,@PCSR0 ; ISSUE A GETPCBB PORT COMMAND
5548                                     ;WAIT FOR DNI INTERRUPT
5549                                     ; LOOP FOR APPROX 2 SEC.
5550 032652' 012701 000003      MOV      #3,R1        ; INIT OUTER LOOP
5551 032656' 005000                                     ; INNER LOOP
5552 032660' 005737 013212'      50$:    CLR      RO        ; DNI INTERRUPT OCCUR ?
5553 032664' 001020                                     ; YES, CONTINUE TEST
5554 032666' 005300      60$:    TST      DNIFLG    ; INNER LOOP EXHAUSTED?
5555 032670' 001373      DEC      RO        ; NO, CHECK FOR INTERRUPT AGAIN
5556 032672' 005301      BNE     60$        ; OUTER LOOP EXHAUSTED?
5557 032674' 001371      DEC      R1        ; NO, KEEP CHECKING FOR INTERRUPT
5558 032676'                                     BNE     60$        ; YES, REPORT ERROR
5558 032676'                                     ERRHRD  022.,ERR007
5559 032676' 104456                                     TRAP   C$ERHRD
5560 032700' 000026                                     .WORD  22
5561 032702' 016254'                                     .WORD  ERR007
5562 032704' 000000                                     .WORD  0
5563 032706'                                     CLRVEC  INTVEC      ; DEALLOCATE VECTOR
5564 032706' 013700 000236'      MOV      INTVEC,RO   ;
5565 032712' 104436      TRAP   C$CVEC
5566 032714'                                     SETPRI  #PRI07      ; RESTORE CPU PRIORITY TO 7
5567 032714' 012700 000340      MOV      #PRI07,RO   ;
5568 032720' 104441      TRAP   C$SPRI
5569 032722'                                     ESCAPE  TST         ; AND ABORT TEST
5570 032722' 104410                                     TRAP   C$ESCAPE
5571 032724' 000040                                     .WORD  L10034-.
5572                                     ;WRITE ONE TO CLEAR DNI
5573 70$:    CLRVEC  INTVEC      ; DEALLOCATE VECTOR
5574 032726'                                     MOV      INTVEC,RO   ;
5575 032726' 013700 000236'      TRAP   C$CVEC
5576 032732' 104436      SETPRI  #PRI07      ; RESTORE CPU PRIORITY TO 7
5577 032734'                                     MOV      #PRI07,RO   ;
5578 032734' 012700 000340      TRAP   C$SPRI
5579 032740' 104441      JSR      PC,CLRDN1   ; WRITE ONE TO CLEAR DNI
5580 032742' 004737 023434'      ; ERROR?
5581                                     BCC     80$        ; NO
5582 032746' 103006      ERRHRD  023.,ERR006,MSG003 ; YES, REPORT ERROR
5583 032750'                                     TRAP   C$ERHRD
5584 032750' 104456                                     .WORD  23
5585 032752' 000027                                     .WORD  ERR006
5586 032754' 016206'                                     .WORD  MSG003
5587 032756' 015114'      ESCAPE  TST         ; AND ABORT
5588 032760'                                     TRAP   C$ESCAPE
5589 032760' 104410                                     .WORD  L10034-.
5590 032762' 000002      80$:    ENDTST
5591 032764'                                     L10034: TRAP   C$SETST
5592 032764'
5593 032764'
5594 032764' 104401

```

HARDWARE TESTS MACY11 30(1046) CZUABA.MAC 10-JAN-83 12:46

11-JAN-83 12:03 PAGE 130 TEST 10: READ INTERNAL ROM TEST

.SBTTL 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
*****

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```

032766'          BGNTST
032766'          T10::
032766' 004737 025334' JSR PC,TINIT          ; IS A DEVICE RESET NEEDED?
032772' 103025          BCC 30$              ; NO
032774' 012777 000040 145224 MOV #RSET,@PCSR0 ; YES, RESET DEUNA
033002' 004737 022546' JSR PC,CHKDNI         ; DNI ?
033006' 103006          BCC 20$              ; YES
033010'          ERRHRD 024.,ERR004,MSG003 ; NO, REPORT ERROR
033010' 104456          TRAP C$ERHRD
033012' 000030          .WORD 24
033014' 016106'          .WORD ERR004
033016' 015114'          .WORD MSG003
033020'          ESCAPE TST                ; AND ABORT TEST
033020' 104410          TRAP C$ESCAPE
033022' 000272          .WORD L10035-.
033024' 004737 023434' 20$: JSR PC,CLRDNI         ; WRITE ONE TO CLEAR DNI
033030' 103006          ; ERROR ?
033032'          BCC 30$
033032' 104456          ERRHRD 025.,ERR006,MSG003 ; YES, REPORT ERROR
033034' 000031          TRAP C$ERHRD
033036' 016206'          .WORD 25
033040' 015114'          .WORD ERR006
033042'          ESCAPE TST                ; AND ABORT TEST
033042' 104410          TRAP C$ESCAPE
033044' 000250          .WORD L10035-.
033046' 004737 024660' 30$: JSR PC,LDPCSR         ; ADDRESS OF PCBB -> PCSR2!3
033052' 012777 000001 145146 MOV #GETPCB,@PCSR0 ; ISSUE GET_PCBB PORT COMMAND
033060' 004737 022546' JSR PC,CHKDNI         ; DNI ?
033064' 103006          BCC 40$              ; YES
033066'          ERRHRD 026.,ERR009,MSG003 ; NO, REPORT ERROR
033066' 104456          TRAP C$ERHRD
033070' 000032          .WORD 26
033072' 016422'          .WORD ERR009
033074' 015114'          .WORD MSG003

```

HARDWARE TESTS MACY11 30(1046) 11-JAN-83 12:03 PAGE 131  
 CZUABA.MAC 10-JAN-83 12:46 TEST 10: READ INTERNAL ROM TEST

```

5651 033076'          ESCAPE TST          ; AND ABORT TEST
5652 033076' 104410          TRAP          C$ESCAPE
5653 033100' 000214          .WORD          L10035-.
5654
5655 033102' 004737 023434' 40$: JSR      PC,CLRDNI          ; WRITE ONE TO CLEAR DNI
5656                                     ; ERROR ?
5657 033106' 103006          BCC      50$
5658 033110'          ERRHRD 027.,ERR006,MSG003 ; YES, REPORT ERROR
5659 033110' 104410          TRAP          C$ERHRD
5660 033112' 000013          .WORD          27
5661 033114' 016206'          .WORD          ERR006
5662 033116' 015114'          .WORD          MSG003
5663 033120'          ESCAPE TST          ; AND ABORT TEST
5664 033120' 104410          TRAP          C$ESCAPE
5665 033122' 000172          .WORD          L10035-.
5666
5667 033124' 012705 011272' 50$: MOV      #DMPMEM,R5          ; DEFAULT DUMP INTERNAL MEMORY
5668 033130' 004737 024630' JSR      PC,LDPCBB          ; LOAD FUNCTION -> PCBB
5669 033134' 012705 012204' MOV      #UDB10A,R5        ; DEFAULT UDBB
5670 033140' 012700 000004' MOV      #4,R0             ; FOUR WORDS
5671 033144' 004737 025030' JSR      PC,LDUDBB        ; LOAD INTO UDBB
5672
5673 033150' 012737 000000 012202' ; MOV      #INITH,CRCH          ; INITIAL CRC VALUE (ZERO)
5674                                     ;
5675 033156' 012703 012214' MOV      #MEM10A,R3        ; R3 POINTS TO ROM ADDRESS TABLE
5676 033162' 012700 000010' MOV      #8.,R0            ; PERFORM 8 ROM DUMPS
5677                                     ; AND CRC CALCULATIONS
5678
5679 033166' 012705 005072' 60$: MOV      #RBUF,R5          ; CLEAR RBUF
5680 033172' 012704 002000' MOV      #1024.,R4
5681 033176' 005025          65$: CLR      (R5)+
5682 033200' 077402          SOB      R4,65$
5683                                     ;
5684 033202' 012337 000270' MOV      (R3)+,UDBB+6        ; LOAD ROM ADDRESS -> UDBB+6
5685 033206' 012777 000002 145012' MOV      #GETCMD,@PCSRO    ; ISSUE GET COMMAND PORT COMMAND
5686 033214' 004737 022546' JSR      PC,CHKDNI          ; DNI ?
5687 033220' 103006          BCC      70$
5688 033222'          ERRHRD 028.,ERR010,MSG003 ; NO, REPORT ERROR
5689 033222' 104456          TRAP          C$ERHRD
5690 033224' 000034          .WORD          28
5691 033226' 016506'          .WORD          ERR010
5692 033230' 015114'          .WORD          MSG003
5693 033232'          ESCAPE TST          ; AND ABORT TEST
5694 033232' 104410          TRAP          C$ESCAPE
5695 033234' 000060          .WORD          L10035-.
5696
5697 033236' 004737 023434' 70$: JSR      PC,CLRDNI          ; WRITE ONE TO CLEAR DNI
5698                                     ; ERROR ?
5699 033242' 103006          BCC      80$
5700 033244'          ERRHRD 029.,ERR006,MSG003 ; YES, REPORT ERROR
5701 033244' 104456          TRAP          C$ERHRD
5702 033246' 000035          .WORD          29
5703 033250' 016206'          .WORD          ERR006
5704 033252' 015114'          .WORD          MSG003
5705 033254'          ESCAPE TST          ; AND ABORT TEST
5706 033254' 104410          TRAP          C$ESCAPE
    
```

HARDWARE TESTS MACY11 30(1046)  
 CZUABA.MAC 10-JAN-83 12:46

11-JAN-83 12:03 PAGE 132  
 TEST 10: READ INTERNAL ROM TEST

```

5707 033256' 000036                                .WORD  L10035-.
5708
5709 033260' 004737 024222'          80$:  JSR    PC,CRBLK      ; CALCULATE CRC ON 1K RBUF
5710 033264' 010437 012202'          MOV    R4,CRCH      ; CRC -> CRCH
5711 033270' 077042          SOB    R0,60$       ; DO ALL 8K BY 1K BLOCKS
5712
5713          ;VERIFY CRC
5714 033272' 005737 012202'          TST    CRCH          ; CRC = 0 ?
5715 033276' 001406          BEQ    95$           ; YES
5716 033300'          ERRHRD 030.,ERR024 ; NO, ROM CRC ERROR, REPORT ERROR
5717 033300' 104456          TRAP  C$ERHRD
5718 033302' 000036          .WORD 30
5719 033304' 017634'          .WORD ERR024
5720 033306' 000000          .WORD 0
5721 033310'          ESCAPE TST          ; AND ABORT TEST
5722 033310' 104410          TRAP  C$ESCAPE
5723 033312' 000002          .WORD L10035-.
5724 033314'          95$:
5725 033314'          ENDTST
5726 033314'
5727 033314' 104401          L10035: TRAP  C$ETST

```

HARDWARE TESTS MACY11 30(1046) 11-JAN-83 12:03 PAGE 133  
CZUABA.MAC 10-JAN-83 12:46

TEST 11: READ/WRITE INTERNAL WCS TEST

.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 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
*****

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5746
5747
5748
5749 033316'
5750 033316'
5751 033316' 004737 025334'
5752 033322' 103025
5753 033324' 012777 000040 144674
5754 033332' 004737 022546'
5755 033336' 103006
5756 033340'
5757 033340' 104456
5758 033342' 000037
5759 033344' 016106'
5760 033346' 015114'
5761 033350'
5762 033350' 104410
5763 033352' 000716
5764
5765 033354' 004737 023434'
5766
5767 033360' 103006
5768 033362'
5769 033362' 104456
5770 033364' 000040
5771 033366' 016206'
5772 033370' 015114'
5773 033372'
5774 033372' 104410
5775 033374' 000674
5776
5777 033376' 004737 024660'
5778 033402' 012777 000001 144616
5779 033410' 004737 022546'
5780 033414' 103006
5781 033416'
5782 033416' 104456
5783 033420' 000041

```

BGNTST

```

JSR PC,TINIT
BCC 30$
MOV #RSET,@PCSR0
JSR PC,CHKDNI
BCC 20$
ERRHRD 031.,ERR004,MSG003

```

```

T11::
: IS A DEVICE RESET NEEDED?
: NO
: YES, RESET DEUNA
: DNI ?
: YES
: NO, REPORT ERROR

```

```

TRAP C$ERHRD
.WORD 31
.WORD ERR004
.WORD MSG003

```

ESCAPE TST

: AND ABORT TEST

```

TRAP C$ESCAPE
.WORD L10036-.

```

20\$:

```

JSR PC,CLRDNI
BCC 30$
ERRHRD 032.,ERR006,MSG003

```

```

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

```

```

TRAP C$ERHRD
.WORD 32
.WORD ERR006
.WORD MSG003

```

30\$:

```

JSR PC,LDPCSR
MOV #GETPCB,@PCSR0
JSR PC,CHKDNI
BCC 40$
ERRHRD 033.,ERR009,MSG003

```

```

: ADDRESS OF PCBB -> PCSR2!3
: ISSUE GET_PCBB PORT COMMAND
: DNI ?
: YES
: NO, REPORT ERROR

```

```

TRAP C$ERHRD
.WORD 33

```

HARDWARE TESTS MACY11 30(1046) 11-JAN-83 12:03 PAGE 134  
 CZUABA.MAC 10-JAN-83 12:46 TEST 11: READ/WRITE INTERNAL WCS TEST

```

5784 033422' 016422' .WORD ERR009
5785 033424' 015114' .WORD MSG003
5786 033426'          ESCAPE TST          ; AND ABORT TEST
5787 033426' 104410          TRAP C$ESCAPE
5788 033430' 000640          .WORD L10036-.
5789
5790 033432' 004737 023434' 40$: JSR PC,CLRDNI          ; WRITE ONE TO CLEAR DNI
5791                                     ; ERROR ?
5792 033436' 103006          BCC 50$
5793 033440'          ERRHRD 034.,ERR006,MSG003 ; NO
5794 033440' 104456          ; YES, REPORT ERROR
5795 033442' 000042          TRAP C$ERHRD
5796 033444' 016206'          .WORD 34
5797 033446' 015114'          .WORD ERR006
5798 033450'          ESCAPE TST          ; AND ABORT TEST
5799 033450' 104410          TRAP C$ESCAPE
5800 033452' 000616          .WORD L10036-.
5801
5802 ;WRITE TOP 1K DOWNLINE LOAD WCS WITH DATA = ADDRESS
5803 033454' 012703 012244' 50$: MOV #MEM11A,R3          ; R3 POINTS TO WCS ADDRESS TABLE
5804
5805 ;WRITE TBUF WITH DATA = ADDRESS
5806 033460' 010305          60$: MOV R3,R5          ; R5 POINTS TO ADDRESS
5807 033462' 004737 024466' JSR PC,LDBUF          ; LOAD TBUF WITH ADDRESS DATA PATTERN
5808 ;LOAD INTERNAL WCS MEMORY
5809 033466' 012705 011302' MOV #LDMEM,R5          ; DEFAULT LOAD INTERNAL MEMORY
5810 033472' 004737 024670' JSR PC,LDPCCBB          ; LOAD FUNCTION -> PCBB
5811 033476' 012705 012234' MOV #UDB11A,R5          ; DEFAULT UDBB
5812 033502' 012700 000004' MOV #4,R0          ; FOUR WORDS
5813 033506' 004737 025030' JSR PC,LDUDBB          ; LOAD INTO UDEB
5814 033512' 012737 001072' 000264' MOV #TBUF,UDBB+2          ; LOAD TBUF ADDRESS -> UDBB+2
5815 033520' 011337 000270' MOV (R3),UDBB+6          ; LOAD WCS ADDRESS -> UDBB+6
5816 033524' 012777 000002' 144474' MOV #GETCMD,@PCSR0          ; ISSUE GET COMMAND PORT COMMAND
5817 033532' 004737 022546' JSR PC,CHKDNI          ; DNI ?
5818 033536' 103006          BCC 70$
5819 033540'          ERRHRD 035.,ERR010,MSG003 ; YES
5820 033540' 104456          ; NO, REPORT ERROR
5821 033542' 000043          TRAP C$ERHRD
5822 033544' 016506'          .WORD 35
5823 033546' 015114'          .WORD ERR010
5824 033550'          ESCAPE TST          ; AND ABORT TEST
5825 033550' 104410          TRAP C$ESCAPE
5826 033552' 000516          .WORD L10036-.
5827
5828 033554' 004737 023434' 70$: JSR PC,CLRDNI          ; WRITE ONE TO CLEAR DNI
5829                                     ; ERROR ?
5830 033560' 103006          BCC 80$
5831 033562'          ERRHRD 036.,ERR006,MSG003 ; NO
5832 033562' 104456          ; YES, REPORT ERROR
5833 033564' 000044          TRAP C$ERHRD
5834 033566' 016206'          .WORD 36
5835 033570' 015114'          .WORD ERR006
5836 033572'          ESCAPE TST          ; AND ABORT TEST
5837 033572' 104410          TRAP C$ESCAPE
5838 033574' 000474          .WORD L10036-.
5839

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 TEST 11: READ/WRITE INTERNAL WCS TEST

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5840                                     ;READ TOP 1K DOWNLINE LOAD WCS AND COMPARE DATA
5841 033576' 012703 012244' 80$: MOV #MEM11A,R3 ; R3 POINTS TO WCS ADDRESS TABLE
5842                                     ;
5843                                     ;:SETUP RBUF FGR DATA COMPARE
5844 033602' 010305 100$: MOV R3,R5 ; R5 POINTS TO ADDRESS
5845 033604' 004737 024466' JSR PC,LDBUF ; LOAD TBUF WITH ADDRESS DATA PATTERN
5846                                     ;:CLEAR RBUF
5847 033610' 012704 005072' MOV #RBUF,R4 ; CLEAR RBUF
5848 033614' 012700 002000 MOV #1024.,R0
5849 033620' 005024 110$: CLR (R4)+
5850 033622' 077002 SOB R0,110$
5851                                     ;:DUMP INTERNAL WCS MEMORY INTO RBUF
5852 033624' 012705 011272' MOV #DMPMEM,R5 ; DEFAULT DUMP INTERNAL MEMORY
5853 033630' 004737 024630' JSR PC,LDPCBB ; LOAD FUNCTION -> PCBB
5854 033634' 012705 012234' MOV #UDB11A,R5 ; DEFAULT UDBB
5855 033640' 012700 000004 MOV #4,R0 ; FOUR WORDS
5856 033644' 004737 025030' JSR PC,LDUDBB ; LOAD INTO UDBB
5857 033650' 012737 005072' 000264' MOV #RBUF,UDBB+2 ; LOAD RBUF ADDRESS -> UDBB+2
5858 033656' 011337 000270' MOV (R3),UDBB+6 ; LOAD WCS ADDRESS -> UDBB+6
5859 033662' 012777 000002 144336 MOV #GETCMD,@PCSR0 ; ISSUE GET COMMAND PORT COMMAND
5860 033670' 004737 022546' JSR PC,CHKDNI ; DNI ?
5861 033674' 103006 BCC 120$ ; YES
5862 033676' ERRHRD 037.,ERR010,MSG003 ; NO, REPORT ERROR
5863 033676' 104456 TRAP C$ERHRD
5864 033700' 000045 .WORD 37
5865 033702' 016506' .WORD ERR010
5866 033704' 015114' .WORD MSG003
5867 033706' ESCAPE TST ; AND ABORT TEST
5868 033706' 104410 TRAP C$ESCAPE
5869 033710' 000360 .WORD L10036-.
5870                                     ;
5871 033712' 004737 023434' 120$: JSR PC,CLRDN1 ; WRITE ONE TO CLEAR DNI
5872                                     ;:ERROR ?
5873 033716' 103006 BCC 130$ ; NO
5874 033720' ERRHRD 038.,ERR006,MSG003 ; YES, REPORT ERROR
5875 033720' 104456 TRAP C$ERHRD
5876 033722' 000046 .WORD 38
5877 033724' 016206' .WORD ERR006
5878 033726' 015114' .WORD MSG003
5879 033730' ESCAPE TST ; AND ABORT TEST
5880 033730' 104410 TRAP C$ESCAPE
5881 033732' 000336 .WORD L10036-.
5882                                     ;
5883                                     ;:COMPARE RBUF WITH TBUF
5884                                     ;:
5885 033734' 012705 002000 130$: MOV #1024.,R5 ; COMPARE 1024. WORDS OF DATA
5886 033740' 004737 024062' JSR PC,CMEMEM ; DATA COMPARE ERROR ?
5887 033744' 103006 BCC 140$ ; NO
5888 033746' ERRHRD 039.,ERR042,MSG007 ; YES, REPORT ERROR
5889 033746' 104456 TRAP C$ERHRD
5890 033750' 000047 .WORD 39
5891 033752' 021607' .WORD ERR042
5892 033754' 015524' .WORD MSG007
5893 033756' ESCAPE TST ; AND ABORT TEST
5894 033756' 104410 TRAP C$ESCAPE
5895 033760' 000310 .WORD L10036-.

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TEST 11: READ/WRITE INTERNAL WCS TEST

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5896
5897
5898
5899
5900 033762* 012703 012244*
5901
5902
5903 033766* 010305
5904 033770* 004737 024530*
5905
5906 033774* 012705 011302*
5907 034000* 004737 024630*
5908 034004* 012705 012234*
5909 034010* 012700 000004
5910 034014* 004737 025030*
5911 034020* 012737 001072* 000264*
5912 034026* 011337 000270*
5913 034032* 012777 000002 144166
5914 034040* 004737 022546*
5915 034044* 103006
5916 034046*
5917 034046* 104456
5918 034050* 000050
5919 034052* 016506*
5920 034054* 015114*
5921 034056*
5922 034056* 104410
5923 034060* 000210
5924
5925 034062* 004737 023434*
5926
5927 034066* 103006
5928 034070*
5929 034070* 104456
5930 034072* 000051
5931 034074* 016206*
5932 034076* 015114*
5933 034100*
5934 034100* 104410
5935 034102* 000166
5936
5937
5938 034104* 012703 012244*
5939
5940
5941 034110* 010305
5942 034112* 004737 024530*
5943
5944 034116* 012704 005072*
5945 034122* 012700 002000
5946 034126* 005024
5947 034130* 077002
5948
5949 034132* 012705 011272*
5950 034136* 004737 024630*
5951 034142* 012705 012234*

:REPEAT TEST WITH COMPLIMENTED DATA PATTERN
:WRITE TOP 1K DOWNLINE LOAD WCS WITH DATA = COMPLIMENT OF ADDRESS
140$: MOV #MEM11A,R3 ; R3 POINTS TO WCS ADDRESS TABLE
:WRITE RBUF WITH DATA = ADDRESS
160$: MOV R3,R5 ; R5 POINTS TO ADDRESS
JSR PC,LDBUFC ; LOAD TBUF WITH COMPLIMENTED DATA
:LOAD INTERNAL WCS MEMORY
MOV #LDMEM,R5 ; DEFAULT LOAD INTERNAL MEMORY
JSR PC,LDPCCB ; LOAD FUNCTION -> PCBB
MOV #UDB11A,R5 ; DEFAULT UDBB
MOV #4,R0 ; FOUR WORDS
JSR PC,LDUDBB ; LOAD INTO UDBB
MOV #TBUF,UDBB+2 ; LOAD TBUF ADDRESS -> UDBB+2
MOV (R3),UDBB+6 ; LOAD WCS ADDRESS -> UDBB+6
MOV #GETCMD,@PCSR0 ; ISSUE GET COMMAND PORT COMMAND
JSR PC,CHKDNI ; DNI ?
BCC 170$ ; YES
ERRHRD 040.,ERR010,MSG003 ; NO, REPORT ERROR
TRAP C$ERHRD
.WORD 40
.WORD ERR010
.WORD MSG003
ESCAPE TST ; AND ABORT TEST
TRAP C$ESCAPE
.WORD L10036-.

170$: JSR PC,CLRDN1 ; WRITE ONE TO CLEAR DNI
; ERROR ?
BCC 180$ ; NO
ERRHRD 041.,ERR006,MSG003 ; YES, REPORT ERROR
TRAP C$ERHRD
.WORD 41
.WORD ERR006
.WORD MSG003
ESCAPE TST ; AND ABORT TEST
TRAP C$ESCAPE
.WORD L10036-.

:READ TOP 1K DOWNLINE LOAD WCS AND COMPARE DATA
180$: MOV #MEM11A,R3 ; R3 POINTS TO WCS ADDRESS TABLE
:SETUP TBUF FOR DATA COMPARE
200$: MOV R3,R5 ; R5 POINTS TO ADDRESS
JSR PC,LDBUFC ; LOAD TBUF WITH COMPLIMENTED DATA
:CLEAR RBUF
MOV #RBUF,R4 ; CLEAR RBUF
MOV #1024.,R0
210$: CLR (R4)+
SOB R0,210$
:DUMP INTERNAL WCS MEMORY INTO RBUF
MOV #DMPMEM,R5 ; DEFAULT DUMP INTERNAL MEMORY
JSR PC,LDPCCB ; LOAD FUNCTION -> PCBB
MOV #UDB11A,R5 ; DEFAULT UDBB

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 CZUABA.MAC 10-JAN-83 12:46 TEST 11: READ/WRITE INTERNAL WCS TEST

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5952 034146* 012700 000004      MOV      #4,R0      ; FOUR WORDS
5953 034152* 004737 025030*      JSR      PC,LDUDBB  ; LOAD INTO UDBB
5954 034156* 012737 005072* 000264*  MOV      #RBUF,UDBB+2 ; LOAD RBUF ADDRESS -> UDBB+2
5955 034164* 011337 000270*      MOV      (R3),UDBB+6 ; LOAD WCS ADDRESS -> UDBB+6
5956 034170* 012777 000002 144030  MOV      #GETCMD,@PCSR0 ; ISSUE GET COMMAND PORT COMMAND
5957 034176* 004737 022546*      JSR      PC,CHKDNI ; DNI ?
5958 034202* 103006      BCC      220$      ; YES
5959 034204*      ERRHRD 042.,ERR010,MSG003 ; NO, REPORT ERROR
5960 034204* 104456      TRAP    C$ERHRD
5961 034206* 000052      .WORD  42
5962 034210* 016506*      .WORD  ERR010
5963 034212* 015114*      .WORD  MSG003
5964 034214*      ESCAPE  TST      ; AND ABORT TEST
5965 034214* 104410      TRAP    C$ESCAPE
5966 034216* 000052      .WORD  L10036-.
5967
5968 034220* 004737 023434*      ;220$: JSR      PC,CLRDNI ; WRITE ONE TO CLEAR DNI
5969
5970 034224* 103006      BCC      230$      ; ERROR ?
5971 034226*      ERRHRD 043.,ERR006,MSG003 ; NO
5972 034226* 104456      ; YES, REPORT ERROR
5973 034230* 000053      TRAP    C$ERHRD
5974 034232* 016206*      .WORD  43
5975 034234* 015114*      .WORD  ERR006
5976 034236*      .WORD  MSG003
5977 034236* 104410      ESCAPE  TST      ; AND ABORT TEST
5978 034240* 000030      TRAP    C$ESCAPE
5979
5980      ;:COMPARE RBUF WITH TBUF
5981
5982 034242* 012705 002000      ;230$: MOV      #1024.,R5 ; COMPARE 1024. WORDS OF DATA
5983 034246* 004737 024062*      JSR      PC,CMPMEM ; DATA COMPARE ERROR ?
5984 034252* 103006      BCC      240$      ; NO
5985 034254*      ERRHRD 044.,ERR042,MSG007 ; YES, REPORT ERROR
5986 034254* 104456      TRAP    C$ERHRD
5987 034256* 000054      .WORD  44
5988 034260* 021607*      .WORD  ERR042
5989 034262* 015524*      .WORD  MSG007
5990 034264*      ESCAPE  TST      ; AND ABORT TEST
5991 034264* 104410      TRAP    C$ESCAPE
5992 034266* 000002      .WORD  L10036-.
5993
5994 034270*      ;240$:
5995 034270*      ENDTST
5996 034270*
5997 034270* 104401      L10036: TRAP    C$ETST

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TEST 12: READ/WRITE MODE FUNCTION TEST

.SBTTL TEST 12: READ/WRITE MODE FUNCTION TEST

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

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5998
5999
6000
6001
6002
6003
6004
6005
6006
6007
6008
6009
6010
6011
6012 034272'          BGNTST
6013 034272'
6014 034272' 004737 025334'          JSR    PC,TINIT          ; IS A DEVICE RESET NEEDED?
6015 034276' 103025          BCC    30$              ; NO
6016 034300' 012777 000040 143720    MOV    #RSET,@PCSR0     ; YES, RESET DEUNA
6017 034306' 004737 022546'          JSR    PC,CHKDNI        ; DNI ?
6018 034312' 103006          BCC    20$              ; YES
6019 034314'          ERRHRD 045.,ERR004,MSG003 ; NO, REPORT ERROR
6020 034314' 104456          TRAP   C$ERHRD
6021 034316' 000055          .WORD 45
6022 034320' 016106'          .WORD ERR004
6023 034322' 015114'          .WORD MSG003
6024 034324'          ESCAPE TST              ; AND ABORT TEST
6025 034324' 104410          TRAP   C$ESCAPE
6026 034326' 000506          .WORD L10037-.
6027
6028 034330' 004737 023434'          20$: JSR    PC,CLRDN1      ; WRITE ONE TO CLEAR DNI
6029
6030 034334' 103006          BCC    30$              ; ERROR ?
6031 034336'          ERRHRD 046.,ERR006,MSG003 ; NO
6032 034336' 104456          ; YES, REPORT ERROR
6033 034340' 000056          TRAP   C$ERHRD
6034 034342' 016206'          .WORD 46
6035 034344' 015114'          .WORD ERR006
6036 034346'          .WORD MSG003
6037 034346' 104410          ESCAPE TST              ; AND ABORT TEST
6038 034350' 000464          TRAP   C$ESCAPE
6039
6040 034352' 004737 024660'          30$: JSR    PC,LDPCSR     ; ADDRESS OF PCBB -> PCSR2!3
6041 034356' 012777 000001 143642    MOV    #GETPCB,@PCSR0 ; ISSUE GET_PCBB PORT COMMAND
6042 034364' 004737 022546'          JSR    PC,CHKDNI        ; DNI?
6043 034370' 103006          BCC    40$              ; YES
6044 034372'          ERRHRD 047.,ERR009,MSG003 ; NO, REPORT ERROR
6045 034372' 104456          TRAP   C$ERHRD
6046 034374' 000057          .WORD 47
6047 034376' 016422'          .WORD ERR009
6048 034400' 015114'          .WORD MSG003
6049 034402'          ESCAPE TST              ; AND ABORT TEST
6050 034402' 104410          TRAP   C$ESCAPE
6051 034404' 000430          .WORD L10037-.
6052
6053 034406' 004737 023434'          40$: JSR    PC,CLRDN1      ; WRITE ONE TO CLEAR DNI

```

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 TEST 12: READ/WRITE MODE FUNCTION TEST

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6054
6055 034412' 103006          BCC      50$          : ERROR ?
6056 034414'          ERRHRD  048.,ERR006,MSG003 : NO
6057 034414' 104456          : YES, REPORT ERROR
6058 034416' 000060          TRAP    C$ERHRD
6059 034420' 016206'          .WORD  48
6060 034422' 015114'          .WORD  ERR006
6061 034424'          .WORD  MSG003
6062 034424' 104410          ESCAPE  TST          : AND ABORT TEST
6063 034426' 000406          TRAP    C$ESCAPE
6064          .WORD  L10037-.
6065          :
6066 034430' 012705 011232' 50$: WRITE SETABLE MODE REGISTER BITS WITH ONES
6067 034434' 004737 024630' : POINT TO DEFAULT WRITE MODE FUNCTION
6068 034440' 012737 175015 000254' : LOAD FUNCTION INTO PCBB
6069 034446' 012777 000002 143552 : SETABLE MODE REGISTER BITS = ALL ONES
6070 034454' 004737 022546' : ISSUE GET_CMD PORT COMMAND
6071 034460' 103006          JSR     PC,CHKDNI    : DNI ?
6072 034462'          BCC      60$          : YES
6073 034462' 104456          ERRHRD  049.,ERR010,MSG003 : NO, REPORT ERROR
6074 034464' 000061          TRAP    C$ERHRD
6075 034466' 016506'          .WORD  49
6076 034470' 015114'          .WORD  ERR010
6077 034472'          .WORD  MSG003
6078 034472' 104410          ESCAPE  TST          : AND ABORT TEST
6079 034474' 000340          TRAP    C$ESCAPE
6080          .WORD  L10037-.
6081 034476' 004737 023434' 60$: JSR     PC,CLRDN1    : WRITE ONE TO CLEAR DNI
6082          : ERROR ?
6083 034502' 103006          BCC      70$          : NO
6084 034504'          ERRHRD  050.,ERR006,MSG003 : YES, REPORT ERROR
6085 034504' 104456          TRAP    C$ERHRD
6086 034506' 000062          .WORD  50
6087 034510' 016206'          .WORD  ERR006
6088 034512' 015114'          .WORD  MSG003
6089 034514'          ESCAPE  TST          : AND ABORT TEST
6090 034514' 104410          TRAP    C$ESCAPE
6091 034516' 000316          .WORD  L10037-.
6092          :
6093          : READ AND COMPARE MODE REGISTER
6094 034520' 012705 011222' 70$: MOV     #RDMODE,R5    : POINT TO DEFAULT READ MODE FUNCTION
6095 034524' 004737 024630' : LOAD FUNCTION INTO PCBB
6096 034530' 012777 000002 143470 : ISSUE GET_CMD PORT COMMAND
6097 034536' 004737 022546' : DNI ?
6098 034542' 103006          BCC      80$          : YES
6099 034544'          ERRHRD  051.,ERR010,MSG003 : NO, REPORT ERROR
6100 034544' 104456          TRAP    C$ERHRD
6101 034546' 000063          .WORD  51
6102 034550' 016506'          .WORD  ERR010
6103 034552' 015114'          .WORD  MSG003
6104 034554'          ESCAPE  TST          : AND ABORT TEST
6105 034554' 104410          TRAP    C$ESCAPE
6106 034556' 000256          .WORD  L10037-.
6107          :
6108 034560' 004737 023434' 80$: JSR     PC,CLRDN1    : WRITE ONE TO CLEAR DNI
6109          : ERROR ?

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 CZUABA.MAC 10-JAN-83 12:46 TEST 12: READ/WRITE MODE FUNCTION TEST

```

6110 034564* 103006          BCC 90$          : NO
6111 034566*          ERRHRD 052.,ERR006,MSG003 : YES, REPORT ERROR
6112 034566* 104456          TRAP C$ERHRD
6113 034570* 000064          .WORD 52
6114 034572* 016206*          .WORD ERR006
6115 034574* 015114*          .WORD MSG003
6116 034576*          ESCAPE TST          : AND ABORT TEST
6117 034576* 104410          TRAP C$ESCAPE
6118 034600* 000234          .WORD L10037-.
6119
6120 034602*          ;
6121 034602* 012703 175015 ; 90$: MOV #CMODE1,R3 : EXPECTED DATA -> R3
6122 034606* 013704 000254* MOV PCBB+2,R4 : ACTUAL DATA -> R4
6123 034612* 020304          CMP R3,R4 : MODE REGISTER = EXPECTED DATA ?
6124 034614* 001406          BEQ 100$ : YES
6125 034616*          ERRHRD 053.,ERR011,MSG002 : NO, REPORT ERROR
6126 034616* 104456          TRAP C$ERHRD
6127 034620* 000065          .WORD 53
6128 034622* 016571*          .WORD ERR011
6129 034624* 015066*          .WORD MSG002
6130 034626*          ESCAPE TST          : AND ABORT TEST
6131 034626* 104410          TRAP C$ESCAPE
6132 034630* 000204          .WORD L10037-.
6133
6134 ; WRITE MODE REGISTER WITH ZEROS
6135 ;
6136 034632* 012705 011232* ; 100$: MOV #WTMODE,R5 : POINT TO DEFAULT WRITE MODE FUNCTION
6137 034636* 004737 024630* JSR PC,LDPCCBB : LOAD FUNCTION INTO PCBB
6138 034642* 012737 000000 000254* MOV #ZERO,PCBB+2 : MODE REGISTER = ALL ZEROS
6139 034650* 012777 000002 143350* MOV #GETCMD,@PCSR0 : ISSUE GET_CMD PORT COMMAND
6140 034656* 004737 022546* JSR PC,CHKDNI : DNI ?
6141 034662* 103006          BCC 160$ : YES
6142 034664*          ERRHRD 054.,ERR010,MSG003 : NO, REPORT ERROR
6143 034664* 104456          TRAP C$ERHRD
6144 034666* 000066          .WORD 54
6145 034670* 016506*          .WORD ERR010
6146 034672* 015114*          .WORD MSG003
6147 034674*          ESCAPE TST          : AND ABORT TEST
6148 034674* 104410          TRAP C$ESCAPE
6149 034676* 000136          .WORD L10037-.
6150
6151 034700* 004737 023434* ; 160$: JSR PC,CLRDNI : WRITE ONE TO CLEAR DNI
6152          : ERROR ?
6153 034704* 103006          BCC 170$ : NO
6154 034706*          ERRHRD 055.,ERR006,MSG003 : YES, REPORT ERROR
6155 034706* 104456          TRAP C$ERHRD
6156 034710* 000067          .WORD 55
6157 034712* 016206*          .WORD ERR006
6158 034714* 015114*          .WORD MSG003
6159 034716*          ESCAPE TST          : AND ABORT TEST
6160 034716* 104410          TRAP C$ESCAPE
6161 034720* 000114          .WORD L10037-.
6162
6163 ; READ AND COMPARE MODE REGISTER
6164 034722* 012705 011222* ; 170$: MOV #RDMODE,R5 : POINT TO DEFAULT READ MODE FUNCTION
6165 034726* 004737 024630* JSR PC,LDPCCBB : LOAD FUNCTION INTO PCBB
    
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 CZUABA.MAC 10-JAN-83 12:46 TEST 12: READ/WRITE MODE FUNCTION TEST

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6166 034732 012777 000002 143266      MOV    #GETCMD,@PCSR0      ; ISSUE GET_CMD PORT COMMAND
6167 034740 004737 022546             JSR    PC,CHKDNI          ; DNI ?
6168 034744 103006             BCC    180$              ; YES
6169 034746             ERRHRD 056.,ERR010,MSG003 ; NO, REPORT ERROR
6170 034746 104456             TRAP  C$ERHRD
6171 034750 000070             .WORD 56
6172 034752 016506             .WORD ERR010
6173 034754 015114             .WORD MSG003
6174 034756             ESCAPE TST                ; AND ABORT TEST
6175 034756 104410             TRAP  C$ESCAPE
6176 034760 000054             .WORD L10037-.
6177
6178 034762 004737 023434             i180$: JSR    PC,CLRDNI      ; WRITE ONE TO CLEAR DNI
6179                                     ; ERROR ?
6180 034766 103006             BCC    190$              ; NO
6181 034770             ERRHRD 057.,ERR006,MSG003 ; YES, REPORT ERROR
6182 034770 104456             TRAP  C$ERHRD
6183 034772 000071             .WORD 57
6184 034774 016206             .WORD ERR006
6185 034776 015114             .WORD MSG003
6186 035000             ESCAPE TST                ; AND ABORT TEST
6187 035000 104410             TRAP  C$ESCAPE
6188 035002 000032             .WORD L10037-.
6189
6190 035004             i190$:
6191 035004 012703 000000      MOV    #ZERO,R3          ; EXPECTED DATA -> R3
6192 035010 013704 000254      MOV    PCBB+2,R4         ; ACTUAL DATA -> R4
6193 035014 020304             CMP    R3,R4            ; MODE REGISTER = EXPECTED DATA ?
6194 035016 001406             BEQ    200$              ; YES
6195 035020             ERRHRD 058.,ERR011,MSG002 ; NO, REPORT ERROR
6196 035020 104456             TRAP  C$ERHRD
6197 035022 000072             .WORD 58
6198 035024 016571             .WORD ERR011
6199 035026 015066             .WORD MSG002
6200 035030             ESCAPE TST                ; AND ABORT TEST
6201 035030 104410             TRAP  C$ESCAPE
6202 035032 000002             .WORD L10037-.
6203
6204 035034             i200$:
6205 035034             ENDTST
6206 035034             L10037: TRAP  C$ETST
6207 035034 104401

```

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TEST 13: READ/WRITE LINK MEMORY TEST

.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
*****

```

6208  
6209  
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6263

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035036'
035036'
035036' 004737 025334'
035042' 103025
035044' 012777 000040 143154
035052' 004737 022546'
035056' 103006
035060'
035060' 104456
035062' 000073
035064' 016106'
035066' 015114'
035070'
035070' 104410
035072' 001150
035074' 004737 023434'
035100' 103006
035102'
035102' 104456
035104' 000074
035106' 016206'
035110' 015114'
035112'
035112' 104410
035114' 001126
035116' 004737 024660'
035122' 012777 000001 143076
035130' 004737 022546'

```

```

BGNTST
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 059.,ERR004,MSG003 ; NO, REPORT ERROR
; TRAP C$ERHRD
; .WORD 59
; .WORD ERR004
; .WORD MSG003
ESCAPE TST ; AND ABORT TEST
; TRAP C$ESCAPE
; .WORD L10040-.
20$: JSR PC,CLRDNI ; WRITE ONE TO CLEAR DNI
; ERROR ?
; NO
ERRHRD 060.,ERR006,MSG003 ; YES, REPORT ERROR
; TRAP C$ERHRD
; .WORD 60
; .WORD ERR006
; .WORD MSG003
ESCAPE TST ; AND ABORT TEST
; TRAP C$ESCAPE
; .WORD L10040-.
30$: JSR PC,LDPCSR ; ADDRESS OF PCBB -> PCSR2!3
MOV #GETPCB,@PCSR0 ; ISSUE GET_PCBB PORT COMMAND
JSR PC,CHKDNI ; DNI ?

```

HARDWARE TESTS MACY11 30(1046)  
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TEST 13: READ/WRITE LINK MEMORY TEST

```

6264 035134' 103006          BCC      40$          : YES
6265 035136'          ERRHRD  061.,ERR009,MSG003 : NO, REPORT ERROR
6266 035136' 104456          TRAP
6267 035140' 000075          .WORD  61          C$ERHRD
6268 035142' 016422'          .WORD  ERR009
6269 035144' 015114'          .WORD  MSG003
6270 035146'          ESCAPE  TST          : AND ABORT TEST
6271 035146' 104410          TRAP
6272 035150' 001072          .WORD  C$ESCAPE
6273                                     L10040-.
6274 035152' 004737 023434' 40$:  JSR      PC,CLRDNI          : WRITE ONE TO CLEAR DNI
6275                                     : ERROR ?
6276 035156' 103006          BCC      45$
6277 035160'          ERRHRD  062.,ERR006,MSG003 : NO
6278 035160' 104456          : YES, REPORT ERROR
6279 035162' 000076          TRAP
6280 035164' 016206'          .WORD  62          C$ERHRD
6281 035166' 015114'          .WORD  ERR006
6282 035170'          .WORD  MSG003
6283 035170' 104410          ESCAPE  TST          : AND ABORT TEST
6284 035172' 001050          TRAP
6285                                     .WORD  C$ESCAPE
6286                                     L10040-.
6287                                     :WRITE MODE REGISTER = INTERNAL LOOPBACK TO TURN OFF LINK MEMORY
6288                                     :
6288 035174' 012705 011232' 45$:  MOV      #WTMODE,R5          : DEFAULT WRITE MODE FUNCTION
6289 035200' 004737 024630' JSR      PC,LDPCBB          : LOAD FUNCTION -> PCBB
6290 035204' 012777 000002' 143014 MOV      #GETCMD,@PCSR0     : ISSUE GET_CMD PORT COMMAND
6291 035212' 004737 022546' JSR      PC,CHKDNI          : DNI ?
6292 035216' 103006          BCC      47$
6293 035220'          ERRHRD  063.,ERR010,MSG003 : YES
6294 035220' 104456          : NO, REPORT ERROR
6295 035222' 000077          TRAP
6296 035224' 016506'          .WORD  63          C$ERHRD
6297 035226' 015114'          .WORD  ERR010
6298 035230'          .WORD  MSG003
6299 035230' 104410          ESCAPE  TST          : AND ABORT TEST
6300 035232' 001010          TRAP
6301                                     .WORD  C$ESCAPE
6302 035234' 004737 023434' 47$:  JSR      PC,CLRDNI          : WRITE ONE TO CLEAR DNI
6303                                     : ERROR ?
6304 035240' 103006          BCC      50$
6305 035242'          ERRHRD  064.,ERR006,MSG003 : NO
6306 035242' 104456          : YES, REPORT ERROR
6307 035244' 000100          TRAP
6308 035246' 016206'          .WORD  64          C$ERHRD
6309 035250' 015114'          .WORD  ERR006
6310 035252'          .WORD  MSG003
6311 035252' 104410          ESCAPE  TST          : AND ABORT TEST
6312 035254' 000766          TRAP
6313                                     .WORD  C$ESCAPE
6314                                     L10040-.
6315 035256' 012703 012246' 50$:  MOV      #MEM13A,R3          : WRITE 16K LINK MEMORY WITH DATA = ADDRESS BY 1K BLOCKS
6316 035262' 012701 000020' MOV      #16.,R1           : R3 POINTS TO LINK MEM ADDRESS TABLE
6317                                     : DO LOOP = 16
6318                                     :WRITE RBUF WITH DATA = ADDRESS
6319 035266' 010305          60$:  MOV      R3,R5           : R5 POINTS TO ADDRESS

```



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 CZUABA.MAC 10-JAN-83 12:46 TEST 13: READ/WRITE LINK MEMORY TEST

```

6320 035270' 004737 024466'          JSR    PC,LDBUF          ; LOAD TBUF WITH ADDRESS DATA PATTERN
6321                                     ;
6322                                     ;:LOAD INTERNAL LINK MEMORY
6323 035274' 012705 011302'          MOV    #LDMEM,R5          ; DEFAULT LOAD INTERNAL MEMORY
6324 035300' 004737 024630'          JSR    PC,LDPCCBB         ; LOAD FUNCTION -> PCBB
6325 035304' 012705 012234'          MOV    #UDB11A,R5        ; DEFAULT UDBB
6326 035310' 012700 000004'          MOV    #4,R0             ; FOUR WORDS
6327 035314' 004737 025030'          JSR    PC,LDUDBB         ; LOAD INTO UDBB
6328 035320' 012737 001072' 000264' MOV    #TBUF,UDBB+2      ; LOAD TBUF ADDRESS -> UDBB+2
6329 035326' 012337 000270'          MOV    (R3)+,UDBB+6     ; LOAD LINK ADDRESS -> UDBB+6
6330                                     ;
6331 035332' 022701 000001'          CMP    #1,R1            ; IS THIS THE LAST 1K BLOCK ?
6332 035336' 001003 000000'          BNE   65$              ; NO
6333 035340' 012737 003774 000262' MOV    #3774,UDBB        ; YES, ONLY WRITE 1022. WORDS
6334                                     ;
6335 035346' 012777 000002 142652 65$: MOV    #GETCMD,@PCSR0     ; ISSUE GET COMMAND PORT COMMAND
6336 035354' 004737 022546'          JSR    PC,CHKDNI         ; DNI ?
6337 035360' 103006 000000'          BCC   70$              ; YES
6338 035362' 104456 000000'          ERRHRD 065.,ERR010,MSG003 ; NO, REPORT ERROR
6339 035362' 104456 000000'          TRAP   C$ERHRD
6340 035364' 000101 000000'          .WORD 65
6341 035366' 016506' 000000'          .WORD ERR010
6342 035370' 015114' 000000'          .WORD MSG003
6343 035372' 104410 000000'          ESCAPE TST              ; AND ABORT TEST
6344 035372' 104410 000000'          TRAP   C$ESCAPE
6345 035374' 000646 000000'          .WORD L10040-.
6346                                     ;
6347 035376' 004737 023434' 70$: JSR    PC,CLRDN1          ; WRITE ONE TO CLEAR DNI
6348                                     ; ERROR ?
6349 035402' 103006 000000'          BCC   80$              ; NO
6350 035404' 104456 000000'          ERRHRD 066.,ERR006,MSG003 ; YES, REPORT ERROR
6351 035404' 104456 000000'          TRAP   C$ERHRD
6352 035406' 000102 000000'          .WORD 66
6353 035410' 016206' 000000'          .WORD ERR006
6354 035412' 015114' 000000'          .WORD MSG003
6355 035414' 104410 000000'          ESCAPE TST              ; AND ABORT TEST
6356 035414' 104410 000000'          TRAP   C$ESCAPE
6357 035416' 000624 000000'          .WORD L10040-.
6358 035420' 005301 000000'          80$: DEC    R1          ; DONE 16 WRITES ?
6359 035422' 001321 000000'          BNE   60$              ; NO
6360                                     ;
6361                                     ;:READ 16K LINK MEMORY BY 1K BLOCKS AND COMPARE DATA
6362 035424' 012703 012246'          MOV    #MEM13A,R3        ; R3 POINTS TO LINK MEM ADDRESS TABLE
6363 035430' 012701 000020'          MOV    #16.,R1          ; DO LOOP = 16
6364                                     ;
6365                                     ;:SETUP TBUF FOR DATA COMPARE
6366 035434' 010305 000000' 100$: MOV    R3,R5          ; R5 POINTS TO ADDRESS
6367 035436' 004737 024466'          JSR    PC,LDBUF         ; LOAD TBUF WITH ADDRESS DATA PATTERN
6368                                     ;
6369                                     ;:CLEAR RBUF
6370 035442' 012704 005072'          MOV    #RBUF,R4          ; CLEAR RBUF
6371 035446' 012700 002000'          MOV    #1024.,R0
6372 035452' 005024 000000' 110$: CLR    (R4)+
6373 035454' 077002 000000'          SOB   R0,110$
6374                                     ;
6375                                     ;:DUMP INTERNAL LINK MEMORY INTO RBUF

```

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```

6376 035456 012705 011272 MOV #DMPMEM,R5 ; DEFAULT DUMP INTERNAL MEMORY
6377 035462 004737 024630 JSR PC,LDPCBB ; LOAD FUNCTION -> PCBB
6378 035466 012705 012234 MOV #UDB11A,R5 ; DEFAULT UDBB
6379 035472 012700 000004 MOV #4,R0 ; FOUR WORDS
6380 035476 004737 025030 JSR PC,LDUDBB ; LOAD INTO UDBB
6381 035502 012737 005072 000264 MOV #RBUF,UDBB+2 ; LOAD RBUF ADDRESS -> UDBB+2
6382 035510 012337 000270 MOV (R3)+,UDBB+6 ; LOAD LINK ADDRESS -> UDBB+6
6383 ;
6384 035514 022701 000001 CMP #1,R1 ; IS THIS THE LAST 1K BLOCK ?
6385 035520 001003 BNE 115$ ; NO
6386 035522 012737 003774 000262 MOV #3774,UDBB ; YES, ONLY READ 1022. WORDS
6387 ;
6388 035530 012777 000002 142470 115$: MOV #GETCMD,@PCSR0 ; ISSUE GET COMMAND PORT COMMAND
6389 035536 004737 022546 JSR PC,CHKDNI ; DNI ?
6390 035542 103006 BCC 120$ ; YES
6391 035544 ERRHRD 067.,ERR010,MSG003 ; NO, REPORT ERROR
6392 035544 104456 TRAP C$ERHRD
6393 035546 000103 .WORD 67
6394 035550 016506 .WORD ERR010
6395 035552 015114 .WORD MSG003
6396 035554 ESCAPE TST ; AND ABORT TEST
6397 035554 104410 TRAP C$ESCAPE
6398 035556 000464 .WORD L10040-
6399 ;
6400 035560 004737 023434 120$: JSR PC,CLRDN1 ; WRITE ONE TO CLEAR DNI
6401 ; ERROR ?
6402 035564 103006 BCC 130$ ; NO
6403 035566 ERRHRD 068.,ERR006,MSG003 ; YES, REPORT ERROR
6404 035566 104456 TRAP C$ERHRD
6405 035570 000104 .WORD 68
6406 035572 016206 .WORD ERR006
6407 035574 015114 .WORD MSG003
6408 035576 ESCAPE TST ; AND ABORT TEST
6409 035576 104410 TRAP C$ESCAPE
6410 035600 000442 .WORD L10040-
6411 ;
6412 ;:COMPARE RBUF WITH TBUF
6413 ;
6414 035602 022701 000001 130$: CMP #1,R1 ; IS THIS THE LAST 1K BLOCK ?
6415 035606 001003 BNE 135$ ; NO
6416 035610 012705 001776 MOV #1022.,R5 ; YES, ONLY COMPARE 1022. WORDS
6417 035614 000402 BR 136$
6418 ;
6419 035616 012705 002000 135$: MOV #1024.,R5 ; COMPARE 1024. WORDS OF DATA
6420 035622 004737 024062 136$: JSR PC,CMPMEM ; DATA COMPARE ERROR ?
6421 035626 103006 BCC 140$ ; NO
6422 035630 ERRHRD 069.,ERR043,MSG007 ; YES, REPORT ERROR
6423 035630 104456 TRAP C$ERHRD
6424 035632 000105 .WORD 69
6425 035634 021650 .WORD ERR043
6426 035636 015524 .WORD MSG007
6427 035640 ESCAPE TST ; AND ABORT TEST
6428 035640 104410 TRAP C$ESCAPE
6429 035642 000400 .WORD L10040-
6430 ;
6431 035644 005301 140$: DEC R1 ; DONE 16 READS ?

```

HARDWARE TESTS MACY11 30(1046)  
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TEST 13: READ/WRITE LINK MEMORY TEST

```

6432 035646* 001272          BNE      100$
6433
6434          ;REPEAT TEST WITH COMPLIMENTED DATA PATTERN
6435
6436          ;WRITE 16K LINK MEMORY WITH DATA = COMPLIMENT OF ADDRESS BY 1K BLOCKS
6437 035650* 012703 012246*   MOV      #MEM13A,R3          ; R3 POINTS TO LINK MEM ADDRESS TABLE
6438 035654* 012701 000020   MOV      #16.,R1           ; DO LOOP = 16
6439
6440          ;WRITE RBUF WITH DATA = ADDRESS
6441 035660* 010305 160$:     MOV      R3,R5           ; R5 POINTS TO ADDRESS
6442 035662* 004737 024530*   JSR      PC,LDBUFC        ; LOAD TBUF WITH COMPLIMENTED DATA
6443
6444          ;LOAD INTERNAL LINK MEMORY
6445 035666* 012705 011302*   MOV      #LDMEM,R5        ; DEFAULT LOAD INTERNAL MEMORY
6446 035672* 004737 024630*   JSR      PC,LDPCCBB       ; LOAD FUNCTION -> PCBB
6447 035676* 012705 012234*   MOV      #UDB11A,R5      ; DEFAULT UDBB
6448 035702* 012700 000004*   MOV      #4,R0           ; FOUR WORDS
6449 035706* 004737 025030*   JSR      PC,LDUDBB        ; LOAD INTO UDBB
6450 035712* 012737 001072*   MOV      #TBUF,UDBB+2    ; LOAD TBUF ADDRESS -> UDBB+2
6451 035720* 012337 000270*   MOV      (R3)+,UDBB+6    ; LOAD LINK ADDRESS -> UDBB+6
6452
6453 035724* 022701 000001   ;
6454 035730* 001003          ; CMP      #1,R1           ; IS THIS THE LAST 1K BLOCK ?
6455 035732* 012737 003774 000262* BNE      165$            ; NO
6456
6457 035740* 012777 000002 142260 165$: MOV      #GETCMD,@PCSRO    ; ISSUE GET COMMAND PORT COMMAND
6458 035746* 004737 022546*   JSR      PC,CHKDNI        ; DNI ?
6459 035752* 103006          ; BCC     170$            ; YES
6460 035754*          ; ERRHRD 070.,ERR010,MSG003 ; NO, REPORT ERROR
6461 035754* 104456          ;
6462 035756* 000106          ; TRAP   C$ERHRD
6463 035760* 016506*          ; .WORD 70
6464 035762* 015114*          ; .WORD ERR010
6465 035764*          ; .WORD MSG003
6466 035764* 104410          ; ESCAPE TST              ; AND ABORT TEST
6467 035766* 000254          ; TRAP   C$ESCAPE
6468          ; .WORD L10040-.
6469 035770* 004737 023434* 170$: JSR      PC,CLRDN1    ; WRITE ONE TO CLEAR DNI
6470          ; ERROR ?
6471 035774* 103006          ; BCC     180$            ; NO
6472 035776*          ; ERRHRD 071.,ERR006,MSG003 ; YES, REPORT ERROR
6473 035776* 104456          ;
6474 036000* 000107          ; TRAP   C$ERHRD
6475 036002* 016206*          ; .WORD 71
6476 036004* 015114*          ; .WORD ERR006
6477 036006*          ; .WORD MSG003
6478 036006* 104410          ; ESCAPE TST              ; AND ABORT TEST
6479 036010* 000232          ; TRAP   C$ESCAPE
6480 036012* 005301          ; .WORD L10040-.
6481 036014* 001321 180$:  DEC      R1           ; DONE 16 WRITES ?
6482          ; BNE      160$            ; NO
6483          ;READ 16K LINK MEMORY BY 1K BLOCKS AND COMPARE DATA
6484 036016* 012703 012246*   MOV      #MEM13A,R3      ; R3 POINTS TO LINK MEM ADDRESS TABLE
6485 036022* 012701 000020   MOV      #16.,R1         ; DO LOOP = 16
6486
6487          ;SETUP TBUF FOR DATA COMPARE

```

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TEST 13: READ/WRITE LINK MEMORY TEST

```

6488 036026' 010305      200$:  MOV      R3,R5      ; R5 POINTS TO ADDRESS
6489 036030' 004737 024530'  JSR      PC,LDBUFC    ; LOAD TBUF WITH COMPLIMENTED DATA
6490                                     ;
6491                                     ;:CLEAR RBUF
6492 036034' 012704 005072'  MOV      #RBUF,R4     ; CLEAR RBUF
6493 036040' 012700 002000    MOV      #1024.,R0
6494 036044' 005024      210$:  CLR      (R4)+
6495 036046' 077002      SOB      R0,210$
6496                                     ;
6497                                     ;:DUMP INTERNAL LINK MEMORY INTO RBUF
6498 036050' 012705 011272'  MOV      #DMPMEM,R5   ; DEFAULT DUMP INTERNAL MEMORY
6499 036054' 004737 024630'  JSR      PC,LDPCBB    ; LOAD FUNCTION -> PCBB
6500 036060' 012705 012234'  MOV      #UDB11A,R5   ; DEFAULT UDBB
6501 036064' 012700 000004    MOV      #4,R0        ; FOUR WORDS
6502 036070' 004737 025030'  JSR      PC,LDUDBB    ; LOAD INTO UDBB
6503 036074' 012737 005072' 000264'  MOV      #RBUF,UDBB+2 ; LOAD RBUF ADDRESS -> UDBB+2
6504 036102' 012337 000270'  MOV      (R3)+,UDBB+6 ; LOAD LINK ADDRESS -> UDBB+6
6505                                     ;
6506 036106' 022701 000001    CMP      #1,R1        ; IS THIS THE LAST 1K BLOCK ?
6507 036112' 001003      BNE      215$        ; NO
6508 036114' 012737 003774 000262'  MOV      #3774,UDBB   ; YES, ONLY READ 1022. WORDS
6509                                     ;
6510 036122' 012777 000002 142076 215$:  MOV      #GETCMD,@PCSR0 ; ISSUE GET COMMAND PORT COMMAND
6511 036130' 004737 022546'  JSR      PC,CHKDNI    ; DNI ?
6512 036134' 103006      BCC      220$        ; YES
6513 036136'          ERRHRD 072.,ERR010,MSG003 ; NO, REPORT ERROR
6514 036136' 104456                                     TRAP    C$ERHRD
6515 036140' 000110                                     .WORD  72
6516 036142' 016506'                                     .WORD  ERR010
6517 036144' 015114'                                     .WORD  MSG003
6518 036146'          ESCAPE TST                          ; AND ABORT TEST
6519 036146' 104410                                     TRAP    C$ESCAPE
6520 036150' 000072                                     .WORD  L10040-.
6521                                     ;
6522 036152' 004737 023434' 220$:  JSR      PC,CLRDNI  ; WRITE ONE TO CLEAR DNI
6523                                     ; ERROR ?
6524 036156' 103006      BCC      230$        ; NO
6525 036160'          ERRHRD 073.,ERR006,MSG003 ; YES, REPORT ERROR
6526 036160' 104456                                     TRAP    C$ERHRD
6527 036162' 000111                                     .WORD  73
6528 036164' 016206'                                     .WORD  ERR006
6529 036166' 015114'                                     .WORD  MSG003
6530 036170'          ESCAPE TST                          ; AND ABORT TEST
6531 036170' 104410                                     TRAP    C$ESCAPE
6532 036172' 000050                                     .WORD  L10040-.
6533                                     ;
6534                                     ;:COMPARE RBUF WITH TBUF
6535                                     ;
6536 036174' 022701 000001 230$:  CMP      #1,R1        ; IS THIS THE LAST 1K BLOCK ?
6537 036200' 001003      BNE      235$        ; NO
6538 036202' 012705 001776    MOV      #1022.,R5   ; YES, ONLY COMPARE 1022. WORDS
6539 036206' 000402      BR       236$
6540                                     ;
6541 036210' 012705 002000 235$:  MOV      #1024.,R5   ; COMPARE 1024. WORDS OF DATA
6542 036214' 004737 024062' 236$:  JSR      PC,CMPMEM   ; DATA COMPARE ERROR ?
6543 036220' 103006      BCC      240$        ; NO

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6544	036222*		ERRHRD 074.,ERR043,MSG007		; YES, REPORT ERROR		
6545	036222*	104456				TRAP	C\$ERHRD
6546	036224*	000112				.WORD	74
6547	036226*	021650*				.WORD	ERR043
6548	036230*	015524*				.WORD	MSG007
6549	036232*		ESCAPE TST		; AND ABORT TEST		
6550	036232*	104410				TRAP	C\$ESCAPE
6551	036234*	000006				.WORD	L10040-
6552							
6553	036236*	005301	240\$:	DEC R1			
6554	036240*	001272		BNE 200\$	; DONE 16 READS ?		
6555			:				
6556	036242*		ENDTST				
6557	036242*					L10040:	
6558	036242*	104401				TRAP	C\$ETST

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TEST 14: INTERNAL LOOPBACK TEST

.SBTTL TEST 14: INTERNAL LOOPBACK TEST

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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

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6585  
6586 036244'  
6587 036244'  
6588 036244'  
6589 036244'  
6590 036244' 104402  
6591  
6592 036246' 004737 025334'  
6593 036252' 103025  
6594 036254' 012777 000040 141744  
6595 036262' 004737 022546'  
6596 036266' 103006  
6597 036270'  
6598 036270' 104456  
6599 036272' 000113  
6600 036274' 016106'  
6601 036276' 015114'  
6602 036300'  
6603 036300' 104410  
6604 036302' 001636  
6605  
6606 036304' 004737 023434' 20\$:  
6607  
6608 036310' 103006  
6609 036312'  
6610 036312' 104456  
6611 036314' 000114  
6612 036316' 016206'  
6613 036320' 015114'  
6614 036322'

```

BGNTST
BGNSUB ;#1
T14::
T14.1: TRAP C$BSUB
JSR PC,TINIT ; IS A DEVICE RESET NEEDED?
BCC 30$ ; NO
MOV #RSET,@PCSR0 ; YES, RESET DEUNA
JSR PC,CHKDNI ; DNI ?
BCC 20$ ; YES
ERRHRD 075.,ERR004,MSG003 ; NO, REPORT ERROR
TRAP C$ERHRD
.WORD 75
.WORD ERR004
.WORD MSG003
ESCAPE TST ; AND ABORT TEST
TRAP C$ESCAPE
.WORD L10041-.
20$: JSR PC,CLRDN1 ; WRITE ONE TO CLEAR DNI
; ERROR ?
BCC 30$ ; NO
ERRHRD 076.,ERR006,MSG003 ; YES, REPORT ERROR
TRAP C$ERHRD
.WORD 76
.WORD ERR006
.WORD MSG003
ESCAPE TST ; AND ABORT TEST

```

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6615 036322* 104410                                TRAP  C$ESCAPE
6616 036324* 001614                                .WORD L10041-.
6617
6618 036326* 004737 024660* 141666 30$: JSR    PC,LDPCSR      ; ADDRESS OF PCBB -> PCSR2!3
6619 036332* 012777 000001 141666 MOV    #GETPCB,@PCSRO ; ISSUE GET_PCBB PORT COMMAND
6620 036340* 004737 022546* JSR    PC,CHKDNI      ; DNI?
6621 036344* 103006 BCC   40$             ; YES
6622 036346* ERRHRD 077.,ERR009,MSG003 ; NO, REPORT ERROR
6623 036346* 104456                                TRAP  C$ERHRD
6624 036350* 000115                                .WORD 77
6625 036352* 016422*                                .WORD ERR009
6626 036354* 015114*                                .WORD MSG003
6627 036356* ESCAPE TST                          ; AND ABORT TEST
6628 036356* 104410                                TRAP  C$ESCAPE
6629 036360* 001560                                .WORD L10041-.
6630
6631 036362* 004737 023434* 40$: JSR    PC,CLRDNI      ; WRITE ONE TO CLEAR DNI
6632 BCC   50$             ; ERROR ?
6633 036366* 103006 ERRHRD 078.,ERR006,MSG003 ; YES, REPORT ERROR
6634 036370*
6635 036370* 104456                                TRAP  C$ERHRD
6636 036372* 000116                                .WORD 78
6637 036374* 016206*                                .WORD ERR006
6638 036376* 015114*                                .WORD MSG003
6639 036400* ESCAPE TST                          ; AND ABORT TEST
6640 036400* 104410                                TRAP  C$ESCAPE
6641 036402* 001536                                .WORD L10041-.
6642
6643 ;WRITE MODE REGISTER = INTERNAL LOOPBACK AND PROM MODE
6644 036404* 012705 011232* 50$: MOV    #WTMODE,R5      ; DEFAULT WRITE MODE FUNCTION
6645 036410* 004737 024630* JSR    PC,LDPCBB      ; LOAD FUNCTION -> PCBB
6646 036414* 012777 000002 141604 MOV    #GETCMD,@PCSRO ; ISSUE GET_CMD PORT COMMAND
6647 036422* 004737 022546* JSR    PC,CHKDNI      ; DNI ?
6648 036426* 103006 BCC   60$             ; YES
6649 036430* ERRHRD 079.,ERR010,MSG003 ; NO, REPORT ERROR
6650 036430* 104456                                TRAP  C$ERHRD
6651 036432* 000117                                .WORD 79
6652 036434* 016506*                                .WORD ERR010
6653 036436* 015114*                                .WORD MSG003
6654 036440* ESCAPE TST                          ; AND ABORT TEST
6655 036440* 104410                                TRAP  C$ESCAPE
6656 036442* 001476                                .WORD L10041-.
6657
6658 036444* 004737 023434* 60$: JSR    PC,CLRDNI      ; WRITE ONE TO CLEAR DNI
6659 BCC   70$             ; ERROR ?
6660 036450* 103006 ERRHRD 080.,ERR006,MSG003 ; YES, REPORT ERROR
6661 036452*
6662 036452* 104456                                TRAP  C$ERHRD
6663 036454* 000120                                .WORD 80
6664 036456* 016206*                                .WORD ERR006
6665 036460* 015114*                                .WORD MSG003
6666 036462* ESCAPE TST                          ; AND ABORT TEST
6667 036462* 104410                                TRAP  C$ESCAPE
6668 036464* 001454                                .WORD L10041-.
6669
6670 ;WRITE RING FORMAT

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6671	036466*	012705	011172*	70\$:	MOV	#WTRNGS,R5	:	DEFAULT WRITE RING FORMAT FUNCTION
6672	036472*	004737	024630*		JSR	PC,LDPCBB	:	LOAD FUNCTION -> PCBB
6673	036476*	012705	011312*		MOV	#RFRMT,R5	:	DEFAULT RING FORMAT
6674	036502*	012700	000006		MOV	#6,RO	:	FORMAT = SIX WORDS
6675	036506*	004737	025030*		JSR	PC,LDUDBB	:	LOAD RING FORMAT -> UDBB
6676	036512*	012777	000002	141506	MOV	#GETCMD,@PCSR0	:	ISSUE GET_CMD PORT COMMAND
6677	036520*	004737	022546*		JSR	PC,CHKDNI	:	DNI ?
6678	036524*	103006			BCC	80\$	:	YES
6679	036526*				ERRHRD	081.,ERR010,MSG003	:	NO, REPORT ERROR
6680	036526*	104456					TRAP	C\$ERHRD
6681	036530*	000121					.WORD	81
6682	036532*	016506*					.WORD	ERR010
6683	036534*	015114*					.WORD	MSG003
6684	036536*				ESCAPE	TST	:	AND ABORT TEST
6685	036536*	104410					TRAP	C\$ESCAPE
6686	036540*	001400					.WORD	L10041-.
6687								
6688	036542*	004737	023434*	80\$:	JSR	PC,CLRDN1	:	WRITE ONE TO CLEAR DNI
6689							:	ERROR ?
6690	036546*	103006			BCC	90\$	:	NO
6691	036550*				ERRHRD	082.,ERR006,MSG003	:	YES, REPORT ERROR
6692	036550*	104456					TRAP	C\$ERHRD
6693	036552*	000122					.WORD	82
6694	036554*	016206*					.WORD	ERR006
6695	036556*	015114*					.WORD	MSG003
6696	036560*				ESCAPE	TST	:	AND ABORT TEST
6697	036560*	104410					TRAP	C\$ESCAPE
6698	036562*	001356					.WORD	L10041-.
6699								
6700					:	WRITE PHYSICAL ADDRESS		
6701	036564*	012705	011132*	90\$:	MOV	#WTPHYA,R5	:	DEFAULT WRITE PHYSICAL ADDR FUNC
6702	036570*	004737	024630*		JSR	PC,LDPCBB	:	LOAD FUNCTION -> PCBB
6703	036574*	012777	000002	141424	MOV	#GETCMD,@PCSR0	:	ISSUE GET_CMD PORT COMMAND
6704	036602*	004737	022546*		JSR	PC,CHKDNI	:	DNI ?
6705	036606*	103006			BCC	100\$	:	YES
6706	036610*				ERRHRD	083.,ERR010,MSG003	:	NO, REPORT ERROR
6707	036610*	104456					TRAP	C\$ERHRD
6708	036612*	000123					.WORD	83
6709	036614*	016506*					.WORD	ERR010
6710	036616*	015114*					.WORD	MSG003
6711	036620*				ESCAPE	TST	:	AND ABORT TEST
6712	036620*	104410					TRAP	C\$ESCAPE
6713	036622*	001316					.WORD	L10041-.
6714								
6715	036624*	004737	023434*	100\$:	JSR	PC,CLRDN1	:	WRITE ONE TO CLEAR DNI
6716							:	ERROR ?
6717	036630*	103006			BCC	110\$	:	NO
6718	036632*				ERRHRD	084.,ERR006,MSG003	:	YES, REPORT ERROR
6719	036632*	104456					TRAP	C\$ERHRD
6720	036634*	000124					.WORD	84
6721	036636*	016206*					.WORD	ERR006
6722	036640*	015114*					.WORD	MSG003
6723	036642*				ESCAPE	TST	:	AND ABORT TEST
6724	036642*	104410					TRAP	C\$ESCAPE
6725	036644*	001274					.WORD	L10041-.
6726								



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TEST 14: INTERNAL LOOPBACK TEST

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6727                                     ;SET UP RINGS FOR ONE BUFFER LOOPBACK
6728 036646* 012705 011542*           ;110$: MOV #TDRB1A,R5                ; DEFAULT ONE BUFFER TRANSMIT RING
6729 036652* 004737 024734*           ; JSR PC,LDTDRB                    ; LOAD TDRB
6730 036656* 012705 011342*           ; MOV #RDR31A,R5                  ; DEFAULT ONE BUFFER RECEIVE RING
6731 036662* 004737 024676*           ; JSR PC,LDRDRB                    ; LOAD RDRB
6732                                     ;
6733                                     ;SET UP BUFFERS AND START
6734 036666* 012705 000254*           ; MOV #PCBB+2,R5                  ; POINT TO DESTINATION ADDRESS
6735 036672* 004737 024602*           ; JSR PC,LDDEST                    ; LOAD DEST
6736 036676* 004737 025230*           ; JSR PC,SETBUF                    ; SET UP BUFFERS
6737 036702* 012777 000004* 141316   ; MOV #START,@PCSR0                ; ISSUE START PORT COMMAND
6738 036710* 004737 022546*           ; JSR PC,CHKDNI                    ; DNI?
6739 036714* 103006                   ; BCC 120$                          ; YES
6740 036716*                               ; ERRHRD 085.,ERR012,MSG003         ; NO, REPORT ERROR
6741 036716* 104456                   ;                                     TRAP C$ERHRD
6742 036720* 000125                   ;                                     .WORD 85
6743 036722* 016637*                   ;                                     .WORD ERR012
6744 036724* 015114*                   ;                                     .WORD MSG003
6745 036726*                               ; ESCAPE TST                        ; AND ABORT TEST
6746 036726* 104410                   ;                                     TRAP C$ESCAPE
6747 036730* 001210                   ;                                     .WORD L10041-.
6748                                     ;
6749 036732* 004737 023434*           ;120$: JSR PC,CLRDNI                ; WRITE ONE TO CLEAR DNI
6750                                     ;                                     ; ERROR ?
6751 036736* 103006                   ;                                     ; NO
6752 036740*                               ; ERRHRD 086.,ERR006,MSG003         ; YES, REPORT ERROR
6753 036740* 104456                   ;                                     TRAP C$ERHRD
6754 036742* 000126                   ;                                     .WORD 86
6755 036744* 016206*                   ;                                     .WORD ERR006
6756 036746* 015114*                   ;                                     .WORD MSG003
6757 036750*                               ; ESCAPE TST                        ; AND ABORT TEST
6758 036750* 104410                   ;                                     TRAP C$ESCAPE
6759 036752* 001166                   ;                                     .WORD L10041-.
6760                                     ;
6761 036754* 004737 023306*           ;130$: JSR PC,CHKTXI                ; TXI ?
6762 036760* 103006                   ; BCC 140$                          ; YES
6763 036762*                               ; ERRHRD 087.,ERR013,MSG003         ; NO, REPORT ERROR
6764 036762* 104456                   ;                                     TRAP C$ERHRD
6765 036764* 000127                   ;                                     .WORD 87
6766 036766* 016720*                   ;                                     .WORD ERR013
6767 036770* 015114*                   ;                                     .WORD MSG003
6768 036772*                               ; ESCAPE TST                        ; AND ABORT TEST
6769 036772* 104410                   ;                                     TRAP C$ESCAPE
6770 036774* 001144                   ;                                     .WORD L10041-.
6771                                     ;
6772 036776* 004737 023616*           ;140$: JSR PC,CLRTXI                ; WRITE ONE TO CLEAR TXI
6773                                     ;                                     ; ERROR ?
6774 037002* 103006                   ; BCC 150$                          ; NO
6775 037004*                               ; ERRHRD 088.,ERR014,MSG003         ; YES, REPORT ERROR
6776 037004* 104456                   ;                                     TRAP C$ERHRD
6777 037006* 000130                   ;                                     .WORD 88
6778 037010* 016751*                   ;                                     .WORD ERR014
6779 037012* 015114*                   ;                                     .WORD MSG003
6780 037014*                               ; ESCAPE TST                        ; AND ABORT TEST
6781 037014* 104410                   ;                                     TRAP C$ESCAPE
6782 037016* 001122                   ;                                     .WORD L10041-.

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6783
6784 037020' 012705 000572'      ;150$: MOV      #TDRB,R5      ; CHECK TDRB OWNERSHIP
6785 037024' 004737 022634'      ; JSR      PC,CHKOWN      ; OWN = PORT DRIVER ?
6786 037030' 103006      ; BCC     160$           ; YES
6787 037032'      ; ERRHRD  089.,ERR018    ; NO, REPORT ERROR
6788 037032' 104456      ; TRAP   C$ERRHRD
6789 037034' 000131      ; .WORD  89
6790 037036' 017216'      ; .WORD  ERR018
6791 037040' 000000      ; .WORD  0
6792 037042'      ; ESCAPE  TST           ; AND ABORT TEST
6793 037042' 104410      ; TRAP   C$ESCAPE
6794 037044' 001074      ; .WORD  L10041-.
6795
6796 037046' 012705 012512'      ;160$: MOV      #TDR14A,R5   ; POINT TO EXPECTED TDRB
6797 037052' 004737 025140'      ; JSR      PC,LDXTDR      ; LOAD INTO XTDRB0 TABLE
6798 037056' 012705 000572'      ; MOV      #TDRB,R5      ; CHECK TDRB
6799 037062' 004737 023220'      ; JSR      PC,CHKTDR      ; ERRORS ?
6800 037066' 103006      ; BCC     170$           ; NO
6801 037070'      ; ERRHRD  090.,ERR020,MSG005 ; YES, REPORT ERROR
6802 037070' 104456      ; TRAP   C$ERRHRD
6803 037072' 000132      ; .WORD  90
6804 037074' 017376'      ; .WORD  ERR020
6805 037076' 015220'      ; .WORD  MSG005
6806 037100'      ; ESCAPE  TST           ; AND ABORT TEST
6807 037100' 104410      ; TRAP   C$ESCAPE
6808 037102' 001036      ; .WORD  L10041-.
6809
6810 037104' 004737 023054'      ;170$: JSR      PC,CHKRXI    ; RXI ?
6811 037110' 103006      ; BCC     180$           ; YES
6812 037112'      ; ERRHRD  091.,ERR015,MSG003 ; NO, REPORT ERROR
6813 037112' 104456      ; TRAP   C$ERRHRD
6814 037114' 000133      ; .WORD  91
6815 037116' 017017'      ; .WORD  ERR015
6816 037120' 015114'      ; .WORD  MSG003
6817 037122'      ; ESCAPE  TST           ; AND ABORT TEST
6818 037122' 104410      ; TRAP   C$ESCAPE
6819 037124' 001014      ; .WORD  L10041-.
6820
6821 037126' 004737 023550'      ;180$: JSR      PC,CLRRXI    ; WRITE ONE TO CLEAR RXI
6822      ; BCC     190$           ; ERROR ?
6823 037132' 103006      ; ERRHRD  092.,ERR016,MSG003 ; NO
6824 037134'      ; YES, REPORT ERROR
6825 037134' 104456      ; TRAP   C$ERRHRD
6826 037136' 000134      ; .WORD  92
6827 037140' 017050'      ; .WORD  ERR016
6828 037142' 015114'      ; .WORD  MSG003
6829 037144'      ; ESCAPE  TST           ; AND ABORT TEST
6830 037144' 104410      ; TRAP   C$ESCAPE
6831 037146' 000772      ; .WORD  L10041-.
6832
6833 037150' 012705 000632'      ;190$: MOV      #RDRB,R5      ; CHECK RDRB OWNERSHIP
6834 037154' 004737 022634'      ; JSR      PC,CHKOWN      ; OWN = PORT DRIVER ?
6835 037160' 103006      ; BCC     200$           ; YES
6836 037162'      ; ERRHRD  093.,ERR017    ; NO, REPORT ERROR
6837 037162' 104456      ; TRAP   C$ERRHRD
6838 037164' 000135      ; .WORD  93

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6839	037166'	017116'					.WORD	ERR017
6840	037170'	000000					.WORD	0
6841	037172'			ESCAPE	TST			: AND ABORT TEST
6842	037172'	104410					TRAP	C\$ESCAPE
6843	037174'	000744					.WORD	L10041-.
6844								
6845	037176'	012705	012622'	200\$:	MOV	#RDR14A,R5		: POINT TO EXPECTED RDRB
6846	037202'	004737	025110'		JSR	PC,LDXRDR		: LOAD INTO XRDRB0 TABLE
6847	037206'	012705	000632'		MOV	#RDRB,R5		: CHECK RDRB
6848	037212'	004737	022754'		JSR	PC,CHKRDR		: ERRORS ?
6849	037216'	103006			BCC	210\$		: NO
6850	037220'				ERRHRD	094.,ERR021,MSG006		: YES, REPORT ERROR
6851	037220'	104456					TRAP	C\$ERHRD
6852	037222'	000136					.WORD	94
6853	037224'	017457'					.WORD	ERR021
6854	037226'	015362'					.WORD	MSG006
6855	037230'			ESCAPE	TST			: AND ABORT TEST
6856	037230'	104410					TRAP	C\$ESCAPE
6857	037232'	000706					.WORD	L10041-.
6858								
6859				: COMPARE RBUF WITH TBUF				
6860	037234'	012705	000070	210\$:	MOV	#56.,R5		: COMPARE 56 WORDS OF DATA
6861	037240'	004737	023732'		JSR	PC,CMPDAT		: DATA COMPARE ERROR ?
6862	037244'	103006			BCC	220\$		: NO
6863	037246'				ERRHRD	095.,ERR022,MSG007		: YES, REPORT ERROR
6864	037246'	104456					TRAP	C\$ERHRD
6865	037250'	000137					.WORD	95
6866	037252'	017540'					.WORD	ERR022
6867	037254'	015524'					.WORD	MSG007
6868	037256'			ESCAPE	TST			: AND ABORT TEST
6869	037256'	104410					TRAP	C\$ESCAPE
6870	037260'	000660					.WORD	L10041-.
6871								
6872	037262'	012705	012712'	220\$:	MOV	#CRC14A,R5		: POINT TO EXPECTED CRCB
6873	037266'	004737	025064'		JSR	PC,LDXCRC		: LOAD INTO XCRC TABLE
6874	037272'	012705	005266'		MOV	#RBUF+124.,R5		: CHECK CRC
6875	037276'	004737	024012'		JSR	PC,CMPCRC		: ERRORS ?
6876	037302'	103006			BCC	230\$		: NO
6877	037304'				ERRHRD	096.,ERR023,MSG008		: YES, REPORT ERROR
6878	037304'	104456					TRAP	C\$ERHRD
6879	037306'	000140					.WORD	96
6880	037310'	017607'					.WORD	ERR023
6881	037312'	015556'					.WORD	MSG008
6882	037314'			ESCAPE	TST			: AND ABORT TEST
6883	037314'	104410					TRAP	C\$ESCAPE
6884	037316'	000622					.WORD	L10041-.
6885								
6886	037320'	012777	000017	140700	230\$:	MOV	#STOP,@PCSR0	: ISSUE STOP PORT COMMAND
6887	037326'	004737	022546'		JSR	PC,CHKDNI		: DNI ?
6888	037332'	103006			BCC	240\$		: YES
6889	037334'				ERRHRD	097.,ERR019,MSG003		: NO, REPORT ERROR
6890	037334'	104456					TRAP	C\$ERHRD
6891	037336'	000141					.WORD	97
6892	037340'	017316'					.WORD	ERR019
6893	037342'	015114'					.WORD	MSG003
6894	037344'			ESCAPE	TST			: AND ABORT TEST

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6895 037344' 104410                                TRAP  C$ESCAPE
6896 037346' 000572                                .WORD L10041-.
6897
6898 037350' 004737 023434' 240$: JSR    PC,CLRDNI                ; WRITE ONE TO CLEAR DNI
6899                                     ; ERROR ?
6900 037354' 103006                                BCC    250$
6901 037356'                                     ERRHRD 098.,ERR006,MSG003 ; NO
6902 037356' 104456                                     ; YES, REPORT ERROR
6903 037360' 000142                                TRAP  C$ERHRD
6904 037362' 016206'                                .WORD 98
6905 037364' 015114'                                .WORD ERR006
6906 037366'                                     .WORD MSG003
6907 037366' 104410                                ESCAPE TST                ; AND ABORT TEST
6908 037370' 000550                                TRAP  C$ESCAPE
6909 037372'                                     .WORD L10041-.
6910 037372'
6911 037372'
6912 037372' 104403                                ENDSUB ;#1                L10042: TRAP  C$ESUB
6913 037374'                                     BGNSUB ;#2
6914 037374'
6915 037374' 104402                                T14.2: TRAP  C$BSUB
6916
6917 ;WRITE MODE REGISTER = INTERNAL LOOPBACK AND PROM MODE AND ENABL COLLISION TEST
6918 ;
6919 037376' 004737 025334' JSR    PC,TINIT           ; IS A DEVICE RESET NEEDED?
6920 037402' 103025 BCC    255$              ; NO
6921 037404' 012777 000040 140614 MOV    #RSET,@PCSR0     ; YES, ISSUE RESET
6922 037412' 004737 022546' JSR    PC,CHKDNI        ; WAIT FOR DNI
6923 037416' 103006 BCC    251$              ; OK
6924 037420' ERRHRD 099.,ERR004,MSG003 ; ERROR, REPORT IT
6925 037420' 104456                                TRAP  C$ERHRD
6926 037422' 000143                                .WORD 99
6927 037424' 016106'                                .WORD ERR004
6928 037426' 015114'                                .WORD MSG003
6929 037430'
6930 037430' 104410                                ESCAPE TST                ; ABORT TEST
6931 037432' 000506                                TRAP  C$ESCAPE
6932 037434' 004737 023434' 251$: JSR    PC,CLRDNI                ; GO CLEAR DNI
6933 037440' 103006 BCC    255$              ; OK
6934 037442' ERRHRD 100.,ERR006,MSG003 ; ERROR TRYING TO CLEAR DNI
6935 037442' 104456                                TRAP  C$ERHRD
6936 037444' 000144                                .WORD 100
6937 037446' 016206'                                .WORD ERR006
6938 037450' 015114'                                .WORD MSG003
6939 037452'
6940 037452' 104410                                ESCAPE TST                ; ABORT TEST
6941 037454' 000464                                TRAP  C$ESCAPE
6942                                     .WORD L10041-.
6943 037456' 012705 011242' 255$: MOV    #WTMOD1,R5          ; POINT TO WRITE MODE FUNCTION
6944 037462' 004737 024630' JSR    PC,LDPCBB        ; LOAD FUNCTION -> PCBB
6945 037466' 012777 000002 140532 MOV    #GETCMD,@PCSR0  ; ISSUE GET_CMD PORT COMMAND
6946 037474' 004737 022546' JSR    PC,CHKDNI        ; DNI ?
6947 037500' 103006 BCC    260$              ; YES
6948 037502' ERRHRD 101.,ERR010,MSG003 ; NO, REPORT ERROR
6949 037502' 104456                                TRAP  C$ERHRD
6950 037504' 000145                                .WORD 101

