





12

a .h w  
A ;:  
1

SEQ 000

ZQNA1

CZQNADO DEQNA FUNCTIONAL TEST

14-Mar-1985 13:09:10  
14-Mar-1985 13:07:35

VAX-11 Bliss-16 V4.1-582  
DISK#USER2:[MARSHALL.DEQNA]ZQNA1.BLI:4 Page 1 (1)

```

: 0001 0  MODULE ZQNA1 (#TITLE 'CZQNADO DEQNA FUNCTIONAL TEST'
: 0002 0          IDENT = 'V01.0',
: 0003 0          ADDRESSING_MODE(Absolute),
: 0004 0          LANGUAGE(BLISS16)) =
: 0005 0  #SBTTL 'GLOBAL DEFINITION MODULE'
: 0006 0
: 0007 1  BEGIN
: 0008 1
: C 0009 1  #(
: C 0010 1          IDENTIFICATION
: C 0011 1          -----
: C 0012 1
: C 0013 1          PRODUCT CODE:   AC-T614D-MC
: C 0014 1
: C 0015 1          PRODUCT NAME:   CZQNADO DEQNA FUNCTIONAL TEST
: C 0016 1
: C 0017 1          PRODUCT DATE:   MARCH 14, 1985
: C 0018 1
: C 0019 1          MAINTAINER:    MSD DIAGNOSTIC ENGINEERING
: C 0020 1
: C 0021 1          AUTHOR:        S. MAZURCZYK
: C 0022 1
: C 0023 1
: C 0024 1          COPYRIGHT (C) 1984,1985
: C 0025 1
: C 0026 1          DIGITAL EQUIPMENT CORPORATION, MAYNARD, MASSACHUSETTS 01754
: C 0027 1
: C 0028 1          THIS SOFTWARE IS FURNISHED UNDER A LICENSE FOR USE ONLY ON A SINGLE
: C 0029 1          COMPUTER SYSTEM AND MAY BE COPIED ONLY WITH THE INCLUSION OF THE
: C 0030 1          ABOVE COPYRIGHT NOTICE. THIS SOFTWARE, OR ANY OTHER COPIES THEREOF,
: C 0031 1          MAY NOT BE PROVIDED OR OTHERWISE MADE AVAILABLE TO ANY OTHER PERSON
: C 0032 1          EXCEPT FOR USE ON SUCH SYSTEM AND TO ONE WHO AGREES TO THESE LICENSE
: C 0033 1          TERMS. TITLE TO AND OWNERSHIP OF THE SOFTWARE SHALL AT ALL TIMES
: C 0034 1          REMAIN IN DEC.
: C 0035 1
: C 0036 1          THE INFORMATION IN THIS SOFTWARE IS SUBJECT TO CHANGE WITHOUT NOTICE
: C 0037 1          AND SHOULD NOT BE CONSTRUED AS A COMMITMENT BY DIGITAL EQUIPMENT
: C 0038 1          CORPORATION.
: C 0039 1
: C 0040 1          DEC ASSUMES NO RESPONSIBILITY FOR THE USE OR RELIABILITY OF ITS
: C 0041 1          SOFTWARE ON EQUIPMENT WHICH IS NOT SUPPLIED BY DEC.
: C 0042 1
: C 0043 1          THE FOLLOWING ARE TRADEMARKS OF DIGITAL EQUIPMENT CORPORATION:
: C 0044 1
: C 0045 1          DIGITAL      PDP      UNIBUS      MASSBUS
: C 0046 1          DEC          DECUS    DECTAPE
: C 0047 1
: C 0048 1
: C 0049 1

```

ZQNA1  
V01.0

CZQNADO DEQNA FUNCTIONAL TEST  
GLOBAL DEFINITION MODULE

14-Mar-1985 13:09:10  
14-Mar-1985 13:07:35

SEQ 0002  
Page 2  
VAX-11 Bliss-16 V4.1-582  
DISK\$USER2:[MARSHALL.DEQNA]ZQNA1.BLI;4 (2)

: C 0050 1  
: C 0051 1  
: C 0052 1  
: C 0053 1  
: C 0054 1  
: C 0055 1  
: C 0056 1  
: C 0057 1  
: C 0058 1  
: C 0059 1  
: C 0060 1  
: C 0061 1  
: C 0062 1  
: C 0063 1  
: C 0064 1  
: C 0065 1  
: C 0066 1  
: C 0067 1  
: C 0068 1  
: C 0069 1  
: C 0070 1  
: C 0071 1  
: C 0072 1  
: C 0073 1  
: C 0074 1  
: C 0075 1  
: C 0076 1  
: C 0077 1  
: C 0078 1  
: C 0079 1

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\*\*\*\*\*

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ZQNA1  
V01.0CZQNADO DEQNA FUNCTIONAL TEST  
GLOBAL DEFINITION MODULE14-Mar-1985 13:09:10  
14-Mar-1985 13:07:35SEQ 0003  
Page 3  
VAX-11 Bliss 16 V4.1-582  
DISK\$USER2:(MARSHALL.DEQNA)ZQNA1.BLI:4 (3)

```

: C 0080 1
: C 0081 1
: C 0082 1
: C 0083 1
: C 0084 1
: C 0085 1
: C 0086 1
: C 0087 1
: C 0088 1
: C 0089 1
: C 0090 1
: C 0091 1
: C 0092 1
: C 0093 1
: C 0094 1
: C 0095 1
: C 0096 1
: C 0097 1
: C 0098 1
: C 0099 1
: C 0100 1
: C 0101 1
: C 0102 1
: C 0103 1
: C 0104 1
: C 0105 1
: C 0106 1
: C 0107 1
: C 0108 1
: C 0109 1
: C 0110 1
: C 0111 1
: C 0112 1
: C 0113 1
: C 0114 1
: C 0115 1
: C 0116 1
: C 0117 1
: C 0118 1
: C 0119 1
: C 0120 1
: C 0121 1
: C 0122 1
: C 0123 1
: C 0124 1
: C 0125 1
: C 0126 1
: C 0127 1
: C 0128 1

```

## 1.0 GENERAL INFORMATION

## 1.1 PROGRAM ABSTRACT

The DIGITAL ETHERNET Q-Bus Network Adapter (DEQNA) Field Functional Diagnostic Program (ZQNA) performs extensive functional testing of the DEQNA/M7504 module for Q18 or Q22-Bus based PDP-11 systems. ZQNA program attempts to isolate faults to the following Field Replacable Units (FRU's): DEQNA, bulkhead assembly, transceiver cable, circuit breaker ( fuse in bulkhead assembly ) and transceiver. This software also attempts to localize faults to the functional areas of the DEQNA module.

A test operator controls testing of the module from a console ( hard copy or CRT ).

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. 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 ZQNA software operates on a typical 'newer PDP-11 processor' system that has one or two DEQNA modules on the Q18 or Q22 system bus. The internal and internal/extended loopback mode tests do not require the transceiver or the loopback connector to be unplugged. The external loopback mode may be used with a terminated transceiver that has no network cable attached.

Testing DEQNA module and its interface to the Ethernet requires following hardware:

- Typical system ( PDP-11/23 Plus, ORION ) with Q-Bus.
- DEQNA module.
- Minimum of 28K words of memory ( supporting block or non-block mode ).
- Console terminal.
- Loopback connector ( male loopback connector, Part # 12 221 96-01 ).
- Bulkhead assembly,
- Transceiver cable,
- and transceiver ( H4000 ).

ZQNA1  
V01.0CZQNA0 DEQNA FUNCTIONAL TEST  
GLOBAL DEFINITION MODULE14-Mar-1985 13:09:10  
14-Mar 1985 13:07:35VAX-11 Bliss-16 V4.1-582  
DISK:JUSER2:[MARSHALL.DEQNA]ZQNA1.BLI;4 (4)SEQ 0004  
Page 4: C 0129 1  
: C 0130 1  
: C 0131 1  
: C 0132 1  
: C 0133 1  
: C 0134 1  
: C 0135 1  
: C 0136 1  
: C 0137 1  
: C 0138 1  
: C 0139 1  
: C 0140 1  
: C 0141 1  
: C 0142 1  
: C 0143 1  
: C 0144 1  
: C 0145 1  
: C 0146 1  
: C 0147 1  
: C 0148 1  
: C 0149 1  
: C 0150 1  
: C 0151 1  
: C 0152 1  
: C 0153 1  
: C 0154 1  
: C 0155 1  
: C 0156 1  
: C 0157 1  
: C 0158 1  
: C 0159 1  
: C 0160 1  
: C 0161 1  
: C 0162 1  
: C 0163 1  
: C 0164 1  
: C 0165 1  
: C 0166 1  
: C 0167 1  
: C 0168 1  
: C 0169 1  
: C 0170 1  
: C 0171 1  
: C 0172 1  
: C 0173 1  
: C 0174 1  
: C 0175 1

## 1.3 RELATED DOCUMENTS AND STANDARDS

-----  
XXDP+ Supervisor/User's Manual - ( CHQUS ).

## 1.4 ASSUMPTIONS

-----  
It is assumed that the system has been tested without DEQNA and found working before this diagnostic is run, or that DEQNA DEC/X11 Exerciser has dropped DEQNA option module when running system test.

## 2.0 OPERATING INSTRUCTIONS

-----  
This section contains a brief description of the runtime services. for detailed information, refer to the XXDP+ User's Manual (CHQUS).

## 2.1 COMMANDS

-----  
There are eleven legal commands for the diagnostic runtime services (supervisor). This section lists the commands and gives a very brief description of them. The XXDP+ User's Manual has more details.

COMMAND	EFFECT
-----	-----
START	Start the diagnostic from an initial state
RESTART	Start the diagnostic without initializing
CONTINUE	Continue at test that was interrupted (after tC)
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".

ZQNA1  
V01.0CZQNADO DEQNA FUNCTIONAL TEST  
GLOBAL DEFINITION MODULE14-Mar-1985 13:09:10  
14-Mar-1985 13:07:35VAX-11 Bliss-16 V4.1-582  
DISK#USER2:[MARSHALL.DEQNA]ZQNA1.BLI;4 (5)SEQ 0005  
Page 5: C 0176 1  
: C 0177 1  
: C 0178 1  
: C 0179 1  
: C 0180 1  
: C 0181 1  
: C 0182 1  
: C 0183 1  
: C 0184 1  
: C 0185 1  
: C 0186 1  
: C 0187 1  
: C 0188 1  
: C 0189 1  
: C 0190 1  
: C 0191 1  
: C 0192 1  
: C 0193 1  
: C 0194 1  
: C 0195 1  
: C 0196 1  
: C 0197 1  
: C 0198 1  
: C 0199 1  
: C 0200 1  
: C 0201 1  
: C 0202 1  
: C 0203 1  
: C 0204 1  
: C 0205 1  
: C 0206 1  
: C 0207 1  
: C 0208 1  
: C 0209 1  
: C 0210 1  
: C 0211 1  
: C 0212 1  
: C 0213 1  
: C 0214 1  
: C 0215 12.2 SWITCHES  
-----

There are several switches which are used to modify supervisor operation. These switches are appended to the legal commands. All of the legal switches are tabulated below with a brief description of each. In the descriptions below, a decimal number is designated by "DDDDD".

SWITCH	EFFECT
-----	-----
/TESTS:LIST	Execute only those tests specified in the list. List is a string of test numbers, for example - /TESTS:1:5:7-10. This list will cause tests 1,5,7,8,9,10 to be run. All other tests will not be run.
/PASS:DDDDD	Execute DDDDD passes (DDDDD = 1 to 64000)
/FLAGS:FLGS	Set specified flags. flags are described in section 2.3.
/EOP:DDDDD	Report end of pass message after every DDDDD passes only. (DDDDD = 1 to 64000)
/UNITS:LIST	TEST/ADD/DROP only those units specified in the list. List example - /UNITS:0:5:10-12 use units 0,5,10,11,12 (unit numbers = 0-63)

Example of switch usage:

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

The effect of this command will be:

1. Tests 1 through 5 will be executed.
2. All units will be tested 1000 times.
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".

ZQNA1  
V01.0

CZQNA0 DEQNA FUNCTIONAL TEST  
GLOBAL DEFINITION MODULE

14-Mar-1985 13:09:10  
14-Mar-1985 13:07:35

SEQ 0006  
Page 6  
VAX-11 Bliss-16 V4.1-582  
DISK\$USER2:[MARSHALL.DEQNA]ZQNA1.BLI;4 (6)

; C 0216 1  
; C 0217 1  
; C 0218 1  
; C 0219 1  
; C 0220 1  
; C 0221 1  
; C 0222 1  
; C 0223 1  
; C 0224 1  
; C 0225 1  
; C 0226 1  
; C 0227 1  
; C 0228 1  
; C 0229 1  
; C 0230 1  
; C 0231 1

Below is a table that specifies which switches can be used by each command.

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



```

: C 0232 1
: C 0233 1
: C 0234 1
: C 0235 1
: C 0236 1
: C 0237 1
: C 0238 1
: C 0239 1
: C 0240 1
: C 0241 1
: C 0242 1
: C 0243 1
: C 0244 1
: C 0245 1
: C 0246 1
: C 0247 1
: C 0248 1
: C 0249 1
: C 0250 1
: C 0251 1
: C 0252 1
: C 0253 1
: C 0254 1
: C 0255 1
: C 0256 1
: C 0257 1
: C 0258 1
: C 0259 1
: C 0260 1
: C 0261 1
: C 0262 1
: C 0263 1
: C 0264 1
: C 0265 1
: C 0266 1
: C 0267 1
: C 0268 1
: C 0269 1
: C 0270 1
: C 0271 1
: C 0272 1
: C 0273 1
: C 0274 1
: C 0275 1
: C 0276 1

```

## 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
IBR*	Inhibit all error reports except first level (first level contains error type, number, PC, test and unit)
IXR*	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 3.0

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
```

ZQNA1  
V01.0CZQNA0 DEQNA FUNCTIONAL TEST  
GLOBAL DEFINITION MODULE14-Mar-1985 13:09:10  
14-Mar 1985 13:07:35VAX-11 Bliss-16 V4.1-582  
DISK\$USER2:[MARSHALL.DEQNA]ZQNA1.BLI;4 (8); C 0277 1  
; C 0278 1  
; C 0279 1  
; C 0280 1  
; C 0281 1  
; C 0282 1  
; C 0283 1  
; C 0284 1  
; C 0285 1  
; C 0286 1  
; C 0287 1  
; C 0288 1  
; C 0289 1  
; C 0290 1  
; C 0291 1  
; C 0292 1  
; C 0293 1  
; C 0294 1  
; C 0295 1  
; C 0296 1  
; C 0297 1  
; C 0298 1  
; C 0299 1  
; C 0300 1  
; C 0301 1  
; C 0302 1  
; C 0303 1  
; C 0304 1  
; C 0305 1  
; C 0306 1  
; C 0307 1  
; C 0308 1  
; C 0309 12.4 HARDWARE QUESTIONS  
-----

When a diagnostic is started, the DRS prompts the user for hardware information by displaying

"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 DRS asks for the number of units. You will then be asked the following questions for each unit.

# OF DEVICES (D) ?

Answer with the number of units to be tested (no default). This answer will determine how many times the following questions are asked. One (1) device must be specified.

DEQNA I/O PAGE ADR (O) 174440 ?

Answer with the address of the I/O page register assigned for one of the DEQNA devices. The I/O page addresses permitted are: 174440 and 174460.

INTERRUPT VECTOR ADR (O) 700 ?

Answer with the interrupt vector address of the DEQNA module. Interrupt vector address for device at I/O page address 174440 is 700 oct. and that for I/O page address of 174460 is 704 oct.

ZQNA1  
VO1.0

CZQNADO DEQNA FUNCTIONAL TEST  
GLOBAL DEFINITION MODULE

14-Mar-1985 13:09:10  
14-Mar-1985 13:07:35

VAX-11 Bliss-16 V4.1-582  
DISK\$USER2:[MARSHALL.DEQNA]ZQNA1.BLI:4 (9)

; C 0310 1  
; C 0311 1  
; C 0312 1  
; C 0313 1  
; C 0314 1  
; C 0315 1  
; C 0316 1  
; C 0317 1  
; C 0318 1  
; C 0319 1  
; C 0320 1  
; C 0321 1  
; C 0322 1  
; C 0323 1  
; C 0324 1  
; C 0325 1  
; C 0326 1  
; C 0327 1  
; C 0328 1  
; C 0329 1  
; C 0330 1  
; C 0331 1  
; C 0332 1  
; C 0333 1  
; C 0334 1  
; C 0335 1  
; C 0336 1  
; C 0337 1  
; C 0338 1  
; C 0339 1  
; C 0340 1  
; C 0341 1  
; C 0342 1  
; C 0343 1  
; C 0344 1  
; C 0345 1  
; C 0346 1  
; C 0347 1  
; C 0348 1  
; C 0349 1  
; C 0350 1  
; C 0351 1  
; C 0352 1  
; C 0353 1  
; C 0354 1  
; C 0355 1  
; C 0356 1  
; C 0357 1  
; C 0358 1  
; C 0359 1  
; C 0360 1  
; C 0361 1

2.5 SOFTWARE QUESTIONS

-----  
After you have answered the hardware questions or after a RESTART or CONTINUE command, the DRS asks for software parameters. These parameters govern some diagnostic specific operation modes. You will be prompted by

CHANGE SW (L) ?

if you wish to change any parameters, answer by typing "Y". The software questions and the default values are described in the next paragraph(s).

DO YOU WANT TO TEST SANITY TIMER (L)?

If you wish to test the Sanity Timer logic, answer by typing "Y". Whenever this question is answered with a "Y" following question will follow:

SANITY TIMER TIMEOUT VALUE (D)?

Answer with the TIMEOUT VALUE being a decimal number between 0 and 7. Use table below to select desired TIMEOUT VALUE.

TIMEOUT VALUE	TIMEOUT PERIOD IN SEC.
-----	-----
0	1/4
1	1
2	4
3	16
4	60
5	240
6	960
7	3840

EXTERNAL LOOPBACK MODE (L)?

Answer with "Y" if you want to execute include "TEST 7" in the test sequence. "TEST 7" is the only test that uses external loopback mode. "N" inhibits execution of "TEST 7".

SYSTEM HAS BLOCK-MODE MEMORY (L)?

Answer with "Y" if the system has block-mode memory and "N" if it has non block-mode memory.

IS LOOPBACK CONNECTOR IN DEQNA (L)?

Answer with "Y" if loopback connector is in the back of the DEQNA module.

ZQNA1  
V01.0CZQNA0 DEQNA FUNCTIONAL TEST  
GLOBAL DEFINITION MODULE14-Mar-1985 13:09:10  
14-Mar-1985 13:07:35SEQ 0010  
Page 10  
VAX-11 Bliss-16 V4.1-582  
DISK\$USER2:[MARSHALL.DEQNA]ZQNA1.BLI.4 (10); C 0362 1  
; C 0363 1  
; C 0364 1  
; C 0365 1  
; C 0366 1  
; C 0367 1  
; C 0368 1  
; C 0369 1  
; C 0370 1  
; C 0371 1  
; C 0372 1  
; C 0373 1  
; C 0374 1  
; C 0375 1  
; C 0376 1  
; C 0377 1  
; C 0378 1  
; C 0379 1  
; C 0380 1  
; C 0381 1  
; C 0382 1  
; C 0383 1  
; C 0384 1  
; C 0385 1  
; C 0386 1  
; C 0387 1  
; C 0388 1

## 2.6 QUICK START UP PROCEDURE (XXDP+)

To start-up this program:

- o Boot XXDP+
- o Give the date
- o Type "R Name", where Name is the name of the BIN file for this program
- o Type "START"
- o Answer the "CHANGE HW" question with "Y"
- o Answer all the hardware questions
- o Answer the "CHANGE SW" question with "Y"
- o Answer all the software questions

When you follow this procedure you will be using only the defaults for flags and software parameters. These defaults are described in the previous sections.

ZONA1  
V01.0CZONADO DEQNA FUNCTIONAL TEST  
GLOBAL DEFINITION MODULE14-Mar-1985 13:09:10  
14-Mar-1985 13:07:35SEQ 0011  
Page 11  
DISK\$USER2:[MARSHALL.DEQNA]ZONA1.BLI:4 (11); C 0389 1  
; C 0390 1  
; C 0391 1  
; C 0392 1  
; C 0393 1  
; C 0394 1  
; C 0395 1  
; C 0396 1  
; C 0397 1  
; C 0398 1  
; C 0399 1  
; C 0400 1  
; C 0401 1  
; C 0402 1  
; C 0403 1  
; C 0404 1  
; C 0405 1  
; C 0406 1  
; C 0407 1  
; C 0408 1  
; C 0409 1  
; C 0410 1  
; C 0411 1  
; C 0412 1  
; C 0413 1  
; C 0414 1  
; C 0415 1  
; C 0416 1  
; C 0417 1  
; C 0418 1  
; C 0419 1  
; C 0420 1  
; C 0421 1  
; C 0422 1  
; C 0423 1  
; C 0424 1  
; C 0425 1  
; C 0426 1  
; C 0427 1  
; C 0428 1  
; C 0429 1  
; C 0430 1  
; C 0431 1  
; C 0432 1

## 3.0 ERROR INFORMATION

-----

## 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 IBE and/or IER flag is set. The general error message is of the form:

```
NAME ER_TYPE ER_NO UNIT_NO TEST_NO PC_ADDR
```

.where;

```
NAME = Diagnostic name
ER_TYPE = Error type ( all errors are HARD )
ER_NO = Error number
UNIT_NO = 0
TEST_NO = Test and subtest where error occurred
PC_ADDR = Program Counter contents
```

Basic error messages are messages that contain some additional information about the error. These are always printed unless one or more of the DRS error flag(s) ( IBE, IXE, IER ) is set. These messages are printed before 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 IXE and/or IER flag is set. These messages are printed after the associated general error message and any associated basic error messages. A typical extended error message might have a following format:

## TRANSMIT DESCRIPTOR LIST

```
Flag Word
Low Order Addr Bits
High Order Addr Bits
Packet Length (byte)
Status Word 1
Status Word 2
```

## RECEIVE DESCRIPTOR LIST

```
Flag Word
Low Order Addr Bits
High Order Addr Bits
Packet Length (byte)
Status Word 1
Status Word 2
```

ZONA1  
J01.0CZONADO DEQNA FUNCTIONAL TEST  
GLOBAL DEFINITION MODULE14-Mar-1985 13:09:10  
14-Mar-1985 13:07:35SEQ 0012  
Page 12  
VAX-11 Bliss-16 V4.1-582  
DISK\$USER2:(MARSHALL.DEQNA)ZONA1.BLI;4 (12)

```

: C 0433 1      SPECIFIC ERROR MESSAGES
: C 0434 1      -----
: C 0435 1
: C 0436 1      The following are possible error messages.
: C 0437 1
: C 0438 1      DEQNA FATAL ERROR DETECTED
: C 0439 1      ACTUAL DATA = octal number  EXPECTED DATA = octal number
: C 0440 1      BAD CSR: ACT = octal number  EXP = octal number
: C 0441 1      BAD TRANSMIT FLAG WORD: ACT = octal number  EXP = octal number
: C 0442 1      BAD TRANSMIT STATUS WORD 1: ACT = octal number  EXP = octal number
: C 0443 1      BAD RECEIVE FLAG WORD: ACT = octal number  EXP = octal number
: C 0444 1      BAD RECEIVE STATUS WORD 1: ACT = octal number  EXP = octal number
: C 0445 1      BAD RECEIVE BUFFER LENGTH: ACT = octal number  EXP = octal number
: C 0446 1      BAD CSR = octal number
: C 0447 1      LOOPBACK PACKET UNABLE TO SET CA BIT, CSR = octal number
: C 0448 1      LOOPBACK PACKET UNABLE TO CLEAR CA BIT, CSR = octal number
: C 0449 1      CA BIT OK, BUT RI BIT IS NOT ON, CSR = octal number
: C 0450 1      CA BIT IN THE CSR WAS SET TOO EARLY, CSR = octal number
: C 0451 1      BAD CSR, EXPECTED, XL AND RL ( BITS 4,5 ) TO BE RESET TO 0
: C 0452 1      BAD CSR, EXPECTED, XL AND RL ( BITS 4,5 ) TO BE SET TO 1
: C 0453 1      BAD CSR, EXPECTED, RI ( BIT 15 ) TO BE SET TO 1
: C 0454 1      BAD CSR, EXPECTED, XI ( BIT 7 ) TO BE SET TO 1
: C 0455 1      BAD CSR, EXPECTED, NI ( BIT 2 ) TO BE SET TO 1
: C 0456 1      BAD CSR, EXPECTED, NI ( BIT 2 ) TO BE RESET TO 0
: C 0457 1
: C 0458 1      CSR ADR = octal number  ACTUAL = octal number  EXPECTED = octal number
: C 0459 1      UNABLE TO RESET DEQNA: ADR: address  CSR = octal number
: C 0460 1      WAIT ABOUT number SECOND(S)
: C 0461 1      SANITY TIMER TIMED OUT AS EXPECTED
: C 0462 1      NO SANITY TIMER INTERRUPT DETECTED
: C 0463 1      DISCONNECT TRANSCEIVER CABLE FROM BULKHEAD ASSEMBLY AND CONNECT
: C 0464 1      LOOPBACK CONNECTOR TO BULKHEAD ASSEMBLY, THEN RETEST
: C 0465 1      DISCONNECT BULKHEAD ASSEMBLY FROM DEQNA AND CONNECT
: C 0466 1      LOOPBACK CONNECTOR TO DEQNA, THEN RETEST
: C 0467 1      CHECK FOR LOOSE WIRES IN A LOOPBACK CONNECTOR OR USE DIFFERENT
: C 0468 1      LOOPBACK CONNECTOR, THEN RETEST
: C 0469 1      REPLACE DEQNA, THEN RETEST
: C 0470 1      REPLACE BULKHEAD CONNECTOR, THEN RETEST
: C 0471 1      DISCONNECT TRANSCEIVER CABLE FROM TRANSCEIVER AND CONNECT IT TO
: C 0472 1      LOOPBACK CONNECTOR AND BULKHEAD ASSEMBLY
: C 0473 1      REPLACE TRANSCEIVER CABLE, THEN RETEST
: C 0474 1      REPLACE TRANSCEIVER, THEN RETEST
: C 0475 1      REPLACE THE FUSE IF BAD, THEN RETEST
: C 0476 1      BAD RECEIVE DESCRIPTOR:
: C 0477 1      BAD TRANSMIT DESCRIPTOR:
: C 0478 1      BAD RECEIVE BUFFER:
: C 0479 1      ACTUAL = octal number  EXPECTED = octal number  INDEX = decimal number
: C 0480 1      DMA OPERATION TAKES TOO LONG
: C 0481 1      TOO MANY DEVICES
: C 0482 1      THERE WAS A POWER FAIL - WAITING
: C 0483 1      WAIT ABOUT decimal number MINUTE(S)
: C 0484 1      WAIT ABOUT decimal number HOUR
: C 0485 1      IF NO RESET, TYPE ANY CHARACTER TO EXIT FROM TEST

```

ZONA1  
/C: CEZONADO DEQNA FUNCTIONAL TEST  
GLOBAL DEFINITION MODULE14 Mar-1985 13:09:10  
14-Mar 1985 13:07:35VAX-11 Bliss-16 V4.1-582  
DISK\$USER2:(MARSHALL.DEQNA)ZONA1.BLI;4 (12)

```
: C 0486 1      TDR VALUE = 0xN'.  
: C 0487 1      BAD CSR, BITS STUCK AT 0:  
: C 0488 1      BAD CSR, BITS STUCK AT 1:  
: C 0489 1      SOFTWARE RESET UNABLE TO CLEAR CSR STATIC BITS:  
: C 0490 1      BAD STATION ADDRESS CHECKSUM: ACT = octal number EXP = octal number  
: C 0491 1      BAD STATION ADDRESS: station address  
: C 0492 1      BAD DEQNA I/O PAGE REGISTER: register address  
: C 0493 1      BAD CSR, EXPECTED RL ( BIT 5 ) TO BE SET TO 0  
: C 0494 1      BAD B/D PROM CHECKSUM: INDEX = octal number ACT = octal number EXP = octal number  
: C 0495 1      B/D PROM CHECKSUM OFFSET = octal number ACT = octal number EXP = octal number  
: C 0496 1      BAD INTERRUPT: ADR = octal number ACT LEV = octal number EXP LEV = octal number  
: C 0497 1      REGISTER FAILED TO RESPOND AT ADDRESS: register address  
: C 0498 1
```

ZQNA1  
V01.0

CZQNA0 DEQNA FUNCTIONAL TEST  
GLOBAL DEFINITION MODULE

14-Mar-1985 13:09:10  
14-Mar-1985 13:07:35

SEQ 0014  
Page 14  
VAX-11 Blues-16 V4.1-582  
DISK#USER2:(MARSHALL.DEQNA)ZQNA1.BLI;4 (13)

: C 0499 1  
: C 0500 1  
: C 0501 1  
: C 0502 1  
: C 0503 1  
: C 0504 1  
: C 0505 1  
: C 0506 1  
: C 0507 1  
: C 0508 1  
: C 0509 1  
: C 0510 1  
: C 0511 1  
: C 0512 1  
: C 0513 1  
: 0514 1  
: 0515 1

4.0 TEST SUMMARIES  
-----

Each test has its own test summary; therefore, test summaries are not included here.

5.0 MAINTENANCE HISTORY  
-----

Rev. CZQNA0 changed to CZQNA0 in March, 1985 by Howard L. Marshall:

Modified DMA Timing Test, Test #14, allow the test to operate properly in the faster 18 MHz. KDJ11-B/BF. Changes are noted by "###" in the comment field of added or changed lines.

)\*



ZQNA1  
V01.0

CZQNADO DEQNA FUNCTIONAL TEST  
GLOBAL DEFINITION MODULE

14-Mar 1985 13:09:10  
14-Mar-1985 13:07:35

SEQ 0015  
Page 15  
VAX-11 Bliss-16 V4.1-582  
DISK\$USER2:[MARSHALL.DEQNA]ZQNA1.BLI;4 (14)

```

: 0516 1
: 0517 1 LIBRARY 'QNALIB'.
: 0518 1 REQUIRE 'BLSMAC.REQ';           ! DIAGNOSTIC SUPERVISOR LIBRARY
: 2008 1
: 2009 1 !..
: 2010 1 !   DEFINE THE NUMBER OF TESTS IN THIS DIAGNOSTIC
: 2011 1 !..
: 2012 1
: 2013 1 PSECT
: 2014 1     CODE = AA$CODE$;
: 2015 1
: 2016 1 LITERAL
: 2017 1     DS$NBR_OF_TESTS = 21;
: 2018 1
: 2019 1 EQUALS;
: 2020 1
: 2021 1 POINTER (ALL);
: 2022 1
: 2023 1 !..
: 2024 1 !   THE PROGRAM HEADER IS THE INTERFACE BETWEEN THE DIAGNOSTIC PROGRAM
: 2025 1 !   AND THE SUPERVISOR.
: 2026 1 !..
: 2027 1
: 2028 1 HEADER (#ASCII'CZQNA ',#ASCII'D',#ASCII'O', 120, 0, PRI00);
: 2029 1
: 2030 1
: 2031 1 !..
: 2032 1 !   NO POINTERS ARE OPTIONAL USING BLISS. MAKE SURE THE FOLLOWING
: 2033 1 !   SECTIONS OF CODE ARE IN PLACE (IN THE CORRECT SKELS),EVEN IF
: 2034 1 !   THE SECTIONS ARE BLANK.
: 2035 1 !
: 2036 1 !   ARGUMENT      FUNCTION
: 2037 1 !   -----      -
: 2038 1 !   RPT           REPORT CODE
: 2039 1 !   SW           SOFTWARE TABLE
: 2040 1 !   SFT         SOFTWARE TABLE QUESTIONS
: 2041 1 !   AU          ADD CODE
: 2042 1 !   DU          DROP CODE
: 2043 1 !   TBL         ERROR TABLE
: 2044 1 !   SETUP       ASSEMBLED P-TABLES
: 2045 1 !
: 2046 1 !   CHANGE THE "HEADER" TO CONTAIN THE PROPER ARGUMENTS.
: 2047 1 !   ARGUMENTS ARE: NAME,REV,PATCH,LONGEST TEST TIME,TYPE
: 2048 1 !   WHERE "TYPE" = 0 FOR SEQUENTIAL DIAGNOSTIC AND =1
: 2049 1 !   FOR EXERCISER. THERE IS ALSO AN OPTIONAL SIXTH ARGUMENT
: 2050 1 !   WHICH SPECIFIES THE PROCESSOR PRIORITY TO BE SET WHEN
: 2051 1 !   STARTING THE DIAGNOSTIC (DEFAULT IS 0).
: 2052 1 !..
: 2053 1
: 2054 1

```

ZQNA1  
V01.0CZQNADO DEQNA FUNCTIONAL TEST  
DISPATCH TABLE14-Mar-1985 13:09:10  
14-Mar-1985 13:07:35VAX-11 Bliss-16 V4.1-582  
DISK#USER2:(MARSHALL.DEQNA)ZONA1.BLI;4 (15)

SEQ 0016

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```

: 2055 1 *SDTTL 'DISPATCH TABLE'
: 2056 1
: 2057 1 DISPATCH (DS#NBR_OF_TESTS);
: 2058 1
: 2059 1 !..
: 2060 1 ! THE DISPATCH TABLE CONTAINS THE STARTING ADDRESS OF EACH TEST.
: 2061 1 ! IT IS USED BY THE SUPERVISOR TO DISPATCH TO EACH TEST.
: 2062 1 !
: 2063 1 ! CHANGE THE LITERAL DECLARATION OF DS#NBR_OF_TESTS TO BE
: 2064 1 ! THE NUMBER OF HARDWARE TESTS IN YOUR PROGRAM.
: 2065 1 !
: 2066 1 !--
: 2067 1
: 2068 1 ERRTBL;
: 2069 1
: 2070 1 !..
: 2071 1 ! THE ERRTBL MACRO IS REQUIRED WHETHER OR NOT YOU REPORT ERRORS USING
: 2072 1 ! THE "ERROR" MACRO. THE ERRTBL MACRO EXPANDS INTO FOUR WORDS THAT
: 2073 1 ! ARE USED BY THE RUNTIME SERVICES DURING AN ERROR CALL: ERROR TYPE,
: 2074 1 ! ERROR NUMBER, ADDRESS OF ERROR MESSAGE AND ADDRESS OF MESSAGE
: 2075 1 ! BLOCK. THERE MUST BE ONLY ONE ERRTBL IN ANY PROGRAM. THIS SECTION
: 2076 1 ! IS NOT OPTIONAL.
: 2077 1 !--
: 2078 1

```

ZQNA1  
V01.0CZQNA0 DEQNA FUNCTIONAL TEST  
GLOBAL DATA SECTION14 Mar-1985 13:09:10  
14 Mar-1985 13:07:35VAX-11 Bliss-16 V4.1-582  
DISK\$USER2:[MARSHALL.DEQNA]ZQNA1.BLI;4 (16)

```

: 2079 1 *SBTTL 'GLOBAL DATA SECTION'
: 2080 1
: 2081 1 PSECT
: 2082 1   PLIT   = $PLIT$,
: 2083 1   OWN   = $OWN$,
: 2084 1   GLOBAL = $GLOB$;
: 2085 1
: 2086 1 !..
: 2087 1 !   THE GLOBAL DATA DEFINED IN THIS SECTION IS USED BY MORE THAN ONE
: 2088 1 !   TEST.
: 2089 1 !--
: 2090 1
: 2091 1 GLOBAL
: 2092 1
: 2093 1 !..
: 2094 1 !   COMMUNICATION AREA DECLARATIONS
: 2095 1 !--
: 2096 1
: 2097 1   RCV_D_LIST : BLOCK [ D_SIZE, WORD ] FIELD ( DL_FIELDS ),
: 2098 1   XMIT_D_LIST : BLOCK [ D_SIZE, WORD ] FIELD ( DL_FIELDS ),
: 2099 1   RCV_BUFFER  : VECTOR [ B_SIZE, BYTE ],
: 2100 1   XMIT_BUFFER : VECTOR [ B_SIZE, BYTE ],
: 2101 1   PHYS_ADR    : VECTOR [ 22, BYTE ],
: 2102 1   SETUP_BUFFER : VECTOR [ SETUP_SIZE, WORD ],
: 2103 1   IOP_TABLE   : VECTOR [ 8, WORD ],
: 2104 1   ETH_STATION_ADR : VECTOR [ 6, WORD ],
: 2105 1   STATION_ADR  : VECTOR [ 4, WORD ],
: 2106 1   PTRN_TABLE   : VECTOR [ 8, BYTE ] INITIAL ( BYTE (
: 2107 1
: 2108 1           %B'00000000', %B'11111111', %B'10101010', %B'01010101',
: 2109 1           %B'11001100', %B'00110011', %B'11110000', %B'00001111' ) ).