```

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TEST 14: INTERNAL LOOPBACK TEST

```

6951 037506' 016506'
6952 037510' 015114'
6953 037512'          ESCAPE TST          ; AND ABORT TEST          .WORD  ERR010
6954 037512' 104410          ;                               .WORD  MSG003
6955 037514' 000424          ;                               TRAP   C$ESCAPE
6956                                     ;                               .WORD  L10041-.
6957 037516' 004737 023434' 260$: JSR    PC,CLRDN1          ; WRITE ONE TO CLEAR DNI
6958                                     ; ERROR ?
6959 037522' 103006          BCC    270$          ; NO
6960 037524'          ERRHRD 102.,ERR006,MSG003 ; YES, REPORT ERROR
6961 037524' 104456          ;                               TRAP   C$ERHRD
6962 037526' 000146          ;                               .WORD  102
6963 037530' 016206'          ;                               .WORD  ERR006
6964 037532' 015114'          ;                               .WORD  MSG003
6965 037534'          ESCAPE TST          ; AND ABORT TEST
6966 037534' 104410          ;                               TRAP   C$ESCAPE
6967 037536' 000402          ;                               .WORD  L10041-.
6968
6969 ;:SET UP RINGS FOR ONE BUFFER LOOPBACK
6970
6971 037540' 012705 011542' 270$: MOV    #TDRB1A,R5          ; DEFAULT ONE BUFFER TRANSMIT RING
6972 037544' 004737 024734' JSR    PC,LDTDRB          ; LOAD TDRB
6973 037550' 012705 011342' MOV    #RDRB1A,R5          ; DEFAULT ONE BUFFER RECEIVE RING
6974 037554' 004737 024676' JSR    PC,LDRDRB          ; LOAD RDRB
6975
6976 ;:SET UP BUFFERS AND START
6977
6978 037560' 012705 000254' MOV    #PCBB+2,R5          ; POINT TO DESTINATION ADDRESS
6979 037564' 004737 024602' JSR    PC,LDDEST          ; LOAD DEST
6980 037570' 004737 025230' JSR    PC,SETBUF          ; SET UP BUFFERS
6981 037574' 012777 000004' 140424 MOV    #START,@PCSR0      ; ISSUE START PORT COMMAND
6982 037602' 004737 022546' JSR    PC,CHKDNI          ; DNI?
6983 037606' 103006          BCC    280$          ; YES
6984 037610'          ERRHRD 103.,ERR012,MSG003 ; NO, REPORT ERROR
6985 037610' 104456          ;                               TRAP   C$ERHRD
6986 037612' 000147          ;                               .WORD  103
6987 037614' 016637'          ;                               .WORD  ERR012
6988 037616' 015114'          ;                               .WORD  MSG003
6989 037620'          ESCAPE TST          ; AND ABORT TEST
6990 037620' 104410          ;                               TRAP   C$ESCAPE
6991 037622' 000316          ;                               .WORD  L10041-.
6992
6993 037624' 004737 023434' 280$: JSR    PC,CLRDN1          ; WRITE ONE TO CLEAR DNI
6994                                     ; ERROR ?
6995 037630' 103006          BCC    290$          ; NO
6996 037632'          ERRHRD 104.,ERR006,MSG003 ; YES, REPORT ERROR
6997 037632' 104456          ;                               TRAP   C$ERHRD
6998 037634' 000150          ;                               .WORD  104
6999 037636' 016206'          ;                               .WORD  ERR006
7000 037640' 015114'          ;                               .WORD  MSG003
7001 037642'          ESCAPE TST          ; AND ABORT TEST
7002 037642' 104410          ;                               TRAP   C$ESCAPE
7003 037644' 000274          ;                               .WORD  L10041-.
7004
7005 037646' 004737 023306' 290$: JSR    PC,CHKTXI          ; TXI ?
7006 037652' 103006          BCC    300$          ; YES

```



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```

7063 040004' 104456 TRAP C$ERHRD
7064 040006' 000156 .WORD 110
7065 040010' 022310' .WORD ERRO49.
7066 040012' 015114' .WORD MSG003
7067 040014' ESCAPE TST ;ABORT TEST
7068 040014' 104410 TRAP C$ESCAPE
7069 040016' 000122 .WORD L10041-.
7070
7071 040020' 012705 011252' 350$: MOV #RDSTA,R5 ;READ PORT STATUS FUNCTION
7072 040024' 004737 024630' JSR PC,LDP CBB ;LOAD FUNCTION INTO PCBB
7073 040030' 012777 000002 140170 MOV #GETCMD,@PCSR0 ;ISSUE GET COMMAND PORT COMMAND
7074 040036' 004737 022546' JSR PC,CHKDNI ;DNI?
7075 040042' 103006 BCC 360$ ;YES
7076 040044' ERRHRD 111.,ERR010,MSG003 ;NO, REPORT ERROR
7077 040044' 104456 TRAP C$ERHRD
7078 040046' 000157 .WORD 111
7079 040050' 016506' .WORD ERRO10
7080 040052' 015114' .WORD MSG003
7081 040054' ESCAPE TST ;ABORT TEST
7082 040054' 104410 TRAP C$ESCAPE
7083 040056' 000062 .WORD L10041-.
7084
7085 040060' 032737 100000 000254' 360$: BIT #BIT15,PCBB+2 ;ERROR SUMMARY BIT SHOULD BE SET
7086 040066' 001004 BNE 370$ ;OK
7087 040070' ERRHRD 112.,ERR050,MSG009 ;PRINT ERROR INFORMATION
7088 040070' 104456 TRAP C$ERHRD
7089 040072' 000160 .WORD 112
7090 040074' 022357' .WORD ERRO50
7091 040076' 015640' .WORD MSG009
7092 040100' 032737 010000 000254' 370$: BIT #BIT12,PCBB+2 ;COLLISION TEST ERROR SHOULD BE SET
7093 040106' 001004 BNE 380$ ;OK
7094 040110' ERRHRD 113.,ERR051,MSG009 ;PRINT ERROR INFORMATION
7095 040110' 104456 TRAP C$ERHRD
7096 040112' 000161 .WORD 113
7097 040114' 022447' .WORD ERRO51
7098 040116' 015640' .WORD MSG009
7099 040120' 004737 023434' 380$: JSR PC,CLR DNI ;GO CLEAR DNI
7100 040124' 103004 BCC 390$ ;OK
7101 040126' ERRHRD 114.,ERR006,MSG003 ;DNI BIT DID NOT CLEAR!
7102 040126' 104456 TRAP C$ERHRD
7103 040130' 000162 .WORD 114
7104 040132' 016206' .WORD ERRO06
7105 040134' 015114' .WORD MSG003
7106 040136' 390$:
7107 040136' ENDSUB ;#2
7108 040136'
7109 040136' 104403 L10043: TRAP C$ESUB
7110 040140'
7111 040140' L10041: TRAP C$SETST
7112 040140' 104401

```

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TEST 15: CRC CHECKING TEST

.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
*****

```

```

040142'
040142'
040142' 004737 025334'
040146' 103025
040150' 012777 000040 140050
040156' 004737 022546'
040162' 103006
040164'
040164' 104456
040166' 000163
040170' 016106'
040172' 015114'
040174'
040174' 104410
040176' 001054
:
040200' 004737 023434' 20$:
040204' 103006
040206'
040206' 104456
040210' 000164
040212' 016206'
040214' 015114'
040216'
040216' 104410
040220' 001032
:
040222' 004737 024660' 30$:
040226' 012777 000001 137772
040234' 004737 022546'
040240' 103006
040242'

```

```

BGNTST
:
: T15::
JSR PC,TINIT ; IS A DEVICE RESET NEEDED?
BCC 30$ ; NO
MOV #RSET,@PCSR0 ; YES, RESET DEUNA
JSR PC,CHKDNI ; DNI ?
BCC 20$ ; YES
ERRHRD 115.,ERR004,MSG003 ; NO, REPORT ERROR
: TRAP C$ERHRD
: .WORD 115
: .WORD ERR004
: .WORD MSG003
ESCAPE TST ; AND ABORT TEST
: TRAP C$ESCAPE
: .WORD L10044-.
:
: 20$:
JSR PC,CLRDN1 ; WRITE ONE TO CLEAR DNI
: ERROR ?
BCC 30$ ; NO
ERRHRD 116.,ERR006,MSG003 ; YES, REPORT ERROR
: TRAP C$ERHRD
: .WORD 116
: .WORD ERR006
: .WORD MSG003
ESCAPE TST ; AND ABORT TEST
: TRAP C$ESCAPE
: .WORD L10044-.
:
: 30$:
JSR PC,LDPCSR ; ADDRESS OF PCBB -> PCSR2!3
MOV #GETPCB,@PCSR0 ; ISSUE GET_PCBB PORT COMMAND
JSR PC,CHKDNI ; DNI?
BCC 40$ ; YES
ERRHRD 117.,ERR009,MSG003 ; NO, REPORT ERROR

```



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```

7169 040242* 104456                                TRAP  C$SERHRD
7170 040244* 000165                                .WORD 117
7171 040246* 016422*                               .WORD  ERR009
7172 040250* 015114*                               .WORD  MSG003
7173 040252*                                     ESCAPE TST                                ; AND ABORT TEST
7174 040252* 104410                                TRAP  C$ESCAPE
7175 040254* 000776                                .WORD  L10044-.
7176
7177 040256* 004737 023434*                       ;40$: JSR    PC,CLRDNI                      ; WRITE ONE TO CLEAR DNI
7178                                     BCC    50$                                ; ERROR ?
7179 040262* 103006                                ERRHRD 118.,ERR006,MSG003                ; NO
7180 040264*                                     ; YES, REPORT ERROR
7181 040264* 104456                                TRAP  C$SERHRD
7182 040266* 000166                                .WORD 118
7183 040270* 016206*                               .WORD  ERR006
7184 040272* 015114*                               .WORD  MSG003
7185 040274*                                     ESCAPE TST                                ; AND ABORT TEST
7186 040274* 104410                                TRAP  C$ESCAPE
7187 040276* 000754                                .WORD  L10044-.
7188                                     ;WRITE MODE REGISTER = INTERNAL LOOPBACK, PROM AND DISABLE XMIT CRC MODE
7189 040300* 012705 011232*                       ;50$: MOV    #WTMODE,R5                    ; DEFAULT WRITE MODE FUNCTION
7190 040304* 004737 024630*                       JSR    PC,LDPCBB                          ; LOAD FUNCTION -> PCBB
7191 040310* 013737 013076* 000254*              MOV    MODE15,PCBB+2                      ; LOAD MODE REGISTER
7192 040316* 012777 000002 137702                MOV    #GETCMD,@PCSR0                    ; ISSUE GET_CMD PORT COMMAND
7193 040324* 004737 022546*                       JSR    PC,CHKDNI                          ; DNI ?
7194 040330* 103006                                BCC    60$                                ; YES
7195 040332*                                     ERRHRD 119.,ERR010,MSG003                ; NO, REPORT ERROR
7196 040332* 104456                                TRAP  C$SERHRD
7197 040334* 000167                                .WORD 119
7198 040336* 016506*                               .WORD  ERR010
7199 040340* 015114*                               .WORD  MSG003
7200 040342*                                     ESCAPE TST                                ; AND ABORT TEST
7201 040342* 104410                                TRAP  C$ESCAPE
7202 040344* 000706                                .WORD  L10044-.
7203
7204 040346* 004737 023434*                       ;60$: JSR    PC,CLRDNI                      ; WRITE ONE TO CLEAR DNI
7205                                     BCC    70$                                ; ERROR ?
7206 040352* 103006                                ERRHRD 120.,ERR006,MSG003                ; NO
7207 040354*                                     ; YES, REPORT ERROR
7208 040354* 104456                                TRAP  C$SERHRD
7209 040356* 000170                                .WORD 120
7210 040360* 016206*                               .WORD  ERR006
7211 040362* 015114*                               .WORD  MSG003
7212 040364*                                     ESCAPE TST                                ; AND ABORT TEST
7213 040364* 104410                                TRAP  C$ESCAPE
7214 040366* 000664                                .WORD  L10044-.
7215
7216 040370* 012705 011172*                       ;70$: MOV    #WTRNGS,R5                    ; DEFAULT WRITE RING FORMAT FUNCTION
7217 040374* 004737 024630*                       JSR    PC,LDPCBB                          ; LOAD FUNCTION -> PCBB
7218 040400* 012705 011312*                       MOV    #RFRMT,R5                          ; DEFAULT RING FORMAT
7219 040404* 012700 000006                        MOV    #6,R0                              ; FORMAT = SIX WORDS
7220 040410* 004737 025030*                       JSR    PC,LDUDBB                          ; LOAD RING FORMAT -> UDBB
7221 040414* 012777 000002 137604                MOV    #GETCMD,@PCSR0                    ; ISSUE GET_CMD PORT COMMAND
7222 040422* 004737 022546*                       JSR    PC,CHKDNI                          ; DNI ?
7223 040426* 103006                                BCC    80$                                ; YES
7224 040430*                                     ERRHRD 121.,ERR010,MSG003                ; NO, REPORT ERROR

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7225	040430'	104456					TRAP	C\$ERHRD
7226	040432'	000171					.WORD	121
7227	040434'	016506'					.WORD	ERR010
7228	040436'	015114'					.WORD	MSG003
7229	040440'				ESCAPE TST			: AND ABORT TEST
7230	040440'	104410					TRAP	C\$ESCAPE
7231	040442'	000610					.WORD	L10044-
7232								
7233	040444'	004737	023434'	80\$:	JSR	PC,CLRDNI		: WRITE ONE TO CLEAR DNI
7234								: ERROR ?
7235	040450'	103006			BCC	90\$		: NO
7236	040452'				ERRHRD	122.,ERR006,MSG003		: YES, REPORT ERROR
7237	040452'	104456					TRAP	C\$ERHRD
7238	040454'	000172					.WORD	122
7239	040456'	016206'					.WORD	ERR006
7240	040460'	015114'					.WORD	MSG003
7241	040462'				ESCAPE TST			: AND ABORT TEST
7242	040462'	104410					TRAP	C\$ESCAPE
7243	040464'	000566					.WORD	L10044-
7244								
7245	040466'	012705	011132'		:WRITE PHYSICAL ADDRESS			
7246	040472'	004737	024630'	90\$:	MOV	#WTPHYA,R5		: DEFAULT WRITE PHYSICAL ADDR FUNC
7247	040476'	012777	000002	137522	JSR	PC,LDP CBB		: LOAD FUNCTION -> PCBB
7248	040504'	004737	022546'		MOV	#GETCMD,@PCSR0		: ISSUE GET_CMD PORT COMMAND
7249	040510'	103006			JSR	PC,CHKDNI		: DNI ?
7250	040512'				BCC	100\$		: YES
7251	040512'	104456			ERRHRD	123.,ERR010,MSG003		: NO, REPORT ERROR
7252	040514'	000173					TRAP	C\$ERHRD
7253	040516'	016506'					.WORD	123
7254	040520'	015114'					.WORD	ERR010
7255	040522'				ESCAPE TST		.WORD	MSG003
7256	040522'	104410						: AND ABORT TEST
7257	040524'	000526					TRAP	C\$ESCAPE
7258							.WORD	L10044-
7259	040526'	004737	023434'	100\$:	JSR	PC,CLRDNI		: WRITE ONE TO CLEAR DNI
7260								: ERROR ?
7261	040532'	103006			BCC	110\$		: NO
7262	040534'				ERRHRD	124.,ERR006,MSG003		: YES, REPORT ERROR
7263	040534'	104456					TRAP	C\$ERHRD
7264	040536'	000174					.WORD	124
7265	040540'	016206'					.WORD	ERR006
7266	040542'	015114'					.WORD	MSG003
7267	040544'				ESCAPE TST			: AND ABORT TEST
7268	040544'	104410					TRAP	C\$ESCAPE
7269	040546'	000504					.WORD	L10044-
7270								
7271	040550'	012705	011602'		:SET UP RINGS FOR ONE BUFFER LOOPBACK			
7272	040554'	004737	024734'	110\$:	MOV	#TDRB1B,R5		: DEFAULT ONE BUFFER TRANSMIT RING
7273	040560'	012705	011342'		JSR	PC,LDTDRB		: LOAD TDRB
7274	040564'	004737	024676'		MOV	#RDRB1A,R5		: DEFAULT ONE BUFFER RECEIVE RING
7275					JSR	PC,LDRDRB		: LOAD RDRB
7276	040570'	012705	000254'		:SET UP BUFFERS AND START			
7277	040574'	004737	024602'		MOV	#PCBB+2,R5		: POINT TO DESTINATION ADDRESS
7278	040600'	004737	025230'		JSR	PC,LDDEST		: LOAD DEST
7279	040604'	013737	012716'	001266'	JSR	PC,SETBUF		: SET UP BUFFERS
7280	040612'	013737	012720'	001270'	MOV	CRC15H,TBUF+124.		: APPEND GODD CRC VALUE
					MOV	CRC15L,TBUF+126.		: TO TRANSMIT DATA

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7281 040620' 012777 000004 137400      MOV      #START,@PCSR0      ; ISSUE START PORT COMMAND
7282 040626' 004737 022546'          JSR      PC,CHKDNI         ; DNI?
7283 040632' 103006          BCC      120$              ; YES
7284 040634'          ERRHRD  125.,ERR012,MSG003 ; NO, REPORT ERROR
7285 040634' 104456          TRAP                                C$ERHRD
7286 040636' 000175          .WORD  125
7287 040640' 016637'          .WORD  ERR012
7288 040642' 015114'          .WORD  MSG003
7289 040644'          ESCAPE  TST                ; AND ABORT TEST
7290 040644' 104410          TRAP                                C$ESCAPE
7291 040646' 000404          .WORD  L10044-.
7292
7293 040650' 004737 023434'          i20$: JSR      PC,CLRDNI         ; WRITE ONE TO CLEAR DNI
7294          BCC      130$              ; ERROR ?
7295 040654' 103006          ERRHRD  126.,ERR006,MSG003 ; NO
7296 040656'          ; YES, REPORT ERROR
7297 040656' 104456          TRAP                                C$ERHRD
7298 040660' 000176          .WORD  126
7299 040662' 016206'          .WORD  ERR006
7300 040664' 015114'          .WORD  MSG003
7301 040666'          ESCAPE  TST                ; AND ABORT TEST
7302 040666' 104410          TRAP                                C$ESCAPE
7303 040670' 000362          .WORD  L10044-.
7304
7305 040672' 004737 023306'          i30$: JSR      PC,CHKTXI         ; TXI ?
7306 040676' 103006          BCC      140$              ; YES
7307 040700'          ERRHRD  127.,ERR013,MSG003 ; NO, REPORT ERROR
7308 040700' 104456          TRAP                                C$ERHRD
7309 040702' 000177          .WORD  127
7310 040704' 016720'          .WORD  ERR013
7311 040706' 015114'          .WORD  MSG003
7312 040710'          ESCAPE  TST                ; AND ABORT TEST
7313 040710' 104410          TRAP                                C$ESCAPE
7314 040712' 000340          .WORD  L10044-.
7315
7316 040714' 004737 023616'          i40$: JSR      PC,CLRTXI         ; WRITE ONE TO CLEAR TXI
7317          BCC      150$              ; ERROR ?
7318 040720' 103006          ERRHRD  128.,ERR014,MSG003 ; NO
7319 040722'          ; YES, REPORT ERROR
7320 040722' 104456          TRAP                                C$ERHRD
7321 040724' 000200          .WORD  128
7322 040726' 016751'          .WORD  ERR014
7323 040730' 015114'          .WORD  MSG003
7324 040732'          ESCAPE  TST                ; AND ABORT TEST
7325 040732' 104410          TRAP                                C$ESCAPE
7326 040734' 000316          .WORD  L10044-.
7327
7328 040736' 012705 000572'          i50$: MOV      #TDRB,R5         ; CHECK TDRB OWNERSHIP
7329 040742' 004737 022634'          JSR      PC,CHKOWN        ; OWN = PORT DRIVER ?
7330 040746' 103006          BCC      160$              ; YES
7331 040750'          ERRHRD  129.,ERR018        ; NO, REPORT ERROR
7332 040750' 104456          TRAP                                C$ERHRD
7333 040752' 000201          .WORD  129
7334 040754' 017216'          .WORD  ERR018
7335 040756' 000000          .WORD  0
7336 040760'          ESCAPE  TST                ; AND ABORT TEST

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TEST 15: CRC CHECKING TEST

7337	040760'	104410						TRAP	C\$ESCAPE
7338	040762'	000270						.WORD	L10044-.
7339									
7340	040764'	012705	012522'	i60\$:	MOV	#TDR15A,R5	:		POINT TO EXPECTED TDRB
7341	040770'	004737	025140'		JSR	PC,LDXTDR	:		LOAD INTO XTDRB0 TABLE
7342	040774'	012705	000572'		MOV	#TDRB,R5	:		CHECK TDRB
7343	041000'	004737	023220'		JSR	PC,CHKTDR	:		ERRORS ?
7344	041004'	103006			BCC	170\$	:		NO
7345	041006'				ERRHRD	130.,ERR020,MSG005	:		YES, REPORT ERROR
7346	041006'	104456						TRAP	C\$ERHRD
7347	041010'	000202						.WORD	130
7348	041012'	017376'						.WORD	ERR020
7349	041014'	015220'						.WORD	MSG005
7350	041016'				ESCAPE	TST	:		AND ABORT TEST
7351	041016'	104410						TRAP	C\$ESCAPE
7352	041020'	000232						.WORD	L10044-.
7353									
7354	041022'	004737	023054'	i70\$:	JSR	PC,CHKRXI	:		RXI ?
7355	041026'	103006			BCC	180\$	:		YES
7356	041030'				ERRHRD	131.,ERR015,MSG003	:		NO, REPORT ERROR
7357	041030'	104456						TRAP	C\$ERHRD
7358	041032'	000203						.WORD	131
7359	041034'	017017'						.WORD	ERR015
7360	041036'	015114'						.WORD	MSG003
7361	041040'				ESCAPE	TST	:		AND ABORT TEST
7362	041040'	104410						TRAP	C\$ESCAPE
7363	041042'	000210						.WORD	L10044-.
7364									
7365	041044'	004737	023550'	i80\$:	JSR	PC,CLRRXI	:		WRITE ONE TO CLEAR RXI
7366									ERROR ?
7367	041050'	103006			BCC	190\$	:		NO
7368	041052'				ERRHRD	132.,ERR016,MSG003	:		YES, REPORT ERROR
7369	041052'	104456						TRAP	C\$ERHRD
7370	041054'	000204						.WORD	132
7371	041056'	017050'						.WORD	ERR016
7372	041060'	015114'						.WORD	MSG003
7373	041062'				ESCAPE	TSi	:		AND ABORT TEST
7374	041062'	104410						TRAP	C\$ESCAPE
7375	041064'	000166						.WORD	L10044-.
7376									
7377	041066'	012705	000632'	i90\$:	MOV	#RDRB,R5	:		CHECK RDRB OWNERSHIP
7378	041072'	004737	022634'		JSR	PC,CHKOWN	:		OWN = PORT DRIVER ?
7379	041076'	103006			BCC	200\$	:		YES
7380	041100'				ERRHRD	133.,ERR017	:		NO, REPORT ERROR
7381	041100'	104456						TRAP	C\$ERHRD
7382	041102'	000205						.WORD	133
7383	041104'	017116'						.WORD	ERR017
7384	041106'	000000						.WORD	0
7385	041110'				ESCAPE	TST	:		AND ABORT TEST
7386	041110'	104410						TRAP	C\$ESCAPE
7387	041112'	000140						.WORD	L10044-.
7388									
7389	041114'	012705	012632'	i200\$:	MOV	#RDR15A,R5	:		POINT TO EXPECTED RDRB
7390	041120'	004737	025110'		JSR	PC,LDXRDR	:		LOAD INTO XRDRB0 TABLE
7391	041124'	012705	000632'		MOV	#RDRB,R5	:		CHECK RDRB
7392	041130'	004737	022754'		JSR	PC,CHKRDR	:		ERRORS ?



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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
*****

```

```

041254*
041254*
041254* 004737 025334*
041260* 103025
041262* 012777 000040 136736
041270* 004737 022546*
041274* 103006
041276*
041276* 104456
041300* 000212
041302* 016106*
041304* 015114*
041306*
041306* 104410
041310* 001054
041312* 004737 023434*
041316* 103006
041320*
041320* 104456
041322* 000213
041324* 016206*
041326* 015114*
041330*
041330* 104410
041332* 001032
041334* 004737 024660*
041340* 012777 000001 136660
041346* 004737 022546*
041352* 103006
041354*

```

```

BGNTST
; IS A DEVICE RESET NEEDED?
JSR PC,TINIT ; T16::
BCC 30$ ; NO
MOV #RSET,@PCSR0 ; YES, RESET DEUNA
JSR PC,CHKDNI ; DNI?
BCC 20$ ; YES
ERRHRD 138.,ERR004,MSG003 ; NO, REPORT ERROR
TRAP C$ERHRD
.WORD 138
.WORD ERR004
.WORD MSG003
ESCAPE TST ; AND ABORT TEST
TRAP C$ESCAPE
.WORD L10045-.
; WRITE ONE TO CLEAR DNI
JSR PC,CLRDNI ; ERROR?
BCC 30$ ; NO
ERRHRD 139.,ERR006,MSG003 ; YES, REPORT ERROR
TRAP C$ERHRD
.WORD 139
.WORD ERR006
.WORD MSG003
ESCAPE TST ; AND ABORT TEST
TRAP C$ESCAPE
.WORD L10045-.
; ADDRESS OF PCBB -> PCSR2!3
JSR PC,LDPCSR ;
MOV #GETPCB,@PCSR0 ; ISSUE GET_PCBB PORT COMMAND
JSR PC,CHKDNI ; DNI?
BCC 40$ ; YES
ERRHRD 140.,ERR009,MSG003 ; NO, REPORT ERROR

```

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```

7498 041354* 104456 TRAP C$ERHRD
7499 041356* 000214 .WORD 140
7500 041360* 016422* .WORD ERRO09
7501 041362* 015114* .WORD MSG003
7502 041364* ESCAPE TST ; AND ABORT TEST
7503 041364* 104410 TRAP C$ESCAPE
7504 041366* 000776 .WORD L10045-.
7505
7506 041370* 004737 023434* 40$: JSR PC,CLRDNI ; WRITE ONE TO CLEAR DNI
7507 .WORD ; ERROR ?
7508 041374* 103006 BCC 50$ ; NO
7509 041376* ERRHRD 141.,ERR006,MSG003 ; YES, REPORT ERROR
7510 041376* 104456 TRAP C$ERHRD
7511 041400* 000215 .WORD 141
7512 041402* 016206* .WORD ERRO0
7513 041404* 015114* .WORD MSG003
7514 041406* ESCAPE TST ; AND ABORT TEST
7515 041406* 104410 TRAP C$ESCAPE
7516 041410* 000754 .WORD L10045-.
7517 ;WRITE MODE REGISTER = INTERNAL LOOPBACK, PROM AND DISABLE XMIT CRC MODE
7518 041412* 012705 011232* 50$: MOV #WTMODE,R5 ; DEFAULT WRITE MODE FUNCTION
7519 041416* 004737 024630* JSR PC,LDPCBB ; LOAD FUNCTION -> PCBB
7520 041422* 013737 013076* 000254* MOV MODE15,PCBB+2 ; LOAD MODE REGISTER
7521 041430* 012777 000002 136570 MOV #GETCMD,@PCSR0 ; ISSUE GET_CMD PORT COMMAND
7522 041436* 004737 022546* JSR PC,CHKDNI ; DNI ?
7523 041442* 103006 BCC 60$ ; YES
7524 041444* ERRHRD 142.,ERR010,MSG003 ; NO, REPORT ERROR
7525 041444* 104456 TRAP C$ERHRD
7526 041446* 000216 .WORD 142
7527 041450* 016506* .WORD ERRO10
7528 041452* 015114* .WORD MSG003
7529 041454* ESCAPE TST ; AND ABORT TEST
7530 041454* 104410 TRAP C$ESCAPE
7531 041456* 000706 .WORD L10045-.
7532
7533 041460* 004737 023434* 60$: JSR PC,CLRDNI ; WRITE ONE TO CLEAR DNI
7534 .WORD ; ERROR ?
7535 041464* 103006 BCC 70$ ; NO
7536 041466* ERRHRD 143.,ERR006,MSG003 ; YES, REPORT ERROR
7537 041466* 104456 TRAP C$ERHRD
7538 041470* 000217 .WORD 143
7539 041472* 016206* .WORD ERRO06
7540 041474* 015114* .WORD MSG003
7541 041476* ESCAPE TST ; AND ABORT TEST
7542 041476* 104410 TRAP C$ESCAPE
7543 041500* 000664 .WORD L10045-.
7544 ;WRITE RING FORMAT
7545 041502* 012705 011172* 70$: MOV #WTRNGS,R5 ; DEFAULT WRITE RING FORMAT FUNCTION
7546 041506* 004737 024630* JSR PC,LDPCBB ; LOAD FUNCTION -> PCBB
7547 041512* 012705 011312* MOV #RFRMT,R5 ; DEFAULT RING FORMAT
7548 041516* 012700 000006 MOV #6,R0 ; FORMAT = SIX WORDS
7549 041522* 004737 025030* JSR PC,LDUDBB ; LOAD RING FORMAT -> UDBB
7550 041526* 012777 000002 136472 MOV #GETCMD,@PCSR0 ; ISSUE GET_CMD PORT COMMAND
7551 041534* 004737 022546* JSR PC,CHKDNI ; DNI ?
7552 041540* 103006 BCC 80$ ; YES
7553 041542* ERRHRD 144.,ERR010,MSG003 ; NO, REPORT ERROR
    
```

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```

7554 041542' 104456          TRAP  C$ERHRD
7555 041544' 000220          .WORD 144
7556 041546' 016506'        .WORD  ERR010
7557 041550' 015114'        .WORD  MSG003
7558 041552'                ESCAPE TST                : AND ABORT TEST
7559 041552' 104410          TRAP  C$ESCAPE
7560 041554' 000610          .WORD  L10045-.
7561
7562 041556' 004737 023434'   80$: JSR    PC,CLRDNI        : WRITE ONE TO CLEAR DNI
7563                                : ERROR ?
7564 041562' 103006          BCC    90$                : NO
7565 041564'                ERRHRD 145.,ERR006,MSG003 : YES, REPORT ERROR
7566 041564' 104456          TRAP  C$ERHRD
7567 041566' 000221          .WORD 145
7568 041570' 016206'        .WORD  ERR006
7569 041572' 015114'        .WORD  MSG003
7570 041574'                ESCAPE TST                : AND ABORT TEST
7571 041574' 104410          TRAP  C$ESCAPE
7572 041576' 000566          .WORD  L10045-.
7573
7574 041600' 012705 011132'   :WRITE PHYSICAL ADDRESS
7575 041604' 004737 024630'   90$: MOV    #WTPHYA,R5        : DEFAULT WRITE PHYSICAL ADDR FUNC
7576 041610' 012777 000002 136410 JSR    PC,LDPCCB          : LOAD FUNCTION -> PCBB
7577 041616' 004737 022546'   MOV    #GETCMD,@PCSR0    : ISSUE GET_CMD PORT COMMAND
7578 041622' 103006          JSR    PC,CHKDNI         : DNI ?
7579 041624'                BCC    100$                : YES
7580 041624' 104456          ERRHRD 146.,ERR010,MSG003 : NO, REPORT ERROR
7581 041626' 000222          TRAP  C$ERHRD
7582 041630' 016506'        .WORD 146
7583 041632' 015114'        .WORD  ERR010
7584 041634'                ESCAPE TST                : AND ABORT TEST
7585 041634' 104410          TRAP  C$ESCAPE
7586 041636' 000526          .WORD  L10045-.
7587
7588 041640' 004737 023434'   100$: JSR   PC,CLRDNI        : WRITE ONE TO CLEAR DNI
7589                                : ERROR ?
7590 041644' 103006          BCC    110$                : NO
7591 041646'                ERRHRD 147.,ERR006,MSG003 : YES, REPORT ERROR
7592 041646' 104456          TRAP  C$ERHRD
7593 041650' 000223          .WORD 147
7594 041652' 016206'        .WORD  ERR006
7595 041654' 015114'        .WORD  MSG003
7596 041656'                ESCAPE TST                : AND ABORT TEST
7597 041656' 104410          TRAP  C$ESCAPE
7598 041660' 000504          .WORD  L10045-.
7599
7600 041662' 012705 011602'   :SET UP RINGS FOR ONE BUFFER LOOPBACK
7601 041666' 004737 024734'   110$: MOV    #TDRB1B,R5        : DEFAULT ONE BUFFER TRANSMIT RING
7602 041672' 012705 011342'   JSR    PC,LDTDRB          : LOAD TDRB
7603 041676' 004737 024676'   MOV    #RDRB1A,R5        : DEFAULT ONE BUFFER RECEIVE RING
7604                                JSR    PC,LDRDRB          : LOAD RDRB
7605                                :SET UP BUFFERS AND START
7606 041702' 012705 000254'   MOV    #PCBB+2,R5        : POINT TO DESTINATION ADDRESS
7607 041706' 004737 024602'   JSR    PC,LDDDEST         : LOAD DEST
7608 041712' 004737 025230'   JSR    PC,SETBUF          : SET UP BUFFERS
7609 041716' 013737 012722' 001266' MOV    CRC16H,TBUF+124.   : APPEND BAD CRC VALUE
7609 041724' 013737 012724' 001270' MOV    CRC16L,TBUF+126.   : TO TRANSMIT DATA

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7610 041732' 012777 000004 136266      MOV      #START,@PCSR0      : ISSUE START PORT COMMAND
7611 041740' 004737 022546'             JSR      PC,CHKDNI         : DNI?
7612 041744' 103006             BCC      120$              : YES
7613 041746'                   ERRHRD  148.,ERR012,MSG003  : NO, REPORT ERROR
7614 041746' 104456             TRAP    C$ERHRD
7615 041750' 000224             .WORD  148
7616 041752' 016637'           .WORD  ERR012
7617 041754' 015114'           .WORD  MSG003
7618 041756'                   ESCAPE  TST                : AND ABORT TEST
7619 041756' 104410             TRAP    C$ESCAPE
7620 041760' 000404             .WORD  L10045-.
7621
7622 041762' 004737 023434'       i20$: JSR      PC,CLRDNI         : WRITE ONE TO CLEAR DNI
7623                                     : ERROR ?
7624 041766' 103006             BCC      130$              : NO
7625 041770'                   ERRHRD  149.,ERR006,MSG003  : YES, REPORT ERROR
7626 041770' 104456             TRAP    C$ERHRD
7627 041772' 000225             .WORD  149
7628 041774' 016206'           .WORD  ERR006
7629 041776' 015114'           .WORD  MSG003
7630 042000'                   ESCAPE  TST                : AND ABORT TEST
7631 042000' 104410             TRAP    C$ESCAPE
7632 042002' 000362             .WORD  L10045-.
7633
7634 042004' 004737 023306'       i30$: JSR      PC,CHKTXI         : TXI ?
7635 042010' 103006             BCC      140$              : YES
7636 042012'                   ERRHRD  150.,ERR013,MSG003  : NO, REPORT ERROR
7637 042012' 104456             TRAP    C$ERHRD
7638 042014' 000226             .WORD  150
7639 042016' 016720'           .WORD  ERR013
7640 042020' 015114'           .WORD  MSG003
7641 042022'                   ESCAPE  TST                : AND ABORT TEST
7642 042022' 104410             TRAP    C$ESCAPE
7643 042024' 000340             .WORD  L10045-.
7644
7645 042026' 004737 023616'       i40$: JSR      PC,CLRTXI         : WRITE ONE TO CLEAR TXI
7646                                     : ERROR ?
7647 042032' 103006             BCC      150$              : NO
7648 042034'                   ERRHRD  151.,ERR014,MSG003  : YES, REPORT ERROR
7649 042034' 104456             TRAP    C$ERHRD
7650 042036' 000227             .WORD  151
7651 042040' 016751'           .WORD  ERR014
7652 042042' 015114'           .WORD  MSG003
7653 042044'                   ESCAPE  TST                : AND ABORT TEST
7654 042044' 104410             TRAP    C$ESCAPE
7655 042046' 000316             .WORD  L10045-.
7656
7657 042050' 012705 000572'       i50$: MOV      #TDRB,R5         : CHECK TDRB OWNERSHIP
7658 042054' 004737 022634'       JSR      PC,CHKOWN        : OWN = PORT DRIVER ?
7659 042060' 103006             BCC      160$              : YES
7660 042062'                   ERRHRD  152.,ERR018        : NO, REPORT ERROR
7661 042062' 104456             TRAP    C$ERHRD
7662 042064' 000230             .WORD  152
7663 042066' 017216'           .WORD  ERR018
7664 042070' 000000             .WORD  0
7665 042072'                   ESCAPE  TST                : AND ABORT TEST

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7666	042072'	104410					TRAP	C\$ESCAPE
7667	042074'	000270					.WORD	L10045-.
7668								
7669	042076'	012705	012522'	160\$:	MOV	#TDR15A,R5	:	POINT TO EXPECTED TDRB
7670	042102'	004737	025140'		JSR	PC,LDXTDR	:	LOAD INTO XTDRB0 TABLE
7671	042106'	012705	000572'		MOV	#TDRB,R5	:	CHECK TDRB
7672	042112'	004737	023220'		JSR	PC,CHKTDR	:	ERRORS ?
7673	042116'	103006			BCC	170\$	:	NO
7674	042120'				ERRHRD	153.,ERR020,MSG005	:	YES, REPORT ERROR
7675	042120'	104456					TRAP	C\$ERHRD
7676	042122'	000231					.WORD	153
7677	042124'	017376'					.WORD	ERR020
7678	042126'	015220'					.WORD	MSG005
7679	042130'				ESCAPE	TST	:	AND ABORT TEST
7680	042130'	104410					TRAP	C\$ESCAPE
7681	042132'	000232					.WORD	L10045-.
7682								
7683	042134'	004737	023054'	170\$:	JSR	PC,CHKRXI	:	RXI ?
7684	042140'	103006			BCC	180\$	:	YES
7685	042142'				ERRHRD	154.,ERR015,MSG003	:	NO, REPORT ERROR
7686	042142'	104456					TRAP	C\$ERHRD
7687	042144'	000232					.WORD	154
7688	042146'	017017'					.WORD	ERR015
7689	042150'	015114'					.WORD	MSG003
7690	042152'				ESCAPE	TST	:	AND ABORT TEST
7691	042152'	104410					TRAP	C\$ESCAPE
7692	042154'	000210					.WORD	L10045-.
7693								
7694	042156'	004737	023550'	180\$:	JSR	PC,CLRRXI	:	WRITE ONE TO CLEAR RXI
7695							:	ERROR ?
7696	042162'	103006			BCC	190\$	:	NO
7697	042164'				ERRHRD	155.,ERR016,MSG003	:	YES, REPORT ERROR
7698	042164'	104456					TRAP	C\$ERHRD
7699	042166'	000233					.WORD	155
7700	042170'	017050'					.WORD	ERR016
7701	042172'	015114'					.WORD	MSG003
7702	042174'				ESCAPE	TST	:	AND ABORT TEST
7703	042174'	104410					TRAP	C\$ESCAPE
7704	042176'	000166					.WORD	L10045-.
7705								
7706	042200'	012705	000632'	190\$:	MOV	#RDRB,R5	:	CHECK RDRB OWNERSHIP
7707	042204'	004737	022634'		JSR	PC,CHKOWN	:	OWN = PORT DRIVER ?
7708	042210'	103006			BCC	200\$	:	YES
7709	042212'				ERRHRD	156.,ERR017	:	NO, REPORT ERROR
7710	042212'	104456					TRAP	C\$ERHRD
7711	042214'	000234					.WORD	156
7712	042216'	017116'					.WORD	ERR017
7713	042220'	000000					.WORD	0
7714	042222'				ESCAPE	TST	:	AND ABORT TEST
7715	042222'	104410					TRAP	C\$ESCAPE
7716	042224'	000140					.WORD	L10045-.
7717								
7718	042226'	012705	012622'	200\$:	MOV	#RDR14A,R5	:	POINT TO EXPECTED RDRB
7719	042232'	004737	025110'		JSR	PC,LDXRDR	:	LOAD INTO XRDRB0 TABLE
7720	042236'	012705	000632'		MOV	#RDRB,R5	:	CHECK RDRB
7721	042242'	004737	022754'		JSR	PC,CHKRDR	:	ERRORS ?

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7722 042246* 103006          BCC 210$          : NO
7723 042250*          ERRHRD 157.,,ERR021,MSG006 : YES, REPORT ERROR
7724 042250* 104456          TRAP C$ERHRD
7725 042252* 000235          .WORD 157
7726 042254* 017457*          .WORD ERR021
7727 042256* 015362*          .WORD MSG006
7728 042260*          ESCAPE TST          : AND ABORT TEST
7729 042260* 104410          TRAP C$ESCAPE
7730 042262* 000102          .WORD L10045-.
7731
7732 042264* 012705 000070    ;COMPARE RBUF WITH TBUF
7733 042270* 004737 023732* 210$: MOV #56.,R5          : COMPARE 56 WORDS OF DATA
7734 042274* 103006          JSR PC,CMPDAT        : DATA COMPARE ERROR ?
7735 042276*          BCC 230$            : NO
7736 042276* 104456          ERRHRD 158.,,ERR022,MSG007 : YES, REPORT ERROR
7737 042300* 000236          TRAP C$ERHRD
7738 042302* 017540*          .WORD 158
7739 042304* 015524*          .WORD ERR022
7740 042306*          .WORD MSG007
7741 042306* 104410          ESCAPE TST          : AND ABORT TEST
7742 042310* 000054          TRAP C$ESCAPE
7743
7744 042312* 012777 000017 135706 ;230$: MOV #STOP,@PCSR0      : ISSUE STOP PORT COMMAND
7745 042320* 004737 022546* JSR PC,CHKDNI        : DNI ?
7746 042324* 103006          BCC 240$            : YES
7747 042326*          ERRHRD 159.,,ERR019,MSG003 : NO, REPORT ERROR
7748 042326* 104456          TRAP C$ERHRD
7749 042330* 000237          .WORD 159
7750 042332* 017316*          .WORD ERR019
7751 042334* 015114*          .WORD MSG003
7752 042336*          ESCAPE TST          : AND ABORT TEST
7753 042336* 104410          TRAP C$ESCAPE
7754 042340* 000024          .WORD L10045-.
7755
7756 042342* 004737 023434* ;240$: JSR PC,CLRDNI      : WRITE ONE TO CLEAR DNI
7757
7758 042346* 103006          BCC 250$            : ERROR ?
7759 042350*          ERRHRD 160.,,ERR006,MSG003 : NO
7760 042350* 104456          : YES, REPORT ERROR
7761 042352* 000240          TRAP C$ERHRD
7762 042354* 016206*          .WORD 160
7763 042356* 015114*          .WORD ERR006
7764 042360*          .WORD MSG003
7765 042360* 104410          ESCAPE TST          : AND ABORT TEST
7766 042362* 000002          TRAP C$ESCAPE
7767 042364*          .WORD L10045-.
7768 042364*          250$: ENDTST
7769 042364*
7770 042364* 104401          L10045: TRAP C$ETST

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TEST 17: DISABLE RECEIVE CHAINING TEST

.SBTTL TEST 17: DISABLE RECEIVE CHAINING TEST

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

TEST SEQUENCE:
1. WRITE MODE REGISTER = INTERNAL LOOPBACK, PROM,
   AND DISABLE DATA CHAINING MODE
2. WRITE RING FORMAT
3. WRITE PHYSICAL ADDRESS
4. SET UP RINGS AND BUFFERS FOR RECEIVE DATA CHAINING
5. ISSUE START
6. CHECK FOR NCHN ERROR IN PDRB+6
7. ISSUE STOP
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7792 042366'
7793 042366'
7794 042366' 004737 025334'
7795 042372' 103025
7796 042374' 012777 000040 135624
7797 042402' 004737 022546'
7798 042406' 103006
7799 042410'
7800 042410' 104456
7801 042412' 000241
7802 042414' 016106'
7803 042416' 015114'
7804 042420'
7805 042420' 104410
7806 042422' 001050
7807
7808 042424' 004737 023434' 20$:
7809
7810 042430' 103006
7811 042432'
7812 042432' 104456
7813 042434' 000242
7814 042436' 016206'
7815 042440' 015114'
7816 042442'
7817 042442' 104410
7818 042444' 001026
7819
7820 042446' 004737 024660' 30$:
7821 042452' 012777 000001 135546
7822 042460' 004737 022546'
7823 042464' 103006
7824 042466'
7825 042466' 104456
7826 042470' 000243

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BGNTST
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 161.,ERR004,MSG003 ; NO, REPORT ERROR
TRAP C$ERHRD
.WORD 161
.WORD ERR004
.WORD MSG003

ESCAPE TST ; AND ABORT TEST
TRAP C$ESCAPE
.WORD L10046-

20$: JSR PC,CLR DNI ; WRITE ONE TO CLEAR DNI
; ERROR ?
BCC 30$ ; NO
ERRHRD 162.,ERR006,MSG003 ; YES, REPORT ERROR
TRAP C$ERHRD
.WORD 162
.WORD ERR006
.WORD MSG003

ESCAPE TST ; AND ABORT TEST
TRAP C$ESCAPE
.WORD L10046-

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 163.,ERR009,MSG003 ; NO, REPORT ERROR
TRAP C$ERHRD
.WORD 163

```

HARDWARE TESTS MACY11 30(1046) 11-JAN-83 12:03 PAGE 172  
 CZUABA.MAC 10-JAN-83 12:46 TEST 17: DISABLE RECEIVE CHAINING TEST

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7827 042472' 016422' .WORD ERR009
7828 042474' 015114' .WORD MSG003
7829 042476'          ESCAPE TST          ; AND ABORT TEST
7830 042476' 104410          TRAP C$ESCAPE
7831 042500' 000772          .WORD L10046-.
7832
7833 042502' 004737 023434' 40$: JSR PC,CLRDN1          ; WRITE ONE TO CLEAR DNI
7834                                     ; ERROR ?
7835 042506' 103006          BCC 50$          ; NO
7836 042510'          ERRHRD 164.,ERR006,MSG003 ; YES, REPORT ERROR
7837 042510' 104456          TRAP C$ERHRD
7838 042512' 000244          .WORD 164
7839 042514' 016206'          .WORD ERR006
7840 042516' 015114'          .WORD MSG003
7841 042520'          ESCAPE TST          ; AND ABORT TEST
7842 042520' 104410          TRAP C$ESCAPE
7843 042522' 000750          .WORD L10046-.
7844
7845 ;WRITE MODE REGISTER = INTERNAL LOOPBACK, PROM AND
7846 ;DISABLE RECEIVE DATA CHAINING MODE
7847 042524' 012705 011232' 50$: MOV #WTMODE,R5          ; DEFAULT WRITE MODE FUNCTION
7848 042530' 004737 024630' JSR PC,LDPCBB          ; LOAD FUNCTION -> PCBB
7849 042534' 013737 013100' 000254' MOV MODE17,PCBB+2      ; LOAD MODE REGISTER
7850 042542' 012777 000002' 135456 MOV #GETCMD,@PCSR0     ; ISSUE GET_CMD PORT COMMAND
7851 042550' 004737 022546' JSR PC,CHKDNI          ; DNI ?
7852 042554' 103006          BCC 60$          ; YES
7853 042556'          ERRHRD 165.,ERR010,MSG003 ; NO, REPORT ERROR
7854 042556' 104456          TRAP C$ERHRD
7855 042560' 000245          .WORD 165
7856 042562' 016506'          .WORD ERR010
7857 042564' 015114'          .WORD MSG003
7858 042566'          ESCAPE TST          ; AND ABORT TEST
7859 042566' 104410          TRAP C$ESCAPE
7860 042570' 000702          .WORD L10046-.
7861
7862 042572' 004737 023434' 60$: JSR PC,CLRDN1          ; WRITE ONE TO CLEAR DNI
7863                                     ; ERROR ?
7864 042576' 103006          BCC 70$          ; NO
7865 042600'          ERRHRD 166.,ERR006,MSG003 ; YES, REPORT ERROR
7866 042600' 104456          TRAP C$ERHRD
7867 042602' 000246          .WORD 166
7868 042604' 016206'          .WORD ERR006
7869 042606' 015114'          .WORD MSG003
7870 042610'          ESCAPE TST          ; AND ABORT TEST
7871 042610' 104410          TRAP C$ESCAPE
7872 042612' 000660          .WORD L10046-.
7873
7874 ;WRITE RING FORMAT
7875 042614' 012705 011172' 70$: MOV #WTRNGS,R5          ; DEFAULT WRITE RING FORMAT FUNCTION
7876 042620' 004737 024630' JSR PC,LDPCBB          ; LOAD FUNCTION -> PCBB
7877 042624' 012705 011312' MOV #RFRMT,R5          ; DEFAULT RING FORMAT
7878 042630' 012700 000006' MOV #6,R0            ; FORMAT = SIX WORDS
7879 042634' 004737 025030' JSR PC,LDUDBB          ; LOAD RING FORMAT -> UDBB
7880 042640' 012777 000002' 135360 MOV #GETCMD,@PCSR0     ; ISSUE GET_CMD PORT COMMAND
7881 042646' 004737 022546' JSR PC,CHKDNI          ; DNI ?
7882 042652' 103006          BCC 80$          ; YES

```

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 CZUABA.MAC 10-JAN-83 12:46 TEST 17: DISABLE RECEIVE CHAINING TEST

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7883 042654' ERRHRD 167.,ERR010,MSG003 ; NO, REPORT ERROR
7884 042654' 104456 TRAP C$ERHRD
7885 042656' 000247 .WORD 167
7886 042660' 016506' .WORD ERR010
7887 042662' 015114' .WORD MSG003
7888 042664' ESCAPE TST ; AND ABORT TEST
7889 042664' 104410 TRAP C$ESCAPE
7890 042666' 000604 .WORD L10046-.
7891
7892 042670' 004737 023434' 80$: JSR PC,CLRDNI ; WRITE ONE TO CLEAR DNI
7893 .WORD .WORD .WORD ; ERROR ?
7894 042674' 103006 BCC 90$ ; NO
7895 042676' ERRHRD 168.,ERR006,MSG003 ; YES, REPORT ERROR
7896 042676' 104456 TRAP C$ERHRD
7897 042700' 000250 .WORD 168
7898 042702' 016206' .WORD ERR006
7899 042704' 015114' .WORD MSG003
7900 042706' ESCAPE TST ; AND ABORT TEST
7901 042706' 104410 TRAP C$ESCAPE
7902 042710' 000562 .WORD L10046-.
7903
7904 .WRITE PHYSICAL ADDRESS
7905 042712' 012705 011132' 90$: MOV #WTPHYA,R5 ; DEFAULT WRITE PHYSICAL ADDR FUNC
7906 042716' 004737 024630' JSR PC,LDPCBB ; LOAD FUNCTION -> PCBB
7907 042722' 012777 000002' 135276 MOV #GETCMD,@PCSR0 ; ISSUE GET_CMD PORT COMMAND
7908 042730' 004737 022546' JSR PC,CHKDNI ; DNI ?
7909 042734' 103006 BCC 100$ ; YES
7910 042736' ERRHRD 169.,ERR010,MSG003 ; NO, REPORT ERROR
7911 042736' 104456 TRAP C$ERHRD
7912 042740' 000251 .WORD 169
7913 042742' 016506' .WORD ERR010
7914 042744' 015114' .WORD MSG003
7915 042746' ESCAPE TST ; AND ABORT TEST
7916 042746' 104410 TRAP C$ESCAPE
7917 042750' 000522 .WORD L10046-.
7918
7919 042752' 004737 023434' 100$: JSR PC,CLRDNI ; WRITE ONE TO CLEAR DNI
7920 .WORD .WORD .WORD ; ERROR ?
7921 042756' 103006 BCC 110$ ; NO
7922 042760' ERRHRD 170.,ERR006,MSG003 ; YES, REPORT ERROR
7923 042760' 104456 TRAP C$ERHRD
7924 042762' 000252 .WORD 170
7925 042764' 016206' .WORD ERR006
7926 042766' 015114' .WORD MSG003
7927 042770' ESCAPE TST ; AND ABORT TEST
7928 042770' 104410 TRAP C$ESCAPE
7929 042772' 000500 .WORD L10046-.
7930
7931 .SET UP RINGS FOR LOOPBACK
7932 042774' 012705 011542' 110$: MOV #TDRB1A,R5 ; DEFAULT ONE BUFFER TRANSMIT RING
7933 043000' 004737 024734' JSR PC,LDTDRB ; LOAD TDRB
7934 043004' 012705 011442' MOV #RDRB2A,R5 ; DEFAULT CHAINED RECEIVE RING
7935 043010' 004737 024676' JSR PC,LDRDRB ; LOAD RDRB
7936
7937 .SET UP BUFFERS AND START
7938 043014' 012705 000254' MOV #PCBB+2,R5 ; POINT TO DESTINATION ADDRESS

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HARDWARE TESTS MACY11 30(1046)  
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TEST 17: DISABLE RECEIVE CHAINING TEST

7939	043020'	004737	024602'		JSR	PC,LDDEST	:	LOAD DEST			
7940	043024'	004737	025230'		JSR	PC,SETBUF	:	SET UP BUFFERS			
7941	043030'	012777	000004'	135170	MOV	#START,@PCSRO	:	ISSUE START PORT COMMAND			
7942	043036'	004737	022546'		JSR	PC,CHKDNI	:	DNI?			
7943	043042'	103006			BCC	120\$	:	YES			
7944	043044'				ERRHRD	171.,ERR012,MSG003	:	NO, REPORT ERROR			
7945	043044'	104456							TRAP	C\$ERHRD	
7946	043046'	000253							.WORD	171	
7947	043050'	016637'							.WORD	ERR012	
7948	043052'	015114'							.WORD	MSG003	
7949	043054'				ESCAPE	TST	:	AND ABORT TEST			
7950	043054'	104410							TRAP	C\$ESCAPE	
7951	043056'	000414							.WORD	L10046-	
7952											
7953	043060'	004737	023434'		:120\$: JSR	PC,CLRDN1	:	WRITE ONE TO CLEAR DNI			
7954											
7955	043064'	103006			BCC	130\$	:	ERROR ?			
7956	043066'				ERRHRD	172.,ERR006,MSG003	:	NO			
7957	043066'	104456									
7958	043070'	000254							TRAP	C\$ERHRD	
7959	043072'	016206'							.WORD	172	
7960	043074'	015114'							.WORD	ERR006	
7961	043076'				ESCAPE	TST	:	AND ABORT TEST	.WORD	MSG003	
7962	043076'	104410							TRAP	C\$ESCAPE	
7963	043100'	000372							.WORD	L10046-	
7964											
7965	043102'	004737	023306'		:130\$: JSR	PC,CHKTXI	:	TXI ?			
7966	043106'	103006			BCC	140\$	:	YES			
7967	043110'				ERRHRD	173.,ERR013,MSG003	:	NO, REPORT ERROR			
7968	043110'	104456							TRAP	C\$ERHRD	
7969	043112'	000255							.WORD	173	
7970	043114'	016720'							.WORD	ERR013	
7971	043116'	015114'							.WORD	MSG003	
7972	043120'				ESCAPE	TST	:	AND ABORT TEST			
7973	043120'	104410							TRAP	C\$ESCAPE	
7974	043122'	000350							.WORD	L10046-	
7975											
7976	043124'	004737	023616'		:140\$: JSR	PC,CLRTXI	:	WRITE ONE TO CLEAR TXI			
7977											
7978	043130'	103006			BCC	150\$	:	ERROR ?			
7979	043132'				ERRHRD	174.,ERR014,MSG003	:	NO			
7980	043132'	104456									
7981	043134'	000256							TRAP	C\$ERHRD	
7982	043136'	016751'							.WORD	174	
7983	043140'	015114'							.WORD	ERR014	
7984	043142'				ESCAPE	TST	:	AND ABORT TEST	.WORD	MSG003	
7985	043142'	104410							TRAP	C\$ESCAPE	
7986	043144'	000326							.WORD	L10046-	
7987											
7988	043146'	012705	000572'		:150\$: MOV	#TDRB,R5	:	CHECK TDRB OWNERSHIP			
7989	043152'	004737	022634'		JSR	PC,CHKOWN	:	OWN = PORT DRIVER ?			
7990	043156'	103006			BCC	160\$	:	YES			
7991	043160'				ERRHRD	175.,ERR018	:	NO, REPORT ERROR			
7992	043160'	104456							TRAP	C\$ERHRD	
7993	043162'	000257							.WORD	175	
7994	043164'	017216'							.WORD	ERR018	

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 CZUABA.MAC 10-JAN-83 12:46 TEST 17: DISABLE RECEIVE CHAINING TEST

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7995 043166' 000000
7996 043170'          ESCAPE TST          ; AND ABORT TEST          .WORD 0
7997 043170' 104410
7998 043172' 000300          TRAP C$ESCAPE
7999          .WORD L10046-.
8000 043174' 012705 012512'      i60$: MOV #TDR14A,R5          ; POINT TO EXPECTED TDRB
8001 043200' 004737 025140'      JSR PC,LDXTDR          ; LOAD INTO XTDRB0 TABLF
8002 043204' 012705 000572'      MOV #TDRB,R5          ; CHECK TDRB
8003 043210' 004737 023220'      JSR PC,CHKTDR          ; ERRORS ?
8004 043214' 103006          BCC 170$              ; NO
8005 043216'          ERRHRD 176.,ERR020,MSG005 ; YES, REPORT ERROR
8006 043216' 104456          TRAP C$ERHRD
8007 043220' 000260          .WORD 176
8008 043222' 017376'          .WORD ERR020
8009 043224' 015220'          .WORD MSG005
8010 043226'          ESCAPE TST          ; AND ABORT TEST          TRAP C$ESCAPE
8011 043226' 104410          .WORD L10046-.
8012 043230' 000242
8013
8014 043232' 004737 023054'      i70$: JSR PC,CHKRXI          ; RXI ?
8015 043236' 103006          BCC 180$              ; YES
8016 043240'          ERRHRD 177.,ERR015,MSG003 ; NO, REPORT ERROR
8017 043240' 104456          TRAP C$ERHRD
8018 043242' 000261          .WORD 177
8019 043244' 017017'          .WORD ERR015
8020 043246' 015114'          .WORD MSG003
8021 043250'          ESCAPE TST          ; AND ABORT TEST          TRAP C$ESCAPE
8022 043250' 104410          .WORD L10046-.
8023 043252' 000220
8024
8025 043254' 004737 023550'      i80$: JSR PC,CLRRXI          ; WRITE ONE TO CLEAR RXI
8026          .WORD 178
8027 043260' 103006          BCC 190$              ; ERROR ?
8028 043262'          ERRHRD 178.,ERR016,MSG003 ; NO
8029          .WORD 178
8029 043262' 104456          .WORD ERR016
8030 043264' 000262          .WORD MSG003
8031 043266' 017050'
8032 043270' 015114'          ESCAPE TST          ; AND ABORT TEST          TRAP C$ESCAPE
8033 043272'          .WORD L10046-.
8034 043272' 104410
8035 043274' 000176
8036          ;CHECK FIRST RING ENTRY
8037 043276' 012705 000632'      i90$: MOV #RDRB,R5          ; CHECK RDRB OWNERSHIP
8038 043302' 004737 022634'      JSR PC,CHKOWN          ; OWN = PORT DRIVER ?
8039 043306' 103006          BCC 200$              ; YES
8040 043310'          ERRHRD 179.,ERR030 ; NO, REPORT ERROR
8041 043310' 104456          TRAP C$ERHRD
8042 043312' 000263          .WORD 179
8043 043314' 020317'          .WORD ERR030
8044 043316' 000000          .WORD 0
8045 043320'          ESCAPE TST          ; AND ABORT TEST          TRAP C$ESCAPE
8046 043320' 104410          .WORD L10046-.
8047 043322' 000150
8048
8049 043324' 012705 012642'      i200$: MOV #RDR17A,R5         ; POINT TO EXPECTED RDRB
8050 043330' 004737 025110'      JSR PC,LDXRDR         ; LOAD INTO XRDRB0 TABLE

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HARDWARE TESTS MACY11 30(1046)  
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 TEST 17: DISABLE RECEIVE CHAINING TEST

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8051 043334' 012705 000632'      MOV    #RDRB,R5      ; CHECK RDRB
8052 043340' 004737 022754'      JSR    PC,CHKRDR    ; ERRORS ?
8053 043344' 103006                BCC    210$         ; NO
8054 043346'                ERRHRD 180.,ERR036,MSG006 ; YES, REPORT ERROR
8055 043346' 104456                TRAP  C$ERHRD
8056 043350' 000264                .WORD 180
8057 043352' 021105'                .WORD ERR036
8058 043354' 015362'                .WORD MSG006
8059 043356'                ESCAPE TST          ; AND ABORT TEST
8060 043356' 104410                TRAP  C$ESCAPE
8061 043360' 000112                .WORD L10046-.
8062                ;CHECK SECOND RING ENTRY
8063 043362' 012705 012652'      210$: MOV    #RDR17B,R5 ; POINT TO EXPECTED RDRB
8064 043366' 004737 025110'      JSR    PC,LDXRDR   ; LOAD INTO XRDRB0 TABLE
8065 043372' 012705 000642'      MOV    #RDRB+8.,R5 ; CHECK RDRB
8066 043376' 004737 022754'      JSR    PC,CHKRDR   ; ERRORS ?
8067 043402' 103006                BCC    230$         ; NO
8068 043404'                ERRHRD 181.,ERR037,MSG006 ; YES, REPORT ERROR
8069 043404' 104456                TRAP  C$ERHRD
8070 043406' 000265                .WORD 181
8071 043410' 021173'                .WORD ERR037
8072 043412' 015362'                .WORD MSG006
8073 043414'                ESCAPE TST          ; AND ABORT TEST
8074 043414' 104410                TRAP  C$ESCAPE
8075 043416' 000054                .WORD L10046-.
8076
8077 043420' 012777 000017 134600 230$: MOV    #STOP,@PCSR0 ; ISSUE STOP PORT COMMAND
8078 043426' 004737 022546'      JSR    PC,CHKDNI   ; DNI ?
8079 043432' 103006                BCC    240$         ; YES
8080 043434'                ERRHRD 182.,ERR019,MSG003 ; NO, REPORT ERROR
8081 043434' 104456                TRAP  C$ERHRD
8082 043436' 000266                .WORD 182
8083 043440' 017316'                .WORD ERR019
8084 043442' 015114'                .WORD MSG003
8085 043444'                ESCAPE TST          ; AND ABORT TEST
8086 043444' 104410                TRAP  C$ESCAPE
8087 043446' 000024                .WORD L10046-.
8088
8089 043450' 004737 023434'      240$: JSR    PC,CLRDN1 ; WRITE ONE TO CLEAR DNI
8090                ; ERROR ?
8091 043454' 103006                BCC    250$         ; NO
8092 043456'                ERRHRD 183.,ERR006,MSG003 ; YES, REPORT ERROR
8093 043456' 104456                TRAP  C$ERHRD
8094 043460' 000267                .WORD 183
8095 043462' 016206'                .WORD ERR006
8096 043464' 015114'                .WORD MSG003
8097 043466'                ESCAPE TST          ; AND ABORT TEST
8098 043466' 104410                TRAP  C$ESCAPE
8099 043470' 000002                .WORD L10046-.
8100 043472'                250$:
8101 043472'                ENDTST
8102 043472'
8103 043472' 104401                L10046: TRAP  C$ETST

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.SBTTL 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
*****

```

BGNTST

T18::

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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 184.,ERR004,MSG003 ; NO, REPORT ERROR

TRAP C$ERHRD
.WORD 184
.WORD ERR004
.WORD MSG003

ESCAPE TST ; AND ABORT TEST

TRAP C$ESCAPE
.WORD L10047-.

20$: JSR PC,CLRDN1 ; WRITE ONE TO CLEAR DNI
; ERROR ?
BCC 30$ ; NO
ERRHRD 185.,ERR006,MSG003 ; YES, REPORT ERROR

TRAP C$ERHRD
.WORD 185
.WORD ERR006
.WORD MSG003

ESCAPE TST ; AND ABORT TEST

TRAP C$ESCAPE
.WORD L10047-.

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 186.,ERR009,MSG003 ; NO, REPORT ERROR

TRAP C$ERHRD
.WORD 186

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 CZUABA.MAC 10-JAN-83 12:46 TEST 18: TRANSMIT CHAINING ERROR TEST

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8160 043600' 016422' .WORD ERR009
8161 043602' 015114' .WORD MSG003
8162 043604' ESCAPE TST ; AND ABORT TEST
8163 043604' 104410 TRAP C$ESCAPE
8164 043606' 000662 .WORD L10047-.
8165
8166 043610' 004737 023434' 40$: JSR PC,CLRDN1 ; WRITE ONE TO CLEAR DNI
8167 ; ERROR ?
8168 043614' 103006 BCC 50$ ; NO
8169 043616' ERRHRD 187.,ERR006,MSG003 ; YES, REPORT ERROR
8170 TRAP C$ERHRD
8171 043616' 104456 .WORD 187
8172 043620' 000273 .WORD ERR006
8173 043622' 016206' .WORD MSG003
8174 043624' 015114' ESCAPE TST ; AND ABORT TEST
8175 043626' 104410 TRAP C$ESCAPE
8176 043630' 000640 .WORD L10047-.
8177
8178 ;WRITE MODE REGISTER = INTERNAL LOOPBACK AND PROM MODE
8179 043632' 012705 011232' 50$: MOV #WTMODE,R5 ; DEFAULT WRITE MODE FUNCTION
8180 043636' 004737 024630' JSR PC,LDPCBB ; LOAD FUNCTION -> PCBB
8181 043642' 012777 000002 134356 MOV #GETCMD,@PCSR0 ; ISSUE GET_CMD PORT COMMAND
8182 043650' 004737 022546' R PC,CHKDNI ; DNI ?
8183 043654' 103006 b_c 60$ ; YES
8184 043656' ERRHRD 188.,ERR010,MSG003 ; NO, REPORT ERROR
8185 043656' 104456 TRAP C$ERHRD
8186 043660' 000274 .WORD 188
8187 043662' 016506' .WORD ERR010
8188 043664' 015114' .WORD MSG003
8189 043666' ESCAPE TST ; AND ABORT TEST
8190 043666' 104410 TRAP C$ESCAPE
8191 043670' 000600 .WORD L10047-.
8192
8193 043672' 004737 023434' 60$: JSR PC,CLRDN1 ; WRITE ONE TO CLEAR DNI
8194 ; ERROR ?
8195 043676' 103006 BCC 70$ ; NO
8196 043700' ERRHRD 189.,ERR006,MSG003 ; YES, REPORT ERROR
8197 043700' 104456 TRAP C$ERHRD
8198 043702' 000275 .WORD 189
8199 043704' 016206' .WORD ERR006
8200 043706' 015114' .WORD MSG003
8201 043710' ESCAPE TST ; AND ABORT TEST
8202 043710' 104410 TRAP C$ESCAPE
8203 043712' 000556 .WORD L10047-.
8204
8205 ;WRITE RING FORMAT
8206 043714' 012705 011172' 70$: MOV #WTRNGS,R5 ; DEFAULT WRITE RING FORMAT FUNCTION
8207 043720' 004737 024630' JSR PC,LDPCBB ; LOAD FUNCTION -> PCBB
8208 043724' 012705 011312' MOV #RFRMT,R5 ; DEFAULT RING FORMAT
8209 043730' 012700 000006 MOV #6,R0 ; FORMAT = SIX WORDS
8210 043734' 004737 025030' JSR PC,LDUDBB ; LOAD RING FORMAT -> UDBB
8211 043740' 012777 000002 134260 MOV #GETCMD,@PCSR0 ; ISSUE GET_CMD PORT COMMAND
8212 043746' 004737 022546' JSR PC,CHKDNI ; DNI ?
8213 043752' 103006 BCC 80$ ; YES
8214 043754' ERRHRD 190.,ERR010,MSG003 ; NO, REPORT ERROR
8215 043754' 104456 TRAP C$ERHRD

```



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 CZUABA.MAC 10-JAN-83 12:46 TEST 18: TRANSMIT CHAINING ERROR TEST

```

8272 044130* 012777 000004 134070      MOV    #START,@PCSR0      ; ISSUE START PORT COMMAND
8273 044136* 004737 022546*             JSR    PC,CHKDNI         ; DNI?
8274 044142* 103006                     BCC    120$              ; YES
8275 044144*                               ERRHRD 194.,ERR012,MSG003 ; NO, REPORT ERROR
8276 044144* 104456                               TRAP  C$ERHRD
8277 044146* 000302                               .WORD 194
8278 044150* 016637*                               .WORD ERR012
8279 044152* 015114*                               .WORD MSG003
8280 044154*                               ESCAPE TST                ; AND ABORT TEST
8281 044154* 104410                               TRAP  C$ESCAPE
8282 044156* 000312                               .WORD L10047-.
8283
8284 044160* 004737 023434*             i20$: JSR    PC,CLRDNI         ; WRITE ONE TO CLEAR DNI
8285                                         ; ERROR ?
8286 044164* 103006                     BCC    130$              ; NO
8287 044166*                               ERRHRD 195.,ERR006,MSG003 ; YES, REPORT ERROR
8288 044166* 104456                               TRAP  C$ERHRD
8289 044170* 000303                               .WORD 195
8290 044172* 016206*                               .WORD ERR006
8291 044174* 015114*                               .WORD MSG003
8292 044176*                               ESCAPE TST                ; AND ABORT TEST
8293 044176* 104410                               TRAP  C$ESCAPE
8294 044200* 000270                               .WORD L10047-.
8295
8296 044202* 004737 023306*             i30$: JSR    PC,CHKTXI         ; TXI ?
8297 044206* 103006                     BCC    140$              ; YES
8298 044210*                               ERRHRD 196.,ERR013,MSG003 ; NO, REPORT ERROR
8299 044210* 104456                               TRAP  C$ERHRD
8300 044212* 000304                               .WORD 196
8301 044214* 016720*                               .WORD ERR013
8302 044216* 015114*                               .WORD MSG003
8303 044220*                               ESCAPE TST                ; AND ABORT TEST
8304 044220* 104410                               TRAP  C$ESCAPE
8305 044222* 000246                               .WORD L10047-.
8306
8307 044224* 004737 023616*             i40$: JSR    PC,CLRTXI         ; WRITE ONE TO CLEAR TXI
8308                                         ; ERROR ?
8309 044230* 103006                     BCC    150$              ; NO
8310 044232*                               ERRHRD 197.,ERR014,MSG003 ; YES, REPORT ERROR
8311 044232* 104456                               TRAP  C$ERHRD
8312 044234* 000305                               .WORD 197
8313 044236* 016751*                               .WORD ERR014
8314 044240* 015114*                               .WORD MSG003
8315 044242*                               ESCAPE TST                ; AND ABORT TEST
8316 044242* 104410                               TRAP  C$ESCAPE
8317 044244* 000224                               .WORD L10047-.
8318
8319 044246* 012705 000572*             ;CHECK FIRST RING ENTRY
8320 044252* 004737 022634*             150$: MOV    #TDRB,R5         ; CHECK TDRB OWNERSHIP
8321 044256* 103006                     JSR    PC,CHKOWN         ; OWN = PORT DRIVER ?
8322 044260*                               BCC    160$              ; YES
8323 044260* 104456                               ERRHRD 198.,ERR027         ; NO, REPORT ERROR
8324 044262* 000306                               TRAP  C$ERHRD
8325 044264* 017777*                               .WORD 198
8326 044266* 000000                               .WORD ERR027
8327 044270*                               ESCAPE TST                ; AND ABORT TEST

```

HARDWARE TESTS MACY11 30(1046)  
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TEST 18: TRANSMIT CHAINING ERROR TEST

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8328 044270' 104410
8329 044272' 000176
8330
8331 044274' 012705 012532' 160$: MOV #TDR18A,R5 ; POINT TO EXPECTED TDRB
8332 044300' 004737 025140' JSR PC,LDXTDR ; LOAD INTO XTDRB0 TABLE
8333 044304' 012705 000572' MOV #TDRB,R5 ; CHECK TDRB
8334 044310' 004737 023220' JSR PC,CHKTDR ; ERRORS ?
8335 044314' 103006 BCC 162$ ; NO
8336 044316' ERRHRD 199.,ERR033,MSG005 ; YES, REPORT ERROR
8337 044316' 104456 TRAP C$ERHRD
8338 044320' 000307 .WORD 199
8339 044322' 020637' .WORD ERR033
8340 044324' 015220' .WORD MSG005
8341 044326' ESCAPE TST ; AND ABORT TEST
8342 044326' 104410 TRAP C$ESCAPE
8343 044330' 000140 .WORD L10047-.
8344
8345 044332' 012705 000602' ;CHECK SECOND RING ENTRY
8346 044336' 004737 022634' 162$: MOV #TDRB+8.,R5 ; CHECK TDRB OWNERSHIP
8347 044342' 103006 JSR PC,CHKOWN ; OWN = PORT DRIVER ?
8348 044344' BCC 164$ ; YES
8349 044344' 104456 ERRHRD 200.,ERR028 ; NO, REPORT ERROR
8350 044346' 000310 TRAP C$ERHRD
8351 044350' 020104' .WORD 200
8352 044352' 000000 .WORD ERR028
8353 044354' ESCAPE TST ; AND ABORT TEST
8354 044354' 104410 TRAP C$ESCAPE
8355 044356' 000112 .WORD L10047-.
8356
8357 044360' 012705 012542' 164$: MOV #TDR18B,R5 ; POINT TO EXPECTED TDRB
8358 044364' 004737 025140' JSR PC,LDXTDR ; LOAD INTO XTDRB0 TABLE
8359 044370' 012705 000602' MOV #TDRB+8.,R5 ; CHECK TDRB
8360 044374' 004737 023220' JSR PC,CHKTDR ; ERRORS ?
8361 044400' 103006 BCC 230$ ; NO
8362 044402' ERRHRD 201.,ERR034,MSG005 ; YES, REPORT ERROR
8363 044402' 104456 TRAP C$ERHRD
8364 044404' 000311 .WORD 201
8365 044406' 020726' .WORD ERR034
8366 044410' 015220' .WORD MSG005
8367 044412' ESCAPE TST ; AND ABORT TEST
8368 044412' 104410 TRAP C$ESCAPE
8369 044414' 000054 .WORD L10047-.
8370
8371 044416' 012777 000017 133602 230$: MOV #STOP,@PCSR0 ; ISSUE STOP PORT COMMAND
8372 044424' 004737 022546' JSR PC,CHKDNI ; DNI ?
8373 044430' 103006 BCC 240$ ; YES
8374 044432' ERRHRD 202.,ERR019,MSG003 ; NO, REPORT ERROR
8375 044432' 104456 TRAP C$ERHRD
8376 044434' 000312 .WORD 202
8377 044436' 017316' .WORD ERR019
8378 044440' 015114' .WORD MSG003
8379 044442' ESCAPE TST ; AND ABORT TEST
8380 044442' 104410 TRAP C$ESCAPE
8381 044444' 000024 .WORD L10047-.
8382
8383 044446' 004737 023434' 240$: JSR PC,CLRDN1 ; WRITE ONE TO CLEAR DNI

```

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CZUABA.MAC 10-JAN-83 12:46 TEST 18: TRANSMIT CHAINING ERROR TEST

8384							
8385	044452'	103006	BCC	250\$	:	ERROR ?	
8386	044454'		ERRHRD	203.,ERR006,MSG003	:	NO	
8387	044454'	104456			:	YES, REPORT ERROR	
8388	044456'	000313					TRAP C\$ERHRD
8389	044460'	016206'					.WORD 203
8390	044462'	015114'					.WORD ERR006
8391	044464'		ESCAPE	TST	:	AND ABORT TEST	.WORD MSG003
8392	044464'	104410					TRAP C\$ESCAPE
8393	044466'	000002					.WORD L10047-
8394	044470'		250\$:				
8395	044470'		ENDTST				
8396	044470'						L10047:
8397	044470'	104401					TRAP C\$ETST

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TEST 19: NO RECEIVE BUFFER TEST

.SBTTL TEST 19: NO RECEIVE BUFFER TEST

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*****
THIS TEST VERIFIES THAT A RCBI ERROR CAN BE DETECTED.
AN INTERNAL LOOPBACK IS ATTEMPTED WITH
NO RECEIVE BUFFERS OWNED BY THE DEUNA.
A RCBI (RECEIVE BUFFER UNAVAILABLE) ERROR IS EXPECTED IN PCRRO.

TEST SEQUENCE:
1. WRITE MODE REGISTER = INTERNAL LOOPBACK AND PROM MODE
2. WRITE RING FORMAT (16 TRANSMIT ENTRIES)
3. WRITE PHYSICAL ADDRESS
4. SET UP RINGS AND BUFFERS
   WITH 16 TRANSMIT PACKETS
   AND NO RECEIVE BUFFERS OWNED BY THE DEUNA
5. ISSUE START
6. CHECK FOR RCBI ERROR IN PCRRO
7. ISSUE STOP
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044472'
044472'
044472' 004737 025334'
044476' 103025
044500' 012777 000040 133520
044506' 004737 022546'
044512' 103006
044514'
044514' 104456
044516' 000314
044520' 016106'
044522' 015114'
044524'
044524' 104410
044526' 000634
044530' 004737 023434'
044534' 103006
044536'
044536' 104456
044540' 000315
044542' 016206'
044544' 015114'
044546'
044546' 104410
044550' 000612
044552' 004737 024660'
044556' 012777 000001 133442
044564' 004737 022546'
044570' 103006
044572'
044572' 104456

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```

BGNTST
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 204.,ERR004,MSG003 ; NO, REPORT ERROR
TRAP C$ERHRD
.WORD 204
.WORD ERR004
.WORD MSG003

ESCAPE TST ; AND ABORT TEST
TRAP C$ESCAPE
.WORD L10050-.

20$: JSR PC,CLR DNI ; WRITE ONE TO CLEAR DNI
; ERROR?
BCC 30$ ; NO
ERRHRD 205.,ERR006,MSG003 ; YES, REPORT ERROR
TRAP C$ERHRD
.WORD 205
.WORD ERR006
.WORD MSG003

ESCAPE TST ; AND ABORT TEST
TRAP C$ESCAPE
.WORD L10050-.

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 206.,ERR009,MSG003 ; NO, REPORT ERROR
TRAP C$ERHRD

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 CZUABA.MAC 10-JAN-83 12:46 TEST 19: NO RECEIVE BUFFER TEST

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8454 044574' 000316 .WORD 206
8455 044576' 016422' .WORD ERR009
8456 044600' 015114' .WORD MSG003
8457 044602' ESCAPE TST ; AND ABORT TEST
8458 044602' 104410 TRAP C$ESCAPE
8459 044604' 000556 .WORD L10050-.
8460
8461 044606' 004737 - 023434' 40$: JSR PC,CLRDN1 ; WRITE ONE TO CLEAR DNI
8462 .WORD ERROR ?
8463 044612' 103006 BCC 50$ ; NO
8464 044614' ERRHRD 207.,ERR006,MSG003 ; YES, REPORT ERROR
8465 044614' 104456 TRAP C$ERHRD
8466 044616' 000317 .WORD 207
8467 044620' 016206' .WORD ERR006
8468 044622' 015114' .WORD MSG003
8469 044624' ESCAPE TST ; AND ABORT TEST
8470 044624' 104410 TRAP C$ESCAPE
8471 044626' 000534 .WORD L10050-.
8472
8473 ;WRITE MODE REGISTER = INTERNAL LOOPBACK AND FROM MODE
8474 044630' 012705 011232' 50$: MOV #WTMODE,R5 ; DEFAULT WRITE MODE FUNCTION
8475 044634' 004737 024630' JSR PC,LDPCBB ; LOAD FUNCTION -> PCBB
8476 044640' 012777 000002 133360 MOV #GETCMD,@PCSR0 ; ISSUE GET_CMD PORT COMMAND
8477 044646' 004737 022546' JSR PC,CHKDNI ; DNI ?
8478 044652' 103006 BCC 60$ ; YES
8479 044654' ERRHRD 208.,ERR010,MSG003 ; NO, REPORT ERROR
8480 044654' 104456 TRAP C$ERHRD
8481 044656' 000320 .WORD 208
8482 044660' 016506' .WORD ERR010
8483 044662' 015114' .WORD MSG003
8484 044664' ESCAPE TST ; AND ABORT TEST
8485 044664' 104410 TRAP C$ESCAPE
8486 044666' 000474 .WORD L10050-.
8487
8488 044670' 004737 C23434' 60$: JSR PC,CLRDN1 ; WRITE ONE TO CLEAR DNI
8489 .WORD ERROR ?
8490 044674' 103006 BCC 70$ ; NO
8491 044676' ERRHRD 209.,ERR006,MSG003 ; YES, REPORT ERROR
8492 044676' 104456 TRAP C$ERHRD
8493 044700' 000321 .WORD 209
8494 044702' 016206' .WORD ERR006
8495 044704' 015114' .WORD MSG003
8496 044706' ESCAPE TST ; AND ABORT TEST
8497 044706' 104410 TRAP C$ESCAPE
8498 044710' 000452 .WORD L10050-.
8499
8500 ;WRITE RING FORMAT (16 TRANSMIT ENTRIES)
8501 044712' 012705 011172' 70$: MOV #WTRNGS,R5 ; DEFAULT WRITE RING FORMAT FUNCTION
8502 044716' 004737 024630' JSR PC,LDPCBB ; LOAD FUNCTION -> PCBB
8503 044722' 012705 011326' MOV #RFRMTX,R5 ; DEFAULT RING FORMAT
8504 044726' 012700 000006 MOV #6,R0 ; FORMAT = SIX WORDS
8505 044732' 004737 025030' JSR PC,LDUDBB ; LOAD RING FORMAT -> UDBB
8506 044736' 012777 000002 133262 MOV #GETCMD,@PCSR0 ; ISSUE GET_CMD PORT COMMAND
8507 044744' 004737 022546' JSR PC,CHKDNI ; DNI ?
8508 044750' 103006 BCC 80$ ; YES
8509 044752' ERRHRD 210.,ERR010,MSG003 ; NO, REPORT ERROR

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 CZUABA.MAC 10-JAN-83 12:46 TEST 19: NO RECEIVE BUFFER TEST

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8566 045116' 004737 024602'      JSR    PC,LDDEST      ; LOAD DEST
8567 045122' 004737 025230'      JSR    PC,SETBUF     ; SET UP BUFFERS
8568 045126' 012777 000004' 133072  MOV    #START,@PCSR0 ; ISSUE START PORT COMMAND
8569 045134' 004737 022546'      JSR    PC,CHKDNI     ; DNI?
8570 045140' 103006                BCC    120$          ; YES
8571 045142'                ERRHRD 214.,ERR012,MSG003 ; NO, REPORT ERROR
8572 045142' 104456                TRAP  C$ERHRD
8573 045144' 000326                .WORD 214
8574 045146' 016637'                .WORD ERR012
8575 045150' 015114'                .WORD MSG003
8576 045152'                ESCAPE TST          ; AND ABORT TEST
8577 045152' 104410                TRAP  C$ESCAPE
8578 045154' 000206                .WORD L10050-.
8579
8580 045156' 004737 023434'      120$: JSR    PC,CLRDNI     ; WRITE ONE TO CLEAR DNI
8581                                ; ERROR ?
8582 045162' 103006                BCC    130$          ; NO
8583 045164'                ERRHRD 215.,ERR006,MSG003 ; YES, REPORT ERROR
8584 045164' 104456                TRAP  C$EPHRD
8585 045166' 000327                .WORD 215
8586 045170' 016206'                .WORD ERR006
8587 045172' 015114'                .WORD MSG003
8588 045174'                ESCAPE TST          ; AND ABORT TEST
8589 045174' 104410                TRAP  C$ESCAPE
8590 045176' 000164                .WORD L10050-.
8591
8592 045200' 004737 023306'      130$: JSR    PC,CHKTXI     ; TXI ?
8593 045204' 103006                BCC    140$          ; YES
8594 045206'                ERRHRD 216.,ERR013,MSG003 ; NO, REPORT ERROR
8595 045206' 104456                TRAP  C$ERHRD
8596 045210' 000330                .WORD 216
8597 045212' 016720'                .WORD ERR013
8598 045214' 015114'                .WORD MSG003
8599 045216'                ESCAPE TST          ; AND ABORT TEST
8600 045216' 104410                TRAP  C$ESCAPE
8601 045220' 000142                .WORD L10050-.
8602
8603 045222' 004737 023616'      140$: JSR    PC,CLRTXI     ; WRITE ONE TO CLEAR TXI
8604                                ; ERROR ?
8605 045226' 103006                BCC    170$          ; NO
8606 045230'                ERRHRD 217.,ERR014,MSG003 ; YES, REPORT ERROR
8607 045230' 104456                TRAP  C$ERHRD
8608 045232' 000331                .WORD 217
8609 045234' 016751'                .WORD ERR014
8610 045236' 015114'                .WORD MSG003
8611 045240'                ESCAPE TST          ; AND ABORT TEST
8612 045240' 104410                TRAP  C$ESCAPE
8613 045242' 000120                .WORD L10050-.
8614
8615                                ;CHECK FOR RCBI SET IN PCSR0
8616
8617 045244' 004737 022666'      170$: JSR    PC,CHKRCE     ; RCBI ?
8618 045250' 103006                BCC    180$          ; YES
8619 045252'                ERRHRD 218.,ERR025,MSG003 ; NO, REPORT ERROR
8620 045252' 104456                TRAP  C$ERHRD
8621 045254' 000332                .WORD 218

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 CZUABA.MAC 10-JAN-83 12:46 TEST 19: NO RECEIVE BUFFER TEST

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8622 045256' 017676' .WORD ERR025
8623 045260' 015114' .WORD MSG003
8624 045262' ESCAPE TST ; AND ABORT TEST
8625 045262' 104410 TRAP C$ESCAPE
8626 045264' 000076 .WORD L10050-.
8627
8628 045266' 004737 023502' 180$: JSR PC,CLRRCE ; WRITE ONE TO CLEAR RCBI
8629 ; ERROR ?
8630 045272' 103006 BCC 230$ ; NO
8631 045274' ERRHRD 219.,ERR026,MSG003 ; YES, REPORT ERROR
8632 045274' 104456 TRAP C$ERHRD
8633 045276' 000333 .WORD 219
8634 045300' 017730' .WORD ERR026
8635 045302' 015114' .WORD MSG003
8636 045304' ESCAPE TST ; AND ABORT TEST
8637 045304' 104410 TRAP C$ESCAPE
8638 045306' 000054 .WORD L10050-.
8639
8640 045310' 012777 000017 132710 230$: MOV #STOP,@PCSR0 ; ISSUE STOP PORT COMMAND
8641 045316' 004737 022546' JSR PC,CHKDNI ; DNI ?
8642 045322' 103006 BCC 240$ ; YES
8643 045324' ERRHRD 220.,ERR019,MSG003 ; NO, REPORT ERROR
8644 045324' 104456 TRAP C$ERHRD
8645 045326' 000334 .WORD 220
8646 045330' 017316' .WORD ERR019
8647 045332' 015114' .WORD MSG003
8648 045334' ESCAPE TST ; AND ABORT TEST
8649 045334' 104410 TRAP C$ESCAPE
8650 045336' 000024 .WORD L10050-.
8651
8652 045340' 004737 023434' 240$: JSR PC,CLR DNI ; WRITE ONE TO CLEAR DNI
8653 ; ERROR ?
8654 045344' 103006 BCC 250$ ; NO
8655 045346' ERRHRD 221.,ERR006,MSG003 ; YES, REPORT ERROR
8656 045346' 104456 TRAP C$ERHRD
8657 045350' 000335 .WORD 221
8658 045352' 016206' .WORD ERR006
8659 045354' 015114' .WORD MSG003
8660 045356' ESCAPE TST ; AND ABORT TEST
8661 045356' 104410 TRAP C$ESCAPE
8662 045360' 000002 .WORD L10050-.
8663 045362' 250$:
8664 045362' ENDTST
8665 045362'
8666 045362' 104401 L10050: TRAP C$ETST

```

HARDWARE TESTS MACY11 30(1046)  
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 TEST 20: DATA CHAINING TEST

.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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045364'
045364'
045364' 004737 025334'
045370' 103025
045372' 012777 000040 132626
045400' 004737 022546'
045404' 103006
045406'
045406' 104456
045410' 000336
045412' 016106'
045414' 015114'
045416'
045416' 104410
045420' 001536
045422' 004737 023434'
045426' 103006
045430'
045430' 104456
045432' 000337
045434' 016206'
045436' 015114'
045440'
045440' 104410
045442' 001514
045444' 004737 024660'
045450' 012777 000001 132550
045456' 004737 022546'
045462' 103006
045464'
    
```

```

BGNTST
T20::
1$: JSR PC,TINIT ; IS A DEVICE RESET NEEDED?
    BCC 30$ ; NO
    MOV #RSET,@PCSR0 ; YES, RESET DEUNA
    JSR PC,CHKDNI ; DNI ?
    BCC 20$ ; YES
    ERRHRD 222.,ERR004,MSG003 ; NO, REPORT ERROR
                                TRAP C$ERHRD
                                .WORD 222
                                .WORD ERR004
                                .WORD MSG003
ESCAPE TST ; AND ABORT TEST
                                TRAP C$ESCAPE
                                .WORD L10051-.
20$: JSR PC,CLRDN1 ; WRITE ONE TO CLEAR DNI
    BCC 30$ ; ERROR ?
    ERRHRD 223.,ERR006,MSG003 ; YES, REPORT ERROR
                                TRAP C$ERHRD
                                .WORD 223
                                .WORD ERR006
                                .WORD MSG003
ESCAPE TST ; AND ABORT TEST
                                TRAP C$ESCAPE
                                .WORD L10051-.
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 224.,ERR009,MSG003 ; NO, REPORT ERROR
    
```

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```

8723 045464' 104456 TRAP C$ERHRD
8724 045466' 000340 .WORD 224
8725 045470' 016422' .WORD ERR009
8726 045472' 015114' .WORD MSG003
8727 045474' ESCAPE TST ; AND ABORT TEST
8728 045474' 104410 TRAP C$ESCAPE
8729 045476' 001460 .WORD L10051-.
8730
8731 045500' 004737 023434' 40$: JSR PC,CLRDN1 ; WRITE ONE TO CLEAR DNI
8732 .WORD ERROR ?
8733 045504' 103006 BCC 50$ ; NO
8734 045506' ERRHRD 225.,ERR006,MSG003 ; YES, REPORT ERROR
8735 045506' 104456 TRAP C$ERHRD
8736 045510' 000341 .WORD 225
8737 045512' 016206' .WORD ERR006
8738 045514' 015114' .WORD MSG003
8739 045516' ESCAPE TST ; AND ABORT TEST
8740 045516' 104410 TRAP C$ESCAPE
8741 045520' 001436 .WORD L10051-.
8742
8743 ;CHECK IF EXTERNAL LOOPBACK
8744 045522' 005737 000224' 50$: TST EXLOOP ; EXTERNAL LOOPBACK SELECTED ?
8745 045526' 001005 BNE 55$ ; YES
8746
8747 ;WRITE MODE REGISTER = INTERNAL LOOPBACK AND PROM MODE
8748 045530' 012705 011232' MOV #WTMODE,R5 ; DEFAULT WRITE MODE FUNCTION
8749 045534' 004737 024630' JSR PC,LDPCBB ; LOAD FUNCTION -> PCBB
8750 045540' 000407 BR 56$
8751 ;WRITE MODE REGISTER = PROM MODE ONLY (EXTERNAL LOOPBACK)
8752 045542' 012705 011232' 55$: MOV #WTMODE,R5 ; DEFAULT WRITE MODE FUNCTION
8753 045546' 004737 024630' JSR PC,LDPCBB ; LOAD FUNCTION -> PCBB
8754 045552' 013737 013102' 000254' MOV MODE20,PCBB+2 ; PROM MODE ONLY
8755 045560' 012777 000002 132440 56$: MOV #GETCMD,@PCSR0 ; ISSUE GET_CMD PORT COMMAND
8756 045566' 004737 022546' JSR PC,CHKDNI ; DNI ?
8757 045572' 103006 BCC 60$ ; YES
8758 045574' ERRHRD 226.,ERR010,MSG003 ; NO, REPORT ERROR
8759 045574' 104456 TRAP C$ERHRD
8760 045576' 000342 .WORD 226
8761 045600' 016506' .WORD ERR010
8762 045602' 015114' .WORD MSG003
8763 045604' ESCAPE TST ; AND ABORT TEST
8764 045604' 104410 TRAP C$ESCAPE
8765 045606' 001350 .WORD L10051-.
8766
8767 045610' 004737 023434' 60$: JSR PC,CLRDN1 ; WRITE ONE TO CLEAR DNI
8768 .WORD ERROR ?
8769 045614' 103006 BCC 70$ ; NO
8770 045616' ERRHRD 227.,ERR006,MSG003 ; YES, REPORT ERROR
8771 045616' 104456 TRAP C$ERHRD
8772 045620' 000343 .WORD 227
8773 045622' 016206' .WORD ERR006
8774 045624' 015114' .WORD MSG003
8775 045626' ESCAPE TST ; AND ABORT TEST
8776 045626' 104410 TRAP C$ESCAPE
8777 045630' 001326 .WORD L10051-.
8778 ;

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8779
8780 045632' 012705 011172'      ;WRITE RING FORMAT
8781 045636' 004737 024630'      70$:  MOV    #WTRNGS,R5      ; DEFAULT WRITE RING FORMAT FUNCTION
8782 045642' 012705 011312'      JSR    PC,LDPCBB          ; LOAD FUNCTION -> PCBB
8783 045646' 012700 000006'      MOV    #RFRMT,R5        ; DEFAULT RING FORMAT
8784 045652' 004737 025030'      MOV    #6,R0            ; FORMAT = SIX WORDS
8785 045656' 012777 000002' 132342 JSR    PC,LDUDBB          ; LOAD RING FORMAT -> UDBB
8786 045664' 004737 022546'      MOV    #GETCMD,@PCSR0   ; ISSUE GET_CMD PORT COMMAND
8787 045670' 103006                JSR    PC,CHKDNI         ; DNI ?
8788 045672'                BCC    80$              ; YES
8789 045672' 104456                ERRHRD 228.,ERR010,MSG003 ; NO, REPORT ERROR
8790 045674' 000344                TRAP  C$ERHRD
8791 045676' 016506'                .WORD 228
8792 045700' 015114'                .WORD ERR010
8793 045702'                .WORD MSG003
8794 045702' 104410                ESCAPE TST              ; AND ABORT TEST
8795 045704' 001252                TRAP  C$ESCAPE
8796                .WORD L10051-.
8797 045706' 004737 023434'      80$:  JSR    PC,CLRDNI     ; WRITE ONE TO CLEAR DNI
8798                .WORD 229
8799 045712' 103006                BCC    90$              ; ERROR ?
8800 045714'                ERRHRD 229.,ERR006,MSG003 ; NO
8801 045714' 104456                .WORD 229
8802 045716' 000345                .WORD ERR006
8803 045720' 016206'                .WORD MSG003
8804 045722' 015114'                ESCAPE TST              ; AND ABORT TEST
8805 045724'                TRAP  C$ESCAPE
8806 045724' 104410                .WORD L10051-.
8807 045726' 001230
8808
8809                ;WRITE PHYSICAL ADDRESS
8810 045730' 012705 011132'      90$:  MOV    #WTPHYA,R5     ; DEFAULT WRITE PHYSICAL ADDR FUNC
8811 045734' 004737 024630'      JSR    PC,LDPCBB          ; LOAD FUNCTION -> PCBB
8812 045740' 012777 000002' 132260 MOV    #GETCMD,@PCSR0   ; ISSUE GET_CMD PORT COMMAND
8813 045746' 004737 022546'      JSR    PC,CHKDNI         ; DNI ?
8814 045752' 103006                BCC    100$             ; YES
8815 045754'                ERRHRD 230.,ERR010,MSG003 ; NO, REPORT ERROR
8816 045754' 104456                TRAP  C$ERHRD
8817 045756' 000346                .WORD 230
8818 045760' 016506'                .WORD ERR010
8819 045762' 015114'                .WORD MSG003
8820 045764'                ESCAPE TST              ; AND ABORT TEST
8821 045764' 104410                TRAP  C$ESCAPE
8822 045766' 001170                .WORD L10051-.
8823
8824 045770' 004737 023434'      100$: JSR    PC,CLRDNI        ; WRITE ONE TO CLEAR DNI
8825                .WORD 231
8826 045774' 103006                BCC    110$             ; ERROR ?
8827 045776'                ERRHRD 231.,ERR006,MSG003 ; NO
8828 045776' 104456                .WORD 231
8829 046000' 000347                .WORD ERR006
8830 046002' 016206'                .WORD MSG003
8831 046004' 015114'                ESCAPE TST              ; AND ABORT TEST
8832 046006'                TRAP  C$ESCAPE
8833 046006' 104410                .WORD L10051-.
8834 046010' 001146

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8835
8836      ;SET UP RINGS FOR THREE BUFFERS CHAINED LOOPBACK
8837 046012' 012705 011742' 110$: MOV #TDRB3A,R5 ; DEFAULT THREE BUFFER TRANSMIT RING
8838 046016' 004737 024734' JSR PC,LDTDRB ; LOAD TDRB
8839 046022' 012705 011502' MOV #RDRB3A,R5 ; DEFAULT THREE BUFFER RECEIVE RING
8840 046026' 004737 024676' JSR PC,LDRDRB ; LOAD RDRB
8841
8842      ;SET UP BUFFERS AND START
8843 046032' 012705 000254' MOV #PCBB+2,R5 ; POINT TO DESTINATION ADDRESS
8844 046036' 004737 024602' JSR PC,LDDEST ; LOAD DEST
8845 046042' 004737 025230' JSR PC,SETBUF ; SET UP BUFFERS
8846      ;LOAD TYPE FIELD = DIAGNOSTIC TYPE
8847 046046' 012705 001106' MOV #TBUF+12,R5 ; POINT TO TYPE FIELD
8848 046052' 012715 002540' MOV #DTYPE,(R5) ; LOAD DIAGNOSTIC TYPE
8849
8850 046056' 012777 000004' 132142 : MOV #START,@PCSR0 ; ISSUE START PORT COMMAND
8851 046064' 004737 022546' JSR PC,CHKDNI ; DNI?
8852 046070' 103006 BCC 120$ ; YES
8853 046072' ERRHRD 232.,ERR012,MSG003 ; NO, REPORT ERROR
8854 046072' 104456 TRAP C$ERHRD
8855 046074' 000350 .WORD 232
8856 046076' 016637' .WORD ERR012
8857 046100' 015114' .WORD MSG003
8858 046102' ESCAPE TST ; AND ABORT TEST
8859 046102' 104410 TRAP C$ESCAPE
8860 046104' 001052 .WORD L10051-.
8861
8862 046106' 004737 023434' 120$: JSR PC,CLRDNI ; WRITE ONE TO CLEAR DNI
8863 BCC 130$ ; ERROR ?
8864 046112' 103006 ERRHRD 233.,ERR006,MSG003 ; NO
8865 046114' ; YES, REPORT ERROR
8866 046114' 104456 TRAP C$ERHRD
8867 046116' 000351 .WORD 233
8868 046120' 016206' .WORD ERR006
8869 046122' 015114' .WORD MSG003
8870 046124' ESCAPE TST ; AND ABORT TEST
8871 046124' 104410 TRAP C$ESCAPE
8872 046126' 001030 .WORD L10051-.
8873
8874 046130' 004737 023306' 130$: JSR PC,CHKTXI ; TXI ?
8875 046134' 103006 BCC 140$ ; YES
8876 046136' ERRHRD 234.,ERR013,MSG003 ; NO, REPORT ERROR
8877 046136' 104456 TRAP C$ERHRD
8878 046140' 000352 .WORD 234
8879 046142' 016720' .WORD ERR013
8880 046144' 015114' .WORD MSG003
8881 046146' ESCAPE TST ; AND ABORT TEST
8882 046146' 104410 TRAP C$ESCAPE
8883 046150' 001006 .WORD L10051-.
8884
8885 046152' 004737 023616' 140$: JSR PC,CLRTXI ; WRITE ONE TO CLEAR TXI
8886 BCC 150$ ; ERROR ?
8887 046156' 103006 ERRHRD 235.,ERR014,MSG003 ; NO
8888 046160' ; YES, REPORT ERROR
8889 046160' 104456 TRAP C$ERHRD
8890 046162' 000353 .WORD 235

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8891	046164'	016751'					.WORD	ERR014
8892	046166'	015114'					.WORD	MSG003
8893	046170'			ESCAPE	TST	: AND ABORT TEST		
8894	046170'	104410					TRAP	C\$ESCAPE
8895	046172'	000764					.WORD	L10051-.
8896				:CHECK	FIRST RING ENTRY			
8897	046174'	012705	000572'	150\$:	MOV #TDRB,R5	: CHECK TDRB OWNERSHIP		
8898	046200'	004737	022634'		JSR PC,CHKOWN	: OWN = PORT DRIVER ?		
8899	046204'	103006			BCC 160\$	: YES		
8900	046206'				ERRHRD 236.,ERR027	: NO, REPORT ERROR		
8901	046206'	104456					TRAP	C\$ERHRD
8902	046210'	000354					.WORD	236
8903	046212'	017777'					.WORD	ERR027
8904	046214'	000000					.WORD	0
8905	046216'			ESCAPE	TST	: AND ABORT TEST		
8906	046216'	104410					TRAP	C\$ESCAPE
8907	046220'	000736					.WORD	L10051-.
8908								
8909	046222'	012705	012552'	160\$:	MOV #TDR20A,R5	: POINT TO EXPECTED TDRB		
8910	046226'	004737	025140'		JSR PC,LDXTDR	: LOAD INTO XTDRB0 TABLE		
8911	046232'	012705	000572'		MOV #TDRB,R5	: CHECK TDRB		
8912	046236'	004737	023220'		JSR PC,CHKTDR	: ERRORS ?		
8913	046242'	103006			BCC 162\$	: NO		
8914	046244'				ERRHRD 237.,ERR033,MSG005	: YES, REPORT ERROR		
8915	046244'	104456					TRAP	C\$ERHRD
8916	046246'	000355					.WORD	237
8917	046250'	020637'					.WORD	ERR033
8918	046252'	015220'					.WORD	MSG005
8919	046254'			ESCAPE	TST	: AND ABORT TEST		
8920	046254'	104410					TRAP	C\$ESCAPE
8921	046256'	000700					.WORD	L10051-.
8922				:CHECK	SECOND RING ENTRY			
8923	046260'	012705	000602'	162\$:	MOV #TDRB+8.,R5	: CHECK TDRB OWNERSHIP		
8924	046264'	004737	022634'		JSR PC,CHKOWN	: OWN = PORT DRIVER ?		
8925	046270'	103006			BCC 164\$	: YES		
8926	046272'				ERRHRD 238.,ERR028	: NO, REPORT ERROR		
8927	046272'	104456					TRAP	C\$ERHRD
8928	046274'	000356					.WORD	238
8929	046276'	020104'					.WORD	ERR028
8930	046300'	000000					.WORD	0
8931	046302'			ESCAPE	TST	: AND ABORT TEST		
8932	046302'	104410					TRAP	C\$ESCAPE
8933	046304'	000652					.WORD	L10051-.
8934								
8935	046306'	012705	012562'	164\$:	MOV #TDR20B,R5	: POINT TO EXPECTED TDRB		
8936	046312'	004737	025140'		JSR PC,LDXTDR	: LOAD INTO XTDRB0 TABLE		
8937	046316'	012705	000602'		MOV #TDRB+8.,R5	: CHECK TDRB		
8938	046322'	004737	023220'		JSR PC,CHKTDR	: ERRORS ?		
8939	046326'	103006			BCC 166\$	: NO		
8940	046330'				ERRHRD 239.,ERR034,MSG005	: YES, REPORT ERROR		
8941	046330'	104456					TRAP	C\$ERHRD
8942	046332'	000357					.WORD	239
8943	046334'	020726'					.WORD	ERR034
8944	046336'	015220'					.WORD	MSG005
8945	046340'			ESCAPE	TST	: AND ABORT TEST		
8946	046340'	104410					TRAP	C\$ESCAPE

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8947 046342' 000614                                .WORD  L10051-.
8948
8949 046344' 012705 000612'                       ;CHECK THIRD RING ENTRY
8950 046350' 004737 022634'                       ;166$:  MOV      #TDRB+16.,R5          : CHECK TDRB OWNERSHIP
8951 046354' 103006                               : JSR      PC,CHKOWN          : OWN = PORT DRIVER ?
8952 046356' 104456                               : BCC     168$               : YES
8953 046356' 104456                               : ERRHRD  240.,ERR029       : NO, REPORT ERROR
8954 046360' 000360                                TRAP    C$ERHRD
8955 046362' 020212'                                .WORD   240
8956 046364' 000000                                .WORD   ERR029
8957 046366'                                     .WORD   0
8958 046366' 104410                                ESCAPE  TST                  ; AND ABORT TEST
8959 046370' 000566                                TRAP    C$ESCAPE
8960                                     .WORD   L10051-.
8961 046372' 012705 012572'                       ;168$:  MOV      #TDR20C,R5          : POINT TO EXPECTED TDRB
8962 046376' 004737 025140'                       : JSR      PC,LDXTDR         : LOAD INTO XTDRB0 TABLE
8963 046402' 012705 000612'                       : MOV      #TDRB+16.,R5      : CHECK TDRB
8964 046406' 004737 023220'                       : JSR      PC,CHKTDR         : ERRORS ?
8965 046412' 103006                               : BCC     170$               : NO
8966 046414' 104456                               : ERRHRD  241.,ERR035,MSG005 : YES, REPORT ERROR
8967 046414' 104456                                TRAP    C$ERHRD
8968 046416' 000361                                .WORD   241
8969 046420' 021016'                                .WORD   ERR035
8970 046422' 015220'                                .WORD   MSG005
8971 046424'                                     ESCAPE  TST                  ; AND ABORT TEST
8972 046424' 104410                                TRAP    C$ESCAPE
8973 046426' 000530                                .WORD   L10051-.
8974
8975 046430' 004737 023054'                       ;170$:  JSR      PC,CHKRXI          : RXI ?
8976 046434' 103006                               : BCC     180$               : YES
8977 046436' 104456                               : ERRHRD  242.,ERR015,MSG003 : NO, REPORT ERROR
8978 046436' 104456                                TRAP    C$ERHRD
8979 046440' 000362                                .WORD   242
8980 046442' 017017'                                .WORD   ERR015
8981 046444' 015114'                                .WORD   MSG003
8982 046446'                                     ESCAPE  TST                  ; AND ABORT TEST
8983 046446' 104410                                TRAP    C$ESCAPE
8984 046450' 000506                                .WORD   L10051-.
8985
8986 046452' 004737 023550'                       ;180$:  JSR      PC,CLRRXI          : WRITE ONE TO CLEAR RXI
8987                                     : ERROR ?
8988 046456' 103006                               : BCC     182$               : NO
8989 046460' 104456                               : ERRHRD  243.,ERR016,MSG003 : YES, REPORT ERROR
8990 046460' 104456                                TRAP    C$ERHRD
8991 046462' 000363                                .WORD   243
8992 046464' 017050'                                .WORD   ERR016
8993 046466' 015114'                                .WORD   MSG003
8994 046470'                                     ESCAPE  TST                  ; AND ABORT TEST
8995 046470' 104410                                TRAP    C$ESCAPE
8996 046472' 000464                                .WORD   L10051-.
8997
8998 046474' 005737 000224'                       ;182$:  TST      EXLOOP          : EXTERNAL LOOPBACK
8999 046500' 001431                               : BEQ     190$               : NO, SKIP EXTERNAL CHECKS
9000                                     ;EXTERNAL LOOPBACK CHECKS
9001                                     ;CHECK SOURCE ADDRESS = DESTINATION ADDRESS
9002 046502' 012703 005100'                       : MOV      #RBUF+6,R3       : R3 POINTS TO SOURCE ADDRESS

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9003 046506' 012704 005072'      MOV      #RBUF,R4      ; R4 POINTS TO DESTINATION ADDRESS
9004 046512' 022324                CMP      (R3)+,(R4)+  ; FIRST WORD COMPARE ?
9005 046514' 001006                BNE     184$          ; NO, GO CHECK TYPE FIELD
9006 046516' 022324                CMP      (R3)+,(R4)+  ; SECOND WORD COMPARE ?
9007 046520' 001004                BNE     184$          ; NO, GO CHECK TYPE FIELD
9008 046522' 021314                CMP      (R3),(R4)    ; THIRD AND LAST COMPARE ?
9009 046524' 001002                BNE     184$          ; NO, CHECK TYPE FIELD
9010 046526' 000137 046564'      JMP      190$        ; SCR = DST, GO CHECK RINGS
9011                                ;SOURCE NOT EQUAL TO DESTINATION
9012                                ;CHECK IF DIAGNOSTIC TYPE
184$: MOV      #RBUF+12.,R4      ; POINT TO TYPE FIELD RECEIVED
9013 046532' 012704 005106'      CMP      #DTYPE,(R4)  ; DIAGNOSTIC TYPE ?
9014 046536' 022714 002540                BEQ     186$          ; YES, REPORT ERROR
9015 046542' 001402                JMP      1$           ; NO, RESTART TEST
9016 046544' 000137 045364'      186$: ERRHRD 244.,ERR047 ; REPORT ERROR
9017 046550'                                TRAP    C$ERHRD
9018 046550' 104456                                .WORD  244
9019 046552' 000364                                .WORD  ERR047
9020 046554' 022162'                                .WORD  0
9021 046556' 000000
9022 046560'                                ESCAPE  TST          ; AND ABORT TEST
9023 046560' 104410                                TRAP    C$ESCAPE
9024 046562' 000374                                .WORD  L10051-.
9025
9026                                ;CHECK FIRST RING ENTRY
9027 046564' 012705 000632'      190$: MOV      #RDRB,R5      ; CHECK RDRB OWNERSHIP
9028 046570' 004737 022634'      JSR      PC,CHKOWN    ; OWN = PORT DRIVER ?
9029 046574' 103006                BCC     200$          ; YES
9030 046576'                                ERRHRD 245.,ERR030  ; NO, REPORT ERROR
9031 046576' 104456                                TRAP    C$ERHRD
9032 046600' 000365                                .WORD  245
9033 046602' 020317'                                .WORD  ERR030
9034 046604' 000000                                .WORD  0
9035 046606'                                ESCAPE  TST          ; AND ABORT TEST
9036 046606' 104410                                TRAP    C$ESCAPE
9037 046610' 000346                                .WORD  L10051-.
9038
9039                                ;
200$: MOV      #RDR20A,R5     ; POINT TO EXPECTED RDRB
9040 046616' 004737 025110'      JSR      PC,LDRDR     ; LOAD INTO XRDRB0 TABLE
9041 046622' 012705 000632'      MOV      #RDRB,R5     ; CHECK RDRB
9042 046626' 004737 022754'      JSR      PC,CHKRDR    ; ERRORS ?
9043 046632' 103006                BCC     202$          ; NO
9044 046634'                                ERRHRD 246.,ERR036,MSG006 ; YES, REPORT ERROR
9045 046634' 104456                                TRAP    C$ERHRD
9046 046636' 000366                                .WORD  246
9047 046640' 021105'                                .WORD  ERR036
9048 046642' 015362'                                .WORD  MSG006
9049 046644'                                ESCAPE  TST          ; AND ABORT TEST
9050 046644' 104410                                TRAP    C$ESCAPE
9051 046646' 000310                                .WORD  L10051-.
9052                                ;CHECK SECOND RING ENTRY
9053 046650' 012705 000642'      202$: MOV      #RDRB+8.,R5  ; CHECK RDRB OWNERSHIP
9054 046654' 004737 022634'      JSR      PC,CHKOWN    ; OWN = PORT DRIVER ?
9055 046660' 103006                BCC     204$          ; YES
9056 046662'                                ERRHRD 247.,ERR031  ; NO, REPORT ERROR
9057 046662' 104456                                TRAP    C$ERHRD
9058 046664' 000367                                .WORD  247

```

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 CZUABA.MAC 10-JAN-83 12:46 TEST 20: DATA CHAINING TEST

```

9059 046666' 020424' .WORD ERRO31
9060 046670' 000000 .WORD 0
9061 046672' ESCAPE TST ; AND ABORT TEST
9062 046672' 104410 TRAP C$ESCAPE
9063 046674' 000262 .WORD L10051-.
9064
9065 046676' 012705 012672' 204$: MOV #RDR20B,R5 ; POINT TO EXPECTED RDRB
9066 046702' 004737 025110' JSR PC,LDXRDR ; LOAD INTO XRDRB0 TABLE
9067 046706' 012705 000642' MOV #RDRB+8.,R5 ; CHECK RDRB
9068 046712' 004737 022754' JSR PC,CHKRDR ; ERRORS ?
9069 046716' 103006 BCC 206$ ; NO
9070 046720' ERRHRD 248.,ERR037,MSG006 ; YES, REPORT ERROR
9071 046720' 104456 TRAP C$ERHRD
9072 046722' 000370 .WORD 248
9073 046724' 021173' .WORD ERRO37
9074 046726' 015362' .WORD MSG006
9075 046730' ESCAPE TST ; AND ABORT TEST
9076 046730' 104410 TRAP C$ESCAPE
9077 046732' 000224 .WORD L10051-.
9078
9079 046734' 012705 000652' 206$: ;CHECK THIRD RING ENTRY
9080 046740' 004737 022634' MOV #RDRB+16.,R5 ; CHECK RDRB OWNERSHIP
9081 046744' 103006 JSR PC,CHKOWN ; OWN = PORT DRIVER ?
9082 046746' BCC 208$ ; YES
9083 046746' 104456 ERRHRD 249.,ERR032 ; NO, REPORT ERROR
9084 046750' 000371 TRAP C$ERHRD
9085 046752' 020532' .WORD 249
9086 046754' 000000 .WORD ERRO32
9087 046756' ESCAPE TST ; AND ABORT TEST
9088 046756' 104410 TRAP C$ESCAPE
9089 046760' 000176 .WORD L10051-.
9090
9091 046762' 012705 012702' 208$: MOV #RDR20C,R5 ; POINT TO EXPECTED RDRB
9092 046766' 004737 025110' JSR PC,LDXRDR ; LOAD INTO XRDRB0 TABLE
9093 046772' 012705 000652' MOV #RDRB+16.,R5 ; CHECK RDRB
9094 046776' 004737 022754' JSR PC,CHKRDR ; ERRORS ?
9095 047002' 103006 BCC 210$ ; NO
9096 047004' ERRHRD 250.,ERR038,MSG006 ; YES, REPORT ERROR
9097 047004' 104456 TRAP C$ERHRD
9098 047006' 000372 .WORD 250
9099 047010' 021262' .WORD ERRO38
9100 047012' 015362' .WORD MSG006
9101 047014' ESCAPE TST ; AND ABORT TEST
9102 047014' 104410 TRAP C$ESCAPE
9103 047016' 000140 .WORD L10051-.
9104
9105 ;COMPARE RBUF WITH TBUF
9106 047020' 012705 000570 210$: MOV #376.,R5 ; COMPARE 376 WORDS OF DATA
9107 047024' 004737 023732' JSR PC,CMPDAT ; DATA COMPARE ERROR ?
9108 047030' 103006 BCC 220$ ; NO
9109 047032' ERRHRD 251.,ERR022,MSG007 ; YES, REPORT ERROR
9110 047032' 104456 TRAP C$ERHRD
9111 047034' 000373 .WORD 251
9112 047036' 017540' .WORD ERRO22
9113 047040' 015524' .WORD MSG007
9114 047042' ESCAPE TST ; AND ABORT TEST

```

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9115 047042' 104410
9116 047044' 000112
9117
9118 047046' 012705 012726' 220$: MOV #CRC20A,R5 ; POINT TO EXPECTED CRC
9119 047052' 004737 025064' JSR PC,LDXCRC ; LOAD INTO XCRC TABLE
9120 047056' 012705 006466' MOV #RBUF+764.,R5 ; CHECK CRC
9121 047062' 004737 024012' JSR PC,CMPCRC ; ERRORS ?
9122 047066' 103006 BCC 230$ ; NO
9123 047070' ERRHRD 252.,ERR023,MSG008 ; YES, REPORT ERROR
9124 047070' 104456
9125 047072' 000374 TRAP C$ERHRD
9126 047074' 017607' .WORD 252
9127 047076' 015556' .WORD ERR023
9128 047100' ESCAPE TST ; AND ABORT TEST .WORD MSG008
9129 047100' 104410
9130 047102' 000054 TRAP C$ESCAPE
9131 .WORD L10051-.
9132 047104' 012777 000017 131114 230$: MOV #STOP,@PCSR0 ; ISSUE STOP PORT COMMAND
9133 047112' 004737 022546' JSR PC,CHKDNI ; DNI ?
9134 047116' 103006 BCC 240$ ; YES
9135 047120' ERRHRD 253.,ERR019,MSG003 ; NO, REPORT ERROR
9136 047120' 104456 TRAP C$ERHRD
9137 047122' 000375 .WORD 253
9138 047124' 017316' .WORD ERR019
9139 047126' 015114' .WORD MSG003
9140 047130' ESCAPE TST ; AND ABORT TEST
9141 047130' 104410 TRAP C$ESCAPE
9142 047132' 000024 .WORD L10051-.
9143
9144 047134' 004737 023434' 240$: JSR PC,CLRDN1 ; WRITE ONE TO CLEAR DNI
9145 BCC 250$ ; ERROR ?
9146 047140' 103006 ERRHRD 254.,ERR006,MSG003 ; NO
9147 047142' ; YES, REPORT ERROR
9148 047142' 104456 TRAP C$ERHRD
9149 047144' 000376 .WORD 254
9150 047146' 016206' .WORD ERR006
9151 047150' 015114' .WORD MSG003
9152 047152' ESCAPE TST ; AND ABORT TEST
9153 047152' 104410 TRAP C$ESCAPE
9154 047154' 000002 .WORD L10051-.
9155 047156' 250$:
9156 047156' ENDTST
9157 047156'
9158 047156' 104401 L10051: TRAP C$ETST

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TEST 21: PHYSICAL ADDRESS TEST

.SBTTL TEST 21: PHYSICAL ADDRESS TEST

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047160'  
047160'  
047160' 004737 025334'  
047164' 103025  
047166' 012777 000040 131052  
047174' 004737 022546'  
047200' 103006  
047202'  
047202' 104456  
047204' 000377  
047206' 016106'  
047210' 015114'  
047212'  
047212' 104410  
047214' 002624  
047216' 004737 023434'  
047222' 103006  
047224'  
047224' 104456  
047226' 000400  
047230' 016206'

\*\*\*\*\*  
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::  
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 255.,ERR004,MSG003 ; NO, REPORT ERROR  
TRAP C\$ERHRD  
.WORD 255  
.WORD ERR004  
.WORD MSG003  
ESCAPE TST ; AND ABORT TEST  
TRAP C\$ESCAPE  
.WORD L10052-  
20\$: JSR PC,CLR DNI ; WRITE ONE TO CLEAR DNI  
; ERROR ?  
BCC 30\$ ; NO  
ERRHRD 256.,ERR006,MSG003 ; YES, REPORT ERROR  
TRAP C\$ERHRD  
.WORD 256  
.WORD ERR006

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 CZUABA.MAC 10-JAN-83 12:46 TEST 21: PHYSICAL ADDRESS TEST

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9215 047232' 015114'
9216 047234'
9217 047234' 104410
9218 047236' 002602
9219
9220 047240' 004737 024660' 30$: JSR PC,LDPCSR : ADDRESS OF PCBB -> PCSR2!3
9221 047244' 012777 000001 130754 MOV #GETPCB,@PCSR0 : ISSUE GET_PCBB PORT COMMAND
9222 047252' 004737 022546' JSR PC,CHKDNI : DNI?
9223 047256' 103006 BCC 40$ : YES
9224 047260' ERRHRD 257.,ERR009,MSG003 : NO, REPORT ERROR
9225 047260' 104456 TRAP C$ERHRD
9226 047262' 000401 .WORD 257
9227 047264' 016422' .WORD ERR009
9228 047266' 015114' .WORD MSG003
9229 047270' ESCAPE TST : AND ABORT TEST
9230 047270' 104410 TRAP C$ESCAPE
9231 047272' 002546 .WORD L10052-.
9232
9233 047274' 004737 023434' 40$: JSR PC,CLRDN1 : WRITE ONE TO CLEAR DNI
9234 BCC 50$ : ERROR ?
9235 047300' 103006 ERRHRD 258.,ERR006,MSG003 : NO
9236 047302' : YES, REPORT ERROR
9237 047302' 104456 TRAP C$ERHRD
9238 047304' 000402 .WORD 258
9239 047306' 016206' .WORD ERR006
9240 047310' 015114' .WORD MSG003
9241 047312' ESCAPE TST : AND ABORT TEST
9242 047312' 104410 TRAP C$ESCAPE
9243 047314' 002524 .WORD L10052-.
9244
9245 :WRITE MODE REGISTER = INTERNAL LOOPBACK
9246 047316' 012705 011232' 50$: MOV #WTMODE,R5 : DEFAULT WRITE MODE FUNCTION
9247 047322' 004737 024630' JSR PC,LDPCBB : LOAD FUNCTION -> PCBB
9248 047326' 013737 013104' 000254' MOV MODE21,PCBB+2 : MODE = INTL LOOPBACK ONLY
9249 047334' 012777 000002 130664 MOV #GETCMD,@PCSR0 : ISSUE GET_CMD PORT COMMAND
9250 047342' 004737 022546' JSR PC,CHKDNI : DNI ?
9251 047346' 103006 BCC 60$ : YES
9252 047350' ERRHRD 259.,ERR010,MSG003 : NO, REPORT ERROR
9253 047350' 104456 TRAP C$ERHRD
9254 047352' 000403 .WORD 259
9255 047354' 016506' .WORD ERR010
9256 047356' 015114' .WORD MSG003
9257 047360' ESCAPE TST : AND ABORT TEST
9258 047360' 104410 TRAP C$ESCAPE
9259 047362' 002456 .WORD L10052-.
9260
9261 047364' 004737 023434' 60$: JSR PC,CLRDN1 : WRITE ONE TO CLEAR DNI
9262 BCC 70$ : ERROR ?
9263 047370' 103006 ERRHRD 260.,ERR006,MSG003 : NO
9264 047372' : YES, REPORT ERROR
9265 047372' 104456 TRAP C$ERHRD
9266 047374' 000404 .WORD 260
9267 047376' 016206' .WORD ERR006
9268 047400' 015114' .WORD MSG003
9269 047402' ESCAPE TST : AND ABORT TEST
9270 047402' 104410 TRAP C$ESCAPE

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HARDWARE TESTS MACY11 30(1046) 11-JAN-83 12:03 PAGE 200  
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```

9327 047570'          ERRHRD 264.,ERR006,MSG003      : YES, REPORT ERROR
9328 047570' 104456
9329 047572' 000410
9330 047574' 016206'
9331 047576' 015114'
9332 047600'          ESCAPE TST                    : AND ABORT TEST
9333 047600' 104410
9334 047602' 002236
9335
9336          ;SET UP RINGS FOR ONE BUFFER LOOPBACK
9337 047604' 012705 011542' 110$: MOV #TDRB1A,R5      : DEFAULT ONE BUFFER TRANSMIT RING
9338 047610' 004737 024734' JSR PC,LDTDRB      : LOAD TDRB
9339 047614' 012705 011342' MOV #RDRB1A,R5     : DEFAULT ONE BUFFER RECEIVE RING
9340 047620' 004737 024676' JSR PC,LDRDRB     : LOAD RDRB
9341
9342          ;SET UP BUFFERS AND START
9343 047624' 012705 000254' MOV #PCBB+2,R5     : POINT TO DESTINATION ADDRESS
9344 047630' 004737 024602' JSR PC,LDDEST     : LOAD DEST
9345 047634' 004737 025230' JSR PC,SETBUF     : SET UP BUFFERS
9346 047640' 012777 000004' 130360 MOV #START,@PCSRO : ISSUE START PORT COMMAND
9347 047646' 004737 022546' JSR PC,CHKDNI    : DNI?
9348 047652' 103006 BCC 120$         : YES
9349 047654'          ERRHRD 265.,ERR012,MSG003     : NO, REPORT ERROR
9350 047654' 104456
9351 047656' 000411
9352 047660' 016637'
9353 047662' 015114'
9354 047664'          ESCAPE TST                    : AND ABORT TEST
9355 047664' 104410
9356 047666' 002152
9357
9358 047670' 004737 023434' 120$: JSR PC,CLRDN1   : WRITE ONE TO CLEAR DNI
9359
9360 047674' 103006 BCC 130$         : ERROR ?
9361 047676'          ERRHRD 266.,ERR006,MSG003     : YES, REPORT ERROR
9362 047676' 104456
9363 047700' 000412
9364 047702' 016206'
9365 047704' 015114'
9366 047706'          ESCAPE TST                    : AND ABORT TEST
9367 047706' 104410
9368 047710' 002130
9369
9370 047712' 004737 023306' 130$: JSR PC,CHKTXI   : TXI ?
9371 047716' 103006 BCC 140$         : YES
9372 047720'          ERRHRD 267.,ERR013,MSG003     : NO, REPORT ERROR
9373 047720' 104456
9374 047722' 000413
9375 047724' 016720'
9376 047726' 015114'
9377 047730'          ESCAPE TST                    : AND ABORT TEST
9378 047730' 104410
9379 047732' 002106
9380
9381 047734' 004737 023616' 140$: JSR PC,CLRTXI   : WRITE ONE TO CLEAR TXI
9382

```

TRAP C\$ERHRD  
 .WORD 264  
 .WORD ERR006  
 .WORD MSG003  
 TRAP C\$ESCAPE  
 .WORD L10052-

TRAP C\$ERHRD  
 .WORD 265  
 .WORD ERR012  
 .WORD MSG003  
 TRAP C\$ESCAPE  
 .WORD L10052-

TRAP C\$ERHRD  
 .WORD 266  
 .WORD ERR006  
 .WORD MSG003  
 TRAP C\$ESCAPE  
 .WORD L10052-

TRAP C\$ERHRD  
 .WORD 267  
 .WORD ERR013  
 .WORD MSG003  
 TRAP C\$ESCAPE  
 .WORD L10052-

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 CZUABA.MAC 10-JAN-83 12:46 TEST 21: PHYSICAL ADDRESS TEST

9383	047740'	103006		BCC	150\$		: NO		
9384	047742'			ERRHRD	268.,	ERR014,MSG003	: YES, REPORT ERROR		
9385	047742'	104456						TRAP	C\$ERHRD
9386	047744'	000414						.WORD	268
9387	047746'	016751'						.WORD	ERR014
9388	047750'	015114'						.WORD	MSG003
9389	047752'			ESCAPE	TST		: AND ABORT TEST		
9390	047752'	104410						TRAP	C\$ESCAPE
9391	047754'	002064						.WORD	L10052-
9392									
9393	047756'	012705	000572'	150\$:	MOV	#TDRB,R5	: CHECK TDRB OWNERSHIP		
9394	047762'	004737	022634'		JSR	PC,CHKOWN	: OWN = PORT DRIVER ?		
9395	047766'	103006			BCC	160\$	: YES		
9396	047770'				ERRHRD	269.,	ERR018	: NO, REPORT ERROR	
9397	047770'	104456						TRAP	C\$ERHRD
9398	047772'	000415						.WORD	269
9399	047774'	017216'						.WORD	ERR018
9400	047776'	000000						.WORD	0
9401	050000'			ESCAPE	TST		: AND ABORT TEST		
9402	050000'	104410						TRAP	C\$ESCAPE
9403	050002'	002036						.WORD	L10052-
9404									
9405	050004'	012705	012512'	160\$:	MOV	#TDR14A,R5	: POINT TO EXPECTED TDRB		
9406	050010'	004737	025140'		JSR	PC,LDXTDR	: LOAD INTO XTDRB0 TABLE		
9407	050014'	012705	000572'		MOV	#TDRB,R5	: CHECK TDRB		
9408	050020'	004737	023220'		JSR	PC,CHKTDR	: ERRORS ?		
9409	050024'	103006			BCC	170\$	: NO		
9410	050026'				ERRHRD	270.,	ERR020,MSG005	: YES, REPORT ERROR	
9411	050026'	104456						TRAP	C\$ERHRD
9412	050030'	000416						.WORD	270
9413	050032'	017376'						.WORD	ERR020
9414	050034'	015220'						.WORD	MSG005
9415	050036'			ESCAPE	TST		: AND ABORT TEST		
9416	050036'	104410						TRAP	C\$ESCAPE
9417	050040'	002000						.WORD	L10052-
9418									
9419	050042'	004737	023054'	170\$:	JSR	PC,CHKRXI	: RXI ?		
9420	050046'	103006			BCC	180\$	: YES		
9421	050050'				ERRHRD	271.,	ERR015,MSG003	: NO, REPORT ERROR	
9422	050050'	104456						TRAP	C\$ERHRD
9423	050052'	000417						.WORD	271
9424	050054'	017017'						.WORD	ERR015
9425	050056'	015114'						.WORD	MSG003
9426	050060'			ESCAPE	TST		: AND ABORT TEST		
9427	050060'	104410						TRAP	C\$ESCAPE
9428	050062'	001756						.WORD	L10052-
9429									
9430	050064'	004737	023550'	180\$:	JSR	PC,CLRRXI	: WRITE ONE TO CLEAR RXI		
9431							: ERROR ?		
9432	050070'	103006			BCC	190\$	: NO		
9433	050072'				ERRHRD	272.,	ERR016,MSG003	: YES, REPORT ERROR	
9434	050072'	104456						TRAP	C\$ERHRD
9435	050074'	000420						.WORD	272
9436	050076'	017050'						.WORD	ERR016
9437	050100'	015114'						.WORD	MSG003
9438	050102'			ESCAPE	TST		: AND ABORT TEST		

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 TEST 21: PHYSICAL ADDRESS TEST

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9439 050102' 104410                                TRAP  C$ESCAPE
9440 050104' 001734                                .WORD L10052-.
9441
9442 050106' 012705 000632'           ;190$: MOV    #RDRB,R5           ; CHECK RDRB OWNERSHIP
9443 050112' 004737 022634'           JSR    PC,CHKOWN           ; OWN = PORT DRIVER ?
9444 050116' 103006                       BCC   200$                ; YES
9445 050120'                                ERRHRD 273.,ERR017        ; NO, REPORT ERROR
9446 050120' 104456                                TRAP  C$ERHRD
9447 050122' 000421                                .WORD 273
9448 050124' 017116'                                .WORD ERR017
9449 050126' 000000                                .WORD 0
9450 050130'                                ESCAPE TST                ; AND ABORT TEST
9451 050130' 104410                                TRAP  C$ESCAPE
9452 050132' 001706                                .WORD L10052-.
9453
9454 050134' 012705 012622'           ;200$: MOV    #RDR14A,R5        ; POINT TO EXPECTED RDRB
9455 050140' 004737 025110'           JSR    PC,LDXRDR          ; LOAD INTO XRDRBO TABLE
9456 050144' 012705 000632'           MOV    #RDRB,R5          ; CHECK RDRB
9457 050150' 004737 022754'           JSR    PC,CHKRDR          ; ERRORS ?
9458 050154' 103006                       BCC   210$                ; NO
9459 050156'                                ERRHRD 274.,ERR021,MSG006 ; YES, REPORT ERROR
9460 050156' 104456                                TRAP  C$ERHRD
9461 050160' 000422                                .WORD 274
9462 050162' 017457'                                .WORD ERR021
9463 050164' 015362'                                .WORD MSG006
9464 050166'                                ESCAPE TST                ; AND ABORT TEST
9465 050166' 104410                                TRAP  C$ESCAPE
9466 050170' 001650                                .WORD L10052-.
9467
9468                                     ;COMPARE RBUF WITH TBUF
9469 050172' 012705 000070           ;210$: MOV    #56.,R5         ; COMPARE 56 WORDS OF DATA
9470 050176' 004737 023732'           JSR    PC,CMPDAT          ; DATA COMPARE ERROR ?
9471 050202' 103006                       BCC   220$                ; NO
9472 050204'                                ERRHRD 275.,ERR022,MSG007 ; YES, REPORT ERROR
9473 050204' 104456                                TRAP  C$ERHRD
9474 050206' 000423                                .WORD 275
9475 050210' 017540'                                .WORD ERR022
9476 050212' 015524'                                .WORD MSG007
9477 050214'                                ESCAPE TST                ; AND ABORT TEST
9478 050214' 104410                                TRAP  C$ESCAPE
9479 050216' 001622                                .WORD L10052-.
9480
9481 050220' 012705 012732'           ;220$: MOV    #CRC21A,R5       ; POINT TO EXPECTED CRC
9482 050224' 004737 025064'           JSR    PC,LDXCRC          ; LOAD INTO XCRC TABLE
9483 050230' 012705 005266'           MOV    #RBUF+124.,R5     ; CHECK CRC
9484 050234' 004737 024012'           JSR    PC,CMPCRC          ; ERRORS ?
9485 050240' 103006                       BCC   230$                ; NO
9486 050242'                                ERRHRD 276.,ERR023,MSG008 ; YES, REPORT ERROR
9487 050242' 104456                                TRAP  C$ERHRD
9488 050244' 000424                                .WORD 276
9489 050246' 017607'                                .WORD ERR023
9490 050250' 015556'                                .WORD MSG008
9491 050252'                                ESCAPE TST                ; AND ABORT TEST
9492 050252' 104410                                TRAP  C$ESCAPE
9493 050254' 001564                                .WORD L10052-.
9494

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 CZUABA.MAC 10-JAN-83 12:46 TEST 21: PHYSICAL ADDRESS TEST

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9495 050256' 012777 000017 127742 230$: MOV #STOP,@PCSR0 ; ISSUE STOP PORT COMMAND
9496 050264' 004737 022546' JSR PC,CHKDNI ; DNI ?
9497 050270' 103006 BCC 240$ ; YES
9498 050272' ERRHRD 277.,ERR019,MSG003 ; NO, REPORT ERROR
9499 050272' 104456 TRAP C$ERHRD
9500 050274' 000425 .WORD 277
9501 050276' 017316' .WORD ERR019
9502 050300' 015114' .WORD MSG003
9503 050302' ESCAPE TST ; AND ABORT TEST
9504 050302' 104410 TRAP C$ESCAPE
9505 050304' 001534 .WORD L10052-.
9506
9507 050306' 004737 023434' 240$: JSR PC,CLRDNI ; WRITE ONE TO CLEAR DNI
9508 BCC 250$ ; ERROR ?
9509 050312' 103006 ERRHRD 278.,ERR006,MSG003 ; YES, REPORT ERROR
9510 050314' TRAP C$ERHRD
9511 050314' 104456 .WORD 278
9512 050316' 000426 .WORD ERR006
9513 050320' 016206' .WORD MSG003
9514 050322' 015114' ESCAPE TST ; AND ABORT TEST
9515 050324' TRAP C$ESCAPE
9516 050324' 104410 .WORD L10052-.
9517 050326' 001512
9518
9519 ;:DESTINATION ADDRESS NOT = PHYSICAL ADDRESS
9520
9521 ;:SET UP RINGS FOR ONE BUFFER LOOPBACK
9522 050330' 012705 011542' 250$: MOV #TDRB1A,R5 ; DEFAULT ONE BUFFER TRANSMIT RING
9523 050334' 004737 024734' JSR PC,LDTDRB ; LOAD TDRB
9524 050340' 012705 011342' MOV #RDRB1A,R5 ; DEFAULT ONE BUFFER RECEIVE RING
9525 050344' 004737 024676' JSR PC,LDRDRB ; LOAD RDRB
9526
9527 ;:SET UP BUFFERS AND START
9528 050350' 012705 012314' MOV #ADR21C,R5 ; POINT TO COMPLEMENTED ADDRESS
9529 050354' 004737 024602' JSR PC,LDDEST ; LOAD DEST
9530 050360' 004737 025230' JSR PC,SETBUF ; SET UP BUFFERS
9531 050364' 012777 000004 127634 MOV #START,@PCSR0 ; ISSUE START PORT COMMAND
9532 050372' 004737 022546' JSR PC,CHKDNI ; DNI?
9533 050376' 103006 BCC 260$ ; YES
9534 050400' ERRHRD 279.,ERR012,MSG003 ; NO, REPORT ERROR
9535 050400' 104456 TRAP C$ERHRD
9536 050402' 000427 .WORD 279
9537 050404' 016637' .WORD ERR012
9538 050406' 015114' .WORD MSG003
9539 050410' ESCAPE TST ; AND ABORT TEST
9540 050410' 104410 TRAP C$ESCAPE
9541 050412' 001426 .WORD L10052-.
9542
9543 050414' 004737 023434' 260$: JSR PC,CLRDNI ; WRITE ONE TO CLEAR DNI
9544 BCC 270$ ; ERROR ?
9545 050420' 103006 ERRHRD 280.,ERR006,MSG003 ; YES, REPORT ERROR
9546 050422' TRAP C$ERHRD
9547 050422' 104456 .WORD 280
9548 050424' 000430 .WORD ERR006
9549 050426' 016206' .WORD MSG003
9550 050430' 015114'

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9551 050432'          ESCAPE TST          ; AND ABORT TEST
9552 050432' 104410
9553 050434' 001404
9554
9555 050436' 004737 023306'      270$: JSR    PC,CHKTXI          ; TXI ?
9556 050442' 103006              BCC    280$          ; YES
9557 050444'          ERRHRD  281.,ERR013,MSG003 ; NO, REPORT ERROR
9558 050444' 104456
9559 050446' 000431
9560 050450' 016720'
9561 050452' 015114'
9562 050454'          ESCAPE TST          ; AND ABORT TEST
9563 050454' 104410
9564 050456' 001362
9565
9566 050460' 004737 023616'      280$: JSR    PC,CLRTXI          ; WRITE ONE TO CLEAR TXI
9567
9568 050464' 103006              BCC    290$          ; ERROR ?
9569 050466'          ERRHRD  282.,ERR014,MSG003 ; NO
9570 050466' 104456
9571 050470' 000432
9572 050472' 016751'
9573 050474' 015114'
9574 050476'          ESCAPE TST          ; AND ABORT TEST
9575 050476' 104410
9576 050500' 001340
9577
9578 050502' 012705 000572'      290$: MOV    #TDRB,R5          ; CHECK TDRB OWNERSHIP
9579 050506' 004737 022634'      JSR    PC,CHKOWN          ; OWN = PORT DRIVER ?
9580 050512' 103006              BCC    300$          ; YES
9581 050514'          ERRHRD  283.,ERR018          ; NO, REPORT ERROR
9582 050514' 104456
9583 050516' 000433
9584 050520' 017216'
9585 050522' 000000
9586 050524'          ESCAPE TST          ; AND ABORT TEST
9587 050524' 104410
9588 050526' 001312
9589
9590 050530' 012705 012602'      300$: MOV    #TDR21X,R5         ; POINT TO EXPECTED TDRB
9591 050534' 004737 025140'      JSR    PC,LDXTDR         ; LOAD INTO XTDRBO TABLE
9592 050540' 012705 000572'      MOV    #TDRB,R5         ; CHECK TDRB
9593 050544' 004737 023220'      JSR    PC,CHKTDR         ; ERRORS ?
9594 050550' 103006              BCC    310$          ; NO
9595 050552'          ERRHRD  284.,ERR020,MSG005 ; YES, REPORT ERROR
9596 050552' 104456
9597 050554' 000434
9598 050556' 017376'
9599 050560' 015220'
9600 050562'          ESCAPE TST          ; AND ABORT TEST
9601 050562' 104410
9602 050564' 001254
9603
9604 050566' 004737 025170'      310$: JSR    PC,NORXI          ; RXI ?
9605 050572' 103006              BCC    320$          ; NO
9606 050574'          ERRHRD  285.,ERR039          ; YES, REPORT ERROR

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9607 050574' 104456                                TRAP  C$ERHRD
9608 050576' 000435                                .WORD 285
9609 050600' 021350'                                .WORD ERR039
9610 050602' 000000                                .WORD 0
9611 050604'                                ESCAPE TST                                ; AND ABORT TEST
9612 050604' 104410                                TRAP  C$ESCAPE
9613 050606' 001232                                .WORD L10052-.
9614
9615 050610' 012777 000017 127410 320$: MOV #STOP,@PCSR0 ; ISSUE STOP PORT COMMAND
9616 050616' 004737 022546' JSR PC,CHKDNI ; DNI ?
9617 050622' 103006 BCC 330$ ; YES
9618 050624' ERRHRD 286.,ERR019,MSG003 ; NO, REPORT ERROR
9619 050624' 104456                                TRAP  C$ERHRD
9620 050626' 000436                                .WORD 286
9621 050630' 017316'                                .WORD ERR019
9622 050632' 015114'                                .WORD MSG003
9623 050634'                                ESCAPE TST                                ; AND ABORT TEST
9624 050634' 104410                                TRAP  C$ESCAPE
9625 050636' 001202                                .WORD L10052-.
9626
9627 050640' 004737 023434' 330$: JSR PC,CLRDNI ; WRITE ONE TO CLEAR DNI
9628 ; ERROR ?
9629 050644' 103006 BCC 340$ ; NO
9630 050646' ERRHRD 287.,ERR006,MSG003 ; YES, REPORT ERROR
9631 050646' 104456                                TRAP  C$ERHRD
9632 050650' 000437                                .WORD 287
9633 050652' 016206'                                .WORD ERR006
9634 050654' 015114'                                .WORD MSG003
9635 050656'                                ESCAPE TST                                ; AND ABORT TEST
9636 050658' 104410                                TRAP  C$ESCAPE
9637 050660' 001160                                .WORD L10052-.
9638
9639 ; REPEAT WITH COMPLEMENTED PHYSICAL ADDRESS
9640
9641 ; WRITE PHYSICAL ADDRESS
9642 050662' 012705 011132' 340$: MOV #WTPHYA,R5 ; DEFAULT WRITE PHYSICAL ADDR FUNC
9643 050666' 004737 024630' JSR PC,LDPCBB ; LOAD FUNCTION -> PCBB
9644 ; LOAD COMPLIMENTED PHYSICAL ADDRESS
9645 050672' 012703 012314' MOV #ADR21C,R3 ; POINT TO PHYSICAL ADDRESS
9646 050676' 012704 000254' MOV #PCBB+2,R4 ; POINT TO PCBB + 2
9647 050702' 012324 MOV (R3)+,(R4)+ ; LOAD ADDRESS
9648 050704' 012324 MOV (R3)+,(R4)+
9649 050706' 012324 MOV (R3)+,(R4)+
9650 050710' 012777 000002 127310 MOV #GETCMD,@PCSR0 ; ISSUE GET_CMD PORT COMMAND
9651 050716' 004737 022546' JSR PC,CHKDNI ; DNI ?
9652 050722' 103006 BCC 350$ ; YES
9653 050724' ERRHRD 288.,ERR010,MSG003 ; NO, REPORT ERROR
9654 050724' 104456                                TRAP  C$ERHRD
9655 050726' 000440                                .WORD 288
9656 050730' 016506'                                .WORD ERR010
9657 050732' 015114'                                .WORD MSG003
9658 050734'                                ESCAPE TST                                ; AND ABORT TEST
9659 050734' 104410                                TRAP  C$ESCAPE
9660 050736' 001102                                .WORD L10052-.
9661
9662 050740' 004737 023434' 350$: JSR PC,CLRDNI ; WRITE ONE TO CLEAR DNI

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9663                                     : ERROR ?
9664 050744' 103006                     BCC 360$
9665 050746'                               ERRHRD 289.,ERR006,MSG003
9666 050746' 104456                                     : YES, REPORT ERROR
9667 050750' 000441                                     TRAP C$ERHRD
9668 050752' 016206'                                     .WORD 289
9669 050754' 015114'                                     .WORD ERR006
9670 050756'                               ESCAPE TST                                     .WORD MSG003
9671 050756' 104410                                     : AND ABORT TEST
9672 050760' 001060                                     TRAP C$ESCAPE
9673                                     :                                     .WORD L10052-.
9674                                     :SET UP RINGS FOR ONE BUFFER LOOPBACK
9675 050762' 012705 011542' 360$: MOV #TDRB1A,R5                                     : DEFAULT ONE BUFFER TRANSMIT RING
9676 050766' 004737 024734' JSR PC,LDTDRB                                     : LOAD TDRB
9677 050772' 012705 011342' MOV #RDRB1A,R5                                     : DEFAULT ONE BUFFER RECEIVE RING
9678 050776' 004737 024676' JSR PC,LDRDRB                                     : LOAD RDRB
9679
9680                                     :SET UP BUFFERS AND START
9681 051002' 012705 000254' MOV #PCBB+2,R5                                     : POINT TO DESTINATION ADDRESS
9682 051006' 004737 024602' JSR PC,LDDEST                                     : LOAD DEST
9683 051012' 004737 025230' JSR PC,SETBUF                                     : SET UP BUFFERS
9684 051016' 012777 000004' 127202 MOV #START,@PCSR0                                     : ISSUE START PORT COMMAND
9685 051024' 004737 022546' JSR PC,CHKDNI                                     : DNI?
9686 051030' 103006 BCC 370$
9687 051032'                               ERRHRD 290.,ERR012,MSG003
9688 051032' 104456                                     : NO, REPORT ERROR
9689 051034' 000442                                     TRAP C$ERHRD
9690 051036' 016637'                                     .WORD 290
9691 051040' 015114'                                     .WORD ERR012
9692 051042'                               ESCAPE TST                                     .WORD MSG003
9693 051042' 104410                                     : AND ABORT TEST
9694 051044' 000774                                     TRAP C$ESCAPE
9695                                     :                                     .WORD L10052-.
9696 051046' 004737 023434' 370$: JSR PC,CLRDN1                                     : WRITE ONE TO CLEAR DNI
9697                                     : ERROR ?
9698 051052' 103006 BCC 380$
9699 051054'                               ERRHRD 291.,ERR006,MSG003
9700 051054' 104456                                     : YES, REPORT ERROR
9701 051056' 000443                                     TRAP C$ERHRD
9702 051060' 016206'                                     .WORD 291
9703 051062' 015114'                                     .WORD ERR006
9704 051064'                               ESCAPE TST                                     .WORD MSG003
9705 051064' 104410                                     : AND ABORT TEST
9706 051066' 000752                                     TRAP C$ESCAPE
9707                                     :                                     .WORD L10052-.
9708 051070' 004737 023306' 380$: JSR PC,CHKTXI                                     : TXI ?
9709 051074' 103006 BCC 390$
9710 051076'                               ERRHRD 292.,ERR013,MSG003
9711 051076' 104456                                     : YES
9712 051100' 000444                                     : NO, REPORT ERROR
9713 051102' 016720'                                     TRAP C$ERHRD
9714 051104' 015114'                                     .WORD 292
9715 051106'                               ESCAPE TST                                     .WORD ERR013
9716 051106' 104410                                     : AND ABORT TEST                                     .WORD MSG003
9717 051110' 000730                                     TRAP C$ESCAPE
9718                                     :                                     .WORD L10052-.

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9719	051112'	004737	023616'	390\$:	JSR	PC,CLRTXI	:	WRITE ONE TO CLEAR TXI		
9720							:	ERROR ?		
9721	051116'	103006			BCC	400\$	:	NO		
9722	051120'				ERRHRD	293.,ERR014,MSG003	:	YES, REPORT ERROR		
9723	051120'	104456							TRAP	C\$ERHRD
9724	051122'	000445							.WORD	293
9725	051124'	016751'							.WORD	ERR014
9726	051126'	015114'							.WORD	MSG003
9727	051130'				ESCAPE	TST	:	AND ABORT TEST		
9728	051130'	104410							TRAP	C\$ESCAPE
9729	051132'	000706							.WORD	L10052-.
9730										
9731	051134'	012705	000572'	400\$:	MOV	#TDRB,R5	:	CHECK TDRB OWNERSHIP		
9732	051140'	004737	022634'		JSR	PC,CHKOWN	:	OWN = PORT DRIVER ?		
9733	051144'	103006			BCC	410\$	:	YES		
9734	051146'				ERRHRD	294.,ERR018	:	NO, REPORT ERROR		
9735	051146'	104456							TRAP	C\$ERHRD
9736	051150'	000446							.WORD	294
9737	051152'	017216'							.WORD	ERR018
9738	051154'	000000							.WORD	0
9739	051156'				ESCAPE	TST	:	AND ABORT TEST		
9740	051156'	104410							TRAP	C\$ESCAPE
9741	051160'	000660							.WORD	L10052-.
9742										
9743	051162'	012705	012512'	410\$:	MOV	#TDR14A,R5	:	POINT TO EXPECTED TDRB		
9744	051166'	004737	025140'		JSR	PC,LDXTDR	:	LOAD INTO XTDRB0 TABLE		
9745	051172'	012705	000572'		MOV	#TDRB,R5	:	CHECK TDRB		
9746	051176'	004737	023220'		JSR	PC,CHKTDR	:	ERRORS ?		
9747	051202'	103006			BCC	420\$	:	NO		
9748	051204'				ERRHRD	295.,ERR020,MSG005	:	YES, REPORT ERROR		
9749	051204'	104456							TRAP	C\$ERHRD
9750	051206'	000447							.WORD	295
9751	051210'	017376'							.WORD	ERR020
9752	051212'	015220'							.WORD	MSG005
9753	051214'				ESCAPE	TST	:	AND ABORT TEST		
9754	051214'	104410							TRAP	C\$ESCAPE
9755	051216'	000622							.WORD	L10052-.
9756										
9757	051220'	004737	023054'	420\$:	JSR	PC,CHKRXI	:	RXI ?		
9758	051224'	103006			BCC	430\$	:	YES		
9759	051226'				ERRHRD	296.,ERR015,MSG003	:	NO, REPORT ERROR		
9760	051226'	104456							TRAP	C\$ERHRD
9761	051230'	000450							.WORD	296
9762	051232'	017017'							.WORD	ERR015
9763	051234'	015114'							.WORD	MSG003
9764	051236'				ESCAPE	TST	:	AND ABORT TEST		
9765	051236'	104410							TRAP	C\$ESCAPE
9766	051240'	000600							.WORD	L10052-.
9767										
9768	051242'	004737	023550'	430\$:	JSR	PC,CLRRXI	:	WRITE ONE TO CLEAR RXI		
9769										
9770	051246'	103006			BCC	440\$	:	ERROR ?		
9771	051250'				ERRHRD	297.,ERR016,MSG003	:	NO		
9772	051250'	104456								
9773	051252'	000451							TRAP	C\$ERHRD
9774	051254'	017050'							.WORD	297
									.WORD	ERR016



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9775 051256' 015114'
9776 051260'
9777 051260' 104410
9778 051262' 000556
9779
9780 051264' 012705 000632' 440$: MOV #RDRB,R5 ; CHECK RDRB OWNERSHIP
9781 051270' 004737 022634' JSR PC,CHKOWN ; OWN = PORT DRIVER ?
9782 051274' 103006 BCC 450$ ; YES
9783 051276' ERRHRD 298.,ERR017 ; NO, REPORT ERROR
9784 051276' 104456 TRAP C$ERHRD
9785 051300' 000452 .WORD 298
9786 051302' 017116' .WORD ERR017
9787 051304' 000000 .WORD 0
9788 051306' ESCAPE TST ; AND ABORT TEST
9789 051306' 104410 TRAP C$ESCAPE
9790 051310' 000530 .WORD L10052-.
9791
9792 051312' 012705 012622' 450$: MOV #RDR14A,R5 ; POINT TO EXPECTED RDRB
9793 051316' 004737 025110' JSR PC,LDXRDR ; LOAD INTO XRDRBO TABLE
9794 051322' 012705 000632' MOV #RDRB,R5 ; CHECK RDRB
9795 051326' 004737 022754' JSR PC,CHKRDR ; ERRORS ?
9796 051332' 103006 BCC 460$ ; NO
9797 051334' ERRHRD 299.,ERR021,MSG006 ; YES, REPORT ERROR
9798 051334' 104456 TRAP C$ERHRD
9799 051336' 000453 .WORD 299
9800 051340' 017457' .WORD ERR021
9801 051342' 015362' .WORD MSG006
9802 051344' ESCAPE TST ; AND ABORT TEST
9803 051344' 104410 TRAP C$ESCAPE
9804 051346' 000472 .WORD L10052-.
9805
9806 ; COMPARE RBUF WITH TBUF
9807 051350' 012705 000070 460$: MOV #56.,R5 ; COMPARE 56 WORDS OF DATA
9808 051354' 004737 023732' JSR PC,CMPDAT ; DATA COMPARE ERROR ?
9809 051360' 103006 BCC 470$ ; NO
9810 051362' ERRHRD 300.,ERR022,MSG007 ; YES, REPORT ERROR
9811 051362' 104456 TRAP C$ERHRD
9812 051364' 000454 .WORD 300
9813 051366' 017540' .WORD ERR022
9814 051370' 015524' .WORD MSG007
9815 051372' ESCAPE TST ; AND ABORT TEST
9816 051372' 104410 TRAP C$ESCAPE
9817 051374' 000444 .WORD L10052-.
9818
9819 051376' 012705 012736' 470$: MOV #CRC21B,R5 ; POINT TO EXPECTED CRCB
9820 051402' 004737 025064' JSR PC,LDXCRC ; LOAD INTO XCRC TABLE
9821 051406' 012705 005266' MOV #RBUF+124.,R5 ; CHECK CRC
9822 051412' 004737 024012' JSR PC,CMPCRC ; ERRORS ?
9823 051416' 103006 BCC 480$ ; NO
9824 051420' ERRHRD 301.,ERR023,MSG008 ; YES, REPORT ERROR
9825 051420' 104456 TRAP C$ERHRD
9826 051422' 000455 .WORD 301
9827 051424' 017607' .WORD ERR023
9828 051426' 015556' .WORD MSG008
9829 051430' ESCAPE TST ; AND ABORT TEST
9830 051430' 104410 TRAP C$ESCAPE

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9831 051432' 000406                                .WORD  L10052-.
9832
9833 051434' 012777 000017 126564 480$:  MOV    #STOP,@PCSR0      : ISSUE STOP PORT COMMAND
9834 051442' 004737 022546'                JSR    PC,CHKDNI          : DNI ?
9835 051446' 103006                        BCC    490$              : YES
9836 051450'                                ERRHRD 302.,ERR019,MSG003 : NO, REPORT ERROR
9837 051450' 104456                                TRAP   C$ERHRD
9838 051452' 000456                                .WORD  302
9839 051454' 017316'                                .WORD  ERR019
9840 051456' 015114'                                .WORD  MSG003
9841 051460'                                ESCAPE TST              : AND ABORT TEST
9842 051460' 104410                                TRAP   C$ESCAPE
9843 051462' 000356                                .WORD  L10052-.
9844
9845 051464' 004737 023434'                490$:  JSR    PC,CLRDN1      : WRITE ONE TO CLEAR DNI
9846                                         : ERROR ?
9847 051470' 103006                        BCC    500$              : NO
9848 051472'                                ERRHRD 303.,ERR006,MSG003 : YES, REPORT ERROR
9849 051472' 104456                                TRAP   C$ERHRD
9850 051474' 000457                                .WORD  303
9851 051476' 016206'                                .WORD  ERR006
9852 051500' 015114'                                .WORD  MSG003
9853 051502'                                ESCAPE TST              : AND ABORT TEST
9854 051502' 104410                                TRAP   C$ESCAPE
9855 051504' 000334                                .WORD  L10052-.
9856
9857                                         : DESTINATION ADDRESS NOT = PHYSICAL ADDRESS
9858
9859                                         : SET UP RINGS FOR ONE BUFFER LOOPBACK
9860 051506' 012705 011542'                500$:  MOV    #TDRB1A,R5      : DEFAULT ONE BUFFER TRANSMIT RING
9861 051512' 004737 024734'                JSR    PC,LDTDRB         : LOAD TDRB
9862 051516' 012705 011342'                MOV    #RDRB1A,R5       : DEFAULT ONE BUFFER RECEIVE RING
9863 051522' 004737 024676'                JSR    PC,LDRDRB         : LOAD RDRB
9864
9865                                         : SET UP BUFFERS AND START
9866 051526' 012705 012306'                MOV    #ADR21,R5        : COMPLIMENT DESTINATION ADDRESS
9867 051532' 004737 024602'                JSR    PC,LDDDEST       : LOAD DEST
9868 051536' 004737 025230'                JSR    PC,SETBUF        : SET UP BUFFERS
9869 051542' 012777 000004 126456          MOV    #START,@PCSR0    : ISSUE START PORT COMMAND
9870 051550' 004737 022546'                JSR    PC,CHKDNI        : DNI?
9871 051554' 103006                        BCC    510$              : YES
9872 051556'                                ERRHRD 304.,ERR012,MSG003 : NO, REPORT ERROR
9873 051556' 104456                                TRAP   C$ERHRD
9874 051560' 000460                                .WORD  304
9875 051562' 016637'                                .WORD  ERR012
9876 051564' 015114'                                .WORD  MSG003
9877 051566'                                ESCAPE TST              : AND ABORT TEST
9878 051566' 104410                                TRAP   C$ESCAPE
9879 051570' 000250                                .WORD  L10052-.
9880
9881 051572' 004737 023434'                510$:  JSR    PC,CLRDN1      : WRITE ONE TO CLEAR DNI
9882                                         : ERROR ?
9883 051576' 103006                        BCC    520$              : NO
9884 051600'                                ERRHRD 305.,ERR006,MSG003 : YES, REPORT ERROR
9885 051600' 104456                                TRAP   C$ERHRD
9886 051602' 000461                                .WORD  305

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9887	051604'	016206'					.WORD	ERR006
9888	051606'	015114'					.WORD	MSG003
9889	051610'			ESCAPE	TST			: AND ABORT TEST
9890	051610'	104410					TRAP	C\$ESCAPE
9891	051612'	000226					.WORD	L10052-.
9892								
9893	051614'	004737	023306'	520\$:	JSR	PC,CHKTXI		: TXI ?
9894	051620'	103006			BCC	530\$		: YES
9895	051622'				ERRHRD	306.,ERR013,MSG003		: NO, REPORT ERROR
9896	051622'	104456					TRAP	C\$ERHRD
9897	051624'	000462					.WORD	306
9898	051626'	016720'					.WORD	ERR013
9899	051630'	015114'					.WORD	MSG003
9900	051632'			ESCAPE	TST			: AND ABORT TEST
9901	051632'	104410					TRAP	C\$ESCAPE
9902	051634'	000204					.WORD	L10052-.
9903								
9904	051636'	004737	023616'	530\$:	JSR	PC,CLRTXI		: WRITE ONE TO CLEAR TXI
9905								: ERROR ?
9906	051642'	103006			BCC	540\$		: NO
9907	051644'				ERRHRD	307.,ERR014,MSG003		: YES, REPORT ERROR
9908	051644'	104456					TRAP	C\$ERHRD
9909	051646'	000463					.WORD	307
9910	051650'	016751'					.WORD	ERR014
9911	051652'	015114'					.WORD	MSG003
9912	051654'			ESCAPE	TST			: AND ABORT TEST
9913	051654'	104410					TRAP	C\$ESCAPE
9914	051656'	000162					.WORD	L10052-.
9915								
9916	051660'	012705	000572'	540\$:	MOV	#TDRB,R5		: CHECK TDRB OWNERSHIP
9917	051664'	004737	022634'		JSR	PC,CHKOWN		: OWN = PORT DRIVER ?
9918	051670'	103006			BCC	550\$		: YES
9919	051672'				ERRHRD	308.,ERR018		: NO, REPORT ERROR
9920	051672'	104456					TRAP	C\$ERHRD
9921	051674'	000464					.WORD	308
9922	051676'	017216'					.WORD	ERR018
9923	051700'	000000					.WORD	0
9924	051702'			ESCAPE	TST			: AND ABORT TEST
9925	051702'	104410					TRAP	C\$ESCAPE
9926	051704'	000134					.WORD	L10052-.
9927								
9928	051706'	012705	012602'	550\$:	MOV	#TDR21X,R5		: POINT TO EXPECTED TDRB
9929	051712'	004737	025140'		JSR	PC,LDXTDR		: LOAD INTO XTDRB0 TABLE
9930	051716'	012705	000572'		MOV	#TDRB,R5		: CHECK TDRB
9931	051722'	004737	023220'		JSR	PC,CHKTDR		: ERRORS ?
9932	051726'	103006			BCC	560\$		: NO
9933	051730'				ERRHRD	309.,ERR020,MSG005		: YES, REPORT ERROR
9934	051730'	104456					TRAP	C\$ERHRD
9935	051732'	000465					.WORD	309
9936	051734'	017376'					.WORD	ERR020
9937	051736'	015220'					.WORD	MSG005
9938	051740'			ESCAPE	TST			: AND ABORT TEST
9939	051740'	104410					TRAP	C\$ESCAPE
9940	051742'	000076					.WORD	L10052-.
9941								
9942	051744'	004737	025170'	560\$:	JSR	PC,NORXI		: RXI ?

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9943 051750' 103006          BCC      570$          ; NO
9944 051752'          ERRHRD  310.,ERR039   ; YES, REPORT ERROR
9945 051752' 104456          TRAP    C$ERHRD
9946 051754' 000466          .WORD  310
9947 051756' 021350'          .WORD  ERR039
9948 051760' 000000          .WORD  0
9949 051762'          ESCAPE  TST          ; AND ABORT TEST
9950 051762' 104410          TRAP    C$ESCAPE
9951 051764' 000054          .WORD  L10052-.
9952
9953 051766' 012777 000017 126232 570$: MOV    #STOP,@PCSR0   ; ISSUE STOP PORT COMMAND
9954 051774' 004737 022546' JSR    PC,CHKDNI     ; DNI ?
9955 052000' 103006          BCC      580$          ; YES
9956 052002'          ERRHRD  311.,ERR019,MSG003 ; NO, REPORT ERROR
9957 052002' 104456          TRAP    C$ERHRD
9958 052004' 000467          .WORD  311
9959 052006' 017316'          .WORD  ERR019
9960 052010' 015114'          .WORD  MSG003
9961 052012'          ESCAPE  TST          ; AND ABORT TEST
9962 052012' 104410          TRAP    C$ESCAPE
9963 052014' 000024          .WORD  L10052-.
9964
9965 052016' 004737 023434' 580$: JSR    PC,CLRDN1   ; WRITE ONE TO CLEAR DNI
9966          .WORD  ERROR ?
9967 052022' 103006          BCC      590$          ; NO
9968 052024'          ERRHRD  312.,ERR006,MSG003 ; YES, REPORT ERROR
9969 052024' 104456          TRAP    C$ERHRD
9970 052026' 000470          .WORD  312
9971 052030' 016206'          .WORD  ERR006
9972 052032' 015114'          .WORD  MSG003
9973 052034'          ESCAPE  TST          ; AND ABORT TEST
9974 052034' 104410          TRAP    C$ESCAPE
9975 052036' 000002          .WORD  L10052-.
9976 052040'          590$:
9977 052040'          ENDTST
9978 052040'
9979 052040' 104401          L10052: TRAP    C$ETST

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TEST 22: MULTICAST ADDRESS TEST

.SBTTL TEST 22: MULTICAST ADDRESS TEST

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*****
THIS TEST VERIFIES THAT MULTICAST ADDRESSING
IS OPERATIONAL.
A WRITE MULTICAST ADDRESS LIST FUNCTION IS USED TO SET
THE DEUNA'S MULTICAST ADDRESS LIST.
INTERNAL LOOPBACKS ARE THEN PERFORMED WITH
CURRENTLY ENABLED AND THEN CURRENTLY DISABLED
MULTICAST DESTINATION ADDRESSES.
THE MULTICAST ADDRESS LIST IS THEN COMPLEMENTED AND THE
TEST IS REPEATED.

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