```

ZQNA1  
V01.0

CZQNA0 DEQNA FUNCTIONAL TEST  
GLOBAL DATA SECTION

14-Mar-1985 13:09:10  
14-Mar-1985 13:07:35

SEQ 0018  
Page 18  
VAX-11 Bliss-16 V4.1-582  
DISK\$USER2:[MARSHALL.DEQNA]ZQNA1.BLI;4 (17)

```

: 2110 1      TARGET_ADR      : VECTOR [ T_SIZE, BYTE ] INITIAL ( BYTE (
: 2111 1
: 2112 1      #X'00', #X'00', #X'00', #X'00', #X'00', #X'00',      : 1 - MEMORY PATTERN
: 2113 1      #X'55', #X'55', #X'55', #X'55', #X'55', #X'55',      : 2
: 2114 1      #X'AA', #X'AA', #X'AA', #X'AA', #X'AA', #X'AA',      : 3 - MEMORY PATTERN
: 2115 1      #X'55', #X'55', #X'55', #X'55', #X'55', #X'55',      : 4 - MEMORY PATTERN
: 2116 1      #X'FF', #X'FF', #X'FF', #X'FF', #X'FF', #X'FF',      : 5 - MEMORY PATTERN
: 2117 1      #X'00', #X'F4', #X'FA', #X'44', #X'44', #X'55',      : 6
: 2118 1      #X'AA', #X'00', #X'00', #X'00', #X'00', #X'00',      : 7 - MEMORY PATTERN
: 2119 1      #X'AA', #X'00', #X'02', #X'AA', #X'AA', #X'AA',      : 8
: 2120 1      #X'AA', #X'00', #X'05', #X'55', #X'55', #X'55',      : 9
: 2121 1      #X'AA', #X'00', #X'04', #X'FF', #X'FF', #X'FF',      : 10
: 2122 1      #X'AA', #X'00', #X'04', #X'00', #X'00', #X'00',      : 11 - LOW ETHERNET ADR
: 2123 1      #X'AA', #X'00', #X'04', #X'18', #X'81', #X'18',      : 12 - HIGH ETHERNET ADR
: 2124 1      #X'01', #X'00', #X'00', #X'00', #X'00', #X'00',      : 13 - ALL MULTICAST
: 2125 1      #X'AB', #X'AA', #X'AA', #X'AA', #X'AA', #X'AA',      : 14 - ALL MULTICAST
: 2126 1      #X'FF', #X'00', #X'01', #X'02', #X'03', #X'04',      : 15 - ALL MULTICAST
: 2127 1      #X'55', #X'05', #X'06', #X'07', #X'08', #X'09',      : 16 - ALL MULTICAST
: 2128 1      #X'CD', #X'36', #X'26', #X'27', #X'27', #X'49',      : 17
: 2129 1      #X'33', #X'A1', #X'67', #X'BB', #X'4C', #X'9F',      : 18
: 2130 1      #X'EB', #X'BE', #X'C7', #X'8F', #X'33', #X'FF',      : 19
: 2131 1      #X'FF', #X'FF', #X'FF', #X'FF', #X'FF', #X'FF' )) , : 20 - STATION ADDR

```

ZQNA1  
V01.0CZQNA0 DEQNA FUNCTIONAL TEST  
GLOBAL DATA SECTION14-Mar-1985 13:09:10  
14-Mar-1985 13:07:35SEQ 0019  
Page 19  
VAX-11 Bliss-16 V4.1-582  
DISK\$USER2:[MARSHALL.DEQNA]ZQNA1.BLI;4 (18)

```

: 2132 1
: 2133 1      BD_PROM_DESCR : VECTOR [ BD_D_SIZE, WORD ] INITIAL ( WORD (
: 2134 1
: 2135 1          NEWB,          ! BUFFER NOT USED IF 1
: 2136 1          V,            ! VALID ADDRESS IF 1
: 2137 1          RCV_BUFFER,   ! RCV BUFFER ADDRESS
: 2138 1          BYTE_COUNT,   ! 1/4 THE BYTE COUNT
: 2139 1          0,            ! STATUS WORD 1
: 2140 1          0,            ! STATUS WORD 2
: 2141 1
: 2142 1          NEWB,          ! BUFFER NOT USED IF 1
: 2143 1          V,            ! VALID ADDRESS IF 1
: 2144 1          XMIT_BUFFER,  ! XMIT BUFFER ADDRESS
: 2145 1          BYTE_COUNT,   ! 1/4 THE BYTE COUNT
: 2146 1          0,            ! STATUS WORD 1
: 2147 1          0,            ! STATUS WORD 2
: 2148 1
: 2149 1          NEWB,          ! BUFFER NOT USED IF 1
: 2150 1          E,            ! VALID ADDRESS IF 1
: 2151 1          0,            ! 2 EXTRA WORDS
: 2152 1          0 )),
: 2153 1
: 2154 1
: 2155 1      TD16: VECTOR [ 44, WORD ] INITIAL ( WORD (
: 2156 1
: 2157 1          NEWB, VL , XMIT_BUFFER      , -1 , 0, 0,    ! 1 BYTE DESCRIPTOR
: 2158 1          NEWB, VHL, XMIT_BUFFER     , -2 , 0, 0,    ! 2 BYTE DESCRIPTOR
: 2159 1          NEWB, VH , XMIT_BUFFER + 2 , -1 , 0, 0,    ! 1 BYTE DESCRIPTOR
: 2160 1          NEWB, VE , XMIT_BUFFER + 4 ,  1 , 0, 0,    ! 2 BYTE DESCRIPTOR
: 2161 1          NEWB, E  , XMIT_D_LIST + 60 , -1 , 0, 0,    ! END OF DESCRIPTOR
: 2162 1          NEWB, V  , XMIT_D_LIST + 56 , -2 , 0, 0,    ! 4 BYTE DESCRIPTOR
: 2163 1          NEWB, VE , TARGET_ADR + 114 , -3 , 0, 0,    ! 6 BYTE DESCRIPTOR
: 2164 1          NEWB, E )),
: 2165 1
: 2166 1      TD13: VECTOR [ 34, WORD ] INITIAL ( WORD (
: 2167 1
: 2168 1          NEWB, V  , XMIT_BUFFER      , -1 , 0, 0,    ! 2 BYTE DESCRIPTOR
: 2169 1          NEWB, V  , XMIT_BUFFER + 2 , -127, 0, 0,   ! 378 BYTE DESCRIPTOR
: 2170 1          NEWB, V  , XMIT_BUFFER + 256, -1 , 0, 0,    ! 2 BYTE DESCRIPTOR
: 2171 1          NEWB, C  , XMIT_D_LIST + 48 , -1 , 0, 0,    ! CHAIN DESCRIPTOR
: 2172 1          NEWB, VE , XMIT_BUFFER + 258, -63 , 0, 0,   ! 2 BYTE DESCRIPTOR
: 2173 1          NEWB, E )),
: 2174 1
: 2175 1      RD13: VECTOR [ 64, WORD ] INITIAL ( WORD (
: 2176 1
: 2177 1          NEWB, V  , RCV_BUFFER      , -1 , 0, 0,    ! 2 BYTE DESCRIPTOR
: 2178 1          NEWB, V  , RCV_BUFFER + 2 , -62 , 0, 0,    ! 124 BYTE DESCRIPTOR
: 2179 1          NEWB, V  , RCV_BUFFER + 126,  1 , 0, 0,    ! 2 BYTE DESCRIPTOR
: 2180 1          NEWB, V  , RCV_BUFFER + 128, -2 , 0, 0,    ! 4 BYTE DESCRIPTOR
: 2181 1          NEWB, V  , RCV_BUFFER + 132, -60 , 0, 0,    ! 120 BYTE DESCRIPTOR
: 2182 1          NEWB, V  , RCV_BUFFER + 252, -2 , 0, 0,    ! 4 BYTE DESCRIPTOR
: 2183 1          NEWB, VC , RCV_D_LIST + 84 ,  1 , 0, 0,    ! CHAIN DESCRIPTOR
: 2184 1          NEWB, V  , RCV_BUFFER + 256, -3 , 0, 0,    ! 6 BYTE DESCRIPTOR

```

ZQNA1  
V01.0

CZQNA0 DEQNA FUNCTIONAL TEST  
GLOBAL DATA SECTION

14-Mar-1985 13:09:10  
14-Mar-1985 13:07:35

VAX-11 B1,ss-16 V4.1-582  
DISK\$USER2:[MARSHALL.DEQNA]ZQNA1.BLI;4 (18)

```
; 2195 1      NEWB, V , RCV_BUFFER + 262 , -60 , 0, 0, ! 120 BYTE DESCRIPTOR
; 2186 1      NEWB, V , RCV_BUFFER + 382 , -1 , 0, 0, ! 2 BYTE DESCRIPTOR
; 2187 1      NEWB, E ), ! END OF DESCRIPTOR
; 2188 1
```

ZQNA1  
V01.0

CZQNA0 DEQNA FUNCTIONAL TEST  
GLOBAL DATA SECTION

14-Mar 1985 13:09:10  
14-Mar-1985 13:07:35

SEQ 0021  
Page 21  
VAX-11 Bliss 16 V4.1-582  
DISK\$USER2:[MARSHALL.DEQNA]ZQNA1.BLI;4 (19)

; 2189 1  
; 2190 1  
; 2191 1  
; 2192 1  
; 2193 1  
; 2194 1  
; 2195 1  
; 2196 1  
; 2197 1  
; 2198 1  
; 2199 1  
; 2200 1  
; 2201 1  
; 2202 1  
; 2203 1  
; 2204 1  
; 2205 1  
; 2206 1  
; 2207 1  
; 2208 1  
; 2209 1  
; 2210 1  
; 2211 1  
; 2212 1  
; 2213 1  
; 2214 1  
; 2215 1  
; 2216 1  
; 2217 1  
; 2218 1  
; 2219 1  
; 2220 1

```

!..
!
!   HARDWARE AND SOFTWARE P-TABLE STORAGE DECLARATIONS
!
!..
!
HWP_TABLE  : REF BLOCK [ HWP_SIZE, WORD ] FIELD ( HWP_FIELDS ),
SWP_TABLE  : REF BLOCK [ SWP_SIZE, WORD ] FIELD ( SWP_FIELDS ),

REG_ADR    : REF REG_STR FIELD ( IOP_FIELDS ),
IOP_DATA   : REF REG_STR FIELD ( IOP_FIELDS ),
GET_ADR    : REF ADR_STR FIELD ( IOP_FIELDS ),

!..
!
!   MISCELLANEOUS DATA DECLARATIONS
!
!..
!
XBUF_LENGTH      : WORD,           ! XMIT BUFFER LENGTH IN WORDS
RBUF_LENGTH      : WORD,           ! RCV BUFFER LENGTH IN BYTES
INTERRUPT_FLG    : WORD,           ! 1 = INTERRUPT OCCURED
DEQNA_NO         : WORD,           ! DEQNA UNDER TEST THIS PASS
COUNTER          : WORD,           ! ITERATION COUNTER, INDEX
UP_COUNTER       : WORD,           ! ITERATION COUNTER, INDEX
DOWN_COUNTER     : WORD,           ! ITERATION COUNTER, INDEX
CHECKSUM         : WORD,           ! EXPECTED PROM CHECKSUM
BUF_LENGTH       : WORD,           ! XMIT BUFFER SIZE IN WORDS
CSR_WORD         : WORD,
XC_FLAG          : WORD INITIAL (0),
ERR_NUMBER       : WORD INITIAL (0),
ERR_FLAG         : WORD INITIAL (0),
ERR_COUNT        : WORD INITIAL (0),

```

ZQNA1  
V01.0

CZQNADO DEQNA FUNCTIONAL TEST  
GLOBAL DATA SECTION

14-Mar-1985 13:09:10  
14-Mar-1985 13:07:35

SEQ 0022  
Page 22  
VAX-11 Bliss-16 V4.1-582  
DISK#USER2:[MARSHALL.DEQNA]ZQNA1.BLI;4 (20)

```

: 2221 1      : **
: 2222 1      :
: 2223 1      : TEMPORARY STORAGE DATA DECLARATIONS
: 2224 1      :
: 2225 1      : ---
: 2226 1
: 2227 1      : TMP_IOP_ADR      : WORD,      : I/O PAGE REGISTER ADDRESS
: 2228 1      : TMP_REG_DATA    : WORD,      : I/O PAGE REG CONTENTS
: 2229 1      : TEMP1           : WORD,      : TEMPORARY STORAGE LOCATION
: 2230 1      : TEMP2           : WORD,      : TEMPORARY STORAGE LOCATION
: 2231 1      : TEMP3           : WORD,      : TEMPORARY STORAGE LOCATION
: 2232 1      : TEMP4           : WORD,      : TEMPORARY STORAGE LOCATION
: 2233 1      : TEMP5           : WORD,      : TEMPORARY STORAGE LOCATION
: 2234 1      : TEMP6           : WORD,      : TEMPORARY STORAGE LOCATION
: 2235 1      : TEMP7           : WORD,      : TEMPORARY STORAGE LOCATION
: 2236 1      : TEMP8           : WORD,      : TEMPORARY STORAGE LOCATION
: 2237 1      : TEMP9           : WORD,      : TEMPORARY STORAGE LOCATION
: 2238 1      : P1              : WORD,      : PARAMETER #1
: 2239 1      : P2              : WORD,      : PARAMETER #2
: 2240 1      : P3              : WORD,      : PARAMETER #3
: 2241 1      : P4              : WORD,      : PARAMETER #4
: 2242 1      : P5              : WORD,      : PARAMETER #5
: 2243 1      : TBYTE1         : BYTE,
: 2244 1      : TBYTE2         : BYTE,
: 2245 1      : TBYTE3         : BYTE,
: 2246 1      : TBYTE4         : BYTE,
: 2247 1      : TADR1          : WORD,
: 2248 1      : TADR2          : WORD,
: 2249 1

```



ZQNA1  
V01.0CZQNA0 DEQNA FUNCTIONAL TEST  
GLOBAL DATA SECTION14-Mar-1985 13:09:10  
14-Mar-1985 13:07:35SEQ 0023  
Page 23  
VAX-11 Bliss-16 V4.1-582  
DISK#USER2:[MARSHALL.DEQNA]ZQNA1.8LI;4 (21)

```

: 2250 1
: 2251 1 #S8TTL 'GLOBAL TEXT SECTION'
: 2252 1
: 2253 1 !..
: 2254 1 ! THE GLOBAL TEXT SECTION CONTAINS FORMAT STATEMENTS, MESSAGES,
: 2255 1 ! AND ASCII INFORMATION THAT IS USED IN MORE THAN ONE TEST.
: 2256 1 !..
: 2257 1
: 2258 1 GLOBAL BIND
: 2259 1
: 2260 1     DESCR_LIST = RCV_D_LIST,
: 2261 1     DATA_BUFFER = RCV_BUFFER,
: 2262 1
: 2263 1 !..
: 2264 1 !     HARDWARE AND SOFTWARE QUESTIONS
: 2265 1 !..
: 2266 1
: 2267 1     GST01 = UPLIT (%ASCIZ'DEQNA I/O PAGE ADR '),
: 2268 1     GST02 = UPLIT (%ASCIZ'INTERRUPT VECTOR ADR '),
: 2269 1     GST03 = UPLIT (%ASCIZ'DO YOU WANT TO TEST SANITY TIMER '),
: 2270 1     GST04 = UPLIT (%ASCIZ'IS LOOPBACK CONNECTOR IN DEQNA '),
: 2271 1     GST05 = UPLIT (%ASCIZ'SANITY TIMER TIME-OUT VALUE '),
: 2272 1     GST06 = UPLIT (%ASCIZ'EXTERNAL LOOPBACK MODE '),
: 2273 1     GST07 = UPLIT (%ASCIZ'SYSTEM HAS BLOCK-MODE MEMORY '),
: 2274 1
: 2275 1
: 2276 1
: 2277 1 !..
: 2278 1 !     DEVICE ERROR MESSAGES
: 2279 1 !..
: 2280 1
: 2281 1     MSG00 = UPLIT (%ASCIZ' DEQNA FATAL ERROR DETECTED '),
: 2282 1     MSG01 = UPLIT (%ASCIZ'%N#N#A DEQNA ADDRESS: %06#A, STATION ADDRESS: '),
: 2283 1     MSG02 = UPLIT (%ASCIZ'%A ACTUAL DATA = %06#A EXPECTED DATA = %06#N'),
: 2284 1     MSG03 = UPLIT (%ASCIZ'%A XMIT DESCRIPTOR RCV DESCRIPTOR %N'),
: 2285 1     MSG04 = UPLIT (%ASCIZ'%A FLAG WORD %06#A %06#N'),
: 2286 1     MSG05 = UPLIT (%ASCIZ'%A HIGH ORDER ADDR BITS %06#A %06#N'),
: 2287 1     MSG06 = UPLIT (%ASCIZ'%A LOW ORDER ADDR BITS %06#A %06#N'),
: 2288 1     MSG07 = UPLIT (%ASCIZ'%A PACKET LENGTH ( WD ) %06#A %06#N'),
: 2289 1     MSG08 = UPLIT (%ASCIZ'%A STATUS WORD 1 %06#A %06#N'),
: 2290 1     MSG09 = UPLIT (%ASCIZ'%A STATUS WORD 2 %06#A %06#N'),
: 2291 1     MSG10 = UPLIT (%ASCIZ'%A DEQNA CSR REGISTER %06#N'),
: 2292 1     MSG11 = UPLIT (%ASCIZ'%A DEQNA I/O PAGE ADR %06#N#N'),
: 2293 1     MSG12 = UPLIT (%ASCIZ'%A BAD CSR: ACT = %06#A EXP = %06#N'),
: 2294 1     MSG13 = UPLIT (%ASCIZ'%A BAD TRANSMIT FLAG WORD: ACT = %06#A EXP = %06#N'),
: 2295 1     MSG14 = UPLIT (%ASCIZ'%A BAD TRANSMIT STATUS WORD 1: ACT = %06#A EXP = %06#N'),
: 2296 1     MSG15 = UPLIT (%ASCIZ'%A BAD RECEIVE FLAG WORD: ACT = %06#A EXP = %06#N'),
: 2297 1     MSG16 = UPLIT (%ASCIZ'%A BAD RECEIVE STATUS WORD 1: ACT = %06#A EXP = %06#N'),
: 2298 1     MSG17 = UPLIT (%ASCIZ'%A BAD RECEIVE BUFFER LENGTH: ACT = %06#A EXP = %06#N'),
: 2299 1     MSG18 = UPLIT (%ASCIZ'%A BAD CSR = %06#N'),
: 2300 1     MSG19 = UPLIT (%ASCIZ'%A LOOPBACK PACKET UNABLE TO SET CA BIT, CSR = %06#N'),
: 2301 1     MSG20 = UPLIT (%ASCIZ'%A LOOPBACK PACKET UNABLE TO CLEAR CA BIT, CSR = %06#N'),
: 2302 1     MSG21 = UPLIT (%ASCIZ'%A CA BIT OK, BUT RI BIT IS NOT ON, CSR = %06#N'),

```

```

: 2303 1 MSG22 = UPLIT (ASCIZ' CA BIT IN THE CSR WAS SET TOO EARLY, CSR = #06#N' ),
: 2304 1 MSG23 = UPLIT (ASCIZ' XL AND RL ( BITS 4,5 ) TO BE RESET TO 0#N' ),
: 2305 1 MSG24 = UPLIT (ASCIZ' XL AND RL ( BITS 4,5 ) TO BE SET TO 1#N' ),
: 2306 1 MSG25 = UPLIT (ASCIZ' RI ( BIT 15 ) TO BE SET TO 1#N' ),
: 2307 1 MSG26 = UPLIT (ASCIZ' XI ( BIT 7 ) TO BE SET TO 1#N' ),
: 2308 1 MSG27 = UPLIT (ASCIZ' NI ( BIT 2 ) TO BE SET TO 1#N' ),
: 2309 1 MSG28 = UPLIT (ASCIZ' NI ( BIT 2 ) TO BE RESET TO 0#N' ),
: 2310 1 MSG29 = UPLIT (ASCIZ' BAD CSR, EXPECTED' ),
: 2311 1 MSG30 = UPLIT (ASCIZ' CSR ADR = #06#A ACTUAL = #06#A EXPECTED = #06#N' ),
: 2312 1 MSG31 = UPLIT (ASCIZ' UNABLE TO RESET DEQNA: ADR: #06#A CSR = #06#N' ),
: 2313 1 MSG32 = UPLIT (ASCIZ' WAIT ABOUT #D2#A SECOND(S) -' ),
: 2314 1 MSG33 = UPLIT (ASCIZ' SANITY TIMER TIMED OUT AS EXPECTED #N' ),
: 2315 1 MSG34 = UPLIT (ASCIZ' NO SANITY TIMER INTERRUPT DETECTED #N' ),
: 2316 1 MSG35 = UPLIT (ASCIZ' DISCONNECT TRANSCEIVER CABLE FROM BULKHEAD ASSEMBLY AND' ),
: 2317 1 MSG36 = UPLIT (ASCIZ' CONNECT LOOPBACK CONNECTOR TO BULKHEAD ASSEMBLY, THEN RETEST#N' ),
: 2318 1 MSG37 = UPLIT (ASCIZ' DISCONNECT BULKHEAD ASSEMBLY FROM DEQNA AND CONNECT' ),
: 2319 1 MSG38 = UPLIT (ASCIZ' LOOPBACK CONNECTOR TO DEQNA, THEN RETEST#N' ),
: 2320 1 MSG39 = UPLIT (ASCIZ' CHECK FOR LOOSE WIRES IN A LOOPBACK CONNECTOR' ),
: 2321 1 MSG40 = UPLIT (ASCIZ' OR USE DIFFERENT LOOPBACK CONNECTOR, THEN RETEST#N' ),
: 2322 1 MSG41 = UPLIT (ASCIZ' REPLACE DEQNA, THEN RETEST#N' ),
: 2323 1 MSG42 = UPLIT (ASCIZ' REPLACE BULKHEAD CONNECTOR, THEN RETEST#N' ),
: 2324 1 MSG43 = UPLIT (ASCIZ' DISCONNECT TRANSCEIVER CABLE FROM TRANSCEIVER' ),
: 2325 1 MSG44 = UPLIT (ASCIZ' AND CONNECT IT TO LOOPBACK CONNECTOR AND BULKHEAD ASSEMBLY#N' ),
: 2326 1 MSG45 = UPLIT (ASCIZ' REPLACE TRANSCEIVER CABLE, THEN RETEST#N' ),
: 2327 1 MSG46 = UPLIT (ASCIZ' REPLACE TRANSCEIVER, THEN RETEST#N' ),
: 2328 1 MSG47 = UPLIT (ASCIZ' REPLACE THE FUSE IF BAD, THEN RETEST#N' ),
: 2329 1 MSG48 = UPLIT (ASCIZ' BAD RECEIVE DESCRIPTOR:' ),
: 2330 1 MSG49 = UPLIT (ASCIZ' BAD TRANSMIT DESCRIPTOR:' ),
: 2331 1 MSG50 = UPLIT (ASCIZ' ACTUAL = #06#A EXPECTED = #06#A INDEX = #D4#N' ),
: 2332 1 MSG51 = UPLIT (ASCIZ' BAD RECEIVE BUFFER: ),
: 2333 1 MSG52 = UPLIT (ASCIZ' DMA OPERATION TAKES TOO LONG#N' ),
: 2334 1 MSG53 = UPLIT (ASCIZ' TOO MANY DEVICES#N' ),
: 2335 1 MSG54 = UPLIT (ASCIZ' THERE WAS A POWER FAIL - WAITING#N' ),
: 2336 1 MSG55 = UPLIT (ASCIZ' WAIT ABOUT #D2#A MINUTE(S) -' ),
: 2337 1 MSG56 = UPLIT (ASCIZ' WAIT ABOUT #D2#A HOUR -' ),
: 2338 1 MSG57 = UPLIT (ASCIZ' IF NO RESET, TYPE ANY CHARACTER TO EXIT FROM TEST#N' ),
: 2339 1 MSG58 = UPLIT (ASCIZ' TDR VALUE IS EQUAL TO ZERO #N' ),
: 2340 1 MSG59 = UPLIT (ASCIZ'-----#N' ),
: 2341 1 MSG60 = UPLIT (ASCIZ' BAD CSR, BITS STUCK AT 0:#N' ),
: 2342 1 MSG61 = UPLIT (ASCIZ' BAD CSR, BITS STUCK AT 1:#N' ),
: 2343 1 MSG62 = UPLIT (ASCIZ' SOFTWARE RESET UNABLE TO CLEAR CSR STATIC BITS:#N' ),
: 2344 1 MSG63 = UPLIT (ASCIZ' BAD STATION ADDRESS CHECKSUM: ACT = #06#A EXP = #06#N' ),
: 2345 1 MSG64 = UPLIT (ASCIZ' BAD STATION ADDRESS: '),
: 2346 1 MSG65 = UPLIT (ASCIZ' BAD DEQNA I/O PAGE REGISTER:#N' ),
: 2347 1 MSG66 = UPLIT (ASCIZ' BAD CSR, EXPECTED RL ( BIT 5 ) TO BE SET TO 0#N' ),
: 2348 1 MSG67 = UPLIT (ASCIZ' BAD B/D PROM CHECKSUM: INDEX = #06#A ACT = #06#A EXP = #06#N' ),
: 2349 1 MSG68 = UPLIT (ASCIZ' B/D PROM CHECKSUM OFFSET = #06#A ACT = #06#A EXP = #06#N' ),
: 2350 1 MSG69 = UPLIT (ASCIZ' BAD INTERRUPT: ADR = #06#A ACT LEV = #06#A EXP LEV = #06#N' ),
: 2351 1 MSG70 = UPLIT (ASCIZ' REGISTER FAILED TO RESPOND AT ADDRESS: #06#N' ),
: 2352 1 MSG71 = UPLIT (ASCIZ' BAD TRANSMIT STATUS, TOO MANY COLLISIONS#N' );
: 2353 1
: 2354 1
: 2355 1

```

ZONA1  
V01.0

CZONADO DEQNA FUNCTIONAL TEST  
DEFAULT HARDWARE P TABLE

14-Mar-1985 13:09:10  
14-Mar-1985 13:07:35

SEQ 0025  
Page 25  
VAX-11 Bliss-16 V4.1-582  
DISK#USER2:(MARSHALL.DEQNA)ZONA1.BLI:4 (22)

: 2356 1  
: 2357 1  
: 2358 1  
: 2359 1  
: 2360 1  
: 2361 1  
: 2362 1  
: 2363 1  
: 2364 1  
: 2365 1  
: 2366 1  
: 2367 1  
: 2368 1  
: 2369 1  
: 2370 1  
: 2371 1  
: 2372 1  
: 2373 1  
: 2374 1  
: 2375 1  
: 2376 1  
: 2377 1  
: 2378 1

```
#SBTTL 'DEFAULT HARDWARE P TABLE'
BGNMW ( HWP_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.

PLACE YOUR DEFAULT HARDWARE P-TABLE HERE. THE VALUES AND
SIZE WILL BE USED AS A "TEMPLATE" FOR CREATING ACTUAL P-TABLE
ENTRIES AND THE DEFAULT VALUES IN THE OPERATOR DIALOGUE.
THE ACTUAL P-TABLE BUILT AT RUNTIME IS STORED IN SUPERVISOR
SPACE.

GLOBAL
DFSTBL : BLOCK [ HWP_SIZE, WORD ] INITIAL ( #0'174440', #0'700' );
ENDMW;
```

ZONA1  
VO1.0

CZONADO DEQNA FUNCTIONAL TEST  
SOFTWARE P TABLE

14-Mar-1985 13:09:10  
14-Mar-1985 13:07:35

VAX-11 B110-16 V4.1-582  
DISK#USER2:(MARSHALL.DEQNA)ZONA1.BLI;4 (23)

; 2379 1  
; 2380 1  
; 2381 1  
; 2382 1  
; 2383 1  
; 2384 1  
; 2385 1  
; 2386 1  
; 2387 1  
; 2388 1  
; 2389 1  
; 2390 1  
; 2391 1  
; 2392 1  
; 2393 1  
; 2394 1  
; 2395 1  
; 2396 1  
; 2397 1  
; 2398 1  
; 2399 1  
; 2400 1  
; 2401 1  
; 2402 1  
; 2403 1  
; 2404 1

\*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.
!
!
!   PLACE YOUR SOFTWARE P-TABLE HERE, USING GLOBAL OR OWN DECLARATIONS
!   THIS TABLE IS NOT OPTIONAL.  THIS TABLE, UNLIKE THE HARDWARE TABLE,
!   WILL CONTAIN THE ACTUAL VALUES ENTERED BY THE OPERATOR.
!..

```

BGNSW ( SP\_TABLE );

GLOBAL

```

SWP_TIMER      : WORD INITIAL ( NO ), ! NO SANITY TIMER TEST
SWP_LBC        : WORD INITIAL ( NO ), ! NO LOOPBACK IN DEQNA
SWP_TOUT_VAL   : WORD INITIAL ( 3 ), ! TIMEOUT VALUE = 16 SEC.
SWP_ILOOP      : WORD INITIAL ( NO ), ! EXTERNAL LOOPBACK MODE
SWP_BLOCK_MEM  : WORD INITIAL ( YES ); ! BLOCK-MODE MEMORY PRESENT

```

ENDSW;

ZQNA1  
V01.0

CZQNA0 DEQNA FUNCTIONAL TEST  
PROTECTION TABLE

14-Mar-1985 13:09:10  
14-Mar-1985 13:07:35

SEQ 0027  
Page 27  
VAX-11 Bliss-16 V4.1-582  
DISK\$USER2:[MARSHALL.DEQNA]ZQNA1.BLI;4 (24)

```

: 2405 1  *SBTTL 'PROTECTION TABLE'
: 2406 1
: 2407 1  !**
: 2408 1  !
: 2409 1  ! THIS TABLE IS USED BY THE RUNTIME SERVICES TO PROTECT THE LOAD MEDIA.
: 2410 1  !
: 2411 1  ! 1ST ARG =      OFFSET INTO P-TABLE FOR CSR ADDRESS
: 2412 1  ! 2ND ARG =      OFFSET INTO P-TABLE FOR MASSBUS ADDRESS
: 2413 1  ! 3RD ARG =      OFFSET INTO P-TABLE FOR DRIVE NUMBER
: 2414 1  !
: 2415 1  ! INSERT BYTE OFFSET FOR DATA NOTED IN COMMENTS ABOVE. (OFFSET
: 2416 1  ! REFERS TO THE NUMBER OF BYTES FROM THE BEGINNING OF A PTABLE
: 2417 1  ! ENTRY TO THE ITEM IN QUESTION.) IF THE PARTICULAR
: 2418 1  ! ITEM DOES NOT APPLY, LEAVE ENTRY AS -1. WHEN THE RUNTIME
: 2419 1  ! SERVICES EXECUTES A GPHARD, IT USES THESE OFFSETS (IF NOT
: 2420 1  ! SET TO -1) TO GET THE ITEMS AND COMPARE WITH THOSE SAVED
: 2421 1  ! IN THE XXDP+ MONITOR. IF THE UNIT BEING REQUESTED MATCHES THE
: 2422 1  ! LOAD DEVICE, THE RUNTIME SERVICES RETURN AN INCOMPLETE FLAG ON
: 2423 1  ! THE GPHARD.
: 2424 1  !
: 2425 1  !
: 2426 1  ! BGNPROT (-1, -1, -1);
: 2427 1  ! ENDPROT;
: 2428 1
: 2429 1
: 2430 1
: 2431 1  ! END
: 2432 0  ! ELUDOM

```