```

```

052042'
052042'
052042' 004737 025334'
052046' 103025
052050' 012777 000040 126150
052056' 004737 022546'
052062' 103006
052064'
052064' 104456
052066' 000471
052070' 016106'
052072' 015114'
052074'
052074' 104410
052076' 003016
052100' 004737 023434'
052104' 103006
052106'

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```

BGNTST
T22::
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, REPORT ERROR
TRAP C$ERHRD
.WORD 313
.WORD ERR004
.WORD MSG003
ESCAPE TST ; AND ABORT TEST
TRAP C$ESCAPE
.WORD L10053-.
20$: JSR PC,CLRDNI ; WRITE ONE TO CLEAR DNI
; ERROR ?
BCC 30$ ; NO
ERRHRD 314.,ERR006,MSG003 ; YES, REPORT ERROR

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10036 052106' 104456 TRAP C$ERHRD
10037 052110' 000472 .WORD 314
10038 052112' 016206' .WORD ERR006
10039 052114' 015114' .WORD MSG003
10040 052116' ESCAPE TST ; AND ABORT TEST
10041 052116' 104410 TRAP C$ESCAPE
10042 052120' 002774 .WORD L10053-.
10043
10044 052122' 004737 024660' 30$: JSR PC,LDPCSR ; ADDRESS OF PCBB -> PCSR2!3
10045 052126' 012777 000001 126072 MOV #GETPCB,@PCSR0 ; ISSUE GET_PCBB PORT COMMAND
10046 052134' 004737 022546' JSR PC,CHKDNI ; DNI?
10047 052140' 103006 BCC 40$ ; YES
10048 052142' ERRHRD 315.,ERR009,MSG003 ; NO, REPORT ERROR
10049 052142' 104456 TRAP C$ERHRD
10050 052144' 000473 .WORD 315
10051 052146' 016422' .WORD ERR009
10052 052150' 015114' .WORD MSG003
10053 052152' ESCAPE TST ; AND ABORT TEST
10054 052152' 104410 TRAP C$ESCAPE
10055 052154' 002740 .WORD L10053-.
10056
10057 052156' 004737 023434' 40$: JSR PC,CLRDNI ; WRITE ONE TO CLEAR DNI
10058 BCC 50$ ; ERROR ?
10059 052162' 103006 ERRHRD 316.,ERR006,MSG003 ; NO
10060 052164' ; YES, REPORT ERROR
10061 052164' 104456 TRAP C$ERHRD
10062 052166' 000474 .WORD 316
10063 052170' 016206' .WORD ERR006
10064 052172' 015114' .WORD MSG003
10065 052174' ESCAPE TST ; AND ABORT TEST
10066 052174' 104410 TRAP C$ESCAPE
10067 052176' 002716 .WORD L10053-.
10068
10069 ;WRITE MODE REGISTER = INTERNAL LOOPBACK
10070 052200' 012705 011232' 50$: MOV #WTMODE,R5 ; DEFAULT WRITE MODE FUNCTION
10071 052204' 004737 024630' JSR PC,LDPCBB ; LOAD FUNCTION -> PCBB
10072 052210' 013737 013104' 000254' MOV MODE21,PCBB+2 ; MODE = INTL LOOPBACK ONLY
10073 052216' 012777 000002 126002 MOV #GETCMD,@PCSR0 ; ISSUE GET_CMD PORT COMMAND
10074 052224' 004737 022546' JSR PC,CHKDNI ; DNI ?
10075 052230' 103006 BCC 60$ ; YES
10076 052232' ERRHRD 317.,ERR010,MSG003 ; NO, REPORT ERROR
10077 052232' 104456 TRAP C$ERHRD
10078 052234' 000475 .WORD 317
10079 052236' 016506' .WORD ERR010
10080 052240' 015114' .WORD MSG003
10081 052242' ESCAPE TST ; AND ABORT TEST
10082 052242' 104410 TRAP C$ESCAPE
10083 052244' 002650 .WORD L10053-.
10084
10085 052246' 004737 023434' 60$: JSR PC,CLRDNI ; WRITE ONE TO CLEAR DNI
10086 BCC 70$ ; ERROR ?
10087 052252' 103006 ERRHRD 318.,ERR006,MSG003 ; NO
10088 052254' ; YES, REPORT ERROR
10089 052254' 104456 TRAP C$ERHRD
10090 052256' 000476 .WORD 318
10091 052260' 016206' .WORD ERR006

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10092 052262' 015114'                                     .WORD  MSG003
10093 052264'                                     ESCAPE TST ; AND ABORT TEST
10094 052264' 104410                                     TRAP    C$ESCAPE
10095 052266' 002626                                     .WORD  L10053-.
10096
10097
10098 052270' 012705 011172'   ;WRITE RING FORMAT
10099 052274' 004737 024630'   70$:  MOV    #WTRNGS,R5           ; DEFAULT WRITE RING FORMAT FUNCTION
10100 052300' 012705 011312'   JSR    PC,LDPCBB           ; LOAD FUNCTION -> PCBB
10101 052304' 012700 000006'   MOV    #RFRMT,R5         ; DEFAULT RING FORMAT
10102 052310' 004737 025030'   MOV    #6,R0             ; FORMAT = SIX WORDS
10103 052314' 012777 000002'   JSR    PC,LDUDBB         ; LOAD RING FORMAT -> UDBB
10104 052322' 004737 022546'   MOV    #GETCMD,@PCSRO    ; ISSUE GET_CMD PORT COMMAND
10105 052326' 103006                                     JSR    PC,CHKDNI         ; DNI ?
10106 052330'                                     BCC    80$               ; YES
10107 052330' 104456                                     ERRHRD 319.,ERR010,MSG003 ; NO, REPORT ERROR
10108 052332' 000477                                     TRAP    C$ERHRD
10109 052334' 016506'                                     .WORD  319
10110 052336' 015114'                                     .WORD  ERR010
10111 052340'                                     .WORD  MSG003
10112 052340' 104410                                     ESCAPE TST ; AND ABORT TEST
10113 052342' 002552                                     TRAP    C$ESCAPE
10114                                     .WORD  L10053-.
10115 052344' 004737 023434'   80$:  JSR    PC,CLRDNI           ; WRITE ONE TO CLEAR DNI
10116                                     ; ERROR ?
10117 052350' 103006                                     BCC    90$               ; NO
10118 052352'                                     ERRHRD 320.,ERR006,MSG003 ; YES, REPORT ERROR
10119 052352' 104456                                     TRAP    C$ERHRD
10120 052354' 000500                                     .WORD  320
10121 052356' 016206'                                     .WORD  ERR006
10122 052360' 015114'                                     .WORD  MSG003
10123 052362'                                     ESCAPE TST ; AND ABORT TEST
10124 052362' 104410                                     TRAP    C$ESCAPE
10125 052364' 002530                                     .WORD  L10053-.
10126
10127
10128 052366' 012705 011132'   ;WRITE PHYSICAL ADDRESS
10129 052372' 004737 024630'   90$:  MOV    #WTPHYA,R5          ; DEFAULT WRITE PHYSICAL ADDR FUNC
10130 052376' 012777 000002'   JSR    PC,LDPCBB         ; LOAD FUNCTION -> PCBB
10131 052404' 004737 022546'   MOV    #GETCMD,@PCSRO    ; ISSUE GET_CMD PORT COMMAND
10132 052410' 103006                                     JSR    PC,CHKDNI         ; DNI ?
10133 052412'                                     BCC    100$              ; YES
10134 052412' 104456                                     ERRHRD 321.,ERR010,MSG003 ; NO, REPORT ERROR
10135 052414' 000501                                     TRAP    C$ERHRD
10136 052416' 016506'                                     .WORD  321
10137 052420' 015114'                                     .WORD  ERR010
10138 052422'                                     .WORD  MSG003
10139 052422' 104410                                     ESCAPE TST ; AND ABORT TEST
10140 052424' 002470                                     TRAP    C$ESCAPE
10141                                     .WORD  L10053-.
10142 052426' 004737 023434'   100$: JSR    PC,CLRDNI           ; WRITE ONE TO CLEAR DNI
10143                                     ; ERROR ?
10144 052432' 103006                                     BCC    102$              ; NO
10145 052434'                                     ERRHRD 322.,ERR006,MSG003 ; YES, REPORT ERROR
10146 052434' 104456                                     TRAP    C$ERHRD
10147 052436' 000502                                     .WORD  322

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10148 052440' 016206' .WORD ERRO06
10149 052442' 015114' .WORD MSG003
10150 052444' ESCAPE TST ; AND ABORT TEST
10151 052444' 104410 TRAP C$ESCAPE
10152 052446' 002446 .WORD L10053-.
10153
10154 ;WRITE MULTICAST ADDRESS LIST
10155 052450' 012705 011152' 102$: MOV #WTMULA,R5 ; DEFAULT WRITE MULTICAST ADDR FUNC
10156 052454' 004737 024630' JSR PC,LDPCBB ; LOAD FUNCTION -> PCBB
10157 052460' 012705 012322' MOV #MULTL,R5 ; LOAD LIST INTO UDBB
10158 052464' 012700 000036 MOV #30.,R0 ; LOAD 30 ENTRIES
10159 052470' 004737 025030' JSR PC,LDUDBB ; MULTICAST LIST -> UDBB
10160 052474' 012777 000002 125524 MOV #GETCMD,@PCSR0 ; ISSUE GET_CMD PORT COMMAND
10161 052502' 004737 022546' JSR PC,CHKDNI ; DNI ?
10162 052506' 103006 BCC 104$ ; YES
10163 052510' ERRHRD 323.,ERR010,MSG003 ; NO, REPORT ERROR
10164 052510' 104456 TRAP C$ERHRD
10165 052512' 000503 .WORD 323
10166 052514' 016506' .WORD ERR010
10167 052516' 015114' .WORD MSG003
10168 052520' ESCAPE TST ; AND ABORT TEST
10169 052520' 104410 TRAP C$ESCAPE
10170 052522' 002372 .WORD L10053-.
10171
10172 052524' 004737 023434' 104$: JSR PC,CLR DNI ; WRITE ONE TO CLEAR DNI
10173 BCC 106$ ; ERROR ?
10174 052530' 103006 ERRHRD 324.,ERR006,MSG003 ; YES, REPORT ERROR
10175 052532' TRAP C$ERHRD
10176 052532' 104456 .WORD 324
10177 052534' 000504 .WORD ERRO06
10178 052536' 016206' .WORD MSG003
10179 052540' 015114'
10180 052542' ESCAPE TST ; AND ABORT TEST
10181 052542' 104410 TRAP C$ESCAPE
10182 052544' 002350 .WORD L10053-.
10183
10184 ;DO TEN LOOPS WITH DEST ADDR = MULTICAST ADDRESS
10185
10186 052546' 012701 000012 106$: MOV #10.,R1 ; DO LOOP = TEN
10187 052552' 012702 012322' MOV #MULTL,R2 ; R2 POINTS TO MULTICAST LIST
10188 052556' 012703 012742' MOV #CRC22A,R3 ; R3 POINTS TO EXPECTED CRC TABLE
10189
10190 ;SET UP RINGS FOR ONE BUFFER LOOPBACK
10191 052562' 012705 011542' 110$: MOV #TDRB1A,R5 ; DEFAULT ONE BUFFER TRANSMIT RING
10192 052566' 004737 024734' JSR PC,LDTDRB ; LOAD TDRB
10193 052572' 012705 011342' MOV #RDRB1A,R5 ; DEFAULT ONE BUFFER RECEIVE RING
10194 052576' 004737 024676' JSR PC,LDRDRB ; LOAD RDRB
10195
10196 ;SET UP BUFFERS AND START
10197 052602' 010205 MOV R2,R5 ; POINT TO DESTINATION ADDRESS
10198 052604' 004737 024602' JSR PC,LDDEST ; LOAD DEST
10199 052610' 004737 025230' JSR PC,SETBUF ; SET UP BUFFERS
10200 052614' 012777 000004 125404 MOV #START,@PCSR0 ; ISSUE START PORT COMMAND
10201 052622' 004737 022546' JSR PC,CHKDNI ; DNI?
10202 052626' 103006 BCC 120$ ; YES
10203 052630' ERRHRD 325.,ERR012,MSG003 ; NO, REPORT ERROR

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 CZUABA.MAC 10-JAN-83 12:46 TEST 22: MULTICAST ADDRESS TEST

10204	052630'	104456				TRAP	C\$ERHRD
10205	052632'	000505				.WORD	325
10206	052634'	016637'				.WORD	ERR012
10207	052636'	015114'				.WORD	MSG003
10208	052640'			ESCAPE TST			; AND ABORT TEST
10209	052640'	104410				TRAP	C\$ESCAPE
10210	052642'	002252				.WORD	L10053-
10211							
10212	052644'	004737	023434'	i20\$:	JSR PC,CLRDNI		; WRITE ONE TO CLEAR DNI
10213							; ERROR ?
10214	052650'	103006			BCC 130\$		; NO
10215	052652'				ERRHRD 326.,ERR006,MSG003		; YES, REPORT ERROR
10216	052652'	104456				TRAP	C\$ERHRD
10217	052654'	000506				.WORD	326
10218	052656'	016206'				.WORD	ERR006
10219	052660'	015114'				.WORD	MSG003
10220	052662'			ESCAPE TST			; AND ABORT TEST
10221	052662'	104410				TRAP	C\$ESCAPE
10222	052664'	002230				.WORD	L10053-
10223							
10224	052666'	004737	023306'	i30\$:	JSR PC,CHKTXI		; TXI ?
10225	052672'	103006			BCC 140\$		; YES
10226	052674'				ERRHRD 327.,ERR013,MSG003		; NO, REPORT ERROR
10227	052674'	104456				TRAP	C\$ERHRD
10228	052676'	000507				.WORD	327
10229	052700'	016720'				.WORD	ERR013
10230	052702'	015114'				.WORD	MSG003
10231	052704'			ESCAPE TST			; AND ABORT TEST
10232	052704'	104410				TRAP	C\$ESCAPE
10233	052706'	002206				.WORD	L10053-
10234							
10235	052710'	004737	023616'	i40\$:	JSR PC,CLRTXI		; WRITE ONE TO CLEAR TXI
10236							; ERROR ?
10237	052714'	103006			BCC 150\$		; NO
10238	052716'				ERRHRD 328.,ERR014,MSG003		; YES, REPORT ERROR
10239	052716'	104456				TRAP	C\$ERHRD
10240	052720'	000510				.WORD	328
10241	052722'	016751'				.WORD	ERR014
10242	052724'	015114'				.WORD	MSG003
10243	052726'			ESCAPE TST			; AND ABORT TEST
10244	052726'	104410				TRAP	C\$ESCAPE
10245	052730'	002164				.WORD	L10053-
10246							
10247	052732'	012705	000572'	i50\$:	MOV #TDRB,R5		; CHECK TDRB OWNERSHIP
10248	052736'	004737	022634'		JSR PC,CHKOWN		; OWN = PORT DRIVER ?
10249	052742'	103006			BCC 160\$		; YES
10250	052744'				ERRHRD 329.,ERR018		; NO, REPORT ERROR
10251	052744'	104456				TRAP	C\$ERHRD
10252	052746'	000511				.WORD	329
10253	052750'	017216'				.WORD	ERR018
10254	052752'	000000				.WORD	0
10255	052754'			ESCAPE TST			; AND ABORT TEST
10256	052754'	104410				TRAP	C\$ESCAPE
10257	052756'	002136				.WORD	L10053-
10258							
10259	052760'	012705	012512'	i60\$:	MOV #TDR14A,R5		; POINT TO EXPECTED TDRB

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TEST 22: MULTICAST ADDRESS TEST

10260	052764'	004737	025140'		JSR	PC,LDXTDR		: LOAD INTO XTDRBO TABLE		
10261	052770'	012705	000572'		MOV	#TDRB,R5		: CHECK TDRB		
10262	052774'	004737	023220'		JSR	PC,CHKTDR		: ERRORS ?		
10263	053000'	103006			BCC	170\$		: NO		
10264	053002'				ERRHRD	330.,ERR020,MSG005		: YES, REPORT ERROR		
10265	053002'	104456							TRAP	C\$ERHRD
10266	053004'	000512							.WORD	330
10267	053006'	017376'							.WORD	ERR020
10268	053010'	015220'							.WORD	MSG005
10269	053012'				ESCAPE	TST		: AND ABORT TEST		
10270	053012'	104410							TRAP	C\$ESCAPE
10271	053014'	002100							.WORD	L10053-
10272										
10273	053016'	004737	023054'	170\$:	JSR	PC,CHKRXI		: RXI ?		
10274	053022'	103006			BCC	180\$		: YES		
10275	053024'				ERRHRD	331.,ERR015,MSG003		: NO, REPORT ERROR		
10276	053024'	104456							TRAP	C\$ERHRD
10277	053026'	000513							.WORD	331
10278	053030'	017017'							.WORD	ERR015
10279	053032'	015114'							.WORD	MSG003
10280	053034'				ESCAPE	TST		: AND ABORT TEST		
10281	053034'	104410							TRAP	C\$ESCAPE
10282	053036'	002056							.WORD	L10053-
10283										
10284	053040'	004737	023550'	180\$:	JSR	PC,CLRRXI		: WRITE ONE TO CLEAR RXI		
10285								: ERROR ?		
10286	053044'	103006			BCC	190\$		: NO		
10287	053046'				ERRHRD	332.,ERR016,MSG003		: YES, REPORT ERROR		
10288	053046'	104456							TRAP	C\$ERHRD
10289	053050'	000514							.WORD	332
10290	053052'	017050'							.WORD	ERR016
10291	053054'	015114'							.WORD	MSG003
10292	053056'				ESCAPE	TST		: AND ABORT TEST		
10293	053056'	104410							TRAP	C\$ESCAPE
10294	053060'	002034							.WORD	L10053-
10295										
10296	053062'	012705	000632'	190\$:	MOV	#RDRB,R5		: CHECK RDRB OWNERSHIP		
10297	053066'	004737	022634'		JSR	PC,CHKOWN		: OWN = PORT DRIVER ?		
10298	053072'	103006			BCC	200\$		: YES		
10299	053074'				ERRHRD	333.,ERR017		: NO, REPORT ERROR		
10300	053074'	104456							TRAP	C\$ERHRD
10301	053076'	000515							.WORD	333
10302	053100'	017116'							.WORD	ERR017
10303	053102'	000000							.WORD	0
10304	053104'				ESCAPE	TST		: AND ABORT TEST		
10305	053104'	104410							TRAP	C\$ESCAPE
10306	053106'	002006							.WORD	L10053-
10307										
10308	053110'	012705	012622'	200\$:	MOV	#RDR14A,R5		: POINT TO EXPECTED RDRB		
10309	053114'	004737	025110'		JSR	PC,LDXRDR		: LOAD INTO XRDRBO TABLE		
10310	053120'	012705	000632'		MOV	#RDRB,R5		: CHECK RDRB		
10311	053124'	004737	022754'		JSR	PC,CHKRDR		: ERRORS ?		
10312	053130'	103006			BCC	210\$		: NO		
10313	053132'				ERRHRD	334.,ERR021,MSG006		: YES, REPORT ERROR		
10314	053132'	104456							TRAP	C\$ERHRD
10315	053134'	000516							.WORD	334

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10316	053136'	017457'					.WORD	ERR021
10317	053140'	015362'					.WORD	MSG006
10318	053142'			ESCAPE	TST			; AND ABORT TEST
10319	053142'	104410					TRAP	C\$ESCAPE
10320	053144'	001750					.WORD	L10053-
10321								
10322								
10323	053146'	012705	000070					
10324	053152'	004737	023732'	210\$:	MOV #56.,R5			; COMPARE 56 WORDS OF DATA
10325	053156'	103006			JSR PC,CMPDAT			; DATA COMPARE ERROR ?
10326	053160'				BCC 220\$			; NO
10327	053160'	104456			ERRHRD 335.,ERR022,MSG007			; YES, REPORT ERROR
10328	053162'	000517					TRAP	C\$ERHRD
10329	053164'	017540'					.WORD	335
10330	053166'	015524'					.WORD	ERR022
10331	053170'			ESCAPE	TST		.WORD	MSG007
10332	053170'	104410					TRAP	C\$ESCAPE
10333	053172'	001722					.WORD	L10053-
10334								
10335	053174'	010305		220\$:	MOV R3,R5			; POINT TO EXPECTED CRC TABLE
10336	053176'	004737	025064'		JSR PC,LDXCRC			; LOAD INTO XCRC TABLE
10337	053202'	012705	005266'		MOV #RBUF+124.,R5			; CHECK CRC
10338	053206'	004737	024012'		JSR PC,CMPCRC			; ERRORS ?
10339	053212'	103006			BCC 230\$			; NO
10340	053214'				ERRHRD 336.,ERR023,MSG008			; YES, REPORT ERROR
10341	053214'	104456					TRAP	C\$ERHRD
10342	053216'	000520					.WORD	336
10343	053220'	017607'					.WORD	ERR023
10344	053222'	015556'					.WORD	MSG008
10345	053224'			ESCAPE	TST			; AND ABORT TEST
10346	053224'	104410					TRAP	C\$ESCAPE
10347	053226'	001666					.WORD	L10053-
10348								
10349	053230'	012777	000017	124770	230\$:	MOV #STOP,@PCSR0		; ISSUE STOP PORT COMMAND
10350	053236'	004737	022546'		JSR PC,CHKDNI			; DNI ?
10351	053242'	103006			BCC 240\$			; YES
10352	053244'				ERRHRD 337.,ERR019,MSG003			; NO, REPORT ERROR
10353	053244'	104456					TRAP	C\$ERHRD
10354	053246'	000521					.WORD	337
10355	053250'	017316'					.WORD	ERR019
10356	053252'	015114'					.WORD	MSG003
10357	053254'			ESCAPE	TST			; AND ABORT TEST
10358	053254'	104410					TRAP	C\$ESCAPE
10359	053256'	001636					.WORD	L10053-
10360								
10361	053260'	004737	023434'	240\$:	JSR PC,CLRDNI			; WRITE ONE TO CLEAR DNI
10362								; ERROR ?
10363	053264'	103006			BCC 245\$			; NO
10364	053266'				ERRHRD 338.,ERR006,MSG003			; YES, REPORT ERROR
10365	053266'	104456					TRAP	C\$ERHRD
10366	053270'	000522					.WORD	338
10367	053272'	016206'					.WORD	ERR006
10368	053274'	015114'					.WORD	MSG003
10369	053276'			ESCAPE	TST			; AND ABORT TEST
10370	053276'	104410					TRAP	C\$ESCAPE
10371	053300'	001614					.WORD	L10053-

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10372
10373 053302' 062702 000006      245$: ADD #6,R2      ; UPDATE R2
10374 053306' 062703 000004      ADD #4,R3      ; UPDATE R3
10375 053312' 005301      DEC R1         ; DONE TEN LOOPBACKS
10376 053314' 001402      BEQ 246$      ; YES
10377 053316' 000137 052562'    JMP 110$      ; NO
10378
10379
10380      ; DO TEN LOOPS WITH DEST ADDRESS = COMPLIMENTED MULTICAST ADDRESS
10381
10382 053322' 012701 000012      246$: MOV #10.,R1    ; DO LOOP = TEN
10383 053326' 012702 012416'    MOV #MULTLC,R2 ; R2 POINTS TO COMPLIMENTED LIST
10384
10385      ; SET UP RINGS FOR ONE BUFFER LOOPBACK
10386 053332' 012705 011542'    250$: MOV #TDRB1A,R5 ; DEFAULT ONE BUFFER TRANSMIT RING
10387 053336' 004737 024734'    JSR PC,LDTDRB ; LOAD TDRB
10388 053342' 012705 011342'    MOV #RDRB1A,R5 ; DEFAULT ONE BUFFER RECEIVE RING
10389 053346' 004737 024676'    JSR PC,LDRDRB ; LOAD RDRB
10390
10391      ; SET UP BUFFERS AND START
10392 053352' 010205      MOV R2,R5     ; POINT TO COMPLEMENTED ADDRESS
10393 053354' 004737 024602'    JSR PC,LDDEST ; LOAD DEST
10394 053360' 004737 025230'    JSR PC,SETBUF ; SET UP BUFFERS
10395 053364' 012777 000004 124634  MOV #START,@PCSR0 ; ISSUE START PORT COMMAND
10396 053372' 004737 022546'    JSR PC,CHKDNI ; DNI?
10397 053376' 103006      BCC 260$     ; YES
10398 053400'      ERRHRD 339.,ERR012,MSG003 ; NO, REPORT ERROR
10399 053400' 104456      TRAP C$ERHRD
10400 053402' 000523      .WORD 339
10401 053404' 016637'    .WORD ERR012
10402 053406' 015114'    .WORD MSG003
10403 053410'      ESCAPE TST      ; AND ABORT TEST
10404 053410' 104410      TRAP C$ESCAPE
10405 053412' 001502      .WORD L10053-.
10406
10407 053414' 004737 023434'    260$: JSR PC,CLRDNI ; WRITE ONE TO CLEAR DNI
10408      ; ERROR ?
10409 053420' 103006      BCC 270$     ; NO
10410 053422'      ERRHRD 340.,ERR006,MSG003 ; YES, REPORT ERROR
10411 053422' 104456      TRAP C$ERHRD
10412 053424' 000524      .WORD 340
10413 053426' 016206'    .WORD ERR006
10414 053430' 015114'    .WORD MSG003
10415 053432'      ESCAPE TST      ; AND ABORT TEST
10416 053432' 104410      TRAP C$ESCAPE
10417 053434' 001460      .WORD L10053-.
10418
10419 053436' 004737 023306'    270$: JSR PC,CHKTXI ; TXI ?
10420 053442' 103006      BCC 280$     ; YES
10421 053444'      ERRHRD 341.,ERR013,MSG003 ; NO, REPORT ERROR
10422 053444' 104456      TRAP C$ERHRD
10423 053446' 000525      .WORD 341
10424 053450' 016720'    .WORD ERR013
10425 053452' 015114'    .WORD MSG003
10426 053454'      ESCAPE TST      ; AND ABORT TEST
10427 053454' 104410      TRAP C$ESCAPE

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10428	053456'	001436					.WORD	L10053-
10429								
10430	053460'	004737	023616'	280\$:	JSR	PC,CLRTXI		: WRITE ONE TO CLEAR TXI
10431								: ERROR ?
10432	053464'	103006			BCC	290\$		: NO
10433	053466'				ERRHRD	342.,ERR014,MSG003		: YES, REPORT ERROR
10434	053466'	104456					TRAP	C\$ERHRD
10435	053470'	000526					.WORD	342
10436	053472'	016751'					.WORD	ERR014
10437	053474'	015114'					.WORD	MSG003
10438	053476'				ESCAPE	TST		: AND ABORT TEST
10439	053476'	104410					TRAP	C\$ESCAPE
10440	053500'	001414					.WORD	L10053-
10441								
10442	053502'	012705	000572'	290\$:	MOV	#TDRB,R5		: CHECK TDRB OWNERSHIP
10443	053506'	004737	022634'		JSR	PC,CHKOWN		: OWN = PORT DRIVER ?
10444	053512'	103006			BCC	300\$		: YES
10445	053514'				ERRHRD	343.,ERR018		: NO, REPORT ERROR
10446	053514'	104456					TRAP	C\$ERHRD
10447	053516'	000527					.WORD	343
10448	053520'	017216'					.WORD	ERR018
10449	053522'	000000					.WORD	0
10450	053524'				ESCAPE	TST		: AND ABORT TEST
10451	053524'	104410					TRAP	C\$ESCAPE
10452	053526'	001366					.WORD	L10053-
10453								
10454	053530'	012705	012602'	300\$:	MOV	#TDR21X,R5		: POINT TO EXPECTED TDRB
10455	053534'	004737	025140'		JSR	PC,LDXTDR		: LOAD INTO XTDRB0 TABLE
10456	053540'	012705	000572'		MOV	#TDRB,R5		: CHECK TDRB
10457	053544'	004737	023220'		JSR	PC,CHKTDR		: ERRORS ?
10458	053550'	103006			BCC	310\$		: NO
10459	053552'				ERRHRD	344.,ERR020,MSG005		: YES, REPORT ERROR
10460	053552'	104456					TRAP	C\$ERHRD
10461	053552'	000530					.WORD	344
10462	053552'	017376'					.WORD	ERR020
10463	053560'	015220'					.WORD	MSG005
10464	053562'				ESCAPE	TST		: AND ABORT TEST
10465	053562'	104410					TRAP	C\$ESCAPE
10466	053564'	001330					.WORD	L10053-
10467								
10468	053566'	004737	025170'	310\$:	JSR	PC,NORXI		: RXI ?
10469	053572'	103006			BCC	320\$		: NO
10470	053574'				ERRHRD	345.,ERR039		: YES, REPORT ERROR
10471	053574'	104456					TRAP	C\$ERHRD
10472	053576'	000531					.WORD	345
10473	053600'	021350'					.WORD	ERR039
10474	053602'	000000					.WORD	0
10475	053604'				ESCAPE	TST		: AND ABORT TEST
10476	053604'	104410					TRAP	C\$ESCAPE
10477	053606'	001306					.WORD	L10053-
10478								
10479	053610'	012777	000017	124410	320\$:	MOV	#STOP,@PCSR0	: ISSUE STOP PORT COMMAND
10480	053616'	004737	022546'		JSR	PC,CHKDNI		: DNI ?
10481	053622'	103006			BCC	330\$		: YES
10482	053624'				ERRHRD	346.,ERR019,MSG003		: NO, REPORT ERROR
10483	053624'	104456					TRAP	C\$ERHRD

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10484 053626' 000532          .WORD 346
10485 053630' 017316'       .WORD ERR019
10486 053632' 015114'       .WORD MSG003
10487 053634'                ESCAPE TST                ; AND ABORT TEST
10488 053634' 104410          TRAP C$ESCAPE
10489 053636' 001256          .WORD L10053-.
10490
10491 053640' 004737 023434' 330$: JSR PC,CLRDNI          ; WRITE ONE TO CLEAR DNI
10492                                ; ERROR ?
10493 053644' 103006          BCC 335$
10494 053646'                ERRHRD 347.,ERR006,MSG003 ; YES, REPORT ERROR
10495 053646' 104456          TRAP C$ERHRD
10496 053650' 000533          .WORD 347
10497 053652' 016206'       .WORD ERR006
10498 053654' 015114'       .WORD MSG003
10499 053656'                ESCAPE TST                ; AND ABORT TEST
10500 053656' 104410          TRAP C$ESCAPE
10501 053660' 001234          .WORD L10053-.
10502
10503 053662' 062702 000006 335$: ADD #6,R2            ; UPDATE R2
10504 053666' 005301          DEC R1                ; DONE 10 LOOPBACKS
10505 053670' 001220          BNE 250$              ; NO
10506
10507                ;REPEAT WITH COMPLEMENTED MULTICAST ADDRESS LIST
10508                ;
10509                ;WRITE MULTICAST ADDRESS LIST
10510 053672' 012705 011152' 340$: MOV #WTMULA,R5        ; DEFAULT WRITE MULTICAST ADDR FUNC
10511 053676' 004737 024630' JSR PC,LDPCBB          ; LOAD FUNCTION -> PCBB
10512 053702' 012705 012416' MOV #MULTLC,R5        ; LOAD LIST INTO UDBB
10513 053706' 012700 000036 MOV #30.,R0           ; LOAD 30 ENTRIES
10514 053712' 004737 025030' JSR PC,LDUDBB         ; MULTICAST LIST -> UDBB
10515 053716' 012777 000002 124302 MOV #GETCMD,@PCSR0    ; ISSUE GET_CMD PORT COMMAND
10516 053724' 004737 022546' JSR PC,CHKDNI         ; DNI ?
10517 053730' 103006          BCC 350$              ; YES
10518 053732'                ERRHRD 348.,ERR010,MSG003 ; NO, REPORT ERROR
10519 053732' 104456          TRAP C$ERHRD
10520 053734' 000534          .WORD 348
10521 053736' 016506'       .WORD ERR010
10522 053740' 015114'       .WORD MSG003
10523 053742'                ESCAPE TST                ; AND ABORT TEST
10524 053742' 104410          TRAP C$ESCAPE
10525 053744' 001150          .WORD L10053-.
10526
10527 053746' 004737 023434' 350$: JSR PC,CLRDNI          ; WRITE ONE TO CLEAR DNI
10528                                ; ERROR ?
10529 053752' 103006          BCC 355$
10530 053754'                ERRHRD 349.,ERR006,MSG003 ; YES, REPORT ERROR
10531 053754' 104456          TRAP C$ERHRD
10532 053756' 000535          .WORD 349
10533 053760' 016206'       .WORD ERR006
10534 053762' 015114'       .WORD MSG003
10535 053764'                ESCAPE TST                ; AND ABORT TEST
10536 053764' 104410          TRAP C$ESCAPE
10537 053766' 001126          .WORD L10053-.
10538
10539                ;DO TEN LOOPS WITH DEST ADDR = NEW COMPLEMENTED MULTICAST ADDRESS
    
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10540
10541 053770' 012701 000012'
10542 053774' 012702 012416'
10543 054000' 012703 013012'
10544
10545
10546 054004' 012705 011542'
10547 054010' 004737 024734'
10548 054014' 012705 011342'
10549 054020' 004737 024676'
10550
10551
10552 054024' 010205
10553 054026' 004737 024602'
10554 054032' 004737 025230'
10555 054036' 012777 000004' 124162
10556 054044' 004737 022546'
10557 054050' 103006
10558 054052'
10559 054052' 104456
10560 054054' 000536
10561 054056' 016637'
10562 054060' 015114'
10563 054062'
10564 054062' 104410
10565 054064' 001030
10566
10567 054066' 004737 023434'
10568
10569 054072' 103006
10570 054074'
10571 054074' 104456
10572 054076' 000537
10573 054100' 016206'
10574 054102' 015114'
10575 054104'
10576 054104' 104410
10577 054106' 001006
10578
10579 054110' 004737 023306'
10580 054114' 103006
10581 054116'
10582 054116' 104456
10583 054120' 000540
10584 054122' 016720'
10585 054124' 015114'
10586 054126'
10587 054126' 104410
10588 054130' 000764
10589
10590 054132' 004737 023616'
10591
10592 054136' 103006
10593 054140'
10594 054140' 104456
10595 054142' 000541

;355$: MOV #10.,R1 ; DO LOOP = TEN
      MOV #MULTLC,R2 ; R2 = COMPLIMENTED ADDRESS LIST
      MOV #CRC22B,R3 ; R3 POINTS TO EXPECTED CRC TABLE

;SET UP RINGS FOR ONE BUFFER LOOPBACK
;360$: 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 R2,R5 ; POINT TO DESTINATION ADDRESS
      JSR PC,LDDEST ; LOAD DEST
      JSR PC,SETBUF ; SET UP BUFFERS
      MOV #START,@PCSR0 ; ISSUE START PORT COMMAND
      JSR PC,CHKDNI ; DNI?
      BCC 370$ ; YES
      ERRHRD 350.,ERR012,MSG003 ; NO, REPORT ERROR

; AND ABORT TEST
      TRAP C$ERHRD
      .WORD 350
      .WORD ERR012
      .WORD MSG003
      ESCAPE TST ; AND ABORT TEST
      TRAP C$ESCAPE
      .WORD L10053-.

;370$: JSR PC,CLRDN1 ; WRITE ONE TO CLEAR DNI
      BCC 380$ ; ERROR ?
      ERRHRD 351.,ERR006,MSG003 ; NO
      ; YES, REPORT ERROR
      TRAP C$ERHRD
      .WORD 351
      .WORD ERR006
      .WORD MSG003
      ESCAPE TST ; AND ABORT TEST
      TRAP C$ESCAPE
      .WORD L10053-.

;380$: JSR PC,CHKTXI ; TXI ?
      BCC 390$ ; YES
      ERRHRD 352.,ERR013,MSG003 ; NO, REPORT ERROR
      TRAP C$ERHRD
      .WORD 352
      .WORD ERR013
      .WORD MSG003
      ESCAPE TST ; AND ABORT TEST
      TRAP C$ESCAPE
      .WORD L10053-.

;390$: JSR PC,CLRTXI ; WRITE ONE TO CLEAR TXI
      BCC 400$ ; ERROR ?
      ERRHRD 353.,ERR014,MSG003 ; NO
      ; YES, REPORT ERROR
      TRAP C$ERHRD
      .WORD 353

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10596	054144'	016751'						.WORD	ERR014
10597	054146'	015114'						.WORD	MSG003
10598	054150'			ESCAPE	TST				: AND ABORT TEST
10599	054150'	104410						TRAP	C\$ESCAPE
10600	054152'	000742						.WORD	L10053-
10601									
10602	054154'	012705	000572'	400\$:	MOV	#TDRB,R5			: CHECK TDRB OWNERSHIP
10603	054160'	004737	022634'		JSR	PC,CHKOWN			: OWN = PORT DRIVER ?
10604	054164'	103006			BCC	410\$			: YES
10605	054166'				ERRHRD	354.,ERR018			: NO, REPORT ERROR
10606	054166'	104456						TRAP	C\$ERHRD
10607	054170'	000542						.WORD	354
10608	054172'	017216'						.WORD	ERR018
10609	054174'	000000						.WORD	0
10610	054176'			ESCAPE	TST				: AND ABORT TEST
10611	054176'	104410						TRAP	C\$ESCAPE
10612	054200'	000714						.WORD	L10053-
10613									
10614	054202'	012705	012512'	410\$:	MOV	#TDR14A,R5			: POINT TO EXPECTED TDRB
10615	054206'	004737	025140'		JSR	PC,LDXTDR			: LOAD INTO XTDRB0 TABLE
10616	054212'	012705	000572'		MOV	#TDRB,R5			: CHECK TDRB
10617	054216'	004737	023220'		JSR	PC,CHKTDR			: ERRORS ?
10618	054222'	103006			BCC	420\$			: NO
10619	054224'				ERRHRD	355.,ERR020,MSG005			: YES, REPORT ERROR
10620	054224'	104456						TRAP	C\$ERHRD
10621	054226'	000543						.WORD	355
10622	054230'	017376'						.WORD	ERR020
10623	054232'	015220'						.WORD	MSG005
10624	054234'			ESCAPE	TST				: AND ABORT TEST
10625	054234'	104410						TRAP	C\$ESCAPE
10626	054236'	000656						.WORD	L10053-
10627									
10628	054240'	004737	023054'	420\$:	JSR	PC,CHKRXI			: RXI ?
10629	054244'	103006			BCC	430\$			: YES
10630	054246'				ERRHRD	356.,ERR015,MSG003			: NO, REPORT ERROR
10631	054246'	104456						TRAP	C\$ERHRD
10632	054250'	000544						.WORD	356
10633	054252'	017017'						.WORD	ERR015
10634	054254'	015114'						.WORD	MSG003
10635	054256'			ESCAPE	TST				: AND ABORT TEST
10636	054256'	104410						TRAP	C\$ESCAPE
10637	054260'	000634						.WORD	L10053-
10638									
10639	054262'	004737	023550'	430\$:	JSR	PC,CLRRXI			: WRITE ONE TO CLEAR RXI
10640									: ERROR ?
10641	054266'	103006			BCC	440\$			: NO
10642	054270'				ERRHRD	357.,ERR016,MSG003			: YES, REPORT ERROR
10643	054270'	104456						TRAP	C\$ERHRD
10644	054272'	000545						.WORD	357
10645	054274'	017050'						.WORD	ERR016
10646	054276'	015114'						.WORD	MSG003
10647	054300'			ESCAPE	TST				: AND ABORT TEST
10648	054300'	104410						TRAP	C\$ESCAPE
10649	054302'	000612						.WORD	L10053-
10650									
10651	054304'	012705	000632'	440\$:	MOV	#RDRB,R5			: CHECK RDRB OWNERSHIP



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 CZUABA.MAC 10-JAN-83 12:46 TEST 22: MULTICAST ADDRESS TEST

10652	054310'	004737	022634'		JSR	PC,CHKOWN		: OWN = PORT DRIVER ?		
10653	054314'	103006			BCC	450\$		: YES		
10654	054316'				ERRHRD	358.,ERR017		: NO, REPORT ERROR		
10655	054316'	104456							TRAP	C\$ERHRD
10656	054320'	000546							.WORD	358
10657	054322'	017116'							.WORD	ERR017
10658	054324'	000000							.WORD	0
10659	054326'				ESCAPE	TST		: AND ABORT TEST		
10660	054326'	104410							TRAP	C\$ESCAPE
10661	054330'	000564							.WORD	L10053-
10662										
10663	054332'	012705	012622'	450\$:	MOV	#RDR14A,R5		: POINT TO EXPECTED RDRB		
10664	054336'	004737	025110'		JSR	PC,LDXRDR		: LOAD INTO XRDRB0 TABLE		
10665	054342'	012705	000632'		MOV	#RDRB,R5		: CHECK RDRB		
10666	054346'	004737	022754'		JSR	PC,CHKRDR		: ERRORS ?		
10667	054352'	103006			BCC	460\$		: NO		
10668	054354'				ERRHRD	359.,ERR021,MSG006		: YES, REPORT ERROR		
10669	054354'	104456							TRAP	C\$ERHRD
10670	054356'	000547							.WORD	359
10671	054360'	017457'							.WORD	ERR021
10672	054362'	015362'							.WORD	MSG006
10673	054364'				ESCAPE	TST		: AND ABORT TEST		
10674	054364'	104410							TRAP	C\$ESCAPE
10675	054366'	000526							.WORD	L10053-
10676										
10677										
10678	054370'	012705	000070	460\$:	MOV	#56.,R5		: COMPARE 56 WORDS OF DATA		
10679	054374'	004737	023732'		JSR	PC,CMPDAT		: DATA COMPARE ERROR ?		
10680	054400'	103006			BCC	470\$		: NO		
10681	054402'				ERRHRD	360.,ERR022,MSG007		: YES, REPORT ERROR		
10682	054402'	104456							TRAP	C\$ERHRD
10683	054404'	000550							.WORD	360
10684	054406'	017540'							.WORD	ERR022
10685	054410'	015524'							.WORD	MSG007
10686	054412'				ESCAPE	TST		: AND ABORT TEST		
10687	054412'	104410							TRAP	C\$ESCAPE
10688	054414'	000500							.WORD	L10053-
10689										
10690	054416'	010305		470\$:	MOV	R3,R5		: POINT TO EXPECTED CRC TABLE		
10691	054420'	004737	025064'		JSR	PC,LDXCRC		: LOAD INTO XCRC TABLE		
10692	054424'	012705	005266'		MOV	#RBUF+124.,R5		: CHECK CRC		
10693	054430'	004737	024012'		JSR	PC,CMPCRC		: ERRORS ?		
10694	054434'	103006			BCC	480\$		: NO		
10695	054436'				ERRHRD	361.,ERR023,MSG008		: YES, REPORT ERROR		
10696	054436'	104456							TRAP	C\$ERHRD
10697	054440'	000551							.WORD	361
10698	054442'	017607'							.WORD	ERR023
10699	054444'	015556'							.WORD	MSG008
10700	054446'				ESCAPE	TST		: AND ABORT TEST		
10701	054446'	104410							TRAP	C\$ESCAPE
10702	054450'	000444							.WORD	L10053-
10703										
10704	054452'	012777	000017	123546	480\$:	MOV	#STOP,@PCSRO	: ISSUE STOP PORT COMMAND		
10705	054460'	004737	022546'		JSR	PC,CHKDNI		: DNI ?		
10706	054464'	103006			BCC	490\$		: YES		
10707	054466'				ERRHRD	362.,ERR019,MSG003		: NO, REPORT ERROR		

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```

10708 054466* 104456 TRAP C$ERHRD
10709 054470* 000552 .WORD 362
10710 054472* 017316* .WORD ERR019
10711 054474* 015114* .WORD MSG003
10712 054476* ESCAPE TST ; AND ABORT TEST
10713 054476* 104410 TRAP C$ESCAPE
10714 054500* 000414 .WORD L10053-.
10715
10716 054502* 004737 023434* 490$: JSR PC,CLRDNI ; WRITE ONE TO CLEAR DNI
10717 ; ERROR ?
10718 054506* 103006 BCC 495$ ; NO
10719 054510* ERRHRD 363.,ERR006,MSG003 ; YES, REPORT ERROR
10720 054510* 104456 TRAP C$ERHRD
10721 054512* 000553 .WORD 363
10722 054514* 016206* .WORD ERR006
10723 054516* 015114* .WORD MSG003
10724 054520* ESCAPE TST ; AND ABORT TEST
10725 054520* 104410 TRAP C$ESCAPE
10726 054522* 000372 .WORD L10053-.
10727
10728 054524* 062702 000006 495$: ADD #6,R2 ; UPDATE R2
10729 054530* 062703 000004 ADD #4,R3 ; UPDATE R3
10730 054534* 005301 DEC R1 ; DONE TEN LOOPBACKS ?
10731 054536* 001402 BEQ 496$ ; YES
10732 054540* 000137 054004* JMP 360$ ; NO
10733
10734 ;DO TEN LOOPS WITH DEST ADDR = COMPLIMENT OF NEW COMPLIMENTED ADDRESS LIST
10735
10736 054544* 012701 000012 496$: MOV #10.,R1 ; DO LOOP = TEN
10737 054550* 012702 012322* MOV #MULTL,R2 ; POINT TO MULTICAST LIST
10738
10739 ;SET UP RINGS FOR ONE BUFFER LOOPBACK
10740 054554* 012705 011542* 500$: MOV #TDRB1A,R5 ; DEFAULT ONE BUFFER TRANSMIT RING
10741 054560* 004737 024734* JSR PC,LDTDRB ; LOAD TDRB
10742 054564* 012705 011342* MOV #RDRB1A,R5 ; DEFAULT ONE BUFFER RECEIVE RING
10743 054570* 004737 024676* JSR PC,LDRDRB ; LOAD RDRB
10744
10745 ;SET UP BUFFERS AND START
10746 054574* 010205 MOV R2,R5 ; COMPLIMENT DESTINATION ADDRESS
10747 054576* 004737 024602* JSR PC,LDDDEST ; LOAD DEST
10748 054602* 004737 025230* JSR PC,SETBUF ; SET UP BUFFERS
10749 054606* 012777 000004 123412 MOV #START,@PCSRO ; ISSUE START PORT COMMAND
10750 054614* 004737 022546* JSR PC,CHKDNI ; DNI?
10751 054620* 103006 BCC 510$ ; YES
10752 054622* ERRHRD 364.,ERR012,MSG003 ; NO, REPORT ERROR
10753 054622* 104456 TRAP C$ERHRD
10754 054624* 000554 .WORD 364
10755 054626* 016637* .WORD ERR012
10756 054630* 015114* .WORD MSG003
10757 054632* ESCAPE TST ; AND ABORT TEST
10758 054632* 104410 TRAP C$ESCAPE
10759 054634* 000260 .WORD L10053-.
10760
10761 054636* 004737 023434* 510$: JSR PC,CLRDNI ; WRITE ONE TO CLEAR DNI
10762 ; ERROR ?
10763 054642* 103006 BCC 520$ ; NO

```

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```

10764 054644'          ERRHRD 365.,ERR006,MSG003      ; YES, REPORT ERROR
10765 054644' 104456
10766 054646' 000555
10767 054650' 016206'
10768 054652' 015114'
10769 054654'          ESCAPE TST                    ; AND ABORT TEST
10770 054654' 104410
10771 054656' 000236
10772
10773 054660' 004737 023306'      §20$: JSR    PC,CHKTXI          ; TXI ?
10774 054664' 103006              BCC    530$                ; YES
10775 054666'          ERRHRD 366.,ERR013,MSG003      ; NO, REPORT ERROR
10776 054666' 104456
10777 054670' 000556
10778 054672' 016720'
10779 054674' 015114'
10780 054676'          ESCAPE TST                    ; AND ABORT TEST
10781 054676' 104410
10782 054700' 000214
10783
10784 054702' 004737 023616'      §30$: JSR    PC,CLRTXI          ; WRITE ONE TO CLEAR TXI
10785
10786 054706' 103006              BCC    540$                ; ERROR ?
10787 054710'          ERRHRD 367.,ERR014,MSG003      ; NO
10788 054710' 104456              ; YES, REPORT ERROR
10789 054712' 000557
10790 054714' 016751'
10791 054716' 015114'
10792 054720'          ESCAPE TST                    ; AND ABORT TEST
10793 054720' 104410
10794 054722' 000172
10795
10796 054724' 012705 000572'      §40$: MOV    #TDRB,R5          ; CHECK TDRB OWNERSHIP
10797 054730' 004737 022634'      JSR    PC,CHKOWN          ; OWN = PORT DRIVER ?
10798 054734' 103006              BCC    550$                ; YES
10799 054736'          ERRHRD 368.,ERR018              ; NO, REPORT ERROR
10800 054736' 104456
10801 054740' 000560
10802 054742' 017216'
10803 054744' 000000
10804 054746'          ESCAPE TST                    ; AND ABORT TEST
10805 054746' 104410
10806 054750' 000144
10807
10808 054752' 012705 012602'      §50$: MOV    #TDR21X,R5       ; POINT TO EXPECTED TDRB
10809 054756' 004737 025140'      JSR    PC,LDXTDR          ; LOAD INTO XTDRBO TABLE
10810 054762' 012705 000572'      MOV    #TDRB,R5          ; CHECK TDRB
10811 054766' 004737 023220'      JSR    PC,CHKTDR          ; ERRORS ?
10812 054772' 103006              BCC    560$                ; NO
10813 054774'          ERRHRD 369.,ERR020,MSG005      ; YES, REPORT ERROR
10814 054774' 104456
10815 054776' 000561
10816 055000' 017376'
10817 055002' 015220'
10818 055004'          ESCAPE TST                    ; AND ABORT TEST
10819 055004' 104410

```



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TEST 23: PROMISCUOUS ADDRESS MODE TEST

.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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10908 055116'
10909 055116'
10910 055116' 004737 025334'
10911 055122' 103025
10912 055124' 012777 000040 123074
10913 055132' 004737 022546'
10914 055136' 103006
10915 055140'
10916 055140' 104456
10917 055142' 000565
10918 055144' 016106'
10919 055146' 015114'

```

BGNTST

```

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 373.,ERR004,MSG003 ; NO, REPORT ERROR

```

```

TRAP CSERHRD
.WORD 373
.WORD ERRJ04
.WORD MSG003

```

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 CZUABA.MAC 10-JAN-83 12:46 TEST 23: PROMISCUOUS ADDRESS MODE TEST

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10920 055150'          ESCAPE TST          ; AND ABORT TEST
10921 055150' 104410          TRAP      C$ESCAPE
10922 055152' 003342          .WORD    L10054-.
10923
10924 055154' 004737 023434' 20$: JSR      PC,CLRDNI          ; WRITE ONE TO CLEAR DNI
10925                                     ; ERROR ?
10926 055160' 103006          BCC      30$
10927 055162'          ERRHRD 374.,ERR006,MSG003 ; NO
10928 055162' 104456          ; YES, REPORT ERROR
10929 055164' 000566          TRAP      C$ERHRD
10930 055166' 016206'          .WORD    374
10931 055170' 015114'          .WORD    ERR006
10932 055172'          ESCAPE TST          ; AND ABORT TEST
10933 055172' 104410          TRAP      C$ESCAPE
10934 055174' 003320          .WORD    L10054-.
10935
10936 055176' 004737 024660' 30$: JSR      PC,LDPCSR          ; ADDRESS OF PCBB -> PCSR2!3
10937 055202' 012777 000001 123016 MOV      #GETPCB,@PCSR0 ; ISSUE GET_PCBB PORT COMMAND
10938 055210' 004737 022546' JSR      PC,CHKDNI          ; DNI?
10939 055214' 103006          BCC      40$
10940 055216'          ERRHRD 375.,ERR009,MSG003 ; YES
10941 055216' 104456          ; NO, REPORT ERROR
10942 055220' 000567          TRAP      C$ERHRD
10943 055222' 016422'          .WORD    375
10944 055224' 015114'          .WORD    ERR009
10945 055226'          ESCAPE TST          ; AND ABORT TEST
10946 055226' 104410          TRAP      C$ESCAPE
10947 055230' 003264          .WORD    L10054-.
10948
10949 055232' 004737 023434' 40$: JSR      PC,CLRDNI          ; WRITE ONE TO CLEAR DNI
10950                                     ; ERROR ?
10951 055236' 103006          BCC      50$
10952 055240'          ERRHRD 376.,ERR006,MSG003 ; NO
10953 055240' 104456          ; YES, REPORT ERROR
10954 055242' 000570          TRAP      C$ERHRD
10955 055244' 016206'          .WORD    376
10956 055246' 015114'          .WORD    ERR006
10957 055250'          ESCAPE TST          ; AND ABORT TEST
10958 055250' 104410          TRAP      C$ESCAPE
10959 055252' 003242          .WORD    L10054-.
10960
10961                                     ; WRITE MODE REGISTER = INTERNAL LOOPBACK AND PROM MODE
10962 055254' 012705 011232' 50$: MOV      #WTMODE,R5          ; DEFAULT WRITE MODE FUNCTION
10963 055260' 004737 024630' JSR      PC,LDPCBB          ; LOAD FUNCTION -> PCBB
10964 055264' 012777 000002 122734 MOV      #GETCMD,@PCSR0 ; ISSUE GET_CMD PORT COMMAND
10965 055272' 004737 022546' JSR      PC,CHKDNI          ; DNI ?
10966 055276' 103006          BCC      60$
10967 055300'          ERRHRD 377.,ERR010,MSG003 ; YES
10968 055300' 104456          ; NO, REPORT ERROR
10969 055302' 000571          TRAP      C$ERHRD
10970 055304' 016506'          .WORD    377
10971 055306' 015114'          .WORD    ERR010
10972 055310'          ESCAPE TST          ; AND ABORT TEST
10973 055310' 104410          TRAP      C$ESCAPE
10974 055312' 003202          .WORD    L10054-.
10975
    
```

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 CZUABA.MAC 10-JAN-83 12:46 TEST 23: PROMISCUOUS ADDRESS MODE TEST

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10976 055314' 004737 023434'      60$: JSR PC,CLRDN1      ; WRITE ONE TO CLEAR DNI
10977                                     ; ERROR ?
10978 055320' 103006              BCC 70$                ; NO
10979 055322'                      ERRHRD 378.,ERR006,MSG003 ; YES, REPORT ERROR
10980 055322' 104456              TRAP C$ERHRD
10981 055324' 000572              .WORD 378
10982 055326' 016206'            .WORD ERR006
10983 055330' 015114'            .WORD MSG003
10984 055332'                      ESCAPE TST             ; AND ABORT TEST
10985 055332' 104410              TRAP C$ESCAPE
10986 055334' 003160              .WORD L10054-.
10987
10988
10989 055336' 012705 011172'      ;WRITE RING FORMAT
10990 055342' 004737 024630'      70$: MOV #WTRNGS,R5      ; DEFAULT WRITE RING FORMAT FUNCTION
10991 055346' 012705 011312'      JSR PC,LDPCBB          ; LOAD FUNCTION -> PCBB
10992 055352' 012700 000006'      MOV #RFRMT,R5         ; DEFAULT RING FORMAT
10993 055356' 004737 025030'      MOV #6,R0             ; FORMAT = SIX WORDS
10994 055362' 012777 000002 122636 JSR PC,LDUDBB          ; LOAD RING FORMAT -> UDBB
10995 055370' 004737 022546'      MOV #GETCMD,@PCSRO    ; ISSUE GET_CMD PORT COMMAND
10996 055374' 103006              JSR PC,CHKDNI          ; DNI ?
10997 055376'                      BCC 80$                ; YES
10998 055376' 104456              ERRHRD 379.,ERR010,MSG003 ; NO, REPORT ERROR
10999 055400' 000573              TRAP C$ERHRD
11000 055402' 016506'            .WORD 379
11001 055404' 015114'            .WORD ERR010
11002 055406'                      .WORD MSG003
11003 055406' 104410              ESCAPE TST             ; AND ABORT TEST
11004 055410' 003104              TRAP C$ESCAPE
11005                                     .WORD L10054-.
11006 055412' 004737 023434'      80$: JSR PC,CLRDN1      ; WRITE ONE TO CLEAR DNI
11007                                     ; ERROR ?
11008 055416' 103006              BCC 90$                ; NO
11009 055420'                      ERRHRD 380.,ERR006,MSG003 ; YES, REPORT ERROR
11010 055420' 104456              TRAP C$ERHRD
11011 055422' 000574              .WORD 380
11012 055424' 016206'            .WORD ERR006
11013 055426' 015114'            .WORD MSG003
11014 055430'                      ESCAPE TST             ; AND ABORT TEST
11015 055430' 104410              TRAP C$ESCAPE
11016 055432' 003062              .WORD L10054-.
11017
11018
11019 055434' 012705 011132'      ;WRITE PHYSICAL ADDRESS
11020 055440' 004737 024630'      90$: MOV #WTPHYA,R5      ; DEFAULT WRITE PHYSICAL ADDR FUNC
11021                                     JSR PC,LDPCBB          ; LOAD FUNCTION -> PCBB
11022 055444' 012703 012306'      ;LOAD DEFAULT PHYSICAL ADDRESS
11023 055450' 012704 000254'      MOV #ADR21,R3         ; POINT TO PHYSICAL ADDRESS
11024 055454' 012324              MOV #PCBB+2,R4        ; POINT TO PCBB + 2
11025 055456' 012324              MOV (R3)+,(R4)+       ; LOAD ADDRESS
11026 055460' 012324              MOV (R3)+,(R4)+
11027 055462' 012777 000002 122536 MOV #GETCMD,@PCSRO    ; ISSUE GET_CMD PORT COMMAND
11028 055470' 004737 022546'      JSR PC,CHKDNI          ; DNI ?
11029 055474' 103006              BCC 100$               ; YES
11030 055476'                      ERRHRD 381.,ERR010,MSG003 ; NO, REPORT ERROR
11031 055476' 104456              TRAP C$ERHRD

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 CZUABA.MAC 10-JAN-83 12:46 TEST 23: PROMISCUOUS ADDRESS MODE TEST

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11032 055500' 000575          .WORD 381
11033 055502' 016506'        .WORD ERR010
11034 055504' 015114'        .WORD MSG003
11035 055506'                ESCAPE TST          ; AND ABORT TEST
11036 055506' 104410          TRAP C$ESCAPE
11037 055510' 003004          .WORD L10054-.
11038
11039 055512' 004737 023434' 100$: JSR PC,CLRDNI          ; WRITE ONE TO CLEAR DNI
11040                                     ; ERROR ?
11041 055516' 103006          BCC 102$
11042 055520'                ERRHRD 382.,ERR006,MSG003 ; YES, REPORT ERROR
11043 055520' 104456          TRAP C$ERHRD
11044 055522' 000576          .WORD 382
11045 055524' 016206'        .WORD ERR006
11046 055526' 015114'        .WORD MSG003
11047 055530'                ESCAPE TST          ; AND ABORT TEST
11048 055530' 104410          TRAP C$ESCAPE
11049 055532' 002762          .WORD L10054-.
11050
11051                                     ; WRITE MULTICAST ADDRESS LIST
11052 055534' 012705 011152' 102$: MOV #WTMULA,R5          ; DEFAULT WRITE MULTICAST ADDR FUNC
11053 055540' 004737 024630' JSR PC,LDPCBB          ; LOAD FUNCTION -> PCBB
11054 055544' 012705 012322' MOV #MULTL,R5          ; LOAD LIST INTO UDBB
11055 055550' 012700 000036 MOV #30.,R0           ; LOAD 30 ENTRIES
11056 055554' 004737 025030' JSR PC,LDUDBB          ; MULTICAST LIST -> UDBB
11057 055560' 012777 000002 122440 MOV #GETCMD,@PCSR0    ; ISSUE GET_CMD PORT COMMAND
11058 055566' 004737 022546' JSR PC,CHKDNI          ; DNI ?
11059 055572' 103006          BCC 104$
11060 055574'                ERRHRD 383.,ERR010,MSG003 ; NO, REPORT ERROR
11061 055574' 104456          TRAP C$ERHRD
11062 055576' 000577          .WORD 383
11063 055600' 016506'        .WORD ERR010
11064 055602' 015114'        .WORD MSG003
11065 055604'                ESCAPE TST          ; AND ABORT TEST
11066 055604' 104410          TRAP C$ESCAPE
11067 055606' 002706          .WORD L10054-.
11068
11069 055610' 004737 023434' 104$: JSR PC,CLRDNI          ; WRITE ONE TO CLEAR DNI
11070                                     ; ERROR ?
11071 055614' 103006          BCC 110$
11072 055616'                ERRHRD 384.,ERR006,MSG003 ; YES, REPORT ERROR
11073 055616' 104456          TRAP C$ERHRD
11074 055620' 000600          .WORD 384
11075 055622' 016206'        .WORD ERR006
11076 055624' 015114'        .WORD MSG003
11077 055626'                ESCAPE TST          ; AND ABORT TEST
11078 055626' 104410          TRAP C$ESCAPE
11079 055630' 002664          .WORD L10054-.
11080
11081                                     ; DESTINATION ADDRESS = PHYSICAL ADDRESS
11082
11083                                     ; SET UP RINGS FOR ONE BUFFER LOOPBACK
11084 055632' 012705 0111542' 110$: MOV #TDRB1A,R5          ; DEFAULT ONE BUFFER TRANSMIT RING
11085 055636' 004737 024734' JSR PC,LDTDRB          ; LOAD TDRB
11086 055642' 012705 011342' MOV #RDRB1A,R5          ; DEFAULT ONE BUFFER RECEIVE RING
11087 055646' 004737 024676' JSR PC,LDRDRB          ; LOAD RDRB

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11088
11089
11090 055652' 012705 012306'      ;SET UP BUFFERS AND START
11091 055656' 004737 024602'      MOV #ADR21,R5          ; POINT TO DESTINATION ADDRESS
11092 055662' 004737 025230'      JSR PC,LDDEST         ; LOAD DEST
11093 055666' 012777 000004' 122332 JSR PC,SETBUF         ; SET UP BUFFERS
11094 055674' 004737 022546'      MOV #START,@PCSR0    ; ISSUE START PORT COMMAND
11095 055700' 103006          JSR PC,CHKDNI         ; DNI?
11096 055702'          BCC 120$             ; YES
11097 055702' 104456          ERRHRD 385.,ERR012,MSG003 ; NO, REPORT ERROR
11098 055704' 000601          TRAP C$ERHRD
11099 055706' 016637'          .WORD 385
11100 055710' 015114'          .WORD ERR012
11101 055712'          .WORD MSG003
11102 055712' 104410          ESCAPE TST           ; AND ABORT TEST
11103 055714' 002600          TRAP C$ESCAPE
11104          .WORD L10054-.
11105 055716' 004737 023434'      ;20$: JSR PC,CLRDNI    ; WRITE ONE TO CLEAR DNI
11106          BCC 130$             ; ERROR ?
11107 055722' 103006          ERRHRD 386.,ERR006,MSG003 ; NO
11108 055724'          .WORD 386
11109 055724' 104456          .WORD ERR006
11110 055726' 000602'          .WORD MSG003
11111 055730' 016206'          ESCAPE TST           ; AND ABORT TEST
11112 055732' 015114'          TRAP C$ESCAPE
11113 055734'          .WORD L10054-.
11114 055734' 104410          ;30$: JSR PC,CHKTXI    ; TXI ?
11115 055736' 002556          BCC 140$             ; YES
11116          ERRHRD 387.,ERR013,MSG003 ; NO, REPORT ERROR
11117 055740' 004737 023306'          TRAP C$ERHRD
11118 055744' 103006          .WORD 387
11119 055746'          .WORD ERR013
11120 055746' 104456          .WORD MSG003
11121 055750' 000603'          ESCAPE TST           ; AND ABORT TEST
11122 055752' 016720'          TRAP C$ESCAPE
11123 055754' 015114'          .WORD L10054-.
11124 055756'          ;40$: JSR PC,CLRTXI    ; WRITE ONE TO CLEAR TXI
11125 055756' 104410          BCC 150$             ; ERROR ?
11126 055760' 002534          ERRHRD 388.,ERR014,MSG003 ; NO
11127          .WORD 388
11128 055762' 004737 023616'          .WORD ERR014
11129          .WORD MSG003
11130 055766' 103006          ESCAPE TST           ; AND ABORT TEST
11131 055770'          TRAP C$ESCAPE
11132 055770' 104456          .WORD L10054-.
11133 055772' 000604'          ;50$: MOV #TDRB,R5     ; CHECK TDRB OWNERSHIP
11134 055774' 016751'          JSR PC,CHKOWN        ; OWN = PORT DRIVER ?
11135 055776' 015114'          BCC 160$             ; YES
11136 056000'          ERRHRD 389.,ERR018  ; NO, REPORT ERROR
11137 056000' 104410
11138 056002' 002512
11139
11140 056004' 012705 000572'
11141 056010' 004737 022634'
11142 056014' 103006
11143 056016'

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11144	056016*	104456				TRAP	C\$ERHRD
11145	056020*	000605				.WORD	389
11146	056022*	017216*				.WORD	ERR018
11147	056024*	000000				.WORD	0
11148	056026*			ESCAPE	TST		; AND ABORT TEST
11149	056026*	104410				TRAP	C\$ESCAPE
11150	056030*	002464				.WORD	L10054-.
11151							
11152	056032*	012705	012512*	i60\$:	MOV	#TDR14A,R5	; POINT TO EXPECTED TDRB
11153	056036*	004737	025140*		JSR	PC,LDXTDR	; LOAD INTO XTDRB0 TABLE
11154	056042*	012705	000572*		MOV	#TDRB,R5	; CHECK TDRB
11155	056046*	004737	023220*		JSR	PC,CHKTDR	; ERRORS ?
11156	056052*	103006			BCC	170\$	; NO
11157	056054*				ERRHRD	390.,ERR020,MSG005	; YES, REPORT ERROR
11158	056054*	104456				TRAP	C\$ERHRD
11159	056056*	000606				.WORD	390
11160	056060*	017376*				.WORD	ERR020
11161	056062*	015220*				.WORD	MSG005
11162	056064*			ESCAPE	TST		; AND ABORT TEST
11163	056064*	104410				TRAP	C\$ESCAPE
11164	056066*	002426				.WORD	L10054-.
11165							
11166	056070*	004737	023054*	i70\$:	JSR	PC,CHKRXI	; RXI ?
11167	056074*	103006			BCC	180\$	; YES
11168	056076*				ERRHRD	391.,ERR015,MSG003	; NO, REPORT ERROR
11169	056076*	104456				TRAP	C\$ERHRD
11170	056100*	000607				.WORD	391
11171	056102*	017017*				.WORD	ERR015
11172	056104*	015114*				.WORD	MSG003
11173	056106*			ESCAPE	TST		; AND ABORT TEST
11174	056106*	104410				TRAP	C\$ESCAPE
11175	056110*	002404				.WORD	L10054-.
11176							
11177	056112*	004737	023550*	i80\$:	JSR	PC,CLRRXI	; WRITE ONE TO CLEAR RXI
11178							; ERROR ?
11179	056116*	103006			BCC	190\$	; NO
11180	056120*				ERRHRD	392.,ERR016,MSG003	; YES, REPORT ERROR
11181	056120*	104456				TRAP	C\$ERHRD
11182	056122*	000610				.WORD	392
11183	056124*	017050*				.WORD	ERR016
11184	056126*	015114*				.WORD	MSG003
11185	056130*			ESCAPE	TST		; AND ABORT TEST
11186	056130*	104410				TRAP	C\$ESCAPE
11187	056132*	002362				.WORD	L10054-.
11188							
11189	056134*	012705	000632*	i90\$:	MOV	#RDRB,R5	; CHECK RDRB OWNERSHIP
11190	056140*	004737	022634*		JSR	PC,CHKOWN	; OWN = PORT DRIVER ?
11191	056144*	103006			BCC	200\$	; YES
11192	056146*				ERRHRD	393.,ERR017	; NO, REPORT ERROR
11193	056146*	104456				TRAP	C\$ERHRD
11194	056150*	000611				.WORD	393
11195	056152*	017116*				.WORD	ERR017
11196	056154*	000000				.WORD	0
11197	056156*			ESCAPE	TST		; AND ABORT TEST
11198	056156*	104410				TRAP	C\$ESCAPE
11199	056160*	002334				.WORD	L10054-.

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 TEST 23: PROMISCUOUS ADDRESS MODE TEST

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11200
11201 056162' 012705 012622'
11202 056166' 004737 025110'
11203 056172' 012705 000632'
11204 056176' 004737 022754'
11205 056202' 103006
11206 056204'
11207 056204' 104456
11208 056206' 000612
11209 056210' 017457'
11210 056212' 015362'
11211 056214'
11212 056214' 104410
11213 056216' 002276
11214
11215
11216 056220' 012705 000070
11217 056224' 004737 023732'
11218 056230' 103006
11219 056232'
11220 056232' 104456
11221 056234' 000613
11222 056236' 017540'
11223 056240' 015524'
11224 056242'
11225 056242' 104410
11226 056244' 002250
11227
11228 056246' 012705 012732'
11229 056252' 004737 025064'
11230 056256' 012705 005266'
11231 056262' 004737 024012'
11232 056266' 103006
11233 056270'
11234 056270' 104456
11235 056272' 000614
11236 056274' 017607'
11237 056276' 015556'
11238 056300'
11239 056300' 104410
11240 056302' 002212
11241
11242 056304' 012777 000017 121714
11243 056312' 004737 022546'
11244 056316' 103006
11245 056320'
11246 056320' 104456
11247 056322' 000615
11248 056324' 017316'
11249 056326' 015114'
11250 056330'
11251 056330' 104410
11252 056332' 002162
11253
11254 056334' 004737 023434'
11255

:
200$: MOV #RDR14A,R5 ; POINT TO EXPECTED RDRB
      JSR PC,LDXRDR ; LOAD INTO XRDRB0 TABLE
      MOV #RDRB,R5 ; CHECK RDRB
      JSR PC,CHKRDR ; ERRORS ?
      BCC 210$ ; NO
      ERRHRD 394.,ERR021,MSG006 ; YES, REPORT ERROR
                                     TRAP C$ERHRD
                                     .WORD 394
                                     .WORD ERR021
                                     .WORD MSG006
      ESCAPE TST ; AND ABORT TEST
                                     TRAP C$ESCAPE
                                     .WORD L10054-.

:
210$: ; COMPARE RBUF WITH TBUF
      MOV #56.,R5 ; COMPARE 56 WORDS OF DATA
      JSR PC,CMPDAT ; DATA COMPARE ERROR ?
      BCC 220$ ; NO
      ERRHRD 395.,ERR022,MSG007 ; YES, REPORT ERROR
                                     TRAP C$ERHRD
                                     .WORD 395
                                     .WORD ERR022
                                     .WORD MSG007
      ESCAPE TST ; AND ABORT TEST
                                     TRAP C$ESCAPE
                                     .WORD L10054-.

:
220$: MOV #CRC21A,R5 ; POINT TO EXPECTED CRC
      JSR PC,LDXCRC ; LOAD INTO XCRC TABLE
      MOV #RBUF+124.,R5 ; CHECK CRC
      JSR PC,CMPCRC ; ERRORS ?
      BCC 230$ ; NO
      ERRHRD 396.,ERR023,MSG008 ; YES, REPORT ERROR
                                     TRAP C$ERHRD
                                     .WORD 396
                                     .WORD ERR023
                                     .WORD MSG008
      ESCAPE TST ; AND ABORT TEST
                                     TRAP C$ESCAPE
                                     .WORD L10054-.

:
230$: MOV #STOP,@PCSR0 ; ISSUE STOP PORT COMMAND
      JSR PC,CHKDNI ; DNI ?
      BCC 240$ ; YES
      ERRHRD 397.,ERR019,MSG003 ; NO, REPORT ERROR
                                     TRAP C$ERHRD
                                     .WORD 397
                                     .WORD ERR019
                                     .WORD MSG003
      ESCAPE TST ; AND ABORT TEST
                                     TRAP C$ESCAPE
                                     .WORD L10054-.

:
240$: JSR PC,CLRDN1 ; WRITE ONE TO CLEAR DNI
      ; ERROR ?

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11256 056340' 103006          BCC 250$          : NO
11257 056342'          ERRHRD 398.,ERR006,MSG003 : YES, REPORT ERROR
11258 056342' 104456          TRAP C$ERHRD
11259 056344' 000616          .WORD 398
11260 056346' 016206'          .WORD ERR006
11261 056350' 015114'          .WORD MSG003
11262 056352'          ESCAPE TST          : AND ABORT TEST
11263 056352' 104410          TRAP C$ESCAPE
11264 056354' 002140          .WORD L10054-.
11265
11266          ;DESTINATION ADDRESS NOT = PHYSICAL ADDRESS
11267
11268          ;SET UP RINGS FOR ONE BUFFER LOOPBACK
11269 056356' 012705 011542' 250$: MOV #TDRB1A,R5 : DEFAULT ONE BUFFER TRANSMIT RING
11270 056362' 004737 024734' JSR PC,LDTDRB : LOAD TDRB
11271 056366' 012705 011342' MOV #RDRB1A,R5 : DEFAULT ONE BUFFER RECEIVE RING
11272 056372' 004737 024676' JSR PC,LDRDRB : LOAD RDRB
11273
11274          ;SET UP BUFFERS AND START
11275 056376' 012705 012314' MOV #ADR21C,R5 : POINT TO COMPLEMENTED ADDRESS
11276 056402' 004737 024602' JSR PC,LDDEST : LOAD DEST
11277 056406' 004737 025230' JSR PC,SETBUF : SET UP BUFFERS
11278 056412' 012777 000004' 121606 MOV #START,@PCSR0 : ISSUE START PORT COMMAND
11279 056420' 004737 022546' JSR PC,CHKDNI : DNI?
11280 056424' 103006          BCC 260$          : YES
11281 056426'          ERRHRD 399.,ERR012,MSG003 : NO, REPORT ERROR
11282 056426' 104456          TRAP C$ERHRD
11283 056430' 000617          .WORD 399
11284 056432' 016637'          .WORD ERR012
11285 056434' 015114'          .WORD MSG003
11286 056436'          ESCAPE TST          : AND ABORT TEST
11287 056436' 104410          TRAP C$ESCAPE
11288 056440' 002054          .WORD L10054-.
11289
11290 056442' 004737 023434' 260$: JSR PC,CLRDN1 : WRITE ONE TO CLEAR DNI
11291          : ERROR ?
11292 056446' 103006          BCC 270$          : NO
11293 056450'          ERRHRD 400.,ERR006,MSG003 : YES, REPORT ERROR
11294 056450' 104456          TRAP C$ERHRD
11295 056452' 000620          .WORD 400
11296 056454' 016206'          .WORD ERR006
11297 056456' 015114'          .WORD MSG003
11298 056460'          ESCAPE TST          : AND ABORT TEST
11299 056460' 104410          TRAP C$ESCAPE
11300 056462' 002032          .WORD L10054-.
11301
11302 056464' 004737 023306' 270$: JSR PC,CHKTXI : TXI ?
11303 056470' 103006          BCC 280$          : YES
11304 056472'          ERRHRD 401.,ERR013,MSG003 : NO, REPORT ERROR
11305 056472' 104456          TRAP C$ERHRD
11306 056474' 000621          .WORD 401
11307 056476' 016720'          .WORD ERR013
11308 056500' 015114'          .WORD MSG003
11309 056502'          ESCAPE TST          : AND ABORT TEST
11310 056502' 104410          TRAP C$ESCAPE
11311 056504' 002010          .WORD L10054-.

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11312
11313 056506' 004737 023616'      280$: JSR      PC,CLRTXI      : WRITE ONE TO CLEAR TXI
11314                                     : ERROR ?
11315 056512' 103006                BCC      290$      : NO
11316 056514'                                ERRHRD  402.,ERR014,MSG003 : YES, REPORT ERROR
11317 056514' 104456                                     TRAP   C$ERHRD
11318 056516' 000622                                     .WORD  402
11319 056520' 016751'                                     .WORD  ERR014
11320 056522' 015114'                                     .WORD  MSG003
11321 056524'                                ESCAPE  TST      : AND ABORT TEST
11322 056524' 104410                                     TRAP   C$ESCAPE
11323 056526' 001766                                     .WORD  L10054-.
11324
11325 056530' 012705 000572'      290$: MOV      #TDRB,R5      : CHECK TDRB OWNERSHIP
11326 056534' 004737 022634'      JSR      PC,CHKOWN    : OWN = PORT DRIVER ?
11327 056540' 103006                BCC      300$      : YES
11328 056542'                                ERRHRD  403.,ERR018 : NO, REPORT ERROR
11329 056542' 104456                                     TRAP   C$ERHRD
11330 056544' 000623                                     .WORD  403
11331 056546' 017216'                                     .WORD  ERR018
11332 056550' 000000                                     .WORD  0
11333 056552'                                ESCAPE  TST      : AND ABORT TEST
11334 056552' 104410                                     TRAP   C$ESCAPE
11335 056554' 001740                                     .WORD  L10054-.
11336
11337 056556' 012705 012512'      300$: MOV      #TDR14A,R5 : POINT TO EXPECTED TDRB
11338 056562' 004737 025140'      JSR      PC,LDXTDR    : LOAD INTO XTDRBO TABLE
11339 056566' 012705 000572'      MOV      #TDRB,R5    : CHECK TDRB
11340 056572' 004737 023220'      JSR      PC,CHKTDR   : ERRORS ?
11341 056576' 103006                BCC      310$      : NO
11342 056600'                                ERRHRD  404.,ERR020,MSG005 : YES, REPORT ERROR
11343 056600' 104456                                     TRAP   C$ERHRD
11344 056602' 000624                                     .WORD  404
11345 056604' 017376'                                     .WORD  ERR020
11346 056606' 015220'                                     .WORD  MSG005
11347 056610'                                ESCAPE  TST      : AND ABORT TEST
11348 056610' 104410                                     TRAP   C$ESCAPE
11349 056612' 001702                                     .WORD  L10054-.
11350
11351 056614' 004737 023054'      310$: JSR      PC,CHKRXI   : RXI ?
11352 056620' 103006                BCC      320$      : YES
11353 056622'                                ERRHRD  405.,ERR015,MSG003 : NO, REPORT ERROR
11354 056622' 104456                                     TRAP   C$ERHRD
11355 056624' 000625                                     .WORD  405
11356 056626' 017017'                                     .WORD  ERR015
11357 056630' 015114'                                     .WORD  MSG003
11358 056632'                                ESCAPE  TST      : AND ABORT TEST
11359 056632' 104410                                     TRAP   C$ESCAPE
11360 056634' 001660                                     .WORD  L10054-.
11361
11362 056636' 004737 023550'      320$: JSR      PC,CLRRXI   : WRITE ONE TO CLEAR RXI
11363                                     : ERROR ?
11364 056642' 103006                BCC      330$      : NO
11365 056644'                                ERRHRD  406.,ERR016,MSG003 : YES, REPORT ERROR
11366 056644' 104456                                     TRAP   C$ERHRD
11367 056646' 000626                                     .WORD  406

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11368	056650'	017050'				.WORD	ERR016
11369	056652'	015114'				.WORD	MSG003
11370	056654'			ESCAPE	TST		: AND ABORT TEST
11371	056654'	104410				TRAP	C\$ESCAPE
11372	056656'	001636				.WORD	L10054-.
11373							
11374	056660'	012705	000632'	330\$:	MOV	#RDRB,R5	: CHECK RDRB OWNERSHIP
11375	056664'	004737	022634'		JSR	PC,CHKOWN	: OWN = PORT DRIVER ?
11376	056670'	103006			BCC	340\$	: YES
11377	056672'				ERRHRD	407.,ERR017	: NO, REPORT ERROR
11378	056672'	104456					TRAP
11379	056674'	000627				.WORD	C\$ERHRD
11380	056676'	017116'				.WORD	407
11381	056700'	000000				.WORD	ERR017
11382	056702'					.WORD	0
11383	056702'	104410			ESCAPE		: AND ABORT TEST
11384	056704'	001610				TRAP	C\$ESCAPE
11385						.WORD	L10054-.
11386	056706'	012705	012622'	340\$:	MOV	#RDR14A,R5	: POINT TO EXPECTED RDRB
11387	056712'	004737	025110'		JSR	PC,LDXRDR	: LOAD INTO XRDRB0 TABLE
11388	056716'	012705	000632'		MOV	#RDRB,R5	: CHECK RDRB
11389	056722'	004737	022754'		JSR	PC,CHKRDR	: ERRORS ?
11390	056726'	103006			BCC	350\$	: NO
11391	056730'				ERRHRD	408.,ERR021,MSG006	: YES, REPORT ERROR
11392	056730'	104456					TRAP
11393	056732'	000630				.WORD	C\$ERHRD
11394	056734'	017457'				.WORD	408
11395	056736'	015362'				.WORD	ERR021
11396	056740'					.WORD	MSG006
11397	056740'	104410			ESCAPE		: AND ABORT TEST
11398	056742'	001552				TRAP	C\$ESCAPE
11399						.WORD	L10054-.
11400					: COMPARE RBUF WITH TBUF		
11401	056744'	012705	000070	350\$:	MOV	#56.,R5	: COMPARE 56 WORDS OF DATA
11402	056750'	004737	023732'		JSR	PC,CPDAT	: DATA COMPARE ERROR ?
11403	056754'	103006			BCC	360\$	: NO
11404	056756'				ERRHRD	409.,ERR022,MSG007	: YES, REPORT ERROR
11405	056756'	104456					TRAP
11406	056760'	000631				.WORD	C\$ERHRD
11407	056762'	017540'				.WORD	409
11408	056764'	015524'				.WORD	ERR022
11409	056766'					.WORD	MSG007
11410	056766'	104410			ESCAPE		: AND ABORT TEST
11411	056770'	001524				TRAP	C\$ESCAPE
11412						.WORD	L10054-.
11413	056772'	012705	013062'	360\$:	MOV	#CRC23B,R5	: POINT TO EXPECTED CRC
11414	056776'	004737	025064'		JSR	PC,LDXCRC	: LOAD INTO XCRC TABLE
11415	057002'	012705	005266'		MOV	#RBUF+124.,R5	: CHECK CRC
11416	057006'	004737	024012'		JSR	PC,CMPCRC	: ERRORS ?
11417	057012'	103006			BCC	370\$	: NO
11418	057014'				ERRHRD	410.,ERR023,MSG008	: YES, REPORT ERROR
11419	057014'	104456					TRAP
11420	057016'	000632				.WORD	C\$ERHRD
11421	057020'	017607'				.WORD	410
11422	057022'	015556'				.WORD	ERR023
11423	057024'				ESCAPE		: AND ABORT TEST
						.WORD	MSG008

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11424 057024* 104410 TRAP C$ESCAPE
11425 057026* 001466 .WORD L10054-.
11426
11427 057030* 012777 000017 121170 370$: MOV #STOP,@PCSR0 ; ISSUE STOP PORT COMMAND
11428 057036* 004737 022546* JSR PC,CHKDNI ; DNI ?
11429 057042* 103006 BCC 380$ ; YES
11430 057044* ERRHRD 411.,ERR019,MSG003 ; NO, REPORT ERROR
11431 057044* 104456 TRAP C$ERHRD
11432 057046* 000633 .WORD 411
11433 057050* 017316* .WORD ERR019
11434 057052* 015114* .WORD MSG003
11435 057054* ESCAPE TST ; AND ABORT TEST
11436 057054* 104410 TRAP C$ESCAPE
11437 057056* 001436 .WORD L10054-.
11438
11439 057060* 004737 023434* 380$: JSR PC,CLRDN! ; WRITE ONE TO CLEAR DNI
11440 .WORD ERROR ?
11441 057064* 103006 BCC 390$ ; NO
11442 057066* ERRHRD 412.,ERR006,MSG003 ; YES, REPORT ERROR
11443 057066* 104456 TRAP C$ERHRD
11444 057070* 000634 .WORD 412
11445 057072* 016206* .WORD ERR006
11446 057074* 015114* .WORD MSG003
11447 057076* ESCAPE TST ; AND ABORT TEST
11448 057076* 104410 TRAP C$ESCAPE
11449 057100* 001414 .WORD L10054-.
11450
11451 ;REWRITE DEFAULT PHYSICAL ADDRESS
11452 057102* 012705 011132* 390$: MOV #WTPHYA,R5 ; DEFAULT WRITE PHYSICAL ADDR FUNC
11453 057106* 004737 024630* JSR PC,LDPCBB ; LOAD FUNCTION -> PCBB
11454 057112* 012777 000002 121106 MOV #GETCMD,@PCSR0 ; ISSUE GET_CMD PORT COMMAND
11455 057120* 004737 022546* JSR PC,CHKDNI ; DNI ?
11456 057124* 103006 BCC 400$ ; YES
11457 057126* ERRHRD 413.,ERR010,MSG003 ; NO, REPORT ERROR
11458 057126* 104456 TRAP C$ERHRD
11459 057130* 000635 .WORD 413
11460 057132* 016506* .WORD ERR010
11461 057134* 015114* .WORD MSG003
11462 057136* ESCAPE TST ; AND ABORT TEST
11463 057136* 104410 TRAP C$ESCAPE
11464 057140* 001354 .WORD L10054-.
11465
11466 057142* 004737 023434* 400$: JSR PC,CLRDN! ; WRITE ONE TO CLEAR DNI
11467 .WORD ERROR ?
11468 057146* 103006 BCC 410$ ; NO
11469 057150* ERRHRD 414.,ERR006,MSG003 ; YES, REPORT ERROR
11470 057150* 104456 TRAP C$ERHRD
11471 057152* 000636 .WORD 414
11472 057154* 016206* .WORD ERR006
11473 057156* 015114* .WORD MSG003
11474 057160* ESCAPE TST ; AND ABORT TEST
11475 057160* 104410 TRAP C$ESCAPE
11476 057162* 001332 .WORD L10054-.
11477
11478 ;DO TEN LOOPS WITH DEST ADDR = MULTICAST ADDRESS
11479

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11480 057164* 012701 000012      410$:  MOV    #10.,R1      ; DO LOOP = TEN
11481 057170* 012702 012322*      MOV    #MULTL,R2      ; R2 POINTS TO MULTICAST LIST
11482 057174* 012703 012742*      MOV    #CRC22A,R3     ; R3 POINTS TO EXPECTED CRC TABLE
11483
11484      ;SET UP RINGS FOR ONE BUFFER LOOPBACK
11485 057200* 012705 011542*      420$:  MOV    #TDRB1A,R5  ; DEFAULT CNE BUFFER TRANSMIT RING
11486 057204* 004737 024734*      JSR    PC,LDTDRB      ; LOAD TDRB
11487 057210* 012705 011342*      MOV    #RDRB1A,R5    ; DEFAULT ONE BUFFER RECEIVE RING
11488 057214* 004737 024676*      JSR    PC,LDRDRB      ; LOAD RDRB
11489
11490      ;SET UP BUFFERS AND START
11491 057220* 010205      MOV    R2,R5          ; POINT TO DESTINATION ADDRESS
11492 057222* 004737 024602*      JSR    PC,LDDDEST     ; LOAD DEST
11493 057226* 004737 025230*      JSR    PC,SETBUF      ; SET UP BUFFERS
11494 057232* 012777 000004* 120766  MOV    #START,@PCSRO  ; ISSUE START PORT COMMAND
11495 057240* 004737 022546*      JSR    PC,CHKDNI      ; DNI?
11496 057244* 103006      BCC    430$           ; YES
11497 057246*      ERRHRD 415.,ERR012,MSG003 ; NO, REPORT ERROR
11498 057246* 104456      TRAP   C$ERHRD
11499 057250* 000637      .WORD 415
11500 057252* 016637*      .WORD ERR012
11501 057254* 015114*      .WORD MSG003
11502 057256*      ESCAPE TST          ; AND ABORT TEST
11503 057256* 104410      TRAP   C$ESCAPE
11504 057260* 001234      .WORD L10054-.
11505
11506 057262* 004737 023434*      430$:  JSR    PC,CLRDN1    ; WRITE ONE TO CLEAR DNI
11507
11508 057266* 103006      BCC    440$           ; ERROR ?
11509 057270*      ERRHRD 416.,ERR006,MSG003 ; NO
11510 057270* 104456      ; YES, REPORT ERROR
11511 057272* 000640      TRAP   C$ERHRD
11512 057274* 016206*      .WORD 416
11513 057276* 015114*      .WORD ERR006
11514 057300*      .WORD MSG003
11515 057300* 104410      ESCAPE TST          ; AND ABORT TEST
11516 057302* 001212      TRAP   C$ESCAPE
11517
11518 057304* 004737 023306*      440$:  JSR    PC,CHKTXI    ; TXI ?
11519 057310* 103006      BCC    450$           ; YES
11520 057312*      ERRHRD 417.,ERR013,MSG003 ; NO, REPORT ERROR
11521 057312* 104456      TRAP   C$ERHRD
11522 057314* 000641      .WORD 417
11523 057316* 016720*      .WORD ERR013
11524 057320* 015114*      .WORD MSG003
11525 057322*      ESCAPE TST          ; AND ABORT TEST
11526 057322* 104410      TRAP   C$ESCAPE
11527 057324* 001170      .WORD L10054-.
11528
11529 057326* 004737 023616*      450$:  JSR    PC,CLRTXI    ; WRITE ONE TO CLEAR TXI
11530
11531 057332* 103006      BCC    470$           ; ERROR ?
11532 057334*      ERRHRD 418.,ERR014,MSG003 ; NO
11533 057334* 104456      ; YES, REPORT ERROR
11534 057336* 000642      TRAP   C$ERHRD
11535 057340* 016751*      .WORD 418
      .WORD ERR014

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11536	057342'	015114'						.WORD	MSG003
11537	057344'			ESCAPE	TST				; AND ABORT TEST
11538	057344'	104410						TRAP	C\$ESCAPE
11539	057346'	001146						.WORD	L10054-
11540									
11541	057350'	012705	000572'	470\$:	MOV	#TDRB,R5			; CHECK TDRB OWNERSHIP
11542	057354'	004737	022634'		JSR	PC,CHKOWN			; OWN = PORT DRIVER ?
11543	057360'	103006			BCC	480\$			; YES
11544	057362'				ERRHRD	419.,ERR018			; NO, REPORT ERROR
11545	057362'	104456						TRAP	C\$ERHRD
11546	057364'	000643						.WORD	419
11547	057366'	017216'						.WORD	ERR018
11548	057370'	000000						.WORD	0
11549	057372'			ESCAPE	TST				; AND ABORT TEST
11550	057372'	104410						TRAP	C\$ESCAPE
11551	057374'	001120						.WORD	L10054-
11552									
11553	057376'	012705	012512'	480\$:	MOV	#TDR14A,R5			; POINT TO EXPECTED TDRB
11554	057402'	004737	025140'		JSR	PC,LDXTDR			; LOAD INTO XTDRB0 TABLE
11555	057406'	012705	000572'		MOV	#TDRB,R5			; CHECK TDRB
11556	057412'	004737	023220'		JSR	PC,CHKTDR			; ERRORS ?
11557	057416'	103006			BCC	490\$			; NO
11558	057420'				ERRHRD	420.,ERR020,MSG005			; YES, REPORT ERROR
11559	057420'	104456						TRAP	C\$ERHRD
11560	057422'	000644						.WORD	420
11561	057424'	017376'						.WORD	ERR020
11562	057426'	015220'						.WORD	MSG005
11563	057430'			ESCAPE	TST				; AND ABORT TEST
11564	057430'	104410						TRAP	C\$ESCAPE
11565	057432'	001062						.WORD	L10054-
11566									
11567	057434'	004737	023054'	490\$:	JSR	PC,CHKRXI			; RXI ?
11568	057440'	103006			BCC	500\$			; YES
11569	057442'				ERRHRD	421.,ERR015,MSG003			; NO, REPORT ERROR
11570	057442'	104456						TRAP	C\$ERHRD
11571	057444'	000645						.WORD	421
11572	057446'	017017'						.WORD	ERR015
11573	057450'	015114'						.WORD	MSG003
11574	057452'			ESCAPE	TST				; AND ABORT TEST
11575	057452'	104410						TRAP	C\$ESCAPE
11576	057454'	001040						.WORD	L10054-
11577									
11578	057456'	004737	023550'	500\$:	JSR	PC,CLRRXI			; WRITE ONE TO CLEAR RXI
11579									; ERROR ?
11580	057462'	103006			BCC	510\$			; NO
11581	057464'				ERRHRD	422.,ERR016,MSG003			; YES, REPORT ERROR
11582	057464'	104456						TRAP	C\$ERHRD
11583	057466'	000646						.WORD	422
11584	057470'	017050'						.WORD	ERR016
11585	057472'	015114'						.WORD	MSG003
11586	057474'			ESCAPE	TST				; AND ABORT TEST
11587	057474'	104410						TRAP	C\$ESCAPE
11588	057476'	001016						.WORD	L10054-
11589									
11590	057500'	012705	000632'	510\$:	MOV	#RDRB,R5			; CHECK RDRB OWNERSHIP
11591	057504'	004737	022634'		JSR	PC,CHKOWN			; OWN = PORT DRIVER ?

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11592 057510' 103006          BCC 520$          : YES
11593 057512'          ERRHRD 423.,ERR017 : NO, REPORT ERROR
11594 057512' 104456          TRAP C$ERHRD
11595 057514' 000647          .WORD 423
11596 057516' 017116'          .WORD ERR017
11597 057520' 000000          .WORD 0
11598 057522'          ESCAPE TST        : AND ABORT TEST
11599 057522' 104410          TRAP C$ESCAPE
11600 057524' 000770          .WORD L10054-.
11601
11602 057526' 012705 012622' 520$: MOV #RDR14A,R5 : POINT TO EXPECTED RDRB
11603 057532' 004737 025110' JSR PC,LDXRDR : LOAD INTO XRDRBO TABLE
11604 057536' 012705 000632' MOV #RDRB,R5 : CHECK RDRB
11605 057542' 004737 022754' JSR PC,CHKRDR : ERRORS ?
11606 057546' 103006          BCC 530$          : NO
11607 057550'          ERRHRD 424.,ERR021,MSG006 : YES, REPORT ERROR
11608 057550' 104456          TRAP C$ERHRD
11609 057552' 000650          .WORD 424
11610 057554' 017457'          .WORD ERR021
11611 057556' 015362'          .WORD MSG006
11612 057560'          ESCAPE TST        : AND ABORT TEST
11613 057560' 104410          TRAP C$ESCAPE
11614 057562' 000732          .WORD L10054-.
11615
11616          :COMPARE RBUF WITH TBUF
11617 057564' 012705 000070 530$: MOV #56.,R5 : COMPARE 56 WORDS OF DATA
11618 057570' 004737 023732' JSR PC,CMPDAT : DATA COMPARE ERROR ?
11619 057574' 103006          BCC 540$          : NO
11620 057576'          ERRHRD 425.,ERR022,MSG007 : YES, REPORT ERROR
11621 057576' 104456          TRAP C$ERHRD
11622 057600' 000651          .WORD 425
11623 057602' 017540'          .WORD ERR022
11624 057604' 015524'          .WORD MSG007
11625 057606'          ESCAPE TST        : AND ABORT TEST
11626 057606' 104410          TRAP C$ESCAPE
11627 057610' 000704          .WORD L10054-.
11628
11629 057612' 010305 540$: MOV R3,R5 : POINT TO EXPECTED CRC TABLE
11630 057614' 004737 025064' JSR PC,LDXCRC : LOAD INTO XCRC TABLE
11631 057620' 012705 005266' MOV #RBUF+124.,R5 : CHECK CRC
11632 057624' 004737 024012' JSR PC,CMPCRC : ERRORS ?
11633 057630' 103006          BCC 550$          : NO
11634 057632'          ERRHRD 426.,ERR023,MSG008 : YES, REPORT ERROR
11635 057632' 104456          TRAP C$ERHRD
11636 057634' 000652          .WORD 426
11637 057636' 017607'          .WORD ERR023
11638 057640' 015556'          .WORD MSG008
11639 057642'          ESCAPE TST        : AND ABORT TEST
11640 057642' 104410          TRAP C$ESCAPE
11641 057644' 000650          .WORD L10054-.
11642
11643 057646' 012777 000017 120352 550$: MOV #STOP,@PCSR0 : ISSUE STOP PORT COMMAND
11644 057654' 004737 022546' JSR PC,CHKDNI : DNI ?
11645 057660' 103006          BCC 560$          : YES
11646 057662'          ERRHRD 427.,ERR019,MSG003 : NO, REPORT ERROR
11647 057662' 104456          TRAP C$ERHRD

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11648 057664' 000653 .WORD 427
11649 057666' 017316' .WORD ERR019
11650 057670' 015114' .WORD MSG003
11651 057672' ESCAPE TST ; AND ABORT TEST
11652 057672' 104410 TRAP C$ESCAPE
11653 057674' 000620 .WORD L10054-.
11654
11655 057676' 004737 023434' 560$: JSR PC,CLRDN1 ; WRITE ONE TO CLEAR DNI
11656 ; ERROR ?
11657 057702' 103006 BCC 565$ ; NO
11658 057704' ERRHRD 428.,ERR006,MSG003 ; YES, REPORT ERROR
11659 057704' 104456 TRAP C$ERHRD
11660 057706' 000654 .WORD 428
11661 057710' 016206' .WORD ERR006
11662 057712' 015114' .WORD MSG003
11663 057714' ESCAPE TST ; AND ABORT TEST
11664 057714' 104410 TRAP C$ESCAPE
11665 057716' 000576 .WORD L10054-.
11666
11667 057720' 062702 000006 565$: ADD #6,R2 ; UPDATE R2
11668 057724' 062703 000004 ADD #4,R3 ; UPDATE R3
11669 057730' 005301 DEC R1 ; DONE TEN LOOPBACKS
11670 057732' 001402 BEQ 566$ ; YES
11671 057734' 000137 057200' JMP 420$ ; NO
11672
11673 ;
11674 ;DO TEN LOOPS WITH DEST ADDRESS = COMPLIMENTED MULTICAST ADDRESS
11675 ;
11676 057740' 012701 000012 566$: MOV #10.,R1 ; DO LOOP = TEN
11677 057744' 012702 012416' MOV #MULTLC,R2 ; R2 POINTS TO COMPLIMENTED LIST
11678 057750' 012703 013012' MOV #CRC22B,R3 ; R3 POINTS TO CRC TABLE
11679 ;
11680 ;SET UP RINGS FOR ONE BUFFER LOOPBACK
11681 057754' 012705 011542' 570$: MOV #TDRB1A,R5 ; DEFAULT ONE BUFFER TRANSMIT RING
11682 057760' 004737 024734' JSR PC,LDTDRB ; LOAD TDRB
11683 057764' 012705 011342' MOV #RDRB1A,R5 ; DEFAULT ONE BUFFER RECEIVE RING
11684 057770' 004737 024676' JSR PC,LDRDRB ; LOAD RDRB
11685 ;
11686 ;SET UP BUFFERS AND START
11687 057774' 010205 MOV R2,R5 ; POINT TO COMPLEMENTED ADDRESS
11688 057776' 004737 024602' JSR PC,LDDEST ; LOAD DEST
11689 060002' 004737 025230' JSR PC,SETBUF ; SET UP BUFFERS
11690 060006' 012777 000004 120212 MOV #START,@PCSR0 ; ISSUE START PORT COMMAND
11691 060014' 004737 022546' JSR PC,CHKDNI ; DNI?
11692 060020' 103006 BCC 580$ ; YES
11693 060022' ERRHRD 429.,ERR012,MSG003 ; NO, REPORT ERROR
11694 060022' 104456 TRAP C$ERHRD
11695 060024' 000655 .WORD 429
11696 060026' 016637' .WORD ERR012
11697 060030' 015114' .WORD MSG003
11698 060032' ESCAPE TST ; AND ABORT TEST
11699 060032' 104410 TRAP C$ESCAPE
11700 060034' 000460 .WORD L10054-.
11701
11702 060036' 004737 023434' 580$: JSR PC,CLRDN1 ; WRITE ONE TO CLEAR DNI
11703 ; ERROR ?
    
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11704 060042' 103006          BCC      590$          : NO
11705 060044'          ERRHRD  430.,ERR006,MSG003 : YES, REPORT ERROR
11706 060044' 104456          TRAP    C$ERHRD
11707 060046' 000656          .WORD  430
11708 060050' 016206'          .WORD  ERR006
11709 060052' 015114'          .WORD  MSG003
11710 060054'          ESCAPE  TST          : AND ABORT TEST
11711 060054' 104410          TRAP    C$ESCAPE
11712 060056' 000436          .WORD  L10054-.
11713
11714 060060' 004737 023306'      590$: JSR      PC,CHKTXI          : TXI ?
11715 060064' 103006          BCC      600$          : YES
11716 060066'          ERRHRD  431.,ERR013,MSG003 : NO, REPORT ERROR
11717 060066' 104456          TRAP    C$ERHRD
11718 060070' 000657          .WORD  431
11719 060072' 016720'          .WORD  ERR013
11720 060074' 015114'          .WORD  MSG003
11721 060076'          ESCAPE  TST          : AND ABORT TEST
11722 060076' 104410          TRAP    C$ESCAPE
11723 060100' 000414          .WORD  L10054-.
11724
11725 060102' 004737 023616'      600$: JSR      PC,CLRTXI          : WRITE ONE TO CLEAR TXI
11726
11727 060106' 103006          BCC      610$          : ERROR ?
11728 060110'          ERRHRD  432.,ERR014,MSG003 : NO
11729 060110' 104456          : YES, REPORT ERROR
11730 060112' 000660          TRAP    C$ERHRD
11731 060114' 016751'          .WORD  432
11732 060116' 015114'          .WORD  ERR014
11733 060120'          .WORD  MSG003
11734 060120' 104410          ESCAPE  TST          : AND ABORT TEST
11735 060122' 000372          TRAP    C$ESCAPE
11736
11737 060124' 012705 000572'      610$: MOV      #TDRB,R5          : CHECK TDRB OWNERSHIP
11738 060130' 004737 022634'      JSR      PC,CHKOWN          : OWN = PORT DRIVER ?
11739 060134' 103006          BCC      620$          : YES
11740 060136'          ERRHRD  433.,ERR018          : NO, REPORT ERROR
11741 060136' 104456          TRAP    C$ERHRD
11742 060140' 000661          .WORD  433
11743 060142' 017216'          .WORD  ERR018
11744 060144' 000000          .WORD  0
11745 060146'          ESCAPE  TST          : AND ABORT TEST
11746 060146' 104410          TRAP    C$ESCAPE
11747 060150' 000344          .WORD  L10054-.
11748
11749 060152' 012705 012512'      620$: MOV      #TDR14A,R5        : POINT TO EXPECTED TDRB
11750 060156' 004737 025140'      JSR      PC,LDXTDR          : LOAD INTO XTDRB0 TABLE
11751 060162' 012705 000572'      MOV      #TDRB,R5          : CHECK TDRB
11752 060166' 004737 023220'      JSR      PC,CHKTDR          : ERRORS ?
11753 060172' 103006          BCC      630$          : NO
11754 060174'          ERRHRD  434.,ERR020,MSG005 : YES, REPORT ERROR
11755 060174' 104456          TRAP    C$ERHRD
11756 060176' 000662          .WORD  434
11757 060200' 017376'          .WORD  ERR020
11758 060202' 015220'          .WORD  MSG005
11759 060204'          ESCAPE  TST          : AND ABORT TEST

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11760 060204' 104410 TRAP C$ESCAPE
11761 060206' 000306 .WORD L10054-.
11762
11763 060210' 004737 023054' ;630$: JSR PC,CHKRXI ; RXI ?
11764 060214' 103006 BCC 640$ ; YES
11765 060216' ERRHRD 435.,ERR015,MSG003 ; NO, REPORT ERROR
11766 060216' 104456 TRAP C$ERHRD
11767 060220' 000663 .WORD 435
11768 060222' 017017' .WORD ERR015
11769 060224' 015114' .WORD MSG003
11770 060226' ESCAPE TST ; AND ABORT TEST
11771 060226' 104410 TRAP C$ESCAPE
11772 060230' 000264 .WORD L10054-.
11773
11774 060232' 004737 023550' ;640$: JSR PC,CLRRXI ; WRITE ONE TO CLEAR RXI
11775 BCC 650$ ; ERROR ?
11776 060236' 103006 ERRHRD 436.,ERR016,MSG003 ; NO
11777 060240' ; YES, REPORT ERROR
11778 060240' 104456 TRAP C$ERHRD
11779 060242' 000664 .WORD 436
11780 060244' 017050' .WORD ERR016
11781 060246' 015114' .WORD MSG003
11782 060250' ESCAPE TST ; AND ABORT TEST
11783 060250' 104410 TRAP C$ESCAPE
11784 060252' 000242 .WORD L10054-.
11785
11786 060254' 012705 000632' ;650$: MOV #RDRB,R5 ; CHECK RDRB OWNERSHIP
11787 060260' 004737 022634' JSR PC,CHKOWN ; OWN = PORT DRIVER ?
11788 060264' 103006 BCC 660$ ; YES
11789 060266' ERRHRD 437.,ERR017 ; NO, REPORT ERROR
11790 060266' 104456 TRAP C$ERHRD
11791 060270' 000665 .WORD 437
11792 060272' 017116' .WORD ERR017
11793 060274' 000000 .WORD 0
11794 060276' ESCAPE TST ; AND ABORT TEST
11795 060276' 104410 TRAP C$ESCAPE
11796 060300' 000214 .WORD L10054-.
11797
11798 060302' 012705 012622' ;660$: MOV #RDR14A,R5 ; POINT TO EXPECTED RDRB
11799 060306' 004737 025110' JSR PC,LDXRDR ; LOAD INTO XRDRB0 TABLE
11800 060312' 012705 000632' MOV #RDRB,R5 ; CHECK RDRB
11801 060316' 004737 022754' JSR PC,CHKRDR ; ERRORS ?
11802 060322' 103006 BCC 670$ ; NO
11803 060324' ERRHRD 438.,ERR021,MSG006 ; YES, REPORT ERROR
11804 060324' 104456 TRAP C$ERHRD
11805 060326' 000666 .WORD 438
11806 060330' 017457' .WORD ERR021
11807 060332' 015362' .WORD MSG006
11808 060334' ESCAPE TST ; AND ABORT TEST
11809 060334' 104410 TRAP C$ESCAPE
11810 060336' 000156 .WORD L10054-.
11811
11812 ;COMPARE RBUF WITH TBUF
11813 060340' 012705 000070' ;670$: MOV #56,R5 ; COMPARE 56 WORDS OF DATA
11814 060344' 004737 023732' JSR PC,CMPDAT ; DATA COMPARE ERROR ?
11815 060350' 103006 BCC 680$ ; NO

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HARDWARE TESTS MACY11 30(1046) 11-JAN-83 12:03 PAGE 245  
 CZUABA.MAC 10-JAN-83 12:46 TEST 23: PROMISCUOUS ADDRESS MODE TEST

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11816 060352' ERRHRD 439.,ERR022,MSG007 ; YES, REPORT ERROR
11817 060352' 104456 TRAP C$ERHRD
11818 060354' 000667 .WORD 439
11819 060356' 017540' .WORD ERR022
11820 060360' 015524' .WORD MSG007
11821 060362' ESCAPE TST ; AND ABORT TEST
11822 060362' 104410 TRAP C$ESCAPE
11823 060364' 000130 .WORD L10054-.
11824
11825 060366' 010305 ;80$: MOV R3,R5 ; POINT TO EXPECTED CRC TABLE
11826 060370' 004737 025064' JSR PC,LDXCRC ; LOAD INTO XCRC TABLE
11827 060374' 012705 005266' MOV #RBUF+124.,R5 ; CHECK CRC
11828 060400' 004737 024012' JSR PC,CMPCRC ; ERRORS ?
11829 060404' 103006 BCC 690$ ; NO
11830 060406' ERRHRD 440.,ERR023,MSG008 ; YES, REPORT ERROR
11831 060406' 104456 TRAP C$ERHRD
11832 060410' 000670 .WORD 440
11833 060412' 017607' .WORD ERR023
11834 060414' 015556' .WORD MSG008
11835 060416' ESCAPE TST ; AND ABORT TEST
11836 060416' 104410 TRAP C$ESCAPE
11837 060420' 060074 .WORD L10054-.
11838
11839 060422' 012777 000017 117576 ;90$: MOV #STOP,@PCSR0 ; ISSUE STOP PORT COMMAND
11840 060430' 004737 022546' JSR PC,CHKDNI ; DNI ?
11841 060434' 103006 BCC 700$ ; YES
11842 060436' ERRHRD 441.,ERR019,MSG003 ; NO, REPORT ERROR
11843 060436' 104456 TRAP C$ERHRD
11844 060440' 000671 .WORD 441
11845 060442' 017316' .WORD ERR019
11846 060444' 015114' .WORD MSG003
11847 060446' ESCAPE TST ; AND ABORT TEST
11848 060446' 104410 TRAP C$ESCAPE
11849 060450' 000044 .WORD L10054-.
11850
11851 060452' 004737 023434' ;700$: JSR PC,CLRDNI ; WRITE ONE TO CLEAR DNI
11852 BCC 710$ ; ERROR ?
11853 060456' 103006 BCC 710$ ; NO
11854 060460' ERRHRD 442.,ERR006,MSG003 ; YES, REPORT ERROR
11855 060460' 104456 TRAP C$ERHRD
11856 060462' 000672 .WORD 442
11857 060464' 016206' .WORD ERR006
11858 060466' 015114' .WORD MSG003
11859 060470' ESCAPE TST ; AND ABORT TEST
11860 060470' 104410 TRAP C$ESCAPE
11861 060472' 000022 .WORD L10054-.
11862
11863 060474' 062702 000006 ;710$: ADD #6,R2 ; UPDATE R2
11864 060500' 062703 000004 ADD #4,R3 ; UPDATE R3
11865 060504' 005301 DEC R1 ; DONE TEN LOOPBACKS
11866 060506' 001402 BEQ 900$ ; YES
11867 060510' 000137 057754' JMP 570$ ; NO
11868
11869 060514' ;900$:
11870 060514' ENDTST
11871 060514'

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L10054:

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CZUABA.MAC 10-JAN-83 12:46 TEST 23: PROMISCUOUS ADDRESS MODE TEST

11872 060514\* 104401

TRAP C\$ETST

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CZUABA.MAC 10-JAN-83 12:46

TEST 24: ENABLE ALL MULTICAST MODE TEST

.SBTTL TEST 24: ENABLE ALL MULTICAST MODE TEST

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11906  
11907 060516'  
11908 060516'  
11909 060516' 004737 025334'  
11910 060522' 103025  
11911 060524' 012777 000040 117474  
11912 060532' 004737 022546'  
11913 060536' 103006  
11914 060540'  
11915 060540' 104456  
11916 060542' 000673  
11917 060544' 016106'  
11918 060546' 015114'  
11919 060550'  
11920 060550' 104410  
11921 060552' 002000  
11922  
11923 060554' 004737 023434'  
11924  
11925 060560' 103006  
11926 060562'  
11927 060562' 104456  
11928 060564' 000674

\*\*\*\*\*  
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  
\*\*\*\*\*

BGNTST

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 443.,ERR004,MSG003 ; NO, REPORT ERROR

TRAP C\$ERHRD  
.WORD 443  
.WORD ERR004  
.WORD MSG003

ESCAPE TST ; AND ABORT TEST

TRAP C\$ESCAPE  
.WORD L10055-

20\$: JSR PC,CLRDNI ; WRITE ONE TO CLEAR DNI  
; ERROR ?  
BCC 30\$ ; NO  
ERRHRD 444.,ERR006,MSG003 ; YES, REPORT ERROR

TRAP C\$ERHRD  
.WORD 444



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 CZUABA.MAC 10-JAN-83 12:46 TEST 24: ENABLE ALL MULTICAST MODE TEST

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11929 060566' 016206' .WORD ERR006
11930 060570' 015114' .WORD MSG003
11931 060572' ESCAPE TST ; AND ABORT TEST
11932 060572' 104410 TRAP C$ESCAPE
11933 060574' 001756 .WORD L10055-.
11934
11935 060576' 004737 024660' 30$: JSR PC,LDPCSR ; ADDRESS OF PCBB -> PCSR2!3
11936 060602' 012777 000001 117416 MOV #GETPCB,@PCSRO ; ISSUE GET_PCBB PORT COMMAND
11937 060610' 004737 022546' JSR PC,CHKDNI ; DNI?
11938 060614' 103006 BCC 40$ ; YES
11939 060616' ERRHRD 445.,ERR009,MSG003 ; NO, REPORT ERROR
11940 060616' 104456 TRAP C$ERHRD
11941 060620' 000675 .WORD 445
11942 060622' 016422' .WORD ERR009
11943 060624' 015114' .WORD MSG003
11944 060626' ESCAPE TST ; AND ABORT TEST
11945 060626' 104410 TRAP C$ESCAPE
11946 060630' 001722 .WORD L10055-.
11947
11948 060632' 004737 023434' 40$: JSR PC,CLRDNI ; WRITE ONE TO CLEAR DNI
11949
11950 060636' 103006 BCC 50$ ; ERROR ?
11951 060640' ERRHRD 446.,ERR006,MSG003 ; NO
11952 060640' 104456 ; YES, REPORT ERROR
11953 060642' 000676 TRAP C$ERHRD
11954 060644' 016206' .WORD 446
11955 060646' 015114' .WORD ERR006
11956 060650' ESCAPE TST ; AND ABORT TEST .WORD MSG003
11957 060650' 104410 TRAP C$ESCAPE
11958 060652' 001700 .WORD L10055-.
11959
11960 ;WRITE MODE REGISTER = INTERNAL LOOPBACK
11961 ;AND ENABLE ALL MULTICAST MODE
11962
11963 060654' 012705 011232' 50$: MOV #WTMODE,R5 ; DEFAULT WRITE MODE FUNCTION
11964 060660' 004737 024630' JSR PC,LDPCBB ; LOAD FUNCTION -> PCBB
11965 060664' 013737 013106' 000254' MOV MODE24,PCBB+2 ; MODE = INTL LOOPBACK AND ENAL
11966 060672' 012777 000002 117326 MOV #GETCMD,@PCSRO ; ISSUE GET_CMD PORT COMMAND
11967 060700' 004737 022546' JSR PC,CHKDNI ; DNI ?
11968 060704' 103006 BCC 60$ ; YES
11969 060706' ERRHRD 447.,ERR010,MSG003 ; NO, REPORT ERROR
11970 060706' 104456 TRAP C$ERHRD
11971 060710' 000677 .WORD 447
11972 060712' 016506' .WORD ERR010
11973 060714' 015114' .WORD MSG003
11974 060716' ESCAPE TST ; AND ABORT TEST
11975 060716' 104410 TRAP C$ESCAPE
11976 060720' 001632 .WORD L10055-.
11977
11978 060722' 004737 023434' 60$: JSR PC,CLRDNI ; WRITE ONE TO CLEAR DNI
11979
11980 060726' 103006 BCC 70$ ; ERROR ?
11981 060730' ERRHRD 448.,ERR006,MSG003 ; NO
11982 060730' 104456 ; YES, REPORT ERROR
11983 060732' 000700 TRAP C$ERHRD
11984 060734' 016206' .WORD 448
 .WORD ERR006

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HARDWARE TESTS MACY11 30(1046) 11-JAN-83 12:03 PAGE 250  
 CZUABA.MAC 10-JAN-83 12:46 TEST 24: ENABLE ALL MULTICAST MODE TEST

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12041 061114' 016206' .WORD ERRO06
12042 061116' 015114' .WORD MSG003
12043 061120' ESCAPE TST ; AND ABORT TEST
12044 061120' 104410 TRAP C$ESCAPE
12045 061122' 001430 .WORD L10055-.
12046
12047 ;WRITE MULTICAST ADDRESS LIST
12048 061124' 012705 011152' 102$: MOV #WTMULA,R5 ; DEFAULT WRITE MULTICAST ADDR FUNC
12049 061130' 004737 024630' JSR PC,LDPCBB ; LOAD FUNCTION -> PCBB
12050 061134' 012705 012322' MOV #MULTL,R5 ; LOAD LIST INTO UDBB
12051 061140' 012700 000036 MOV #30.,R0 ; LOAD 30 ENTRIES
12052 061144' 004737 025030' JSR PC,LDUDBB ; MULTICAST LIST -> UDBB
12053 061150' 012777 000002 117050 MOV #GETCMD,@PCSR0 ; ISSUE GET_CMD PORT COMMAND
12054 061156' 004737 022546' JSR PC,CHKDNI ; DNI ?
12055 061162' 103006 BCC 104$ ; YES
12056 061164' ERRHRD 453.,ERR010,MSG003 ; NO, REPORT ERROR
12057 061164' 104456 TRAP C$ERHRD
12058 061166' 000705 .WORD 453
12059 061170' 016506' .WORD ERR010
12060 061172' 015114' .WORD MSG003
12061 061174' ESCAPE TST ; AND ABORT TEST
12062 061174' 104410 TRAP C$ESCAPE
12063 061176' 001354 .WORD L10055-.
12064
12065 061200' 004737 023434' 104$: JSR PC,CLRDNI ; WRITE ONE TO CLEAR DNI
12066 BCC 106$ ; ERROR ?
12067 061204' 103006 ERRHRD 454.,ERR006,MSG003 ; NO
12068 061206' 104456 ; YES, REPORT ERROR
12069 061206' 000706 TRAP C$ERHRD
12070 061210' 016206' .WORD 454
12071 061212' 015114' .WORD ERRO06
12072 061214' 015114' .WORD MSG003
12073 061216' ESCAPE TST ; AND ABORT TEST
12074 061216' 104410 TRAP C$ESCAPE
12075 061220' 001332 .WORD L10055-.
12076
12077 ;DO TEN LOOPS WITH DEST ADDR = MULTICAST ADDRESS
12078
12079 061222' 012701 000012 106$: MOV #10.,R1 ; DO LOOP = TEN
12080 061226' 012702 012322' MOV #MULTL,R2 ; R2 POINTS TO MULTICAST LIST
12081 061232' 012703 012742' MOV #CRC22A,R3 ; R3 POINTS TO EXPECTED CRC TABLE
12082
12083 ;SET UP RINGS FOR ONE BUFFER LOOPBACK
12084 061236' 012705 011542' 110$: MOV #TDRB1A,R5 ; DEFAULT ONE BUFFER TRANSMIT RING
12085 061242' 004737 024734' JSR PC,LDTDRB ; LOAD TDRB
12086 061246' 012705 011342' MOV #RDRB1A,R5 ; DEFAULT ONE BUFFER RECEIVE RING
12087 061252' 004737 024676' JSR PC,LDRDRB ; LOAD RDRB
12088
12089 ;SET UP BUFFERS AND START
12090 061256' 010205 MOV R2,R5 ; POINT TO DESTINATION ADDRESS
12091 061260' 004737 024602' JSR PC,LDDEST ; LOAD DEST
12092 061264' 004737 025230' JSR PC,SETBUF ; SET UP BUFFERS
12093 061270' 012777 000004 116730 MOV #START,@PCSR0 ; ISSUE START PORT COMMAND
12094 061276' 004737 022546' JSR PC,CHKDNI ; DNI?
12095 061302' 103006 BCC 120$ ; YES
12096 061304' ERRHRD 455.,ERR012,MSG003 ; NO, REPORT ERROR

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HARDWARE TESTS MACY11 30(1046) 11-JAN-83 12:03 PAGE 251  
 CZUABA.MAC 10-JAN-83 12:46 TEST 24: ENABLE ALL MULTICAST MODE TEST

12097	061304'	104456				TRAP	C\$ERHRD
12098	061306'	000707				.WORD	455
12099	061310'	016637'				.WORD	ERR012
12100	061312'	015114'				.WORD	MSG003
12101	061314'			ESCAPE TST			: AND ABORT TEST
12102	061314'	104410				TRAP	C\$ESCAPE
12103	061316'	001234				.WORD	L10055-.
12104							
12105	061320'	004737	023434'	i20\$:	JSR PC,CLRDNI		: WRITE ONE TO CLEAR DNI
12106							: ERROR ?
12107	061324'	103006			BCC 130\$		: NO
12108	061326'				ERRHRD 456.,ERR006,MSG003		: YES, REPORT ERROR
12109	061326'	104456				TRAP	C\$ERHRD
12110	061330'	000710				.WORD	456
12111	061332'	016206'				.WORD	ERR006
12112	061334'	015114'				.WORD	MSG003
12113	061336'			ESCAPE TST			: AND ABORT TEST
12114	061336'	104410				TRAP	C\$ESCAPE
12115	061340'	001212				.WORD	L10055-.
12116							
12117	061342'	004737	023306'	i30\$:	JSR PC,CHKTXI		: TXI ?
12118	061346'	103006			BCC 140\$		: YES
12119	061350'				ERRHRD 457.,ERR013,MSG003		: NO, REPORT ERROR
12120	061350'	104456				TRAP	C\$ERHRD
12121	061352'	000711				.WORD	457
12122	061354'	016720'				.WORD	ERR013
12123	061356'	015114'				.WORD	MSG003
12124	061360'			ESCAPE TST			: AND ABORT TEST
12125	061360'	104410				TRAP	C\$ESCAPE
12126	061362'	001170				.WORD	L10055-.
12127							
12128	061364'	004737	023616'	i40\$:	JSR PC,CLRTXI		: WRITE ONE TO CLEAR TXI
12129							: ERROR ?
12130	061370'	103006			BCC 150\$		: NO
12131	061372'				ERRHRD 458.,ERR014,MSG003		: YES, REPORT ERROR
12132	061372'	104456				TRAP	C\$ERHRD
12133	061374'	000712				.WORD	458
12134	061376'	016751'				.WORD	ERR014
12135	061400'	015114'				.WORD	MSG003
12136	061402'			ESCAPE TST			: AND ABORT TEST
12137	061402'	104410				TRAP	C\$ESCAPE
12138	061404'	001146				.WORD	L10055-.
12139							
12140	061406'	012705	000572'	i50\$:	MOV #TDRB,R5		: CHECK TDRB OWNERSHIP
12141	061412'	004737	022634'		JSR PC,CHKOWN		: OWN = PORT DRIVER ?
12142	061416'	103006			BCC 160\$		: YES
12143	061420'				ERRHRD 459.,ERR018		: NO, REPORT ERROR
12144	061420'	104456				TRAP	C\$ERHRD
12145	061422'	000713				.WORD	459
12146	061424'	017216'				.WORD	ERR018
12147	061426'	000000				.WORD	0
12148	061430'			ESCAPE TST			: AND ABORT TEST
12149	061430'	104410				TRAP	C\$ESCAPE
12150	061432'	001120				.WORD	L10055-.
12151							
12152	061434'	012705	012512'	i60\$:	MOV #TDR14A,R5		: POINT TO EXPECTED TDRB

HARDWARE TESTS MACY11 30(1046)  
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TEST 24: ENABLE ALL MULTICAST MODE TEST

12153	061440*	004737	025140*		JSR	PC,LDXTDR	:	LOAD INTO XTDRB0 TABLE		
12154	061444*	012705	000572*		MOV	#TDRB,R5	:	CHECK TDRB		
12155	061450*	004737	023220*		JSR	PC,CHKTRD	:	ERRORS ?		
12156	061454*	103006			BCC	170\$	:	NO		
12157	061456*				ERRHRD	460.,ERRC20,MSG005	:	YES, REPORT ERROR		
12158	061456*	104456							TRAP	C\$ERHRD
12159	061460*	000714							.WORD	460
12160	061462*	017376*							.WORD	ERR020
12161	061464*	015220*							.WORD	MSG005
12162	061466*				ESCAPE	TST	:	AND ABORT TEST		
12163	061466*	104410							TRAP	C\$ESCAPE
12164	061470*	001062							.WORD	L10055-.
12165										
12166	061472*	004737	023054*	i70\$:	JSR	PC,CHKRXI	:	RXI ?		
12167	061476*	103006			BCC	180\$	:	YES		
12168	061500*				ERRHRD	461.,ERR015,MSG003	:	NO, REPORT ERROR		
12169	061500*	104456							TRAP	C\$ERHRD
12170	061502*	000715							.WORD	461
12171	061504*	017017*							.WORD	ERR015
12172	061506*	015114*							.WORD	MSG003
12173	061510*				ESCAPE	TST	:	AND ABORT TEST		
12174	061510*	104410							TRAP	C\$ESCAPE
12175	061512*	001040							.WORD	L10055-.
12176										
12177	061514*	004737	023550*	i80\$:	JSR	PC,CLRRXI	:	WRITE ONE TO CLEAR RXI		
12178										
12179	061520*	103006			BCC	190\$	:	ERROR ?		
12180	061522*				ERRHRD	462.,ERR016,MSG003	:	NO		
12181	061522*	104456								
12182	061524*	000716							TRAP	C\$ERHRD
12183	061526*	017050*							.WORD	462
12184	061530*	015114*							.WORD	ERR016
12185	061532*				ESCAPE	TST	:	AND ABORT TEST	.WORD	MSG003
12186	061532*	104410							TRAP	C\$ESCAPE
12187	061534*	001016							.WORD	L10055-.
12188										
12189	061536*	012705	000632*	i90\$:	MOV	#RDRB,R5	:	CHECK RDRB OWNERSHIP		
12190	061542*	004737	022634*		JSR	PC,CHKOWN	:	OWN = PORT DRIVER ?		
12191	061546*	103006			BCC	200\$	:	YES		
12192	061550*				ERRHRD	463.,ERR017	:	NO, REPORT ERROR		
12193	061550*	104456							TRAP	C\$ERHRD
12194	061552*	000717							.WORD	463
12195	061554*	017116*							.WORD	ERR017
12196	061556*	000000							.WORD	0
12197	061560*				ESCAPE	TST	:	AND ABORT TEST		
12198	061560*	104410							TRAP	C\$ESCAPE
12199	061562*	000770							.WORD	L10055-.
12200										
12201	061564*	012705	012622*	i200\$:	MOV	#RDR14A,R5	:	POINT TO EXPECTED RDRB		
12202	061570*	004737	025110*		JSR	PC,LDXRDR	:	LOAD INTO XRDRB0 TABLE		
12203	061574*	012705	000632*		MOV	#RDRB,R5	:	CHECK RDRB		
12204	061600*	004737	022754*		JSR	PC,CHKRDR	:	ERRORS ?		
12205	061604*	103006			BCC	210\$	:	NO		
12206	061606*				ERRHRD	464.,ERR021,MSG006	:	YES, REPORT ERROR		
12207	061606*	104456							TRAP	C\$ERHRD
12208	061610*	000720							.WORD	464

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 CZUABA.MAC 10-JAN-83 12:46 TEST 24: ENABLE ALL MULTICAST MODE TEST

12209	061612'	017457'					.WORD	ERR021
12210	061614'	015362'					.WORD	MSG006
12211	061616'			ESCAPE	TST	:	AND ABORT TEST	
12212	061616'	104410					TRAP	C\$ESCAPE
12213	061620'	000732					.WORD	L10055-
12214								
12215								
12216	061622'	012705	000070					
12217	061626'	004737	023732'	210\$:	MOV #56.,R5	:	COMPARE 56 WORDS OF DATA	
12218	061632'	103006			JSR PC,CMPCAT	:	DATA COMPARE ERROR ?	
12219	061634'				BCC 220\$	:	NO	
12220	061634'	104456			ERRHRD 465.,ERR022,MSG007	:	YES, REPORT ERROR	
12221	061636'	000721					TRAP	C\$ERHRD
12222	061640'	017540'					.WORD	465
12223	061642'	015524'					.WORD	ERR022
12224	061644'			ESCAPE	TST	:	AND ABORT TEST	MSG007
12225	061644'	104410					TRAP	C\$ESCAPE
12226	061646'	000704					.WORD	L10055-
12227								
12228	061650'	010305		220\$:	MOV R3,R5	:	POINT TO EXPECTED CRC TABLE	
12229	061652'	004737	025064'		JSR PC,LDXCRC	:	LOAD INTO XCRC TABLE	
12230	061656'	012705	005266'		MOV #RBUF+124.,R5	:	CHECK CRC	
12231	061662'	004737	024012'		JSR PC,CMPCRC	:	ERRORS ?	
12232	061666'	103006			BCC 230\$	:	NO	
12233	061670'				ERRHRD 466.,ERR023,MSG008	:	YES, REPORT ERROR	
12234	061670'	104456					TRAP	C\$ERHRD
12235	061672'	000722					.WORD	466
12236	061674'	017607'					.WORD	ERR023
12237	061676'	015556'					.WORD	MSG008
12238	061700'			ESCAPE	TST	:	AND ABORT TEST	
12239	061700'	104410					TRAP	C\$ESCAPE
12240	061702'	000650					.WORD	L10055-
12241								
12242	061704'	012777	000017	116314	230\$:	MOV #STOP,@PCSR0	:	ISSUE STOP PORT COMMAND
12243	061712'	004737	022546'		JSR PC,CHKDNI	:	DNI ?	
12244	061716'	103006			BCC 240\$	:	YES	
12245	061720'				ERRHRD 467.,ERR019,MSG003	:	NO, REPORT ERROR	
12246	061720'	104456					TRAP	C\$ERHRD
12247	061722'	000723					.WORD	467
12248	061724'	017316'					.WORD	ERR019
12249	061726'	015114'					.WORD	MSG003
12250	061730'			ESCAPE	TST	:	AND ABORT TEST	
12251	061730'	104410					TRAP	C\$ESCAPE
12252	061732'	000620					.WORD	L10055-
12253								
12254	061734'	004737	023434'	240\$:	JSR PC,CLRDN1	:	WRITE ONE TO CLEAR DNI	
12255								
12256	061740'	103006			BCC 245\$	:	NO	
12257	061742'				ERRHRD 468.,ERR006,MSG003	:	YES, REPORT ERROR	
12258	061742'	104456					TRAP	C\$ERHRD
12259	061744'	000724					.WORD	468
12260	061746'	016206'					.WORD	ERR006
12261	061750'	015114'					.WORD	MSG003
12262	061752'			ESCAPE	TST	:	AND ABORT TEST	
12263	061752'	104410					TRAP	C\$ESCAPE
12264	061754'	000576					.WORD	L10055-

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TEST 24: ENABLE ALL MULTICAST MODE TEST

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12265
12266 061756' 062702 000006      245$:  ADD      #6,R2      ; UPDATE R2
12267 061762' 062703 000004      ADD      #4,R3      ; UPDATE R3
12268 061766' 005301      DEC      R1          ; DONE TEN LOOPBACKS
12269 061770' 001402      BEQ     246$        ; YES
12270 061772' 000137 061236'    JMP     110$        ; NO
12271
12272
12273      ; DO TEN LOOPS WITH DEST ADDRESS = COMPLIMENTED MULTICAST ADDRESS
12274
12275 061776' 012701 000012      246$:  MOV     #10.,R1   ; DO LOOP = TEN
12276 062002' 012702 012416'    MOV     #MULTLC,R2  ; R2 POINTS TO COMPLIMENTED LIST
12277 062006' 012703 013012'    MOV     #CRC22B,R3  ; R3 POINTS TO EXPECTED CRC LIST
12278
12279      ; SET UP RINGS FOR ONE BUFFER LOOPBACK
12280 062012' 012705 011542'    250$:  MOV     #TDRB1A,R5 ; DEFAULT ONE BUFFER TRANSMIT RING
12281 062016' 004737 024734'    JSR    PC,LDTDRB   ; LOAD TDRB
12282 062022' 012705 011342'    MOV     #RDRB1A,R5 ; DEFAULT ONE BUFFER RECEIVE RING
12283 062026' 004737 024676'    JSR    PC,LDRDRB   ; LOAD RDRB
12284
12285      ; SET UP BUFFERS AND START
12286 062032' 010205      MOV     R2,R5       ; POINT TO COMPLEMENTED ADDRESS
12287 062034' 004737 024602'    JSR    PC,LDDDEST  ; LOAD DEST
12288 062040' 004737 025230'    JSR    PC,SETBUF   ; SET UP BUFFERS
12289 062044' 012777 000004' 116154  MOV     #START,@PCSR0 ; ISSUE START PORT COMMAND
12290 062052' 004737 022546'    JSR    PC,CHKDNI   ; DNI?
12291 062056' 103006      BCC    260$        ; YES
12292 062060'      ERRHRD 469.,ERR012,MSG003 ; NO, REPORT ERROR
12293 062060' 104456      TRAP   C$ERHRD
12294 062062' 000725      .WORD 469
12295 062064' 016637'    .WORD ERR012
12296 062066' 015114'    .WORD MSG003
12297 062070'      ESCAPE TST        ; AND ABORT TEST
12298 062070' 104410      TRAP   C$ESCAPE
12299 062072' 000460      .WORD L10055-.
12300
12301 062074' 004737 023434'    260$:  JSR    PC,CLRDN1   ; WRITE ONE TO CLEAR DNI
12302
12303      BCC    270$        ; ERROR ?
12304 062102'      ERRHRD 470.,ERR006,MSG003 ; NO
12305 062102' 104456      ; YES, REPORT ERROR
12306 062104' 000726      TRAP   C$ERHRD
12307 062106' 016206'    .WORD 470
12308 062110' 015114'    .WORD ERR006
12309 062112'      .WORD MSG003
12310 062112' 104410      ESCAPE TST        ; AND ABORT TEST
12311 062114' 000436      TRAP   C$ESCAPE
12312      .WORD L10055-.
12313 062116' 004737 023306'    270$:  JSR    PC,CHKTXI   ; TXI ?
12314 062122' 103006      BCC    280$        ; YES
12315 062124'      ERRHRD 471.,ERR013,MSG003 ; NO, REPORT ERROR
12316 062124' 104456      TRAP   C$ERHRD
12317 062126' 000727      .WORD 471
12318 062130' 016720'    .WORD ERR013
12319 062132' 015114'    .WORD MSG003
12320 062134'      ESCAPE TST        ; AND ABORT TEST

```

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12321	062134'	104410					TRAP	C\$ESCAPE
12322	062136'	000414					.WORD	L10055-
12323								
12324	062140'	004737	023616'	280\$:	JSR	PC,CLRTXI		: WRITE ONE TO CLEAR TXI
12325								: ERROR ?
12326	062144'	103006			BCC	290\$		: NO
12327	062146'				ERRHRD	472.,ERR014,MSG003		: YES, REPORT ERROR
12328	062146'	104456					TRAP	C\$ERHRD
12329	062150'	000730					.WORD	472
12330	062152'	016751'					.WORD	ERR014
12331	062154'	015114'					.WORD	MSG003
12332	062156'				ESCAPE	TST		: AND ABORT TEST
12333	062156'	104410					TRAP	C\$ESCAPE
12334	062160'	000372					.WORD	L10055-
12335								
12336	062162'	012705	000572'	290\$:	MOV	#TDRB,R5		: CHECK TDRB OWNERSHIP
12337	062166'	004737	022634'		JSR	PC,CHKOWN		: OWN = PORT DRIVER ?
12338	062172'	103006			BCC	300\$		: YES
12339	062174'				ERRHRD	473.,ERR018		: NO, REPORT ERROR
12340	062174'	104456					TRAP	C\$ERHRD
12341	062176'	000731					.WORD	473
12342	062200'	017216'					.WORD	ERR018
12343	062202'	000000					.WORD	0
12344	062204'				ESCAPE	TST		: AND ABORT TEST
12345	062204'	104410					TRAP	C\$ESCAPE
12346	062206'	000344					.WORD	L10055-
12347								
12348	062210'	012705	012512'	300\$:	MOV	#TDR14A,R5		: POINT TO EXPECTED TDRB
12349	062214'	004737	025140'		JSR	PC,LDXTDR		: LOAD INTO XTDRB0 TABLE
12350	062220'	012705	000572'		MOV	#TDRB,R5		: CHECK TDRB
12351	062224'	004737	023220'		JSR	PC,CHKTDR		: ERRORS ?
12352	062230'	103006			BCC	420\$		: NO
12353	062232'				ERRHRD	474.,ERR020,MSG005		: YES, REPORT ERROR
12354	062232'	104456					TRAP	C\$ERHRD
12355	062234'	000732					.WORD	474
12356	062236'	017376'					.WORD	ERR020
12357	062240'	015220'					.WORD	MSG005
12358	062242'				ESCAPE	TST		: AND ABORT TEST
12359	062242'	104410					TRAP	C\$ESCAPE
12360	062244'	000306					.WORD	L10055-
12361								
12362	062246'	004737	023054'	420\$:	JSR	PC,CHKRXI		: RXI ?
12363	062252'	103006			BCC	430\$		: YES
12364	062254'				ERRHRD	475.,ERR015,MSG003		: NO, REPORT ERROR
12365	062254'	104456					TRAP	C\$ERHRD
12366	062256'	000733					.WORD	475
12367	062260'	017017'					.WORD	ERR015
12368	062262'	015114'					.WORD	MSG003
12369	062264'				ESCAPE	TST		: AND ABORT TEST
12370	062264'	104410					TRAP	C\$ESCAPE
12371	062266'	000264					.WORD	L10055-
12372								
12373	062270'	004737	023550'	430\$:	JSR	PC,CLRRXI		: WRITE ONE TO CLEAR RXI
12374								: ERROR ?
12375	062274'	103006			BCC	440\$		: NO
12376	062276'				ERRHRD	476.,ERR016,MSG003		: YES, REPORT ERROR