```

.TITLE CZQNA0 DEQNA FUNCTIONAL TEST
.IDENT /V01.0/
.ENABL AMA

```

```

000000          .PSECT  $CODE$,  RO
000000          103     132     121    L$NAME::.ASCII /CZQ/
000003          116     101     040    .ASCII /NA /
000006          000     .BYTE  0
000007          000     .BYTE  0
000010          L$REV::
000010          104     .ASCII /D/
000011          060     .ASCII /O/
000012          000000G  L$UNIT::.WORD  T$PTHV
000014          000170  L$TIML::.WORD  170
000016          000000G  L$HPCP::.WORD  L$HARD
000020          000000G  L$SPCP::.WORD  L$SOFT
000022          000210'  L$HPTP::.WORD  L$HW
000024          000220'  L$SPTP::.WORD  L$SW
000026          000000G  L$LADP::.WORD  L$LAST
000030          000000  L$STA::.WORD  0
000032          000000  L$CO::.WORD  0
000034          000000  L$DTYP::.WORD  0

```

ZQNA1  
V01.0

CZQNA0 DEQNA FUNCTIONAL TEST  
PROTECTION TABLE

14-Mar-1985 13:09:10  
14-Mar-1985 13:07:35

SEQ 0028  
Page 28  
VAX-11 Bliss-16 V4.1-582  
DISK#USER2:[MARSHALL.DEQNA]ZQNA1.BLI;4 (24)

000036	000000	L\$APT::	.WORD	0
000040	000124	L\$DTP::	.WORD	L\$DISPATCH
000042	000000	L\$PRIO::	.WORD	0
000044	000000	L\$ENVI::	.WORD	0
000046	000000	L\$EXP1::	.WORD	0
000050		L\$MREV::		
000050	003		.BYTE	3
000051	003		.BYTE	3
000052	000000	L\$EF::	.WORD	0
000054	000000		.WORD	0
000056	000000	L\$SPC::	.WORD	0
000060	000000G	L\$DEVP::	.WORD	L\$DVTYP
000062	000000G	L\$REPP::	.WORD	L\$RPT
000064	000000	L\$EXP4::	.WORD	0
000066	000000	L\$EXP5::	.WORD	0
000070	000000G	L\$AUT::	.WORD	L\$AU
000072	000000G	L\$DUT::	.WORD	L\$DU
000074	000000	L\$LUN::	.WORD	0
000076	000000G	L\$DESP::	.WORD	L\$DESC
000100	104035	L\$LOAD::	.WORD	-73743
000102	000176	L\$ETP::	.WORD	L\$ERRTBL
000104	000000G	L\$ICP::	.WORD	L\$INIT
000106	000000G	L\$CCP::	.WORD	L\$CLEAN
000110	000000G	L\$ACP::	.WORD	L\$AUTO
000112	000234	L\$PRT::	.WORD	L\$PROT
000114	000000	L\$TEST::	.WORD	0
000116	000000	L\$DLY::	.WORD	0
000120	000000	L\$HIME::	.WORD	0
000122	000025	D\$PCNT::	.WORD	25
000124	000000G	L\$DISPATCH::		
			.WORD	T1
			.WORD	T2
000126	000000G		.WORD	T3
000130	000000G		.WORD	T4
000132	000000G		.WORD	T5
000134	000000G		.WORD	T6
000136	000000G		.WORD	T7
000140	000000G		.WORD	T8
000142	000000G		.WORD	T9
000144	000000G		.WORD	T10
000146	000000G		.WORD	T11
000150	000000G		.WORD	T12
000152	000000G		.WORD	T13
000154	000000G		.WORD	T14
000156	000000G		.WORD	T15
000160	000000G		.WORD	T16
000162	000000G		.WORD	T17
000164	000000G		.WORD	T18
000166	000000G		.WORD	T19
000170	000000G		.WORD	T20
000172	000000G		.WORD	T21
000174	000000G		.WORD	T21
000176		ERRTYP::	.BLKW	1
000200		ERRNBR::	.BLKW	1

ZQNA1  
V01.0

CZQNA0 DEQNA FUNCTIONAL TEST  
PROTECTION TABLE

14-Mar-1985 13:09:10  
14 Mar-1985 13:07:35

SEQ 0029  
Page 29  
VAX-11 Bliss-16 V4.1-582  
DISK\$USER2:[MARSHALL.DEQNA]ZQNA1.BLI;4 (24)

000202				ERRMSG::	.BLKW	1
000204				ERRBLK::	.BLKW	1
000206	000000C			L\$HWLEN::		
					.WORD	<<L\$NDHW-L\$HWLEN>/2>
000210	174440			DFSTBL::	.WORD	-3340
000212	000700				.WORD	700
000214				L\$NDHW::	.BLKW	1
000216	000000C			L\$SWLEN::		
					.WORD	<<L\$NDSW-L\$SWLEN>/2>
000220	000000			SWP.TIMER::		
					.WORD	0
000222	000000			SWP.LBC::		
					.WORD	0
000224	000003			SWP.TOUT.VAL::		
					.WORD	3
000226	000000			SWP.ILOOP::		
					.WORD	0
000230	000J01			SWP.BLOCK.MEM::		
					.WORD	1
000232				L\$NDSW::	.BLKW	1
000234	177777			L\$PROT::	.WORD	-1
000236	177777				.WORD	-1
000240	177777				.WORD	-1

000000					.PSECT	\$PLIT\$, RO, D
000000	104	105	121	P.AAA:	.ASCII	/DEQ/
000003	116	101	040		.ASCII	/NA /
000006	111	057	117		.ASCII	/I/<57>/0/
000011	040	120	101		.ASCII	/ PA/
000014	107	105	040		.ASCII	/GE /
000017	101	104	122		.ASCII	/ADR/
000022	040	040	040		.ASCII	/ / /
000025	040	000	000		.ASCII	/ /<00><00>
000030	111	116	124	P.AAB:	.ASCII	/INT/
000033	105	122	122		.ASCII	/ERR/
000036	125	120	124		.ASCII	/UPT/
000041	040	126	105		.ASCII	/ VE/
000044	103	124	117		.ASCII	/CTO/
000047	122	040	101		.ASCII	/R A/
000052	104	122	040		.ASCII	/DR /
000055	040	000	000		.ASCII	/ /<00><00>
000060	104	117	040	P.AAC:	.ASCII	/DO /
000063	131	117	125		.ASCII	/YOU/
000066	040	127	101		.ASCII	/ WA/
000071	116	124	040		.ASCII	/NT /
000074	124	117	040		.ASCII	/TO /
000077	124	105	123		.ASCII	/TES/
000102	124	040	123		.ASCII	/T S/
000105	101	116	111		.ASCII	/ANI/
000110	124	131	040		.ASCII	/TY /
000113	124	111	115		.ASCII	/TIM/

ZQNA1  
V01.0

CZQNA00 DEQNA FUNCTIONAL TEST  
PROTECTION TABLE

14-Mar-1985 13:09:10  
14-Mar-1985 13:07:35

VAX-11 B1.1-16 V4.1-582  
DISK\$USER2:[MARSHALL.DEQNA]ZQNA1.BLI;4 (24)

000116	105	122	040		.ASCII	/ER /
000121	000				.ASCII	<00>
000122	111	123	040	P.AAD:	.ASCII	/IS /
000125	114	117	117		.ASCII	/LOO/
000130	120	102	101		.ASCII	/PBA/
000133	103	113	040		.ASCII	/CK /
000136	103	117	116		.ASCII	/CON/
000141	116	105	103		.ASCII	/NEC/
000144	124	117	122		.ASCII	/TOR/
000147	040	111	116		.ASCII	/ IN/
000152	040	104	105		.ASCII	/ DE/
000155	121	116	101		.ASCII	/QNA/
000160	040	040	040		.ASCII	/ /
000163	000				.ASCII	<00>
000164	123	101	116	P.AAE:	.ASCII	/SAN/
000167	111	124	131		.ASCII	/ITY/
000172	040	124	111		.ASCII	/ TI/
000175	115	105	122		.ASCII	/MER/
000200	040	124	111		.ASCII	/ TI/
000203	115	105	055		.ASCII	/ME-/
000206	117	125	124		.ASCII	/OUT/
000211	040	126	101		.ASCII	/ VA/
000214	114	125	105		.ASCII	/LUE/
000217	040	040	040		.ASCII	/ /
000222	040	040	040		.ASCII	/ /
000225	000				.ASCII	<00>
000226	105	130	124	P.AAF:	.ASCII	/EXT/
000231	105	122	116		.ASCII	/ERN/
000234	101	114	040		.ASCII	/AL /
000237	114	117	117		.ASCII	/LOO/
000242	120	102	101		.ASCII	/PBA/
000245	103	113	040		.ASCII	/CK /
000250	115	117	104		.ASCII	/MOD/
000253	105	040	040		.ASCII	/E /
000256	040	040	040		.ASCII	/ /
000261	040	040	040		.ASCII	/ /
000264	040	040	040		.ASCII	/ /
000267	000				.ASCII	<00>
000270	123	131	123	P.AAG:	.ASCII	/SYS/
000273	124	105	115		.ASCII	/TEM/
000276	040	110	101		.ASCII	/ HA/
000301	123	040	102		.ASCII	/S B/
000304	114	117	103		.ASCII	/LOC/
000307	113	055	115		.ASCII	/K-M/
000312	117	104	105		.ASCII	/ODE/
000315	040	115	105		.ASCII	/ ME/
000320	115	117	122		.ASCII	/MOR/
000323	131	040	040		.ASCII	/Y /
000326	040	040	040		.ASCII	/ /
000331	000				.ASCII	<00>
000332	040	104	105	P.AAH:	.ASCII	/ DE/
000335	121	116	101		.ASCII	/QNA/
000340	040	106	101		.ASCII	/ FA/



ZQNA1  
V01.0

CZQNA0 DEQNA FUNCTIONAL TEST  
PROTECTION TABLE

14-Mar-1985 13:09:10  
14-Mar-1985 13:07:35

VAX-11 Bliss-16 V4.1-582

000343	124	101	114	.ASCII	/TAL/	
000346	040	105	122	.ASCII	/ER/	
000351	122	117	122	.ASCII	/ROR/	
000354	040	104	105	.ASCII	/DE/	
000357	124	105	103	.ASCII	/TEC/	
000362	124	105	104	.ASCII	/TED/	
000365	040	000	000	.ASCII	//<00><00>	
000370	045	116	045	P.AAI:	.ASCII	/N#N/
000373	116	045	101	.ASCII	/N#A/	
000376	040	040	040	.ASCII	/ /	
000401	104	105	121	.ASCII	/DEQ/	
000404	116	101	040	.ASCII	/NA /	
000407	101	104	104	.ASCII	/ADD/	
000412	122	105	123	.ASCII	/RES/	
000415	123	072	040	.ASCII	/S: /	
000420	045	117	066	.ASCII	/#06/	
000423	045	101	054	.ASCII	/#A, /	
000426	040	040	123	.ASCII	/ S/	
000431	124	101	124	.ASCII	/TAT/	
000434	111	117	116	.ASCII	/ION/	
000437	040	101	104	.ASCII	/AD/	
000442	104	122	105	.ASCII	/DRE/	
000445	123	123	072	.ASCII	/SS: /	
000450	040	000		.ASCII	//<00>	
000452	045	101	040	P.AAJ:	.ASCII	/#A /
000455	040	040	040	.ASCII	/ /	
000460	040	040	101	.ASCII	/ A/	
000463	103	124	125	.ASCII	/CTU/	
000466	101	114	040	.ASCII	/AL /	
000471	104	101	124	.ASCII	/DAT/	
000474	101	040	075	.ASCII	/A =/	
000477	040	045	117	.ASCII	/ #0/	
000502	066	045	101	.ASCII	/6#A/	
000505	040	040	040	.ASCII	/ /	
000510	040	040	105	.ASCII	/ E/	
000513	130	120	105	.ASCII	/XPE/	
000516	103	124	105	.ASCII	/CTE/	
000521	104	040	104	.ASCII	/D D/	
000524	101	124	101	.ASCII	/ATA/	
000527	040	075	040	.ASCII	/ = /	
000532	045	117	066	.ASCII	/#06/	
000535	045	116	000	.ASCII	/#N/<00>	
000540	045	101	040	P.AAK:	.ASCII	/#A /
000543	040	040	040	.ASCII	/ /	
000546	040	040	040	.ASCII	/ /	
000551	040	040	040	.ASCII	/ /	
000554	040	040	040	.ASCII	/ /	
000557	040	040	040	.ASCII	/ /	
000562	040	040	040	.ASCII	/ /	
000565	040	040	040	.ASCII	/ /	
000570	040	040	040	.ASCII	/ /	
000573	040	040	040	.ASCII	/ /	
000576	130	115	111	.ASCII	/XMI/	

ZQNA1  
V01.0

CZQNADO DEQNA FUNCTIONAL TEST  
PROTECTION TABLE

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VAX-11 Bliss-16 V4.1-582  
DISK\$USER2:[MARSHALL.DEQNA]ZQNA1.BLI;4 (24)

000601	124	040	104	.ASCII	/T D/
000604	105	123	103	.ASCII	/ESC/
000607	122	111	120	.ASCII	/RIP/
000612	124	117	122	.ASCII	/TOR/
000615	040	040	040	.ASCII	/ /
000620	040	122	103	.ASCII	/ RC/
000623	126	040	104	.ASCII	/V D/
000626	105	123	103	.ASCII	/ESC/
000631	122	111	120	.ASCII	/RIP/
000634	124	117	122	.ASCII	/TOR/
000637	040	045	116	.ASCII	/ %N/
000642	000	000		.ASCII	<00><00>
000644	045	101	040	P.AAL:	.ASCII /%A /
000647	040	040	040		.ASCII / /
000652	040	040	106		.ASCII / F/
000655	114	101	107		.ASCII /LAG/
000660	040	127	117		.ASCII / WO/
000663	122	104	040		.ASCII /RD /
000666	040	040	040		.ASCII / /
000671	040	040	040		.ASCII / /
000674	040	040	040		.ASCII / /
000677	040	040	040		.ASCII / /
000702	040	040	040		.ASCII / /
000705	040	040	045		.ASCII / %/
000710	117	066	045		.ASCII /06%/
000713	101	040	040		.ASCII /A /
000716	040	040	040		.ASCII / /
000721	040	040	040		.ASCII / /
000724	040	040	040		.ASCII / /
000727	040	045	117		.ASCII / %0/
000732	066	045	116		.ASCII /6%N/
000735	000				.ASCII <00>
000736	045	101	040	P.AAM:	.ASCII /%A /
000741	040	040	040		.ASCII / /
000744	040	040	110		.ASCII / H/
000747	111	107	110		.ASCII /IGH/
000752	040	117	122		.ASCII / OR/
000755	104	105	122		.ASCII /DER/
000760	040	101	104		.ASCII / AD/
000763	104	122	040		.ASCII /DR /
000766	102	111	124		.ASCII /BIT/
000771	123	040	040		.ASCII /S /
000774	040	040	040		.ASCII / /
000777	040	040	045		.ASCII / %/
001002	117	066	045		.ASCII /06%/
001005	101	040	040		.ASCII /A /
001010	040	040	040		.ASCII / /
001013	040	040	040		.ASCII / /
001016	040	040	040		.ASCII / /
001021	040	045	117		.ASCII / %0/
001024	066	045	116		.ASCII /6%N/
001027	000				.ASCII <00>
001030	045	101	040	P.AAN:	.ASCII /%A /

ZQNA1  
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CZQNA0 DEQNA FUNCTIONAL TEST  
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VAX-11 Bliss-16 V4.1-582  
DISK#USER2:[MARSHALL.DEQNA]ZQNA1.BLI;4 (24)

001033	040	040	040	.ASCII	/ /
001036	040	040	114	.ASCII	/ L/
001041	117	127	040	.ASCII	/OW /
001044	040	117	122	.ASCII	/ OR/
001047	104	105	122	.ASCII	/DER/
001052	040	101	104	.ASCII	/ AD/
001055	104	122	040	.ASCII	/DR /
001060	102	111	124	.ASCII	/BIT/
001063	123	040	040	.ASCII	/S /
001066	040	040	040	.ASCII	/ /
001071	040	040	045	.ASCII	/ #/
001074	117	066	045	.ASCII	/06#/
001077	101	040	040	.ASCII	/A /
001102	040	040	040	.ASCII	/ /
001105	040	040	040	.ASCII	/ /
001110	040	040	040	.ASCII	/ /
001113	040	045	117	.ASCII	/ #0/
001116	066	045	116	.ASCII	/6#N/
001121	000			.ASCII	<00>
001122	045	101	040	P.AAO: .ASCII	/#A /
001125	040	040	040	.ASCII	/ /
001130	040	040	120	.ASCII	/ P/
001133	101	103	113	.ASCII	/ACK/
001136	105	124	040	.ASCII	/ET /
001141	114	105	116	.ASCII	/LEN/
001144	107	124	110	.ASCII	/GTH/
001147	040	050	040	.ASCII	/ ( /
001152	127	104	040	.ASCII	/WD /
001155	051	040	040	.ASCII	/) /
001160	040	040	040	.ASCII	/ /
001163	040	040	045	.ASCII	/ #/
001166	117	066	045	.ASCII	/06#/
001171	101	040	040	.ASCII	/A /
001174	040	040	040	.ASCII	/ /
001177	040	040	040	.ASCII	/ /
001202	040	040	040	.ASCII	/ /
001205	040	045	117	.ASCII	/ #0/
001210	066	045	116	.ASCII	/6#N/
001213	000			.ASCII	<00>
001214	045	101	040	P.AAP: .ASCII	/#A /
001217	040	040	040	.ASCII	/ /
001222	040	040	123	.ASCII	/ S/
001225	124	101	124	.ASCII	/TAT/
001230	125	123	040	.ASCII	/US /
001233	127	117	122	.ASCII	/WOR/
001236	104	040	061	.ASCII	/D 1/
001241	040	040	040	.ASCII	/ /
001244	040	040	040	.ASCII	/ /
001247	040	040	040	.ASCII	/ /
001252	040	040	040	.ASCII	/ /
001255	040	040	045	.ASCII	/ #/
001260	117	066	045	.ASCII	/06#/
001263	101	040	040	.ASCII	/A /

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CZQNA0 DEQNA FUNCTIONAL TEST  
PROTECTION TABLE

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VAX-11 Bliss-16 V4.1-582  
DISK\$USFR2:[MARSHALL.DEQNA]ZQNA1.BLI;4 (24)

001266	040	040	040	.ASCII	/ /
001271	040	040	040	.ASCII	/ /
001274	040	040	040	.ASCII	/ /
001277	040	045	117	.ASCII	/ #0/
001302	066	045	116	.ASCII	/6#N/
001305	000			.ASCII	<00>
001306	045	101	040	P.AAQ:	.ASCII /#A /
001311	040	040	040	.ASCII	/ /
001314	040	040	123	.ASCII	/ S/
001317	124	101	124	.ASCII	/TAT/
001322	125	123	040	.ASCII	/US /
001325	127	117	122	.ASCII	/WOR/
001330	104	040	062	.ASCII	/D 2/
001333	040	040	040	.ASCII	/ /
001336	040	040	040	.ASCII	/ /
001341	040	040	040	.ASCII	/ /
001344	040	040	040	.ASCII	/ /
001347	040	040	045	.ASCII	/ #/
001352	117	066	045	.ASCII	/06#/
001355	101	040	040	.ASCII	/A /
001360	040	040	040	.ASCII	/ /
001363	040	040	040	.ASCII	/ /
001366	040	040	040	.ASCII	/ /
001371	040	045	117	.ASCII	/ #0/
001374	066	045	116	.ASCII	/6#N/
001377	000			.ASCII	<00>
001400	045	101	040	P.AAR:	.ASCII /#A /
001403	040	040	040	.ASCII	/ /
001406	040	040	104	.ASCII	/ D/
001411	105	121	116	.ASCII	/EQN/
001414	101	040	103	.ASCII	/A C/
001417	123	122	040	.ASCII	/SR /
001422	122	105	107	.ASCII	/REG/
001425	111	123	124	.ASCII	/IST/
001430	105	122	040	.ASCII	/ER /
001433	040	040	040	.ASCII	/ /
001436	040	040	040	.ASCII	/ /
001441	040	040	040	.ASCII	/ /
001444	040	040	040	.ASCII	/ /
001447	040	040	040	.ASCII	/ /
001452	040	040	045	.ASCII	/ #/
001455	117	066	045	.ASCII	/06#/
001460	116	000		.ASCII	/N/<00>
001462	045	101	040	P.AAS:	.ASCII /#A /
001465	040	040	040	.ASCII	/ /
001470	040	040	104	.ASCII	/ D/
001473	105	121	116	.ASCII	/EQN/
001476	101	040	111	.ASCII	/A I/
001501	057	117	040	.ASCII	<57>/0 /
001504	120	101	107	.ASCII	/PAG/
001507	105	040	101	.ASCII	/E A/
001512	104	122	040	.ASCII	/DR /
001515	040	040	040	.ASCII	/ /

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CZQNA0 DEQNA FUNCTIONAL TEST  
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VAX-11 Bliss-16 V4.1-582  
DISK\$USER2:[MARSHALL.DEQNA]ZQNA1.BLI;4 (24)

001520	040	040	040	.ASCII	/ /
001523	040	040	040	.ASCII	/ /
001526	040	040	040	.ASCII	/ /
001531	040	040	040	.ASCII	/ /
001534	040	040	045	.ASCII	/ #/
001537	117	066	045	.ASCII	/06#/
001542	116	045	116	.ASCII	/N#N/
001545	000			.ASCII	<00>
001546	045	101	040	P.AAT:	.ASCII /#A /
001551	102	101	104	.ASCII	/BAD/
001554	040	103	123	.ASCII	/ CS/
001557	122	072	040	.ASCII	/R: /
001562	101	103	124	.ASCII	/ACT/
001565	040	075	040	.ASCII	/ = /
001570	045	117	066	.ASCII	/#06/
001573	045	101	040	.ASCII	/#A /
001576	105	130	120	.ASCII	/EXP/
001601	040	075	040	.ASCII	/ = /
001604	045	117	066	.ASCII	/#06/
001607	045	116	000	.ASCII	/#N/<00>
001612	045	101	040	P.AAU:	.ASCII /#A /
001615	102	101	104	.ASCII	/BAD/
001620	040	124	122	.ASCII	/ TR/
001623	101	116	123	.ASCII	/ANS/
001626	115	111	124	.ASCII	/MIT/
001631	040	106	114	.ASCII	/ FL/
001634	101	107	040	.ASCII	/AG /
001637	127	117	122	.ASCII	/WOR/
001642	104	072	040	.ASCII	/D: /
001645	101	103	124	.ASCII	/ACT/
001650	040	075	040	.ASCII	/ = /
001653	045	117	066	.ASCII	/#06/
001656	045	101	040	.ASCII	/#A /
001661	105	130	120	.ASCII	/EXP/
001664	040	075	040	.ASCII	/ = /
001667	045	117	066	.ASCII	/#06/
001672	045	116	000	.ASCII	/#N/<00>
001675	000			.ASCII	<00>
001676	045	101	040	P.AAV:	.ASCII /#A /
001701	102	101	104	.ASCII	/BAD/
001704	040	124	122	.ASCII	/ TR/
001707	101	116	123	.ASCII	/ANS/
001712	115	111	124	.ASCII	/MIT/
001715	040	123	124	.ASCII	/ ST/
001720	101	124	125	.ASCII	/ATU/
001723	123	040	127	.ASCII	/S W/
001726	117	122	104	.ASCII	/ORD/
001731	040	061	072	.ASCII	/ 1:/
001734	040	101	103	.ASCII	/ AC/
001737	124	040	075	.ASCII	/T =/
001742	040	045	117	.ASCII	/ #0/
001745	066	045	101	.ASCII	/6#A/
001750	040	105	130	.ASCII	/ EX/

ZQNA1  
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CZQNADO DEQNA FUNCTIONAL TEST  
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SEQ 0036  
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DISK\$USER2:[MARSHALL.DEQNA]ZQNA1.BLI;4 (24)

001753	120	040	075	.ASCII	/P =/	
001756	040	045	117	.ASCII	/ #0/	
001761	066	045	116	.ASCII	/6#N/	
001764	000	000		.ASCII	<00><00>	
001766	045	101	040	P.AAW:	.ASCII	/#A /
001771	102	101	104	.ASCII	/BAD/	
001774	040	122	105	.ASCII	/ RE/	
001777	103	105	111	.ASCII	/CEI/	
002002	126	105	040	.ASCII	/VE /	
002005	106	114	101	.ASCII	/FLA/	
002010	107	040	127	.ASCII	/G W/	
002013	117	122	104	.ASCII	/ORD/	
002016	072	040	101	.ASCII	/: A/	
002021	103	124	040	.ASCII	/CT /	
002024	075	040	045	.ASCII	/= #/	
002027	117	066	045	.ASCII	/06#/	
002032	101	040	105	.ASCII	/A E/	
002035	130	120	040	.ASCII	/XP /	
002040	075	040	045	.ASCII	/= #/	
002043	117	066	045	.ASCII	/06#/	
002046	116	000		.ASCII	/N/<00>	
002050	045	101	040	P.AAX:	.ASCII	/#A /
002053	102	101	104	.ASCII	/BAD/	
002056	040	122	105	.ASCII	/ RE/	
002061	103	105	111	.ASCII	/CEI/	
002064	126	105	040	.ASCII	/VE /	
002067	123	124	101	.ASCII	/STA/	
002072	124	125	123	.ASCII	/TUS/	
002075	040	127	117	.ASCII	/ WO/	
002100	122	104	040	.ASCII	/RD /	
002103	061	072	040	.ASCII	/1: /	
002106	101	103	124	.ASCII	/ACT/	
002111	040	075	040	.ASCII	/ = /	
002114	045	117	066	.ASCII	/#06/	
002117	045	101	040	.ASCII	/#A /	
002122	105	130	120	.ASCII	/EXP/	
002125	040	075	040	.ASCII	/ = /	
002130	045	117	066	.ASCII	/#06/	
002133	045	116	000	.ASCII	/#N/<00>	
002136	045	101	040	P.AAY:	.ASCII	/#A /
002141	102	101	104	.ASCII	/BAD/	
002144	040	122	105	.ASCII	/ RE/	
002147	103	105	111	.ASCII	/CEI/	
002152	126	105	040	.ASCII	/VE /	
002155	102	125	106	.ASCII	/BUF/	
002160	106	105	122	.ASCII	/FER/	
002163	040	114	105	.ASCII	/ LE/	
002166	116	107	124	.ASCII	/NGT/	
002171	110	072	040	.ASCII	/H: /	
002174	101	103	124	.ASCII	/ACT/	
002177	040	075	040	.ASCII	/ = /	
002202	045	117	066	.ASCII	/#06/	
002205	045	101	040	.ASCII	/#A /	

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CZONADO DEQNA FUNCTIONAL TEST  
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SEQ 0037  
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VAX-11 Bliss-16 V4.1-582  
DISK\$USER2:[MARSHALL.DEQNA]ZQNA1.BLI;4 (24)

002210	105	130	120	.ASCII	/EXP/
002213	040	075	040	.ASCII	/ = /
002216	045	117	066	.ASCII	/#06/
002221	045	116	000	.ASCII	/#N/<00>
002224	045	101	040	P.AAZ:	.ASCII /#A /
002227	102	101	104	.ASCII	/BAD/
002232	040	103	123	.ASCII	/ CS/
002235	122	040	075	.ASCII	/R =/
002240	040	045	117	.ASCII	/ #0/
002243	066	045	116	.ASCII	/6#N/
002246	000	000		.ASCII	<00><00>
002250	045	101	040	P.ABA:	.ASCII /#A /
002253	114	117	117	.ASCII	/LOO/
002256	120	102	101	.ASCII	/PBA/
002261	103	113	040	.ASCII	/CK /
002264	120	101	103	.ASCII	/PAC/
002267	113	105	124	.ASCII	/KET/
002272	040	125	116	.ASCII	/ UN/
002275	101	102	114	.ASCII	/ABL/
002300	105	040	124	.ASCII	/E T/
002303	117	040	123	.ASCII	/O S/
002306	105	124	040	.ASCII	/ET /
002311	103	101	040	.ASCII	/CA /
002314	102	111	124	.ASCII	/BIT/
002317	054	040	103	.ASCII	/ . C/
002322	123	122	040	.ASCII	/SR /
002325	075	040	045	.ASCII	/ = #/
002330	117	066	045	.ASCII	/06#/
002333	116	000	000	.ASCII	/N/<00><00>
002336	045	101	040	P.ABB:	.ASCII /#A /
002341	114	117	117	.ASCII	/LOO/
002344	120	102	101	.ASCII	/PBA/
002347	103	113	040	.ASCII	/CK /
002352	120	101	103	.ASCII	/PAC/
002355	113	105	124	.ASCII	/KET/
002360	040	125	116	.ASCII	/ UN/
002363	101	102	114	.ASCII	/ABL/
002366	105	040	124	.ASCII	/E T/
002371	117	040	103	.ASCII	/O C/
002374	114	105	101	.ASCII	/LEA/
002377	122	040	103	.ASCII	/R C/
002402	101	040	102	.ASCII	/A B/
002405	111	124	054	.ASCII	/IT./
002410	040	103	123	.ASCII	/ CS/
002413	122	040	075	.ASCII	/R =/
002416	040	045	117	.ASCII	/ #0/
002421	066	045	116	.ASCII	/6#N/
002424	000	000		.ASCII	<00><00>
002426	045	101	040	P.ABC:	.ASCII /#A /
002431	103	101	040	.ASCII	/CA /
002434	102	111	124	.ASCII	/BIT/
002437	040	117	113	.ASCII	/ OK/
002442	054	040	102	.ASCII	/ . B/

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CZONADO DEQNA FUNCTIONAL TEST  
PROTECTION TABLE

002445	125	124	040	.ASCII	/UT /
002450	122	111	040	.ASCII	/RI /
002453	102	111	124	.ASCII	/BIT/
002456	040	111	123	.ASCII	/ IS/
002461	040	116	117	.ASCII	/ NO/
002464	124	040	117	.ASCII	/T O/
002467	116	054	040	.ASCII	/N. /
002472	103	123	122	.ASCII	/CSR/
002475	040	075	040	.ASCII	/ = /
002500	045	117	066	.ASCII	/#06/
002503	045	116	000	.ASCII	/#N/<00>
002506	045	101	040	P.ABD:	.ASCII /#A /
002511	103	101	040	.ASCII	/CA /
002514	102	111	124	.ASCII	/BIT/
002517	040	111	116	.ASCII	/ IN/
002522	040	124	110	.ASCII	/ TH/
002525	105	040	103	.ASCII	/E C/
002530	123	122	040	.ASCII	/SR /
002533	127	101	123	.ASCII	/WAS/
002536	040	123	105	.ASCII	/ SE/
002541	124	040	124	.ASCII	/T T/
002544	117	117	040	.ASCII	/00 /
002547	105	101	122	.ASCII	/EAR/
002552	114	131	054	.ASCII	/LY./
002555	040	103	123	.ASCII	/ CS/
002560	122	040	075	.ASCII	/R =/
002563	040	045	117	.ASCII	/ #0/
002566	066	045	116	.ASCII	/6#N/
002571	000			.ASCII	<00>
002572	045	101	040	P.ABE:	.ASCII /#A /
002575	130	114	040	.ASCII	/XL /
002600	101	116	104	.ASCII	/AND/
002603	040	122	114	.ASCII	/ RL/
002606	040	050	040	.ASCII	/ ( /
002611	102	111	124	.ASCII	/BIT/
002614	123	040	064	.ASCII	/S 4/
002617	054	065	040	.ASCII	/,5 /
002622	051	040	124	.ASCII	/) T/
002625	117	040	102	.ASCII	/O B/
002630	105	040	122	.ASCII	/E R/
002633	105	123	105	.ASCII	/ESE/
002636	124	040	124	.ASCII	/T T/
002641	117	040	060	.ASCII	/O O/
002644	045	116	000	.ASCII	/#N/<00>
002647	000			.ASCII	<00>
002650	045	101	040	P.ABF:	.ASCII /#A /
002653	130	114	040	.ASCII	/XL /
002656	101	116	104	.ASCII	/AND/
002661	040	122	114	.ASCII	/ RL/
002664	040	050	040	.ASCII	/ ( /
002667	102	111	124	.ASCII	/BIT/
002672	123	040	064	.ASCII	/S 4/
002675	054	065	040	.ASCII	/,5 /



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CZONADO DEQNA FUNCTIONAL TEST  
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SEQ 0039  
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DISK\$USER2:[MARSHALL.DEQNA]ZONA1.BLI:4 (24)

002700	051	040	124	.ASCII	/) T/
002703	117	040	102	.ASCII	/O B/
002706	105	040	123	.ASCII	/E S/
002711	105	124	040	.ASCII	/ET /
002714	124	117	040	.ASCII	/TO /
002717	061	045	116	.ASCII	/1#N/
002722	000	000		.ASCII	<00><00>
002724	045	101	040	P.ABG:	.ASCII /#A /
002727	122	111	040	.ASCII	/RI /
002732	050	040	102	.ASCII	/( B/
002735	111	124	040	.ASCII	/IT /
002740	061	065	040	.ASCII	/15 /
002743	051	040	124	.ASCII	/) T/
002746	117	040	102	.ASCII	/O B/
002751	105	040	123	.ASCII	/E S/
002754	105	124	040	.ASCII	/ET /
002757	124	117	040	.ASCII	/TO /
002762	061	045	116	.ASCII	/1#N/
002765	000			.ASCII	<00>
002766	045	101	040	P.ABH:	.ASCII /#A /
002771	130	111	040	.ASCII	/XI /
002774	050	040	102	.ASCII	/( B/
002777	111	124	040	.ASCII	/IT /
003002	067	040	051	.ASCII	/7 )/
003005	040	124	117	.ASCII	/ TO/
003010	040	102	105	.ASCII	/ BE/
003013	040	123	105	.ASCII	/ SE/
003016	124	040	124	.ASCII	/T T/
003021	117	040	061	.ASCII	/O 1/
003024	045	116	000	.ASCII	/#N/<00>
003027	000			.ASCII	<00>
003030	045	101	040	P.ABI:	.ASCII /#A /
003033	116	111	040	.ASCII	/NI /
003036	050	040	102	.ASCII	/( B/
003041	111	124	040	.ASCII	/IT /
003044	062	040	051	.ASCII	/2 )/
003047	040	124	117	.ASCII	/ TO/
003052	040	102	105	.ASCII	/ BE/
003055	040	123	105	.ASCII	/ SE/
003060	124	040	124	.ASCII	/T T/
003063	117	040	061	.ASCII	/O 1/
003066	045	116	000	.ASCII	/#N/<00>
003071	000			.ASCII	<00>
003072	045	101	040	P.ABJ:	.ASCII /#A /
003075	116	111	040	.ASCII	/NI /
003100	050	040	102	.ASCII	/( B/
003103	111	124	040	.ASCII	/IT /
003106	062	040	051	.ASCII	/2 )/
003111	040	124	117	.ASCII	/ TO/
003114	040	102	105	.ASCII	/ BE/
003117	040	122	105	.ASCII	/ RE/
003122	123	105	124	.ASCII	/SET/
003125	040	124	117	.ASCII	/ TO/

ZQNA1  
V01.0

CZQNA0 DEQNA FUNCTIONAL TEST  
PROTECTION TABLE

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SEQ 0040  
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DISK\$USER2:(MARSHALL.DEQNA)ZQNA1.BLI;4 (24)

003130	040	060	045		.ASCII / 0# /
003133	116	000	000		.ASCII /N/<00><00>
003136	045	101	040	P.ABK:	.ASCII /#A /
003141	102	101	104		.ASCII /BAD/
003144	040	103	123		.ASCII / CS/
003147	122	054	040		.ASCII /R. /
003152	105	130	120		.ASCII /EXP/
003155	105	103	124		.ASCII /ECT/
003160	105	104	000		.ASCII /ED/<00>
003163	000				.ASCII <00>
003164	045	101	040	P.ABL:	.ASCII /#A /
003167	103	123	122		.ASCII /CSR/
003172	040	101	104		.ASCII / AD/
003175	122	040	075		.ASCII /R =/
003200	040	045	117		.ASCII / #0/
003203	066	045	101		.ASCII /6#A/
003206	040	040	101		.ASCII / A/
003211	103	124	125		.ASCII /CTU/
003214	101	114	040		.ASCII /AL /
003217	075	040	045		.ASCII /- #/
003222	117	066	045		.ASCII /06#/
003225	101	040	040		.ASCII /A /
003230	105	130	120		.ASCII /EXP/
003233	105	103	124		.ASCII /ECT/
003236	105	104	040		.ASCII /ED /
003241	075	040	045		.ASCII /- #/
003244	117	066	045		.ASCII /06#/
003247	116	000	000	P.ABM:	.ASCII /N/<00><00>
003252	045	116	045		.ASCII /#N#/
003255	101	040	125		.ASCII /A U/
003260	116	101	102		.ASCII /NAB/
003263	114	105	040		.ASCII /LE /
003266	124	117	040		.ASCII /TO /
003271	122	105	123		.ASCII /RES/
003274	105	124	040		.ASCII /ET /
003277	104	105	121		.ASCII /DEQ/
003302	116	101	072		.ASCII /NA:/
003305	040	101	104		.ASCII / AD/
003310	122	072	040		.ASCII /R: /
003313	045	117	066		.ASCII /#06/
003316	045	101	040		.ASCII /#A /
003321	040	103	123		.ASCII / CS/
003324	122	040	075		.ASCII /R =/
003327	040	045	117		.ASCII / #0/
003332	066	045	116		.ASCII /6#N/
003335	000				.ASCII <00>
003336	045	116	045	P.ABN:	.ASCII /#N#/
003341	101	040	127		.ASCII /A W/
003344	101	111	124		.ASCII /AIT/
003347	040	101	102		.ASCII / AB/
003352	117	125	124		.ASCII /OUT/
003355	040	045	104		.ASCII / #0/
003360	062	045	101		.ASCII /2#A/

ZQNA1  
V01.0

CZQNADO DEQNA FUNCTIONAL TEST  
PROTECTION TABLE

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SEQ 0041  
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DISK#USER2:[MARSHALL.DEQNA]ZQNA1.BLI;4 (24)

003363	040	123	105	.ASCII	/ SE/
003366	103	117	116	.ASCII	/CON/
003371	104	050	123	.ASCII	/D(S/
003374	051	040	055	.ASCII	/) -/
003377	000			.ASCII	<00>
003400	045	116	045	P.ABO: .ASCII	/#N#/
003403	101	040	123	.ASCII	/A S/
003406	101	116	111	.ASCII	/ANI/
003411	124	131	040	.ASCII	/TY /
003414	124	111	115	.ASCII	/TIM/
003417	105	122	040	.ASCII	/ER /
003422	124	111	115	.ASCII	/TIM/
003425	105	104	040	.ASCII	/ED /
003430	117	125	124	.ASCII	/OUT/
003433	040	101	123	.ASCII	/ AS/
003436	040	105	130	.ASCII	/ EX/
003441	120	105	103	.ASCII	/PEC/
003444	124	105	104	.ASCII	/TED/
003447	040	045	116	.ASCII	/ #N/
003452	000	000		.ASCII	<00><00>
003454	045	116	045	P.ABP: .ASCII	/#N#/
003457	101	040	116	.ASCII	/A N/
003462	117	040	123	.ASCII	/O S/
003465	101	116	111	.ASCII	/ANI/
003470	124	131	040	.ASCII	/TY /
003473	124	111	115	.ASCII	/TIM/
003476	105	122	040	.ASCII	/ER /
003501	111	116	124	.ASCII	/INT/
003504	105	122	122	.ASCII	/ERR/
003507	125	120	124	.ASCII	/UPT/
003512	040	104	105	.ASCII	/ DE/
003515	124	105	103	.ASCII	/TEC/
003520	124	105	104	.ASCII	/TED/
003523	040	045	116	.ASCII	/ #N/
003526	000	000		.ASCII	<00><00>
003530	045	116	045	P.ABQ: .ASCII	/#N#/
003533	101	040	104	.ASCII	/A D/
003536	111	123	103	.ASCII	/ISC/
003541	117	116	116	.ASCII	/ONN/
003544	105	103	124	.ASCII	/ECT/
003547	040	124	122	.ASCII	/ TR/
003552	101	116	123	.ASCII	/ANS/
003555	103	105	111	.ASCII	/CEI/
003560	126	105	122	.ASCII	/VER/
003563	040	103	101	.ASCII	/ CA/
003566	102	114	105	.ASCII	/BLE/
003571	040	106	122	.ASCII	/ FR/
003574	117	115	040	.ASCII	/OH /
003577	102	125	114	.ASCII	/BIA/
003602	113	110	105	.ASCII	/KHE/
003605	101	104	040	.ASCII	/AC /
003610	101	123	123	.ASCII	/A S/
003613	105	115	102	.ASCII	/EIB/

ZQNA1  
V01.0CZQNADO DEQNA FUNCTIONAL TEST  
PROTECTION TABLE14-Mar-1985 13:09:10  
14-Mar-1985 13:07:35SEQ 0042  
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DISK\$USER2:[MARSHALL.DEQNA]ZQNA1.BLI;4 (24)

003616	114	131	040	.ASCII	/LY /
003621	101	116	104	.ASCII	/AND/
003624	000	000		.ASCII	<00><00>
003626	045	116	045	P.ABR:	.ASCII /#N#/
003631	101	040	103	.ASCII	/A C/
003634	117	116	116	.ASCII	/ONN/
003637	105	103	124	.ASCII	/ECT/
003642	040	114	117	.ASCII	/ LO/
003645	117	120	102	.ASCII	/OPB/
003650	101	103	113	.ASCII	/ACK/
003653	040	103	117	.ASCII	/ CO/
003656	116	116	105	.ASCII	/NNE/
003661	103	124	117	.ASCII	/CTO/
003664	122	040	124	.ASCII	/R T/
003667	117	040	102	.ASCII	/O B/
003672	125	114	113	.ASCII	/ULK/
003675	110	105	101	.ASCII	/HEA/
003700	104	040	101	.ASCII	/D A/
003703	123	123	105	.ASCII	/SSE/
003706	115	102	114	.ASCII	/MBL/
003711	131	054	040	.ASCII	/Y, /
003714	124	110	105	.ASCII	/THE/
003717	116	040	122	.ASCII	/N R/
003722	105	124	105	.ASCII	/ETE/
003725	123	124	045	.ASCII	/ST#/
003730	116	000		.ASCII	/N/<00>
003732	045	116	045	P.ABS:	.ASCII /#N#/
003735	101	040	104	.ASCII	/A D/
003740	111	123	103	.ASCII	/ISC/
003743	117	116	116	.ASCII	/ONN/
003746	105	103	124	.ASCII	/ECT/
003751	040	102	125	.ASCII	/ BU/
003754	114	113	110	.ASCII	/LKH/
003757	105	101	104	.ASCII	/EAD/
003762	040	101	123	.ASCII	/ AS/
003765	123	105	115	.ASCII	/SEM/
003770	102	114	131	.ASCII	/BLY/
003773	040	106	122	.ASCII	/ FR/
003776	117	115	040	.ASCII	/OM /
004001	104	105	121	.ASCII	/DEQ/
004004	116	101	040	.ASCII	/NA /
004007	101	116	104	.ASCII	/AND/
004012	040	103	117	.ASCII	/ CO/
004015	116	116	105	.ASCII	/NNE/
004020	103	124	000	.ASCII	/CT/<00>
004023	000			.ASCII	<00>
004024	045	116	045	P.ABT:	.ASCII /#N#/
004027	101	040	114	.ASCII	/A L/
004032	117	117	120	.ASCII	/OOP/
004035	102	101	103	.ASCII	/BAC/
004040	113	040	103	.ASCII	/K C/
004043	117	116	116	.ASCII	/ONN/
004046	105	103	124	.ASCII	/ECT/

ZQNA1  
V01.0CZQNA0 DEQNA FUNCTIONAL TEST  
PROTECTION TABLE14-Mar-1985 13:09:10  
14-Mar-1985 13:07:35SEQ 0043  
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VAX-11 Bliss-16 V4.1-582  
DISK#USER2:[MARSHALL.DEQNA]ZQNA1.BLI;4 (24)

004051	117	122	040	.ASCII	/OR /
004054	124	117	040	.ASCII	/TO /
004057	104	105	121	.ASCII	/DEQ/
004062	116	101	054	.ASCII	/NA /
004065	040	124	110	.ASCII	/ TH/
004070	105	116	040	.ASCII	/EN /
004073	122	105	124	.ASCII	/RET/
004076	105	123	124	.ASCII	/EST/
004101	045	116	000	.ASCII	/N/<00>
004104	045	116	045	P.ABU: .ASCII	/N#/
004107	101	040	103	.ASCII	/A C/
004112	110	105	103	.ASCII	/HEC/
004115	113	040	106	.ASCII	/K F/
004120	117	122	040	.ASCII	/OR /
004123	114	117	117	.ASCII	/LOO/
004126	123	105	040	.ASCII	/SE /
004131	127	111	122	.ASCII	/WIR/
004134	105	123	040	.ASCII	/ES /
004137	111	116	040	.ASCII	/IN /
004142	101	040	114	.ASCII	/A L/
004145	117	117	120	.ASCII	/OOP/
004150	102	101	103	.ASCII	/BAC/
004153	113	040	103	.ASCII	/K C/
004156	117	116	116	.ASCII	/ONN/
004161	105	103	124	.ASCII	/ECT/
004164	117	122	000	.ASCII	/OR/<00>
004167	000			.ASCII	<00>
004170	045	116	045	P.ABV: .ASCII	/N#/
004173	101	040	117	.ASCII	/A O/
004176	122	040	125	.ASCII	/R U/
004201	123	105	040	.ASCII	/SE /
004204	104	111	106	.ASCII	/DIF/
004207	106	105	122	.ASCII	/FER/
004212	105	116	124	.ASCII	/ENT/
004215	040	114	117	.ASCII	/ LO/
004220	117	120	102	.ASCII	/OPB/
004223	101	103	113	.ASCII	/ACK/
004226	040	103	117	.ASCII	/ CO/
004231	116	116	105	.ASCII	/NNE/
004234	103	124	117	.ASCII	/CTO/
004237	122	054	040	.ASCII	/R, /
004242	124	110	105	.ASCII	/THE/
004245	116	040	122	.ASCII	/N R/
004250	105	124	105	.ASCII	/ETE/
004253	123	124	045	.ASCII	/ST#/
004256	116	000		.ASCII	/N/<00>
004260	045	116	045	P.ABW: .ASCII	/N#/
004263	101	040	122	.ASCII	/A R/
004266	105	120	114	.ASCII	/EPL/
004271	101	103	105	.ASCII	/ACE/
004274	040	104	105	.ASCII	/ DE/
004277	121	116	101	.ASCII	/QNA/
004302	054	040	124	.ASCII	/, T/

ZQNA1  
V01.0

CZQNADO DEQNA FUNCTIONAL TEST  
PROTECTION TABLE

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SEQ 0044  
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VAX-11 Bliss-16 V4 1 582  
DISK#USER2:[MARSHALL.DEQNA]ZQNA1.BLI;4 (24)

004305	110	105	116	.ASCII	/HEN/
004310	040	122	105	.ASCII	/ RE/
004313	124	105	123	.ASCII	/TES/
004316	124	045	116	.ASCII	/T#N/
004321	000			.ASCII	<00>
004322	045	116	045	P.ABX:	.ASCII /#N#/
004325	101	040	122	.ASCII	/A R/
004330	105	120	114	.ASCII	/EPL/
004333	101	103	105	.ASCII	/ACE/
004336	040	102	125	.ASCII	/ BU/
004341	114	113	110	.ASCII	/LKH/
004344	105	101	104	.ASCII	/EAD/
004347	040	103	117	.ASCII	/ CO/
004352	116	116	105	.ASCII	/NNE/
004355	103	124	117	.ASCII	/CTO/
004360	122	054	040	.ASCII	/R, /
004363	124	110	105	.ASCII	/THE/
004366	116	040	122	.ASCII	/N R/
004371	105	124	105	.ASCII	/ETE/
004374	123	124	045	.ASCII	/ST#/
004377	116	000	000	.ASCII	/N/<00><00>
004402	045	116	045	P.ABY:	.ASCII /#N#/
004405	101	040	104	.ASCII	/A D/
004410	111	123	103	.ASCII	/ISC/
004413	117	116	116	.ASCII	/ONN/
004416	105	103	124	.ASCII	/ECT/
004421	040	124	122	.ASCII	/ TR/
004424	101	116	123	.ASCII	/ANS/
004427	103	105	111	.ASCII	/CEI/
004432	126	105	122	.ASCII	/VER/
004435	040	103	101	.ASCII	/ CA/
004440	102	114	105	.ASCII	/BLE/
004443	040	106	122	.ASCII	/ FR/
004446	117	115	040	.ASCII	/OM /
004451	124	122	101	.ASCII	/TRA/
004454	116	123	103	.ASCII	/NSC/
004457	105	111	126	.ASCII	/EIV/
004462	105	122	000	.ASCII	/ER/<00>
004465	000			.ASCII	<00>
004466	045	116	045	P.ABZ:	.ASCII /#N#/
004471	101	040	101	.ASCII	/A A/
004474	116	104	040	.ASCII	/ND /
004477	103	117	116	.ASCII	/CON/
004502	116	105	103	.ASCII	/NEC/
004505	124	040	111	.ASCII	/T I/
004510	124	040	124	.ASCII	/T T/
004513	117	040	114	.ASCII	/O L/
004516	117	117	120	.ASCII	/OOP/
004521	102	101	103	.ASCII	/BAC/
004524	113	040	103	.ASCII	/K C/
004527	117	116	116	.ASCII	/ONN/
004532	105	103	124	.ASCII	/ECT/
004535	117	122	040	.ASCII	/OR /

ZQNA1  
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CZQNADO DEQNA FUNCTIONAL TEST  
PROTECTION TABLE

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VAX-11 Bliss-16 V4.1-582  
DISK#USER2:[MARSHALL.DEQNA]ZQNA1.BLI;4 (24)

004540	101	116	104	.ASCII	/AND/
004543	040	102	125	.ASCII	/BU/
004546	114	113	110	.ASCII	/LKH/
004551	105	101	104	.ASCII	/EAD/
004554	040	101	123	.ASCII	/AS/
004557	123	105	115	.ASCII	/SEM/
004562	102	114	131	.ASCII	/BLY/
004565	045	116	000	.ASCII	/N/<00>
004570	045	116	045	P.ACA: .ASCII	/N%/
004573	101	040	122	.ASCII	/A R/
004576	105	120	114	.ASCII	/EPL/
004601	101	103	105	.ASCII	/ACE/
004604	040	124	122	.ASCII	/TR/
004607	101	116	123	.ASCII	/ANS/
004612	103	105	111	.ASCII	/CEI/
004615	126	105	122	.ASCII	/VER/
004620	040	103	101	.ASCII	/CA/
004623	102	114	105	.ASCII	/BLE/
004626	054	040	124	.ASCII	/, T/
004631	110	105	116	.ASCII	/HEN/
004634	040	122	105	.ASCII	/RE/
004637	124	105	123	.ASCII	/TES/
004642	124	045	116	.ASCII	/T#N/
004645	000			.ASCII	<00>
004646	045	116	045	P.ACB: .ASCII	/N%/
004651	101	040	122	.ASCII	/A R/
004654	105	120	114	.ASCII	/EPL/
004657	101	103	105	.ASCII	/ACE/
004662	040	124	122	.ASCII	/TR/
004665	101	116	123	.ASCII	/ANS/
004670	103	105	111	.ASCII	/CEI/
004673	126	105	122	.ASCII	/VER/
004676	054	040	124	.ASCII	/, T/
004701	110	105	116	.ASCII	/HEN/
004704	040	122	105	.ASCII	/RE/
004707	124	105	123	.ASCII	/TES/
004712	124	045	116	.ASCII	/T#N/
004715	000			.ASCII	<00>
004716	045	116	045	P.ACC: .ASCII	/N%/
004721	101	040	122	.ASCII	/A R/
004724	105	120	114	.ASCII	/EPL/
004727	101	103	105	.ASCII	/ACE/
004732	040	124	110	.ASCII	/TH/
004735	105	040	106	.ASCII	/E F/
004740	125	123	105	.ASCII	/USE/
004743	040	111	106	.ASCII	/IF/
004746	040	102	101	.ASCII	/BA/
004751	104	054	040	.ASCII	/D, /
004754	124	110	105	.ASCII	/THE/
004757	116	040	122	.ASCII	/N R/
004762	105	124	105	.ASCII	/ETE/
004765	123	124	045	.ASCII	/ST%/
004770	116	000		.ASCII	/N/<00>

ZQNA1  
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CZQNA0 DEQNA FUNCTIONAL TEST  
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SEQ 0046  
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VAX-11 Bliss-16 V4.1-582  
DISK#USER2:[MARSHALL.DEQNA]ZQNA1.BLI;4 (24)

004772	045	116	045	P.ACD:	.ASCII	/#N#/ /A B/ /AD / /REC/ /EIV/ /E D/ /ESC/ /RIP/ /TOR/ /:/<00><00>
004775	101	040	102		.ASCII	/A B/
005000	101	104	040		.ASCII	/AD /
005003	122	105	103		.ASCII	/REC/
005006	105	111	126		.ASCII	/EIV/
005011	105	040	104		.ASCII	/E D/
005014	105	123	103		.ASCII	/ESC/
005017	122	111	120		.ASCII	/RIP/
005022	124	117	122		.ASCII	/TOR/
005025	072	000	000		.ASCII	/:/<00><00>
005030	045	116	045	P.ACE:	.ASCII	/#N#/ /A B/ /AD / /TRA/ /NSM/ /IT / /DES/ /CRI/ /PTO/ /R:/<00>
005033	101	040	102		.ASCII	/A B/
005036	101	104	040		.ASCII	/AD /
005041	124	122	101		.ASCII	/TRA/
005044	116	123	115		.ASCII	/NSM/
005047	111	124	040		.ASCII	/IT /
005052	104	105	123		.ASCII	/DES/
005055	103	122	111		.ASCII	/CRI/
005060	120	124	117		.ASCII	/PTO/
005063	122	072	000		.ASCII	/R:/<00>
005066	045	101	040	P.ACF:	.ASCII	/#A / /ACT/ /UAL/ / = / /06/ /A / /EXP/ /ECT/ /ED / / = #/ /06#/ /A I/ /NDE/ /X =/ / #D/ /4#N/ <00><00>
005071	101	103	124		.ASCII	/#A /
005074	125	101	114		.ASCII	/ACT/
005077	040	075	040		.ASCII	/UAL/
005102	045	117	066		.ASCII	/ = /
005105	045	101	040		.ASCII	/06/
005110	105	130	120		.ASCII	/A /
005113	105	103	124		.ASCII	/EXP/
005116	105	104	040		.ASCII	/ECT/
005121	075	040	045		.ASCII	/ED /
005124	117	066	045		.ASCII	/ = #/
005127	101	040	111		.ASCII	/06#/
005132	116	104	105		.ASCII	/A I/
005135	130	040	075		.ASCII	/NDE/
005140	040	045	104		.ASCII	/X =/
005143	064	045	116		.ASCII	/ #D/
005146	000	000			.ASCII	/4#N/
005150	045	116	045	P.ACG:	.ASCII	<00><00>
005153	101	040	102		.ASCII	/#N#/ /A B/ /AD / /REC/ /EIV/ /E B/ /UFF/ /ER:/ <00><00>
005156	101	104	040		.ASCII	/#N#/
005161	122	105	103		.ASCII	/A B/
005164	105	111	126		.ASCII	/AD /
005167	105	040	102		.ASCII	/REC/
005172	125	106	106		.ASCII	/EIV/
005175	105	122	072		.ASCII	/E B/
005200	000	000			.ASCII	/UFF/
005202	045	116	045	P.ACH:	.ASCII	/ER:/ <00><00>
005205	101	040	104		.ASCII	/#N#/ /A D/ /MA / /OPE/ /RAT/ /ION/ / TA/
005210	115	101	040		.ASCII	/#N#/
005213	117	120	105		.ASCII	/A D/
005216	122	101	124		.ASCII	/MA /
005221	111	117	116		.ASCII	/OPE/
005224	040	124	101		.ASCII	/RAT/



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CZQNADO DEQNA FUNCTIONAL TEST  
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SEQ 0047  
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VAX-11 Bliss-16 V4.1-582  
DISK#USER2:[MARSHALL.DEQNA]ZQNA1.BLI;4 (24)

005227	113	105	123	.ASCII	/KES/
005232	040	124	117	.ASCII	/ TO/
005235	117	040	114	.ASCII	/O L/
005240	117	116	107	.ASCII	/ONG/
005243	045	116	000	.ASCII	/#N/<00>
005246	045	116	045	P.ACI: .ASCII	/#N#/
005251	101	040	124	.ASCII	/A T/
005254	117	117	040	.ASCII	/OO /
005257	115	101	116	.ASCII	/MAN/
005262	131	040	104	.ASCII	/Y D/
005265	105	126	111	.ASCII	/EVI/
005270	103	105	123	.ASCII	/CES/
005273	045	116	000	.ASCII	/#N/<00>
005276	045	116	045	P.ACJ: .ASCII	/#N#/
005301	101	040	124	.ASCII	/A T/
005304	110	105	122	.ASCII	/HER/
005307	105	040	127	.ASCII	/E W/
005312	101	123	040	.ASCII	/AS /
005315	101	040	120	.ASCII	/A P/
005320	117	127	105	.ASCII	/OWE/
005323	122	040	106	.ASCII	/R F/
005326	101	111	114	.ASCII	/AIL/
005331	040	055	040	.ASCII	/ - /
005334	127	101	111	.ASCII	/WAI/
005337	124	111	116	.ASCII	/TIN/
005342	107	045	116	.ASCII	/GMN/
005345	000			.ASCII	<00>
005346	045	116	045	P.ACK: .ASCII	/#N#/
005351	101	040	127	.ASCII	/A W/
005354	101	111	124	.ASCII	/AIT/
005357	040	101	102	.ASCII	/ AB/
005362	117	125	124	.ASCII	/OUT/
005365	040	045	104	.ASCII	/ #D/
005370	062	045	101	.ASCII	/2#A/
005373	040	115	111	.ASCII	/ MI/
005376	116	125	124	.ASCII	/NUT/
005401	105	050	123	.ASCII	/E(S/
005404	051	040	055	.ASCII	/) -/
005407	000			.ASCII	<00>
005410	045	116	045	P.ACL: .ASCII	/#N#/
005413	101	040	127	.ASCII	/A W/
005416	101	111	124	.ASCII	/AIT/
005421	040	101	102	.ASCII	/ AB/
005424	117	125	124	.ASCII	/OUT/
005427	040	045	104	.ASCII	/ #D/
005432	062	045	101	.ASCII	/2#A/
005435	040	110	117	.ASCII	/ HO/
005440	125	122	040	.ASCII	/UR /
005443	055	000	000	.ASCII	/-/<00><00>
005446	045	101	040	P.ACM: .ASCII	/#A /
005451	111	106	040	.ASCII	/IF /
005454	116	117	040	.ASCII	/NO /
005457	122	105	123	.ASCII	/RES/

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CZQNA0 DEQNA FUNCTIONAL TEST  
PROTECTION TABLE

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VAX-11 B11s-16 V4.1-582  
DISK#USER2:[MARSHALL.DEQNA]ZQNA1.BLI;4 (24)

005462	105	124	054	.ASCII	/ET/
005465	040	124	131	.ASCII	/TY/
005470	120	105	040	.ASCII	/PE/
005473	101	116	131	.ASCII	/ANY/
005476	040	103	110	.ASCII	/CH/
005501	101	122	101	.ASCII	/ARA/
005504	103	124	105	.ASCII	/CTE/
005507	122	040	124	.ASCII	/RT/
005512	117	040	105	.ASCII	/OE/
005515	130	111	124	.ASCII	/XIT/
005520	040	106	122	.ASCII	/FR/
005523	117	115	040	.ASCII	/OM/
005526	124	105	123	.ASCII	/TES/
005531	124	045	116	.ASCII	/T#N/
005534	000	000		.ASCII	<00><00>
005536	045	116	045	P.ACN: .ASCII	/#N#/
005541	101	040	124	.ASCII	/AT/
005544	104	122	040	.ASCII	/DR/
005547	126	101	114	.ASCII	/VAL/
005552	125	105	040	.ASCII	/UE/
005555	111	123	040	.ASCII	/IS/
005560	105	121	125	.ASCII	/EQU/
005563	101	114	040	.ASCII	/AL/
005566	124	117	040	.ASCII	/TO/
005571	132	105	122	.ASCII	/ZER/
005574	117	040	045	.ASCII	/O #/
005577	116	000	000	.ASCII	/N/<00><00>
005602	045	116	045	P.ACO: .ASCII	/#N#/
005605	116	045	101	.ASCII	/N#A/
005610	055	055	055	.ASCII	/---/
005613	055	055	055	.ASCII	/---/
005616	055	055	055	.ASCII	/---/
005621	055	055	055	.ASCII	/---/
005624	055	055	055	.ASCII	/---/
005627	055	055	055	.ASCII	/---/
005632	055	055	055	.ASCII	/---/
005635	055	055	055	.ASCII	/---/
005640	055	055	055	.ASCII	/---/
005643	055	055	055	.ASCII	/---/
005646	055	055	055	.ASCII	/---/
005651	055	055	055	.ASCII	/---/
005654	055	055	055	.ASCII	/---/
005657	055	055	055	.ASCII	/---/
005662	055	055	055	.ASCII	/---/
005665	055	055	055	.ASCII	/---/
005670	055	055	055	.ASCII	/---/
005673	055	055	055	.ASCII	/---/
005676	055	055	055	.ASCII	/---/
005701	055	055	055	.ASCII	/---/
005704	055	055	055	.ASCII	/---/
005707	055	055	045	.ASCII	/--#/
005712	116	000		.ASCII	/N/<00>
005714	045	116	045	P.ACP: .ASCII	/#N#/

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CZQNA0 DEQNA FUNCTIONAL TEST  
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SEQ 0049  
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VAX-11 B1,ss-16 V4.1-582  
DISK#USER2:[MARSHALL.DEQNA]ZQNA1.BLI;4 (24)

005717	101	040	102	.ASCII	/A B/
005722	101	104	040	.ASCII	/AD /
005725	103	123	122	.ASCII	/CSR/
005730	054	040	102	.ASCII	/, B/
005733	111	124	123	.ASCII	/ITS/
005736	040	123	124	.ASCII	/ ST/
005741	125	103	113	.ASCII	/UCK/
005744	040	101	124	.ASCII	/ AT/
005747	040	060	072	.ASCII	/ O:/
005752	045	116	000	.ASCII	/#N/<00>
005755	000			.ASCII	<00>
005756	045	116	045	P.ACQ:	.ASCII /#N#/
005761	101	040	102	.ASCII	/A B/
005764	101	104	040	.ASCII	/AD /
005767	103	123	122	.ASCII	/CSR/
005772	054	040	102	.ASCII	/, B/
005775	111	124	123	.ASCII	/ITS/
006000	040	123	124	.ASCII	/ ST/
006003	125	103	113	.ASCII	/UCK/
006006	040	101	124	.ASCII	/ AT/
006011	040	061	072	.ASCII	/ 1:/
006014	045	116	000	.ASCII	/#N/<00>
006017	000			.ASCII	<00>
006020	045	116	045	P.ACR:	.ASCII /#N#/
006023	101	040	123	.ASCII	/A S/
006026	117	106	124	.ASCII	/OFT/
006031	127	101	122	.ASCII	/WAR/
006034	105	040	122	.ASCII	/E R/
006037	105	123	105	.ASCII	/ESE/
006042	124	040	125	.ASCII	/T U/
006045	116	101	102	.ASCII	/NAB/
006050	114	105	040	.ASCII	/LE /
006053	124	117	040	.ASCII	/TO /
006056	103	114	105	.ASCII	/CLE/
006061	101	122	040	.ASCII	/AR /
006064	103	123	122	.ASCII	/CSR/
006067	040	123	124	.ASCII	/ ST/
006072	101	124	111	.ASCII	/ATI/
006075	103	040	102	.ASCII	/C B/
006100	111	124	123	.ASCII	/ITS/
006103	072	045	116	.ASCII	/:#N/
006106	000	000		.ASCII	<00><00>
006110	045	116	045	P.ACS:	.ASCII /#N#/
006113	101	040	102	.ASCII	/A B/
006116	101	104	040	.ASCII	/AD /
006121	123	124	101	.ASCII	/STA/
006124	124	111	117	.ASCII	/TIO/
006127	116	040	101	.ASCII	/N A/
006132	104	104	122	.ASCII	/DDR/
006135	105	123	123	.ASCII	/ESS/
006140	040	103	110	.ASCII	/ CH/
006143	105	103	113	.ASCII	/ECK/
006146	123	125	115	.ASCII	/SUM/

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CZQNA0 DEQNA FUNCTIONAL TEST  
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SEQ 0050  
Page 50  
VAX-11 Bliss-16 V4.1-582  
DISK#USER2:[MARSHALL.DEQNA]ZQNA1.BLI;4 (24)

006151	072	040	101	.ASCII	/: A/
006154	103	124	040	.ASCII	/CT /
006157	075	040	045	.ASCII	/= #/
006162	117	066	045	.ASCII	/06#/
006165	101	040	105	.ASCII	/A E/
006170	130	120	040	.ASCII	/XP /
006173	075	040	045	.ASCII	/= #/
006176	117	066	045	.ASCII	/06#/
006201	116	000	000	.ASCII	/N/<00><00>
006204	045	116	045	P.ACT: .ASCII	/#N#/
006207	101	040	102	.ASCII	/A B/
006212	101	104	040	.ASCII	/AD /
006215	123	124	101	.ASCII	/STA/
006220	124	111	117	.ASCII	/TIO/
006223	116	040	101	.ASCII	/N A/
006226	104	104	122	.ASCII	/DDR/
006231	105	123	123	.ASCII	/ESS/
006234	072	040	000	.ASCII	/: /<00>
006237	000			.ASCII	<00>
006240	045	116	045	P.ACU: .ASCII	/#N#/
006243	101	040	102	.ASCII	/A B/
006246	101	104	040	.ASCII	/AD /
006251	104	105	121	.ASCII	/DEQ/
006254	116	101	040	.ASCII	/NA /
006257	111	057	117	.ASCII	/I/<57>/0/
006262	040	120	101	.ASCII	/ PA/
006265	107	105	040	.ASCII	/GE /
006270	122	105	107	.ASCII	/REG/
006273	111	123	124	.ASCII	/IST/
006276	105	122	072	.ASCII	/ER:/
006301	045	116	000	.ASCII	/#N/<00>
006304	045	116	045	P.ACW: .ASCII	/#N#/
006307	101	040	102	.ASCII	/A B/
006312	101	104	040	.ASCII	/AD /
006315	103	123	122	.ASCII	/CSR/
006320	054	040	105	.ASCII	/, E/
006323	130	120	105	.ASCII	/XPE/
006326	103	124	105	.ASCII	/CTE/
006331	104	040	122	.ASCII	/D R/
006334	114	040	050	.ASCII	/L (/
006337	040	102	111	.ASCII	/ BI/
006342	124	040	065	.ASCII	/T 5/
006345	040	051	040	.ASCII	/ ) /
006350	124	117	040	.ASCII	/TO /
006353	102	105	040	.ASCII	/BE /
006356	123	105	124	.ASCII	/SET/
006361	040	124	117	.ASCII	/ TO/
006364	040	060	045	.ASCII	/ 0#/
006367	116	000	000	.ASCII	/N/<00><00>
006372	045	116	045	P.ACW: .ASCII	/#N#/
006375	101	040	102	.ASCII	/A B/
006400	101	104	040	.ASCII	/AD /
006403	102	057	104	.ASCII	/B/<57>/D/

ZQNA1  
V01.0CZONADO DEQNA FUNCTIONAL TEST  
PROTECTION TABLE14-Mar-1985 13:09:10  
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DISK#USER2:(MARSHALL.DEQNA)ZQNA1.BLI;4 (24)

006406	040	120	122	.ASCII	/ PR/
006411	117	115	040	.ASCII	/OM /
006414	103	110	105	.ASCII	/CHE/
006417	103	113	123	.ASCII	/CKS/
006422	125	115	072	.ASCII	/UM:/
006425	040	111	116	.ASCII	/ IN/
006430	104	105	130	.ASCII	/DEX/
006433	040	075	040	.ASCII	/ = /
006436	045	117	066	.ASCII	/#06/
006441	045	101	040	.ASCII	/#A /
006444	101	103	124	.ASCII	/ACT/
006447	040	075	040	.ASCII	/ = /
006452	045	117	066	.ASCII	/#06/
006455	045	101	040	.ASCII	/#A /
006460	105	130	120	.ASCII	/EXP/
006463	040	075	040	.ASCII	/ = /
006466	045	117	066	.ASCII	/#06/
006471	045	116	000	.ASCII	/#N/<00>
006474	045	116	045	P.ACX: .ASCII	/#N#/
006477	101	040	102	.ASCII	/A B/
006502	057	104	040	.ASCII	<57>/D /
006505	120	122	117	.ASCII	/PRO/
006510	115	040	103	.ASCII	/M C/
006513	110	105	103	.ASCII	/MEC/
006516	113	123	125	.ASCII	/KSU/
006521	115	040	117	.ASCII	/M O/
006524	106	106	123	.ASCII	/FFS/
006527	105	124	040	.ASCII	/ET /
006532	075	040	045	.ASCII	/ = #/
006535	117	066	045	.ASCII	/06#/
006540	101	040	101	.ASCII	/A A/
006543	103	124	040	.ASCII	/CT /
006546	075	040	045	.ASCII	/ = #/
006551	117	066	045	.ASCII	/06#/
006554	101	040	105	.ASCII	/A E/
006557	130	120	040	.ASCII	/XP /
006562	075	040	045	.ASCII	/ = #/
006565	117	066	045	.ASCII	/06#/
006570	116	000		.ASCII	/N/<00>
006572	045	116	045	P.ACY: .ASCII	/#N#/
006575	101	040	102	.ASCII	/A B/
006600	101	104	040	.ASCII	/AD /
006603	111	116	124	.ASCII	/INT/
006606	105	122	122	.ASCII	/ERR/
006611	125	120	124	.ASCII	/UPT/
006614	072	040	101	.ASCII	/: A/
006617	104	122	040	.ASCII	/DR /
006622	075	040	045	.ASCII	/ = #/
006625	117	066	045	.ASCII	/06#/
006630	101	040	101	.ASCII	/A A/
006633	103	124	040	.ASCII	/CT /
006636	114	105	126	.ASCII	/LEV/
006641	040	075	040	.ASCII	/ = /

ZQNA1  
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CZQNA0 DEQNA FUNCTIONAL TEST  
PROTECTION TABLE

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SEQ 0052  
Page 52  
VAX-11 B1:00-16 V4.1-582  
DISK:USER2:[MARSHALL.DEQNA]ZQNA1.BLI;4 (24)

006644	045	117	066	.ASCII	/#06/
006647	045	101	040	.ASCII	/#A /
006652	105	130	120	.ASCII	/EXP/
006655	040	114	105	.ASCII	/ LE/
006660	126	040	075	.ASCII	/V =/
006663	040	045	117	.ASCII	/ #0/
006666	066	045	116	.ASCII	/6#N/
006671	000			.ASCII	<00>
006672	045	116	045	P.ACZ: .ASCII	/#N#/
006675	101	040	122	.ASCII	/A R/
006700	105	107	111	.ASCII	/EGI/
006703	123	124	105	.ASCII	/STE/
006706	122	040	106	.ASCII	/R F/
006711	101	111	114	.ASCII	/AIL/
006714	105	104	040	.ASCII	/ED /
006717	124	117	040	.ASCII	/TO /
006722	122	105	123	.ASCII	/RES/
006725	120	117	116	.ASCII	/PON/
006730	104	040	101	.ASCII	/D A/
006733	124	040	101	.ASCII	/T A/
006736	104	104	122	.ASCII	/DDR/
006741	105	123	123	.ASCII	/ESS/
006744	072	040	040	.ASCII	/: /
006747	045	117	066	.ASCII	/#06/
006752	045	116	000	.ASCII	/#N/<00>
C,6755	000			.ASCII	<00>
006756	045	116	045	P.ADA: .ASCII	/#N#/
006761	101	040	102	.ASCII	/A B/
006764	101	104	040	.ASCII	/AD /
006767	124	122	101	.ASCII	/TRA/
006772	116	123	115	.ASCII	/NSM/
006775	111	124	040	.ASCII	/IT /
007000	123	124	101	.ASCII	/STA/
007003	124	125	123	.ASCII	/TUS/
007006	054	040	124	.ASCII	/, T/
007011	117	117	040	.ASCII	/00 /
007014	115	101	116	.ASCII	/MAN/
007017	131	040	103	.ASCII	/Y C/
007022	117	114	114	.ASCII	/OLL/
007025	111	123	111	.ASCII	/ISI/
007030	117	116	123	.ASCII	/ONS/
007033	045	116	000	.ASCII	/#N/<00>

000000	.PSECT	\$GLOB\$, D
000000	RCV.D.LIST::	
	.BLKW	100
000200	XMIT.D.LIST::	
	.BLKW	100
000400	RCV.BUFFER::	
	.BLKW	2000
004400	XMIT.BUFFER::	

ZONA1  
V01.0

CZONADO DEQNA FUNCTIONAL TEST  
PROTECTION TABLE

14-Mar-1985 13:09:10  
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SEQ 0053  
Page 53  
VAX-11 B110-16 V4.1-582  
DISK#USER2:[MARSHALL.DEQNA]ZONA1.BLI 4 (24)

010400		PHYS.ADR::	.BLKW	2000
010426		SETUP.BUFFER::	.BLKW	13
011426		IOP.TABLE::	.BLKW	400
011446		ETH.STATION.ADR::	.BLKW	10
011462		STATION.ADR::	.BLKW	6
011472		PTRN.TABLE::	.BLKW	4
011472	000		.BYTE	0
011473	377		.BYTE	377
011474	252		.BYTE	252
011475	125		.BYTE	125
011476	314		.BYTE	314
011477	063		.BYTE	63
011500	360		.BYTE	360
011501	017		.BYTE	17
011502		TARGET.ADR::		
011502	000		.BYTE	0
011503	000		.BYTE	0
011504	000		.BYTE	0
011505	000		.BYTE	0
011506	000		.BYTE	0
011507	000		.BYTE	0
011510	125		.BYTE	125
011511	125		.BYTE	125
011512	125		.BYTE	125
011513	125		.BYTE	125
011514	125		.BYTE	125
011515	125		.BYTE	125
011516	252		.BYTE	252
011517	252		.BYTE	252
011520	252		.BYTE	252
011521	252		.BYTE	252
011522	252		.BYTE	252
011523	252		.BYTE	252
011524	125		.BYTE	125
011525	125		.BYTE	125
011526	125		.BYTE	125
011527	125		.BYTE	125
011530	125		.BYTE	125
011531	125		.BYTE	125
011532	377		.BYTE	377
011533	377		.BYTE	377
011534	377		.BYTE	377
011535	377		.BYTE	377
011536	377		.BYTE	377
011537	377		.BYTE	377
011540	000		.BYTE	0
011541	364		.BYTE	364

ZQNA1  
V01.0

CZQNA0 DEQNA FUNCTIONAL TEST  
PROTECTION TABLE

14-Mar-1985 13:09:10  
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VAX-11 Bliss-16 V4.1-582  
DISK#USER2:[MARSHALL.DEQNA]ZQNA1.BLI;4 (24)

011542	372	.BYTE	372
011543	104	.BYTE	104
011544	104	.BYTE	104
011545	125	.BYTE	125
011546	252	.BYTE	252
011547	000	.BYTE	0
011550	000	.BYTE	0
011551	000	.BYTE	0
011552	000	.BYTE	0
011553	000	.BYTE	0
011554	252	.BYTE	252
011555	000	.BYTE	0
011556	002	.BYTE	2
011557	252	.BYTE	252
011560	252	.BYTE	252
011561	252	.BYTE	252
011562	252	.BYTE	252
011563	000	.BYTE	0
011564	005	.BYTE	5
011565	125	.BYTE	125
011566	125	.BYTE	125
011567	125	.BYTE	125
011570	252	.BYTE	252
011571	000	.BYTE	0
011572	004	.BYTE	4
011573	377	.BYTE	377
011574	377	.BYTE	377
011575	377	.BYTE	377
011576	252	.BYTE	252
011577	000	.BYTE	0
011600	004	.BYTE	4
011601	000	.BYTE	0
011602	000	.BYTE	0
011603	000	.BYTE	0
011604	252	.BYTE	252
011605	000	.BYTE	0
011606	004	.BYTE	4
011607	030	.BYTE	30
011610	201	.BYTE	201
011611	030	.BYTE	30
011612	001	.BYTE	1
011613	000	.BYTE	0
011614	000	.BYTE	0
011615	000	.BYTE	0
011616	000	.BYTE	0
011617	000	.BYTE	0
011620	253	.BYTE	253
011621	252	.BYTE	252
011622	252	.BYTE	252
011623	252	.BYTE	252
011624	252	.BYTE	252
011625	252	.BYTE	252
011626	377	.BYTE	377



ZQNA1  
V01.0

CZQNA0 DEQNA FUNCTIONAL TFST  
PROTECTION TABLE

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SEQ 0055  
Page 55  
VAX-11 Bliss-16 V4.1-582  
DISK\$USER2:[MARSHALL.DEQNA]ZQNA1.BLI;4 (24)

011627	000	.BYTE	0
011630	001	.BYTE	1
011631	002	.BYTE	2
011632	003	.BYTE	3
011633	004	.BYTE	4
011634	125	.BYTE	125
011635	005	.BYTE	5
011636	006	.BYTE	6
011637	007	.BYTE	7
011640	010	.BYTE	10
011641	011	.BYTE	11
011642	315	.BYTE	315
011643	066	.BYTE	66
011644	046	.BYTE	46
011645	047	.BYTE	47
011646	047	.BYTE	47
011647	111	.BYTE	111
011650	063	.BYTE	63
011651	241	.BYTE	241
011652	147	.BYTE	147
011653	273	.BYTE	273
011654	114	.BYTE	114
011655	237	.BYTE	237
011656	353	.BYTE	353
011657	276	.BYTE	276
011660	307	.BYTE	307
011661	217	.BYTE	217
011662	063	.BYTE	63
011663	377	.BYTE	377
011664	377	.BYTE	377
011665	377	.BYTE	377
011666	377	.BYTE	377
011667	377	.BYTE	377
011670	377	.BYTE	377
011671	377	.BYTE	377
011672		BD.PROM.DESCR::	
011672	100000	.WORD	-100000
011674	100000	.WORD	-100000
011676	000400'	.WORD	RCV.BUFFER
011700	176000	.WORD	-2000
011702	000000	.WORD	0
011704	000000	.WORD	0
011706	100000	.WORD	-100000
011710	100000	.WORD	-100000
011712	004400'	.WORD	XMIT.BUFFER
011714	176000	.WORD	-2000
011716	000000	.WORD	0
011720	000000	.WORD	0
011722	100000	.WORD	-100000
011724	020000	.WORD	20000
011726	000000	.WORD	0
011730	000000	.WORD	0
011732		TD16::	

ZQNA1  
V01.0

CZQNA0 DEQNA FUNCTIONAL TEST  
PROTECTION TABLE

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VAX-11 Bliss-16 V4.1-582  
DISK#USER2:[MARSHALL.DEQNA]ZQNA1.BLI;4 (24)

011732	100000	.WORD	-100000
011734	100200	.WORD	-77600
011736	004400'	.WORD	XMIT.BUFFER
011740	177777	.WORD	-1
011742	000000	.WORD	0
011744	000000	.WORD	0
011746	100000	.WORD	-100000
011750	100300	.WORD	-77500
011752	004400'	.WORD	XMIT.BUFFER
011754	177776	.WORD	-2
011756	000000	.WORD	0
011760	000000	.WORD	0
011762	100000	.WORD	-100000
011764	100100	.WORD	-77700
011766	004402'	.WORD	XMIT.BUFFER+2
011770	177777	.WORD	-1
011772	000000	.WORD	0
011774	000000	.WORD	0
011776	100000	.WORD	-100000
012000	120000	.WORD	-60000
012002	004404'	.WORD	XMIT.BUFFER+4
012004	177777	.WORD	-1
012006	000000	.WORD	0
012010	000000	.WORD	0
012012	100000	.WORD	-100000
012014	020000	.WORD	20000
012016	000274'	.WORD	XMIT.D.LIST+74
012020	177777	.WORD	-1
012022	000000	.WORD	0
012024	000000	.WORD	0
012026	100000	.WORD	-100000
012030	100000	.WORD	-100000
012032	000270'	.WORD	XMIT.D.LIST+70
012034	177776	.WORD	-2
012036	000000	.WORD	0
012040	000000	.WORD	0
012042	100000	.WORD	-100000
012044	120000	.WORD	-60000
012046	011664'	.WORD	TARGET.ADR+162
012050	177775	.WORD	-3
012052	000000	.WORD	0
012054	000000	.WORD	0
012056	100000	.WORD	-100000
012060	020000	.WORD	20000
012062			
012062	100000	.WORD	-100000
012064	100000	.WORD	-100000
012066	004400'	.WORD	XMIT.BUFFER
012070	177777	.WORD	-1
012072	000000	.WORD	0
012074	000000	.WORD	0
012076	100000	.WORD	-100000
012100	100000	.WORD	-100000

TD13::

ZQNA1  
V01.0

CZQNA0 DEQNA FUNCTIONAL TEST  
PROTECTION TABLE

14-Mar-1985 13:09:10  
14-Mar-1985 13:07:35

VAX-11 Bliss-16 V4.1-582  
DISK#USER2:(MARSHALL.DEQNA)ZQNA1.BLI;4 (24)

012102	004402'	.WORD	XMIT.BUFFER+2
012104	177601	.WORD	-177
012106	000000	.WORD	0
012110	000000	.WORD	0
012112	100000	.WORD	-100000
012114	100000	.WORD	-100000
012116	005000'	.WORD	XMIT.BUFFER+400
012120	177777	.WORD	-1
012122	000000	.WORD	0
012124	000000	.WORD	0
012126	100000	.WORD	-100000
012130	040000	.WORD	40000
012132	000260'	.WORD	XMIT.D.LIST+60
012134	177777	.WORD	-1
012136	000000	.WORD	0
012140	000000	.WORD	0
012142	100000	.WORD	-100000
012144	120000	.WORD	-60000
012146	005002'	.WORD	XMIT.BUFFER+402
012150	177701	.WORD	-77
012152	000000	.WORD	0
012154	000000	.WORD	0
012156	100000	.WORD	-100000
012160	020000	.WORD	20000
012162		.BLKB	4
012166			
012166	100000	RD13::	.WORD -100000
012170	100000		.WORD -100000
012172	000400'		.WORD RCV.BUFFER
012174	177777		.WORD -1
012176	000000		.WORD 0
012200	000000		.WORD 0
012202	100000		.WORD -100000
012204	100000		.WORD -100000
012206	000402'		.WORD RCV.BUFFER+2
012210	177702		.WORD -76
012212	000000		.WORD 0
012214	000000		.WORD 0
012216	100000		.WORD -100000
012220	100000		.WORD -100000
012222	000576'		.WORD RCV.BUFFER+176
012224	177777		.WORD -1
012226	000000		.WORD 0
012230	000000		.WORD 0
012232	100000		.WORD -100000
012234	100000		.WORD -100000
012236	000600'		.WORD RCV.BUFFER+200
012240	177776		.WORD -2
012242	000000		.WORD 0
012244	000000		.WORD 0
012246	100000		.WORD -100000
012250	100000		.WORD -100000
012252	000604'		.WORD RCV.BUFFER+204

ZQNA1  
V01.0

CZQNA0 DEQNA FUNCTIONAL TEST  
PROTECTION TABLE

14-Mar-1985 13:09:10  
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VAX-11 Bliss-16 V4.1-582  
DISK#USER2:[MARSHALL.DEQNA]ZQNA1.BLI;4 (24)

012254	177704	.WORD	-74
012256	000000	.WORD	0
012260	000000	.WORD	0
012262	100000	.WORD	-100000
012264	100000	.WORD	-100000
012266	000774'	.WORD	RCV.BUFFER+374
012270	177776	.WORD	-2
012272	000000	.WORD	0
012274	000000	.WORD	0
012276	100000	.WORD	-100000
012300	140000	.WORD	-40000
012302	000124'	.WORD	RCV.D.LIST+124
012304	177777	.WORD	-1
012306	000000	.WORD	0
012310	000000	.WORD	0
012312	100000	.WORD	-100000
012314	100000	.WORD	-100000
012316	001000'	.WORD	RCV.BUFFER+400
012320	177775	.WORD	-3
012322	000000	.WORD	0
012324	000000	.WORD	0
012326	100000	.WORD	-100000
012330	100000	.WORD	-100000
012332	001006'	.WORD	RCV.BUFFER+406
012334	177704	.WORD	-74
012336	000000	.WORD	0
012340	000000	.WORD	0
012342	100000	.WORD	-100000
012344	100000	.WORD	-100000
012346	001176'	.WORD	RCV.BUFFER+576
012350	177777	.WORD	-1
012352	000000	.WORD	0
012354	000000	.WORD	0
012356	100000	.WORD	-100000
012360	020000	.WORD	20000
012362		.BLKB	4
012366		HWP.TABLE::	
		.BLKW	1
012370		SWP.TABLE::	
		.BLKW	1
012372		REG.ADR::	
		.BLKW	1
012374		IOP.DATA::	
		.BLKW	1
012376		GET.ADR::	
		.BLKW	1
012400		XBUF.LENGTH::	
		.BLKW	1
012402		RBUF.LENGTH::	
		.BLKW	1
012404		INTERRUPT.FLG::	
		.BLKW	1
012406		DEQNA.NO::	

ZQNA1  
V01.0

CZQNA00 DEQNA FUNCTIONAL TEST  
PROTECTION TABLE

14-Mar-1985 13:09:10  
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VAX-11 Bliss-16 V4.1-582  
DISK\$USER2:[MARSHALL.DEQNA]ZQNA1.BLI;4 (24)

012410		COUNTER::	.BLKW	1
012412		UP.COUNTER::	.BLKW	1
012414		DOWN.COUNTER::	.BLKW	1
012416		CHECKSUM::	.BLKW	1
012420		BUF.LENGTH::	.BLKW	1
012422		CSR.WORD::	.BLKW	1
012424	000000	XC.FLAG::	.WORD	0
012426	000000	ERR.NUMBER::	.WORD	0
012430	000000	ERR.FLAG::	.WORD	0
012432	000000	ERR.COUNT::	.WORD	0
012434		TMP.IOP.ADR::	.BLKW	1
012436		TMP.REG.DATA::	.BLKW	1
012440		TEMP1::	.BLKW	1
012442		TEMP2::	.BLKW	1
012444		TEMP3::	.BLKW	1
012446		TEMP4::	.BLKW	1
012450		TEMP5::	.BLKW	1
012452		TEMP6::	.BLKW	1
012454		TEMP7::	.BLKW	1
012456		TEMP8::	.BLKW	1
012460		TEMP9::	.BLKW	1
012462		P1::	.BLKW	1
012464		P2::	.BLKW	1
012466		P3::	.BLKW	1
012470		P4::	.BLKW	1
012472		P5::	.BLKW	1
012474		TBYTE1::	.BLKB	1
012475		TBYTE2::	.BLKB	1
012476		TBYTE3::	.BLKB	1
012477		TBYTE4::	.BLKB	1
012500		TADR1::	.BLKW	1
012502		TADR2::	.BLKW	1