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 CZUABA.MAC 10-JAN-83 12:46 TEST 24: ENABLE ALL MULTICAST MODE TEST

```

12377 062276* 104456 TRAP C$ERHRD
12378 062300* 000734 .WORD 476
12379 062302* 017050* .WORD ERR016
12380 062304* 015114* .WORD MSG003
12381 062306* ESCAPE TST ; AND ABORT TEST
12382 062306* 104410 TRAP C$ESCAPE
12383 062310* 000242 .WORD L10055-.
12384
12385 062312* 012705 000632* ;40$: MOV #RDRB,R5 ; CHECK RDRB OWNERSHIP
12386 062316* 004737 022634* JSR PC,CHKOWN ; OWN = PORT DRIVER ?
12387 062322* 103006 BCC 450$ ; YES
12388 062324* ERRHRD 477.,ERR017 ; NO, REPORT ERROR
12389 062324* 104456 TRAP C$ERHRD
12390 062326* 000735 .WORD 477
12391 062330* 017116* .WORD ERR017
12392 062332* 000000 .WORD 0
12393 062334* ESCAPE TST ; AND ABORT TEST
12394 062334* 104410 TRAP C$ESCAPE
12395 062336* 000214 .WORD L10055-.
12396
12397 062340* 012705 012622* ;450$: MOV #RDR14A,R5 ; POINT TO EXPECTED RDRB
12398 062344* 004737 025110* JSR PC,LDXRDR ; LOAD INTO XRDRB0 TABLE
12399 062350* 012705 000632* MOV #RDRB,R5 ; CHECK RDRB
12400 062354* 004737 022754* JSR PC,CHKRDR ; ERRORS ?
12401 062360* 103006 BCC 460$ ; NO
12402 062362* ERRHRD 478.,ERR021,MSG006 ; YES, REPORT ERROR
12403 062362* 104456 TRAP C$ERHRD
12404 062364* 000736 .WORD 478
12405 062366* 017457* .WORD ERR021
12406 062370* 015362* .WORD MSG006
12407 062372* ESCAPE TST ; AND ABORT TEST
12408 062372* 104410 TRAP C$ESCAPE
12409 062374* 000156 .WORD L10055-.
12410
12411 ;COMPARE RBUF WITH TBUF
12412 062376* 012705 000070 ;460$: MOV #56.,R5 ; COMPARE 56 WORDS OF DATA
12413 062402* 004737 023732* JSR PC,CMPDAT ; DATA COMPARE ERROR ?
12414 062406* 103006 BCC 470$ ; NO
12415 062410* ERRHRD 479.,ERR022,MSG007 ; YES, REPORT ERROR
12416 062410* 104456 TRAP C$ERHRD
12417 062412* 000737 .WORD 479
12418 062414* 017540* .WORD ERR022
12419 062416* 015524* .WORD MSG007
12420 062420* ESCAPE TST ; AND ABORT TEST
12421 062420* 104410 TRAP C$ESCAPE
12422 062422* 000130 .WORD L10055-.
12423
12424 062424* 010305 ;470$: MOV R3,R5 ; POINT TO EXPECTED CRC TABLE
12425 062426* 004737 025064* JSR PC,LDXCRC ; LOAD INTO XCRC TABLE
12426 062432* 012705 005266* MOV #RBUF+124.,R5 ; CHECK CRC
12427 062436* 004737 024012* JSR PC,CMPCRC ; ERRORS ?
12428 062442* 103006 BCC 480$ ; NO
12429 062444* ERRHRD 480.,ERR023,MSG008 ; YES, REPORT ERROR
12430 062444* 104456 TRAP C$ERHRD
12431 062446* 000740 .WORD 480
12432 062450* 017607* .WORD ERR023

```

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```

12433 062452* 015556*
12434 062454*          ESCAPE TST          ; AND ABORT TEST          .WORD MSG008
12435 062454* 104410
12436 062456* 000074          TRAP C$ESCAPE
12437                                .WORD L10055-.
12438 062460* 012777 000017 115540 480$: MOV #STOP,@PCSR0      ; ISSUE STOP PORT COMMAND
12439 062466* 004737 022546* JSR PC,CHKDNI      ; DNI ?
12440 062472* 103006      BCC 490$          ; YES
12441 062474*          ERRHRD 481.,ERR019,MSG003 ; NO, REPORT ERROR
12442 062474* 104456          TRAP C$ERHRD
12443 062476* 000741          .WORD 481
12444 062500* 017316*          .WORD ERR019
12445 062502* 015114*          .WORD MSG003
12446 062504*          -          ESCAPE TST          ; AND ABORT TEST
12447 062504* 104410          TRAP C$ESCAPE
12448 062506* 000044          .WORD L10055-.
12449
12450 062510* 004737 023434* 490$: JSR PC,CLR DNI      ; WRITE ONE TO CLEAR DNI
12451                                ; ERROR ?
12452 062514* 103006      BCC 495$          ; NO
12453 062516*          ERRHRD 482.,ERR006,MSG003 ; YES, REPORT ERROR
12454 062516* 104456          TRAP C$ERHRD
12455 062520* 000742          .WORD 482
12456 062522* 016206*          .WORD ERR006
12457 062524* 015114*          .WORD MSG003
12458 062526*          ESCAPE TST          ; AND ABORT TEST
12459 062528* 104410          TRAP C$ESCAPE
12460 062530* 000022          .WORD L10055-.
12461
12462 062532* 062702 000006 495$: ADD #6,R2      ; UPDATE R2
12463 062536* 062703 000004 ADD #4,R3          ; UPDATE R3
12464 062542* 005301      DEC R1            ; DONE TEN LOOPBACKS ?
12465 062544* 001402      BEQ 500$          ; YES
12466 062546* 000137 062012* JMP 250$          ; NO
12467
12468 062552*          500$:          ENDTST
12469 062552*
12470 062552*
12471 062552* 104401          L10055: TRAP C$ETST

```

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TEST 25: PAD RUNT PACKETS TEST

.SBTTL TEST 25: PAD RUNT PACKETS TEST

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```

*****
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 TRANSMISION 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
*****

```

```

062554'
062554'
062554' 004737 025334'
062560' 103025
062562' 012777 000040 115436
062570' 004737 022546'
062574' 103006
062576'
062576' 104456
062600' 000743
062602' 016106'
062604' 015114'
062606'
062606' 104410
062610' 001462
062612' 004737 023434'
062616' 103006
062620'
062620' 104456
062622' 000744
062624' 016206'

```

```

BGNTST
JSR PC,TINIT ; IS A DEVICE RESET NEEDED?
BCC 30$ ; NO
MOV #RSET,@PCSRO ; YES, RESET DEUNA
JSR PC,CHKDNI ; DNI ?
BCC 20$ ; 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 L10056-.

20$: JSR PC,CLRDNI ; WRITE ONE TO CLEAR DNI
; ERROR ?
BCC 30$ ; NO
ERRHRD 484.,ERR006,MSG003 ; YES, REPORT ERROR
TRAP C$ERHRD
.WORD 484
.WORD ERR006

```

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```

12528 062626' 015114'
12529 062630'
12530 062630' 104410
12531 062632' 001440
12532
12533 062634' 004737 024660' 115360 30$: JSR PC,LDPCSR ; ADDRESS OF PCBB -> PCSR2!3
12534 062640' 012777 000001' MOV #GETPCB,@PCSR0 ; ISSUE GET_PCBB PORT COMMAND
12535 062646' 004737 022546' JSR PC,CHKDNI ; DNI?
12536 062652' 103006 BCC 40$ ; YES
12537 062654'
12538 062654' 104456 ERRHRD 485.,ERR009,MSG003 ; NO, REPORT ERROR
12539 062656' 000745 TRAP C$ERHRD
12540 062660' 016422' .WORD 485
12541 062662' 015114' .WORD ERR009
12542 062664'
12543 062664' 104410 ESCAPE TST ; AND ABORT TEST
12544 062666' 001404 TRAP C$ESCAPE
12545 .WORD L10056-.
12546 062670' 004737 023434' 40$: JSR PC,CLRDNI ; WRITE ONE TO CLEAR DNI
12547
12548 062674' 103006 BCC 50$ ; ERROR ?
12549 062676' ERRHRD 486.,ERR006,MSG003 ; NO
12550 062676' 104456 ; YES, REPORT ERROR
12551 062700' 000746 TRAP C$ERHRD
12552 062702' 016206' .WORD 486
12553 062704' 015114' .WORD ERR006
12554 062706'
12555 062706' 104410 ESCAPE TST ; AND ABORT TEST
12556 062710' 001362 TRAP C$ESCAPE
12557 .WORD L10056-.
12558
12559 062712' 012705 011232' 50$: ;WRITE MODE REGISTER = INTERNAL LOOPBACK AND PROM MODE
12560 062716' 004737 024630' MOV #WTMODE,R5 ; DEFAULT WRITE MODE FUNCTION
12561 062722' 012777 000002' JSR PC,LDPCBB ; LOAD FUNCTION -> PCBB
12562 062730' 004737 022546' MOV #GETCMD,@PCSR0 ; ISSUE GET_CMD PORT COMMAND
12563 062734' 103006 JSR PC,CHKDNI ; DNI ?
12564 062736' BCC 60$ ; YES
12565 062736' 104456 ERRHRD 487.,ERR010,MSG003 ; NO, REPORT ERROR
12566 062740' 000747 TRAP C$ERHRD
12567 062742' 016506' .WORD 487
12568 062744' 015114' .WORD ERR010
12569 062746'
12570 062746' 104410 ESCAPE TST ; AND ABORT TEST
12571 062750' 001322 TRAP C$ESCAPE
12572 .WORD L10056-.
12573 062752' 004737 023434' 60$: JSR PC,CLRDNI ; WRITE ONE TO CLEAR DNI
12574
12575 062756' 103006 BCC 70$ ; ERROR ?
12576 062760' ERRHRD 488.,ERR006,MSG003 ; NO
12577 062760' 104456 ; YES, REPORT ERROR
12578 062762' 000750 TRAP C$ERHRD
12579 062764' 016206' .WORD 488
12580 062766' 015114' .WORD ERR006
12581 062770'
12582 062770' 104410 ESCAPE TST ; AND ABORT TEST
12583 062772' 001300 TRAP C$ESCAPE
.WORD L10056-.

```

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```

12584
12585      ;WRITE RING FORMAT
12586 062774' 012705 011172'      70$:  MOV    #WTRNGS,R5      ; DEFAULT WRITE RING FORMAT FUNCTION
12587 063000' 004737 024630'      JSR    PC,LDPCBB      ; LOAD FUNCTION -> PCBB
12588 063004' 012705 011312'      MOV    #RFRMT,R5      ; DEFAULT RING FORMAT
12589 063010' 012700 000006'      MOV    #6,R0          ; FORMAT = SIX WORDS
12590 063014' 004737 025030'      JSR    PC,LDUDBB      ; LOAD RING FORMAT -> UDBB
12591 063020' 012777 000002' 115200 MOV    #GETCMD,@PCSR0 ; ISSUE GET_CMD PORT COMMAND
12592 063026' 004737 022546'      JSR    PC,CHKDNI      ; DNI ?
12593 063032' 103006      BCC    80$            ; YES
12594 063034'      ERRHRD 489.,ERR010,MSG003 ; NO, REPORT ERROR
12595 063034' 104456      ;
12596 063036' 000751      TRAP  C$ERHRD
12597 063040' 016506'      .WORD 489
12598 063042' 015114'      .WORD  ERR010
12599 063044'      .WORD  MSG003
12600 063044' 104410      ESCAPE TST          ; AND ABORT TEST
12601 063046' 001224      TRAP  C$ESCAPE
12602      .WORD  L10056-.
12603 063050' 004737 023434'      80$:  JSR    PC,CLRDNI      ; WRITE ONE TO CLEAR DNI
12604      ;
12605 063054' 103006      BCC    90$            ; ERROR ?
12606 063056'      ERRHRD 490.,ERR006,MSG003 ; NO
12607 063056' 104456      ; YES, REPORT ERROR
12608 063060' 000752      TRAP  C$ERHRD
12609 063062' 016206'      .WORD 490
12610 063064' 015114'      .WORD  ERR006
12611 063066'      .WORD  MSG003
12612 063066' 104410      ESCAPE TST          ; AND ABORT TEST
12613 063070' 001202      TRAP  C$ESCAPE
12614      .WORD  L10056-.
12615      ;WRITE PHYSICAL ADDRESS
12616 063072' 012705 011132'      90$:  MOV    #WTPHYA,R5      ; DEFAULT WRITE PHYSICAL ADDR FUNC
12617 063076' 004737 024630'      JSR    PC,LDPCBB      ; LOAD FUNCTION -> PCBB
12618 063102' 012777 000002' 115116 MOV    #GETCMD,@PCSR0 ; ISSUE GET_CMD PORT COMMAND
12619 063110' 004737 022546'      JSR    PC,CHKDNI      ; DNI ?
12620 063114' 103006      BCC    100$           ; YES
12621 063116'      ERRHRD 491.,ERR010,MSG003 ; NO, REPORT ERROR
12622 063116' 104456      ;
12623 063120' 000753      TRAP  C$ERHRD
12624 063122' 016506'      .WORD 491
12625 063124' 015114'      .WORD  ERR010
12626 063126'      .WORD  MSG003
12627 063126' 104410      ESCAPE TST          ; AND ABORT TEST
12628 063130' 001142      TRAP  C$ESCAPE
12629      .WORD  L10056-.
12630 063132' 004737 023434'      100$: JSR    PC,CLRDNI      ; WRITE ONE TO CLEAR DNI
12631      ;
12632 063136' 103006      BCC    110$           ; ERROR ?
12633 063140'      ERRHRD 492.,ERR006,MSG003 ; NO
12634 063140' 104456      ; YES, REPORT ERROR
12635 063142' 000754      TRAP  C$ERHRD
12636 063144' 016206'      .WORD 492
12637 063146' 015114'      .WORD  ERR006
12638 063150'      .WORD  MSG003
12639 063150' 104410      ESCAPE TST          ; AND ABORT TEST
      TRAP  C$ESCAPE

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 CZUABA.MAC 10-JAN-83 12:46 TEST 25: PAD RUNT PACKETS TEST

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12640 063152' 001120                                     .WORD  L10056-.
12641
12642                                     ;SET UP RINGS FOR ONE BUFFER LOOPBACK (RUNT PACKET)
12643 063154' 012705 011642' 110$: MOV #TDRB1C,R5           ; DEFAULT ONE BUFFER (RUNT PACKET)
12644 063160' 004737 024734' JSR PC,LDTDRB           ; LOAD TDRB
12645 063164' 012705 011342' MOV #RDRB1A,R5         ; DEFAULT ONE BUFFER RECEIVE RING
12646 063170' 004737 024676' JSR PC,LDRDRB           ; LOAD RDRB
12647
12648                                     ;SET UP BUFFERS AND START
12649 063174' 012705 000254' MOV #PCBB+2,R5         ; POINT TO DESTINATION ADDRESS
12650 063200' 004737 024602' JSR PC,LDDEST         ; LOAD DEST
12651 063204' 004737 025230' JSR PC,SETBUF         ; SET UP BUFFERS
12652 063210' 012777 000004' 115010 MOV #START,@PCSR0    ; ISSUE START PORT COMMAND
12653 063216' 004737 022546' JSR PC,CHKDNI         ; DNI?
12654 063222' 103006 BCC 120$             ; YES
12655 063224' ERRHRD 493.,ERR012,MSG003 ; NO, REPORT ERROR
12656 063224' 104456 TRAP C$ERHRD
12657 063226' 000755 .WORD 493
12658 063230' 016637' .WORD ERR012
12659 063232' 015114' .WORD MSG003
12660 063234' ESCAPE TST ; AND ABORT TEST
12661 063234' 104410 TRAP C$ESCAPE
12662 063236' 001034 .WORD L10056-.
12663
12664 063240' 004737 023434' 120$: JSR PC,CLRDNI         ; WRITE ONE TO CLEAR DNI
12665 BCC 130$             ; ERROR ?
12666 063244' 103006 ERRHRD 494.,ERR006,MSG003 ; YES, REPORT ERROR
12667 063246' TRAP C$ERHRD
12668 063246' 104456 .WORD 494
12669 063250' 000756 .WORD ERR006
12670 063252' 016206' .WORD MSG003
12671 063254' 015114' ESCAPE TST ; AND ABORT TEST
12672 063256' TRAP C$ESCAPE
12673 063256' 104410 .WORD L10056-.
12674 063260' 001012
12675
12676 063262' 004737 023306' 130$: JSR PC,CHKTXI         ; TXI ?
12677 063266' 103006 BCC 140$             ; YES
12678 063270' ERRHRD 495.,ERR013,MSG003 ; NO, REPORT ERROR
12679 063270' 104456 TRAP C$ERHRD
12680 063272' 000757 .WORD 495
12681 063274' 016720' .WORD ERR013
12682 063276' 015114' .WORD MSG003
12683 063300' ESCAPE TST ; AND ABORT TEST
12684 063300' 104410 TRAP C$ESCAPE
12685 063302' 000770 .WORD L10056-.
12686
12687 063304' 004737 023616' 140$: JSR PC,CLRTXI         ; WRITE ONE TO CLEAR TXI
12688 BCC 150$             ; ERROR ?
12689 063310' 103006 ERRHRD 496.,ERR014,MSG003 ; YES, REPORT ERROR
12690 063312' TRAP C$ERHRD
12691 063312' 104456 .WORD 496
12692 063314' 000760 .WORD ERR014
12693 063316' 016751' .WORD MSG003
12694 063320' 015114' ESCAPE TST ; AND ABORT TEST
12695 063322'

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12696 063322' 104410 TRAP C$ESCAPE
12697 063324' 000746 .WORD L10056-.
12698
12699
12700 063326' 012705 000600' ;CHECK FOR BUFL ERROR IN TDRB+6
12701 063332' 011504 150$: MOV #TDRB+6,R5 ; R5 POINTS TO TDRB+6
12702 063334' 032704 100000 MOV (R5),R4 ; R4 = TDRB+6
12703 063340' 001006 BIT #BUFL,R4 ; BUFL SET ?
12704 063342' ERRHRD 497.,ERR040 ; YES
; NO, REPORT ERROR
12705 063342' 104456 TRAP C$ERHRD
12706 063344' 000761 .WORD 497
12707 063346' 021451' .WORD ERR040
12708 063350' 000000 .WORD 0
12709 063352' ESCAPE TST
12710 063352' 104410 TRAP C$ESCAPE
12711 063354' 000716 .WORD L10056-.
12712
12713 063356' 012777 000017 114642 160$: MOV #STOP,@PCSR0 ; ISSUE STOP PORT COMMAND
12714 063364' 004737 022546' JSR PC,CHKDNI ; DNI ?
12715 063370' 103006 BCC 170$ ; YES
12716 063372' ERRHRD 498.,ERR019,MSG003 ; NO, REPORT ERROR
12717 063372' 104456 TRAP C$ERHRD
12718 063374' 000762 .WORD 498
12719 063376' 017316' .WORD ERR019
12720 063400' 015114' .WORD MSG003
12721 063402' ESCAPE TST ; AND ABORT TEST
12722 063402' 104410 TRAP C$ESCAPE
12723 063404' 000666 .WORD L10056-.
12724
12725 063406' 004737 023434' 170$: JSR PC,CLR DNI ; WRITE ONE TO CLEAR DNI
12726 BCC 180$ ; ERROR ?
12727 063412' 103006 ; NO
12728 063414' ERRHRD 499.,ERR006,MSG003 ; YES, REPORT ERROR
12729 063414' 104456 TRAP C$ERHRD
12730 063416' 000763 .WORD 499
12731 063420' 016206' .WORD ERR006
12732 063422' 015114' .WORD MSG003
12733 063424' ESCAPE TST ; AND ABORT TEST
12734 063424' 104410 TRAP C$ESCAPE
12735 063426' 000644 .WORD L10056-.
12736
12737 ;PART 2 - VERIFY PAD RUNT PACKET MODE
12738 ;WRITE MODE REGISTER = INTERNAL LOOPBACK , PROM
12739 ; AND PAD RUNT PACKET MODE
12740
12741
12742 063430' 012705 011232' 180$: MOV #WTMODE,R5 ; DEFAULT WRITE MODE FUNCTION
12743 063434' 004737 024630' JSR PC,LDP CBB ; LOAD FUNCTION -> PCBB
12744 063440' 013737 013110' 000254' MOV MODE25,PCBB+2 ; PROM, TPAD AND INTL MODE
12745 063446' 012777 000002 114552 MOV #GETCMD,@PCSR0 ; ISSUE GET_CMD PORT COMMAND
12746 063454' 004737 022546' JSR PC,CHKDNI ; DNI ?
12747 063460' 103006 BCC 190$ ; YES
12748 063462' ERRHRD 500.,ERR010,MSG003 ; NO, REPORT ERROR
12749 063462' 104456 TRAP C$ERHRD
12750 063464' 000764 .WORD 500
12751 063466' 016506' .WORD ERR010

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12752 063470' 015114'
12753 063472'          ESCAPE TST          ; AND ABORT TEST          .WORD  MSG003
12754 063472' 104410
12755 063474' 000576          TRAP          C$ESCAPE
12756          .WORD          L10056-.
12757 063476' 004737 023434' 190$: JSR      PC,CLRDNI          ; WRITE ONE TO CLEAR DNI
12758          .WORD          ; ERROR ?
12759 063502' 103006          BCC      200$          ; NO
12760 063504'          ERRHRD  501.,ERR006,MSG003 ; YES, REPORT ERROR
12761 063504' 104456          TRAP          C$ERHRD
12762 063506' 000765          .WORD          501
12763 063510' 016206'          .WORD          ERR006
12764 063512' 015114'          .WORD          MSG003
12765 063514'          ESCAPE TST          ; AND ABORT TEST
12766 063514' 104410          TRAP          C$ESCAPE
12767 063516' 000554          .WORD          L10056-.
12768
12769          ;SET UP RINGS FOR ONE BUFFER LOOPBACK (RUNT PACKET)
12770 063520' 012705 011642' 200$: MOV      #TDRB1C,R5          ; DEFAULT BUFFER = RUNT PACKET
12771 063524' 004737 024734' JSR      PC,LDTDRB          ; LOAD TDRB
12772 063530' 012705 011342' MOV      #RDRB1A,R5          ; DEFAULT ONE BUFFER RECEIVE RING
12773 063534' 004737 024676' JSR      PC,LDRDRB          ; LOAD RDRB
12774
12775          ;SET UP BUFFERS AND START
12776 063540' 012705 011134' MOV      #WTPHYA+2,R5          ; POINT TO DESTINATION ADDRESS
12777 063544' 004737 024602' JSR      PC,LDDEST          ; LOAD DEST
12778 063550' 004737 025230' JSR      PC,SETBUF          ; SET UP BUFFERS
12779 063554' 012777 000004 114444 MOV      #START,@PCSR0          ; ISSUE START PORT COMMAND
12780 063562' 004737 022546' JSR      PC,CHKDNI          ; DNI?
12781 063566' 103006          BCC      210$          ; YES
12782 063570'          ERRHRD  502.,ERR012,MSG003 ; NO, REPORT ERROR
12783 063570' 104456          TRAP          C$ERHRD
12784 063572' 000766          .WORD          502
12785 063574' 016637'          .WORD          ERR012
12786 063576' 015114'          .WORD          MSG003
12787 063600'          ESCAPE TST          ; AND ABORT TEST
12788 063600' 104410          TRAP          C$ESCAPE
12789 063602' 000470          .WORD          L10056-.
12790
12791 063604' 004737 023434' 210$: JSR      PC,CLRDNI          ; WRITE ONE TO CLEAR DNI
12792          .WORD          ; ERROR ?
12793 063610' 103006          BCC      220$          ; NO
12794 063612'          ERRHRD  503.,ERR006,MSG003 ; YES, REPORT ERROR
12795 063612' 104456          TRAP          C$ERHRD
12796 063614' 000767          .WORD          503
12797 063616' 016206'          .WORD          ERR006
12798 063620' 015114'          .WORD          MSG003
12799 063622'          ESCAPE TST          ; AND ABORT TEST
12800 063622' 104410          TRAP          C$ESCAPE
12801 063624' 000446          .WORD          L10056-.
12802
12803 063626' 004737 023306' 220$: JSR      PC,CHKTXI          ; TXI ?
12804 063632' 103006          BCC      230$          ; YES
12805 063634'          ERRHRD  504.,ERR013,MSG003 ; NO, REPORT ERROR
12806 063634' 104456          TRAP          C$ERHRD
12807 063636' 000770          .WORD          504

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12808	063640'	016720'						.WORD	ERR013
12809	063642'	015114'						.WORD	MSG003
12810	063644'			ESCAPE	TST				; AND ABORT TEST
12811	063644'	104410						TRAP	C\$ESCAPE
12812	063646'	000424						.WORD	L10056-
12813									
12814	063650'	004737	023616'	230\$:	JSR	PC,CLRTXI			; WRITE ONE TO CLEAR TXI
12815									; ERROR ?
12816	063654'	103006			BCC	240\$			; NO
12817	063656'				ERRHRD	505.,ERR014,MSG003			; YES, REPORT ERROR
12818	063656'	104456						TRAP	C\$ERHRD
12819	063660'	000771						.WORD	505
12820	063662'	016751'						.WORD	ERR014
12821	063664'	015114'						.WORD	MSG003
12822	063666'			ESCAPE	TST				; AND ABORT TEST
12823	063666'	104410						TRAP	C\$ESCAPE
12824	063670'	000402						.WORD	L10056-
12825									
12826	063672'	012705	000572'	240\$:	MOV	#TDRB,R5			; CHECK TDRB OWNERSHIP
12827	063676'	004737	022634'		JSR	PC,CHKOWN			; OWN = PORT DRIVER ?
12828	063702'	103006			BCC	250\$			; YES
12829	063704'				ERRHRD	506.,ERR018			; NO, REPORT ERROR
12830	063704'	104456						TRAP	C\$ERHRD
12831	063706'	000772						.WORD	506
12832	063710'	017216'						.WORD	ERR018
12833	063712'	000000						.WORD	0
12834	063714'			ESCAPE	TST				; AND ABORT TEST
12835	063714'	104410						TRAP	C\$ESCAPE
12836	063716'	000354						.WORD	L10056-
12837									
12838	063720'	012705	012612'	250\$:	MOV	#TDR25A,R5			; POINT TO EXPECTED TDRB
12839	063724'	004737	025140'		JSR	PC,LDXTDR			; LOAD INTO XTDRB0 TABLE
12840	063730'	012705	000572'		MOV	#TDRB,R5			; CHECK TDRB
12841	063734'	004737	023220'		JSR	PC,CHKTDR			; ERRORS ?
12842	063740'	103006			BCC	260\$			; NO
12843	063742'				ERRHRD	507.,ERR020,MSG005			; YES, REPORT ERROR
12844	063742'	104456						TRAP	C\$ERHRD
12845	063744'	000773						.WORD	507
12846	063746'	017376'						.WORD	ERR020
12847	063750'	015220'						.WORD	MSG005
12848	063752'			ESCAPE	TST				; AND ABORT TEST
12849	063752'	104410						TRAP	C\$ESCAPE
12850	063754'	000316						.WORD	L10056-
12851									
12852	063756'	004737	023054'	260\$:	JSR	PC,CHKRXI			; RXI ?
12853	063762'	103006			BCC	270\$			; YES
12854	063764'				ERRHRD	508.,ERR015,MSG003			; NO, REPORT ERROR
12855	063764'	104456						TRAP	C\$ERHRD
12856	063766'	000774						.WORD	508
12857	063770'	017017'						.WORD	ERR015
12858	063772'	015114'						.WORD	MSG003
12859	063774'			ESCAPE	TST				; AND ABORT TEST
12860	063774'	104410						TRAP	C\$ESCAPE
12861	063776'	000274						.WORD	L10056-
12862									
12863	064000'	004737	023550'	270\$:	JSR	PC,CLRRXI			; WRITE ONE TO CLEAR RXI

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 CZUABA.MAC 10-JAN-83 12:46 TEST 25: PAD RUNT PACKETS TEST

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12864
12865 064004' 103006          BCC      280$          : ERROR ?
12866 064006'          ERRHRD  509.,ERR016,MSG003 : NO
12867 064006' 104456          : YES, REPORT ERROR          TRAP      C$ERHRD
12868 064010' 000775          .WORD   509
12869 064012' 017050'          .WORD   ERR016
12870 064014' 015114'          .WORD   MSG003
12871 064016'          ESCAPE  TST          : AND ABORT TEST          TRAP      C$ESCAPE
12872 064016' 104410          :                               .WORD   L10056-.
12873 064020' 000252
12874
12875 064022' 012705 000632' 280$: MOV      #RDRB,R5          : CHECK RDRB OWNERSHIP
12876 064026' 004737 022634' JSR      PC,CHKOWN          : OWN = PORT DRIVER ?
12877 064032' 103006          BCC      290$          : YES
12878 064034'          ERRHRD  510.,ERR017          : NO, REPORT ERROR          TRAP      C$ERHRD
12879 064034' 104456          :                               .WORD   510
12880 064036' 000776          .WORD   ERR017
12881 064040' 017116'          .WORD   0
12882 064042' 000000          ESCAPE  TST          : AND ABORT TEST          TRAP      C$ESCAPE
12883 064044'          :                               .WORD   L10056-.
12884 064044' 104410
12885 064046' 000224
12886
12887 064050' 012705 012622' 290$: MOV      #RDR14A,R5          : POINT TO EXPECTED RDRB
12888 064054' 004737 025110' JSR      PC,LDXRDR          : LOAD INTO XRDRBO TABLE
12889 064060' 012705 000632' MOV      #RDRB,R5          : CHECK RDRB
12890 064064' 004737 022754' JSR      PC,CHKRDR          : ERRORS ?
12891 064070' 103006          BCC      300$          : NO
12892 064072'          ERRHRD  511.,ERR021,MSG006 : YES, REPORT ERROR          TRAP      C$ERHRD
12893 064072' 104456          :                               .WORD   511
12894 064074' 000777          .WORD   ERR021
12895 064076' 017457'          .WORD   MSG006
12896 064100' 015362'          ESCAPE  TST          : AND ABORT TEST          TRAP      C$ESCAPE
12897 064102'          :                               .WORD   L10056-.
12898 064102' 104410
12899 064104' 000166
12900
12901          : COMPARE RBUF WITH DEFAULT PADDED RUNT PACKET
12902 064106' 012705 000027' 300$: MOV      #23.,R5          : COMPARE 23 WORDS OF DATA
12903 064112' 004737 023732' JSR      PC,CMPDAT          : DATA COMPARE ERROR ?
12904 064116' 103006          BCC      310$          : NO
12905 064120'          ERRHRD  512.,ERR022,MSG007 : YES, REPORT ERROR          TRAP      C$ERHRD
12906 064120' 104456          :                               .WORD   512
12907 064122' 001000          .WORD   ERR022
12908 064124' 017540'          .WORD   MSG007
12909 064126' 015524'          ESCAPE  TST          : AND ABORT TEST          TRAP      C$ESCAPE
12910 064130'          :                               .WORD   L10056-.
12911 064130' 104410
12912 064132' 000140
12913
12914          : CHECK FOR PADDING
12915 064134' 012705 000001' 310$: MOV      #1.,R5          : COMPARE 1 WORD OF DATA PADDING
12916 064140' 004737 024142' JSR      PC,CMPRNT          : DATA COMPARE ERROR ?
12917 064144' 103006          BCC      320$          : NO
12918 064146'          ERRHRD  513.,ERR041,MSG007 : YES, REPORT ERROR          TRAP      C$ERHRD
12919 064146' 104456

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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
*****

```

13000 064274\*  
13001 064274\*  
13002 064274\* 004737 025334\*  
13003 064300\* 103025  
13004 064302\* 012777 000040 113716  
13005 064310\* 004737 022546\*  
13006 064314\* 103006  
13007 064316\*  
13008 064316\* 104456  
13009 064320\* 001005  
13010 064322\* 016106\*  
13011 064324\* 015114\*  
13012 064326\*  
13013 064326\* 104410  
13014 064330\* 001254  
13015  
13016 064332\* 004737 023434\*  
13017  
13018 064336\* 103006  
13019 064340\*  
13020 064340\* 104456  
13021 064342\* 001006  
13022 064344\* 016206\*  
13023 064346\* 015114\*

```

BGNTST
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 517.,ERR004,MSG003 ; NO, REPORT ERROR
; TRAP C$ERHRD
; .WORD 517
; .WORD ERR004
; .WORD MSG003

ESCAPE TST ; AND ABORT TEST
; TRAP C$ESCAPE
; .WORD L10057-.

20$: JSR PC,CLRDNI ; WRITE ONE TO CLEAR DNI
; ERROR ?
BCC 30$ ; NO
ERRHRD 518.,ERR006,MSG003 ; YES, REPORT ERROR
; TRAP C$ERHRD
; .WORD 518
; .WORD ERR006
; .WORD MSG003

```

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13024 064350'          ESCAPE TST          ; AND ABORT TEST
13025 064350' 104410          TRAP      C$ESCAPE
13026 064352' 001232          .WORD    L10057-.
13027
13028 064354' 004737 024660' 30$: JSR      PC,LDPCSR          ; ADDRESS OF PCBB -> PCSR2!3
13029 064360' 012777 000001' 113640 MOV     #GETPCB,@PCSR0      ; ISSUE GET_PCBB PORT COMMAND
13030 064366' 004737 022546' JSR     PC,CHKDNI          ; DNI?
13031 064372' 103006          BCC     40$              ; YES
13032 064374'          ERRHRD  519.,ERR009,MSG003 ; NO, REPORT ERROR
13033 064374' 104456          TRAP      C$ERHRD
13034 064376' 001007          .WORD    519
13035 064400' 016422'          .WORD    ERR009
13036 064402' 015114'          .WORD    MSG003
13037 064404'          ESCAPE TST          ; AND ABORT TEST
13038 064404' 104410          TRAP      C$ESCAPE
13039 064406' 001176          .WORD    L10057-.
13040
13041 064410' 004737 023434' 40$: JSR     PC,CLRDN1          ; WRITE ONE TO CLEAR DNI
13042          BCC     50$              ; ERROR ?
13043 064414' 103006          ERRHRD  520.,ERR006,MSG003 ; NO
13044 064416'          ; YES, REPORT ERROR
13045 064416' 104456          TRAP      C$ERHRD
13046 064420' 001010          .WORD    520
13047 064422' 016206'          .WORD    ERR006
13048 064424' 015114'          .WORD    MSG003
13049 064426'          ESCAPE TST          ; AND ABORT TEST
13050 064426' 104410          TRAP      C$ESCAPE
13051 064430' 001154          .WORD    L10057-.
13052
13053          ;WRITE MODE REGISTER = INTERNAL LOOPBACK AND HALF DUPLEX MODE
13054 064432' 012705 011232' 50$: MOV     #WTMODE,R5          ; DEFAULT WRITE MODE FUNCTION
13055 064436' 004737 024630' JSR     PC,LDPCBB          ; LOAD FUNCTION -> PCBB
13056 064442' 013737 013112' 000254' MOV     MODE26,PCBB+2      ; MODE = INTL, HDUP
13057 064450' 012777 000002' 113550 MOV     #GETCMD,@PCSR0      ; ISSUE GET_CMD PORT COMMAND
13058 064456' 004737 022546' JSR     PC,CHKDNI          ; DNI ?
13059 064462' 103006          BCC     60$              ; YES
13060 064464'          ERRHRD  521.,ERR010,MSG003 ; NO, REPORT ERROR
13061 064464' 104456          TRAP      C$ERHRD
13062 064466' 001011          .WORD    521
13063 064470' 016506'          .WORD    ERR010
13064 064472' 015114'          .WORD    MSG003
13065 064474'          ESCAPE TST          ; AND ABORT TEST
13066 064474' 104410          TRAP      C$ESCAPE
13067 064476' 001106          .WORD    L10057-.
13068
13069 064500' 004737 023434' 60$: JSR     PC,CLRDN1          ; WRITE ONE TO CLEAR DNI
13070          BCC     70$              ; ERROR ?
13071 064504' 103006          ERRHRD  522.,ERR006,MSG003 ; NO
13072 064506'          ; YES, REPORT ERROR
13073 064506' 104456          TRAP      C$ERHRD
13074 064510' 001012          .WORD    522
13075 064512' 016206'          .WORD    ERR006
13076 064514' 015114'          .WORD    MSG003
13077 064516'          ESCAPE TST          ; AND ABORT TEST
13078 064516' 104410          TRAP      C$ESCAPE
13079 064520' 001064          .WORD    L10057-.

```

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CZUABA.MAC 10-JAN-83 12:46 TEST 26: HALF DUPLEX TEST

```

13080
13081
13082 064522' 012705 011172'
13083 064526' 004737 024630'
13084 064532' 012705 011312'
13085 064536' 012700 000006
13086 064542' 004737 025030'
13087 064546' 012777 000002' 113452
13088 064554' 004737 022546'
13089 064560' 103006
13090 064562'
13091 064562' 104456
13092 064564' 001013
13093 064566' 016506'
13094 064570' 015114'
13095 064572'
13096 064572' 104410
13097 064574' 001010
13098
13099 064576' 004737 023434'
13100
13101 064602' 103006
13102 064604'
13103 064604' 104456
13104 064606' 001014
13105 064610' 016206'
13106 064612' 015114'
13107 064614'
13108 064614' 104410
13109 064616' 000766
13110
13111
13112 064620' 012705 011132'
13113 064624' 004737 024630'
13114
13115 064630' 012703 012306'
13116 064634' 012704 000254'
13117 064640' 012324
13118 064642' 012324
13119 064644' 012324
13120 064646' 012777 000002' 113352
13121 064654' 004737 022546'
13122 064660' 103006
13123 064662'
13124 064662' 104456
13125 064664' 001015
13126 064666' 016506'
13127 064670' 015114'
13128 064672'
13129 064672' 104410
13130 064674' 000710
13131
13132 064676' 004737 023434'
13133
13134 064702' 103006
13135 064704'

:WRITE RING FORMAT
70$: MOV #WTRNGS,R5
      JSR PC,LDPCBB
      MOV #RFRMT,R5
      MOV #6,R0
      JSR PC,LDUDBB
      MOV #GETCMD,@PCSR0
      JSR PC,CHKDNI
      BCC 80$
      ERRHRD 523.,ERR010,MSG003

:WRITE PHYSICAL ADDRESS
90$: MOV #WTPHYA,R5
      JSR PC,LDPCBB
:LOAD DEFAULT PHYSICAL ADDRESS
      MOV #ADR21,R3
      MOV #PCBB+2,R4
      MOV (R3)+,(R4)+
      MOV (R3)+,(R4)+
      MOV (R3)+,(R4)+
      MOV #GETCMD,@PCSR0
      JSR PC,CHKDNI
      BCC 100$
      ERRHRD 525.,ERR010,MSG003

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

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

: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

:AND ABORT TEST
TRAP C$ERHRD
.WORD 523
.WORD ERR010
.WORD MSG003

:AND ABORT TEST
TRAP C$ESCAPE
.WORD L10057-.

:AND ABORT TEST
TRAP C$ERHRD
.WORD 524
.WORD ERR006
.WORD MSG003

:AND ABORT TEST
TRAP C$ESCAPE
.WORD L10057-.

:AND ABORT TEST
TRAP C$ERHRD
.WORD 525
.WORD ERR010
.WORD MSG003

:AND ABORT TEST
TRAP C$ESCAPE
.WORD L10057-.

```

HARDWARE TESTS MACY11 30(1046) 11-JAN-83 12:03 PAGE 270  
 CZUABA.MAC 10-JAN-83 12:46 TEST 26: HALF DUPLEX TEST

13136	064704'	104456				TRAP	C\$ERHRD
13137	064706'	001016				.WORD	526
13138	064710'	016206'				.WORD	ERR006
13139	064712'	015114'				.WORD	MSG003
13140	064714'			ESCAPE TST			: AND ABORT TEST
13141	064714'	104410				TRAP	C\$ESCAPE
13142	064716'	000666				.WORD	L10057-.
13143							
13144				:SET UP RINGS FOR ONE BUFFER LOOPBACK			
13145	064720'	012705	011542'	110\$: MOV #TDRB1A,R5			: DEFAULT ONE BUFFER TRANSMIT RING
13146	064724'	004737	024734'	JSR PC,LDTDRB			: LOAD TDRB
13147	064730'	012705	011342'	MOV #RDRB1A,R5			: DEFAULT ONE BUFFER RECEIVE RING
13148	064734'	004737	024676'	JSR PC,LDRDRB			: LOAD RDRB
13149							
13150				:SET UP BUFFERS AND START			
13151	064740'	012705	000254'	MOV #PCBB+2,R5			: POINT TO DESTINATION ADDRESS
13152	064744'	004737	024602'	JSR PC,LDDEST			: LOAD DEST
13153	064750'	004737	025230'	JSR PC,SETBUF			: SET UP BUFFERS
13154	064754'	012777	000004'	MOV #START,@PCSR0	113244		: ISSUE START PORT COMMAND
13155	064762'	004737	022546'	JSR PC,CHKDNI			: DNI?
13156	064766'	103006		BCC 120\$			: YES
13157	064770'			ERRHRD 527.,ERR012,MSG003			: NO, REPORT ERROR
13158	064770'	104456				TRAP	C\$ERHRD
13159	064772'	001017				.WORD	527
13160	064774'	016637'				.WORD	ERR012
13161	064776'	015114'				.WORD	MSG003
13162	065000'			ESCAPE TST			: AND ABORT TEST
13163	065000'	104410				TRAP	C\$ESCAPE
13164	065002'	000602				.WORD	L10057-.
13165							
13166	065004'	004737	023434'	120\$: JSR PC,CLRDN1			: WRITE ONE TO CLEAR DNI
13167							: ERROR ?
13168	065010'	103006		BCC 130\$			: NO
13169	065012'			ERRHRD 528.,ERR006,MSG003			: YES, REPORT ERROR
13170	065012'	104456				TRAP	C\$ERHRD
13171	065014'	001020				.WORD	528
13172	065016'	016206'				.WORD	ERR006
13173	065020'	015114'				.WORD	MSG003
13174	065022'			ESCAPE TST			: AND ABORT TEST
13175	065022'	104410				TRAP	C\$ESCAPE
13176	065024'	000560				.WORD	L10057-.
13177							
13178	065026'	004737	023306'	130\$: JSR PC,CHKTXI			: TXI ?
13179	065032'	103006		BCC 140\$			: YES
13180	065034'			ERRHRD 529.,ERR013,MSG003			: NO, REPORT ERROR
13181	065034'	104456				TRAP	C\$ERHRD
13182	065036'	001021				.WORD	529
13183	065040'	016720'				.WORD	ERR013
13184	065042'	015114'				.WORD	MSG003
13185	065044'			ESCAPE TST			: AND ABORT TEST
13186	065044'	104410				TRAP	C\$ESCAPE
13187	065046'	000536				.WORD	L10057-.
13188							
13189	065050'	004737	023616'	140\$: JSR PC,CLRTXI			: WRITE ONE TO CLEAR TXI
13190							: ERROR ?
13191	065054'	103006		BCC 150\$			: NO

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 CZUABA.MAC 10-JAN-83 12:46 TEST 26: HALF DUPLEX TEST

```

13192 065056'          ERRHRD  530.,ERR014,MSG003      ; YES, REPORT ERROR
13193 065056' 104456          TRAP C$ERHRD
13194 065060' 001022          .WORD  530
13195 065062' 016751'          .WORD  ERR014
13196 065064' 015114'          .WORD  MSG003
13197 065066'          ESCAPE  TST                      ; AND ABORT TEST
13198 065066' 104410          TRAP C$ESCAPE
13199 065070' 000514          .WORD  L10057-.
13200
13201 065072' 012705 000572'   i50$: MOV    #TDRB,R5          ; CHECK TDRB OWNERSHIP
13202 065076' 004737 022634'   JSR    PC,CHKOWN       ; OWN = PORT DRIVER ?
13203 065102' 103006          BCC    160$            ; YES
13204 065104'          ERRHRD  531.,ERR018          ; NO, REPORT ERROR
13205 065104' 104456          TRAP C$ERHRD
13206 065106' 001023          .WORD  531
13207 065110' 017216'          .WORD  ERR018
13208 065112' 000000          .WORD  0
13209 065114'          ESCAPE  TST                      ; AND ABORT TEST
13210 065114' 104410          TRAP C$ESCAPE
13211 065116' 000466          .WORD  L10057-.
13212
13213 065120' 012705 012512'   i60$: MOV    #TDR14A,R5      ; POINT TO EXPECTED TDRB
13214 065124' 004737 025140'   JSR    PC,LDXTDR       ; LOAD INTO XTDRBO TABLE
13215 065130' 012705 000572'   MOV    #TDRB,R5        ; CHECK TDRB
13216 065134' 004737 023220'   JSR    PC,CHKTDR       ; ERRORS ?
13217 065140' 103006          BCC    170$            ; NO
13218 065142'          ERRHRD  532.,ERR020,MSG005      ; YES, REPORT ERROR
13219 065142' 104456          TRAP C$ERHRD
13220 065144' 001024          .WORD  532
13221 065146' 017376'          .WORD  ERR020
13222 065150' 015220'          .WORD  MSG005
13223 065152'          ESCAPE  TST                      ; AND ABORT TEST
13224 065152' 104410          TRAP C$ESCAPE
13225 065154' 000430          .WORD  L10057-.
13226
13227 065156' 004737 025170'   i70$: JSR    PC,NORXI        ; RXI ?
13228 065162' 103006          BCC    180$            ; NO
13229 065164'          ERRHRD  533.,ERR046          ; YES, REPORT ERROR
13230 065164' 104456          TRAP C$ERHRD
13231 065166' 001025          .WORD  533
13232 065170' 022070'          .WORD  ERR046
13233 065172' 000000          .WORD  0
13234 065174'          ESCAPE  TST                      ; AND ABORT TEST
13235 065174' 104410          TRAP C$ESCAPE
13236 065176' 000406          .WORD  L10057-.
13237
13238 065200' 012777 000017 113020 i80$: MOV    #STOP,@P/CSRO      ; ISSUE STOP PORT COMMAND
13239 065206' 004737 022546'   JSR    PC,CHKONI       ; DNI ?
13240 065212' 103006          BCC    240$            ; YES
13241 065214'          ERRHRD  534.,ERR019,MSG003      ; NO, REPORT ERROR
13242 065214' 104456          TRAP C$ERHRD
13243 065216' 001026          .WORD  534
13244 065220' 017316'          .WORD  ERR019
13245 065222' 015114'          .WORD  MSG003
13246 065224'          ESCAPE  TST                      ; AND ABORT TEST
13247 065224' 104410          TRAP C$ESCAPE

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 CZUABA.MAC 10-JAN-83 12:46 TEST 26: HALF DUPLEX TEST

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13248 065226' 000356                                .WORD  L10057-.
13249
13250 065230' 004737 023434'                240$: JSR    PC,CLRDNI                ; WRITE ONE TO CLEAR DNI
13251                                         ; ERROR ?
13252 065234' 103006                                BCC    250$                          ; NO
13253 065236'                                ERRHRD 535.,ERR006,MSG003            ; YES, REPORT ERROR
13254 065236' 104456                                TRAP   C$ERHRD
13255 065240' 001027                                .WORD  535
13256 065242' 016206'                                .WORD  ERR006
13257 065244' 015114'                                .WORD  MSG003
13258 065246'                                ESCAPE TST                            ; AND ABORT TEST
13259 065246' 104410                                TRAP   C$ESCAPE
13260 065250' 000334                                .WORD  L10057-.
13261
13262                                         ;:DESTINATION ADDRESS NOT = PHYSICAL ADDRESS
13263
13264                                         ;:SET UP RINGS FOR ONE BUFFER LOOPBACK
13265 065252' 012705 011542'                250$: MOV    #TDRB1A,R5                ; DEFAULT ONE BUFFER TRANSMIT RING
13266 065256' 004737 024734'                JSR    PC,LDTDRB                      ; LOAD TDRB
13267 065262' 012705 011342'                MOV    #RDRB1A,R5                    ; DEFAULT ONE BUFFER RECEIVE RING
13268 065266' 004737 024676'                JSR    PC,LDRDRB                      ; LOAD RDRB
13269
13270                                         ;:SET UP BUFFERS AND START
13271 065272' 012705 012314'                MOV    #ADR21C,R5                    ; POINT TO COMPLEMENTED ADDRESS
13272 065276' 004737 024602'                JSR    PC,LDDEST                      ; LOAD DEST
13273 065302' 004737 025230'                JSR    PC,SETBUF                      ; SET UP BUFFERS
13274 065306' 012777 000004' 112712        MOV    #START,@PCSR0                 ; ISSUE START PORT COMMAND
13275 065314' 004737 022546'                JSR    PC,CHKDNI                      ; DNI?
13276 065320' 103006                                BCC    260$                          ; YES
13277 065322'                                ERRHRD 536.,ERR012,MSG003            ; NO, REPORT ERROR
13278 065322' 104456                                TRAP   C$ERHRD
13279 065324' 001030                                .WORD  536
13280 065326' 016637'                                .WORD  ERR012
13281 065330' 015114'                                .WORD  MSG003
13282 065332'                                ESCAPE TST                            ; AND ABORT TEST
13283 065332' 104410                                TRAP   C$ESCAPE
13284 065334' 000250                                .WORD  L10057-.
13285
13286 065336' 004737 023434'                260$: JSR    PC,CLRDNI                ; WRITE ONE TO CLEAR DNI
13287                                         ; ERROR ?
13288 065342' 103006                                BCC    270$                          ; NO
13289 065344'                                ERRHRD 537.,ERR006,MSG003            ; YES, REPORT ERROR
13290 065344' 104456                                TRAP   C$ERHRD
13291 065346' 001031                                .WORD  537
13292 065350' 016206'                                .WORD  ERR006
13293 065352' 015114'                                .WORD  MSG003
13294 065354'                                ESCAPE TST                            ; AND ABORT TEST
13295 065354' 104410                                TRAP   C$ESCAPE
13296 065356' 000226                                .WORD  L10057-.
13297
13298 065360' 004737 023306'                270$: JSR    PC,CHKTXI                ; TXI ?
13299 065364' 103006                                BCC    280$                          ; YES
13300 065366'                                ERRHRD 538.,ERR013,MSG003            ; NO, REPORT ERROR
13301 065366' 104456                                TRAP   C$ERHRD
13302 065370' 001032                                .WORD  538
13303 065372' 016720'                                .WORD  ERR013
    
```

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 CZUABA.MAC 10-JAN-83 12:46 TEST 26: HALF DUPLEX TEST

13304	065374'	015114'						.WORD	MSG003
13305	065376'			ESCAPE	TST				
13306	065376'	104410							: AND ABORT TEST
13307	065400'	000204						TRAP	C\$ESCAPE
13308								.WORD	L10057-.
13309	065402'	004737	023616'	.280\$:	JSR	PC,CLRTXI			: WRITE ONE TO CLEAR TXI
13310									: ERROR ?
13311	065406'	103006			BCC	290\$			: NO
13312	065410'				ERRHRD	539.,ERR014,MSG003			: YES, REPORT ERROR
13313	065410'	104456						TRAP	C\$ERHRD
13314	065412'	001033						.WORD	539
13315	065414'	016751'						.WORD	ERR014
13316	065416'	015114'						.WORD	MSG003
13317	065420'				ESCAPE	TST			: AND ABORT TEST
13318	065420'	104410						TRAP	C\$ESCAPE
13319	065422'	000162						.WORD	L10057-.
13320									
13321	065424'	012705	000572'	.290\$:	MOV	#TDRB,R5			: CHECK TDRB OWNERSHIP
13322	065430'	004737	022634'		JSR	PC,CHKOWN			: OWN = PORT DRIVER ?
13323	065434'	103006			BCC	300\$			: YES
13324	065436'				ERRHRD	540.,ERR018			: NO, REPORT ERROR
13325	065436'	104456						TRAP	C\$ERHRD
13326	065440'	001034						.WORD	540
13327	065442'	017216'						.WORD	ERR018
13328	065444'	000000						.WORD	0
13329	065446'				ESCAPE	TST			: AND ABORT TEST
13330	065446'	104410						TRAP	C\$ESCAPE
13331	065450'	000134						.WORD	L10057-.
13332									
13333	065452'	012705	012602'	.300\$:	MOV	#TDR21X,R5			: POINT TO EXPECTED TDRB
13334	065456'	004737	025140'		JSR	PC,LDXTDR			: LOAD INTO XTDRB0 TABLE
13335	065462'	012705	000572'		MOV	#TDRB,R5			: CHECK TDRB
13336	065466'	004737	023220'		JSR	PC,CHKTDR			: ERRORS ?
13337	065472'	103006			BCC	310\$			: NO
13338	065474'				ERRHRD	541.,ERR020,MSG005			: YES, REPORT ERROR
13339	065474'	104456						TRAP	C\$ERHRD
13340	065476'	001035						.WORD	541
13341	065500'	017376'						.WORD	ERR020
13342	065502'	015220'						.WORD	MSG005
13343	065504'				ESCAPE	TST			: AND ABORT TEST
13344	065504'	104410						TRAP	C\$ESCAPE
13345	065506'	000076						.WORD	L10057-.
13346									
13347	065510'	004737	025170'	.310\$:	JSR	PC,NORXI			: RXI ?
13348	065514'	103006			BCC	320\$			: NO
13349	065516'				ERRHRD	542.,ERR046			: YES, REPORT ERROR
13350	065516'	104456						TRAP	C\$ERHRD
13351	065520'	001036						.WORD	542
13352	065522'	022070'						.WORD	ERR046
13353	065524'	000000						.WORD	0
13354	065526'				ESCAPE	TST			: AND ABORT TEST
13355	065526'	104410						TRAP	C\$ESCAPE
13356	065530'	000054						.WORD	L10057-.
13357									
13358	065532'	012777	000017	.320\$:	MOV	#STOP,@PCSR0			: ISSUE STOP PORT COMMAND
13359	065540'	004737	022546'	112466	JSR	PC,CHKDNI			: DNI ?

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 CZUABA.MAC 10-JAN-83 12:46 TEST 26: HALF DUPLEX TEST

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13360 065544' 103006          BCC      330$          : YES
13361 065546'                ERRHRD  543.,ERR019,MSG003 : NO, REPORT ERROR
13362 065546' 104456          TRAP    C$ERHRD
13363 065550' 001037          .WORD  543
13364 065552' 017316'        .WORD  ERR019
13365 065554' 015114'        .WORD  MSG003
13366 065556'                ESCAPE  TST          : AND ABORT TEST
13367 065556' 104410          TRAP    C$ESCAPE
13368 065560' 000024          .WORD  L10057-.
13369
13370 065562' 004737 023434' 330$: JSR      PC,CLRDNI : WRITE ONE TO CLEAR DNI
13371                                : ERROR ?
13372 065566' 103006          BCC      340$
13373 065570'                ERRHRD  544.,ERR006,MSG003 : YES, REPORT ERROR
13374 065570' 104456          TRAP    C$ERHRD
13375 065572' 001040          .WORD  544
13376 065574' 016206'        .WORD  ERR006
13377 065576' 015114'        .WORD  MSG003
13378 065600'                ESCAPE  TST          : AND ABORT TEST
13379 065600' 104410          TRAP    C$ESCAPE
13380 065602' 000002          .WORD  L10057-.
13381
13382 065604'                340$:
13383 065604'                ENDTST
13384 065604'
13385 065604' 104401          L10057: TRAP    C$ETST

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 CZUABA.MAC 10-JAN-83 12:46 TEST 27: SIMULTANEOUS OPERATIONS TEST

.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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065606'  
065606'  
065606' 004737 025334'  
065612' 103025  
065614' 012777 000040 112404  
065622' 004737 022546'  
065626' 103006  
065630'  
065630' 104456  
065632' 001041  
065634' 016106'  
065636' 015114'  
065640'  
065640' 104410  
065642' 001472  
065644' 004737 023434' 20\$:  
065650' 103006  
065652'  
065652' 104456  
065654' 001042  
065656' 016206'  
065660' 015114'  
065662'  
065662' 104410  
065664' 001450  
065666' 004737 024660' 30\$:  
065672' 012777 000001 112326  
065700' 004737 022546'  
065704' 103006  
065706'  
065706' 104456

```

BGNTST
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 545.,ERR004,MSG003 ; NO, REPORT ERROR
TRAP C$ERHRD
.WORD 545
.WORD ERR004
.WORD MSG003

ESCAPE TST ; AND ABORT TEST
TRAP C$ESCAPE
.WORD L10060-

20$: JSR PC,CLR DNI ; WRITE ONE TO CLEAR DNI
; ERROR ?
BCC 30$ ; NO
ERRHRD 546.,ERR006,MSG003 ; YES, REPORT ERROR
TRAP C$ERHRD
.WORD 546
.WORD ERR006
.WORD MSG003

ESCAPE TST ; AND ABORT TEST
TRAP C$ESCAPE
.WORD L10060-

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 547.,ERRC09,MSG003 ; NO, REPORT ERROR
TRAP C$ERHRD

```

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```

13442 065710' 001043          .WORD 547
13443 065712' 016422'        .WORD ERR009
13444 065714' 015114'        .WORD MSG003
13445 065716'                ESCAPE TST          ; AND ABORT TEST
13446 065716' 104410          TRAP C$ESCAPE
13447 065720' 001414          .WORD L10060-.
13448
13449 065722' 004737 023434' 40$: JSR PC,CLRDNI          ; WRITE ONE TO CLEAR DNI
13450                                     ; ERROR ?
13451 065726' 103006          BCC 50$              ; NO
13452 065730'                ERRHRD 548.,ERR006,MSG003 ; YES, REPORT ERROR
13453 065730' 104456          TRAP C$ERHRD
13454 065732' 001044          .WORD 548
13455 065734' 016206'        .WORD ERR006
13456 065736' 015114'        .WORD MSG003
13457 065740'                ESCAPE TST          ; AND ABORT TEST
13458 065740' 104410          TRAP C$ESCAPE
13459 065742' 001372          .WORD L10060-.
13460
13461                                     ;WRITE MODE REGISTER = INTERNAL LOOPBACK AND PROM MODE
13462 065744' 012705 011232' 50$: MOV #WTMODE,R5          ; DEFAULT WRITE MODE FUNCTION
13463 065750' 004737 024630' JSR PC,LDPCBB          ; LOAD FUNCTION -> PCBB
13464 065754' 012777 000002 112244 MOV #GETCMD,@PCSRO    ; ISSUE GET_CMD PORT COMMAND
13465 065762' 004737 022546' JSR PC,CHKDNI          ; DNI ?
13466 065766' 103006          BCC 60$              ; YES
13467 065770'                ERRHRD 549.,ERR010,MSG003 ; NO, REPORT ERROR
13468 065770' 104456          TRAP C$ERHRD
13469 065772' 001045          .WORD 549
13470 065774' 016506'        .WORD ERR010
13471 065776' 015114'        .WORD MSG003
13472 066000'                ESCAPE TST          ; AND ABORT TEST
13473 066000' 104410          TRAP C$ESCAPE
13474 066002' 001332          .WORD L10060-.
13475
13476 066004' 004737 023434' 60$: JSR PC,CLRDNI          ; WRITE ONE TO CLEAR DNI
13477                                     ; ERROR ?
13478 066010' 103006          BCC 70$              ; NO
13479 066012'                ERRHRD 550.,ERR006,MSG003 ; YES, REPORT ERROR
13480 066012' 104456          TRAP C$ERHRD
13481 066014' 001046          .WORD 550
13482 066016' 016206'        .WORD ERR006
13483 066020' 015114'        .WORD MSG003
13484 066022'                ESCAPE TST          ; AND ABORT TEST
13485 066022' 104410          TRAP C$ESCAPE
13486 066024' 001310          .WORD L10060-.
13487
13488                                     ;WRITE RING FORMAT
13489 066026' 012705 011172' 70$: MOV #WTRNGS,R5          ; DEFAULT WRITE RING FORMAT FUNCTION
13490 066032' 004737 024630' JSR PC,LDPCBB          ; LOAD FUNCTION -> PCBB
13491 066036' 012705 011312' MOV #RFRMT,R5          ; DEFAULT RING FORMAT
13492 066042' 012700 000006 MOV #6,R0              ; FORMAT = SIX WORDS
13493 066046' 004737 025030' JSR PC,LDUDBB          ; LOAD RING FORMAT -> UDBB
13494 066052' 012777 000002 112146 MOV #GETCMD,@PCSRO    ; ISSUE GET_CMD PORT COMMAND
13495 066060' 004737 022546' JSR PC,CHKDNI          ; DNI ?
13496 066064' 103006          BCC 80$              ; YES
13497 066066'                ERRHRD 551.,ERR010,MSG003 ; NO, REPORT ERROR

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```

13498 066066* 104456                                TRAP  C$ERHRD
13499 066070* 001047                                .WORD 551
13500 066072* 016506*                               .WORD  ERR010
13501 066074* 015114*                               .WORD  MSG003
13502 066076*                                       ESCAPE TST                                ; AND ABORT TEST
13503 066076* 104410                                TRAP  C$ESCAPE
13504 066100* 001234                                .WORD  L10060-.
13505
13506 066102* 004737 023434*                       ;80$: JSR    PC,CLRDNI                      ; WRITE ONE TO CLEAR DNI
13507                                       ; ERROR ?
13508 066106* 103006                                BCC   90$
13509 066110*                                       ERRHRD 552.,ERR006,MSG003                ; NO
; YES, REPORT ERROR
13510 066110* 104456                                TRAP  C$ERHRD
13511 066112* 001050                                .WORD 552
13512 066114* 016206*                               .WORD  ERR006
13513 066116* 015114*                               .WORD  MSG003
13514 066120*                                       ESCAPE TST                                ; AND ABORT TEST
13515 066120* 104410                                TRAP  C$ESCAPE
13516 066122* 001212                                .WORD  L10060-.
13517
13518 ;WRITE PHYSICAL ADDRESS
13519 066124* 012705 011132*                       ;90$: MOV    #WTPHYA,R5                    ; DEFAULT WRITE PHYSICAL ADDR FUNC
13520 066130* 004737 024630*                       JSR    PC,LDP CBB                        ; LOAD FUNCTION -> PCBB
13521 066134* 012777 000002 112064                 MOV    #GETCMD,@PCSR0                    ; ISSUE GET_CMD PORT COMMAND
13522 066142* 004737 022546*                       JSR    PC,CHKDNI                          ; DNI ?
13523 066146* 103006                                BCC   100$
13524 066150*                                       ERRHRD 553.,ERR010,MSG003                ; YES
; NO, REPORT ERROR
13525 066150* 104456                                TRAP  C$ERHRD
13526 066152* 001051                                .WORD 553
13527 066154* 016506*                               .WORD  ERR010
13528 066156* 015114*                               .WORD  MSG003
13529 066160*                                       ESCAPE TST                                ; AND ABORT TEST
13530 066160* 104410                                TRAP  C$ESCAPE
13531 066162* 001152                                .WORD  L10060-.
13532
13533 066164* 004737 023434*                       ;100$: JSR   PC,CLRDNI                      ; WRITE ONE TO CLEAR DNI
13534                                       ; ERROR ?
13535 066170* 103006                                BCC   110$
13536 066172*                                       ERRHRD 554.,ERR006,MSG003                ; NO
; YES, REPORT ERROR
13537 066172* 104456                                TRAP  C$ERHRD
13538 066174* 001052                                .WORD 554
13539 066176* 016206*                               .WORD  ERR006
13540 066200* 015114*                               .WORD  MSG003
13541 066202*                                       ESCAPE TST                                ; AND ABORT TEST
13542 066202* 104410                                TRAP  C$ESCAPE
13543 066204* 001130                                .WORD  L10060-.
13544
13545 ;SET UP RINGS FOR THREE BUFFERS CHAINED LOOPBACK
13546 066206* 012705 011742*                       ;110$: MOV   #TDRB3A,R5                    ; DEFAULT THREE BUFFER TRANSMIT RING
13547 066212* 004737 024734*                       JSR    PC,LDTDRB                          ; LOAD TDRB
13548 066216* 012705 011502*                       MOV    #RDRB3A,R5                          ; DEFAULT THREE BUFFER RECEIVE RING
13549 066222* 004737 024676*                       JSR    PC,LDRDRB                          ; LOAD RDRB
13550
13551 ;SET UP BUFFERS
13552 066226* 012705 000254*                       MOV    #PCBB+2,R5                          ; POINT TO DESTINATION ADDRESS
13553 066232* 004737 024602*                       JSR    PC,LDDDEST                          ; LOAD DEST
    
```

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13554 066236' 004737 025230'          JSR      PC,SETBUF          ; SET UP BUFFERS
13555
13556          ;SET UP READ COUNTERS FUNCTION
13557 066242' 012705 011202'          MOV      #RDCNT,R5          ; DEFAULT READ COUNTERS FUNCTION
13558 066246' 004737 024630'          JSR      PC,LDPCCBB        ; LOAD FUNCTION -> PCBB
13559
13560          ;ISSUE START
13561 066252' 012777 000004' 111746    MOV      #START,@PCSR0     ; ISSUE START PORT COMMAND
13562 066260' 004737 022546'          JSR      PC,CHKDNI         ; DNI?
13563 066264' 103006          BCC     115$              ; YES
13564 066266'          ERRHRD  555.,ERR012,MSG003 ; NO, REPORT ERROR
13565 066266' 104456          TRAP   C$ERHRD
13566 066270' 001053          .WORD  555
13567 066272' 016637'          .WORD  ERR012
13568 066274' 015114'          .WORD  MSG003
13569 066276'          ESCAPE  TST              ; AND ABORT TEST
13570 066276' 104410          TRAP   C$ESCAPE
13571 066300' 001034          .WORD  L10060-.
13572
13573 066302' 004737 023434'          ;115$: JSR      PC,CLRDN1     ; WRITE ONE TO CLEAR DNI
13574          ; ERROR ?
13575 066306' 103006          BCC     120$              ; NO
13576 066310'          ERRHRD  556.,ERR006,MSG003 ; YES, REPORT ERROR
13577 066310' 104456          TRAP   C$ERHRD
13578 066312' 001054          .WORD  556
13579 066314' 016206'          .WORD  ERR006
13580 066316' 015114'          .WORD  MSG003
13581 066320'          ESCAPE  TST              ; AND ABORT TEST
13582 066320' 104410          TRAP   C$ESCAPE
13583 066322' 001012          .WORD  L10060-.
13584
13585          ;ISSUE GET COMMAND FOR READ COUNTERS FUNCTION
13586 066324' 012777 000002' 111674    ;120$: MOV      #GETCMD,@PCSR0 ; ISSUE GET_CMD PORT COMMAND
13587 066332' 004737 022546'          JSR      PC,CHKDNI         ; DNI ?
13588 066336' 103006          BCC     125$              ; YES
13589 066340'          ERRHRD  557.,ERR044,MSG003 ; NO, REPORT ERROR
13590 066340' 104456          TRAP   C$ERHRD
13591 066342' 001055          .WORD  557
13592 066344' 021712'          .WORD  ERR044
13593 066346' 015114'          .WORD  MSG003
13594 066350'          ESCAPE  TST              ; AND ABORT TEST
13595 066350' 104410          TRAP   C$ESCAPE
13596 066352' 000762          .WORD  L10060-.
13597
13598 066354' 004737 023434'          ;125$: JSR      PC,CLRDN1     ; WRITE ONE TO CLEAR DNI
13599          ; ERROR ?
13600 066360' 103006          BCC     130$              ; NO
13601 066362'          ERRHRD  558.,ERR006,MSG003 ; YES, REPORT ERROR
13602 066362' 104456          TRAP   C$ERHRD
13603 066364' 001056          .WORD  558
13604 066366' 016206'          .WORD  ERR006
13605 066370' 015114'          .WORD  MSG003
13606 066372'          ESCAPE  TST              ; AND ABORT TEST
13607 066372' 104410          TRAP   C$ESCAPE
13608 066374' 000740          .WORD  L10060-.
13609

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13610	066376'	004737	023306'	130\$:	JSR	PC,CHKTXI	:	TXI ?		
13611	066402'	103006			BCC	140\$	:	YES		
13612	066404'				ERRHRD	559.,ERR013,MSG003	:	NO, REPORT ERROR		
13613	066404'	104456							TRAP	C\$ERHRD
13614	066406'	001057							.WORD	559
13615	066410'	016720'							.WORD	ERR013
13616	066412'	015114'							.WORD	MSG003
13617	066414'				ESCAPE	TST	:	AND ABORT TEST		
13618	066414'	104410							TRAP	C\$ESCAPE
13619	066416'	000716							.WORD	L10060-.
13620										
13621	066420'	004737	023616'	140\$:	JSR	PC,CLRXYI	:	WRITE ONE TO CLEAR TXI		
13622							:	ERROR ?		
13623	066424'	103006			BCC	150\$	:	NO		
13624	066426'				ERRHRD	560.,ERR014,MSG003	:	YES, REPORT ERROR		
13625	066426'	104456							TRAP	C\$ERHRD
13626	066430'	001060							.WORD	560
13627	066432'	016751'							.WORD	ERR014
13628	066434'	015114'							.WORD	MSG003
13629	066436'				ESCAPE	TST	:	AND ABORT TEST		
13630	066436'	104410							TRAP	C\$ESCAPE
13631	066440'	000674							.WORD	L10060-.
13632										
13633	066442'	012705	000572'	:CHECK FIRST RING ENTRY	150\$:	MOV	#TDRB,R5	:	CHECK TDRB OWNERSHIP	
13634	066446'	004737	022634'			JSR	PC,CHKOWN	:	OWN = PORT DRIVER ?	
13635	066452'	103006				BCC	160\$	:	YES	
13636	066454'					ERRHRD	561.,ERR027	:	NO, REPORT ERROR	
13637	066454'	104456							TRAP	C\$ERHRD
13638	066456'	001061							.WORD	561
13639	066460'	017777'							.WORD	ERR027
13640	066462'	000000							.WORD	0
13641	066464'				ESCAPE	TST	:	AND ABORT TEST		
13642	066464'	104410							TRAP	C\$ESCAPE
13643	066466'	000646							.WORD	L10060-.
13644										
13645	066470'	012705	012552'	160\$:	MOV	#TDR20A,R5	:	POINT TO EXPECTED TDRB		
13646	066474'	004737	025140'		JSR	PC,LDXTDR	:	LOAD INTO XTDRB0 TABLE		
13647	066500'	012705	000572'		MOV	#TDRB,R5	:	CHECK TDRB		
13648	066504'	004737	023220'		JSR	PC,CHKTDR	:	ERRORS ?		
13649	066510'	103006			BCC	162\$	:	NO		
13650	066512'				ERRHRD	562.,ERR033,MSG005	:	YES, REPORT ERROR		
13651	066512'	104456							TRAP	C\$ERHRD
13652	066514'	001062							.WORD	562
13653	066516'	020637'							.WORD	ERR033
13654	066520'	015220'							.WORD	MSG005
13655	066522'				ESCAPE	TST	:	AND ABORT TEST		
13656	066522'	104410							TRAP	C\$ESCAPE
13657	066524'	000610							.WORD	L10060-.
13658										
13659	066526'	012705	000602'	:CHECK SECOND RING ENTRY	162\$:	MOV	#TDRB+8.,R5	:	CHECK TDRB OWNERSHIP	
13660	066532'	004737	022634'			JSR	PC,CHKOWN	:	OWN = PORT DRIVER ?	
13661	066536'	103006				BCC	164\$	:	YES	
13662	066540'					ERRHRD	563.,ERR028	:	NO, REPORT ERROR	
13663	066540'	104456							TRAP	C\$ERHRD
13664	066542'	001063							.WORD	563
13665	066544'	020104'							.WORD	ERR028



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13666 066546 000000
13667 066550          ESCAPE TST          ; AND ABORT TEST          .WORD 0
13668 066550 104410
13669 066552 000562
13670
13671 066554 012705 012562 164$: MOV #TDR20B,R5          ; POINT TO EXPECTED TDRB
13672 066560 004737 025140 JSR PC,LDXTDR          ; LOAD INTO XTDRB0 TABLE
13673 066564 012705 000602 MOV #TDRB+8.,R5        ; CHECK TDRB
13674 066570 004737 023220 JSR PC,CHKTDR          ; ERRORS ?
13675 066574 103006 BCC 166$              ; NO
13676 066576          ERRHRD 564.,ERR034,MSG005 ; YES, REPORT ERROR
13677 066576 104456 TRAP C$ERHRD
13678 066600 001064 .WORD 564
13679 066602 020726 .WORD ERR034
13680 066604 015220 .WORD MSG005
13681 066606          ESCAPE TST          ; AND ABORT TEST
13682 066606 104410 TRAP C$ESCAPE
13683 066610 000524 .WORD L10060-.
13684
13685 066612 012705 000612 ;CHECK THIRD RING ENTRY
13686 066616 004737 022634 166$: MOV #TDRB+16.,R5 ; CHECK TDRB OWNERSHIP
13687 066622 103006 JSR PC,CHKOWN          ; OWN = PORT DRIVER ?
13688 066624          BCC 168$              ; YES
13689 066624 104456 ERRHRD 565.,ERR029 ; NO, REPORT ERROR
13690 066626 001065 TRAP C$ERHRD
13691 066630 020212 .WORD 565
13692 066632 000000 .WORD ERR029
13693 066634          ESCAPE TST          ; AND ABORT TEST          .WORD 0
13694 066634 104410 TRAP C$ESCAPE
13695 066636 000476 .WORD L10060-.
13696
13697 066640 012705 012572 168$: MOV #TDR20C,R5          ; POINT TO EXPECTED TDRB
13698 066644 004737 025140 JSR PC,LDXTDR          ; LOAD INTO XTDRB0 TABLE
13699 066650 012705 000612 MOV #TDRB+16.,R5        ; CHECK TDRB
13700 066654 004737 023220 JSR PC,CHKTDR          ; ERRORS ?
13701 066660 103006 BCC 170$              ; NO
13702 066662          ERRHRD 566.,ERR035,MSG005 ; YES, REPORT ERROR
13703 066662 104456 TRAP C$ERHRD
13704 066664 001066 .WORD 566
13705 066666 021016 .WORD ERR035
13706 066670 015220 .WORD MSG005
13707 066672          ESCAPE TST          ; AND ABORT TEST
13708 066672 104410 TRAP C$ESCAPE
13709 066674 000440 .WORD L10060-.
13710
13711 066676 004737 023054 170$: JSR PC,CHKRXI          ; RXI ?
13712 066702 103006 BCC 180$              ; YES
13713 066704          ERRHRD 567.,ERR015,MSG003 ; NO, REPORT ERROR
13714 066704 104456 TRAP C$ERHRD
13715 066706 001067 .WORD 567
13716 066710 017017 .WORD ERR015
13717 066712 015114 .WORD MSG003
13718 066714          ESCAPE TST          ; AND ABORT TEST
13719 066714 104410 TRAP C$ESCAPE
13720 066716 000416 .WORD L10060-.
13721

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13722	066720	004737	023550	180\$:	JSR	PC,CLRRXI	:	WRITE ONE TO CLEAR RXI		
13723							:	ERROR ?		
13724	066724	103006			BCC	190\$	:	NO		
13725	066726				ERRHRD	568.,ERR016,MSG003	:	YES, REPORT ERROR		
13726	066726	104456							TRAP	C\$ERHRD
13727	066730	001070							.WORD	568
13728	066732	017050							.WORD	ERR016
13729	066734	015114							.WORD	MSG003
13730	066736				ESCAPE	TST	:	AND ABORT TEST		
13731	066736	104410							TRAP	C\$ESCAPE
13732	066740	000374							.WORD	L10060-
13733					:CHECK	FIRST RING ENTRY				
13734	066742	012705	000632	190\$:	MOV	#RDRB,R5	:	CHECK RDRB OWNERSHIP		
13735	066746	004737	022634		JSR	PC,CHKOWN	:	OWN = PORT DRIVER ?		
13736	066752	103006			BCC	200\$	:	YES		
13737	066754				ERRHRD	569.,ERR030	:	NO, REPORT ERROR		
13738	066754	104456							TRAP	C\$ERHRD
13739	066756	001071							.WORD	569
13740	066760	020317							.WORD	ERR030
13741	066762	000000							.WORD	0
13742	066764				ESCAPE	TST	:	AND ABORT TEST		
13743	066764	104410							TRAP	C\$ESCAPE
13744	066766	000346							.WORD	L10060-
13745										
13746	066770	012705	012662	200\$:	MOV	#RDR20A,R5	:	POINT TO EXPECTED RDRB		
13747	066774	004737	025110		JSR	PC,LDXRDR	:	LOAD INTO XRDRB0 TABLE		
13748	067000	012705	000632		MOV	#RDRB,R5	:	CHECK RDRB		
13749	067004	004737	022754		JSR	PC,CHKRDR	:	ERRORS ?		
13750	067010	103006			BCC	202\$	:	NO		
13751	067012				ERRHRD	570.,ERR036,MSG006	:	YES, REPORT ERROR		
13752	067012	104456							TRAP	C\$ERHRD
13753	067014	001072							.WORD	570
13754	067016	021105							.WORD	ERR036
13755	067020	015362							.WORD	MSG006
13756	067022				ESCAPE	TST	:	AND ABORT TEST		
13757	067022	104410							TRAP	C\$ESCAPE
13758	067024	000310							.WORD	L10060-
13759					:CHECK	SECOND RING ENTRY				
13760	067026	012705	000642	202\$:	MOV	#RDRB+8.,R5	:	CHECK RDRB OWNERSHIP		
13761	067032	004737	022634		JSR	PC,CHKOWN	:	OWN = PORT DRIVER ?		
13762	067036	103006			BCC	204\$	:	YES		
13763	067040				ERRHRD	571.,ERR031	:	NO, REPORT ERROR		
13764	067040	104456							TRAP	C\$ERHRD
13765	067042	001073							.WORD	571
13766	067044	020424							.WORD	ERR031
13767	067046	000000							.WORD	0
13768	067050				ESCAPE	TST	:	AND ABORT TEST		
13769	067050	104410							TRAP	C\$ESCAPE
13770	067052	000262							.WORD	L10060-
13771										
13772	067054	012705	012672	204\$:	MOV	#RDR20B,R5	:	POINT TO EXPECTED RDRB		
13773	067060	004737	025110		JSR	PC,LDXRDR	:	LOAD INTO XRDRB0 TABLE		
13774	067064	012705	000642		MOV	#RDRB+8.,R5	:	CHECK RDRB		
13775	067070	004737	022754		JSR	PC,CHKRDR	:	ERRORS ?		
13776	067074	103006			BCC	206\$	:	NO		
13777	067076				ERRHRD	572.,ERR037,MSG006	:	YES, REPORT ERROR		