```
.GLOBL L$SOFT, T$PTHV, L$RPT, L$INIT
.GLOBL L$CLEAN, L$LAST, L$HARD, L$DVTYP
.GLOBL L$DESC, L$DU, L$AU, L$AUTO, T1
.GLOBL T2, T3, T4, T5, T6, T7, T8, T9
.GLOBL T10, T11, T12, T13, T14, T15, T16
.GLOBL T17, T18, T19, T20, T21
```

ZQNA1  
V01.0

CZQNAO DEQNA FUNCTIONAL TEST  
PROTECTION TABLE

14-Mar-1985 13:09:10  
14-Mar-1985 13:07:35

SEQ 0060  
Page 60  
VAX-11 Bliss-16 V4.1-582  
DISK\$USER2:[MARSHALL.DEQNA]ZQNA1.BLI;4 (24)

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--	1000
000400	BIT8--	400
000200	BIT7--	200
000100	BIT6--	100
000040	BIT5--	40
000020	BIT4--	20
000010	BIT3--	10
000004	BIT2--	4
000002	BIT1--	2
000001	BIT0--	1
000040	EF.START--	40
000037	EF.RESTART--	37
000036	EF.CONTINUE--	36
000035	EF.NEW--	35
000034	EF.PWR--	34
000340	PRI07--	340
000300	PRI06--	300
000240	PRI05--	240
000200	PRI04--	200
000140	PRI03--	140
000100	PRI02--	100
000040	PRI01--	40
000000	PRI00--	0
000004	EVL--	4
000010	LOT--	10
000020	ADR--	20
000040	IDU--	40
000100	ISR--	100
000200	UAM--	200
000400	BOE--	400
001000	PNT--	1000
002000	PRI--	2000
004000	IXE--	4000
010000	IBE--	10000
020000	IER--	20000

040000	LOE==	40000
100000	HOE==	-100000
000176'	L\$ERRTBL==	ERRTYP
000220'	L\$SW==	L\$SWLEN+2
000210'	L\$HW==	L\$HWLEN+2
000011'	L\$DEPO==	L\$REV+1
000000'	DESCR.LIST==	RCV.D.LIST
000400'	DATA.BUFFER==	RCV.BUFFER
000000'	QST01==	P.AAA
000030'	QST02==	P.AAB
000060'	QST03==	P.AAC
000122'	QST04==	P.AAD
000164'	QST05==	P.AAE
000226'	QST06==	P.AAF
000270'	QST07==	P.AAG
000332'	MSG00==	P.AAH
000370'	MSG01==	P.AAI
000452'	MSG02==	P.AAJ
000540'	MSG03==	P.AAK
000644'	MSG04==	P.AAL
000736'	MSG05==	P.AAM
001030'	MSG06==	P.AAN
001122'	MSG07==	P.AAO
001214'	MSG08==	P.AAP
001306'	MSG09==	P.AAQ
001400'	MSG10==	P.AAR
001462'	MSG11==	P.AAS
001546'	MSG12==	P.AAT
001612'	MSG13==	P.AAU
001676'	MSG14==	P.AAV
001766'	MSG15==	P.AAW
002050'	MSG16==	P.AAX
002136'	MSG17==	P.AAY
002224'	MSG18==	P.AAZ
002250'	MSG19==	P.ABA
002336'	MSG20==	P.ABB
002426'	MSG21==	P.ABC
002506'	MSG22==	P.ABD
002572'	MSG23==	P.ABE
002650'	MSG24==	P.ABF
002724'	MSG25==	P.ABG
002766'	MSG26==	P.ABH
003030'	MSG27==	P.ABI
003072'	MSG28==	P.ABJ
003136'	MSG29==	P.ABK
003164'	MSG30==	P.ABL
003252'	MSG31==	P.ABM
003336'	MSG32==	P.ABN
003400'	MSG33==	P.ABO
003454'	MSG34==	P.ABP
003530'	MSG35==	P.ABQ
003626'	MSG36==	P.ABR
003732'	MSG37==	P.ABS

004024'	MSG38==	P.ABT
004104'	MSG39==	P.ABU
004170'	MSG40==	P.ABV
004260'	MSG41==	P.ABW
004322'	MSG42==	P.ABX
004402'	MSG43==	P.ABY
004466'	MSG44==	P.ABZ
004570'	MSG45==	P.ACA
004646'	MSG46==	P.ACB
004716'	MSG47==	P.ACC
004772'	MSG48==	P.ACD
005030'	MSG49==	P.ACE
005066'	MSG50==	P.ACF
005150'	MSG51==	P.ACG
005202'	MSG52==	P.ACH
005246'	MSG53==	P.ACI
005276'	MSG54==	P.ACJ
005346'	MSG55==	P.ACK
005410'	MSG56==	P.ACL
005446'	MSG57==	P.ACM
005536'	MSG58==	P.ACN
005602'	MSG59==	P.ACO
005714'	MSG60==	P.ACP
005756'	MSG61==	P.ACQ
006020'	MSG62==	P.ACR
006110'	MSG63==	P.ACS
006204'	MSG64==	P.ACT
006240'	MSG65==	P.ACU
006304'	MSG66==	P.ACV
006372'	MSG67==	P.ACW
006474'	MSG68==	P.ACX
006572'	MSG69==	P.ACY
006672'	MSG70==	P.ACZ
006756'	MSG71==	P.ADA
000210'	HP.TABLE==	L\$HWLEN*2
000220'	SP.TABLE==	L\$SWLEN*2

PSECT SUMMARY

Psect Name	Words	Attributes
\$CODE\$	81	RO , I , LCL, REL, CON
\$GLOB\$	2722	RW , D , LCL, REL, CON
\$PLIT\$	1807	RO , D , LCL, REL, CON

Library Statistics

File	-----	Symbols	-----	Pages	Processing
	Total	Loaded	Percent	Mapped	Time



ZQNA1  
V01.0

CZQNA0 DEQNA FUNCTIONAL TEST  
PROTECTION TABLE

14-Mar-1985 13:09:10  
14-Mar-1985 13:07:35

SEQ 0063  
Page 63  
VAX-11 Bliss-16 V4.1 582  
DISK#USER2:[MARSHALL.DEQNA]ZQNA1.BLI:4 (24)

; DISK#USER2:[MARSHALL.DEQNA]QNALIB.L16;15  
; 223 88 39 14 00:00.1

COMMAND QUALIFIERS

; BLISS/PDP11 ZQNA1.BLI/LIST=ZQNA1.LIS/OBJECT=ZQNA1.OBJ/SOURCE=PAGE:53  
; Size: 0 code + 4610 data words  
; Run Time: 00:23.8  
; Elapsed Time: 01:12.3  
; Lines/CPU Min: 6123  
; Lexemes/CPU-Min: 38814  
; Memory Used: 230 pages  
; Compilation Complete

ZQNA2

CZQNA20 DEQNA FUNCTIONAL TEST

14-Mar-1985 13:10:29  
14 Mar-1985 13:04:24

VAX-11 B1:es 16 V4.1 582  
DISK\$USER2:[MARSHALL.DEQNA]ZQNA2.BLI:4 (1