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13778	067076'	104456				TRAP	C\$ERHRD
13779	067100'	001074				.WORD	572
13780	067102'	021173'				.WORD	ERR037
13781	067104'	015362'				.WORD	MSG006
13782	067106'			ESCAPE TST			: AND ABORT TEST
13783	067106'	104410				TRAP	C\$ESCAPE
13784	067110'	000224				.WORD	L10060-
13785							
13786	067112'	012705	000652'	:CHECK THIRD RING ENTRY			
13787	067116'	004737	022634'	206\$: MOV #RDRB+16.,R5			: CHECK RDRB OWNERSHIP
13788	067122'	103006		JSR PC,CHKOWN			: OWN = PORT DRIVER ?
13789	067124'			BCC 208\$			: YES
13790	067124'	104456		ERRHRD 573.,ERR032			: NO, REPORT ERROR
13791	067126'	001075				TRAP	C\$ERHRD
13792	067130'	020532'				.WORD	573
13793	067132'	000000				.WORD	ERR032
13794	067134'			ESCAPE TST		.WORD	0
13795	067134'	104410				TRAP	C\$ESCAPE
13796	067136'	000176				.WORD	L10060-
13797							
13798	067140'	012705	012702'	:208\$: MOV #RDR20C,R5			: POINT TO EXPECTED RDRB
13799	067144'	004737	025110'	JSR PC,LDXRDR			: LOAD INTO XRDRB0 TABLE
13800	067150'	012705	000652'	MOV #RDRB+16.,R5			: CHECK RDRB
13801	067154'	004737	022754'	JSR PC,CHKRDR			: ERRORS ?
13802	067160'	103006		BCC 210\$			: NO
13803	067162'			ERRHRD 574.,ERR038,MSG006			: YES, REPORT ERROR
13804	067162'	104456				TRAP	C\$ERHRD
13805	067164'	001076				.WORD	574
13806	067166'	021262'				.WORD	ERR038
13807	067170'	015362'				.WORD	MSG006
13808	067172'			ESCAPE TST			: AND ABORT TEST
13809	067172'	104410				TRAP	C\$ESCAPE
13810	067174'	000140				.WORD	L10060-
13811							
13812				:COMPARE RBUF WITH TBUF			
13813	067176'	012705	000570	210\$: MOV #376.,R5			: COMPARE 376 WORDS OF DATA
13814	067202'	004737	023732'	JSR PC,CMPDAT			: DATA COMPARE ERROR ?
13815	067206'	103006		BCC 220\$			: NO
13816	067210'			ERRHRD 575.,ERR022,MSG007			: YES, REPORT ERROR
13817	067210'	104456				TRAP	C\$ERHRD
13818	067212'	001077				.WORD	575
13819	067214'	017540'				.WORD	ERR022
13820	067216'	015524'				.WORD	MSG007
13821	067220'			ESCAPE TST			: AND ABORT TEST
13822	067220'	104410				TRAP	C\$ESCAPE
13823	067222'	000112				.WORD	L10060-
13824							
13825	067224'	012705	013072'	:220\$: MOV #CRC27A,R5			: POINT TO EXPECTED CRC
13826	067230'	004737	025064'	JSR PC,LDXCRC			: LOAD INTO XCRC TABLE
13827	067234'	012705	006466'	MOV #RBUF+764.,R5			: CHECK CRC
13828	067240'	004737	024012'	JSR PC,CMPCRC			: ERRORS ?
13829	067244'	103006		BCC 230\$			: NO
13830	067246'			ERRHRD 576.,ERR023,MSG008			: YES, REPORT ERROR
13831	067246'	104456				TRAP	C\$ERHRD
13832	067250'	001100				.WORD	576
13833	067252'	017607'				.WORD	ERR023

HARDWARE TESTS MACY11 30(1046) 11-JAN-83 12:03 PAGE 283  
 CZUABA.MAC 10-JAN-83 12:46 TEST 27: SIMULTANEOUS OPERATIONS TEST

```

13834 067254' 015556'
13835 067256'          ESCAPE TST          ; AND ABORT TEST          .WORD  MSG008
13836 067256' 104410
13837 067260' 000054          TRAP          C$ESCAPE
13838                                     .WORD          L10060-.
13839 067262' 012777 000017 110736 230$:  MOV    #STOP,@PCSR0      ; ISSUE STOP PORT COMMAND
13840 067270' 004737 022546'          JSR    PC,CHKDNI        ; DNI ?
13841 067274' 103006          BCC   240$              ; YES
13842 067276'          ERRHRD 577.,ERR019,MSG003 ; NO, REPORT ERROR
13843 067276' 104456          TRAP          C$ERHRD
13844 067300' 001101          .WORD          577
13845 067302' 017316'          .WORD          ERR019
13846 067304' 015114'          .WORD          MSG003
13847 067306'          ESCAPE TST          ; AND ABORT TEST
13848 067306' 104410          TRAP          C$ESCAPE
13849 067310' 000024          .WORD          L10060-.
13850
13851 067312' 004737 023434'          240$: JSR    PC,CLRDNI      ; WRITE ONE TO CLEAR DNI
13852                                     ; ERROR ?
13853 067316' 103006          BCC   250$              ; NO
13854 067320'          ERRHRD 578.,ERR006,MSG003 ; YES, REPORT ERROR
13855 067320' 104456          TRAP          C$ERHRD
13856 067322' 001102          .WORD          578
13857 067324' 016206'          .WORD          ERR006
13858 067326' 015114'          .WORD          MSG003
13859 067330'          ESCAPE TST          ; AND ABORT TEST
13860 067330' 104410          TRAP          C$ESCAPE
13861 067332' 000002          .WORD          L10060-.
13862 067334'          250$:
13863 067334'          ENDTST
13864 067334'          L10060:
13865 067334' 104401          TRAP          C$ETST

```

HARDWARE TESTS MACY11 30(1046) 11-JAN-83 12:03 PAGE 284  
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TEST 28: PRINT DEVICE PARAMETERS TEST

.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
*****

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067336\* 005737 013214\*  
067342\* 001002  
067344\*  
067344\* 104432  
067346\* 000710  
  
067350\* 004737 025334\*  
067354\* 103025  
067356\* 012777 000040 110642  
067364\* 004737 022546\*  
067370\* 103006  
067372\*  
067372\* 104456  
067374\* 001103  
067376\* 016106\*  
067400\* 015114\*  
067402\*  
067402\* 104410  
067404\* 000652  
  
067406\* 004737 023434\*  
  
067412\* 103006  
067414\*  
067414\* 104456  
067416\* 001104  
067420\* 016206\*  
067422\* 015114\*  
067424\*  
067424\* 104410  
067426\* 000630  
  
067430\* 004737 024660\*  
067434\* 012777 000001 110564  
067442\* 004737 022546\*  
067446\* 103006  
067450\*  
067450\* 104456  
067452\* 001105

```

BGNTST
TST FRSTIM ; RUN THIS TEST ? T28::
BNE 5$ ; YES
EXIT TST ; NO, EXIT
; TRAP C$EXIT
; .WORD L10061-.

5$: JSR PC,TINIT ; IS A DEVICE RESET NEEDED?
BCC 30$ ; NO
MOV #RSET,@PCSR0 ; YES, RESET DEUNA
JSR PC,CHKDNI ; DNI ?
BCC 20$ ; YES
ERRHRD 579.,ERR004,MSG003 ; NO, REPORT ERROR
; TRAP C$ERHRD
; .WORD 579
; .WORD ERR004
; .WORD MSG003

ESCAPE TST ; AND ABORT TEST
; TRAP C$ESCAPE
; .WORD L10061-.

20$: JSR PC,CLR DNI ; WRITE ONE TO CLEAR DNI
BCC 30$ ; ERROR ?
ERRHRD 580.,ERR006,MSG003 ; YES, REPORT ERROR
; TRAP C$ERHRD
; .WORD 580
; .WORD ERR006
; .WORD MSG003

ESCAPE TST ; AND ABORT TEST
; TRAP C$ESCAPE
; .WORD L10061-.

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 581.,ERR009,MSG003 ; NO, REPORT ERROR
; TRAP C$ERHRD
; .WORD 581

```



HARDWARE TESTS MACY11 30(1046) 11-JAN-83 12:03 PAGE 286  
 CZUABA.MAC 10-JAN-83 12:46 TEST 28: PRINT DEVICE PARAMETERS TEST

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13978 067642'          ERRHRD 585.,ERR010,MSG003      ; NO, REPORT ERROR
13979 067642' 104456          TRAP C$ERHRD
13980 067644' 001111          .WORD 585
13981 067646' 016506'          .WORD ERR010
13982 067650' 015114'          .WORD MSG003
13983 067652'          ESCAPE TST                      ; AND ABORT TEST
13984 067652' 104410          TRAP C$ESCAPE
13985 067654' 000402          .WORD L10061-.
13986
13987 067656' 004737 023434'  ;110$: JSR PC,CLRDNI          ; WRITE ONE TO CLEAR DNI
13988                                     ; ERROR ?
13989 067662' 103006          BCC 120$
13990 067664'          ERRHRD 586.,ERR006,MSG003      ; YES, REPORT ERROR
13991 067664' 104456          TRAP C$ERHRD
13992 067666' 001112          .WORD 586
13993 067670' 016206'          .WORD ERR006
13994 067672' 015114'          .WORD MSG003
13995 067674'          ESCAPE TST                      ; AND ABORT TEST
13996 067674' 104410          TRAP C$ESCAPE
13997 067676' 000360          .WORD L10061-.
13998
13999                                     ;MOVE MICROCODE REVISION FROM PCBB -> RREV
14000 067700' 013737 000254' 070266' ;120$: MOV PCBB+2,RREV
14001 067706' 042737 177700 070266' BIC #177700,RREV          ; MASK RREV
14002
14003                                     ;READ SWITCH PACK
14004 067714' 012705 011272' ;130$: MOV #DMPMEM,R5          ; DEFAULT DUMP INTERNAL MEMORY
14005 067720' 004737 024630' JSR PC,LDPCBB          ; LOAD FUNCTION -> PCBB
14006 067724' 012705 013114' MOV #UDB28A,R5          ; DEFAULT UDBB
14007 067730' 012700 000004' MOV #4,R0          ; FOUR WORDS
14008 067734' 004737 025030' JSR PC,LDUDBB          ; LOAD INTO UDBB
14009 067740' 012737 070270' 000264' MOV #SWPACK,UDBB+2      ; LOAD ADDRESS
14010 067746' 013737 013124' 000270' MOV SWADDR,UDBB+6      ; LOAD INTERNAL ADDRESS
14011 067754' 012777 000002 110244' MOV #GETCMD,@PCSRO    ; ISSUE GET COMMAND PORT COMMAND
14012 067762' 004737 022546' JSR PC,CHKDNI          ; DNI ?
14013 067766' 103006          BCC 140$
14014 067770'          ERRHRD 587.,ERR010,MSG003      ; NO, REPORT ERROR
14015 067770' 104456          TRAP C$ERHRD
14016 067772' 001113          .WORD 587
14017 067774' 016506'          .WORD ERR010
14018 067776' 015114'          .WORD MSG003
14019 070000'          ESCAPE TST                      ; AND ABORT TEST
14020 070000' 104410          TRAP C$ESCAPE
14021 070002' 000254          .WORD L10061-.
14022
14023 070004' 004737 023434'  ;140$: JSR PC,CLRDNI          ; WRITE ONE TO CLEAR DNI
14024                                     ; ERROR ?
14025 070010' 103006          BCC 150$
14026 070012'          ERRHRD 588.,ERR006,MSG003      ; YES, REPORT ERROR
14027 070012' 104456          TRAP C$ERHRD
14028 070014' 001114          .WORD 588
14029 070016' 016206'          .WORD ERR006
14030 070020' 015114'          .WORD MSG003
14031 070022'          ESCAPE TST                      ; AND ABORT TEST
14032 070022' 104410          TRAP C$ESCAPE
14033 070024' 000232          .WORD L10061-.

```

HARDWARE TESTS MACY11 30(1046) 11-JAN-83 12:03 PAGE 287  
 CZUABA.MAC 10-JAN-83 12:46 TEST 28: PRINT DEVICE PARAMETERS TEST

```

14034                                     :GET SWITCH PACK INFO READY TO PRINT
14035 070026' 013704 070270' 150$: MOV SWPACK,R4 ; SWITCH PACK -> R4
14036 070032' 042704 167777' BIC #167777,R4 ; MASK BIT 12
14037 070036' 012700 000013' MOV #11.,R0 ; SHIFT BIT FOR INDEX
14038 070042' 006204 160$: ASR R4
14039 070044' 005300 DEC R0
14040 070046' 001375 BNE 160$
14041 070050' 062704 070410' ADD #LPTBL,R4 ; INDEX INTO LOOP TABLE
14042 070054' 011437 070272' MOV (R4),LPMSG ; LOAD INTO LOOP MESSAGE
14043 070060' 013704 070270' 170$: MOV SWPACK,R4 ; SWITCH PACK -> R4
14044 070064' 042704 171777' BIC #171777,R4 ; MASK BITS 10 AND 11
14045 070070' 012700 000011' MOV #9.,R0 ; SHIFT BITS FOR INDEX
14046 070074' 006204 180$: ASR R4
14047 070076' 005300 DEC R0
14048 070100' 001375 BNE 180$
14049 070102' 062704 070414' ADD #BTTBL,R4 ; INDEX INTO BOOT TABLE
14050 070106' 011437 070274' MOV (R4),BTMSG ; LOAD INTO BOOT MESSAGE
14051                                     :
14052                                     : PRINT
14053                                     :
14054 070112' PRINTB #FRM015,#DEFHDR ; PRINT DEFAULT PHYSICAL ADDRESS
14055 070112' 012746 070300' MOV #DEFHDR,-(SP)
14056 070116' 012746 014555' MOV #FRM015,-(SP)
14057 070122' 012746 000002' MOV #2,-(SP)
14058 070126' 010600 MOV SP,R0
14059 070130' 104414 TRAP C$PNTB
14060 070132' 062706 000006' ADD #6,SP
14061 070136' PRINTB #FRM016,RREV ; PRINT MICROCODE REV
14062 070136' 013746 070266' MOV RREV,-(SP)
14063 070142' 012746 014562' MOV #FRM016,-(SP)
14064 070146' 012746 000002' MOV #2,-(SP)
14065 070152' 010600 MOV SP,R0
14066 070154' 104414 TRAP C$PNTB
14067 070156' 062706 000006' ADD #6,SP
14068 070162' PRINTB #FRM015,#SWHDR ; PRINT SWITCH PACK HEADER
14069 070162' 012746 070424' MOV #SWHDR,-(SP)
14070 070166' 012746 014555' MOV #FRM015,-(SP)
14071 070172' 012746 000002' MOV #2,-(SP)
14072 070176' 010600 MOV SP,R0
14073 070200' 104414 TRAP C$PNTB
14074 070202' 062706 000006' ADD #6,SP
14075 070206' PRINTB #FRM015,LPMSG ; PRINT LOOPBACK MESSAGE
14076 070206' 013746 070272' MOV LPMSG,-(SP)
14077 070212' 012746 014555' MOV #FRM015,-(SP)
14078 070216' 012746 000002' MOV #2,-(SP)
14079 070222' 010600 MOV SP,R0
14080 070224' 104414 TRAP C$PNTB
14081 070226' 062706 000006' ADD #6,SP
14082 070232' PRINTB #FRM015.BTMSG ; PRINT BOOT MESSAGE
14083 070232' 013746 070274' MOV BTMSG,-(SP)
14084 070236' 012746 014555' MOV #FRM015,-(SP)
14085 070242' 012746 000002' MOV #2,-(SP)
14086 070246' 010600 MOV SP,R0
14087 070250' 104414 TRAP C$PNTB
14088 070252' 062706 000006' ADD #6,SP
14089                                     :

```



HARDWARE TESTS MACY11 30(1046) 11-JAN-83 12:03 PAGE 288  
 CZUABA.MAC 10-JAN-83 12:46 TEST 28: PRINT DEVICE PARAMETERS TEST

14090 070256\*  
 14091 070256\*  
 14092 070256\*  
 14093 070256\* 104401

250\$:  
 ENDTST

L10061: TRAP C\$ETST

HARDWARE TESTS MACY11 30(1046) 11-JAN-83 12:03 PAGE 289  
 CZUABA.MAC 10-JAN-83 12:46 TEST 28: PRINT DEVICE PARAMETERS TEST

```

14094          ;LOCAL STORAGE FOR TEST 28
14095 070260' 000000 DPA::          .WORD 0          ; DEFAULT PHYSICAL ADDRESS (15:00)
14096 070262' 000000          .WORD 0          ; DEFAULT PHYSICAL ADDRESS (31:16)
14097 070264' 000000          .WORD 0          ; DEFAULT PHYSICAL ADDRESS (47:32)
14098          ;
14099 070266' 000000 RREV::        .WORD 0          ; MICROCODE REVISION
14100          ;
14101 070270' 000000 SWPACK::       .WORD 0          ; SWITCH PACK CONTENTS
14102 070272' 000000 LPMSG::        .WORD 0          ; LOOPBACK MESSAGE ADDRESS
14103 070274' 000000 BTMSG::        .WORD 0          ; BOOT MESSAGE ADDRESS
14104          ;
14105 070276' 000      HEXDAT::       .BYTE 0          ; HEX DATA FOR CONVERSION
14106 070277' 000      HEXVAL::      .BYTE 0          ; ASCII HEX VALUE
14107          ;
14108 070300' 005015 052105 042510 DEFHDR::     .ASCII <15><12>/ETHERNET DEFAULT ADDRESS (HEX): /
14109 070306' 047122 052105 042040
14110 070314' 043105 052501 052114
14111 070322' 040440 042104 042522
14112 070330' 051523 024040 042510
14113 070336' 024530 020072 040
14114 070343' 040      040      DEFADR::     .ASCII / /
14115 070345' 055          .ASCII /- /
14116 070346' 020040      .ASCII / /
14117 070350' 055          .ASCII /- /
14118 070351' 040      040      .ASCII / /
14119 070353' 055          .ASCII /- /
14120 070354' 020040      .ASCII / /
14121 070356' 055          .ASCII /- /
14122 070357' 040      040      .ASCII / /
14123 070361' 055          .ASCII /- /
14124 070362' 020040      .ASCII / /
14125 070364' 005015 000      .ASCIIZ <15><12>
14126          ;
14127 070367' 060      HEXTBL::     .ASCII /0 /
14128 070370' 061          .ASCII /1 /
14129 070371' 062          .ASCII /2 /
14130 070372' 063          .ASCII /3 /
14131 070373' 064          .ASCII /4 /
14132 070374' 065          .ASCII /5 /
14133 070375' 066          .ASCII /6 /
14134 070376' 067          .ASCII /7 /
14135 070377' 070          .ASCII /8 /
14136 070400' 071          .ASCII /9 /
14137 070401' 101         .ASCII /A /
14138 070402' 102         .ASCII /B /
14139 070403' 103         .ASCII /C /
14140 070404' 104         .ASCII /D /
14141 070405' 105         .ASCII /E /
14142 070406' 106         .ASCII /F /
14143          .EVEN
14144          ;
14145          ; LOOP MESSAGE TABLE
14146 070410' 070456' LPTBL::     .WORD LPMSG0
14147 070412' 070515'          .WORD LPMSG1
14148          ; BOOT MESSAGE TABLE
14149 070414' 070553' BTTBL::     .WORD BTMSG0

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HARDWARE TESTS MACY11 30(1046) 11-JAN-83 12:03 PAGE 290  
 CZUABA.MAC 10-JAN-83 12:46 TEST 28: PRINT DEVICE PARAMETERS TEST

14150	070416'	070611'				.WORD	BTMSG1
14151	070420'	070644'				.WORD	BTMSG2
14152	070422'	070710'				.WORD	BTMSG3
14153							
14154	070424'	005015	053523	052111		.ASCII	<15><12>/SWITCH PACK SET FOR :/
14155	070432'	044103	050040	041501			
14156	070440'	020113	042523	020124			
14157	070446'	047506	020122	072			
14158	070453'	015	000012				
14159	070456'	020040	020040	051440	LPMSG0::	.ASCIZ	<15><12>
14160	070464'	046105	020106	042524		.ASCII	/ SELF TEST LOUP DISABLED/
14161	070472'	052123	046040	047517			
14162	070500'	020120	044504	040523			
14163	070506'	046102	042105				
14164	070512'	005015	000				
14165	070515'	040	020040	020040	LPMSG1::	.ASCIZ	<15><12>
14166	070522'	042523	043114	052040		.ASCII	/ SELF TEST LOOP ENABLED/
14167	070530'	051505	020124	047514			
14168	070536'	050117	042440	040516			
14169	070544'	046102	042105				
14170	070550'	005015	000				
14171	070553'	040	020040	020040	BTMSG0::	.ASCIZ	<15><12>
14172	070560'	047516	051040	046505		.ASCII	/ NO REMOTE BOOT ENABLED/
14173	070566'	052117	020105	047502			
14174	070574'	052117	042440	040516			
14175	070602'	046102	042105				
14176	070606'	005015	000				
14177	070611'	040	020040	020040	BTMSG1::	.ASCIZ	<15><12>
14178	070616'	042522	047515	042524		.ASCII	/ REMOTE BOOT ENABLED/
14179	070624'	041040	047517	020124			
14180	070632'	047105	041101	042514			
14181	070640'	104					
14182	070641'	015	000012				
14183	070644'	020040	020040	051040	BTMSG2::	.ASCIZ	<15><12>
14184	070652'	046505	052117	020105		.ASCII	/ REMOTE BOOT ENABLED WITH ROM/
14185	070660'	047502	052117	042440			
14186	070666'	040516	046102	042105			
14187	070674'	053440	052111	020110			
14188	070702'	047522	115				
14189	070705'	015	000012				
14190	070710'	020040	020040	051040	BTMSG3::	.ASCIZ	<15><12>
14191	070716'	046505	052117	020105		.ASCII	/ REMOTE BOOT AND POWER UP BOOT BOTH ENABLED/
14192	070724'	047502	052117	040440			
14193	070732'	042116	050040	053517			
14194	070740'	051105	052440	020120			
14195	070746'	047502	052117	041040			
14196	070754'	052117	020110	047105			
14197	070762'	041101	042514	104			
14198	070767'	015	000012			.ASCIZ	<15><12>
14199						.EVEN	

PARAMETER CODING MACY11 30(1046) 11-JAN-83 12:03 PAGE 291  
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070772\*  
070772\* 000010  
070774\*  
070774\*  
070774\* 000021  
070776\* 071014\*  
071000\* 160000  
071002\* 177776  
071004\*  
071004\* 001021  
071006\* 071047\*  
071010\* 000000  
071012\* 000776  
071014\*  
071014\*  
071014\* 044127 052101 044440  
071022\* 020123 044124 020105  
071030\* 041520 051123 020060  
071036\* 042101 051104 051505  
071044\* 037523 000  
071047\* 127 040510 020124  
071054\* 051511 052040 042510  
071062\* 053040 041505 047524  
071070\* 020122 042101 051104  
071076\* 051505 037523 000  
071104\*

.TITLE PARAMETER CODING  
.SBTTL HARDWARE PARAMETER CODING SECTION

;++  
: THE HARDWARE PARAMETER CODING SECTION CONTAINS MACROS  
: THAT ARE USED BY THE SUPERVISOR TO BUILD P-TABLES. THE  
: MACROS ARE NOT EXECUTED AS MACHINE INSTRUCTIONS BUT ARE  
: INTERPRETED BY THE SUPERVISOR AS DATA STRUCTURES. THE  
: MACROS ALLOW THE SUPERVISOR TO ESTABLISH COMMUNICATIONS  
: WITH THE OPERATOR.  
:--

BGNHRD

.WORD L10062-L\$HARD/2  
L\$HARD::

GPRMA ASKCSR,0,0,160000,177776,NO ;FIRST P-TABLE QUESTION

.WORD T\$CODE  
.WORD ASKCSR  
.WORD T\$LLOLIM  
.WORD T\$HILIM

GPRMA ASKVEC,2,0,0,776,NO ;SECOND P-TABLE QUESTION

.WORD T\$CODE  
.WORD ASKVEC  
.WORD T\$LLOLIM  
.WORD T\$HILIM

ENDHRD

.EVEN  
L10062:

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

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

.EVEN

PARAMETER CODING MACY11 30(1046) 11-JAN-83 12:03 PAGE 292  
CZUABA.MAC 10-JAN-83 12:46 SOFTWARE PARAMETER CODING SECTION

.SBTTL SOFTWARE PARAMETER CODING SECTION

;++  
: 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.  
:--

14244  
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071104'  
071104' 000003  
071106'  
071106'  
071106' 000130  
071110' 071114'  
071112' 000001  
  
071114'  
071114'  
  
071114' 052522 020116 042524  
071122' 052123 031040 020060  
071130' 047111 042440 052130  
071136' 051105 040516 020114  
071144' 047514 050117 040502  
071152' 045503 046440 042117  
071160' 020105 000077  
  
071164'  
071164' 000010  
  
071204'  
071204' 000000  
071206' 000000  
071210'  
071210' 000001

BGNSFT  
  
GPRML ASKEXT,0,1,YES  
  
.EVEN  
ENDSFT  
  
ASKEXT: .ASCIZ /RUN TEST 20 IN EXTERNAL LOOPBACK MODE ?/  
  
.EVEN  
\$PATCH: .BLKW 10  
  
LASTAD  
  
L\$LAST: ENDMOD  
.END

.WORD L10063-L\$SOFT/2  
L\$SOFT::  
  
.WORD T\$CODE  
.WORD ASKEXT  
.WORD 1  
  
L10063: .EVEN  
  
.EVEN  
.WORD 0  
.WORD 0

PARAMETER CODING MACY11 30(1046) 11-JAN-83 12:03 PAGE 294  
CZUABA.MAC 10-JAN-83 12:46 CROSS REFERENCE TABLE -- USER SYMBOLS

ADR = 000020 G	1317#													
ADR21 012306RG	1850#	9307	9866	11022	11090	13115								
ADR21C 012314RG	1853#	9528	9645	11275	13271									
ASKCSR 071014R	14221	14233#												
ASKEXT 071114R	14261	14271#												
ASKVEC 071047R	14226	14238#												
ASSEMB= 000010	1068													
BIT0 = 000001 G	1290#													
BIT00 = 000001 G	1279#	1290	1344	1346	1350	1367	1369	1370	1372					
BIT01 = 000002 G	1278#	1289	1345	1346	1348	1350	1368	1369	1371	1372				
BIT02 = 000004 G	1277#	1288	1347	1348	1350	1370	1371	1372						
BIT03 = 000010 G	1276#	1287	1349	1350	1361									
BIT04 = 000020 G	1275#	1286												
BIT05 = 000040 G	1274#	1285	1341											
BIT06 = 000100 G	1273#	1284	1340											
BIT07 = 000200 G	1272#	1283	1339	1359										
BIT08 = 000400 G	1271#	1282	1338	1378										
BIT09 = 001000 G	1270#	1281	1377											
BIT1 = 000002 G	1289#													
BIT10 = 002000 G	1269#	1336												
BIT11 = 004000 G	1268#	1335												
BIT12 = 010000 G	1267#	1334	7092											
BIT13 = 020000 G	1266#	1333												
BIT14 = 040000 G	1265#	1332	1354	1376										
BIT15 = 100000 G	1264#	1331	1353	1375	1380	7085								
BIT2 = 000004 G	1288#													
BIT3 = 000010 G	1287#													
BIT4 = 000020 G	1286#													
BIT5 = 000040 G	1285#													
BIT6 = 000100 G	1284#													
BIT7 = 000200 G	1283#													
BIT8 = 000400 G	1282#													
BIT9 = 001000 G	1281#													
BOE = 000400 G	1321#													
BTMSG 070274RG	14050*	14083	14103#											
BTMSG0 070553RG	14149	14171#												
BTMSG1 070611RG	14150	14177#												
BTMSG2 070644RG	14151	14183#												
BTMSG3 070710RG	14152	14190#												
BTTBL 070414RG	14049	14149#												
BUFL = 100000 G	1380#	12702												
CHKDNI 022546RG	2970#	4879	5387	5411	5438	5462	5507	5619	5644	5686	5754	5779	5817	
	5860	5914	5957	6017	6042	6070	6097	6140	6167	6238	6263	6291	6336	
	6389	6458	6511	6595	6620	6647	6677	6704	6738	6887	6922	6946	6982	
	7074	7141	7166	7193	7222	7248	7282	7416	7470	7495	7522	7551	7577	
	7611	7745	7797	7822	7851	7881	7908	7942	8078	8130	8155	8182	8212	
	8239	8273	8372	8425	8450	8477	8507	8534	8569	8641	8695	8720	8756	
	8786	8813	8851	9133	9197	9222	9250	9280	9313	9347	9496	9532	9616	
	9651	9685	9834	9870	9954	10021	10046	10074	10104	10131	10161	10201	10350	
	10396	10480	10516	10556	10705	10750	10834	10913	10938	10965	10995	11028	11058	
	11094	11243	11279	11428	11455	11495	11644	11691	11840	11912	11937	11967	11997	
	12024	12054	12094	12243	12290	12439	12510	12535	12562	12592	12619	12653	12714	
	12746	12780	12942	13005	13030	13058	13088	13121	13155	13239	13275	13359	13413	
	13438	13465	13495	13522	13562	13587	13840	13892	13917	13944	13976	14012		
CHKOWN 022634RG	3014#	6785	6834	7329	7378	7658	7707	7989	8038	8320	8346	8898	8924	
	8950	9028	9054	9080	9394	9443	9579	9732	9781	9917	10248	10297	10443	



PARAMETER CODING MACY11 30(1046) 11-JAN-83 12:03 PAGE 296  
 CZUABA.MAC 10-JAN-83 12:46 CROSS REFERENCE TABLE -- USER SYMBOLS

CRC22B	013012RG	2014#	10543	11678	12277															
CRC23B	013062RG	2034#	11413																	
CRC25B	013066RG	2036#	12927																	
CRC27A	013072RG	2038#	13825																	
C\$AU =	000052	1068#	4540																	
C\$AUTO=	000061	1068#	4476																	
C\$BRK =	000022	1068#																		
C\$BSEG=	000004	1068#	4784	4834																
C\$BSUB=	000002	1068#	6590	6915																
C\$CEFG=	000045	1068#																		
C\$CLCK=	000062	1068#																		
C\$CLEA=	000012	1068#	4497																	
C\$CLOS=	000035	1068#																		
C\$CLP1=	000006	1068#																		
C\$CVEC=	000036	1068#	4628	4671	4713	4754	5565	5576												
C\$DCLN=	000044	1068#	4456	4625	4668	4710	4751													
C\$DODU=	000051	1068#	4623	4666	4708	4749														
C\$DRPT=	000024	1068#																		
C\$DU =	000053	1068#	4518																	
C\$EDIT=	000003	1068#	1129																	
C\$ERDF=	000055	1068#	4617	4660	4702	4743														
C\$ERHR=	000056	1068#	4793	4843	4882	4894	4919	4934	4946	5390	5402	5414	5426	5441						
		5453	5465	5477	5510	5522	5559	5584	5622	5634	5647	5659	5689	5701						
		5717	5757	5769	5782	5794	5820	5832	5863	5875	5889	5917	5929	5960						
		5972	5986	6020	6032	6045	6057	6073	6085	6100	6112	6126	6143	6155						
		6170	6182	6196	6241	6253	6266	6278	6294	6306	6339	6351	6392	6404						
		6423	6461	6473	6514	6526	6545	6598	6610	6623	6635	6650	6662	6680						
		6692	6707	6719	6741	6753	6764	6776	6788	6802	6813	6825	6837	6851						
		6864	6878	6890	6902	6925	6935	6949	6961	6985	6997	7008	7020	7031						
		7043	7054	7063	7077	7088	7095	7102	7144	7156	7169	7181	7196	7208						
		7225	7237	7251	7263	7285	7297	7308	7320	7332	7346	7357	7369	7381						
		7395	7407	7419	7431	7473	7485	7498	7510	7525	7537	7554	7566	7580						
		7592	7614	7626	7637	7649	7661	7675	7686	7698	7710	7724	7736	7748						
		7760	7800	7812	7825	7837	7854	7866	7884	7896	7911	7923	7945	7957						
		7968	7980	7992	8006	8017	8029	8041	8055	8069	8081	8093	8133	8145						
		8158	8170	8185	8197	8215	8227	8242	8254	8276	8288	8299	8311	8323						
		8337	8349	8363	8375	8387	8428	8440	8453	8465	8480	8492	8510	8522						
		8537	8549	8572	8584	8595	8607	8620	8632	8644	8656	8698	8710	8723						
		8735	8759	8771	8789	8801	8816	8828	8854	8866	8877	8889	8901	8915						
		8927	8941	8953	8967	8978	8990	9018	9031	9045	9057	9071	9083	9097						
		9110	9124	9136	9148	9200	9212	9225	9237	9253	9265	9283	9295	9316						
		9328	9350	9362	9373	9385	9397	9411	9422	9434	9446	9460	9473	9487						
		9499	9511	9535	9547	9558	9570	9582	9596	9607	9619	9631	9654	9666						
		9688	9700	9711	9723	9735	9749	9760	9772	9784	9798	9811	9825	9837						
		9849	9873	9885	9896	9908	9920	9934	9945	9957	9969	10024	10036	10049						
		10061	10077	10089	10107	10119	10134	10146	10164	10176	10204	10216	10227	10239						
		10251	10265	10276	10288	10300	10314	10327	10341	10353	10365	10399	10411	10422						
		10434	10446	10460	10471	10483	10495	10519	10531	10559	10571	10582	10594	10606						
		10620	10631	10643	10655	10669	10682	10696	10708	10720	10753	10765	10776	10788						
		10800	10814	10825	10837	10849	10916	10928	10941	10953	10968	10980	10998	11010						
		11031	11043	11061	11073	11097	11109	11120	11132	11144	11158	11169	11181	11193						
		11207	11220	11234	11246	11258	11282	11294	11305	11317	11329	11343	11354	11366						
		11378	11392	11405	11419	11431	11443	11458	11470	11498	11510	11521	11533	11545						
		11559	11570	11582	11594	11608	11621	11635	11647	11659	11694	11706	11717	11729						
		11741	11755	11766	11778	11790	11804	11817	11831	11843	11855	11915	11927	11940						
		11952	11970	11982	12000	12012	12027	12039	12057	12069	12097	12109	12120	12132						



PARAMETER CODING MACY11 30(1046) 11-JAN-83 12:03 PAGE 297  
CZUABA.MAC 10-JAN-83 12:46 CROSS REFERENCE TABLE -- USER SYMBOLS

12144	12158	12169	12181	12193	12207	12220	12234	12246	12258	12293	12305	12316
12328	12340	12354	12365	12377	12389	12403	12416	12430	12442	12454	12513	12525
12538	12550	12565	12577	12595	12607	12622	12634	12656	12668	12679	12691	12705
12717	12729	12749	12761	12783	12795	12806	12818	12830	12844	12855	12867	12879
12893	12906	12919	12933	12945	12957	13008	13020	13033	13045	13061	13073	13091
13103	13124	13136	13158	13170	13181	13193	13205	13219	13230	13242	13254	13278
13290	13301	13313	13325	13339	13350	13362	13374	13416	13428	13441	13453	13468
13480	13498	13510	13525	13537	13565	13577	13590	13602	13613	13625	13637	13651
13663	13677	13689	13703	13714	13726	13738	13752	13764	13778	13790	13804	13817
13831	13843	13855	13895	13907	13920	13932	13947	13959	13979	13991	14015	14027
1068#												
1068#												
1068#												
1068#	4887	4899	4924	4939	4951	5395	5407	5419	5431	5446	5458	5470
5482	5515	5527	5570	5589	5627	5639	5652	5664	5694	5706	5722	5762
5774	5787	5799	5825	5837	5868	5880	5894	5922	5934	5965	5977	5991
6025	6037	6050	6062	6078	6090	6105	6117	6131	6148	6160	6175	6187
6201	6246	6258	6271	6283	6299	6311	6344	6356	6397	6409	6428	6466
6478	6519	6531	6550	6603	6615	6628	6640	6655	6667	6685	6697	6712
6724	6746	6758	6769	6781	6793	6807	6818	6830	6842	6856	6869	6883
6895	6907	6930	6940	6954	6966	6990	7002	7013	7025	7036	7048	7068
7082	7149	7161	7174	7186	7201	7213	7230	7242	7256	7268	7290	7302
7313	7325	7337	7351	7362	7374	7386	7400	7412	7424	7436	7478	7490
7503	7515	7530	7542	7559	7571	7585	7597	7619	7631	7642	7654	7666
7680	7691	7703	7715	7729	7741	7753	7765	7805	7817	7830	7842	7859
7871	7889	7901	7916	7928	7950	7962	7973	7985	7997	8011	8022	8034
8046	8060	8074	8086	8098	8138	8150	8163	8175	8190	8202	8220	8232
8247	8259	8281	8293	8304	8316	8328	8342	8354	8368	8380	8392	8433
8445	8458	8470	8485	8497	8515	8527	8542	8554	8577	8589	8600	8612
8625	8637	8649	8661	8703	8715	8728	8740	8764	8776	8794	8806	8821
8833	8859	8871	8882	8894	8906	8920	8932	8946	8958	8972	8983	8995
9023	9036	9050	9062	9076	9088	9102	9115	9129	9141	9153	9205	9217
9230	9242	9258	9270	9288	9300	9321	9333	9355	9367	9378	9390	9402
9416	9427	9439	9451	9465	9478	9492	9504	9516	9540	9552	9563	9575
9587	9601	9612	9624	9636	9659	9671	9693	9705	9716	9728	9740	9754
9765	9777	9789	9803	9816	9830	9842	9854	9878	9890	9901	9913	9925
9939	9950	9962	9974	10029	10041	10054	10066	10082	10094	10112	10124	10139
10151	10169	10181	10209	10221	10232	10244	10256	10270	10281	10293	10305	10319
10332	10346	10358	10370	10404	10416	10427	10439	10451	10465	10476	10488	10500
10524	10536	10564	10576	10587	10599	10611	10625	10636	10648	10660	10674	10687
10701	10713	10725	10758	10770	10781	10793	10805	10819	10830	10842	10854	10921
10933	10946	10958	10973	10985	11003	11015	11036	11048	11066	11078	11102	11114
11125	11137	11149	11163	11174	11186	11198	11212	11225	11239	11251	11263	11287
11299	11310	11322	11334	11348	11359	11371	11383	11397	11410	11424	11436	11448
11463	11475	11503	11515	11526	11538	11550	11564	11575	11587	11599	11613	11626
11640	11652	11664	11699	11711	11722	11734	11746	11760	11771	11783	11795	11809
11822	11836	11848	11860	11920	11932	11945	11957	11975	11987	12005	12017	12032
12044	12062	12074	12102	12114	12125	12137	12149	12163	12174	12186	12198	12212
12225	12239	12251	12263	12298	12310	12321	12333	12345	12359	12370	12382	12394
12408	12421	12435	12447	12459	12518	12530	12543	12555	12570	12582	12600	12612
12627	12639	12661	12673	12684	12696	12710	12722	12734	12754	12766	12788	12800
12811	12823	12835	12849	12860	12872	12884	12898	12911	12924	12938	12950	12962
13013	13025	13038	13050	13066	13078	13096	13108	13129	13141	13163	13175	13186
13198	13210	13224	13235	13247	13259	13283	13295	13306	13318	13330	13344	13355
13367	13379	13421	13433	13446	13458	13473	13485	13503	13515	13530	13542	13570
13582	13595	13607	13618	13630	13642	13656	13668	13682	13694	13708	13719	13731

C\$ERRO= 000060  
C\$ERSF= 000054  
C\$ERSO= 000057  
C\$ESCA= 000010



PARAMETER CODING MACY11 30(1046) 11-JAN-83 12:03 PAGE 299  
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EPCSR0	013126RG	2054#	2325	2987*	3067*	3176*	3323*	3356*	3392*	3428*	3464*	3500*	3535*	4255*
		4916*												
EPCSR1	013130RG	2055#	2324	2988*	3068*	3177*	3324*	3357*	3393*	3429*	3465*	3501*	3536*	4256*
		4917*												
ERDRB0	013132RG	2056#	2396	3124										
ERDRB2	013134RG	2057#	2404											
ERDRB4	013136RG	2058#	2412											
ERDRB6	013140RG	2059#	2420											
ERRBLK	013234RG	2095#												
ERRMSG	013232RG	2094#												
ERRNBR	013230RG	2093#												
ERRS =	040000 G	1376#												
ERRTYP	013226RG	2092#												
ERR001	015762RG	2501#	4619	4662	4704	4745								
ERR002	016012RG	2505#	4795											
ERR003	016050RG	2510#	4845											
ERR004	016106RG	2515#	4884	5392	5512	5624	5759	6022	6243	6600	6927	7146	7475	7802
		8135	8430	8700	9202	10026	10918	11917	12515	13010	13418	13897		
ERR005	016162RG	2523#	4936											
ERR006	016206RG	2527#	4896	4948	5404	5428	5455	5479	5524	5586	5636	5661	5703	5771
		5796	5834	5877	5931	5974	6034	6059	6087	6114	6157	6184	6255	6280
		6308	6353	6406	6475	6528	6612	6637	6664	6694	6721	6755	6904	6937
		6963	6999	7104	7158	7183	7210	7239	7265	7299	7433	7487	7512	7539
		7568	7594	7628	7762	7814	7839	7868	7898	7925	7959	8095	8147	8172
		8199	8229	8256	8290	8389	8442	8467	8494	8524	8551	8586	8658	8712
		8737	8773	8803	8830	8868	9150	9214	9239	9267	9297	9330	9364	9513
		9549	9633	9668	9702	9851	9887	9971	10038	10063	10091	10121	10148	10178
		10218	10367	10413	10497	10533	10573	10722	10767	10851	10930	10955	10982	11012
		11045	11075	11111	11260	11296	11445	11472	11512	11661	11708	11857	11929	11954
		11984	12014	12041	12071	12111	12260	12307	12456	12527	12552	12579	12609	12636
		12670	12731	12763	12797	12959	13022	13047	13075	13105	13138	13172	13256	13292
		13376	13430	13455	13482	13512	13539	13579	13604	13857	13909	13934	13961	13993
		14029												
ERR007	016254RG	2534#	5561											
ERR008	016343RG	2544#	5416											
ERR009	016422RG	2553#	5443	5649	5784	6047	6268	6625	7171	7500	7827	8160	8455	8725
		9227	10051	10943	11942	12540	13035	13443	13922					
ERR010	016506RG	2562#	5467	5691	5822	5865	5919	5962	6075	6102	6145	6172	6296	6341
		6394	6463	6516	6652	6682	6709	6951	7079	7198	7227	7253	7527	7556
		7582	7856	7886	7913	8187	8217	8244	8482	8512	8539	8761	8791	8818
		9255	9285	9318	9656	10079	10109	10136	10166	10521	10970	11000	11033	11063
		11460	11972	12002	12029	12059	12567	12597	12624	12751	13063	13093	13126	13470
		13500	13527	13949	13981	14017								
ERR011	016571RG	2571#	6128	6198										
ERR012	016637RG	2578#	6743	6987	7287	7616	7947	8278	8574	8856	9352	9537	9690	9875
		10206	10401	10561	10755	11099	11284	11500	11696	12099	12295	12658	12785	13160
		13280	13567											
ERR013	016720RG	2588#	6766	7010	7310	7639	7970	8301	8597	8879	9375	9560	9713	9898
		10229	10424	10584	10778	11122	11307	11523	11719	12122	12318	12681	12808	13183
		13303	13615											
ERR014	016751RG	2593#	6778	7022	7322	7651	7982	8313	8609	8891	9387	9572	9725	9910
		10241	10436	10596	10790	11134	11319	11535	11731	12134	12330	12693	12820	13195
		13315	13627											
ERR015	017017RG	2600#	6815	7033	7359	7688	8019	8980	9424	9762	10278	10633	11171	11356
		11572	11768	12171	12367	12857	13716							
ERR016	017050RG	2605#	6827	7045	7371	7700	8031	8992	9436	9774	10290	10645	11183	11368





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 CZUABA.MAC 10-JAN-83 12:46 CROSS REFERENCE TABLE -- USER SYMBOLS

11174	11186	11198	11212	11225	11239	11251	11263	11287	11299	11310	11322	11334
11348	11359	11371	11383	11397	11410	11424	11436	11448	11463	11475	11503	11515
11526	11538	11550	11564	11575	11587	11599	11613	11626	11640	11652	11664	11699
11711	11722	11734	11746	11760	11771	11783	11795	11809	11822	11836	11848	11860
11871	11908	11920	11932	11945	11957	11975	11987	12005	12017	12032	12044	12062
12074	12102	12114	12125	12137	12149	12163	12174	12186	12198	12212	12225	12239
12251	12263	12298	12310	12321	12333	12345	12359	12370	12382	12394	12408	12421
12435	12447	12459	12470	12506	12518	12530	12543	12555	12570	12582	12600	12612
12627	12639	12661	12673	12684	12696	12710	12722	12734	12754	12766	12788	12800
12811	12823	12835	12849	12860	12872	12884	12898	12911	12924	12938	12950	12962
12966	13001	13013	13025	13038	13050	13066	13078	13096	13108	13129	13141	13163
13175	13186	13198	13210	13224	13235	13247	13259	13283	13295	13306	13318	13330
13344	13355	13367	13379	13384	13409	13421	13433	13446	13458	13473	13485	13503
13515	13530	13542	13570	13582	13595	13607	13618	13630	13642	13656	13668	13682
13694	13708	13719	13731	13743	13757	13769	13783	13795	13809	13822	13836	13848
13860	13864	13882	13886	13900	13912	13925	13937	13952	13964	13984	13996	14020
14032	14092	14216	14256	14290								
1068#	4485	4496										
1068#	4506	4517										
1068#	1074	2306	2320	2334	2354	2392	2430	2444	2466	2500	4373	4382
4460	4477	4489	4498	4510	4519	4532	4541	4561	4588	4603	4630	4632
4646	4673	4675	4688	4715	4717	4729	4756	4758	4777	4802	4806	4808
4827	4852	4856	4858	4875	4887	4899	4924	4939	4951	4955	4957	5383
5395	5407	5419	5431	5446	5458	5470	5482	5486	5488	5503	5515	5527
5570	5589	5593	5595	5615	5627	5639	5652	5664	5694	5706	5722	5726
5728	5750	5762	5774	5787	5799	5825	5837	5868	5880	5894	5922	5934
5965	5977	5991	5996	5998	6013	6025	6037	6050	6062	6078	6090	6105
6117	6131	6148	6160	6175	6187	6201	6206	6208	6234	6246	6258	6271
6283	6299	6311	6344	6356	6397	6409	6428	6466	6478	6519	6531	6550
6557	6559	6587	6589	6603	6615	6628	6640	6655	6667	6685	6697	6712
6724	6746	6758	6769	6781	6793	6807	6818	6830	6842	6856	6869	6883
6895	6907	6911	6913	6914	6930	6940	6954	6966	6990	7002	7013	7025
7036	7048	7068	7082	7108	7110	7111	7113	7137	7149	7161	7174	7186
7201	7213	7230	7242	7256	7268	7290	7302	7313	7325	7337	7351	7362
7374	7386	7400	7412	7424	7436	7440	7442	7466	7478	7490	7503	7515
7530	7542	7559	7571	7585	7597	7619	7631	7642	7654	7666	7680	7691
7703	7715	7729	7741	7753	7765	7769	7771	7793	7805	7817	7830	7842
7859	7871	7889	7901	7916	7928	7950	7962	7973	7985	7997	8011	8022
8034	8046	8060	8074	8086	8098	8102	8104	8126	8138	8150	8163	8175
8190	8202	8220	8232	8247	8259	8281	8293	8304	8316	8328	8342	8354
8368	8380	8392	8396	8398	8421	8433	8445	8458	8470	8485	8497	8515
8527	8542	8554	8577	8589	8600	8612	8625	8637	8649	8661	8665	8567
8691	8703	8715	8728	8740	8764	8776	8794	8806	8821	8833	8859	8871
8882	8894	8906	8920	8932	8946	8958	8972	8983	8995	9023	9036	9050
9062	9076	9088	9102	9115	9129	9141	9153	9157	9159	9193	9205	9217
9230	9242	9258	9270	9288	9300	9321	9333	9355	9367	9378	9390	9402
9416	9427	9439	9451	9465	9478	9492	9504	9516	9540	9552	9563	9575
9587	9601	9612	9624	9636	9659	9671	9693	9705	9716	9728	9740	9754
9765	9777	9789	9803	9816	9830	9842	9854	9878	9890	9901	9913	9925
9939	9950	9962	9974	9978	9980	10017	10029	10041	10054	10066	10082	10094
10112	10124	10139	10151	10169	10181	10209	10221	10232	10244	10256	10270	10281
10293	10305	10319	10332	10346	10358	10370	10404	10416	10427	10439	10451	10465
10476	10488	10500	10524	10536	10564	10576	10587	10599	10611	10625	10636	10648
10660	10674	10687	10701	10713	10725	10758	10770	10781	10793	10805	10819	10830
10842	10854	10862	10864	10909	10921	10933	10946	10958	10973	10985	11003	11015
11036	11048	11066	11078	11102	11114	11125	11137	11149	11163	11174	11186	11198

F\$CLEA= 000007  
 F\$DU = 000016  
 F\$END = 000041







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5515	5527	5570	5589	5593#	5595#	5615#	5627	5639	5652	5664	5694	5706
5722	5726#	5728#	5750#	5762	5774	5787	5799	5825	5837	5868	5880	5894
5922	5934	5965	5977	5991	5996#	5998#	6013#	6025	6037	6050	6062	6078
6090	6105	6117	6131	6148	6160	6175	6187	6201	6206#	6208#	6234#	6246
6258	6271	6283	6299	6311	6344	6356	6397	6409	6428	6466	6478	6519
6531	6550	6557#	6559#	6587#	6589	6603	6615	6628	6640	6655	6667	6685
6697	6712	6724	6746	6758	6769	6781	6793	6807	6818	6830	6842	6856
6869	6883	6895	6907	6914	6930	6940	6954	6966	6990	7002	7013	7025
7036	7048	7068	7082	7111#	7113#	7137#	7149	7161	7174	7186	7201	7213
7230	7242	7256	7268	7290	7302	7313	7325	7337	7351	7362	7374	7386
7400	7412	7424	7436	7440#	7442#	7466#	7478	7490	7503	7515	7530	7542
7559	7571	7585	7597	7619	7631	7642	7654	7666	7680	7691	7703	7715
7729	7741	7753	7765	7769#	7771#	7793#	7805	7817	7830	7842	7859	7871
7889	7901	7916	7928	7950	7962	7973	7985	7997	8011	8022	8034	8046
8060	8074	8086	8098	8102#	8104#	8126#	8138	8150	8163	8175	8190	8202
8220	8232	8247	8259	8281	8293	8304	8316	8328	8342	8354	8368	8380
8392	8396#	8398#	8421#	8433	8445	8458	8470	8485	8497	8515	8527	8542
8554	8577	8589	8600	8612	8625	8637	8649	8661	8665#	8667#	8691#	8703
8715	8728	8740	8764	8776	8794	8806	8821	8833	8859	8871	8882	8894
8906	8920	8932	8946	8958	8972	8983	8995	9023	9036	9050	9062	9076
9088	9102	9115	9129	9141	9153	9157#	9159#	9193#	9205	9217	9230	9242
9258	9270	9288	9300	9321	9333	9355	9367	9378	9390	9402	9416	9427
9439	9451	9465	9478	9492	9504	9516	9540	9552	9563	9575	9587	9601
9612	9624	9636	9659	9671	9693	9705	9716	9728	9740	9754	9765	9777
9789	9803	9816	9830	9842	9854	9878	9890	9901	9913	9925	9939	9950
9962	9974	9978#	9980#	10017#	10029	10041	10054	10066	10082	10094	10112	10124
10139	10151	10169	10181	10209	10221	10232	10244	10256	10270	10281	10293	10305
10319	10332	10346	10358	10370	10404	10416	10427	10439	10451	10465	10476	10488
10500	10524	10536	10564	10576	10587	10599	10611	10625	10636	10648	10660	10674
10687	10701	10713	10725	10758	10770	10781	10793	10805	10819	10830	10842	10854
10862#	10864#	10909#	10921	10933	10946	10958	10973	10985	11003	11015	11036	11048
11066	11078	11102	11114	11125	11137	11149	11163	11174	11186	11198	11212	11225
11239	11251	11263	11287	11299	11310	11322	11334	11348	11359	11371	11383	11397
11410	11424	11436	11448	11463	11475	11503	11515	11526	11538	11550	11564	11575
11587	11599	11613	11626	11640	11652	11664	11699	11711	11722	11734	11746	11760
11771	11783	11795	11809	11822	11836	11848	11860	11871#	11873#	11908#	11920	11932
11945	11957	11975	11987	12005	12017	12032	12044	12062	12074	12102	12114	12125
12137	12149	12163	12174	12186	12198	12212	12225	12239	12251	12263	12298	12310
12321	12333	12345	12359	12370	12382	12394	12408	12421	12435	12447	12459	12470#
12472#	12506#	12518	12530	12543	12555	12570	12582	12600	12612	12627	12639	12661
12673	12684	12696	12710	12722	12734	12754	12766	12788	12800	12811	12823	12835
12849	12860	12872	12884	12898	12911	12924	12938	12950	12962	12966#	12968#	13001#
13013	13025	13038	13050	13066	13078	13096	13108	13129	13141	13163	13175	13186
13198	13210	13224	13235	13247	13259	13283	13295	13306	13318	13330	13344	13355
13367	13379	13384#	13386#	13409#	13421	13433	13446	13458	13473	13485	13503	13515
13530	13542	13570	13582	13595	13607	13618	13630	13642	13656	13668	13682	13694
13708	13719	13731	13743	13757	13769	13783	13795	13809	13822	13836	13848	13860
13864#	13866#	13882#	13886	13900	13912	13925	13937	13952	13964	13984	13996	14020
14032	14092#	14094#										
1068#	4373	4510	4532									
LDBUF	024466RG	3892#	5807	5845	6320	6367						
LDBUFC	024530RG	3924#	5904	5942	6442	6489						
LDDEST	024602RG	3960#	6735	6979	7277	7606	7939	8270	8566	8844	9344	9529
		10198	10393	10553	10747	11091	11276	11492	11688	12091	12287	12650
		13272	13553									
LDMEM	011302RG	1524#	5809	5906	6323	6445						
											9682	9867
											12777	13152

JSJMP = 000167  
LDBUF 024466RG  
LDBUFC 024530RG  
LDDEST 024602RG  
LDMEM 011302RG



PARAMETER CODING MACY11 30(1046) 11-JAN-83 12:03 PAGE 307  
 CZUABA.MAC 10-JAN-83 12:46 CROSS REFERENCE TABLE -- USER SYMBOLS

L\$EXP4	000064RG	1139#					
L\$EXP5	000066RG	1141#					
L\$HARD	070774RG	1102	14216	14217#			
L\$HIME	000120RG	1167#					
L\$HPCP	000016RG	1101#					
L\$HPTP	000022RG	1105#					
L\$HW	000216RG	1106	1219	1220#			
L\$ICP	000104RG	1155#					
L\$INIT	025416RG	1156	4406#				
L\$LADP	000026RG	1109#					
L\$LAST	071210RG	1110	14288#				
L\$LOAD	000100RG	1151#					
L\$LUN	000074RG	1147#					
L\$MREV	000050RG	1127#					
L\$NAME	000000RG	1084#					
L\$PRIO	000042RG	1121#					
L\$PROT	025410RG	1162	4390#				
L\$PRT	000112RG	1161#					
L\$REPP	000062RG	1137#					
L\$REV	000010RG	1093#					
L\$RPT	025402RG	1138	4369#				
L\$SOFT	071106RG	1104	14256	14257#			
L\$SPC	000056RG	1133#					
L\$SPCP	000020RG	1103#					
L\$SPTP	000024RG	1107#					
L\$STA	000030RG	1111#					
L\$SW	000224RG	1108	1237	1238#			
L\$TEST	000114RG	1163#					
L\$TIML	000014RG	1099#					
L\$UNIT	000012RG	1097#	4436				
L10000	000222R	1219	1226#				
L10001	000226R	1237	1245#				
L10002	015064R	2304#					
L10003	015112R	2318#					
L10004	015144R	2332#					
L10005	015216R	2352#					
L10006	015360R	2390#					
L10007	015522R	2428#					
L10010	015554R	2442#					
L10011	015636R	2464#					
L10012	015760R	2498#					
L10013	025406R	4374	4380#				
L10015	025614R	4458#					
L10016	025616R	4475#					
L10017	025624R	4490	4496#				
L10020	025632R	4511	4517#				
L10021	025640R	4533	4539#				
L10022	025650R	4559#					
L10023	025676R	4586#					
L10024	025774R	4630#					
L10025	026074R	4673#					
L10026	026174R	4715#					
L10027	026274R	4756#					
L10030	026350R	4806#					
L10031	026424R	4856#					
L10032	026654R	4888	4900	4925	4940	4952	4955#

PARAMETER CODING CZUABA.MAC	MACY11 10-JAN-83 12:46	30(1046)	11-JAN-83 12:03 PAGE 308 CROSS REFERENCE TABLE -- USER SYMBOLS											
L10033 032500R	5396	5408	5420	5432	5447	5459	5471	5483	5486#					
L10034 032764R	5516	5528	5571	5590	5593#									
L10035 033314R	5628	5640	5653	5665	5695	5707	5723	5726#						
L10036 034270R	5763	5775	5788	5800	5826	5838	5869	5881	5895	5923	5935	5966	5978	
	5992	5996#												
L10037 035034R	6026	6038	6051	6063	6079	6091	6106	6118	6132	6149	6161	6176	6188	
	6202	6206#												
L10040 036242R	6247	6259	6272	6284	6300	6312	6345	6357	6398	6410	6429	6467	6479	
	6520	6532	6551	6557#										
L10041 040140R	6604	6616	6629	6641	6656	6668	6686	6698	6713	6725	6747	6759	6770	
	6782	6794	6808	6819	6831	6843	6857	6870	6884	6896	6908	6931	6941	
	6955	6967	6991	7003	7014	7026	7037	7049	7069	7083	7111#			
L10042 037372R	6911#													
L10043 040136R	7108#													
L10044 041252R	7150	7162	7175	7187	7202	7214	7231	7243	7257	7269	7291	7303	7314	
	7326	7338	7352	7363	7375	7387	7401	7413	7425	7437	7440#			
L10045 042364R	7479	7491	7504	7516	7531	7543	7560	7572	7586	7598	7620	7632	7643	
	7655	7667	7681	7692	7704	7716	7730	7742	7754	7766	7769#			
L10046 043472R	7806	7818	7831	7843	7860	7872	7890	7902	7917	7929	7951	7963	7974	
	7986	7998	8012	8023	8035	8047	8061	8075	8087	8099	8102#			
L10047 044470R	8139	8151	8164	8176	8191	8203	8221	8233	8248	8260	8282	8294	8305	
	8317	8329	8343	8355	8369	8381	8393	8396#						
L10050 045362R	8434	8446	8459	8471	8486	8498	8516	8528	8543	8555	8578	8590	8601	
	8613	8626	8638	8650	8662	8665#								
L10051 047156R	8704	8716	8729	8741	8765	8777	8795	8807	8822	8834	8860	8872	8883	
	8895	8907	8921	8933	8947	8959	8973	8984	8996	9024	9037	9051	9063	
	9077	9089	9103	9116	9130	9142	9154	9157#						
L10052 052040R	9206	9218	9231	9243	9259	9271	9289	9301	9322	9334	9356	9368	9379	
	9391	9403	9417	9428	9440	9452	9466	9479	9493	9505	9517	9541	9553	
	9564	9576	9588	9602	9613	9625	9637	9660	9672	9694	9706	9717	9729	
	9741	9755	9766	9778	9790	9804	9817	9831	9843	9855	9879	9891	9902	
	9914	9926	9940	9951	9963	9975	9978#							
L10053 055114R	10030	10042	10055	10067	10083	10095	10113	10125	10140	10152	10170	10182	10210	
	10222	10233	10245	10257	10271	10282	10294	10306	10320	10333	10347	10359	10371	
	10405	10417	10428	10440	10452	10466	10477	10489	10501	10525	10537	10565	10577	
	10588	10600	10612	10626	10637	10649	10661	10675	10688	10702	10714	10726	10759	
	10771	10782	10794	10806	10820	10831	10843	10855	10862#					
L10054 060514R	10922	10934	10947	10959	10974	10986	11004	11016	11037	11049	11067	11079	11103	
	11115	11126	11138	11150	11164	11175	11187	11199	11213	11226	11240	11252	11264	
	11288	11300	11311	11323	11335	11349	11360	11372	11384	11398	11411	11425	11437	
	11449	11464	11476	11504	11516	11527	11539	11551	11565	11576	11588	11600	11614	
	11627	11641	11653	11665	11700	11712	11723	11735	11747	11761	11772	11784	11796	
	11810	11823	11837	11849	11861	11871#								
L10055 062552R	11921	11933	11946	11958	11976	11988	12006	12018	12033	12045	12063	12075	12103	
	12115	12126	12138	12150	12164	12175	12187	12199	12213	12226	12240	12252	12264	
	12299	12311	12322	12334	12346	12360	12371	12383	12395	12409	12422	12436	12448	
	12460	12470#												
L10056 064272R	12519	12531	12544	12556	12571	12583	12601	12613	12628	12640	12662	12674	12685	
	12697	12711	12723	12735	12755	12767	12789	12801	12812	12824	12836	12850	12861	
	12873	12885	12899	12912	12925	12939	12951	12963	12966#					
L10057 065604R	13014	13026	13039	13051	13067	13079	13097	13109	13130	13142	13164	13176	13187	
	13199	13211	13225	13236	13248	13260	13284	13296	13307	13319	13331	13345	13356	
	13368	13380	13384#											
L10060 067334R	13422	13434	13447	13459	13474	13486	13504	13516	13531	13543	13571	13583	13596	
	13608	13619	13631	13643	13657	13669	13683	13695	13709	13720	13732	13744	13758	
	13770	13784	13796	13810	13823	13837	13849	13861	13864#					





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PRI01 = 000040 G	1310#													
PRI02 = 000100 G	1309#													
PRI03 = 000140 G	1308#													
PRI04 = 000200 G	1307#	5539												
PRI05 = 000240 G	1306#													
PRI06 = 000300 G	1305#													
PRI07 = 000340 G	1304#	4605	4648	4690	4731	5567	5578							
RBUF = 005072RG	1430#	1548	1553	1558	1563	1568	1573	1578	1583	1588	1598	1603	1608	
	1623	1813	1955	1959	1963	1971	3571	3660	3704	3745	4290	5679	5847	
	5857	5944	5954	6370	6381	6492	6503	6874	9002	9003	9013	9120	9483	
	9821	10337	10692	11230	11415	11631	11827	12230	12426	12929	13827			
RBUF2 = 005472RG	1431#	1593	1613	1967	1975									
RBUF3 = 006072RG	1432#	1618	1979											
RBUF4 = 006472RG	1433#													
RBUF5 = 007072RG	1434#													
RBUF6 = 007472RG	1435#													
RBUF7 = 010072RG	1436#													
RBUF8 = 010472RG	1437#													
RCBI = 002000 G	1336#	3059	3424	3426										
RDCNT = 011202RG	1485#	13557												
RDDEFA = 011112RG	1450#	13941												
RDMODE = 011222RG	1495#	6094	6164											
RDMULA = 011142RG	1465#													
RDPHYA = 011122RG	1455#													
RDRB = 000632RG	1420#	1534	1541	4043	6833	6847	7377	7391	7706	7720	8037	8051	8065	
	9027	9041	9053	9067	9079	9093	9442	9456	9780	9794	10296	10310	10651	
	10665	11189	11203	11374	11388	11590	11604	11786	11800	12189	12203	12385	12399	
	12875	12889	13734	13748	13760	13774	13786	13800						
RDRB1A = 011342RG	1547#	6730	6973	7273	7602	8265	9339	9524	9677	9862	10193	10388	10548	
	10742	11086	11271	11487	11683	12086	12282	12645	12772	13147	13267			
RDRB1B = 011402RG	1567#	8561												
RDRB2A = 011442RG	1587#	7934												
RDRB3A = 011502RG	1607#	8839	13548											
RDRNGS = 011162RG	1475#													
RDR14A = 012622RG	1954#	6845	7718	9454	9792	10308	10663	11201	11386	11602	11798	12201	12397	
	12887													
RDR15A = 012632RG	1958#	7389												
RDR17A = 012642RG	1962#	8049												
RDR17B = 012652RG	1966#	8063												
RDR20A = 012662RG	1970#	9039	13746											
RDR20B = 012672RG	1974#	9065	13772											
RDR20C = 012702RG	1978#	9091	13798											
RDSTA = 011252RG	1509#	7071	13973											
READY = 000002 G	1368#	4348												
RESET = 000000 G	1366#													
RFRMT = 011312RG	1531#	6673	7218	7547	7877	8208	8782	9276	10100	10991	11993	12588	13084	
	13491													
RFRMTX = 011326RG	1538#	8503												
RMTC = 000010 G	1361#													
RREV = 070266RG	1400*	14001*	14062	14099#										
RSET = 000040 G	1341#	4878	5386	5506	5618	5753	6016	6237	6594	6921	7140	7469	7796	
	8129	8424	8694	9196	10020	10912	11911	12509	13004	13412	13891			
RUN = 000003 G	1369#													
RXI = 020000 G	1333#	3168	3460	3462	4253									
SERI = 100000 G	1331#	3354	3531	3533										
SETBUF = 025230RG	4285#	6736	6980	7278	7607	7940	8271	8567	8845	9345	9530	9683	9868	







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4795	4796	4801	4807	4834	4843	4844	4845	4846	4851	4857	4882	4883
4884	4885	4887	4888	4894	4895	4896	4897	4899	4900	4919	4920	4921
4922	4924	4925	4934	4935	4936	4937	4939	4940	4946	4947	4948	4949
4951	4952	4956	5390	5391	5392	5393	5395	5396	5402	5403	5404	5405
5407	5408	5414	5415	5416	5417	5419	5420	5426	5427	5428	5429	5431
5432	5441	5442	5443	5444	5446	5447	5453	5454	5455	5456	5458	5459
5465	5466	5467	5468	5470	5471	5477	5478	5479	5480	5482	5483	5487
5510	5511	5512	5513	5515	5516	5522	5523	5524	5525	5527	5528	5532
5533	5534	5535	5536	5537	5539	5540	5559	5560	5561	5562	5564	5565
5567	5568	5570	5571	5575	5576	5578	5579	5584	5585	5586	5587	5589
5590	5594	5622	5623	5624	5625	5627	5628	5634	5635	5636	5637	5639
5640	5647	5648	5649	5650	5652	5653	5659	5660	5661	5662	5664	5665
5689	5690	5691	5692	5694	5695	5701	5702	5703	5704	5706	5707	5717
5718	5719	5720	5722	5723	5727	5757	5758	5759	5760	5762	5763	5769
5770	5771	5772	5774	5775	5782	5783	5784	5785	5787	5788	5794	5795
5796	5797	5799	5800	5820	5821	5822	5823	5825	5826	5832	5833	5834
5835	5837	5838	5863	5864	5865	5866	5868	5869	5875	5876	5877	5878
5880	5881	5889	5890	5891	5892	5894	5895	5917	5918	5919	5920	5922
5923	5929	5930	5931	5932	5934	5935	5960	5961	5962	5963	5965	5966
5972	5973	5974	5975	5977	5978	5986	5987	5988	5989	5991	5992	5997
6020	6021	6022	6023	6025	6026	6032	6033	6034	6035	6037	6038	6045
6046	6047	6048	6050	6051	6057	6058	6059	6060	6062	6063	6073	6074
6075	6076	6078	6079	6085	6086	6087	6088	6090	6091	6100	6101	6102
6103	6105	6106	6112	6113	6114	6115	6117	6118	6126	6127	6128	6129
6131	6132	6143	6144	6145	6146	6148	6149	6155	6156	6157	6158	6160
6161	6170	6171	6172	6173	6175	6176	6182	6183	6184	6185	6187	6188
6196	6197	6198	6199	6201	6202	6207	6241	6242	6243	6244	6246	6247
6253	6254	6255	6256	6258	6259	6266	6267	6268	6269	6271	6272	6278
6279	6280	6281	6283	6284	6294	6295	6296	6297	6299	6300	6306	6307
6308	6309	6311	6312	6339	6340	6341	6342	6344	6345	6351	6352	6353
6354	6356	6357	6392	6393	6394	6395	6397	6398	6404	6405	6406	6407
6409	6410	6423	6424	6425	6426	6428	6429	6461	6462	6463	6464	6466
6467	6473	6474	6475	6476	6478	6479	6514	6515	6516	6517	6519	6520
6526	6527	6528	6529	6531	6532	6545	6546	6547	6548	6550	6551	6558
6590	6598	6599	6600	6601	6603	6604	6610	6611	6612	6613	6615	6616
6623	6624	6625	6626	6628	6629	6635	6636	6637	6638	6640	6641	6650
6651	6652	6653	6655	6656	6662	6663	6664	6665	6667	6668	6680	6681
6682	6683	6685	6686	6692	6693	6694	6695	6697	6698	6707	6708	6709
6710	6712	6713	6719	6720	6721	6722	6724	6725	6741	6742	6743	6744
6746	6747	6753	6754	6755	6756	6758	6759	6764	6765	6766	6767	6769
6770	6776	6777	6778	6779	6781	6782	6788	6789	6790	6791	6793	6794
6802	6803	6804	6805	6807	6808	6813	6814	6815	6816	6818	6819	6825
6826	6827	6828	6830	6831	6837	6838	6839	6840	6842	6843	6851	6852
6853	6854	6856	6857	6864	6865	6866	6867	6869	6870	6878	6879	6880
6881	6883	6884	6890	6891	6892	6893	6895	6896	6902	6903	6904	6905
6907	6908	6912	6915	6925	6926	6927	6928	6930	6931	6935	6936	6937
6938	6940	6941	6949	6950	6951	6952	6954	6955	6961	6962	6963	6964
6966	6967	6985	6986	6987	6988	6990	6991	6997	6998	6999	7000	7002
7003	7008	7009	7010	7011	7013	7014	7020	7021	7022	7023	7025	7026
7031	7032	7033	7034	7036	7037	7043	7044	7045	7046	7048	7049	7054
7055	7056	7057	7063	7064	7065	7066	7068	7069	7077	7078	7079	7080
7082	7083	7088	7089	7090	7091	7095	7096	7097	7098	7102	7103	7104
7105	7109	7112	7144	7145	7146	7147	7149	7150	7156	7157	7158	7159
7161	7162	7169	7170	7171	7172	7174	7175	7181	7182	7183	7184	7186
7187	7196	7197	7198	7199	7201	7202	7208	7209	7210	7211	7213	7214
7225	7226	7227	7228	7230	7231	7237	7238	7239	7240	7242	7243	7251

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7252	7253	7254	7256	7257	7263	7264	7265	7266	7268	7269	7285	7286
7287	7288	7290	7291	7297	7298	7299	7300	7302	7303	7308	7309	7310
7311	7313	7314	7320	7321	7322	7323	7325	7326	7332	7333	7334	7335
7337	7338	7346	7347	7348	7349	7351	7352	7357	7358	7359	7360	7362
7363	7369	7370	7371	7372	7374	7375	7381	7382	7383	7384	7386	7387
7395	7396	7397	7398	7400	7401	7407	7408	7409	7410	7412	7413	7419
7420	7421	7422	7424	7425	7431	7432	7433	7434	7436	7437	7441	7473
7474	7475	7476	7478	7479	7485	7486	7487	7488	7490	7491	7498	7499
7500	7501	7503	7504	7510	7511	7512	7513	7515	7516	7525	7526	7527
7528	7530	7531	7537	7538	7539	7540	7542	7543	7554	7555	7556	7557
7559	7560	7566	7567	7568	7569	7571	7572	7580	7581	7582	7583	7585
7586	7592	7593	7594	7595	7597	7598	7614	7615	7616	7617	7619	7620
7626	7627	7628	7629	7631	7632	7637	7638	7639	7640	7642	7643	7649
7650	7651	7652	7654	7655	7661	7662	7663	7664	7666	7667	7675	7676
7677	7678	7680	7681	7686	7687	7688	7689	7691	7692	7698	7699	7700
7701	7703	7704	7710	7711	7712	7713	7715	7716	7724	7725	7726	7727
7729	7730	7736	7737	7738	7739	7741	7742	7748	7749	7750	7751	7753
7754	7760	7761	7762	7763	7765	7766	7770	7800	7801	7802	7803	7805
7806	7812	7813	7814	7815	7817	7818	7825	7826	7827	7828	7830	7831
7837	7838	7839	7840	7842	7843	7854	7855	7856	7857	7859	7860	7866
7867	7868	7869	7871	7872	7884	7885	7886	7887	7889	7890	7896	7897
7898	7899	7901	7902	7911	7912	7913	7914	7916	7917	7923	7924	7925
7926	7928	7929	7945	7946	7947	7948	7950	7951	7957	7958	7959	7960
7962	7963	7968	7969	7970	7971	7973	7974	7980	7981	7982	7983	7985
7986	7992	7993	7994	7995	7997	7998	8006	8007	8008	8009	8011	8012
8017	8018	8019	8020	8022	8023	8029	8030	8031	8032	8034	8035	8041
8042	8043	8044	8046	8047	8055	8056	8057	8058	8060	8061	8069	8070
8071	8072	8074	8075	8081	8082	8083	8084	8086	8087	8093	8094	8095
8096	8098	8099	8103	8133	8134	8135	8136	8138	8139	8145	8146	8147
8148	8150	8151	8158	8159	8160	8161	8163	8164	8170	8171	8172	8173
8175	8176	8185	8186	8187	8188	8190	8191	8197	8198	8199	8200	8202
8203	8215	8216	8217	8218	8220	8221	8227	8228	8229	8230	8232	8233
8242	8243	8244	8245	8247	8248	8254	8255	8256	8257	8259	8260	8276
8277	8278	8279	8281	8282	8288	8289	8290	8291	8293	8294	8299	8300
8301	8302	8304	8305	8311	8312	8313	8314	8316	8317	8323	8324	8325
8326	8328	8329	8337	8338	8339	8340	8342	8343	8349	8350	8351	8352
8354	8355	8363	8364	8365	8366	8368	8369	8375	8376	8377	8378	8380
8381	8387	8388	8389	8390	8392	8393	8397	8428	8429	8430	8431	8433
8434	8440	8441	8442	8443	8445	8446	8453	8454	8455	8456	8458	8459
8465	8466	8467	8468	8470	8471	8480	8481	8482	8483	8485	8486	8492
8493	8494	8495	8497	8498	8510	8511	8512	8513	8515	8516	8522	8523
8524	8525	8527	8528	8537	8538	8539	8540	8542	8543	8549	8550	8551
8552	8554	8555	8572	8573	8574	8575	8577	8578	8584	8585	8586	8587
8589	8590	8595	8596	8597	8598	8600	8601	8607	8608	8609	8610	8612
8613	8620	8621	8622	8623	8625	8626	8632	8633	8634	8635	8637	8638
8644	8645	8646	8647	8649	8650	8656	8657	8658	8659	8661	8662	8666
8698	8699	8700	8701	8703	8704	8710	8711	8712	8713	8715	8716	8723
8724	8725	8726	8728	8729	8735	8736	8737	8738	8740	8741	8759	8760
8761	8762	8764	8765	8771	8772	8773	8774	8776	8777	8789	8790	8791
8792	8794	8795	8801	8802	8803	8804	8806	8807	8816	8817	8818	8819
8821	8822	8828	8829	8830	8831	8833	8834	8854	8855	8856	8857	8859
8860	8866	8867	8868	8869	8871	8872	8877	8878	8879	8880	8882	8883
8889	8890	8891	8892	8894	8895	8901	8902	8903	8904	8906	8907	8915
8916	8917	8918	8920	8921	8927	8928	8929	8930	8932	8933	8941	8942
8943	8944	8946	8947	8953	8954	8955	8956	8958	8959	8967	8968	8969
8970	8972	8973	8978	8979	8980	8981	8983	8984	8990	8991	8992	8993