```
: 0001 0  MODULE ZQNA2 (#TITLE 'CZQNA20 DEQNA FUNCTIONAL TEST'  
: 0002 0          IDENT = 'Y01.0',  
: 0003 0          ADDRESSING_MODE(Absolute)  
: 0004 0          ) =  
: 0005 0  #SBTTL 'PROGRAM INIT MODULE'  
: 0006 0  
: 0007 1  BEGIN  
: 0008 1  
: 0009 1  LIBRARY 'QNALIB';           : QNALIB LIBRARY  
: 0010 1  REQUIRE 'BLSMAC.REQ';     : DIAGNOSTIC SUPERVISOR LIBRARY  
: 1500 1
```

ZONA2  
VOL.0

CZONADO DEQNA FUNCTIONAL TEST  
EXTERNAL DECLARATIONS

14-Mar-1985 13:10:29  
14-Mar-1985 13:04:24

VAX-11 B1.00-16 V4.1-582  
DISK:USER2:(MARSHALL.DEQNA)ZONA2.BLI;4 (2)

```

; 1501 1 #SBTTL 'EXTERNAL DECLARATIONS'
; 1502 1 !<BLF/FORMAT>
; 1503 1
; 1504 1 PSECT
; 1505 1 CODE = AA$CODE$;
; 1506 1
; 1507 1
; 1508 1 FORWARD ROUTINE
; 1509 1 NXM_INT : L$ISR NOVALUE;
; 1510 1
; 1511 1 EXTERNAL ROUTINE
; 1512 1 RESET_DEQNA : NOVALUE;
; 1513 1

```

ZQNA2  
V01.0CZQNA20 DEQNA FUNCTIONAL TEST  
EXTERNAL DECLARATIONS14-Mar-1985 13:10:29  
14-Mar-1985 13:04:24SEQ 0066  
Page 3  
VAX-11 Bliss-16 V4.1-582  
DISK#USER2:(MARSHALL.DEQNA)ZQNA2.BLI;4 (3)

```

: 1514 1 EXTERNAL
: 1515 1
: 1516 1 !..
: 1517 1 ! COMMUNICATION AREA DECLARATIONS
: 1518 1 !--
: 1519 1
: 1520 1     P_TABLE      : VECTOR [ 8, WORD ],
: 1521 1
: 1522 1
: 1523 1 !..
: 1524 1 ! HARDWARE AND SOFTWARE P-TABLE STORAGE DECLARATIONS
: 1525 1 !--
: 1526 1
: 1527 1     HWP_TABLE   : REF BLOCK [ HWP_SIZE, WORD ] FIELD ( HWP_FIELDS ),
: 1528 1     SWP_TABLE   : REF BLOCK [ SWP_SIZE, WORD ] FIELD ( SWP_FIELDS ),
: 1529 1
: 1530 1     INTERRUPT_FLG      : WORD,                ! 1 = INTERRUPT OCCURED
: 1531 1
: 1532 1     REG_ADR       : REF REG_STR FIELD ( IOP_FIELDS ),
: 1533 1     IOP_DATA      : REF REG_STR FIELD ( IOP_FIELDS ),
: 1534 1     GET_ADR       : REF ADR_STR FIELD ( IOP_FIELDS ),
: 1535 1
: 1536 1 !..
: 1537 1 ! TEMPORARY STORAGE DATA DECLARATIONS
: 1538 1 !--
: 1539 1
: 1540 1     TMP_IOP_ADR   : WORD,                ! I/O PAGE REGISTER ADDRESS
: 1541 1     TMP_REG_DATA  : WORD,                ! I/O PAGE REG CONTENTS
: 1542 1     TEMP1        : WORD,                ! TEMPORARY STORAGE LOCATION
: 1543 1     TEMP2        : WORD,                ! TEMPORARY STORAGE LOCATION
: 1544 1     TEMP3        : WORD,                ! TEMPORARY STORAGE LOCATION
: 1545 1     TEMP4        : WORD,                ! TEMPORARY STORAGE LOCATION
: 1546 1     TEMP5        : WORD,                ! TEMPORARY STORAGE LOCATION
: 1547 1     TEMP6        : WORD,                ! TEMPORARY STORAGE LOCATION
: 1548 1     TEMP7        : WORD,                ! TEMPORARY STORAGE LOCATION
: 1549 1     TEMP8        : WORD,                ! TEMPORARY STORAGE LOCATION
: 1550 1     TEMP9        : WORD,                ! TEMPORARY STORAGE LOCATION
: 1551 1
: 1552 1
: 1553 1 !..
: 1554 1 ! QUESTIONS AND ERROR MESSAGEES DECLARED EXTERNALLY
: 1555 1 !--
: 1556 1
: 1557 1     QST01, QST02, QST03, QST04, QST05, QST06, QST07, MSG54;
: 1558 1

```

ZQNA2  
V01.0

CZQNADO DEQNA FUNCTIONAL TEST  
TYPE AND DESCRIPTION

14-Mar-1985 13:10:29  
14-Mar-1985 13:04:24

SEQ 0067  
Page 4  
VAX-11 Bliss-16 V4.1-582  
DISK#USER2:[MARSHALL.DEQNA]ZQNA2.BLI;4 (4)

```

: 1559 1 *SBTTL 'TYPE AND DESCRIPTION'
: 1560 1
: 1561 1 !..
: 1562 1 ! NAMES OF DEVICES SUPPORTED BY PROGRAM
: 1563 1 !--
: 1564 1
: 1565 1 EQUALS;
: 1566 1 DEVTYP (*ASCIZ'DEQNA/M7504');
: 1567 1
: 1568 1 !..
: 1569 1 ! TEST DESCRIPTION
: 1570 1 !--
: 1571 1
: 1572 1 DESCRIPT (*ASCIZ'DEQNA FUNCTIONAL TEST');
: 1573 1

```

ZQNA2  
V01.0

CZQNA0 DEQNA FUNCTIONAL TEST  
HARDWARE PARAMETER CODING SECTION

14-Mar-1985 13:10:29  
14-Mar-1985 13:04:24

VAX-11 Bliss-16 V4.1 582  
DISK#USER2:[MARSHALL.DEQNA]ZQNA2.BLI;4 (5)  
SEQ 0068  
Page 5

```

: 1574 1 *SBTTL 'HARDWARE PARAMETER CODING SECTION'
: 1575 1
: 1576 1 !..
: 1577 1 !
: 1578 1 ! THE HARDWARE PARAMETER CODING SECTION CONTAINS MACROS
: 1579 1 ! THAT ARE USED BY THE SUPERVISOR TO BUILD P-TABLES. THE
: 1580 1 ! MACROS ARE NOT EXECUTED AS MACHINE INSTRUCTIONS BUT ARE
: 1581 1 ! INTERPRETED BY THE SUPERVISOR AS DATA STRUCTURES. THE
: 1582 1 ! MACROS ALLOW THE SUPERVISOR TO ESTABLISH COMMUNICATIONS
: 1583 1 ! WITH THE OPERATOR.
: 1584 1 !
: 1585 1 ! THIS CODE IS USED BY THE SUPERVISOR TO INTERROGATE THE OPERATOR
: 1586 1 ! FOR DEVICE INFORMATION TO PUT IN THE P-TABLE. THIS CODE IS USED
: 1587 1 ! IN CONJUNCTION WITH THE DEFAULT P-TABLE TEMPLATE. THE MACROS
: 1588 1 ! USED IN THIS SECTION ARE "GPRMD", "GPRMA".
: 1589 1 !..
: 1590 1 BGNHRD;
: 1591 1 GPRMA (QST01, #0'0', 0, #0'174440', #0'174460', YES, 1); ! I/O PAGE ADDRESS ?
: 1592 1 GPRMA (QST02, #0'2', 0, #0'700', #0'704', YES, 1); ! INTERRUPT VECTOR ADDR ?
: 1593 1 ENDHRD;
: 1594 1
: 1595 1

```

ZQNA2  
V01.0CZQNA0 DEQNA FUNCTIONAL TEST  
SOFTWARE PARAMETER CODING SECTION14-Mar-1985 13:10:29  
14-Mar-1985 13:04:24VAX-11 Bliss-16 V4.1-582  
DISK\$USER2:(MARSHALL.DEQNA)ZQNA2.BLI;4 (6)

SEQ 0069

Page 6

```

: 1596 1 *SBTTL 'SOFTWARE PARAMETER CODING SECTION'
: 1597 1
: 1598 1 !..
: 1599 1 ! THE SOFTWARE PARAMETER CODING SECTION CONTAINS MACROS
: 1600 1 ! THAT ARE USED BY THE SUPERVISOR TO BUILD P-TABLES. THE
: 1601 1 ! MACROS ARE NOT EXECUTED AS MACHINE INSTRUCTIONS BUT ARE
: 1602 1 ! INTERPRETED BY THE SUPERVISOR AS DATA STRUCTURES. THE
: 1603 1 ! MACROS ALLOW THE SUPERVISOR TO ESTABLISH COMMUNICATIONS
: 1604 1 ! WITH THE OPERATOR.
: 1605 1 !--
: 1606 1
: 1607 1 BGNSFT;
: 1608 1
: 1609 1 GPRML ( QST03, #0'0', -1, YES, 1); ! DO YOU WANT TO TEST SANITY TIMER ?
: 1610 1 XFERF(NOTIMER);
: 1611 1 GPRMD ( QST05, #0'4', D, -1, 0, 7, YES, 1);
: 1612 1 ! SANITY TIMER TIME-OUT VALUE ?
: 1613 1 $L(NOTIMER);
: 1614 1
: 1615 1 GPRML ( QST06, #0'6', -1, YES, 1); ! EXTERNAL LOOPBACK MODE ?
: 1616 1 GPRML ( QST07, #0'10', -1, YES, 1); ! SYSTEM HAS BLOCK-MODE MEMORY ?
: 1617 1 GPRML ( QST04, #0'2', -1, YES, 1); ! LOOPBACK CONNECTOR IN DEQNA ?
: 1618 1
: 1619 1 ENDSFT;
: 1620 1
: 1621 1

```

ZQNA2  
V01.0

CZQNADO DEQNA FUNCTIONAL TEST  
REPORT CODING SECTION

14-Mar-1985 13:10:29  
14-Mar-1985 13:04:24

SEQ 0070  
Page 7  
VAX-11 B1,ss-16 V4.1-582  
DISK\$USER2:[MARSHALL.DEQNA]ZQNA2.BLI;4 (7)

```

: 1622 1 *SBTTL 'REPORT CODING SECTION'
: 1623 1
: 1624 1 !**
: 1625 1 !
: 1626 1 ! THE REPORT CODING SECTION CONTAINS THE
: 1627 1 ! "PRINTS" CALLS THAT GENERATE STATISTICAL REPORTS.
: 1628 1 !
: 1629 1 ! THIS SECTION CONTAINS THE CODE FOR PRINTING
: 1630 1 ! STATISTICAL INFORMATION GATHERED BY THE DIAGNOSTIC. IT IS
: 1631 1 ! EXECUTED BY THE OPERATOR COMMAND "PRINT" OR BY THE MACRO CALL
: 1632 1 ! "DORPT". USE THE PRINTS MACRO TO PRINT THE INFORMATION.
: 1633 1 ! USE FORMAT STATEMENTS AS IN THE PRINTB/PRINTX MACROS. IT IS
: 1634 1 ! THE PROGRAMMER'S RESPONSIBILITY TO DEVISE AND IMPLEMENT THE
: 1635 1 ! FORM AND CONTENT OF THE STATISTICS.
: 1636 1 !--
: 1637 1
: 1638 1
: 1639 2 BGNRPT;
: 1640 2
: 1641 2 TEMP1 = 1;
: 1642 2
: 1643 1 ENDRPT;

```

```

.TITLE ZQNA2 CZQNADO DEQNA FUNCTIONAL TEST
.IDENT /V01.0/
.ENABL AMA

```

```

000000          .PSECT $CODE$, RO
000000      104      105      121      L$DVTYP::
000003          .ASCII /DEQ/
000006          .ASCII /NA/<57>
000011          .ASCII /M75/
000014          .ASCII /04/<00>
000014          .BLKB 2
000016          L$DESC::.ASCII /DEQ/
000021          .ASCII /NA /
000024          .ASCII /FUN/
000027          .ASCII /CTI/
000032          .ASCII /ONA/
000035          .ASCII /L T/
000040          .ASCII /EST/
000043          .ASCII <00>
000044          .BLKB 2
000046      000000C      L$HRDLN::
000050          .WORD <<<L$NDHRD-L$HRDLN>/2>-1>
000052      000000G      GP$1:: .WORD 31
000054      174440          .WORD QST01
000056      174460          .WORD -3340
000060      001031          .WORD -3320
000062      000000G      GP$2:: .WORD 1031
                                .WORD QST02

```



ZQNA2  
V01.0

CZQNA0 DEQNA FUNCTIONAL TEST  
REPORT CODING SECTION

14 Mar-1985 13:10:29  
14-Mar-1985 13:04:24

SEQ 0071  
Page 8  
VAX-11 Bliss-16 V4.1-582  
DISK#USER2:[MARSHALL.DEQNA]ZQNA2.BLI;4 (7)

```

000064 000700          .WORD 700
000066 000704          .WORD 704
000070          L$NDHRD: .BLKW 1
000072 000000C        L$SFTLN: .WORD <<<L$NDSFT L$SFTLN>/2>-1>
000074 000130          GP$3: .WORD 130
000076 000000G        .WORD QST03
000100 177777          .WORD -1
000102 000000C        $NOTIMER: .WORD <<<<$LNOTIMER $NOTIMER>*400>+4>+40>
000104 002052          GP$4: .WORD 2052
000106 000000G        .WORD QST05
000110 177777          .WORD -1
000112 000000        .WORD 0
000114 000007        .WORD 7
000116 001004        $LNOTIMER: .WORD 1004
000120 003130          GP$5: .WORD 3130
000122 000000G        .WORD QST06
000124 177777          .WORD -1
000126 004130          GP$6: .WORD 4130
000130 000000G        .WORD QST07
000132 177777          .WORD -1
000134 001130          GP$7: .WORD 1130
000136 000000G        .WORD QST04
000140 177777          .WORD -1
000142          L$NDSFT: .BLKW 1

.GLOBL RESET.DEQNA, IOP.TABLE, HWP.TABLE
.GLOBL SWP.TABLE, INTERRUPT.FLG, REG.ADR
.GLOBL IOP.DATA, GET.ADR, TMP.IOP.ADR
.GLOBL TMP.REG.DATA, TEMP1, TEMP2, TEMP3
.GLOBL TEMP4, TEMP5, TEMP6, TEMP7, TEMP8
.GLOBL TEMP9, QST01, QST02, QST03, QST04
.GLOBL QST05, QST06, QST07, MSG54

```

```

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

```

ZQNA2  
V01.0

CZQNA0 DEQNA FUNCTIONAL TEST  
REPORT CODING SECTION

14 Mar-1985 13:10:29  
14-Mar-1985 13:04:24

SEQ 0072  
Page 9  
VAX-11 Bliss-16 V4.1-582  
DISK\$USER2:[MARSHALL.DEQNA]ZQNA2.BLI;4 (7)

000004	BIT02==	4
000002	BIT01==	2
000001	BIT00==	1
001000	BIT9==	1000
000400	BIT8==	400
000200	BIT7==	200
000100	BIT6==	100
000040	BIT5==	40
000020	BIT4==	20
000010	BIT3==	10
000004	BIT2==	4
000002	BIT1==	2
000001	BIT0==	1
000040	EF.START==	40
000037	EF.RESTART==	37
000036	EF.CONTINUE==	36
000035	EF.NEW==	35
000034	EF.PWR==	34
000340	PRI07==	340
000300	PRI06==	300
000240	PRI05==	240
000200	PRI04==	200
000140	PRI03==	140
000100	PRI02==	100
000040	PRI01==	40
000000	PRI00==	0
000004	EVL==	4
000010	LOT==	10
000020	ADR==	20
000040	IDU==	40
000100	ISR==	100
000200	UAM==	200
000400	BOE==	400
001000	PNT==	1000
002000	PRI==	2000
004000	IXE==	4000
010000	IBE==	10000
020000	TER==	20000
040000	LOE==	40000
100000	HOE==	-100000
000050'	L\$HARD==	L\$HRDLN+2
000074'	L\$SOFT==	L\$SFTLN+2

000000 .SBTTL LRPT REPORT CODING SECTION  
.PSECT AA\$CODE\$, RO

000000 012737 000001 000000G LRPT: MOV #1,TEMP1 ; 1641  
000006 000207 RTS PC ; 1619

; Routine Size: 4 words, Routine Base: AA\$CODE\$ + 0000  
; Maximum stack depth per invocation: 0 words

ZQNA2  
V01.0

CZQNA0 DEQNA FUNCTIONAL TEST  
REPORT CODING SECTION

14-Mar-1985 13:10:29  
14-Mar-1985 13:04:24

SEQ 0073  
Page 10  
VAX-11 Bliss-16 V4.1-582  
DISK\$USER2:[MARSHALL.DEQNA]ZQNA2.BLI;4 (7)

000000	004737	000000'		.SBTTL	L\$RPT REPORT CODING SECTION	
000004	104425		L\$RPT::	JSR	PC,LRPT	
000006	000207			TRAP	25	
				RTS	PC	

1641

; Routine Size: 4 words, Routine Base: AA\$CODE\$ + 0010  
 ; Maximum stack depth per invocation: 2 words

; 1644 1  
 ; 1645 1  
 ; 1646 1  
 ; 1647 1

ZQNA2  
V01.0CZQNA0 DEQNA FUNCTIONAL TEST  
INITIALIZE SECTION14-Mar-1985 13:10:29  
14-Mar 1985 13:04:24SEQ 0074  
Page 11  
VAX 11 Bliss-16 V4.1-582  
DISK\$USER2:[MARSHALL.DEQNA]ZQNA2.BLI;4 (8)

```

1 1648 1 *SBTTL 'INITIALIZE SECTION'
1 1649 1
1 1650 1 !**
1 1651 1 ! THE INITIALIZE SECTION CONTAINS THE CODING THAT IS PERFORMED
1 1652 1 ! AT THE BEGINNING OF EACH PASS.
1 1653 1
1 1654 1 ! THE INITIALIZE CODE IS EXECUTED UNDER FIVE CONDITIONS. THERE
1 1655 1 ! ARE SUPERVISOR EVENT FLAGS THAT ARE USED TO LET THE
1 1656 1 ! DIAGNOSTIC KNOW UNDER WHICH CONDITION THE EXECUTION IS TAKING
1 1657 1 ! PLACE. THE EVENT FLAGS ARE READ USING THE "READEF" MACRO.
1 1658 1 ! THE CONDITIONS UNDER WHICH THE INIT CODE IS EXECUTED AND THE
1 1659 1 ! CORRESPONDING EVENT FLAGS ARE:
1 1660 1 ! START COMMAND EF.START
1 1661 1 ! RESTART COMMAND EF.RESTART
1 1662 1 ! CONTINUE COMMAND EF.CONTINUE
1 1663 1 ! POWERDOWN/POWERUP EF.PWR
1 1664 1 ! NEW PASS EF.NEW
1 1665 1 ! EXAMPLE OF EVENT FLAG USE:
1 1666 1 ! IF READEF(EF.START) THEN
1 1667 1 ! START_FLAG = 1;
1 1668 1 ! DURING THE INIT CODE, USE THE "GPHARD" MACRO TO OBTAIN P-TABLE
1 1669 1 ! INFORMATION FOR DEVICE TESTING. GET ONE UNIT'S INFORMATION IF
1 1670 1 ! THIS IS A SEQUENTIAL DIAGNOSTIC. NUMBER OF UNITS AVAILABLE IS IN
1 1671 1 ! A HEADER LOCATION: "L$UNIT".
1 1672 1 !--
1 1673 1
1 1674 2 BGNINIT;
1 1675 2
1 1676 2 LOCAL
1 1677 2 START_FLAG, ! SET IF THIS PASS IS A START
1 1678 2 DELAY_MULT; ! CONTAINS DELAY FACTOR
1 1679 2
1 1680 2 SETPRI (PRI07); ! PRIORITY 7 - NO INTERRUPTS ALLOWED
1 1681 2 START_FLAG = CLEAR_FLG; ! CLEAR FLAG BEFORE TESTING IT
1 1682 2
1 1683 2 IF READEF (EF_PWR) ! ARE WE HERE BECAUSE OF POWER FAIL?
1 1684 2 THEN
1 1685 3 BEGIN
1 1686 3 PRINTF ( MSG54 ); ! "THERE WAS POWER FAILURE - WAITING"
1 1687 3
1 1688 3 INCR COUNT FROM 0 TO 60 DO ! WAIT APPROX. 60 SECONDS
1 1689 4 BEGIN
1 1690 4 DELAY_MULT = 10000;
1 1691 4 DELAY (.DELAY_MULT);
1 1692 4 BREAK; ! BREAK FOR APT
1 1693 3 END;
1 1694 2 END;
1 1695 2
1 1696 2 IF READEF (EF_START) ! IS THIS A START ?
1 1697 2 THEN
1 1698 3 BEGIN
1 1699 3 START_FLAG = TRUE;
1 1700 2 END;

```

ZQNA2  
V01.0

CZQNADO DEQNA FUNCTIONAL TEST  
INITIALIZE SECTION

14-Mar-1985 13:10:29  
14-Mar-1985 13:04:24

VAX-11 Bliss-16 V4.1-582  
DISK\$USER2:[MARSHALL.DEQNA]ZQNA2.BLI;4

```

; 1701 2
; 1702 2
; 1703 2
; 1704 2
; 1705 2
; 1706 2
; 1707 2
; 1708 3
; 1709 3
; 1710 3
; 1711 3
; 1712 3
; 1713 3
; 1714 3
; 1715 3
; 1716 3
; 1717 3
; 1718 3
; 1719 3
; 1720 4
; 1721 4
; 1722 4
; 1723 4
; 1724 4
; 1725 4
; 1726 4
; 1727 5
; 1728 5
; 1729 5
; 1730 4
; 1731 3
; 1732 2
; 1733 2
; 1734 1

!++
! CLEAR HARDWARE P-TABLE ON A START BEFORE DOING THE GPHARDS
!--

IF .START_FLAG OR READEF (EF_NEW) OR READEF (EF_CONTINUE)
THEN
    ! IF THIS IS A START
    BEGIN
        LOCAL TABLE_POINTER;
        INCR INDEX FROM 0 TO HWP_SIZE BY 2 DO      ! ZERO OUT THE TABLES
            (HWP_TABLE + .INDEX) = 0;

        !++
        ! GET BASE ADDRESS OF HARDWARE P-TABLE AND DEQNA I/O PAGE
        !--

        IF GPHARD ( 0, TABLE_POINTER ) NEQU 0      ! GET P-TABLE ADDRESS
        THEN
            BEGIN
                IOP_DATA = .HWP_TABLE [ ADDR ];
                HWP_TABLE = .TABLE_POINTER;          ! SAVE HWP-TABLE ADDRESS
                REG_ADR = .HWP_TABLE [ ADDR ];       ! SAVE I/O PAGE BASE ADDRESS
                GET_ADR = .HWP_TABLE [ ADDR ];       ! SAVE I/O PAGE BASE ADDRESS
                TMP_IOP_ADR = .HWP_TABLE [ ADDR ];
                INCR INDEX FROM 0 TO 7 DO
                    BEGIN
                        IOP_TABLE [ .INDEX ] = .TMP_IOP_ADR;
                        TMP_IOP_ADR = .TMP_IOP_ADR + 2;
                    END;
                END;
            END;
        END;
    END;
    RETURN;
ENDINIT;

```

.GLOBL L\$DLY

```

000000 004137 000000G          .SBTTL LINIT INITIALIZE SECTION
000004 005746                LINIT: JSR    R1,$SAVE4          ; 1643
000006 012700 000340          TST    -(SP)
000012 104441                MOV    #340,R0          ; 1680
000014 005004                TRAP  41
000016 012700 000034          CLR    R4              ; START.FLAG 1681
000022 104447                MOV    #34,R0          ; 1683
000024 103027                TRAP  47
000026 012746 000000G          BHS   6$
000032 012746 000001          MOV    #MSG54,-(SP)   ; 1686
000036 010600                MOV    #1,-(SP)
000040 104417                MOV    SP,R0          ; SP,*
000042 012702 000075          TRAP  17
                                MOV    #75,R2          ; *.COUNT 1688

```

ZQNA2  
V01.0

CZQNA20 DEQNA FUNCTIONAL TEST  
INITIALIZE SECTION

14-Mar-1985 13:10:29  
14-Mar-1985 13:04:24

VAX-11 B1.0-16 V4.1 582  
DISK\$USER2:[MARSHALL.DEQNA]ZQNA2.BLI;4 (8)

```

000046 012703 023420          1$:  MOV    #23420,R3          ; *,DELAY.MULT          1690
000052 010301                MOV    R3,R1            ; DELAY.MULT,$$TMP2    1691
000054 001410                BEQ    5$                ;
000056 013700 000000G        MOV    L$DLY,R0         ; *,$$TMP1
000062 001403                BEQ    4$                ;
000064 005066 000004        3$:  CLR    4(SP)           ; $$TMP
000070 077003                SOB    R0,3$           ; $$TMP1,*
000072 005301                4$:  DEC    R1            ; $$TMP2
000074 000767                BR     2$                ;
000076 104422                5$:  TRAP  22              ;
000100 077216                SOB    R2,1$           ; COUNT,*
000102 022626                CMP    (SP)*,(SP)*     ;
000104 012700 000040        6$:  MOV    #40,R0          ;
000110 104447                TRAP  47                ;
000112 103002                BHIS   7$                ;
000114 012704 000001        MOV    #1,R4            ; *,START.FLAG          1699
000120 006004                7$:  ROR    R4            ; START.FLAG            1706
000122 103410                BLO    8$                ;
000124 012700 000035        MOV    #35,R0           ;
000130 104447                TRAP  47                ;
000132 103404                BCS    8$                ;
000134 012700 000036        MOV    #36,R0           ;
000140 104447                TRAP  47                ;
000142 103044                BHIS   11$              ;
000144 005000                8$:  CLR    R0            ; INDEX                  1711
000146 005060 000000G        9$:  CLR    HWP.TABLE(R0) ; *(INDEX)              1712
000152 062700 000002        ADD    #2,R0            ; *,INDEX                1711
000156 020027 000002        CMP    R0,#2           ; INDEX,*
000162 003771                BLE    9$                ;
000164 005000                CLR    R0                ;
000166 104442                TRAP  42                ;
000170 005700                TST    R0                ; TABLE.POINTER
000172 001430                BEQ    11$              ;
000174 017737 000000G 000000G  MOV    @HWP.TABLE,IOP.DATA ;
000202 010037 000000G        MOV    R0,HWP.TABLE     ; TABLE.POINTER,*
000206 011000                MOV    (R0),R0          ; HWP.TABLE,*
000210 010037 000000G        MOV    R0,REG.ADR       ;
000214 010037 000000G        MOV    R0,GET.ADR       ;
000220 010037 000000G        MOV    R0,TMP.IOP.ADR   ;
000224 005000                CLR    R0                ; INDEX
000226 013760 000000G 000000G  10$: MOV    TMP.IOP.ADR,IOP.TABLE(R0) ; *,*(INDEX)          1728
000234 062737 000002 000000G  ADD    #2,TMP.IOP.ADR   ;
000242 062700 000002        ADD    #2,R0            ; *,INDEX                1729
000246 020027 000016        CMP    R0,#16           ; INDEX,*
000252 003765                BLE    10$              ;
000254 005726                11$: TST    (SP)*        ;
000256 000207                RTS    PC                ;

```

; Routine Size: 88 words, Routine Base: AA\$CODE\$ + 0020  
; Maximum stack depth per invocation: 10 words

ZQNA2  
V01.0

CZQNA0 DEQNA FUNCTIONAL TEST  
INITIALIZE SECTION

14-Mar-1985 13:10:29  
14-Mar-1985 13:04:24

VAX-11 Bliss-16 V4.1-582  
DISK\$USER2:[MARSHALL.DEQNA]ZQNA2.BLI;4 (8)

000000	004737	000020	.SBTTL	L\$INIT INITIALIZE SECTION	
000004	104411		L\$INIT::JSR	PC.LINIT	
000006	000207		TRAP	11	
			RTS	PC	

1733

; Routine Size: 4 words, Routine Base: AA\$CODE\$ + 0300  
 ; Maximum stack depth per invocation: 2 words

; 1735 1  
 ; 1736 1  
 ; 1737 1

ZONA2  
V01.0

CZONADO DEQNA FUNCTIONAL TEST  
AUTODROP SECTION

14-Mar 1985 13:10:29  
14-Mar-1985 13:04:24

SEQ 0078  
Page 15  
VAX 11 B1.00 16 V4 1-582  
DISK\$USER2:[MARSHALL.DEQNA]ZONA2.BLI;4 (9)

```

; 1738 1      .SBTTL 'AUTODROP SECTION
; 1739 1
; 1740 1      !..
; 1741 1      !
; 1742 1      !
; 1743 1      ! THIS CODE IS EXECUTED IMMEDIATELY AFTER THE INITIALIZE CODE IF
; 1744 1      ! THE "ADR" FLAG WAS SET. THE UNIT UNDER TEST IS CHECKED TO
; 1745 1      ! SEE IF IT WILL RESPOND. IF IT DOESN'T IT IS IMMEDIATELY
; 1746 1      ! DROPPED FROM TESTING.
; 1747 1      !..
; 1748 1
; 1749 2      BGNAUTO;
; 1750 2
; 1751 2      RETURN;
; 1752 2
; 1753 1      ENDAUTO;

```

```

000000 000207          .SBTTL LAUTO AUTODROP SECTION
                      LAUTO: RTS      PC          ;          1734
; Routine Size: 1 word,      Routine Base: AA$CODE$ + 0310
; Maximum stack depth per invocation: 0 words

```

```

000000 004737 000310' .SBTTL L$AUTO AUTODROP SECTION
000004 104461 L$AUTO: JSR      PC,LAUTO          ;          1751
000006 000207          TRAP      61
                      RTS      PC
; Routine Size: 4 words,      Routine Base: AA$CODE$ + 0312
; Maximum stack depth per invocation: 2 words

```

```

; 1754 1
; 1755 1

```



ZONA2  
V01.0

CZONADO DEQNA FUNCTIONAL TEST  
CLEANUP CODING SECTION

14-Mar-1985 13:10:29  
14-Mar-1985 13:04:24

SEQ 0079  
Page 16  
VAX-11 Bliss-16 V4.1-582  
DISK#USER2:[MARSHALL.DEQNA]ZONA2.BLI;4 (10)

```

: 1756 1  #SBTTL 'CLEANUP CODING SECTION'
: 1757 1
: 1758 1  !..
: 1759 1  !
: 1760 1  !   THE CLEANUP CODING SECTION CONTAINS THE CODING THAT IS PERFORMED
: 1761 1  !   AFTER THE HARDWARE TESTS HAVE BEEN PERFORMED.
: 1762 1  !
: 1763 1  !   INSERT YOUR CLEANUP CODING. THIS CODING SHOULD
: 1764 1  !   RESTORE YOUR TEST-DEVICE TO A NEUTRAL STATE.
: 1765 1  !   THIS CODE WILL BE EXECUTED AFTER EACH PASS AND AFTER THE
: 1766 1  !   PROGRAM IS INTERRUPTED BY "+C".
: 1767 1  !--
: 1768 1
: 1769 2  BGNCLN;
: 1770 2
: 1771 2  RETURN;
: 1772 2
: 1773 1  ENDCLN;

```

```

000000 000207          .SBTTL LCLEAN CLEANUP CODING SECTION
                      LCLEAN: RTS PC ; 1753

```

```

; Routine Size: 1 word,      Routine Base: AA$CODE$ + 0322
; Maximum stack depth per invocation: 0 words

```

```

000000 004737 000322' .SBTTL L$CLEAN CLEANUP CODING SECTION
                      L$CLEAN: JSR PC,L$CLEAN ; 1771
                      TRAP 12
                      RTS PC

```

```

; Routine Size: 4 words,      Routine Base: AA$CODE$ + 0324
; Maximum stack depth per invocation: 2 words

```

```

: 1774 1
: 1775 1

```

ZQNA2  
V01.0

CZQNA0 DEQNA FUNCTIONAL TEST  
DROP UNIT SECTION

14-Mar-1985 13:10:29  
14-Mar-1985 13:04:24

SEQ 0080  
Page 17  
VAX-11 Bliss-16 V4.1 582  
DISK#USER2:[MARSHALL.DEQNA]ZQNA2.BLI;4 (11)

```

: 1776 1 *SBTTL 'DROP UNIT SECTION'
: 1777 1
: 1778 1 !..
: 1779 1 !
: 1780 1 ! THE DROP-UNIT SECTION CONTAINS THE CODING THAT CAUSES A DEVICE
: 1781 1 ! TO NO LONGER BE TESTED.
: 1782 1 !
: 1783 1 ! INSERT DROP CODE HERE. THIS CODE WILL BE EXECUTED AFTER
: 1784 1 ! A "DROP" COMMAND OR A "DODU" MACRO EXECUTION. THE PURPOSE
: 1785 1 ! OR THIS CODE IS TO DO ANY NECESSARY HOUSEKEEPING AFTER A
: 1786 1 ! UNIT HAS BEEN DROPPED.
: 1787 1 !
: 1788 1 !--
: 1789 1
: 1790 2 BGNDU;
: 1791 2
: 1792 2 RETURN;
: 1793 2
: 1794 1 ENDDU;

```

```

000000 000207 LDU: .SBTTL LDU DROP UNIT SECTION ; 1773
RTS PC

```

```

; Routine Size: 1 word, Routine Base: AA$CODE$ + 0334
; Maximum stack depth per invocation: 0 words

```

```

000000 004737 000334' L$DU:: .SBTTL L$DU DROP UNIT SECTION ; 1792
000004 104453 JSR PC,LDU
000006 000207 TRAP 53
RTS PC

```

```

; Routine Size: 4 words, Routine Base: AA$CODE$ + 0336
; Maximum stack depth per invocation: 2 words

```

```

: 1795 1
: 1796 1

```

ZQNA2  
V01.0

CZQNADO DEQNA FUNCTIONAL TEST  
ADD UNIT SECTION

14-Mar-1985 13:10:29  
14-Mar-1985 13:04:24

SEQ 0081  
Page 18  
VAX-11 B1,ss 16 V4.1-582  
DISK\$USER2:[MARSHALL.DEQNA]ZQNA2.BLI;4 (12)

```

: 1797 1 *SBTTL 'ADD UNIT SECTION'
: 1798 1
: 1799 1 !..
: 1800 1 !
: 1801 1 ! THE ADD-UNIT SECTION CONTAINS ANY CODE THE PROGRAMMER WISHES
: 1802 1 ! TO BE EXECUTED IN CONJUNCTION WITH THE ADDING OF A UNIT BACK
: 1803 1 ! TO THE TEST CYCLE.
: 1804 1 !
: 1805 1 ! INSERT ADD CODE HERE. THIS CODE WILL BE EXECUTED AFTER
: 1806 1 ! AN "ADD" COMMAND. THE PURPOSE OF THIS CODE IS TO DO ANY
: 1807 1 ! HOUSEKEEPING THAT MAY BE NECESSARY AFTER A UNIT HAS BEEN ADDED.
: 1808 1 !
: 1809 1 !..
: 1810 1
: 1811 2 BGNAU;
: 1812 2
: 1813 2 RETURN;
: 1814 2
: 1815 1 ENDAU;

```

```

000000 000207 LAU: .SBTTL LAU ADD UNIT SECTION ; 1794
RTS PC

```

```

; Routine Size: 1 word, Routine Base: AA$CODE$ + 0346
; Maximum stack depth per invocation: 0 words

```

```

000000 004737 000346' L$AU:: .SBTTL L$AU ADD UNIT SECTION ; 1813
000004 104452 JSR PC,LAU
000006 000207 TRAP 52
RTS PC

```

```

; Routine Size: 4 words, Routine Base: AA$CODE$ + 0350
; Maximum stack depth per invocation: 2 words

```

```

: 1816 1
: 1817 1

```

ZQNA2  
V01.0

CZQNADO DEQNA FUNCTIONAL TEST  
ADD UNIT SECTION

14-Mar-1985 13:10:29  
14-Mar-1985 13:04:24

SEQ 0082  
Page 19  
VAX-11 Bliss-16 V4.1-582  
DISK\$USER2:[MARSHALL.DEQNA]ZQNA2.BLI;4 (13)

```

: 1818 1
: 1819 2   BGNSRV (NXM_INT);
: 1820 2
: 1821 2   !..
: 1822 2   !
: 1823 2   !       GLOBAL LOCATION "INTERRUPT_FLG" IS SET TO TRUE WHICH INDICATES
: 1824 2   !       THE INITIALIZATION SEQUENCE INTERRUPT OCCURED.
: 1825 2   !
: 1826 2   !..
: 1827 2
: 1828 2   INTERRUPT_FLG      = #0'177777';
: 1829 2
: 1830 1   ENDSRV;

```

```

000000 012737 177777 000000G      .SBTTL  NXM.INT ADD UNIT SECTION
                                NXM.INT::
000006 000002                      MOV    #-1,INTERRUPT.FLG
                                RTI

```

1828  
1819

```

: Routine Size: 4 words,      Routine Base: AA$CODE$ + 0360
: Maximum stack depth per invocation: 0 words

```

```

: 1831 1
: 1832 1   END
: 1833 0   ELUDOM

```

```

:
:           OTS external references
:           .GLOBL $SAVE4

```

PSECT SUMMARY

Psect Name	Words	Attributes
\$CODE\$	50	RO , I , LCL, REL, CON
AA\$CODE\$	124	RO , I , LCL, REL, CON

Library Statistics

File	Symbols			Pages Mapped	Processing Time
	Total	Loaded	Percent		
DISK\$USER2:[MARSHALL.DEQNA]QNALIB.L16;15	223	48	21	14	00:00.1

ZQNA2  
V01.0

CZQNADO DEQNA FUNCTIONAL TEST  
ADD UNIT SECTION

14-Mar-1985 13:10:29  
14-Mar-1985 13:04:24

SEQ 0083  
Page 20  
VAX-11 Bliss-16 V4.1-582  
DISK#USER2:[MARSHALL.DEQNA]ZQNA2.BLI;4 (13)

COMMAND QUALIFIERS

; BLISS/PDP11 ZQNA2.BLI/LIST=ZQNA2.LIS/OBJECT=ZQNA2.OBJ/SOURCE=PAGE:53

; Size: 124 code + 50 data words  
; Run Time: 00:12.9  
; Elapsed Time: 00:43.3  
; Lines/CPU Min: 8499  
; Lexemes/CPU-Min: 58038  
; Memory Used: 168 pages  
; Compilation Complete

ZQNA3

CZQNADO DEQNA FUNCTIONAL TEST

14-Mar-1985 13:11:16  
14-Mar-1985 13:05:35

SEQ 0084  
Page 1  
VAX-11 Bliss-16 V4.1-582  
DISK\$USER2:[MARSHALL.DEQNA]ZQNA3.BLI;4 (1)

```
; 0001 0  MODULE ZQNA3 (*,ITL 'CZQNADO DEQNA FUNCTIONAL TEST'  
; 0002 0  IDENT = 'V01.0',  
; 0003 0  ADDRESSING_MODE(Absolute)  
; 0004 0  ) =  
; 0005 0  *SBTTL 'DEQNA TEST DEFINITION MODULE'  
; 0006 1  BEGIN  
; 0007 1  !<BLF/FORMAT>  
; 0008 1  
; 0009 1  LIBRARY 'QNALIB';           ! QNALIB LIBRARY  
; 0010 1  REQUIRE 'BLSMAC.REQ';     ! DIAGNOSTIC SUPERVISOR LIBRARY  
; 1500 1
```

ZQNA3  
V01.0

CZQNA0 DEQNA FUNCTIONAL TEST  
DEQNA TEST DEFINITION MODULE

14-Mar-1985 13:11:16  
14-Mar-1985 13:05:35

SEQ 0085  
Page 2  
VAX-11 Bliss-16 V4.1-582  
DISK#USER2:[MARSHALL.DEQNA]ZQNA3.BLI;4 (2)

```

; 1501 1 PSECT
; 1502 1 CODE = AB$CODE$;
; 1503 1
; 1504 1 !++
; 1505 1 ! EXTERNAL DATA USED BY THIS MODULE
; 1506 1 !--
; 1507 1
; 1508 1 EXTERNAL ROUTINE
; 1509 1
; 1510 1 CHK_CSR_STATUS : NOVALUE,
; 1511 1 CHK_RIXI_STATUS : NOVALUE,
; 1512 1 CHK_RCV_STATUS : NOVALUE,
; 1513 1 CHK_XMIT_STATUS : NOVALUE,
; 1514 1 CLR_BUFFERS : NOVALUE,
; 1515 1 CLR_DESCR : NOVALUE,
; 1516 1 COMPARE_PACKETS : NOVALUE,
; 1517 1 E1$REPORT : NOVALUE, ! PRINT EXTENDED ERROR MESSAGE
; 1518 1 ERROR$REPORT : NOVALUE, ! PRINT EXTENDED ERROR MESSAGE
; 1519 1 FORM_HEX_ADR : NOVALUE,
; 1520 1 KBD_INT : NOVALUE,
; 1521 1 NXM_INT : L$ISR NOVALUE, ! NXM INTERRUPT SERVICE ROUTINE
; 1522 1 PREP_FOR_SETUP : NOVALUE,
; 1523 1 PWR_INT : NOVALUE,
; 1524 1 RESET_DEQNA : NOVALUE,
; 1525 1 SEND_ELOOP_PACKET : NOVALUE,
; 1526 1 SEND_TEST_PACKET : NOVALUE,
; 1527 1 SET_XDESCR_LIST : NOVALUE,
; 1528 1 SET_RDESCR_LIST : NOVALUE,
; 1529 1 TURN_OFF_LED : NOVALUE,
; 1530 1 VER_DESCR_STATUS : NOVALUE,
; 1531 1 WAIT_FOR_TIMEOUT : NOVALUE,
; 1532 1 WALKING_BIT : NOVALUE,
; 1533 1 WRT_STATION_ADR : NOVALUE,
; 1534 1 XMIT_AND_RCV_PACKET : NOVALUE,
; 1535 1 XMIT_ILOOP_PACKET : NOVALUE,
; 1536 1 XMIT_SETUP_PACKET : NOVALUE;
; 1537 1
; 1538 1

```

ZQNA3  
V01.0CZQNA0 DEQNA FUNCTIONAL TEST  
DEQNA TEST DEFINITION MODULE14-Mar-1985 13:11:16  
14-Mar-1985 13:05:35SEQ 00A6  
Page 3  
VAX-11 Bliss-16 V4.1-582  
DISK#USER2:[MARSHALL.DEQNA]ZQNA3.BLI;4 (3)

```

: 1539 1
: 1540 1
: 1541 1
: 1542 1
: 1543 1
: 1544 1
: 1545 1
: 1546 1
: 1547 1
: 1548 1
: 1549 1
: 1550 1
: 1551 1
: 1552 1
: 1553 1
: 1554 1
: 1555 1
: 1556 1
: 1557 1
: 1558 1
: 1559 1
: 1560 1
: 1561 1
: 1562 1
: 1563 1
: 1564 1
: 1565 1
: 1566 1
: 1567 1
: 1568 1
: 1569 1
: 1570 1
: 1571 1
: 1572 1
: 1573 1

```

EXTERNAL

```

!..
!   COMMUNICATION AREA DECLARATIONS
!--

```

```

RCV_D_LIST      : BLOCK [ D_SIZE, WORD ] FIELD ( DL_FIELDS ),
XMIT_D_LIST     : BLOCK [ D_SIZE, WORD ] FIELD ( DL_FIELDS ),
DESCR_LIST      : BLOCK [ DESCR_SIZE, WORD ] FIELD ( DL_FIELDS ),
RCV_BUFFER      : VECTOR [ B_SIZE, BYTE ],
XMIT_BUFFER     : VECTOR [ B_SIZE, BYTE ],
DATA_BUFFER     : VECTOR [ BUF_SIZE, BYTE ],
TARGET_ADR      : VECTOR [ T_SIZE, BYTE ],
PHYS_ADR        : VECTOR [ 22, BYTE ],
IOP_TABLE       : VECTOR [ 8, WORD ],
RD13            : VECTOR [ 64, WORD ],
TD13            : VECTOR [ 28, WORD ],
TD16            : VECTOR [ 44, WORD ],
BD_PROM_DESCR   : VECTOR [ BD_D_SIZE, WORD ],
STATION_ADR     : VECTOR [ 4, WORD ],
PTRN_TABLE      : VECTOR [ 8, BYTE ],

```

```

!..
!   HARDWARE AND SOFTWARE P-TABLE STORAGE DECLARATIONS
!--

```

```

HWP_TABLE       : REF BLOCK [ HWP_SIZE, WORD ] FIELD ( HWP_FIELDS ),
SWP_TABLE       : REF BLOCK [ SWP_SIZE, WORD ] FIELD ( SWP_FIELDS ),

```

```

REG_ADR         : REF REG_STR FIELD ( IOP_FIELDS ),
GET_ADR         : REF ADR_STR FIELD ( IOP_FIELDS ),
IOP_DATA        : REF REG_STR FIELD ( IOP_FIELDS ),

```



ZQNA3  
V01.0

CZQNA0 DEQNA FUNCTIONAL TEST  
DEQNA TEST DEFINITION MODULE

14-Mar-1985 13:11:16  
14-Mar-1985 13:05:35

VAX-11 Bliss-16 V4.1-582  
DISK#USER2:[MARSHALL.DEQNA]ZQNA3.BLI;4

! (0=NONE,-1=L-CLOCK,1=P\_CLOCK)

; 1574 1  
; 1575 1  
; 1576 1  
; 1577 1  
; 1578 1  
; 1579 1  
; 1580 1  
; 1581 1  
; 1582 1  
; 1583 1  
; 1584 1  
; 1585 1  
; 1586 1  
; 1587 1  
; 1588 1  
; 1589 1  
; 1590 1  
; 1591 1  
; 1592 1  
; 1593 1  
; 1594 1  
; 1595 1  
; 1596 1  
; 1597 1

!+  
!- MISCELLANEOUS DATA DECLARATIONS

XBUF\_LENGTH, RBUF\_LENGTH, INTERRUPT\_FLG, COUNTER,  
SWP\_BLOCK\_MEM, SWP\_TOUT\_VAL, SWP\_ILOOP, SWP\_TIMER,  
UP\_COUNTER, DOWN\_COUNTER, CHECKSUM, ERR\_NUMBER,  
XC\_FLAG, SWP\_LBC,  
ERR\_COUNT, ERR\_FLAG, CSR\_WORD, PRI00,  
PRI01, PRI02, PRI03, PRI04,  
PRI05, PRI06, PRI07, DEQNA\_NO : WORD,

!+  
!- TEMPORARY STORAGE DATA DECLARATIONS

P1, P2, P3, P4,  
TMP\_IOP\_ADR, TMP\_REG\_DATA, TEMP1, TEMP2,  
TEMP3, TEMP4, TEMP5, TEMP6,  
TEMP7, TEMP8, TEMP9, TADR1,  
TADR2 : WORD,  
TBYTE1, TBYTE2, TBYTE3, TBYTE4 : BYTE,

ZQNA3  
V01.0

CZQNAO DEQNA FUNCTIONAL TEST  
DEQNA TEST DEFINITION MODULE

14-Mar-1985 13:11:16  
14-Mar-1985 13:05:35

SEQ 0088  
Page 5  
VAX-11 Bliss-16 V4.1-582  
DISK#USER2:{MARSHALL.DEQNA}ZQNA3.BLI;4 (5)

; 1598 1  
; 1599 1  
; 1600 1  
; 1601 1  
; 1602 1  
; 1603 1  
; 1604 1  
; 1605 1  
; 1606 1  
; 1607 1  
; 1608 1  
; 1609 1  
; 1610 1  
; 1611 1  
; 1612 1  
; 1613 1

!..  
! ERROR MESSAGES DEFINED EXTERNALLY  
!--

MSG00, MSG71,  
MSG01, MSG02, MSG03, MSG04, MSG05, MSG06, MSG07, MSG08, MSG09, MSG10,  
MSG11, MSG12, MSG13, MSG14, MSG15, MSG16, MSG17, MSG18, MSG19, MSG20,  
MSG21, MSG22, MSG23, MSG24, MSG25, MSG26, MSG27, MSG28, MSG29, MSG30,  
MSG31, MSG32, MSG33, MSG34, MSG35, MSG36, MSG37, MSG38, MSG39, MSG40,  
MSG41, MSG42, MSG43, MSG44, MSG45, MSG46, MSG47, MSG48, MSG49, MSG50,  
MSG51, MSG52, MSG53, MSG54, MSG55, MSG56, MSG57, MSG58, MSG59, MSG60,  
MSG61, MSG62, MSG63, MSG64, MSG65, MSG66, MSG67, MSG68, MSG69, MSG70;

ZQNA3  
V01.0

CZQNA0 DEQNA FUNCTIONAL TEST  
TEST 1 - NON-EXISTANT I/O PAGE REGISTER TEST

14-Mar-1985 13:11:16  
14-Mar-1985 13:05:35

VAX-11 B1.00 16 V4.1-582  
DISK\$USER2:[MARSHALL.DEQNA]ZQNA3.BLI;4 (6)

1614 1  
1615 1  
1616 1  
1617 1  
1618 1  
1619 1  
1620 1  
1621 1  
1622 1  
1623 1  
1624 1  
1625 1  
1626 1  
1627 1  
1628 1  
1629 1  
1630 1  
1631 1  
1632 1  
1633 1  
1634 1  
1635 1  
1636 1  
1637 1  
1638 1  
1639 1  
1640 1  
1641 1  
1642 1  
1643 1  
1644 1  
1645 1  
1646 1  
1647 1

\*SBTTL 'TEST 1 - NON-EXISTANT I/O PAGE REGISTER TEST'

!..

TEST 1: NON-EXISTANT I/O PAGE REGISTER TEST

DESCRIPTION:

This test verifies that all the device registers residing in the I/O Page can be accessed without forcing a non-existent memory (NXM) interrupt. If the operator specifies loop on error, the program re-executes the code that detected the error until ^C is entered.

Hardware tested: Q-Bus to DEQNA Slave Registers Interface

Processing:

```
BEGIN
  get ready for NXM interrupt
  REPEAT for every I/O page register
    read I/O prge register
    IF NXM occured
      THEN
        print error message if not inhibited
      ENDIF
    ENDREPEAT
  write any data pattern into the first 2 I/O page registers
  IF NXM occured
    THEN
      print error message if not inhibited
    ENDIF
  END
```

ZQNA3  
V01.0CZQNA0 DEQNA FUNCTIONAL TEST  
TEST 1 - NON-EXISTANT I/O PAGE REGISTER TEST14-Mar-1985 13:11:16  
14-Mar-1985 13:05:35VAX-11 B1:00-16 V4.1-582  
DISK#USER2:(MARSHALL.DEQNA)ZQNA3.BLI;4 (7)

```

: 1648 3  BGNTST;
: 1649 3
: 1650 3  SETVEC (4, NXM_INT, PRI07);      : SET UP FOR AN NXM INTERRUPT
: 1651 3  DELAY (MS_DELAY);              : DELAY 50 x 100 us = 5 ms
: 1652 3  INTERRUPT_FLG = CLEAR_FLG;    : CLEAR OUT NEX FLAG
: 1653 3
: 1654 3  TMP_IOP_ADR = .HWP_TABLE [ ADDR ];
: 1655 3  INCR INDEX FROM 0 TO 7 DO
: 1656 4    BEGIN
: 1657 6      BGNSUB;
: 1658 6        TEMP1 = ..TMP_IOP_ADR;
: 1659 6        DELAY(7);
: 1660 6        IF .INTERRUPT_FLG EQLU WORD_LIMIT      : SEE IF WE GOT A NXM INTRT
: 1661 6          THEN
: 1662 7            BEGIN                          : ADDRESS NOT THERE
: 1663 7              INTERRUPT_FLG = CLEAR_FLG;    : CLEAR TRAP FLAG
: 1664 7              PRINTB ( MSG59 );
: 1665 7              PRINTB ( MSG70, .TMP_IOP_ADR );
: 1666 7              ERRDF (0101, MSG00, E1$R$REPORT); : 'I/O PAGE REG. NOT PRESENT'
: 1667 7              DODU ( DEQNA_NO );
: 1668 7              DOCLN;
: 1669 6            END;
: 1670 4          ENDSUB;
: 1671 4          TMP_IOP_ADR = .TMP_IOP_ADR + 2;
: 1672 3        END;
: 1673 3
: 1674 3  TMP_IOP_ADR = .HWP_TABLE [ ADDR ];
: 1675 3  INCR INDEX FROM 0 TO 1 DO
: 1676 4    BEGIN
: 1677 6      BGNSUB;
: 1678 6        .TMP_IOP_ADR = 'X'7F';              : WRITE FIRST 2 LOCATIONS
: 1679 6        DELAY(7);
: 1680 6        IF .INTERRUPT_FLG EQLU WORD_LIMIT      : SEE IF WE GOT A NXM INTRT
: 1681 6          THEN
: 1682 7            BEGIN                          : ADDRESS NOT THERE
: 1683 7              INTERRUPT_FLG = CLEAR_FLG;    : CLEAR TRAP FLAG
: 1684 7              PRINTB ( MSG59 );
: 1685 7              PRINTB ( MSG70, .TMP_IOP_ADR );
: 1686 7              ERRDF (0102, MSG00, E1$R$REPORT); : 'I/O PAGE REG. NOT PRESENT'
: 1687 7              DODU ( DEQNA_NO );
: 1688 7              DOCLN;
: 1689 6            END;
: 1690 4          ENDSUB;
: 1691 4          TMP_IOP_ADR = .TMP_IOP_ADR + 2;
: 1692 3        END;
: 1693 3
: 1694 3  CLRVEC (4);                      : CLEAR INTERRUPT VECTOR
: 1695 3
: 1696 1  ENDTST;

```

```

.TITLE ZQNA3 CZQNA0 DEQNA FUNCTIONAL TEST
.IDENT /V01.0/

```

```

.ENABL AMA

.GLOBAL CHK.CSR.STATUS, CHK.RIXI.STATUS
.GLOBAL CHK.RCV.STATUS, CHK.XMIT.STATUS
.GLOBAL CLR.BUFFERS, CLR.DESCR, COMPARE.PACKETS
.GLOBAL E1$REPORT, ERROR$REPORT, FORM.HEX.ADR
.GLOBAL KBD.INT, NXM.INT, PREP.FOR.SETUP
.GLOBAL PWR.INT, RESET.DEQNA, SEND.ELOOP.PACKET
.GLOBAL SEND.TEST.PACKET, SET.XDESCR.LIST
.GLOBAL SET.RDESCR.LIST, TURN.OFF.LED
.GLOBAL VER.DESCR.STATUS, WAIT.FOR.TIMEOUT
.GLOBAL WALKING.BIT, WRT.STATION.ADR, XMIT.AND.RCV.PACKET
.GLOBAL XMIT.ILOOP.PACKET, XMIT.SETUP.PACKET
.GLOBAL RCV.D.LIST, XMIT.D.LIST, DESCR.LIST
.GLOBAL RCV.BUFFER, XMIT.BUFFER, DATA.BUFFER
.GLOBAL TARGET.ADR, PHYS.ADR, IOP.TABLE
.GLOBAL RD13, TD13, TD16, BD.PROM.DESCR
.GLOBAL STATION.ADR, PTRN.TABLE, HWP.TABLE
.GLOBAL SWP.TABLE, REG.ADR, GET.ADR, IOP.DATA
.GLOBAL XBUF.LENGTH, RBUF.LENGTH, INTERRUPT.FLG
.GLOBAL COUNTER, SWP.BLOCK.MEM, SWP.TOUT.VAL
.GLOBAL SWP.ILOOP, SWP.TIMER, UP.COUNTER
.GLOBAL DOWN.COUNTER, CHECKSUM, ERR.NUMBER
.GLOBAL XC.FLAG, SWP.LBC, ERR.COUNT, ERR.FLAG
.GLOBAL CSR.WORD, PRI00, PRI01, PRI02
.GLOBAL PRI03, PRI04, PRI05, PRI06, PRI07
.GLOBAL DEQNA.NO, P1, P2, P3, P4, TMP.IOP.ADR
.GLOBAL TMP.REG.DATA, TEMP1, TEMP2, TEMP3
.GLOBAL TEMP4, TEMP5, TEMP6, TEMP7, TEMP8
.GLOBAL TEMP9, TADR1, TADR2, TBYTE1, TBYTE2
.GLOBAL TBYTE3, TBYTE4, MSG00, MSG71, MSG01
.GLOBAL MSG02, MSG03, MSG04, MSG05, MSG06
.GLOBAL MSG07, MSG08, MSG09, MSG10, MSG11
.GLOBAL MSG12, MSG13, MSG14, MSG15, MSG16
.GLOBAL MSG17, MSG18, MSG19, MSG20, MSG21
.GLOBAL MSG22, MSG23, MSG24, MSG25, MSG26
.GLOBAL MSG27, MSG28, MSG29, MSG30, MSG31
.GLOBAL MSG32, MSG33, MSG34, MSG35, MSG36
.GLOBAL MSG37, MSG38, MSG39, MSG40, MSG41
.GLOBAL MSG42, MSG43, MSG44, MSG45, MSG46
.GLOBAL MSG47, MSG48, MSG49, MSG50, MSG51
.GLOBAL MSG52, MSG53, MSG54, MSG55, MSG56
.GLOBAL MSG57, MSG58, MSG59, MSG60, MSG61
.GLOBAL MSG62, MSG63, MSG64, MSG65, MSG66
.GLOBAL MSG67, MSG68, MSG69, MSG70, L$DLY

```

```

.SBTTL $T1 TEST 1 - NON-EXISTANT I/O PAGE REGISTER TEST
.PSECT AB$CODE$, RO

```

000000

```

000000 004137 000000G
000004 005746
000006 012746 000000G

```

```

$T1: JSR R1,$SAVE2 ;
TST -(SP)
MOV @PRI07,-(SP) ;

```

1611

1650

000012	012746	000000G		MOV	#NXM.INT,-(SP)		
000016	012746	000004		MOV	#4,-(SP)		
000022	012746	000003		MOV	#3,-(SP)		
000026	104437			TRAP	37		
000030	012701	000062		MOV	#62,R1	; *,\$\$TMP2	1651
000034	001410		1\$:	BEQ	4\$		
000036	013700	000000G		MOV	L\$DLY,R0	; *,\$\$TMP1	
000042	001403			BEQ	3\$		
000044	005066	000010	2\$:	CLR	10(SP)	; \$\$TMP	
000050	077003			SOB	R0,2\$	; \$\$TMP1,*	
000052	005301		3\$:	DEC	R1	; \$\$TMP2	
000054	000767			BR	1\$		
000056	005037	000000G	4\$:	CLR	INTERRUPT.FLG		1652
000062	017737	000000G	000000G	MOV	#HWP.TABLE,TMP.IOP.ADR		1654
000070	012702	000010		MOV	#10,R2	; *.INDEX	1655
000074	104402		5\$:	TRAP	2		1656
000076	017737	000000G	000000G	MOV	#TMP.IOP.ADR,TEMP1		1658
000104	012701	000007		MOV	#7,R1	; *,\$\$TMP2	1659
000110	001410		6\$:	BEQ	9\$		
000112	013700	000000G		MOV	L\$DLY,R0	; *,\$\$TMP1	
000116	001403			BEQ	8\$		
000120	005066	000010	7\$:	CLR	10(SP)	; \$\$TMP	
000124	077003			SOB	R0,7\$	; \$\$TMP1,*	
000126	005301		8\$:	DEC	R1	; \$\$TMP2	
000130	000767			BR	6\$		
000132	023727	000000G	177777	9\$:	CMP	INTERRUPT.FLG,#-1	
000140	001032			BNE	10\$		1660
000142	005037	000000G		CLR	INTERRUPT.FLG		1663
000146	012716	000000G		MOV	#MSG59,(SP)		1664
000152	012746	000001		MOV	#1,-(SP)		
000156	010600			MOV	SP,R0	; SP,*	
000160	104414			TRAP	14		
000162	013716	000000G		MOV	TMP.IOP.ADR,(SP)		1665
000166	012746	000000G		MOV	#MSG70,-(SP)		
000172	012746	000002		MOV	#2,-(SP)		
000176	010600			MOV	SP,R0	; SP,*	
000200	104414			TRAP	14		
000202	104455			TRAP	55		1666
000204	000145			.WORD	145		
000206	000000G			.WORD	MSG00		
000210	000000G			.WORD	E1\$REPORT		
000212	012700	000000G		MOV	#DEQNA.NO,R0		1667
000216	104451			TRAP	51		
000220	104444			TRAP	44		
000222	062706	000006		ADD	#6,SP		1662
000226	104467		10\$:	TRAP	67		1669
000230	006000			ROR	R0		
000232	103720			BLO	5\$		
000234	062737	000002	000000G	ADD	#2,TMP.IOP.ADR		1671
000242	077264			SOB	R2,5\$	; INDEX,*	1655
000244	017737	000000G	000000G	MOV	#HWP.TABLE,TMP.IOP.ADR		1674
000252	012702	000002		MOV	#2,R2	; *.INDEX	1675
000256	104402		11\$:	TRAP	2		1676

ZQNA3 V01.0	CZQNADO DEQNA FUNCTIONAL TEST TEST 1 - NON-EXISTANT I/O PAGE REGISTER TEST	14-Mar-1985 13:11:16 14-Mar-1985 13:05:35	VAX-11 Bliss-16 V4.1-582 DISK#USER2:(MARSHALL.DEQNA)ZQNA3.BLI;4		
000260	012777	000177	000000G	MOV #177,@TMP.IOP.ADR ;	1678
000266	012701	000007		MOV #7,R1 ; *,##TMP2	1679
000272	001410		12:	BEQ 15;	
000274	013700	000000G		MOV L#DLY,RO ; *,##TMP1	
000300	001403			BEQ 14;	
000302	005066	000010		CLR 10(SP) ; ##TMP	
000306	077003		13:	SOB RO,13; ##TMP1,*	
000310	005301		14:	DEC R1 ; ##TMP2	
000312	000767			BR 12;	
000314	023727	000000G	177777	15: CMP INTERRUPT.FLG,#-1 ;	1680
000322	001032			BNE 16;	
000324	005037	000000G		CLR INTERRUPT.FLG ;	1683
000330	012716	000000G		MOV #MSG59,(SP) ;	1684
000334	012746	000001		MOV #1,-(SP) ;	
000340	010600			MOV SP,RO ; SP,*	
000342	104414			TRAP 14 ;	
000344	013716	000000G		MOV TMP.IOP.ADR,(SP) ;	1685
000350	012746	000000G		MOV #MSG70,-(SP) ;	
000354	012746	000002		MOV #2,-(SP) ;	
000360	010600			MOV SP,RO ; SP,*	
000362	104414			TRAP 14 ;	
000364	104455			TRAP 55 ;	1686
000366	000146			.WORD 146 ;	
000370	000000G			.WORD MSG00 ;	
000372	000000G			.WORD E1\$REPORT ;	
000374	012700	000000G		MOV #DEQNA.NO,RO ;	1687
000400	104451			TRAP 51 ;	
000402	104444			TRAP 44 ;	
000404	062706	000006		ADD #6,SP ;	1682
000410	104467		16:	TRAP 67 ;	1689
000412	006000			ROR RO ;	
000414	103720			BLO 11; ;	
000416	062737	000002	000000G	ADD #2,TMP.IOP.ADR ;	1691
000424	077264			SOB R2,11; INDEX,*	1675
000426	012700	000004		MOV #4,RO ;	1694
000432	104436			TRAP 36 ;	
000434	062706	000012		ADD #12,SP ;	1611
000440	000207			RTS PC ;	

; Routine Size: 145 words, Routine Base: AB#CODE# + 0000  
; Maximum stack depth per invocation: 13 words

			.SBTTL T1 TEST 1 - NON-EXISTANT I/O PAGE REGISTER TEST	
000000	004737	000000'	T1::	
000000			1:	JSR PC,#T1 ;
000004	104466			TRAP 66 ;
000006	006000			ROR RO ;
000010	103773			BLO 1; ;
000012	000207			RTS PC ;

ZQNA3  
V01.0

CZQNADO DEQNA FUNCTIONAL TEST  
TEST 1 - NON-EXISTANT I/O PAGE REGISTER TEST

14-Mar-1985 13:11:16  
14 Mar 1985 13:05:35

SEQ 0094  
VAX-11 Bliss-16 V4.1-582  
Page 11  
DISK#USER2:[MARSHALL.DEQNA]ZQNA3.BLI;4 (7)

; Routine Size: 6 words. Routine Base: AB#CODE# + 0442  
; Maximum stack depth per invocation: 2 words

; 1697 1  
; 1698 1



ZQNA3  
V01.0CZQNADO DEQNA FUNCTIONAL TEST  
TEST 2 - CSR STATIC BIT TEST14-Mar 1985 13:11:16  
14-Mar-1985 13:05:35SEQ 0095  
Page 12  
VAX-11 Bliss-16 V4.1-582  
DISK#USER2:[MARSHALL.DEQNA]ZQNA3.BLI;4 (8)