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8995	8996	9018	9019	9020	9021	9023	9024	9031	9032	9033	9034	9036
9037	9045	9046	9047	9048	9050	9051	9057	9058	9059	9060	9062	9063
9071	9072	9073	9074	9076	9077	9083	9084	9085	9086	9088	9089	9097
9098	9099	9100	9102	9103	9110	9111	9112	9113	9115	9116	9124	9125
9126	9127	9129	9130	9136	9137	9138	9139	9141	9142	9148	9149	9150
9151	9153	9154	9158	9200	9201	9202	9203	9205	9206	9212	9213	9214
9215	9217	9218	9225	9226	9227	9228	9230	9231	9237	9238	9239	9240
9242	9243	9253	9254	9255	9256	9258	9259	9265	9266	9267	9268	9270
9271	9283	9284	9285	9286	9288	9289	9295	9296	9297	9298	9300	9301
9316	9317	9318	9319	9321	9322	9328	9329	9330	9331	9333	9334	9350
9351	9352	9353	9355	9356	9362	9363	9364	9365	9367	9368	9373	9374
9375	9376	9378	9379	9385	9386	9387	9388	9390	9391	9397	9398	9399
9400	9402	9403	9411	9412	9413	9414	9416	9417	9422	9423	9424	9425
9427	9428	9434	9435	9436	9437	9439	9440	9446	9447	9448	9449	9451
9452	9460	9461	9462	9463	9465	9466	9473	9474	9475	9476	9478	9479
9487	9488	9489	9490	9492	9493	9499	9500	9501	9502	9504	9505	9511
9512	9513	9514	9516	9517	9535	9536	9537	9538	9540	9541	9547	9548
9549	9550	9552	9553	9558	9559	9560	9561	9563	9564	9570	9571	9572
9573	9575	9576	9582	9583	9584	9585	9587	9588	9596	9597	9598	9599
9601	9602	9607	9608	9609	9610	9612	9613	9619	9620	9621	9622	9624
9625	9631	9632	9633	9634	9636	9637	9654	9655	9656	9657	9659	9660
9666	9667	9668	9669	9671	9672	9688	9689	9690	9691	9693	9694	9700
9701	9702	9703	9705	9706	9711	9712	9713	9714	9716	9717	9723	9724
9725	9726	9728	9729	9735	9736	9737	9738	9740	9741	9749	9750	9751
9752	9754	9755	9760	9761	9762	9763	9765	9766	9772	9773	9774	9775
9777	9778	9784	9785	9786	9787	9789	9790	9798	9799	9800	9801	9803
9804	9811	9812	9813	9814	9816	9817	9825	9826	9827	9828	9830	9831
9837	9838	9839	9840	9842	9843	9849	9850	9851	9852	9854	9855	9873
9874	9875	9876	9878	9879	9885	9886	9887	9888	9890	9891	9896	9897
9898	9899	9901	9902	9908	9909	9910	9911	9913	9914	9920	9921	9922
9923	9925	9926	9934	9935	9936	9937	9939	9940	9945	9946	9947	9948
9950	9951	9957	9958	9959	9960	9962	9963	9969	9970	9971	9972	9974
9975	9979	10024	10025	10026	10027	10029	10030	10036	10037	10038	10039	10041
10042	10049	10050	10051	10052	10054	10055	10061	10062	10063	10064	10066	10067
10077	10078	10079	10080	10082	10083	10089	10090	10091	10092	10094	10095	10107
10108	10109	10110	10112	10113	10119	10120	10121	10122	10124	10125	10134	10135
10136	10137	10139	10140	10146	10147	10148	10149	10151	10152	10164	10165	10166
10167	10169	10170	10176	10177	10178	10179	10181	10182	10204	10205	10206	10207
10209	10210	10216	10217	10218	10219	10221	10222	10227	10228	10229	10230	10232
10233	10239	10240	10241	10242	10244	10245	10251	10252	10253	10254	10256	10257
10265	10266	10267	10268	10270	10271	10276	10277	10278	10279	10281	10282	10288
10289	10290	10291	10293	10294	10300	10301	10302	10303	10305	10306	10314	10315
10316	10317	10319	10320	10327	10328	10329	10330	10332	10333	10341	10342	10343
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10370	10371	10399	10400	10401	10402	10404	10405	10411	10412	10413	10414	10416
10417	10422	10423	10424	10425	10427	10428	10434	10435	10436	10437	10439	10440
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10472	10473	10474	10476	10477	10483	10484	10485	10486	10488	10489	10495	10496
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10631	10632	10633	10634	10636	10637	10643	10644	10645	10646	10648	10649	10655
10656	10657	10658	10660	10661	10669	10670	10671	10672	10674	10675	10682	10683
10684	10685	10687	10688	10696	10697	10698	10699	10701	10702	10708	10709	10710
10711	10713	10714	10720	10721	10722	10723	10725	10726	10753	10754	10755	10756

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 CZUABA.MAC 10-JAN-83 12:46 CROSS REFERENCE TABLE -- USER SYMBOLS

10758	10759	10765	10766	10767	10768	10770	10771	10776	10777	10778	10779	10781
10782	10788	10789	10790	10791	10793	10794	10800	10801	10802	10803	10805	10806
10814	10815	10816	10817	10819	10820	10825	10826	10827	10828	10830	10831	10837
10838	10839	10840	10842	10843	10849	10850	10851	10852	10854	10855	10863	10916
10917	10918	10919	10921	10922	10928	10929	10930	10931	10933	10934	10941	10942
10943	10944	10946	10947	10953	10954	10955	10956	10958	10959	10968	10969	10970
10971	10973	10974	10980	10981	10982	10983	10985	10986	10998	10999	11000	11001
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11444	11445	11446	11448	11449	11458	11459	11460	11461	11463	11464	11470	11471
11472	11473	11475	11476	11498	11499	11500	11501	11503	11504	11510	11511	11512
11513	11515	11516	11521	11522	11523	11524	11526	11527	11533	11534	11535	11536
11538	11539	11545	11546	11547	11548	11550	11551	11559	11560	11561	11562	11564
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11697	11699	11700	11706	11707	11708	11709	11711	11712	11717	11718	11719	11720
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11805	11806	11807	11809	11810	11817	11818	11819	11820	11822	11823	11831	11832
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11858	11860	11861	11872	11915	11916	11917	11918	11920	11921	11927	11928	11929
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12058	12059	12060	12062	12063	12069	12070	12071	12072	12074	12075	12097	12098
12099	12100	12102	12103	12109	12110	12111	12112	12114	12115	12120	12121	12122
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12149	12150	12158	12159	12160	12161	12163	12164	12169	12170	12171	12172	12174
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12360	12365	12366	12367	12368	12370	12371	12377	12378	12379	12380	12382	12383
12389	12390	12391	12392	12394	12395	12403	12404	12405	12406	12408	12409	12416
12417	12418	12419	12421	12422	12430	12431	12432	12433	12435	12436	12442	12443
12444	12445	12447	12448	12454	12455	12456	12457	12459	12460	12471	12513	12514
12515	12516	12518	12519	12525	12526	12527	12528	12530	12531	12538	12539	12540

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 CZUABA.MAC 10-JAN-83 12:46 CROSS REFERENCE TABLE -- USER SYMBOLS

12541	12543	12544	12550	12551	12552	12553	12555	12556	12565	12566	12567	12568
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12601	12607	12608	12609	12610	12612	12613	12622	12623	12624	12625	12627	12628
12634	12635	12636	12637	12639	12640	12656	12657	12658	12659	12661	12662	12668
12669	12670	12671	12673	12674	12679	12680	12681	12682	12684	12685	12691	12692
12693	12694	12696	12697	12705	12706	12707	12708	12710	12711	12717	12718	12719
12720	12722	12723	12729	12730	12731	12732	12734	12735	12749	12750	12751	12752
12754	12755	12761	12762	12763	12764	12766	12767	12783	12784	12785	12786	12788
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12951	12957	12958	12959	12960	12962	12963	12967	13008	13009	13010	13011	13013
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13045	13046	13047	13048	13050	13051	13061	13062	13063	13064	13066	13067	13073
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13105	13106	13108	13109	13124	13125	13126	13127	13129	13130	13136	13137	13138
13139	13141	13142	13158	13159	13160	13161	13163	13164	13170	13171	13172	13173
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13368	13374	13375	13376	13377	13379	13380	13385	13416	13417	13418	13419	13421
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13540	13542	13543	13565	13566	13567	13568	13570	13571	13577	13578	13579	13580
13582	13583	13590	13591	13592	13593	13595	13596	13602	13603	13604	13605	13607
13608	13613	13614	13615	13616	13618	13619	13625	13626	13627	13628	13630	13631
13637	13638	13639	13640	13642	13643	13651	13652	13653	13654	13656	13657	13663
13664	13665	13666	13668	13669	13677	13678	13679	13680	13682	13683	13689	13690
13691	13692	13694	13695	13703	13704	13705	13706	13708	13709	13714	13715	13716
13717	13719	13720	13726	13727	13728	13729	13731	13732	13738	13739	13740	13741
13743	13744	13752	13753	13754	13755	13757	13758	13764	13765	13766	13767	13769
13770	13778	13779	13780	13781	13783	13784	13790	13791	13792	13793	13795	13796
13804	13805	13806	13807	13809	13810	13817	13818	13819	13820	13822	13823	13831
13832	13833	13834	13836	13837	13843	13844	13845	13846	13848	13849	13855	13856
13857	13858	13860	13861	13865	13886	13887	13895	13896	13897	13898	13900	13901
13907	13908	13909	13910	13912	13913	13920	13921	13922	13923	13925	13926	13932
13933	13934	13935	13937	13938	13947	13948	13949	13950	13952	13953	13959	13960
13961	13962	13964	13965	13979	13980	13981	13982	13984	13985	13991	13992	13993
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14032	14033	14055	14056	14057	14058	14059	14060	14062	14063	14064	14065	14066
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14083	14084	14085	14086	14087	14088	14093	14216	14220	14221	14222	14223	14225
14226	14227	14228	14230	14256	14260	14261	14262	14266	14285	14286	14287	
1068#	6589	6914										
1068#	1226	1245	2304	2318	2332	2352	2390	2428	2442	2464	2498	4380
4458	4475	4496	4517	4539	4559	4586	4630	4673	4715	4756	4800	4806
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SVCSUB= 000001  
 SVCTAG= 000001

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		7769	8102	8396	8665	9157	9978	10862	11871	12470	12966	13384	13864	14092
		14231	14267											
SVCTST=	000001	1068#	4603	4646	4688	4729	4777	4827	4875	5383	5503	5615	5750	6013
		6234	6587	7137	7466	7793	8126	8421	8691	9193	10017	10909	11908	12506
		13001	13409	13882										
SWADDR	013124RG	2051#	14010											
SWHDR	070424RG	14069	14154#											
SWPACK	070270RG	14009	14035	14043	14101#									
S&LSYM=	010000	1068#	1227#	1246#	2305#	2319#	2333#	2353#	2391#	2429#	2443#	2465#	2499#	4381#
		4459#	4476#	4497#	4518#	4540#	4560#	4587#	4631#	4674#	4716#	4757#	4784#	4807#
		4834#	4857#	4956#	5487#	5594#	5727#	5997#	6207#	6558#	6912#	7109#	7112#	7441#
		7770#	8103#	8397#	8666#	9158#	9979#	10863#	11872#	12471#	12967#	13385#	13865#	14093#
		14232#	14268#											
TBUF	001072RG	1422#	1630	1635	1640	1645	1650	1655	1660	1665	1670	1675	1680	1685
		1690	1695	1700	1705	1710	1725	1730	1735	1740	1745	1750	1755	1760
		1765	1770	1775	1780	1785	1790	1795	1800	1805	1919	1923	1927	1931
		1935	1947	1951	3570	3659	3898	3931	4298	5814	5911	6328	6450	7279*
		7280*	7608*	7609*	8847									
TBUF2	001472RG	1423#	1715	1939										
TBUF3	002072RG	1424#	1720	1943										
TBUF4	002472RG	1425#												
TBUF5	003072RG	1426#												
TBUF6	003472RG	1427#												
TBUF7	004072RG	1428#												
TBUF8	004472RG	1429#												
TDRB	000572RG	1419#	1531	4074	6784	6798	7328	7342	7657	7671	7988	8002	8319	8333
		8345	8359	8897	8911	8923	8937	8949	8963	9393	9407	9578	9592	9731
		9745	9916	9930	10247	10261	10442	10456	10602	10616	10796	10810	11140	11154
		11325	11339	11541	11555	11737	11751	12140	12154	12336	12350	12700	12826	12840
		13201	13215	13321	13335	13633	13647	13659	13673	13685	13699			
TDRBXX	012002RG	1729#	8559											
TDRB1A	011542RG	1629#	6728	6971	7932	9337	9522	9675	9860	10191	10386	10546	10740	11084
		11269	11485	11681	12084	12280	13145	13265						
TDRB1B	011602RG	1649#	7271	7600										
TDRB1C	011642RG	1669#	12643	12770										
TDRB2A	011702RG	1689#	8263											
TDRB3A	011742RG	1709#	8837	13546										
TDRMSK=	007777 G	1387#	3120											
TDRX	000672RG	1421#	1538	4105										
TDR14A	012512RG	1918#	6796	8000	9405	9743	10259	10614	11152	11337	11553	11749	12152	12348
		13213												
TDR15A	012522RG	1922#	7340	7669										
TDR18A	012532RG	1926#	8331											
TDR18B	012542RG	1930#	8357											
TDR20A	012552RG	1934#	8909	13645										
TDR20B	012562RG	1938#	8935	13671										
TDR20C	012572RG	1942#	8961	13697										
TDR21X	012602RG	1946#	9590	9928	10454	10808	13333							
TDR25A	012612RG	1950#	12838											
TIMASK=	177400 G	1384#	4343											
TINIT	025334RG	4341#	4876	5384	5504	5616	5751	6014	6235	6592	6919	7138	7467	7794
		8127	8422	8692	9194	10018	10910	11909	12507	13002	13410	13889		
TXI =	010000 G	1334#	3315	3496	3498									
T\$ARGC=	000002	1085#	1086#	1087#	1088#	1089#	1090#	1091#	1092#	2297#	2302	2310#	2316	2324#
		2330	2338#	2343	2345#	2350	2358#	2364	2366#	2372	2374#	2380	2382#	2388
		2396#	2402	2404#	2410	2412#	2418	2420#	2426	2434#	2440	2448#	2454	2456#

PARAMETER CODING  
CZUABA.MAC

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TSCODE= 000130  
TSERRN= 001114

TSEXCP= 000000  
TSFLAG= 000040

2462	2470#	2475	2477#	2482	2484#	2489	2491#	2496	14055#	14060	14062#	14067
14069#	14074	14076#	14081	14083#	14088							
14220#	14225#	14260#										
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5403#	5415#	5427#	5442#	5454#	5466#	5478#	5511#	5523#	5560#	5585#	5623#	5635#
5648#	5660#	5690#	5702#	5718#	5758#	5770#	5783#	5795#	5821#	5833#	5864#	5876#
5890#	5918#	5930#	5961#	5973#	5987#	6021#	6033#	6046#	6058#	6074#	6086#	6101#
6113#	6127#	6144#	6156#	6171#	6183#	6197#	6242#	6254#	6267#	6279#	6295#	6307#
6340#	6352#	6393#	6405#	6424#	6462#	6474#	6515#	6527#	6546#	6599#	6611#	6624#
6636#	6651#	6663#	6681#	6693#	6708#	6720#	6742#	6754#	6765#	6777#	6789#	6803#
6814#	6826#	6838#	6852#	6865#	6879#	6891#	6903#	6926#	6936#	6950#	6962#	6986#
6998#	7009#	7021#	7032#	7044#	7055#	7064#	7078#	7089#	7096#	7103#	7145#	7157#
7170#	7182#	7197#	7209#	7226#	7238#	7252#	7264#	7286#	7298#	7309#	7321#	7333#
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7538#	7555#	7567#	7581#	7593#	7615#	7627#	7638#	7650#	7662#	7676#	7687#	7699#
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8082#	8094#	8134#	8146#	8159#	8171#	8186#	8198#	8216#	8228#	8243#	8255#	8277#
8289#	8300#	8312#	8324#	8338#	8350#	8364#	8376#	8388#	8429#	8441#	8454#	8466#
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4956	5487	5594	5727	5997	6207	6558	6912	7109	7112	7441	7770	8103
8397	8666	9158	9979	10863	11872	12471	12967	13385	13865	14093	14232	14268
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TSLAST= 000001  
TSLOLI= 000000  
TSLSYM= 010000

TSLTNO= 000034  
TSLNEST= 177777

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T\$NS2 = 000002  
 T\$PTNU= 000000  
 T\$SAVL= 177777  
 T\$SEGL= 177777  
 T\$SEKO= 010000  
 T\$SUBN= 000000

T\$TAGL = 177777  
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T\$TEMP= 000000

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1074#	14290											
1219#	1226	1237#	1245	2295#	2304	2308#	2318	2322#	2332	2336#	2352	2356#
2390	2394#	2428	2432#	2442	2446#	2464	2468#	2498	4369#	4380	4390#	4397
4406#	4458	4471#	4475	4485#	4496	4506#	4517	4528#	4539	4556#	4559	4576#
4586	4604#	4630	4647#	4673	4689#	4715	4730#	4756	4778#	4806	4828#	4856
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13384	13410#	13864	13883#	14092	14216#	14230	14256#	14266				
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5407#	5408	5419#	5420	5431#	5432	5446#	5447	5458#	5459	5470#	5471	5482#
5483	5486#	5515#	5516	5527#	5528	5570#	5571	5589#	5590	5593#	5627#	5628
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6176	6187#	6188	6201#	6202	6206#	6246#	6247	6258#	6259	6271#	6272	6283#
6284	6299#	6300	6311#	6312	6344#	6345	6356#	6357	6397#	6398	6409#	6410
6428#	6429	6466#	6467	6478#	6479	6519#	6520	6531#	6532	6550#	6551	6557#
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6686	6697#	6698	6712#	6713	6724#	6725	6746#	6747	6758#	6759	6769#	6770
6781#	6782	6793#	6794	6807#	6808	6818#	6819	6830#	6831	6842#	6843	6856#
6857	6869#	6870	6883#	6884	6895#	6896	6907#	6908	6911#	6930#	6931	6940#
6941	6954#	6955	6966#	6967	6990#	6991	7002#	7003	7013#	7014	7025#	7026
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8343	8354#	8355	8368#	8369	8380#	8381	8392#	8393	8396#	8433#	8434	8445#
8446	8458#	8459	8470#	8471	8485#	8486	8497#	8498	8515#	8516	8527#	8528
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8626	8637#	8638	8649#	8650	8661#	8662	8665#	8703#	8704	8715#	8716	8728#
8729	8740#	8741	8764#	8765	8776#	8777	8794#	8795	8806#	8807	8821#	8822
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8921	8932#	8933	8946#	8947	8958#	8959	8972#	8973	8983#	8984	8995#	8996
9023#	9024	9036#	9037	9050#	9051	9062#	9063	9076#	9077	9088#	9089	9102#
9103	9115#	9116	9129#	9130	9141#	9142	9153#	9154	9157#	9205#	9206	9217#
9218	9230#	9231	9242#	9243	9258#	9259	9270#	9271	9288#	9289	9300#	9301
9321#	9322	9333#	9334	9355#	9356	9367#	9368	9378#	9379	9390#	9391	9402#
9403	9416#	9417	9427#	9428	9439#	9440	9451#	9452	9465#	9466	9478#	9479
9492#	9493	9504#	9505	9516#	9517	9540#	9541	9552#	9553	9563#	9564	9575#
9576	9587#	9588	9601#	9602	9612#	9613	9624#	9625	9636#	9637	9659#	9660
9671#	9672	9693#	9694	9705#	9706	9716#	9717	9728#	9729	9740#	9741	9754#
9755	9765#	9766	9777#	9778	9789#	9790	9803#	9804	9816#	9817	9830#	9831
9842#	9843	9854#	9855	9878#	9879	9890#	9891	9901#	9902	9913#	9914	9925#
9926	9939#	9940	9950#	9951	9962#	9963	9974#	9975	9978#	10029#	10030	10041#
10042	10054#	10055	10066#	10067	10082#	10083	10094#	10095	10112#	10113	10124#	10125
10139#	10140	10151#	10152	10169#	10170	10181#	10182	10209#	10210	10221#	10222	10232#
10233	10244#	10245	10256#	10257	10270#	10271	10281#	10282	10293#	10294	10305#	10306
10319#	10320	10332#	10333	10346#	10347	10358#	10359	10370#	10371	10404#	10405	10416#
10417	10427#	10428	10439#	10440	10451#	10452	10465#	10466	10476#	10477	10488#	10489
10500#	10501	10524#	10525	10536#	10537	10564#	10565	10576#	10577	10587#	10588	10599#
10600	10611#	10612	10625#	10626	10636#	10637	10648#	10649	10660#	10661	10674#	10675
10687#	10688	10701#	10702	10713#	10714	10725#	10726	10758#	10759	10770#	10771	10781#
10782	10793#	10794	10805#	10806	10819#	10820	10830#	10831	10842#	10843	10854#	10855
10862#	10921#	10922	10933#	10934	10946#	10947	10958#	10959	10973#	10974	10985#	10986
11003#	11004	11015#	11016	11036#	11037	11048#	11049	11066#	11067	11078#	11079	11102#
11103	11114#	11115	11125#	11126	11137#	11138	11149#	11150	11163#	11164	11174#	11175
11186#	11187	11198#	11199	11212#	11213	11225#	11226	11239#	11240	11251#	11252	11263#
11264	11287#	11288	11299#	11300	11310#	11311	11322#	11323	11334#	11335	11348#	11349
11359#	11360	11371#	11372	11383#	11384	11397#	11398	11410#	11411	11424#	11425	11436#
11437	11448#	11449	11463#	11464	11475#	11476	11503#	11504	11515#	11516	11526#	11527
11538#	11539	11550#	11551	11564#	11565	11575#	11576	11587#	11588	11599#	11600	11613#
11614	11626#	11627	11640#	11641	11652#	11653	11664#	11665	11699#	11700	11711#	11712
11722#	11723	11734#	11735	11746#	11747	11760#	11761	11771#	11772	11783#	11784	11795#
11796	11809#	11810	11822#	11823	11836#	11837	11848#	11849	11860#	11861	11871#	11920#
11921	11932#	11933	11945#	11946	11957#	11958	11975#	11976	11987#	11988	12005#	12006
12017#	12018	12032#	12033	12044#	12045	12062#	12063	12074#	12075	12102#	12103	12114#
12115	12125#	12126	12137#	12138	12149#	12150	12163#	12164	12174#	12175	12186#	12187
12198#	12199	12212#	12213	12225#	12226	12239#	12240	12251#	12252	12263#	12264	12298#
12299	12310#	12311	12321#	12322	12333#	12334	12345#	12346	12359#	12360	12370#	12371
12382#	12383	12394#	12395	12408#	12409	12421#	12422	12435#	12436	12447#	12448	12459#
12460	12470#	12518#	12519	12530#	12531	12543#	12544	12555#	12556	12570#	12571	12582#
12583	12600#	12601	12612#	12613	12627#	12628	12639#	12640	12661#	12662	12673#	12674
12684#	12685	12696#	12697	12710#	12711	12722#	12723	12734#	12735	12754#	12755	12766#
12767	12788#	12789	12800#	12801	12811#	12812	12823#	12824	12835#	12836	12849#	12850
12860#	12861	12872#	12873	12884#	12885	12898#	12899	12911#	12912	12924#	12925	12938#
12939	12950#	12951	12962#	12963	12966#	13013#	13014	13025#	13026	13038#	13039	13050#
13051	13066#	13067	13078#	13079	13096#	13097	13108#	13109	13129#	13130	13141#	13142
13163#	13164	13175#	13176	13186#	13187	13198#	13199	13210#	13211	13224#	13225	13235#

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T\$TEST= 000034

T\$TSTM= 177777

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13433#	13434	13446#	13447	13458#	13459	13473#	13474	13485#	13486	13503#	13504	13515#
13516	13530#	13531	13542#	13543	13570#	13571	13582#	13583	13595#	13596	13607#	13608
13618#	13619	13630#	13631	13642#	13643	13656#	13657	13668#	13669	13682#	13683	13694#
13695	13708#	13709	13719#	13720	13731#	13732	13743#	13744	13757#	13758	13769#	13770
13783#	13784	13795#	13796	13809#	13810	13822#	13823	13836#	13837	13848#	13849	13860#
13861	13864#	13886#	13887	13900#	13901	13912#	13913	13925#	13926	13937#	13938	13952#
13953	13964#	13965	13984#	13985	13996#	13997	14020#	14021	14032#	14033	14092#	14220#
14225#	14230#	14260#	14266#	14290#								
1068#	4603#	4646#	4688#	4729#	4777#	4827#	4875#	5383#	5503#	5615#	5750#	6013#
6234#	6587#	6589	6914	7137#	7466#	7793#	8126#	8421#	8691#	9193#	10017#	10909#
11908#	12506#	13001#	13409#	13882#	14289							
1068#	2301	2305	2315	2319	2329	2333	2342	2349	2353	2363	2371	2379
2387	2391	2401	2409	2417	2425	2429	2439	2443	2453	2461	2465	2474
2481	2488	2495	2499	4381	4412	4417	4422	4427	4440	4456	4459	4476
4489	4497	4518	4540	4609	4617	4623	4625	4628	4631	4652	4660	4666
4668	4671	4674	4694	4702	4708	4710	4713	4716	4735	4743	4749	4751
4754	4757	4784	4793	4801	4807	4834	4843	4851	4857	4882	4887	4894
4899	4919	4924	4934	4939	4946	4951	4956	5390	5395	5402	5407	5414
5419	5426	5431	5441	5446	5453	5458	5465	5470	5477	5482	5487	5510
5515	5522	5527	5536	5540	5559	5565	5568	5570	5576	5579	5584	5589
5594	5622	5627	5634	5639	5647	5652	5659	5664	5689	5694	5701	5706
5717	5722	5727	5757	5762	5769	5774	5782	5787	5794	5799	5820	5825
5832	5837	5863	5868	5875	5880	5889	5894	5917	5922	5929	5934	5960
5965	5972	5977	5986	5991	5997	6020	6025	6032	6037	6045	6050	6057
6062	6073	6078	6085	6090	6100	6105	6112	6117	6126	6131	6143	6148
6155	6160	6170	6175	6182	6187	6196	6201	6207	6241	6246	6253	6258
6266	6271	6278	6283	6294	6299	6306	6311	6339	6344	6351	6356	6392
6397	6404	6409	6423	6428	6461	6466	6473	6478	6514	6519	6526	6531
6545	6550	6558	6590	6598	6603	6610	6615	6623	6628	6635	6640	6650
6655	6662	6667	6680	6685	6692	6697	6707	6712	6719	6724	6741	6746
6753	6758	6764	6769	6776	6781	6788	6793	6802	6807	6813	6818	6825
6830	6837	6842	6851	6856	6864	6869	6878	6883	6890	6895	6902	6907
6912	6915	6925	6930	6935	6940	6949	6954	6961	6966	6985	6990	6997
7002	7008	7013	7020	7025	7031	7036	7043	7048	7054	7063	7068	7077
7082	7088	7095	7102	7109	7112	7144	7149	7156	7161	7169	7174	7181
7186	7196	7201	7208	7213	7225	7230	7237	7242	7251	7256	7263	7268
7285	7290	7297	7302	7308	7313	7320	7325	7332	7337	7346	7351	7357
7362	7369	7374	7381	7386	7395	7400	7407	7412	7419	7424	7431	7436
7441	7473	7478	7485	7490	7498	7503	7510	7515	7525	7530	7537	7542
7554	7559	7566	7571	7580	7585	7592	7597	7614	7619	7626	7631	7637
7642	7649	7654	7661	7666	7675	7680	7686	7691	7698	7703	7710	7715
7724	7729	7736	7741	7748	7753	7760	7765	7770	7800	7805	7812	7817
7825	7830	7837	7842	7854	7859	7866	7871	7884	7889	7896	7901	7911
7916	7923	7928	7945	7950	7957	7962	7968	7973	7980	7985	7992	7997
8006	8011	8017	8022	8029	8034	8041	8046	8055	8060	8069	8074	8081
8086	8093	8098	8103	8133	8138	8145	8150	8158	8163	8170	8175	8185
8190	8197	8202	8215	8220	8227	8232	8242	8247	8254	8259	8276	8281
8288	8293	8299	8304	8311	8316	8323	8328	8337	8342	8349	8354	8363
8368	8375	8380	8387	8392	8397	8428	8433	8440	8445	8453	8458	8465
8470	8480	8485	8492	8497	8510	8515	8522	8527	8537	8542	8549	8554
8572	8577	8584	8589	8595	8600	8607	8612	8620	8625	8632	8637	8644
8649	8656	8661	8666	8698	8703	8710	8715	8723	8728	8735	8740	8759
8764	8771	8776	8789	8794	8801	8806	8816	8821	8828	8833	8854	8859
8866	8871	8877	8882	8889	8894	8901	8906	8915	8920	8927	8932	8941

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8946	8953	8958	8967	8972	8978	8983	8990	8995	9018	9023	9031	9036	
9045	9050	9057	9062	9071	9076	9083	9088	9097	9102	9110	9115	9124	
9129	9136	9141	9148	9153	9158	9200	9205	9212	9217	9225	9230	9237	
9242	9253	9258	9265	9270	9283	9288	9295	9300	9316	9321	9328	9333	
9350	9355	9362	9367	9373	9378	9385	9390	9397	9402	9411	9416	9422	
9427	9434	9439	9446	9451	9460	9465	9473	9478	9487	9492	9499	9504	
9511	9516	9535	9540	9547	9552	9558	9563	9570	9575	9582	9587	9596	
9601	9607	9612	9619	9624	9631	9636	9654	9659	9666	9671	9688	9693	
9700	9705	9711	9716	9723	9728	9735	9740	9749	9754	9760	9765	9772	
9777	9784	9789	9798	9803	9811	9816	9825	9830	9837	9842	9849	9854	
9873	9878	9885	9890	9896	9901	9908	9913	9920	9925	9934	9939	9945	
9950	9957	9962	9969	9974	9979	10024	10029	10036	10041	10049	10054	10061	
10066	10077	10082	10089	10094	10107	10112	10119	10124	10134	10139	10146	10151	
10164	10169	10176	10181	10204	10209	10216	10221	10227	10232	10239	10244	10251	
10256	10265	10270	10276	10281	10288	10293	10300	10305	10314	10319	10327	10332	
10341	10346	10353	10358	10365	10370	10399	10404	10411	10416	10422	10427	10434	
10439	10446	10451	10460	10465	10471	10476	10483	10488	10495	10500	10519	10524	
10531	10536	10559	10564	10571	10576	10582	10587	10594	10599	10606	10611	10620	
10625	10631	10636	10643	10648	10655	10660	10669	10674	10682	10687	10696	10701	
10708	10713	10720	10725	10753	10758	10765	10770	10776	10781	10788	10793	10800	
10805	10814	10819	10825	10830	10837	10842	10849	10854	10863	10916	10921	10928	
10933	10941	10946	10953	10958	10968	10973	10980	10985	10998	11003	11010	11015	
11031	11036	11043	11048	11061	11066	11073	11078	11097	11102	11109	11114	11120	
11125	11132	11137	11144	11149	11158	11163	11169	11174	11181	11186	11193	11198	
11207	11212	11220	11225	11234	11239	11246	11251	11258	11263	11282	11287	11294	
11299	11305	11310	11317	11322	11329	11334	11343	11348	11354	11359	11366	11371	
11378	11383	11392	11397	11405	11410	11419	11424	11431	11436	11443	11448	11458	
11463	11470	11475	11498	11503	11510	11515	11521	11526	11533	11538	11545	11550	
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11640	11647	11652	11659	11664	11694	11699	11706	11711	11717	11722	11729	11734	
11741	11746	11755	11760	11766	11771	11778	11783	11790	11795	11804	11809	11817	
11822	11831	11836	11843	11848	11855	11860	11872	11915	11920	11927	11932	11940	
11945	11952	11957	11970	11975	11982	11987	12000	12005	12012	12017	12027	12032	
12039	12044	12057	12062	12069	12074	12097	12102	12109	12114	12120	12125	12132	
12137	12144	12149	12158	12163	12169	12174	12181	12186	12193	12198	12207	12212	
12220	12225	12234	12239	12246	12251	12258	12263	12293	12298	12305	12310	12316	
12321	12328	12333	12340	12345	12354	12359	12365	12370	12377	12382	12389	12394	
12403	12408	12416	12421	12430	12435	12442	12447	12454	12459	12471	12513	12518	
12525	12530	12538	12543	12550	12555	12565	12570	12577	12582	12595	12600	12607	
12612	12622	12627	12634	12639	12656	12661	12668	12673	12679	12684	12691	12696	
12705	12710	12717	12722	12729	12734	12749	12754	12761	12766	12783	12788	12795	
12800	12806	12811	12818	12823	12830	12835	12844	12849	12855	12860	12867	12872	
12879	12884	12893	12898	12906	12911	12919	12924	12933	12938	12945	12950	12957	
12962	12967	13008	13013	13020	13025	13033	13038	13045	13050	13061	13066	13073	
13078	13091	13096	13103	13108	13124	13129	13136	13141	13158	13163	13170	13175	
13181	13186	13193	13198	13205	13210	13219	13224	13230	13235	13242	13247	13254	
13259	13278	13283	13290	13295	13301	13306	13313	13318	13325	13330	13339	13344	
13350	13355	13362	13367	13374	13379	13385	13416	13421	13428	13433	13441	13446	
13453	13458	13468	13473	13480	13485	13498	13503	13510	13515	13525	13530	13537	
13542	13565	13570	13577	13582	13590	13595	13602	13607	13613	13618	13625	13630	
13637	13642	13651	13656	13663	13668	13677	13682	13689	13694	13703	13708	13714	
13719	13726	13731	13738	13743	13752	13757	13764	13769	13778	13783	13790	13795	
13804	13809	13817	13822	13831	13836	13843	13848	13855	13860	13865	13886	13895	
13900	13907	13912	13920	13925	13932	13937	13947	13952	13959	13964	13979	13984	
13991	13996	14015	14020	14027	14032	14059	14066	14073	14080	14087	14093		
TSTSTS= 000001	1068#	4604#	4647#	4689#	4730#	4778#	4828#	4876#	5384#	5504#	5616#	5751#	6014#

PARAMETER CODING MACY11 30(1046) 11-JAN-83 12:03 PAGE 326  
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TSSAU = 010021	6235#	6588#	7138#	7467#	7794#	8127#	8422#	8692#	9194#	10018#	10910#	11909#	12507#
TSSAUT= 010016	13002#	13410#	13883#										
TSSCLE= 010017	4528#	4532	4539										
TSSDU = 010020	4471#	4475											
TSSHAR= 010062	4485#	4489	4496										
TSSHW = 010000	4506#	4510	4517										
TSSINI= 010015	14216#	14231											
TSSMSG= 010012	1219#	1226											
	4406#	4458											
	2295#	2304	2308#	2318	2322#	2332	2336#	2352	2356#	2390	2394#	2428	2432#
	2442	2446#	2464	2468#	2498								
TSSPRO= 010014	4390#												
TSSRPT= 010013	4369#	4373	4380										
TSSSEG= 010000	4784#	4800#	4834#	4850#									
TSSOF= 010063	14256#	14267											
TSSSRV= 010023	4556#	4559	4576#	4586									
TSSSUB= 010043	6590#	6911	6915#	7108									
TSSSW = 010001	1237#	1245											
TSTES= 010061	4604#	4630	4647#	4673	4689#	4715	4730#	4756	4778#	4806	4828#	4856	4876#
	4887	4899	4924	4939	4951	4955	5384#	5395	5407	5419	5431	5446	5458
	5470	5482	5486	5504#	5515	5527	5570	5589	5593	5616#	5627	5639	5652
	5664	5694	5706	5722	5726	5751#	5762	5774	5787	5799	5825	5837	5868
	5880	5894	5922	5934	5965	5977	5991	5996	6014#	6025	6037	6050	6062
	6078	6090	6105	6117	6131	6148	6160	6175	6187	6201	6206	6235#	6246
	6258	6271	6283	6299	6311	6344	6356	6397	6409	6428	6466	6478	6519
	6531	6550	6557	6588#	6603	6615	6628	6640	6655	6667	6685	6697	6712
	6724	6746	6758	6769	6781	6793	6807	6818	6830	6842	6856	6869	6883
	6895	6907	6930	6940	6954	6966	6990	7002	7013	7025	7036	7048	7068
	7082	7111	7138#	7149	7161	7174	7186	7201	7213	7230	7242	7256	7268
	7290	7302	7313	7325	7337	7351	7362	7374	7386	7400	7412	7424	7436
	7440	7467#	7478	7490	7503	7515	7530	7542	7559	7571	7585	7597	7619
	7631	7642	7654	7666	7680	7691	7703	7715	7729	7741	7753	7765	7769
	7794#	7805	7817	7830	7842	7859	7871	7889	7901	7916	7928	7950	7962
	7973	7985	7997	8011	8022	8034	8046	8060	8074	8086	8098	8102	8127#
	8138	8150	8163	8175	8190	8202	8220	8232	8247	8259	8281	8293	8304
	8316	8328	8342	8354	8368	8380	8392	8396	8422#	8433	8445	8458	8470
	8485	8497	8515	8527	8542	8554	8577	8589	8600	8612	8625	8637	8649
	8661	8665	8692#	8703	8715	8728	8740	8764	8776	8794	8806	8821	8833
	8859	8871	8882	8894	8906	8920	8932	8946	8958	8972	8983	8995	9023
	9036	9050	9062	9076	9088	9102	9115	9129	9141	9153	9157	9194#	9205
	9217	9230	9242	9258	9270	9288	9300	9321	9333	9355	9367	9378	9390
	9402	9416	9427	9439	9451	9465	9478	9492	9504	9516	9540	9552	9563
	9575	9587	9601	9612	9624	9636	9659	9671	9693	9705	9716	9728	9740
	9754	9765	9777	9789	9803	9816	9830	9842	9854	9878	9890	9901	9913
	9925	9939	9950	9962	9974	9978	10018#	10029	10041	10054	10066	10082	10094
	10112	10124	10139	10151	10169	10181	10209	10221	10232	10244	10256	10270	10281
	10293	10305	10319	10332	10346	10358	10370	10404	10416	10427	10439	10451	10465
	10476	10488	10500	10524	10536	10564	10576	10587	10599	10611	10625	10636	10648
	10660	10674	10687	10701	10713	10725	10758	10770	10781	10793	10805	10819	10830
	10842	10854	10862	10910#	10921	10933	10946	10958	10973	10985	11003	11015	11036
	11048	11066	11078	11102	11114	11125	11137	11149	11163	11174	11186	11198	11212
	11225	11239	11251	11263	11287	11299	11310	11322	11334	11348	11359	11371	11383
	11397	11410	11424	11436	11448	11463	11475	11503	11515	11526	11538	11550	11564
	11575	11587	11599	11613	11626	11640	11652	11664	11699	11711	11722	11734	11746
	11760	11771	11783	11795	11809	11822	11836	11848	11860	11871	11909#	11920	11932
	11945	11957	11975	11987	12005	12017	12032	12044	12062	12074	12102	12114	12125

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		12137	12149	12163	12174	12186	12198	12212	12225	12239	12251	12263	12298	12310
		12321	12333	12345	12359	12370	12382	12394	12408	12421	12435	12447	12459	12470
		12507#	12518	12530	12543	12555	12570	12582	12600	12612	12627	12639	12661	12673
		12684	12696	12710	12722	12734	12754	12766	12788	12800	12811	12823	12835	12849
		12860	12872	12884	12898	12911	12924	12938	12950	12962	12966	13002#	13013	13025
		13038	13050	13066	13078	13096	13108	13129	13141	13163	13175	13186	13198	13210
		13224	13235	13247	13259	13283	13295	13306	13318	13330	13344	13355	13367	13379
		13384	13410#	13421	13433	13446	13458	13473	13485	13503	13515	13530	13542	13570
		13582	13595	13607	13618	13630	13642	13656	13668	13682	13694	13708	13719	13731
		13743	13757	13769	13783	13795	13809	13822	13836	13848	13860	13864	13883#	13886
		13900	13912	13925	13937	13952	13964	13984	13996	14020	14032	14092		
T1	025700RG	1180	4603#											
T10	032766RG	1189	5615#											
T11	033316RG	1190	5750#											
T12	034272RG	1191	6013#											
T13	035036RG	1192	6234#											
T14	036244RG	1193	6587#											
T14.1	036244R	6589#												
T14.2	037374R	6914#												
T15	040142RG	1194	7137#											
T16	041254RG	1195	7466#											
T17	042366RG	1196	7793#											
T18	043474RG	1197	8126#											
T19	044472RG	1198	8421#											
T2	025776RG	1181	4646#											
T20	045364RG	1199	8691#											
T21	047160RG	1200	9193#											
T22	052042RG	1201	10017#											
T23	055116RG	1202	10909#											
T24	060516RG	1203	11908#											
T25	062554RG	1204	12506#											
T26	064274RG	1205	13001#											
T27	065606RG	1206	13409#											
T28	067336RG	1207	13882#											
T3	026076RG	1182	4688#											
T4	026176RG	1183	4729#											
T5	026276RG	1184	4777#											
T6	026352RG	1185	4827#											
T7	026426RG	1186	4875#											
T8	032206RG	1187	5383#											
T9	032502RG	1188	5503#											
UAM	= 000200 G	1320#												
UDBB	000262RG	1418#	1466	1471	1476	1481	1486	1491	1520	1525	4137	5684*	5814*	5815*
		5857*	5858*	5911*	5912*	5954*	5955*	6328*	6329*	6333*	6381*	6382*	6386*	6450*
		6451*	6455*	6503*	6504*	6508*	14009*	14010*						
UDB10A	012204RG	1812#	5669											
UDB11A	012234RG	1826#	5811	5854	5908	5951	6325	6378	6447	6500				
UDB28A	013114RG	2047#	14006											
UNAPRI	000240RG	1409#	5532											
UNIHLT=	000005 G	1370#												
UNIT	000242RG	1410#	4434*	4435*	4436	4439	4622	4665	4707	4748				
WTMODE	011232RG	1500#	6066	6136	6288	6644	7189	7518	7847	8179	8474	8748	8752	9246
		10070	10962	11963	12559	12742	13054	13462						
WTMOD1	011242RG	1504#	6943											
WTMULA	011152RG	1470#	10155	10510	11052	12048								
WTPHYA	011132RG	1460#	6701	7245	7574	7905	8236	8531	8810	9304	9642	10128	11019	11452

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WTRNGS 011172RG	12021	12616	12776	13112	13519	8206	8501	8780	9274	10098	10989	11991	12586
	1480#	6671	7216	7545	7875								
	13082	13489											
XCRC 013202RG	2076#	2449	3615	4165									
XCRCB 013204RG	2077#	2448											
XDAT 013174RG	2073#	2435	3577*	3666*	3710*								
WR = 100000 G	1353#												
XRDRB0 013142RG	2060#	2397	3112	4191									
XRDRB2 013144RG	2061#	2405											
XRDRB4 013146RG	2062#	2413											
XRDRB6 013150RG	2063#	2421											
XTDRB0 013162RG	2068#	2359	3263	4219									
XTDRB2 013164RG	2069#	2367											
XTDRB4 013166RG	2070#	2375											
XTDRB6 013170RG	2071#	2383											
X\$ALWA= 000000	1068#												
X\$FALS= 000040	1068#												
X\$OFFS= 000400	1068#												
X\$TRUE= 000020	1068#												
ZERO = 000000 G	1382#	3703	4019	6138	6191								
\$PATCH 071164RG	14280#												
.	1417#	1418#	1419#	1420#	1421#	1422#	1423#	1424#	1425#	1426#	1427#	1428#	1429#
	1430#	1431#	1432#	1433#	1434#	1435#	1436#	1437#	2126#	2283#	4374	4490	4511
	4533	4888	4900	4925	4940	4952	5360#	5396	5408	5420	5432	5447	5459
	5471	5483	5516	5528	5571	5590	5628	5640	5653	5665	5695	5707	5723
	5763	5775	5788	5800	5826	5838	5869	5881	5895	5923	5935	5966	5978
	5992	6026	6038	6051	6063	6079	6091	6106	6118	6132	6149	6161	6176
	6188	6202	6247	6259	6272	6284	6300	6312	6345	6357	6398	6410	6429
	6467	6479	6520	6532	6551	6604	6616	6629	6641	6656	6668	6686	6698
	6713	6725	6747	6759	6770	6782	6794	6808	6819	6831	6843	6857	6870
	6884	6896	6908	6931	6941	6955	6967	6991	7003	7014	7026	7037	7049
	7069	7083	7150	7162	7175	7187	7202	7214	7231	7243	7257	7269	7291
	7303	7314	7326	7338	7352	7363	7375	7387	7401	7413	7425	7437	7479
	7491	7504	7516	7531	7543	7560	7572	7586	7598	7620	7632	7643	7655
	7667	7681	7692	7704	7716	7730	7742	7754	7766	7806	7818	7831	7843
	7860	7872	7890	7902	7917	7929	7951	7963	7974	7986	7998	8012	8023
	8035	8047	8061	8075	8087	8099	8139	8151	8164	8176	8191	8203	8221
	8233	8248	8260	8282	8294	8305	8317	8329	8343	8355	8369	8381	8393
	8434	8446	8459	8471	8486	8498	8516	8528	8543	8555	8578	8590	8601
	8613	8626	8638	8650	8662	8704	8716	8729	8741	8765	8777	8795	8807
	8822	8834	8860	8872	8883	8895	8907	8921	8933	8947	8959	8973	8984
	8996	9024	9037	9051	9063	9077	9089	9103	9116	9130	9142	9154	9206
	9218	9231	9243	9259	9271	9289	9301	9322	9334	9356	9368	9379	9391
	9403	9417	9428	9440	9452	9466	9479	9493	9505	9517	9541	9553	9564
	9576	9588	9602	9613	9625	9637	9660	9672	9694	9706	9717	9729	9741
	9755	9766	9778	9790	9804	9817	9831	9843	9855	9879	9891	9902	9914
	9926	9940	9951	9963	9975	10030	10042	10055	10067	10083	10095	10113	10125
	10140	10152	10170	10182	10210	10222	10233	10245	10257	10271	10282	10294	10306
	10320	10333	10347	10359	10371	10405	10417	10428	10440	10452	10466	10477	10489
	10501	10525	10537	10565	10577	10588	10600	10612	10626	10637	10649	10661	10675
	10688	10702	10714	10726	10759	10771	10782	10794	10806	10820	10831	10843	10855
	10922	10934	10947	10959	10974	10986	11004	11016	11037	11049	11067	11079	11103
	11115	11126	11138	11150	11164	11175	11187	11199	11213	11226	11240	11252	11264
	11288	11300	11311	11323	11335	11349	11360	11372	11384	11398	11411	11425	11437
	11449	11464	11476	11504	11516	11527	11539	11551	11565	11576	11588	11600	11614
	11627	11641	11653	11665	11700	11712	11723	11735	11747	11761	11772	11784	11796



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11810	11823	11837	11849	11861	11921	11933	11946	11958	11976	11988	12006	12018
12033	12045	12063	12075	12103	12115	12126	12138	12150	12164	12175	12187	12199
12213	12226	12240	12252	12264	12299	12311	12322	12334	12346	12360	12371	12383
12395	12409	12422	12436	12448	12460	12519	12531	12544	12556	12571	12583	12601
12613	12628	12640	12662	12674	12685	12697	12711	12723	12735	12755	12767	12789
12801	12812	12824	12836	12850	12861	12873	12885	12899	12912	12925	12939	12951
12963	13014	13026	13039	13051	13067	13079	13097	13109	13130	13142	13164	13176
13187	13199	13211	13225	13236	13248	13260	13284	13296	13307	13319	13331	13345
13356	13368	13380	13422	13434	13447	13459	13474	13486	13504	13516	13531	13543
13571	13583	13596	13608	13619	13631	13643	13657	13669	13683	13695	13709	13720
13732	13744	13758	13770	13784	13796	13810	13823	13837	13849	13861	13887	13901
13913	13926	13938	13953	13965	13985	13997	14021	14033	14143#	14243#	14281#	



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ENDSUB	1#	1068#	6910	7107														
ENDSW	1#	1068#	1244															
ENDTST	1#	1068#	4629	4672	4714	4755	4805	4855	4954	5485	5592	5725	5995	6205	6556			
	7110	7439	7768	8101	8395	8664	9156	9977	10861	11870	12469	12965	13383	13863	14091			
EQUALS	1#	1068#	1260															
ERRDF	1#	1068#	4616	4659	4701	4742												
ERRHRD	1#	1068#	4792	4842	4881	4893	4918	4933	4945	5389	5401	5413	5425	5440	5452			
	5464	5476	5509	5521	5558	5583	5621	5633	5646	5658	5688	5700	5716	5756	5768			
	5781	5793	5819	5831	5862	5874	5888	5916	5928	5959	5971	5985	6019	6031	6044			
	6056	6072	6084	6099	6111	6125	6142	6154	6169	6181	6195	6240	6252	6265	6277			
	6293	6305	6338	6350	6391	6403	6422	6460	6472	6513	6525	6544	6597	6609	6622			
	6634	6649	6661	6679	6691	6706	6718	6740	6752	6763	6775	6787	6801	6812	6824			
	6836	6850	6863	6877	6889	6901	6924	6934	6948	6960	6984	6996	7007	7019	7030			
	7042	7053	7062	7076	7087	7094	7101	7143	7155	7168	7180	7195	7207	7224	7236			
	7250	7262	7284	7296	7307	7319	7331	7345	7356	7368	7380	7394	7406	7418	7430			
	7472	7484	7497	7509	7524	7536	7553	7565	7579	7591	7613	7625	7636	7648	7660			
	7674	7685	7697	7709	7723	7735	7747	7759	7799	7811	7824	7836	7853	7865	7883			
	7895	7910	7922	7944	7956	7967	7979	7991	8005	8016	8028	8040	8054	8068	8080			
	8092	8132	8144	8157	8169	8184	8196	8214	8226	8241	8253	8275	8287	8298	8310			
	8322	8336	8348	8362	8374	8386	8427	8439	8452	8464	8479	8491	8509	8521	8536			
	8548	8571	8583	8594	8606	8619	8631	8643	8655	8697	8709	8722	8734	8758	8770			
	8788	8800	8815	8827	8853	8865	8876	8888	8900	8914	8926	8940	8952	8966	8977			
	8989	9017	9030	9044	9056	9070	9082	9096	9109	9123	9135	9147	9199	9211	9224			
	9236	9252	9264	9282	9294	9315	9327	9349	9361	9372	9384	9396	9410	9421	9433			
	9445	9459	9472	9486	9498	9510	9534	9546	9557	9569	9581	9595	9606	9618	9630			
	9653	9665	9687	9699	9710	9722	9734	9748	9759	9771	9783	9797	9810	9824	9836			
	9848	9872	9884	9895	9907	9919	9933	9944	9956	9968	10023	10035	10048	10060	10076			
	10088	10106	10118	10133	10145	10163	10175	10203	10215	10226	10238	10250	10264	10275	10287			
	10299	10313	10326	10340	10352	10364	10398	10410	10421	10433	10445	10459	10470	10482	10494			
	10518	10530	10558	10570	10581	10593	10605	10619	10630	10642	10654	10668	10681	10695	10707			
	10719	10752	10764	10775	10787	10799	10813	10824	10836	10848	10915	10927	10940	10952	10967			
	10979	10997	11009	11030	11042	11060	11072	11096	11108	11119	11131	11143	11157	11168	11180			
	11192	11206	11219	11233	11245	11257	11281	11293	11304	11316	11328	11342	11353	11365	11377			
	11391	11404	11418	11430	11442	11457	11469	11497	11509	11520	11532	11544	11558	11569	11581			
	11593	11607	11620	11634	11646	11658	11693	11705	11716	11728	11740	11754	11765	11777	11789			
	11803	11816	11830	11842	11854	11914	11926	11939	11951	11969	11981	11999	12011	12026	12038			
	12056	12068	12096	12108	12119	12131	12143	12157	12168	12180	12192	12206	12219	12233	12245			
	12257	12292	12304	12315	12327	12339	12353	12364	12376	12388	12402	12415	12429	12441	12453			
	12512	12524	12537	12549	12564	12576	12594	12606	12621	12633	12655	12667	12678	12690	12704			
	12716	12728	12748	12760	12782	12794	12805	12817	12829	12843	12854	12866	12878	12892	12905			
	12918	12932	12944	12956	13007	13019	13032	13044	13060	13072	13090	13102	13123	13135	13157			
	13169	13180	13192	13204	13218	13229	13241	13253	13277	13289	13300	13312	13324	13338	13349			
	13361	13373	13415	13427	13440	13452	13467	13479	13497	13509	13524	13536	13564	13576	13589			
	13601	13612	13624	13636	13650	13662	13676	13688	13702	13713	13725	13737	13751	13763	13777			
	13789	13803	13816	13830	13842	13854	13894	13906	13919	13931	13946	13958	13978	13990	14014			
	14026																	
ERROR	1#	1068#																
ERRSF	1#	1068#																
ERRSOF	1#	1068#																
ERRTBL	1#	1068#	2090															
ESCAPE	1#	1068#	4886	4898	4923	4938	4950	5394	5406	5418	5430	5445	5457	5469	5481			
	5514	5526	5569	5588	5626	5638	5651	5663	5693	5705	5721	5761	5773	5786	5798			
	5824	5836	5867	5879	5893	5921	5933	5964	5976	5990	6024	6036	6049	6061	6077			
	6089	6104	6116	6130	6147	6159	6174	6186	6200	6245	6257	6270	6282	6298	6310			
	6343	6355	6396	6408	6427	6465	6477	6518	6530	6549	6602	6614	6627	6639	6654			
	6666	6684	6696	6711	6723	6745	6757	6768	6780	6792	6806	6817	6829	6841	6855			



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MSCOUN	1#	1068#	2297#	2310#	2324#	2338#	2345#	2358#	2366#	2374#	2382#	2396#	2404#	2412#	2420#
	2434#	2448#	2456#	2470#	2477#	2484#	2491#	14055#	14062#	14069#	14076#	14083#			
MSDATA	1#	1068#	1084#	1093	1095	1097	1099	1101	1103	1105	1107	1109	1111	1113	1115
	1117	1119	1121	1123#	1125	1127	1130	1133	1135	1137	1139	1141	1143	1145	1147
	1149	1151	1153	1155	1157	1159	1161	1163	1165	1167	2108#	2116#			
MSDECR	1#	1068#	1226#	1245#	2304#	2318#	2332#	2352#	2390#	2428#	2442#	2464#	2498#	4380#	4397#
	4458#	4475#	4496#	4517#	4539#	4559#	4586#	4630#	4673#	4715#	4756#	4800#	4806#	4850#	4856#
	4955#	5486#	5593#	5726#	5996#	6206#	6557#	6911#	7108#	7111#	7440#	7769#	8102#	8396#	8665#
	9157#	9978#	10862#	11871#	12470#	12966#	13384#	13864#	14092#	14230#	14266#	14290#			
MSDEFA	1#	1068#	14220#	14225#	14260#										
MSENDE	1#	1068#	1226#	1245#	2304#	2318#	2332#	2352#	2390#	2428#	2442#	2464#	2498#	4380#	4458#
	4475#	4496#	4517#	4539#	4559#	4586#	4630#	4673#	4715#	4756#	4800#	4806#	4850#	4856#	4955#
	5486#	5593#	5726#	5996#	6206#	6557#	6911#	7108#	7111#	7440#	7769#	8102#	8396#	8665#	9157#
	9978#	10862#	11871#	12470#	12966#	13384#	13864#	14092#	14230#	14266#	14290#				
MSERRI	1#	1068#	4617#	4660#	4702#	4743#	4793#	4843#	4882#	4894#	4919#	4934#	4946#	5390#	5402#
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PARAMETER CODING  
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CROSS REFERENCE TABLE -- MACRO NAMES

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 CZUABA.MAC 10-JAN-83 12:46 CROSS REFERENCE TABLE -- MACRO NAMES

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 CZUABA.MAC 10-JAN-83 12:46 CROSS REFERENCE TABLE -- MACRO NAMES

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CROSS REFERENCE TABLE -- MACRO NAMES

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 CZUABA.MAC    10-JAN-83 12:46    CROSS REFERENCE TABLE -- MACRO NAMES

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 CZUABA.MAC 10-JAN-83 12:46 CROSS REFERENCE TABLE -- MACRO NAMES

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CZUABA.MAC 10-JAN-83 12:46 CROSS REFERENCE TABLE -- MACRO NAMES

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 CZUABA.MAC 10-JAN-83 12:46 CROSS REFERENCE TABLE -- MACRO NAMES

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PARAMETER CODING MACY11 30(1046) 11-JAN-83 12:03 PAGE 343  
CZUABA.MAC 10-JAN-83 12:46 CROSS REFERENCE TABLE -- MACRO NAMES

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 CZUABA.MAC 10-JAN-83 12:46 CROSS REFERENCE TABLE -- MACRO NAMES

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10151#	10164#	10169#	10176#	10181#	10204#	10209#	10216#	10221#	10227#	10232#	10239#	10244#	10251#	10256#	
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MSMCHI	1#	1068#													
MSMCLO	1#	1068#													
MSMSK1	1#	1068#													
MSPOP	1#	1068#	1226#	1245#	2304#	2318#	2332#	2352#	2390#	2428#	2442#	2464#	2498#	4380#	4397#
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 CZUABA.MAC 10-JAN-83 12:46 CROSS REFERENCE TABLE -- MACRO NAMES

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	7467	7793#	7794	8126#	8127	8421#	8422	8691#	8692	9193#	9194	10017#	10018	10909#	10910
	11908#	11909	12506#	12507	13001#	13002	13409#	13410	13882#	13883	14216#	14256#			
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	4734	5532#	5533	5534	5535	14055#	14056	14057	14062#	14063	14064	14069#	14070	14071	14076#
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	8422#	8692#	9194#	10018#	10910#	11909#	12507#	13002#	13410#	13883#	14216#	14256#			
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	4459	4475#	4476	4489#	4496#	4497	4510#	4517#	4518	4532#	4539#	4540	4605#	4609	4617
	4622#	4623	4625#	4627#	4628	4630#	4631	4648#	4652	4660	4665#	4666	4668#	4670#	4671
	4673#	4674	4690#	4694	4702	4707#	4708	4710#	4712#	4713	4715#	4716	4731#	4735	4743
	4748#	4749	4751#	4753#	4754	4756#	4757	4784#	4793	4800#	4801	4806#	4807	4834#	4843
	4850#	4851	4856#	4857	4882	4887#	4894	4899#	4919	4924#	4934	4939#	4946	4951#	4955#
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	6258#	6266	6271#	6278	6283#	6294	6299#	6306	6311#	6339	6344#	6351	6356#	6392	6397#
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	7362#	7369	7374#	7381	7386#	7395	7400#	7407	7412#	7419	7424#	7431	7436#	7440#	7441
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8190#	8197	8202#	8215	8220#	8227	8232#	8242	8247#	8254	8259#	8276	8281#	8288	8293#
8299	8304#	8311	8316#	8323	8328#	8337	8342#	8349	8354#	8363	8368#	8375	8380#	8387
8392#	8396#	8397	8428	8433#	8440	8445#	8453	8458#	8465	8470#	8480	8485#	8492	8497#
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8833#	8854	8859#	8866	8871#	8877	8882#	8889	8894#	8901	8906#	8915	8920#	8927	8932#
8941	8946#	8953	8958#	8967	8972#	8978	8983#	8990	8995#	9018	9023#	9031	9036#	9045
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9890#	9896	9901#	9908	9913#	9920	9925#	9934	9939#	9945	9950#	9957	9962#	9969	9974#
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PARAMETER CODING MACY11 30(1046) 11-JAN-83 12:03 PAGE 348  
 CZUABA.MAC 10-JAN-83 12:46 CROSS REFERENCE TABLE -- MACRO NAMES

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PARAMETER CODING  
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8277	8278	8279	8288#	8289	8290	8291	8299#	8300	8301	8302	8311#	8312	8313	8314
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8366	8375#	8376	8377	8378	8387#	8388	8389	8390	8428#	8429	8430	8431	8440#	8441
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9237#	9238	9239	9240	9253#	9254	9255	9256	9265#	9266	9267	9268	9283#	9284	9285
9286	9295#	9296	9297	9298	9316#	9317	9318	9319	9328#	9329	9330	9331	9350#	9351
9352	9353	9362#	9363	9364	9365	9373#	9374	9375	9376	9385#	9386	9387	9388	9397#
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9446#	9447	9448	9449	9460#	9461	9462	9463	9473#	9474	9475	9476	9487#	9488	9489
9490	9499#	9500	9501	9502	9511#	9512	9513	9514	9535#	9536	9537	9538	9547#	9548
9549	9550	9558#	9559	9560	9561	9570#	9571	9572	9573	9582#	9583	9584	9585	9596#
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9654#	9655	9656	9657	9666#	9667	9668	9669	9688#	9689	9690	9691	9700#	9701	9702
9703	9711#	9712	9713	9714	9723#	9724	9725	9726	9735#	9736	9737	9738	9749#	9750
9751	9752	9760#	9761	9762	9763	9772#	9773	9774	9775	9784#	9785	9786	9787	9798#
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10037	10038	10039	10049#	10050	10051	10052	10061#	10062	10063	10064	10077#	10078	10079	10080
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10206	10207	10216#	10217	10218	10219	10227#	10228	10229	10230	10239#	10240	10241	10242	10251#
10252	10253	10254	10265#	10266	10267	10268	10276#	10277	10278	10279	10288#	10289	10290	10291
10300#	10301	10302	10303	10314#	10315	10316	10317	10327#	10328	10329	10330	10341#	10342	10343
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10519#	10520	10521	10522	10531#	10532	10533	10534	10559#	10560	10561	10562	10571#	10572	10573
10574	10582#	10583	10584	10585	10594#	10595	10596	10597	10606#	10607	10608	10609	10620#	10621
10622	10623	10631#	10632	10633	10634	10643#	10644	10645	10646	10655#	10656	10657	10658	10669#
10670	10671	10672	10682#	10683	10684	10685	10696#	10697	10698	10699	10708#	10709	10710	10711
10720#	10721	10722	10723	10753#	10754	10755	10756	10765#	10766	10767	10768	10776#	10777	10778
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10980#	10981	10982	10983	10998#	10999	11000	11001	11010#	11011	11012	11013	11031#	11032	11033
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PARAMETER CODING MACY11 30(1046) 11-JAN-83 12:03 PAGE 352  
 CZUABA.MAC 10-JAN-83 12:46 CROSS REFERENCE TABLE -- MACRO NAMES

11193#	11194	11195	11196	11207#	11208	11209	11210	11220#	11221	11222	11223	11234#	11235	11236
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11296	11297	11305#	11306	11307	11308	11317#	11318	11319	11320	11329#	11330	11331	11332	11343#
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11392#	11393	11394	11395	11405#	11406	11407	11408	11419#	11420	11421	11422	11431#	11432	11433
11434	11443#	11444	11445	11446	11458#	11459	11460	11461	11470#	11471	11472	11473	11498#	11499
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11708	11709	11717#	11718	11719	11720	11729#	11730	11731	11732	11741#	11742	11743	11744	11755#
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11804#	11805	11806	11807	11817#	11818	11819	11820	11831#	11832	11833	11834	11843#	11844	11845
11846	11855#	11856	11857	11858	11915#	11916	11917	11918	11927#	11928	11929	11930	11940#	11941
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12057#	12058	12059	12060	12069#	12070	12071	12072	12097#	12098	12099	12100	12109#	12110	12111
12112	12120#	12121	12122	12123	12132#	12133	12134	12135	12144#	12145	12146	12147	12158#	12159
12160	12161	12169#	12170	12171	12172	12181#	12182	12183	12184	12193#	12194	12195	12196	12207#
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12258#	12259	12260	12261	12293#	12294	12295	12296	12305#	12306	12307	12308	12316#	12317	12318
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12553	12565#	12566	12567	12568	12577#	12578	12579	12580	12595#	12596	12597	12598	12607#	12608
12609	12610	12622#	12623	12624	12625	12634#	12635	12636	12637	12656#	12657	12658	12659	12668#
12669	12670	12671	12679#	12680	12681	12682	12691#	12692	12693	12694	12705#	12706	12707	12708
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13170#	13171	13172	13173	13181#	13182	13183	13184	13193#	13194	13195	13196	13205#	13206	13207
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13256	13257	13278#	13279	13280	13281	13290#	13291	13292	13293	13301#	13302	13303	13304	13313#
13314	13315	13316	13325#	13326	13327	13328	13339#	13340	13341	13342	13350#	13351	13352	13353
13362#	13363	13364	13365	13374#	13375	13376	13377	13416#	13417	13418	13419	13428#	13429	13430
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13482	13483	13498#	13499	13500	13501	13510#	13511	13512	13513	13525#	13526	13527	13528	13537#
13538	13539	13540	13565#	13566	13567	13568	13577#	13578	13579	13580	13590#	13591	13592	13593
13602#	13603	13604	13605	13613#	13614	13615	13616	13625#	13626	13627	13628	13637#	13638	13639
13640	13651#	13652	13653	13654	13663#	13664	13665	13666	13677#	13678	13679	13680	13689#	13690
13691	13692	13703#	13704	13705	13706	13714#	13715	13716	13717	13726#	13727	13728	13729	13738#
13739	13740	13741	13752#	13753	13754	13755	13764#	13765	13766	13767	13778#	13779	13780	13781
13790#	13791	13792	13793	13804#	13805	13806	13807	13817#	13818	13819	13820	13831#	13832	13833
13834	13843#	13844	13845	13846	13855#	13856	13857	13858	13886#	13895#	13896	13897	13898	13907#
13908	13909	13910	13920#	13921	13922	13923	13932#	13933	13934	13935	13947#	13948	13949	13950
13959#	13960	13961	13962	13979#	13980	13981	13982	13991#	13992	13993	13994	14015#	14016	14017
14018	14027#	14028	14029	14030	14220#	14225#	14260#	14286	14287					

MSXFER 1# 1068#  
 OPEN 1# 1068#  
 POINTE 1# 1068# 1080

PARAMETER CODING MACY11 30(1046) 11-JAN-83 12:03 PAGE 353  
 CZUABA.MAC 10-JAN-83 12:46 CROSS REFERENCE TABLE -- MACRO NAMES

PRINTB	1#	1068#	2296	2309	2323	2337	2344	2357	2365	2373	2381	2395	2403	2411	2419
	2433	2447	2455	2469	2476	2483	2490	14054	14061	14068	14075	14082			
PRINTF	1#	1068#													
PRINTS	1#	1068#													
PRINTX	1#	1068#													
READBU	1#	1068#													
REDEF	1#	1068#	4410	4415	4420	4425									
RFLAGS	1#	1068#													
SETPRI	1#	1068#	5538	5566	5577										
SETVEC	1#	1068#	4604	4647	4689	4730	5531								
SLASH	1#	1068#													
STARS	1#	1068#													
SVC	1#	1068#													
XFER	1#	1068#	4373#	4489#	4510#	4532#	13886#								
XFERF	1#	1068#													
XFERT	1#	1068#													

. ABS. 000000 000  
 071210 001

ERRORS DETECTED: 0  
 DEFAULT GLOBALS GENERATED: 0

CZUABA.OBJ,CZUABA.LST/CRF/SOL/NL:TOC=SVC34R.P11,CZUABA.MAC  
 RUN-TIME: 82 96 11 SECONDS  
 RUN-TIME RATIO: 305/189=1.6  
 CORE USED: 34K (68 PAGES)



LNKX11 V023 12-JAN-83 2:00

#CZUABA.BIN/B:2000,CZUABA.MAP=CZUABA/E

LOAD MAP

TRANSFER ADDRESS: 000001

LOW LIMIT: 002000

HIGH LIMIT: 073210

\*\*\*\*\*

MODULE SECTION	PARAME ENTRY	ADDRESS	SIZE
<. ABS.>		000000	000000
	ADR	000020	
	BIT0	000001	
	BIT00	000001	
	BIT01	000002	
	BIT02	000004	
	BIT03	000010	
	BIT04	000020	
	BIT05	000040	
	BIT06	000100	
	BIT07	000200	
	BIT08	000400	
	BIT09	001000	
	BIT1	000002	
	BIT10	002000	
	BIT11	004000	
	BIT12	010000	
	BIT13	020000	
	BIT14	040000	
	BIT15	100000	
	BIT2	000004	
	BIT3	000010	
	BIT4	000020	
	BIT5	000040	
	BIT6	000100	
	BIT7	000200	
	BIT8	000400	
	BIT9	001000	
	BOE	000400	
	BUFL	100000	
	CMODE1	175015	
	DNI	004000	
	DTYPE	002540	
	EF.CON	000036	
	EF.NEW	000035	
	EF.PWR	000034	
	EF.RES	000037	
	EF.STA	000040	
	ENP	000400	
	ERRS	040000	
	EVL	000004	
	FATI	000400	
	GETCMD	000002	
	GETPCB	000001	
	GOODST	000000	

HOE	100000
IBE	010000
ICAB	040000
IDU	000040
IER	020000
INITH	000000
INTE	000100
INTR	000200
ISR	000100
IXE	004000
LOE	040000
LOT	000010
NIHLT	000006
NIUNI	000007
ONES	177777
OWN	100000
PCEI	040000
PCTO	000200
PDMD	000010
PNOP	000006
PNT	001000
POLYH	120001
PRI	002000
PRILD	000001
PRI00	000000
PRI01	000040
PRI02	000100
PRI03	000140
PRI04	000200
PRI05	000240
PRI06	000300
PRI07	000340
RCBI	002000
READY	000002
RESET	000000
RMTC	000010
RSET	000040
RUN	000003
RXI	020000
SERI	100000
SIZ4K	020000
SIZ8K	040000
SLFT	000003
SMASK	177770
START	000004
STMASK	140377
STOP	000017
STP	001000
TDRMSK	007777
TIMASK	177400
TXI	010000
UAM	000200
UNIHLT	000005
XPWR	100000
ZERO	000000
< >	002000 071210
ADR21	014306
ADR21C	014314
BTMSG	072274

BTMSG0	072553
BTMSG1	072611
BTMSG2	072644
BTMSG3	072710
BTTBL	072414
CHKDNI	024546
CHKOWN	024634
CHKRCE	024666
CHKRDR	024754
CHKRXI	025054
CHKSER	025374
CHKSTR	025142
CHKTDR	025220
CHKTXI	025306
CLRCNT	013212
CLRDNI	025434
CLRRCE	025502
CLRRXI	025550
CLRSER	025664
CLRSTA	013262
CLRTXI	025616
CMPCRC	026012
CMPDAT	025732
CMPMEM	026062
CMPRNT	026142
CRCBLK	026222
CRCH	014202
CRC14A	014712
CRC15H	014716
CRC15L	014720
CRC16H	014722
CRC16L	014724
CRC20A	014726
CRC21A	014732
CRC21B	014736
CRC22A	014742
CRC22B	015012
CRC23B	015062
CRC25B	015066
CRC27A	015072
DEFADR	072343
DEFHDR	072300
DEST	002244
DFPTBL	002216
DMPMEM	013272
DNIFLG	015212
DPA	072260
ECODE	015206
ECRC	015176
ECRCB	015200
EDAT	015172
EPCSR0	015126
EPCSR1	015130
ERDRB0	015132
ERDRB2	015134
ERDRB4	015136
ERDRB6	015140
ERRBLK	015234
ERRMSG	015232

ERRNBR	015230
ERRTYP	015226
ERR001	017762
ERR002	020012
ERR003	020050
ERR004	020106
ERR005	020162
ERR006	020206
ERR007	020254
ERR008	020343
ERR009	020422
ERR010	020506
ERR011	020571
ERR012	020637
ERR013	020720
ERR014	020751
ERR015	021017
ERR016	021050
ERR017	021116
ERR018	021216
ERR019	021316
ERR020	021376
ERR021	021457
ERR022	021540
ERR023	021607
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ERR026	021730
ERR027	021777
ERR028	022104
ERR029	022212
ERR030	022317
ERR031	022424
ERR032	022532
ERR033	022637
ERR034	022726
ERR035	023016
ERR036	023105
ERR037	023173
ERR038	023262
ERR039	023350
ERR040	023451
ERR041	023554
ERR042	023607
ERR043	023650
ERR044	023712
ERR045	024003
ERR046	024070
ERR047	024162
ERR048	024256
ERR049	024310
ERR050	024357
ERR051	024447
ETDRB0	015152
ETDRB2	015154
ETDRB4	015156
ETDRB6	015160
FRM001	015330
FRM002	015365

FRM003	015446
FRM004	015507
FRM005	015547
FRM006	015634
FRM007	015721
FRM008	016006
FRM009	016073
FRM010	016160
FRM011	016245
FRM012	016332
FRM013	016417
FRM014	016476
FRM015	016555
FRM016	016562
FRM017	016633
FRM018	016661
FRM019	016715
FRM020	016751
FRM021	017005
FRSTIM	015214
HEXDAT	072276
HEXDPA	026320
HEXH	026402
HEXL	026440
HEXTBL	072367
HEXVAL	072277
INTVEC	002236
ISRDN1	027652
ISRNXM	027642
LDBUF	026466
LDBUFC	026530
LDDEST	026602
LDMEM	013302
LDPCBB	026630
LDPCSR	026660
LDRDRB	026676
LDTDRB	026734
LDTDRX	026772
LDUDBB	027030
LDXCRC	027064
LDXRDR	027110
LDXTDR	027140
LPMSG	072272
LPMSG0	072456
LPMSG1	072515
LPTBL	072410
LSMA	013102
LSACP	002110
LSAPT	002036
LSAU	027634
LSAUT	002070
LSAUTO	027616
LSCCP	002106
LSCLEA	027620
LSCO	002032
LSDEPO	002011
LSDESC	015244
LSDESP	002076
LSDEVP	002060

3

L\$DISP	002124
L\$DLY	002116
L\$DTP	002040
L\$DTYP	002034
L\$DU	027626
L\$DUT	002072
L\$DVTY	015236
L\$EF	002052
L\$ENV1	002044
L\$ERRT	015226
L\$ETP	002102
L\$EXP1	002046
L\$EXP4	002064
L\$EXP5	002066
L\$HARD	072774
L\$HIME	002120
L\$HPCP	002016
L\$HPTP	002022
L\$HW	002216
L\$ICP	002104
L\$INIT	027416
L\$LADP	002026
L\$LAST	073210
L\$LOAD	002100
L\$LUN	002074
L\$MREV	002050
L\$NAME	002000
L\$PRIO	002042
L\$PROT	027410
L\$PRT	002112
L\$REPP	002062
L\$REV	002010
L\$RPT	027402
L\$SOFT	073106
L\$SPC	002056
L\$SPCP	002020
L\$SPTP	002024
L\$STA	002030
L\$SW	002224
L\$TEST	002114
L\$TIML	002014
L\$UNIT	002012
MEM10A	014214
MEM11A	014244
MEM13A	014246
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MODE17	015100
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MODE21	015104
MODE24	015106
MODE25	015110
MODE26	015112
MSG001	017042
MSG002	017066
MSG003	017114
MSG004	017146
MSG005	017220
MSG006	017362
MSG007	017524

MSG008	017556
MSG009	017640
MULTL	014322
MULTLC	014416
NEXMEM	015210
NOPF	013072
NORXI	027170
PATRN1	015216
PCBB	002252
PCSR0	002226
PCSR1	002230
PCSR2	002232
PCSR3	002234
RBUF	007072
RBUF2	007472
RBUF3	010072
RBUF4	010472
RBUF5	011072
RBUF6	011472
RBUF7	012072
RBUF8	012472
RDCNT	013202
RDDEFA	013112
RDMODE	013222
RDMULA	013142
RDPHYA	013122
RDRB	002632
RDRB1A	013342
RDRB1B	013402
RDRB2A	013442
RDRB3A	013502
RDRNGS	013162
RDR14A	014622
RDR15A	014632
RDR17A	014642
RDR17B	014652
RDR20A	014662
RDR20B	014672
RDR20C	014702
RDSTA	013252
RFRMT	013312
RFRMTX	013326
RREV	072266
SETBUF	027230
SFPTBL	002224
SMSG00	031060
SMSG01	031110
SMSG02	031137
SMSG03	031152
SMSG04	031211
SMSG05	031240
SMSG06	031303
SMSG07	031336
SMSG10	031354
SMSG11	031406
SMSG12	031421
SMSG13	031436
SMSG14	031452
SMSG15	031466

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SMSG16	031502
SMSG17	031516
SMSG20	031532
SMSG21	031555
SMSG22	031571
SMSG23	031605
SMSG24	031621
SMSG25	031635
SMSG26	031651
SMSG27	031665
SMSG30	031701
SMSG31	031756
SMSG32	032030
SMSG33	032103
SMSG34	032147
SMSG35	032220
SMSG36	032263
SMSG37	032334
SMSG40	032377
SMSG41	032467
SMSG42	032554
SMSG43	032642
SMSG44	032721
SMSG45	033005
SMSG46	033063
SMSG47	033077
SMSG50	033113
SMSG51	033201
SMSG52	033264
SMSG53	033350
SMSG54	033425
SMSG55	033507
SMSG56	033563
SMSG57	033577
SMSG60	033613
SMSG61	033626
SMSG62	033651
SMSG63	033665
SMSG64	033714
SMSG65	033730
SMSG66	033751
SMSG67	033765
SMSG70	034001
SMSG71	034022
SMSG72	034055
SMSG73	034101
SMSG74	034115
SMSG75	034131
SMSG76	034145
SMSG77	034161
STMSG	030656
STTBL	030660
SWADDR	015124
SWHDR	072424
SWPACK	072270
TBUF	003072
TBUF2	003472
TBUF3	004072
TBUF4	004472



TBUF 5	005072
TBUF 6	005472
TBUF 7	006072
TBUF 8	006472
TDRB	002572
TDRBXX	014002
TDRB1A	013542
TDRB1B	013602
TDRB1C	013642
TDRB2A	013702
TDRB3A	013742
TDRX	002672
TDR14A	014512
TDR15A	014522
TDR18A	014532
TDR18B	014542
TDR20A	014552
TDR20B	014562
TDR20C	014572
TDR21X	014602
TDR25A	014612
TINIT	027334
T1	027700
T10	034766
T11	035316
T12	036272
T13	037036
T14	040244
T15	042142
T16	043254
T17	044366
T18	045474
T19	046472
T2	027776
T20	047364
T21	051160
T22	054042
T23	057116
T24	062516
T25	064554
T26	066274
T27	067606
T28	071336
T3	030076
T4	030176
T5	030276
T6	030352
T7	030426
T8	034206
T9	034502
UDBB	002262
UDB10A	014204
UDB11A	014234
UDB28A	015114
UNAPRI	002240
UNIT	002242
WTMODE	013232
WTMOD1	013242
WTMULA	013152

WTPHYA	013132
WTRNGS	013172
XCRC	015202
XCRCB	015204
XDAT	015174
XRDRB0	015142
XRDRB2	015144
XRDRB4	015146
XRDRB6	015150
XTDRB0	015162
XTDRB2	015164
XTDRB4	015166
XTDRB6	015170
\$PATCH	073164

RUN-TIME: 3 SECONDS  
5K CORE USED