```

: 1699 1 *SBTTL 'TEST 2 - CSR STATIC BIT TEST'
: 1700 1 !**
: 1701 1 !
: 1702 1 ! TEST 2:      CSR STATIC BIT TEST
: 1703 1 !
: 1704 1 ! DESCRIPTION:
: 1705 1 !
: 1706 1 !       This test verifies that the CSR register static bits can be set
: 1707 1 !       and cleared as specified.  The host writes data patterns to this
: 1708 1 !       register and reads them back verifying no static
: 1709 1 !       (stuck at 1 / stuck at 0) faults occur.  If the operator specifies
: 1710 1 !       loop on error, the program re-executes the code that detected the
: 1711 1 !       error until ^C is entered.
: 1712 1 !
: 1713 1 !       Hardware tested:                Q-Bus to DEQNA Slave Regs. Interface
: 1714 1 !
: 1715 1 !       Processing:
: 1716 1 !
: 1717 1 !           BEGIN
: 1718 1 !             check Software Reset ( SR ) bit in the CSR for stuck at 0
: 1719 1 !             and 1
: 1720 1 !             IF error
: 1721 1 !             THEN
: 1722 1 !               print error message if not inhibited
: 1723 1 !             ENDIF
: 1724 1 !             set static bits ( 0,3,8,9 ) and check for expected CSR status
: 1725 1 !             IF error
: 1726 1 !             THEN
: 1727 1 !               print error message if not inhibited
: 1728 1 !             ENDIF
: 1729 1 !             clear static bits and check for expected CSR status
: 1730 1 !             IF error
: 1731 1 !             THEN
: 1732 1 !               print error message if not inhibited
: 1733 1 !             ENDIF
: 1734 1 !             set static bits ( 0,3,8,9 ) and check for expected CSR status
: 1735 1 !             IF error
: 1736 1 !             THEN
: 1737 1 !               print error message if not inhibited
: 1738 1 !             ENDIF
: 1739 1 !             reset DEQNA and check for expected CSR status
: 1740 1 !             IF error
: 1741 1 !             THEN
: 1742 1 !               print error message if not inhibited
: 1743 1 !             ENDIF
: 1744 1 !           END
: 1745 1 !

```

ZQNA3  
V01.0CZQNADO DEQNA FUNCTIONAL TEST  
TEST 2 - CSR STATIC BIT TEST14-Mar-1985 13:11:16  
14-Mar-1985 13:05:35SEQ 0096  
Page 13  
VAX-11 Bliss-16 V4.1-582  
DISK#USER2:[MARSHALL.DEQNA]ZQNA3.BLI:4 (9)

```

: 1746 3  BGNTST;
: 1747 3
: 1748 5  BGNSUB;
: 1749 5
: 1750 5      !**
: 1751 5      ! CHECK IF CSR STATIC BITS (BIT 0,3,8 AND 9) ARE NOT STUCK AT 0
: 1752 5      !--
: 1753 5
: 1754 5      RESET_DEQNA ( );
: 1755 5      PUT_BIT ( CSR, ALL_BITS, PATRN1 );
: 1756 5      DELAY ( TIME6_LIMIT );
: 1757 5      TEMP1 = GET_BIT [ CSR_ALL ] AND PATRN1;
: 1758 5      IF .TEMP1 NEQU PATRN1
: 1759 5          THEN
: 1760 6          BEGIN
: 1761 6              PRINTB ( MSG59 );
: 1762 6              PRINTB ( MSG60 );
: 1763 6              PRINTB ( MSG30, .GET_ADR [ CSR_ALL ], .TEMP1, PATRN1 );
: 1764 6              ERRDF ( 0201, MSG00, E1$REPORT );
: 1765 5          END;
: 1766 3  ENDSUB;
: 1767 3
: 1768 3      !**
: 1769 3      ! CHECK IF CSR STATIC BITS (BIT 0,3,8 AND 9) ARE NOT STUCK AT 1
: 1770 3      !--
: 1771 3
: 1772 5  BGNSUB;
: 1773 5      PUT_BIT ( CSR, ALL_BITS, ZERO );
: 1774 5      DELAY ( TIME6_LIMIT );
: 1775 5      TEMP2 = GET_BIT [ CSR_ALL ] AND PATRN1;
: 1776 5      IF .TEMP2 NEQU ZERO
: 1777 5          THEN
: 1778 6          BEGIN
: 1779 6              PRINTB ( MSG59 );
: 1780 6              PRINTB ( MSG61 );
: 1781 6              PRINTB ( MSG30, .GET_ADR [ CSR_ALL ], .TEMP2, ZERO );
: 1782 6              ERRDF ( 0202, MSG00, E1$REPORT );
: 1783 5          END;
: 1784 3  ENDSUB;
: 1785 3
: 1786 5  BGNSUB;
: 1787 5      PUT_BIT ( CSR, ALL_BITS, PATRN1 );
: 1788 5      RESET_DEQNA ( );
: 1789 5      TEMP3 = GET_BIT [ CSR_ALL ] AND PATRN1;
: 1790 5      IF .TEMP3 NEQU ZERO
: 1791 5          THEN
: 1792 6          BEGIN
: 1793 6              PRINTB ( MSG59 );
: 1794 6              PRINTB ( MSG62 );
: 1795 6              PRINTB ( MSG30, .GET_ADR [ CSR_ALL ], .TEMP4, ZERO );
: 1796 6              ERRDF ( 0203, MSG00, E1$REPORT );
: 1797 5          END;
: 1798 3  ENDSUB;

```

ZQNA3  
V01.0

CZQNA0 DEQNA FUNCTIONAL TEST  
TEST 2 - CSR STATIC BIT TEST

14-Mar-1985 13:11:16  
14 Mar-1985 13:05:35

SEQ 0097  
Page 14  
VAX-11 Bliss-16 V4.1-582  
DISK#USER2:[MARSHALL.DEQNA]ZQNA3.BLI;4 (9)

; 1799 3  
; 1800 1     ENDTST;

```

000000 004137 000000G          $T2:  .SBTTL  $T2 TEST 2 - CSR STATIC BIT TEST
000004 162706 000016          SUB     R1,$SAVE2 ;
000010 104402          1$:  TRAP   #16,SP ;
000012 004737 000000G          JSR    PC,RESET.DEQNA ;
000016 013701 000000G          MOV    REG.ADR,R1 ;
000022 012761 001411 000016  MOV    #1411,16(R1) ;
000030 012702 000001          MOV    #1,R2 ; *,$$TMP2
000034 001410          2$:  BEQ    5$ ;
000036 013700 000000G          MOV    L$DLY,R0 ; *,$$TMP1
000042 001403          BEQ    4$ ;
000044 005066 000014          3$:  CLR    14(SP) ; $$TMP
000050 077003          SOB    R0,3$ ; $$TMP1,*
000052 005302          4$:  DEC    R2 ; $$TMP2
000054 000767          BR     2$ ;
000056 016116 000016          5$:  MOV    16(R1),(SP) ; *,TMP.LOCATION
000062 011637 000000G          MOV    (SP),TEMP1 ; TMP.LOCATION,*
000066 042737 176366 000000G  BIC    #176366,TEMP1
000074 023727 000000G 001411  CMP    TEMP1,#1411 ;
000102 001444          BEQ    6$ ;
000104 012746 000000G          MOV    #MSG59,-(SP) ;
000110 012746 000001          MOV    #1,-(SP) ;
000114 010600          MOV    SP,R0 ; SP,*
000116 104414          TRAP  14 ;
000120 012716 000000G          MOV    #MSG60,(SP) ;
000124 012746 000001          MOV    #1,-(SP) ;
000130 010600          MOV    SP,R0 ; SP,*
000132 104414          TRAP  14 ;
000134 012716 001411          MOV    #1411,(SP) ;
000140 013746 000000G          MOV    TEMP1,-(SP) ;
000144 013766 000000G 000012  MOV    GET.ADR,12(SP) ; *,TMP.LOCATION
000152 062766 000016 000012  ADD    #16,12(SP) ; *,TMP.LOCATION
000160 016646 000012          MOV    12(SP),-(SP) ; TMP.LOCATION,*
000164 012746 000000G          MOV    #MSG30,-(SP) ;
000170 012746 000004          MOV    #4,-(SP) ;
000174 010600          MOV    SP,R0 ; SP,*
000176 104414          TRAP  14 ;
000200 104455          TRAP  55 ;
000202 000311          .WORD 311 ;
000204 000000G          .WORD MSG00 ;
000206 000000G          .WORD E1$REPORT ;
000210 062706 000016          ADD    #16,SP ;
000214 104467          6$:  TRAP  67 ;
000216 006000          ROR    R0 ;
000220 103673          BLO   1$ ;
000222 104402          7$:  TRAP  2 ;
000224 013701 000000G          MOV    REG.ADR,R1 ;
000230 005061 000016          CLR    16(R1) ;
000234 012702 000001          MOV    #1,R2 ; *,$$TMP2

```

ZQNA3  
V01.0

CZQNADO DEQNA FUNCTIONAL TEST  
TEST 2 - CSR STATIC BIT TEST

14-Mar-1985 13:11:16  
14 Mar-1985 13:05:35

VAX 11 B1,ss-16 V4.1-582  
DISK\$USER2:[MARSHALL.DEQNA]ZQNA3.BLI;4 (9)

000240	001410			8‡:	BEQ	11‡				
000242	013700	000000G			MOV	L‡DLY,RO		; *,‡‡TMP1		
000246	001403				BEQ	10‡				
000250	005066	000014		9‡:	CLR	14(SP)		; ‡‡TMP		
000254	077003				SOB	RO,9‡		; ‡‡TMP1,*		
000256	005302			10‡:	DEC	R2		; ‡‡TMP2		
000260	000767				BR	8‡				
000262	016166	000016	000004	11‡:	MOV	16(R1),4(SP)		; *,TMP.LOCATION		1775
000270	016637	000004	000000G		MOV	4(SP),TEMP2		; TMP.LOCATION,*		
000276	042737	176366	000000G		BIC	#176366,TEMP2				
000304	001443				BEQ	12‡				1776
000306	012746	000000G			MOV	#MSG59,-(SP)				1779
000312	012746	000001			MOV	#1,-(SP)				
000316	010600				MOV	SP,RO		; SP,*		
000320	104414				TRAP	14				
000322	012716	000000G			MOV	#MSG61,(SP)				1780
000326	012746	000001			MOV	#1,-(SP)				
000332	010600				MOV	SP,RO		; SP,*		
000334	104414				TRAP	14				
000336	005016				CLR	(SP)				1781
000340	013746	000000G			MOV	TEMP2,-(SP)				
000344	013766	000000G	000016		MOV	GET.ADR,16(SP)		; *,TMP.LOCATION		
000352	062766	000016	000016		ADD	#16,16(SP)		; *,TMP.LOCATION		
000360	016646	000016			MOV	16(SP),-(SP)		; TMP.LOCATION,*		
000364	012746	000000G			MOV	#MSG30,-(SP)				
000370	012746	000004			MOV	#4,-(SP)				
000374	010600				MOV	SP,RO		; SP,*		
000376	104414				TRAP	14				
000400	104455				TRAP	55				1782
000402	000312				.WORD	312				
000404	000000G				.WORD	MSG00				
000406	000000G				.WORD	E1‡REPORT				
000410	062706	000016			ADD	#16,SP				1778
000414	104467			12‡:	TRAP	67				1783
000416	006000				ROR	RO				
000420	103700				BLO	7‡				
000422	104402			13‡:	TRAP	2				1784
000424	013700	000000G			MOV	REG.ADR,RO				1787
000430	012760	001411	000016		MOV	#1411,16(RO)				
000436	004737	000000G			JSR	PC,RESET.DEQNA				1788
000442	013700	000000G			MOV	REG.ADR,RO				1789
000446	016066	000016	000010		MOV	16(RO),10(SP)		; *,TMP.LOCATION		
000454	016637	000010	000000G		MOV	10(SP),TEMP3		; TMP.LOCATION,*		
000462	042737	176366	000000G		BIC	#176366,TEMP3				
000470	001443				BEQ	14‡				1790
000472	012746	000000G			MOV	#MSG59,-(SP)				1793
000476	012746	000001			MOV	#1,-(SP)				
000502	010600				MOV	SP,RO		; SP,*		
000504	104414				TRAP	14				
000506	012716	000000G			MOV	#MSG62,(SP)				1794
000512	012746	000001			MOV	#1,-(SP)				
000516	010600				MOV	SP,RO		; SP,*		
000520	104414				TRAP	14				

ZQNA3  
V01.0

CZQNA0 DEQNA FUNCTIONAL TEST  
TEST 2 - CSR STATIC BIT TEST

14-Mar-1985 13:11:16  
14-Mar-1985 13:05:35

VAX-11 Bliss-16 V4.1-582  
DISK#USER2:[MARSHALL.DEQNA]ZQNA3.BLI;4 (9)

```

000522 005016          CLR      (SP)
000524 013746 000000G  MOV      TEMP4,-(SP)
000530 013766 000000G 000022  MOV      GET.ADR,22(SP)
000536 062766 000016 000022  ADD      #16,22(SP)
000544 016646 000022      MOV      22(SP),-(SP)
000550 012746 000000G      MOV      #MSG30,-(SP)
000554 012746 000004      MOV      #4,-(SP)
000560 010600          MOV      SP,R0
000562 104414          TRAP     14
000564 104455          TRAP     55
000566 000313          .WORD   313
000570 000000G      .WORD   MSG00
000572 000000G      .WORD   E1#REPORT
000574 062706 000016      ADD      #16,SP
000600 104467          14$:   TRAP     67
000602 006000          ROR      R0
000604 103706          BLO     13$
000606 062706 000016      ADD      #16,SP
000612 000207          RTS     PC

```

; Routine Size: 198 words, Routine Base: AB#CODE# + 0456  
; Maximum stack depth per invocation: 19 words

```

000000 004737 000456'      T2::   .SBTTL  T2 TEST 2 - CSR STATIC BIT TEST
000000 1$:              JSR     PC,#T2
000004 104466          TRAP     66
000006 006000          ROR      R0
000010 103773          BLO     1$
000012 000207          RTS     PC

```

; Routine Size: 6 words, Routine Base: AB#CODE# + 1272  
; Maximum stack depth per invocation: 2 words

; 1801 1  
; 1802 1

ZQNA3  
V01.0CZQNADO DEQNA FUNCTIONAL TEST 14-Mar-1985 13:11:16  
TEST 3 - ETHERNET STATION ADDRESS VERIFY TEST 14-Mar-1985 13:05:35SEQ 0100  
Page 17  
VAX-11 B1,ss-16 V4.1-582  
DISK#USER2:[MARSHALL.DEQNA]ZQNA3.BLI;4 (10)

```

; 1803 1 *SBTTL 'TEST 3 - ETHERNET STATION ADDRESS VERIFY TEST'
; 1804 1 !**
; 1805 1 !
; 1806 1 ! TEST 3: ETHERNET STATION ADDRESS VERIFY TEST
; 1807 1 !
; 1808 1 ! DESCRIPTION:
; 1809 1 !
; 1810 1 ! This test verifies that the Ethernet Station Address PROM can be
; 1811 1 ! read and loaded to host memory correctly. Ethernet Station Address is
; 1812 1 ! verified and checksum is computed from PROM data read and this checksum
; 1813 1 ! is compared to the checksum stored in the Ethernet Station Address
; 1814 1 ! PROM. Ethernet Station Address is always printed out on the console in
; 1815 1 ! the Ethernet standard format. If the address is not proper, the error
; 1816 1 ! is recorded and an appropriate error message is printed out on the
; 1817 1 ! console. If the operator specifies loop on error, the program
; 1818 1 ! re-executes the code that detected the error until ^C is entered.
; 1819 1 !
; 1820 1 ! Hardware tested: Station Address PROM
; 1821 1 ! Q-Bus DMA Interface
; 1822 1 ! Processing:
; 1823 1 !
; 1824 1 ! BEGIN
; 1825 1 !
; 1826 1 ! read DEQNA Station Address PROM and checksum
; 1827 1 ! save copy of Station Address PROM in host memory
; 1828 1 ! print Station Address on the console in standard format
; 1829 1 ! compute Station Address ROM checksum
; 1830 1 ! IF checksum read not equal checksum computed
; 1831 1 ! THEN
; 1832 1 ! print error message if not inhibited
; 1833 1 ! ENDIF
; 1834 1 ! IF Station Address
; 1835 1 ! [all 0's]
; 1836 1 ! OR [all 1's]:
; 1837 1 ! OR [multicast bit set]:
; 1838 1 ! THEN
; 1839 1 ! print error message if not inhibited
; 1840 1 ! ENDIF
; 1841 1 !
; 1842 1 ! END
; 1843 1 !--

```

ZQNA3  
V01.0CZQNADO DEQNA FUNCTIONAL TEST  
TEST 3 - ETHERNET STATION ADDRESS VERIFY TEST14-Mar-1985 13:11:16  
14-Mar-1985 13:05:35SEQ 0101  
Page 18  
VAX-11 Bliss-16 V4.1-582  
DISK#USER2:[MARSHALL.DEQNA]ZQNA3.BLI;4 (11)

```

; 1844 3 BGNTST;
; 1845 3
; 1846 5 BGNSUB;
; 1847 5 RESET_DEQNA ( );
; 1848 5 FORM_HEX_ADR ( PHA_INDEX );
; 1849 5
; 1850 5 !**
; 1851 5 ! COMPUTE EXPECTED CHECKSUM
; 1852 5 !--
; 1853 5
; 1854 5 CHECKSUM = 0;
; 1855 5
; 1856 5 INCR INDEX FROM 0 TO 5 BY 2 DO
; 1857 6 BEGIN
; 1858 6 IF ( .CHECKSUM AND #0'100000' ) NEQU ZERO
; 1859 6 THEN
; 1860 7 BEGIN
; 1861 7 CHECKSUM = .CHECKSUM + 1;
; 1862 7 CHECKSUM = .CHECKSUM + 1;
; 1863 7 END
; 1864 6 ELSE
; 1865 6 CHECKSUM = .CHECKSUM + 1;
; 1866 6
; 1867 6 CHECKSUM = .CHECKSUM + .STATION_ADR [ .COUNTER ];
; 1868 6
; 1869 6 IF .CHECKSUM GTRU WORD_LIMIT
; 1870 6 THEN
; 1871 6 CHECKSUM = .CHECKSUM + 1;
; 1872 6
; 1873 6 COUNTER = .COUNTER + 1;
; 1874 5 END;
; 1875 5
; 1876 5 !**
; 1877 5 ! PRINT PHYSICAL STATION ADDRESS
; 1878 5 !--
; 1879 5
; 1880 5 PRINTB ( MSG01, .HWP_TABLE [ ADDR ] );
; 1881 5 PRINTB ( PHYS_ADR );
; 1882 5
; 1883 5 !**
; 1884 5 ! READ ACTUAL CHECKSUM FROM DEQNA STATION ADDRESS PROM AND COMPARE IT TO
; 1885 5 ! THE EXPECTED CHECKSUM COMPUTED ABOVE.
; 1886 5 !--
; 1887 5
; 1888 5 PUT_BIT ( CSR, LB, EXT_LOOPBACK );
; 1889 5 DELAY ( 5 );
; 1890 5 TEMP1 = .REG_ADR [ 1, ALL_BITS ];
; 1891 5 TEMP1 = .TEMP1 + 8;
; 1892 5 TEMP2 = .REG_ADR [ 0, ALL_BITS ];
; 1893 5 STATION_ADR [ CHSUM ] = .TEMP1 OR ( .TEMP2 AND #0'000377' );
; 1894 5 PUT_BIT ( CSR, LB, ZERO );
; 1895 5 IF .CHECKSUM NEQU .STATION_ADR [ CHSUM ]
; 1896 5 THEN

```

ZQNA3  
VO1.0

CZQNADO DEQNA FUNCTIONAL TEST  
TEST 3 - ETHERNET STATION ADDRESS VERIFY TEST

14-Mar-1985 13:11:16  
14-Mar-1985 13:05:35

VAX-11 Bliss-16 V4.1-582  
DISK#USER2:[MARSHALL.DEQNA]ZQNA3.BLI;4 (11)

```

; 1897 6      BEGIN
; 1898 6      PRINTB ( MSG59 );
; 1899 6      PRINTB ( MSG63, .STATION_ADR [ CHSUM ], .CHECKSUM );
; 1900 6      ERRDF (0301, MSG00, E1$REPORT);
; 1901 5      END;
; 1902 3      ENDSUB;
; 1903 3
; 1904 3      TEMP3 = ZERO;
; 1905 3      TEMP4 = ZERO;
; 1906 3      INCR INDEX FROM 0 TO 2 DO
; 1907 4      BEGIN
; 1908 4      TEMP3 = .TEMP3 + .STATION_ADR [ .INDEX ];
; 1909 4      IF .STATION_ADR [ .INDEX ] EQLU #X'FFFF'
; 1910 4      THEN
; 1911 4      TEMP4 = .TEMP4 + 1;
; 1912 3      END;
; 1913 3
; 1914 4      IF ( .TEMP3 EQLU ZERO )
; 1915 4      OR ( .TEMP4 GTRU ZERO )
; 1916 4      OR ( ( .STATION_ADR [ ZERO ] AND #X'0100' ) EQLU #X'0100' )
; 1917 3      THEN
; 1918 4      BEGIN
; 1919 4      PRINTB ( MSG59 );
; 1920 4      PRINTB ( MSG64 );
; 1921 4      PRINTB ( PHYS_ADR );
; 1922 4      ERRDF ( 0302, MSG00, E1$REPORT);
; 1923 3      END;
; 1924 3
; 1925 1      ENDTST;

```

Address	OpCode	OpName	OpData	Comment	PC
000000	004137	000000G	\$T3: JSR	R1, \$SAVE2	1800
000004	162706	000006	SUB	#6, SP	
000010	104402		1\$: TRAP	2	1844
000012	004737	000000G	JSR	PC, RESET, DEQNA	1847
000016	012746	000023	MOV	#23, -(SP)	1848
000022	004737	000000G	JSR	PC, FORM. HEX. ADR	
000026	005037	000000G	CLR	CHECKSUM	1854
000032	005001		CLR	R1	1856
000034	013700	000000G	2\$: MOV	CHECKSUM, R0	1861
000040	006300		ASL	R0	
000042	032737	100000 000000G	BIT	#-100000, CHECKSUM	1858
000050	001405		BEQ	3\$	
000052	010037	000000G	MOV	R0, CHECKSUM	1861
000056	005237	000000G	INC	CHECKSUM	1862
000062	000402		BR	4\$	1858
000064	010037	000000G	3\$: MOV	R0, CHECKSUM	1865
000070	013700	000000G	4\$: MOV	COUNTER, R0	1867
000074	006300		ASL	R0	
000076	066037	000000G 000000G	ADD	STATION. ADR(R0), CHECKSUM	
000104	005237	000000G	INC	COUNTER	1873
000110	062701	000002	ADD	#2, R1	1856



ZQNA3  
V01.0

CZQNA0 DEQNA FUNCTIONAL TEST  
TEST 3 - ETHERNET STATION ADDRESS VERIFY TEST

14-Mar-1985 13:11:16  
14-Mar-1985 13:05:35

VAX-11 Bliess-16 V4.1-582  
DISK#USER2:[MARSHALL.DEQNA]ZQNA3.BLI;4 (11)

000114	020127	000005		CMP	R1,#5	; INDEX,*	
000120	003745			BLE	2#		
000122	017716	000000G		MOV	@HWP.TABLE,(SP)		1880
000126	012746	000000G		MOV	@MSG01,-(SP)		
000132	012746	000002		MOV	#2,-(SP)		
000136	010600			MOV	SP,RO	; SP,*	
000140	104414			TRAP	14		
000142	012716	000000G		MOV	@PHYS.ADR,(SP)		1881
000146	012746	000001		MOV	#1,-(SP)		
000152	010600			MOV	SP,RO	; SP,*	
000154	104414			TRAP	14		
000156	013701	000000G		MOV	REG.ADR,R1		1888
000162	052761	001400	000016	BIS	#1400,16(R1)		
000170	012702	000005		MOV	#5,R2	; *,\$\$TMP2	1889
000174	001410		5#:	BEQ	8#		
000176	013700	000000G		MOV	L\$DLY,RO	; *,\$\$TMP1	
000202	001403			BEQ	7#		
000204	005066	000014		6#:	CLR	14(SP)	; \$\$TMP
000210	077003			SOB	RO,6#	; \$\$TMP1,*	
000212	005302			7#:	DEC	R2	; \$\$TMP2
000214	000767			BR	5#		
000216	016166	000002	000010	8#:	MOV	2(R1),10(SP)	; *,TMP.LOCATION
000224	016600	000010		MOV	10(SP),RO	; TEMP1,*	1890
000230	072027	000010		ASH	#10,RO		1891
000234	010037	000000G		MOV	RO,TEMP1		
000240	011166	000012		MOV	(R1),12(SP)	; *,TMP.LOCATION	1892
000244	011137	000000G		MOV	(R1),TEMP2	; TMP.LOCATION,*	
000250	005037	000006G		CLR	STATION.ADR+6		1893
000254	111137	000006G		MOV	(R1),STATION.ADR+6	; TEMP2,*	
000260	050037	000006G		BIS	RO,STATION.ADR+6	; TEMP1,*	
000264	042761	001400	000016	BIC	#1400,16(R1)		1894
000272	023737	000000G	000006G	CMP	CHECKSUM,STATION.ADR+6		1895
000300	001426			BEQ	9#		
000302	012716	000000G		MOV	@MSG59,(SP)		1898
000306	012746	000001		MOV	#1,-(SP)		
000312	010600			MOV	SP,RO	; SP,*	
000314	104414			TRAP	14		
000316	013716	000000G		MOV	CHECKSUM,(SP)		1899
000322	013746	000006G		MOV	STATION.ADR+6,-(SP)		
000326	012746	000000G		MOV	@MSG63,-(SP)		
000332	012746	000003		MOV	#3,-(SP)		
000336	010600			MOV	SP,RO	; SP,*	
000340	104414			TRAP	14		
000342	104455			TRAP	55		1900
000344	000455			.WORD	455		
000346	000000G			.WORD	MSG00		
000350	000000G			.WORD	E1\$REPORT		
000352	062706	000010		ADD	#10,SP		1897
000356	062706	000010		ADD	#10,SP		1844
000362	104467		9#:	TRAP	67		1901
000364	006000			ROR	RO		
000366	103610			BLO	1#		
000370	005037	000000G		CLR	TEMP3		1904

ZQNA3  
V01.0

CZQNA0 DEQNA FUNCTIONAL TEST  
TEST 3 ETHERNET STATION ADDRESS VERIFY TEST

14-Mar-1985 13:11:16  
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VAX-11 Bliess-16 V4.1-582  
DISK#USER2:[MARSHALL.DEQNA]ZQNA3.BLI;4 (11)  
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000374	005037	000000G		CLR	TEMP4	:	1905
000400	005000			CLR	R0	:	1906
000402	066037	000000G 000000G	10#:	ADD	STATION.ADR(R0),TEMP3	:	1908
000410	026027	000000G 177777		CMP	STATION.ADR(R0),r 1	:	1909
000416	001002			BNE	11#	:	
000420	005237	000000G		INC	TEMP4	:	1911
000424	062700	000002	11#:	ADD	#2,R0	:	1906
000430	020027	000004		CMP	R0,#4	:	
000434	003762			BLE	10#	:	
000436	005737	000000G		TST	TEMP3	:	1914
000442	001407			BEQ	12#	:	
000444	005737	000000G		TST	TEMP4	:	1915
000450	001004			BNE	12#	:	
000452	032737	000400 000000G		BIT	#400,STATION.ADR	:	1916
000460	001430			BEQ	13#	:	
000462	012746	000000G	12#:	MOV	#MSG59,-(SP)	:	1919
000466	012746	000001		MOV	#1,-(SP)	:	
000472	010600			MOV	SP,R0	:	
000474	104414			TRAP	14	:	
000476	012716	000000G		MOV	#MSG64,(SP)	:	1920
000502	012746	000001		MOV	#1,-(SP)	:	
000506	010600			MOV	SP,R0	:	
000510	104414			TRAP	14	:	
000512	012716	000000G		MOV	#PHYS.ADR,(SP)	:	1921
000516	012746	000001		MOV	#1,-(SP)	:	
000522	010600			MOV	SP,R0	:	
000524	104414			TRAP	14	:	
000526	104455			TRAP	55	:	1922
000530	000456			.WORD	456	:	
000532	000000G			.WORD	MSG00	:	
000534	000000G			.WORD	E1#REPORT	:	
000536	062706	000010		ADD	#10,SP	:	1918
000542	062706	000006	13#:	ADD	#6,SP	:	1800
000546	000207			RTS	PC	:	

; Routine Size: 180 words, Routine Base: AB#CODE# + 1306  
; Maximum stack depth per invocation: 16 words

				.SBTTL T3 TEST 3 - ETHERNET STATION ADDRESS VERIFY TEST			
000000	004737	001306'	T3::				
000000			1#:	JSR	PC,#T3	:	1923
000004	104466			TRAP	66	:	
000006	006000			ROR	R0	:	
000010	103773			BLO	1#	:	
000012	000207			RTS	PC	:	

; Routine Size: 6 words, Routine Base: AB#CODE# + 2056  
; Maximum stack depth per invocation: 2 words

ZQNA3  
V01.0

CZQNA30 DEQNA FUNCTIONAL TEST  
TEST 3 - ETHERNET STATION ADDRESS VERIFY TEST

14-Mar-1985 13:11:16  
14-Mar-1985 13:05:35

VAX-11 Bliss-16 V4.1-582  
DISK#USER2:(MARSHALL.DEQNA)ZQNA3.BLI;4 (11)

: 1926 1  
: 1927 1

ZQNA3  
V01.0CZQNADO DEQNA FUNCTIONAL TEST  
TEST 4 - INTERRUPT VECTOR ADDRESS TEST14-Mar-1985 13:11:16  
14-Mar-1985 13:05:35VAX-11 Bliss-16 V4.1-582  
DISK#USER2:(MARSHALL.DEQNA)ZQNA3.BLI;4 (12)SEQ 0106  
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```

: 1928 1 *SBTTL 'TEST 4 - INTERRUPT VECTOR ADDRESS TEST'
: 1929 1 !**
: 1930 1 !
: 1931 1 ! TEST 4: INTERRUPT VECTOR ADDRESS TEST
: 1932 1 !
: 1933 1 ! DESCRIPTION:
: 1934 1 !
: 1935 1 ! This test verifies that all bits of the vector address register
: 1936 1 ! can be set and cleared as specified. The host writes data patterns
: 1937 1 ! to this register and reads them back verifying no static
: 1938 1 ! (stuck at 1 / stuck at 0) faults occur. If the operator specifies
: 1939 1 ! loop on error, the program re-executes the code that detected the
: 1940 1 ! error until ^C is entered.
: 1941 1 !
: 1942 1 ! NOTE: Only bits 9:2 of the Interrupt Vector Address Register are
: 1943 1 ! valid, rest read as 0.
: 1944 1 !
: 1945 1 ! The following BINARY data patterns are used:
: 1946 1 !
: 1947 1 ! 00000000 11111111
: 1948 1 ! 10101010 01010101
: 1949 1 ! 11001100 00110011
: 1950 1 ! 11110000 00001111
: 1951 1 ! walking 1's, 1 propagating thru Vector Address Reg.
: 1952 1 ! walking 0's, 0 propagating thru Vector Address Reg.
: 1953 1 !
: 1954 1 ! Hardware tested: Device Vector Address Register
: 1955 1 ! Slave Interface Registers
: 1956 1 !
: 1957 1 ! Processing:
: 1958 1 !
: 1959 1 ! BEGIN
: 1960 1 !
: 1961 1 ! reset device
: 1962 1 ! REPEAT for each pattern
: 1963 1 ! write pattern to Vector Address Register ( bits 9:2 )
: 1964 1 ! read pattern from Vector Address Register ( bits 9:2 )
: 1965 1 ! compare write pattern to read pattern (less noise bits)
: 1966 1 ! IF not equal
: 1967 1 ! THEN
: 1968 1 ! print error message if not inhibited
: 1969 1 ! ENDIF
: 1970 1 !
: 1971 1 ! ENDREPEAT
: 1972 1 ! END
: 1973 1 !

```

ZQNA3  
V01.0CZQNA0 DEQNA FUNCTIONAL TEST  
TEST 4 - INTERRUPT VECTOR ADDRESS TEST14-Mar 1985 13:11:16  
14-Mar-1985 13:05:35VAX-11 Bliss-16 V4.1-582  
DISK#USER2:[MARSHALL.DEQNA]ZQNA3.BLI;4 (13)SEQ 0107  
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```

: 1974 3  BGNTST;
: 1975 3
: 1976 3  RESET_DEQNA ( );
: 1977 3
: 1978 3  !..
: 1979 3  ! WRITE ALTERNATING 0'S AND 1'S TO INTERRUPT VECTOR ADDRESS REGISTER
: 1980 3  ! IN THE I/O PAGE, THEN READ AND COMPARE TO THE WRITE PATTERN
: 1981 3  !..
: 1982 3
: 1983 3  INCR INDEX FROM 0 TO 7 DO
: 1984 4  BEGIN
: 1985 4  TBYTE1 = .PTRN_TABLE [ .INDEX ];
: 1986 6  BGNSUB;
: 1987 6  PUT_BIT [ INT_VEC, VEC_ADR, .TBYTE1 ];
: 1988 6  IF GET_BIT [ INT_VEC, VEC_ADR ] NEQU .TBYTE1
: 1989 6  THEN
: 1990 7  BEGIN
: 1991 7  PRINTB ( MSG59 );
: 1992 7  PRINTB ( MSG65 );
: 1993 7  PRINTB ( MSG30, .GET_ADR [ VEC_ALL ], .TBYTE1, GET_BIT [ INT_VEC, VEC_ADR ] );
: 1994 7  ERRDF ( 0401, MSG00, E1$REPORT );
: 1995 6  END;
: 1996 4  ENDSUB;
: 1997 3  END;
: 1998 3  !..
: 1999 3  ! WRITE WALKING 1 PATTERN INTO THE INTERRUPT VECTOR ADDRESS IN THE I/O PAGE
: 2000 3  ! REGISTER THEN READ AND COMPARE TO THE WRITE PATTERN
: 2001 3  !..
: 2002 3
: 2003 3  TEMP1 = #B'00000001';
: 2004 3
: 2005 3  INCR INDEX FROM 0 TO 7 DO
: 2006 4  BEGIN
: 2007 6  BGNSUB;
: 2008 6  PUT_BIT [ INT_VEC, VEC_ADR, .TEMP1 ];
: 2009 6  IF GET_BIT [ INT_VEC, VEC_ADR ] NEQU .TEMP1
: 2010 6  THEN
: 2011 7  BEGIN
: 2012 7  PRINTB ( MSG59 );
: 2013 7  PRINTB ( MSG65 );
: 2014 7  PRINTB ( MSG30, .GET_ADR [ VEC_ALL ], .TEMP1, GET_BIT [ INT_VEC, VEC_ADR ] );
: 2015 7  ERRDF ( 0402, MSG00, E1$REPORT );
: 2016 6  END;
: 2017 6  TEMP1 = .TEMP1 + 1;
: 2018 4  ENDSUB;
: 2019 3  END;
: 2020 3
: 2021 3  !..
: 2022 3  ! WRITE WALKING 0 PATTERN INTO THE INTERRUPT VECTOR ADDRESS IN THE I/O PAGE
: 2023 3  ! REGISTER THEN READ AND COMPARE TO THE WRITE PATTERN
: 2024 3  !..
: 2025 3
: 2026 3  TEMP1 = #B'11111110';

```

ZQNA3  
V01.0

CZQNA0 DEQNA FUNCTIONAL TEST  
TEST 4 - INTERRUPT VECTOR ADDRESS TEST

14-Mar-1985 13:11:16  
14-Mar-1985 13:05:35

SEQ 0108  
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VAX-11 Bliss-16 V4.1-582  
DISK#USER2:[MARSHALL.DEQNA]ZQNA3.BLI;4 (13)

```

: 2027 3
: 2028 3   INCR INDEX FROM 0 TO 7 DO
: 2029 4   BEGIN
: 2030 6   BGNSUB;
: 2031 6   PUT_BIT [ INT_VEC, VEC_ADR, .TEMP1 ];
: 2032 6   IF GET_BIT [ INT_VEC, VEC_ADR ] NEQU .TEMP1
: 2033 6   THEN
: 2034 7   BEGIN
: 2035 7   PRINTB ( MSG59 );
: 2036 7   PRINTB ( MSG65 );
: 2037 7   PRINTB ( MSG30, .GET_ADR [ VEC_ALL ], .TEMP1, GET_BIT [ INT_VEC, VEC_ADR ] );
: 2038 7   ERROF ( 0403, MSG00, E1$REPORT );
: 2039 6   END;
: 2040 6
: 2041 6   TEMP1 = (( .TEMP1 + 1 ) + 1 ) AND #0'000377' ;
: 2042 4   ENDSUB;
: 2043 3   END;
: 2044 3
: 2045 1   ENDTST;

```

000000	004137	000000G	\$T4:	.SBTTL	\$T4 TEST 4 - INTERRUPT VECTOR ADDRESS TEST		
000004	162706	000022		JSR	R1, \$SAVE2	;	1925
000010	004737	000000G		SUB	#22, SP	;	
000014	005001			JSR	PC, RESET.DEQNA	;	1976
000016	116137	000000G 000000G	1\$:	CLR	R1	;	1983
000024	105037	000001G		MOV	PTRN.TABLE(R1), TBYTE1	;	1985
000030	104402		2\$:	CLRB	TBYTE1+1	;	
000032	013700	000000G		TRAP	2	;	
000036	013702	000000G		MOV	REG.ADR, R0	;	1987
000042	006302			MOV	TBYTE1, R2	;	
000044	006302			ASL	R2	;	
000046	042702	176003		ASL	R2	;	
000052	042760	001774 000014		BIC	#176003, R2	;	
000060	050260	000014		BIC	#1774, 14(R0)	;	
000064	016016	000014		BIS	R2, 14(R0)	;	
000070	013702	000000G		MOV	14(R0), (SP)	;	1988
000074	011600			MOV	TBYTE1, R2	;	
000076	006200			MOV	(SP), R0	;	
000100	006200			ASR	R0	;	
000102	042700	177400		ASR	R0	;	
000106	020002			BIC	#177400, R0	;	
000110	001456			CMP	R0, R2	;	
000112	012746	000000G		BEQ	3\$	;	
000116	012746	000001		MOV	#MSG59, -(SP)	;	1991
000122	010600			MOV	#1, -(SP)	;	
000124	104414			MOV	SP, R0	;	
000126	012716	000000G		TRAP	14	;	
000132	012746	000001		MOV	#MSG65, (SP)	;	1992
000136	010600			MOV	#1, -(SP)	;	
000140	104414			MOV	SP, R0	;	
000142	013700	000000G		TRAP	14	;	
				MOV	REG.ADR, R0	;	1993

ZQNA3  
V01.0

CZQNADO DEQNA FUNCTIONAL TEST  
TEST 4 - INTERRUPT VECTOR ADDRESS TEST

14-Mar-1985 13:11:16  
14-Mar-1985 13:05:35

SEQ 0109  
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VAX-11 Bliss-16 V4.1-582  
DISK\$USER2:[MARSHALL.DEQNA]ZQNA3.BLI;4 (13)

000146	016066	000014	000010	MOV	14(R0),10(SP)	; *,TMP.LOCATION	
000154	016600	000010		MOV	10(SP),R0	; TMP.LOCATION,*	
000160	006200			ASR	R0		
000162	006200			ASR	R0		
000164	042700	177400		BIC	#177400,R0		
000170	010016			MOV	R0,(SP)		
000172	013746	000000G		MOV	TBYTE1,-(SP)		
000176	013766	000000G	000014	MOV	GET.ADR,14(SP)	; *,TMP.LOCATION	
000204	062766	000014	000014	ADD	#14,14(SP)	; *,TMP.LOCATION	
000212	016646	000014		MOV	14(SP),-(SP)	; TMP.LOCATION,*	
000216	012746	000000G		MOV	#MSG30,-(SP)		
000222	012746	000004		MOV	#4,-(SP)		
000226	010600			MOV	SP,R0	; SP,*	
000230	104414			TRAP	14		
000232	104455			TRAP	55		1994
000234	000621			.WORD	621		
000236	000000G			.WORD	MSG00		
000240	000000G			.WORD	E1\$REPORT		
000242	062706	000016		ADD	#16,SP		1990
000246	104467			TRAP	67		1995
000250	006000			ROR	R0		
000252	103666			BLO	24		
000254	005201			INC	R1	; INDEX	1983
000256	020127	000007		CMP	R1,#7	; INDEX,*	
000262	003655			BLE	14		
000264	012737	000001	000000G	MOV	#1,TEMP1		2003
000272	012701	000010		MOV	#10,R1	; *,INDEX	2005
000276	104402			TRAP	2		2006
000300	013700	000000G		MOV	REG.ADR,R0		2008
000304	013702	000000G		MOV	TEMP1,R2		
000310	006302			ASL	R2		
000312	006302			ASL	R2		
000314	042702	176003		BIC	#176003,R2		
000320	042760	001774	000014	BIC	#1774,14(R0)		
000326	050260	000014		BIS	R2,14(R0)		
000332	016066	000014	000006	MOV	14(R0),6(SP)	; *,TMP.LOCATION	2009
000340	013702	000000G		MOV	TEMP1,R2		
000344	016600	000006		MOV	6(SP),R0	; TMP.LOCATION,*	
000350	006200			ASR	R0		
000352	006200			ASR	R0		
000354	042700	177400		BIC	#177400,R0		
000360	020002			CMP	R0,R2		
000362	001456			BEQ	54		
000364	012746	000000G		MOV	#MSG59,-(SP)		2012
000370	012746	000001		MOV	#1,-(SP)		
000374	010600			MOV	SP,R0	; SP,*	
000376	104414			TRAP	14		
000400	012716	000000G		MOV	#MSG65,(SP)		2013
000404	012746	000001		MOV	#1,-(SP)		
000410	010600			MOV	SP,R0	; SP,*	
000412	104414			TRAP	14		
000414	013700	000000G		MOV	REG.ADR,R0		2014
000420	016066	000014	000016	MOV	14(R0),16(SP)	; *,TMP.LOCATION	

ZQNA3  
V01.0

CZQNADO DEQNA FUNCTIONAL TEST  
TEST 4 - INTERRUPT VECTOR ADDRESS TEST

14-Mar-1985 13:11:16  
14-Mar-1985 13:05:35

SEQ 0110  
Page 27  
VAX-11 Bliss-16 V4.1-582  
DISK#USER2:[MARSHALL.DEQNA]ZQNA3.BLI;4 (13)

000426	016600	000016		MOV	16(SP),R0		; TMP.LOCATION,*	
000432	006200			ASR	R0			
000434	006200			ASR	R0			
000436	042700	177400		BIC	#177400,R0			
000442	010016			MOV	R0,(SP)			
000444	013746	000000G		MOV	TEMP1,-(SP)			
000450	013766	000000G	000022	MOV	GET.ADR,22(SP)		; *,TMP.LOCATION	
000456	062766	000014	000022	ADD	#14,22(SP)		; *,TMP.LOCATION	
000464	016646	000022		MOV	22(SP),-(SP)		; TMP.LOCATION,*	
000470	012746	000000G		MOV	#MSG30,-(SP)			
000474	012746	000004		MOV	#4,-(SP)			
000500	010600			MOV	SP,R0		; SP,*	
000502	104414			TRAP	14			
000504	104455			TRAP	55			
000506	000622			.WORD	622			2015
000510	000000G			.WORD	MSG00			
000512	000000G			.WORD	E1\$REPORT			
000514	062706	000016		ADD	#16,SP			2011
000520	006337	000000G	5\$:	ASL	TEMP1			2017
000524	104467			TRAP	67			
000526	006000			ROR	R0			
000530	103662			BLO	4\$			
000532	005301			DEC	R1		; INDEX	2005
000534	001260			BNE	4\$			
000536	012737	000376	000000G	MOV	#376,TEMP1			2026
000544	012701	000010		MOV	#10,R1		; *,INDEX	2028
000550	104402		6\$:	TRAP	2			2029
000552	013700	000000G		MOV	REG.ADR,R0			2031
000556	013702	000000G		MOV	TEMP1,R2			
000562	006302			ASL	R2			
000564	006302			ASL	R2			
000566	042702	176003		BIC	#176003,R2			
000572	042760	001774	000014	BIC	#1774,14(R0)			
000600	050260	000014		BIS	R2,14(R0)			
000604	016066	000014	000014	MOV	14(R0),14(SP)		; *,TMP.LOCATION	2032
000612	013702	000000G		MOV	TEMP1,R2			
000616	016600	000014		MOV	14(SP),R0		; TMP.LOCATION,*	
000622	006200			ASR	R0			
000624	006200			ASR	R0			
000626	042700	177400		BIC	#177400,R0			
000632	020002			CMP	R0,R2			
000634	001456			BEQ	7\$			
000636	012746	000000G		MOV	#MSG59,-(SP)			2035
000642	012746	000001		MOV	#1,-(SP)			
000646	010600			MOV	SP,R0		; SP,*	
000650	104414			TRAP	14			
000652	012716	000000G		MOV	#MSG65,(SP)			2036
000656	012746	000001		MOV	#1,-(SP)			
000662	010600			MOV	SP,R0		; SP,*	
000664	104414			TRAP	14			
000666	013700	000000G		MOV	REG.ADR,R0			2037
000672	016066	000014	000024	MOV	14(R0),24(SP)		; *,TMP.LOCATION	
000700	016600	000024		MOV	24(SP),R0		; TMP.LOCATION,*	



ZQNA3  
V01.0

CZQNADO DEQNA FUNCTIONAL TEST  
TEST 4 - INTERRUPT VECTOR ADDRESS TEST

14-Mar-1985 13:11:16  
14-Mar-1985 13:05:35

SEQ 0111  
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VAX-11 Bliss-16 V4.1-582  
DISK\$USER2:[MARSHALL.DEQNA]ZQNA3.BLI;4 (13)

```

000704 006200      ASR      RO
000706 006200      ASR      RO
000710 042700 177400 BIC      #177400,RO
000714 010016      MOV      RO,(SP)
000716 013746 000000G MOV      TEMP1,-(SP)
000722 013766 000000G 000030 MOV      GET.ADR,30(SP)      ; *,TMP.LOCATION
000730 062766 000014 000030 ADD      #14,30(SP)      ; *,TMP.LOCATION
000736 016646 000030      MOV      30(SP),-(SP)      ; TMP.LOCATION,*
000742 012746 000000G      MOV      #MSG30,-(SP)
000746 012746 000004      MOV      #4,-(SP)
000752 010600      MOV      SP,RO      ; SP,*
000754 104414      TRAP     14
000756 104455      TRAP     55
000760 000623      .WORD    623
000762 000000G      .WORD    MSG00
000764 000000G      .WORD    E1$REPORT
000766 062706 000016      ADD      #16,SP      ;
000772 013700 000000G      MOV      TEMP1,RO      ;
000776 006300      ASL      RO
001000 005200      INC      RO
001002 005037 000000G      CLR      TEMP1
001006 110037 000000G      MOVB     RO,TEMP1
001012 104467      TRAP     67
001014 006000      ROR      RO
001016 103654      BLO      6$
001020 005301      DEC      R1      ; INDEX
001022 001252      BNE      6$
001024 062706 000022      ADD      #22,SP
001030 000207      RTS      PC

```

; Routine Size: 269 words, Routine Base: AB\$CODE\$ + 2072  
; Maximum stack depth per invocation: 21 words

```

000000 004737 002072' T4::      .SBTTL  T4 TEST 4 - INTERRUPT VECTOR ADDRESS TEST
000000 1$:      JSR      PC,$T4      ;
000004 104466      TRAP     66
000006 006000      ROR      RO
000010 103773      BLO      1$
000012 000207      RTS      PC

```

; Routine Size: 6 words, Routine Base: AB\$CODE\$ + 3124  
; Maximum stack depth per invocation: 2 words

; 2046 1

ZQNA3  
V01.0CZQNA0 DEQNA FUNCTIONAL TEST  
TEST 5 - BOOT/DIAGNOSTIC PROM CHECKSUM TEST14-Mar-1985 13:11:16  
14-Mar-1985 13:05:35SEQ 0112  
Page 29  
VAX-11 Bliss-16 V4.1-582  
DISK#USER2:[MARSHALL.DEQNA]ZQNA3.BLI;4 (14)

```

: 2047 1 *SBTTL 'TEST 5 - BOOT/DIAGNOSTIC PROM CHECKSUM TEST'
: 2048 1 : **
: 2049 1 :
: 2050 1 : TEST 5:      BOOT/DIAGNOSTIC PROM CHECKSUM TEST
: 2051 1 :
: 2052 1 : DESCRIPTION:
: 2053 1 :
: 2054 1 :     This test verifies that the contents of the on-board ROM
: 2055 1 :     (Boot/Diagnostic ROM) can be loaded to the host memory correctly.
: 2056 1 :     Checksum is generated from the ROM data read and this checksum is
: 2057 1 :     compared to the checksum stored in the last word location of the
: 2058 1 :     on-board ROM. If the operator specifies loop on error, the program
: 2059 1 :     re-executes the code that detected the error until tC is entered.
: 2060 1 :
: 2061 1 :
: 2062 1 :     Hardware tested:      Q-Bus to DMA interface
: 2063 1 :                          I8051 microprocessor
: 2064 1 :                          I8051 ROM
: 2065 1 :                          CSR register
: 2066 1 :                          Receive FIFO
: 2067 1 :
: 2068 1 :     Processing:
: 2069 1 :         BEGIN
: 2070 1 :             reset device
: 2071 1 :             setup Receive Descriptor List(s)
: 2072 1 :             set Boot/Diagnostic ROM and External loopback bits
: 2073 1 :                 This moves ROM boot code into receive FIFO
: 2074 1 :             wait 10 msec. or until RL ( bit 5 in CSR ) = 0
: 2075 1 :             check CSR status ( bit 5 ) and RCV Descriptor List status
: 2076 1 :             IF error
: 2077 1 :             THEN
: 2078 1 :                 print error message if not inhibited
: 2079 1 :             ENDIF
: 2080 1 :             clear Boot/Diagnostic ROM bit in CSR
: 2081 1 :                 This moves contents of FIFO to host memory
: 2082 1 :             wait 10 msec. or until RCV Descriptor status changed
: 2083 1 :             IF change in status
: 2084 1 :             THEN
: 2085 1 :                 print error message if not inhibited
: 2086 1 :             ENDIF
: 2087 1 :             compute ROM checksum and compare to checksum read from ROM
: 2088 1 :             IF not equal
: 2089 1 :             THEN
: 2090 1 :                 print error message if not inhibited
: 2091 1 :             ENDIF
: 2092 1 :         END
: 2093 1 :

```

ZQNA3  
V01.0CZQNADU DEQNA FUNCTIONAL TEST  
TEST 5 - BOOT/DIAGNOSTIC PROM CHECKSUM TEST14-Mar-1985 13:11:16  
14-Mar-1985 13:05:35VAX-11 Bliss-16 V4.1-582  
DISK#USER2:[MARSHALL.DEQNA]ZQNA3.BLI;4 (15)SEQ 0113  
Page 30

```

: 2094 3  BGNTST;
: 2095 3
: 2096 3  RESET_DEQNA ( );
: 2097 3  CLR_BUFFERS ( 2 * K );
: 2098 3
: 2099 3  !**
: 2100 3  ! COPY BOOT/DIAGNOSTIC PROM DESCRIPTOR LIST INTO WORK AREA
: 2101 3  !--
: 2102 3
: 2103 3  INCR INDEX FROM 0 TO BD_D_SIZE - 1 DO
: 2104 3    DESCR_LIST [ .INDEX, W_LEN ] = .BD_PROM_DESCR [ .INDEX ];
: 2105 3
: 2106 3  .IOP_TABLE [ RLO_ADR ] = RCV_D_LIST;
: 2107 3  .IOP_TABLE [ RHI_ADR ] = 0;
: 2108 3
: 2109 3  PUT_BIT ( CSR, LB, EXT_LOOPBACK );
: 2110 3  PUT_BIT ( CSR, BD, SET_IT );
: 2111 3
: 2112 3  DELAY ( K );
: 2113 3  INCR INDEX FROM 0 TO TIME3_LIMIT DO
: 2114 3    IF GET_BIT [ CSR, RL ] EQLU ZERO
: 2115 3      THEN
: 2116 4        BEGIN
: 2117 4          TEMP1 = .INDEX;
: 2118 4          EXITLOOP;
: 2119 4        END
: 2120 3      ELSE
: 2121 3        IF .INDEX EQLU TIME3_LIMIT
: 2122 3          THEN
: 2123 4            BEGIN
: 2124 4              PRINTB ( MSG59 );
: 2125 4              PRINTB ( MSG66, GET_BIT [ CSR_ALL ] );
: 2126 4              ERRDF ( 0501, MSG00, ERROR$REPORT );
: 2127 3            END;
: 2128 3
: 2129 3  VER_DESCR_STATUS ( );
: 2130 3
: 2131 3  !**
: 2132 3  ! FINISH BOOT/DIAGNOSTIC PROM UPLOAD
: 2133 3  !--
: 2134 3
: 2135 3  PUT_BIT ( CSR, BD, CLR_IT );
: 2136 3  DELAY ( K );
: 2137 3
: 2138 3  !**
: 2139 3  ! CHECK IF RECEIVE STATUS CHANGED
: 2140 3  !--
: 2141 3
: 2142 3  VER_DESCR_STATUS ( );
: 2143 3
: 2144 3  RESET_DEQNA ( );
: 2145 3
: 2146 3  TEMP3 = 0;

```

ZQNA3  
V01.0

CZQNADO DEQNA FUNCTIONAL TEST  
TEST 5 - BOOT/DIAGNOSTIC PROM CHECKSUM TEST

14-Mar-1985 13:11:16  
14-Mar-1985 13:05:35

VAX-11 Bliss-16 V4.1-582  
DISK\$USER2:[MARSHALL.DEQNA]ZQNA3.BLI;4 (15)

```

; 2147 3 TEMP3 = .DATA_BUFFER [ CHSUM_OFFSET + 1 ];
; 2148 3 TEMP3 = ( .TEMP3 + 8 ) AND #X'FF00';
; 2149 3 TEMP3 = .DATA_BUFFER [ CHSUM_OFFSET ] + .TEMP3;
; 2150 3
; 2151 3 TEMP2 = .DATA_BUFFER [ .TEMP3 + 1 ];
; 2152 3 TEMP2 = ( .TEMP2 + 8 ) AND #X'FF00';
; 2153 3 TEMP2 = .DATA_BUFFER [ .TEMP3 ] + .TEMP2;
; 2154 3
; 2155 3 COUNTER = 0;
; 2156 3 CHECKSUM = 0;
; 2157 3
; 2158 3 INCR INDEX FROM 0 TO PROM_SIZE - 2 DO
; 2159 3 IF .COUNTER EQLU .TEMP3
; 2160 3 THEN
; 2161 3 COUNTER = .COUNTER + 2
; 2162 3 ELSE
; 2163 4 BEGIN
; 2164 4 CHECKSUM = .CHECKSUM + ( .DATA_BUFFER [ .COUNTER ] AND #X'FF' );
; 2165 4 COUNTER = .COUNTER + 1;
; 2166 3 END;
; 2167 3
; 2168 4 IF ( .TEMP2 EQLU ZERO ) OR ( .TEMP2 NEQU .CHECKSUM )
; 2169 3 THEN
; 2170 4 BEGIN
; 2171 4 CSR_WORD = GET_BIT ( CSR_ALL );
; 2172 4 PRINTB ( MSG59 );
; 2173 4 PRINTB ( MSG67, .TEMP3, .TEMP2, .CHECKSUM );
; 2174 4 ERRDF ( 0502, MSG00, E1$REPORT );
; 2175 3 END;
; 2176 3
; 2177 1 ENDTST;

```

Address	Offset	Hex	Label	Operation	Comments	PC
000000	004137	000000G	\$T5:	JSR	R1,\$SAVE3	2045
000004	162706	000010		SUB	#10,SP	
000010	004737	000000G		JSR	PC,RESET.DEQNA	2096
000014	012746	004000		MOV	#4000,-(SP)	2097
000020	004737	000000G		JSR	PC,CLR.BUFFERS	
000024	005000			CLR	R0	INDEX 2103
000026	016060	000000G 000000G	1\$:	MOV	BD.PROM.DESCR(R0),DESCR.LIST(R0); *(INDEX),*(INDEX)	2104
000034	062700	000002		ADD	#2,R0	*,INDEX 2103
000040	020027	000036		CMP	R0,#36	INDEX,*
000044	003770			BLE	1\$	
000046	012777	000000G 000004G		MOV	#RCV.D.LIST,@IOP.TABLE+4	2106
000054	005077	000006G		CLR	@IOP.TABLE+6	2107
000060	013700	000000G		MOV	REG.ADR,R0	2109
000064	052760	001410 000016		BIS	#1410,16(R0)	2110
000072	012701	002000		MOV	#2000,R1	*,\$\$TMP2 2112
000076	001410		2\$:	BEQ	5\$	
000100	013700	000000G		MOV	L\$DLY,R0	*,\$\$TMP1
000104	001403			BEQ	4\$	
000106	005066	000010	3\$:	CLR	10(SP)	\$\$TMP

ZQNA3  
V01.0

CZQNA0 DEQNA FUNCTIONAL TEST  
TEST 5 - BOOT/DIAGNOSTIC PROM CHECKSUM TEST

14-Mar-1985 13:11:16  
14-Mar-1985 13:05:35

VAX-11 Bliss-16 V4.1-582  
DISK#USER2:[MARSHALL.DEQNA]ZQNA3.BLI;4 (15)  
SEQ 0115  
Page 32

000112	077003		SOB	R0,3	; \$\$TMP1,*	
000114	005301		DEC	R1	; \$\$TMP2	
000116	000767		BR	2		
000120	005001		5#: CLR	R1	# INDEX	2113
000122	013700	000000G	6#: MOV	REG.ADR,R0	#	2114
000126	016066	000016 000002	MOV	16(R0),2(SP)	# *,TMP.LOCATION	
000134	032766	000040 000002	BIT	#40,2(SP)	; *,TMP.LOCATION	
000142	001003		BNE	7		
000144	010137	000000G	MOV	R1,TEMP1	; INDEX,*	2117
000150	000440		BR	9		2116
000152	020127	002000	7#: CMP	R1,#2000	; INDEX,*	2121
000156	001031		BNE	8		
000160	012716	000000G	MOV	#MSG59,(SP)		2124
000164	012746	000001	MOV	#1,-(SP)		
000170	010600		MOV	SP,R0	; SP,*	
000172	104414		TRAP	14		
000174	013700	000000G	MOV	REG.ADR,R0		2125
000200	016066	000016 000006	MOV	16(R0),6(SP)	; *,TMP.LOCATION	
000206	016616	000006	MOV	6(SP),(SP)	; TMP.LOCATION,*	
000212	012746	000000G	MOV	#MSG66,-(SP)		
000216	012746	000002	MOV	#2,-(SP)		
000222	010600		MOV	SP,R0	; SP,*	
000224	104414		TRAP	14		
000226	104455		TRAP	55		2126
000230	000765		.WORD	765		
000232	000000G		.WORD	MSG00		
000234	000000G		.WORD	ERROR\$REPORT		
000236	062706	000006	ADD	#6,SP		2123
000242	005201		8#: INC	R1	; INDEX	2113
000244	020127	002000	CMP	R1,#2000	; INDEX,*	
000250	003724		BLE	6		
000252	004737	000000G	9#: JSR	PC,VER.DESCR.STATUS		2129
000256	013700	000000G	MOV	REG.ADR,R0		2135
000262	142760	000010 000016	BICB	#10,16(R0)		
000270	012701	002000	MOV	#2000,R1	; *,\$\$TMP2	2136
000274	001410		10#: BEQ	13		
000276	013700	000000G	MOV	L\$DLY,R0	; *,\$\$TMP1	
000302	001403		BEQ	12		
000304	005066	000010	11#: CLR	10(SP)	; \$\$TMP	
000310	077003		SOB	R0,11	; \$\$TMP1,*	
000312	005301		12#: DEC	R1	; \$\$TMP2	
000314	000767		BR	10		
000316	004737	000000G	13#: JSR	PC,VER.DESCR.STATUS		2142
000322	004737	000000G	JSR	PC,RESET.DEQNA		2144
000326	005037	000000G	CLR	TEMP3		2147
000332	113737	000007G 000000G	MOV	DATA.BUFFER*7,TEMP3		
000340	013700	000000G	MOV	TEMP3,R0		2148
000344	072027	000010	ASH	#10,R0		
000350	010037	000000G	MOV	R0,TEMP3		
000354	042737	000377 000000G	BIC	#377,TEMP3		
000362	005000		CLR	R0		2149
000364	153700	000006G	BISB	DATA.BUFFER*6,R0		
000370	060037	000000G	ADD	R0,TEMP3		

ZQNA3  
V01.0

CZQNA0 DEQNA FUNCTIONAL TEST  
TEST 5 - BOOT/DIAGNOSTIC PROM CHECKSUM TEST

14-Mar-1985 13:11:16  
14-Mar-1985 13:05:35

VAX-11 Bliss-16 V4.1-582  
DISK#USER2:(MARSHALL.DEQNA)ZQNA3.BLI;4

000374	013701	000000G		MOV	TEMP3,R1	:		2151
000400	116137	000001G	000000G	MOV	DATA.BUFFER+1(R1),TEMP2	:		
000406	105037	000001G		CLRB	TEMP2.1	:		
000412	013700	000000G		MOV	TEMP2,R0	:		2152
000416	072027	000010		ASH	#10,R0	:		
000422	010037	000000G		MOV	R0,TEMP2	:		
000426	042737	000377	000000G	BIC	#377,TEMP2	:		
000434	005000			CLR	R0	:		2153
000436	156100	000000G		BISB	DATA.BUFFER(R1),R0	:		
000442	060037	000000G		ADD	R0,TEMP2	:		
000446	005037	000000G		CLR	COUNTER	:		2155
000452	005037	000000G		CLR	CHECKSUM	:		2156
000456	012702	007777		MOV	#7777,R2	:	*,INDEX	2158
000462	013700	000000G	14:	MOV	COUNTER,R0	:		2159
000466	020001			CMP	R0,R1	:		
000470	001004			BNE	15:	:		
000472	062737	000002	000000G	ADD	#2,COUNTER	:		2161
000500	000407			BR	16:	:		2159
000502	005003			CLR	R3	:		2164
000504	156003	000000G		BISB	DATA.BUFFER(R0),R3	:		
000510	060337	000000G		ADD	R3,CHECKSUM	:		
000514	005237	000000G		INC	COUNTER	:		2165
000520	077220			SOB	R2,14:	:	INDEX,*	2158
000522	013700	000000G	16:	MOV	TEMP2,R0	:		2168
000526	001403			BEQ	17:	:		
000530	020037	000000G		CMP	R0,CHECKSUM	:		
000534	001440			BEQ	18:	:		
000536	013700	000000G	17:	MOV	REG.ADR,R0	:		2171
000542	016066	000016	000006	MOV	16(R0),6(SP)	:	*,TMP.LOCATION	
000550	016637	000006	000000G	MOV	6(SP),CSR.WORD	:	TMP.LOCATION,*	
000556	012716	000000G		MOV	#MSG59,(SP)	:		2172
000562	012746	000001		MOV	#1,-(SP)	:		
000566	010600			MOV	SP,R0	:	SP,*	
000570	104414			TRAP	14	:		
000572	013716	000000G		MOV	CHECKSUM,(SP)	:		2173
000576	013746	000000G		MOV	TEMP2,-(SP)	:		
000602	013746	000000G		MOV	TEMP3,-(SP)	:		
000606	012746	000000G		MOV	#MSG67,-(SP)	:		
000612	012746	000004		MOV	#4,-(SP)	:		
000616	010600			MOV	SP,R0	:	SP,*	
000620	104414			TRAP	14	:		
000622	104455			TRAP	55	:		2174
000624	000766			.WORD	766	:		
000626	000000G			.WORD	MSG00	:		
000630	000000G			.WORD	E1\$REPORT	:		
000632	062706	000012		ADD	#12,SP	:		2170
000636	062706	000012	18:	ADD	#12,SP	:		2045
000642	000207			RTS	PC	:		

; Routine Size: 210 words, Routine Base: AB\$CODE\$ + 3140  
; Maximum stack depth per invocation: 16 words

ZQNA3  
V01.0

CZQNA0 DEQNA FUNCTIONAL TEST  
TEST 5 - BOOT/DIAGNOSTIC PROM CHECKSUM TEST

14-Mar-1985 13:11:16  
14-Mar-1985 13:05:35

SEQ 0117  
Page 34  
VAX-11 Bliss-16 V4.1-582  
DISK#USER2:[MARSHALL.DEQNA]ZQNA3.BLI;4 (15)

```

000000 004737 003140'      TS::      .SBTTL  T5 TEST 5 - BOOT/DIAGNOSTIC PROM CHECKSUM TEST
000000      1$:      JSR      PC,$T5
000004 104466      TRAP     66
000006 006000      ROR      R0
000010 103773      BLO     1$
000012 000207      RTS     PC

```

2175

```

; Routine Size: 6 words,      Routine Base: AB$CODE$ + 4004
; Maximum stack depth per invocation: 2 words

```

; 2178 1

ZQNA3  
V01.0CZQNA0 DEQNA FUNCTIONAL TEST  
TEST 6 - INTERRUPT SANITY TEST14-Mar-1985 13:11:16  
14-Mar-1985 13:05:35VAX-11 Bliss-16 V4.1-582  
DISK#USER2:[MARSHALL.DEQNA]ZQNA3.BLI;4 (16)SEQ 0118  
Page 35

```

: 2179 1 #SBTTL 'TEST 6 - INTERRUPT SANITY TEST'
: 2180 1 !..
: 2181 1 !
: 2182 1 ! TEST 6:      INTERRUPT SANITY TEST
: 2183 1 !
: 2184 1 ! DESCRIPTION:
: 2185 1 !
: 2186 1 ! This test verifies that DEQNA interrupts the processor only at
: 2187 1 ! the expected level ( 4 ) and not any other level. If the operator
: 2188 1 ! specifies loop on error, the program re-executes the code that
: 2189 1 ! detected the error until ^C is entered.
: 2190 1 !
: 2191 1 ! Hardware tested:      Q-Bus to QTDC interface
: 2192 1 !                      CSR register
: 2193 1 !                      Q-Bus timeout logic
: 2194 1 !                      QTDC interrupt logic
: 2195 1 ! Processing:
: 2196 1 !
: 2197 1 !     BEGIN
: 2198 1 !     reset device
: 2199 1 !     set-up for NXM interrupt
: 2200 1 !     REPEAT for each processor priority level
: 2201 1 !     enable device interrupt (set CSR bit 6)
: 2202 1 !     force NXM interrupt
: 2203 1 !     check for expected CSR status
: 2204 1 !     IF error
: 2205 1 !     THEN
: 2206 1 !     print error message if not inhibited
: 2207 1 !     ENDIF
: 2208 1 !     ENDREPEAT
: 2209 1 !     END
: 2210 1 ! --

```



```

: 2211 1
: 2212 3   BGNTST;
: 2213 3
: 2214 3   RESET_DEQNA ( );
: 2215 3   SETVEC ( .HWP_TABLE [ VEC ], NXM_INT, PRI07 );   ! SET UP FOR AN NXM INTERRUPT
: 2216 3   .IOP_TABLE [ INT_VEC ] = .HWP_TABLE [ VEC ];
: 2217 3   TMP_IOP_ADR = .HWP_TABLE [ ADDR ];
: 2218 3   COUNTER = 0;
: 2219 3
: 2220 3   INCR PRIORITY FROM PRI00 TO PRI07 BY *0'40' DO
: 2221 4     BEGIN
: 2222 4       SETPRI ( .PRIORITY );   ! SET PROCESSOR PRI LEVEL
: 2223 6       BGNSUB;
: 2224 6         PUT_BIT ( CSR, IE, SET_IT );   ! ENABLE INTERRUPTS
: 2225 6         DELAY ( 5 );
: 2226 6         INTERRUPT_FLG = CLEAR_FLG;
: 2227 6
: 2228 6         .IOP_TABLE [ XLO_ADR ] = NXM_LO_ADR;   ! WRITE LOW ADDRESS
: 2229 6         .IOP_TABLE [ XHI_ADR ] = NXM_HI_ADR;   ! WRITE HIGH ADDRESS
: 2230 6
: 2231 6         DELAY ( 2 );
: 2232 6         GETPRI ( TEMP1 );
: 2233 6         TEMP1 = .TEMP1 + ( - 5 );
: 2234 6
: 2235 6         IF .INTERRUPT_FLG EQLU WORD_LIMIT
: 2236 6           THEN   ! INTERRUPT SHOULD NOT OCCUR
: 2237 6             IF .PRIORITY GTRU PRI03
: 2238 6               THEN
: 2239 7                 BEGIN
: 2240 7                   PRINTB ( MSG59 );
: 2241 7                   PRINTB ( MSG69, .TMP_IOP_ADR, .TEMP1, .COUNTER );
: 2242 7                   ERRDF ( 0601, MSG00, E1$REPORT );
: 2243 6                   END;
: 2244 6
: 2245 6         IF .INTERRUPT_FLG EQLU ZERO
: 2246 6           THEN   ! INTERRUPT SHOULD OCCUR
: 2247 6             IF .PRIORITY LEQU PRI03
: 2248 6               THEN
: 2249 6                 IF ( .XMIT_D_LIST [ FLGWD ] AND XFLG_MASK ) NEQU XFLG_MASK
: 2250 6                   THEN
: 2251 7                     BEGIN
: 2252 7                       PRINTB ( MSG59 );
: 2253 7                       PRINTB ( MSG69, .TMP_IOP_ADR, .TEMP1, .COUNTER );
: 2254 7                       ERRDF ( 0602, MSG00, E1$REPORT );
: 2255 6                     END;
: 2256 6         RESET_DEQNA ( );
: 2257 4       ENDSUB;
: 2258 4       COUNTER = .COUNTER + 1;
: 2259 3     END;
: 2260 3
: 2261 3   SETPRI ( PRI03 );   ! SET PROCESSOR PRI LEVEL
: 2262 3
: 2263 1   ENDTST;

```

```

000000 004137 000000G          $T6:  .SBTTL  $T6 TEST 6 - INTERRUPT SANITY TEST
000004 005746                    JSR    R1,$SAVE2          ;           2177
000006 004737 000000G          TST    -(SP)             ;
000012 012746 000000G          JSR    PC,RESET.DEQNA    ;           2214
000016 012746 000000G          MOV    #PRI07,-(SP)      ;           2215
000022 013700 000000G          MOV    #NXM.INT,-(SP)    ;
000026 016046 000002          MOV    HWP.TABLE,R0     ;
000032 012746 000003          MOV    2(R0),-(SP)       ;
000036 104437                    TRAP   37                 ;
000040 013700 000000G          MOV    HWP.TABLE,R0     ;           2216
000044 016077 000002 000014G  MOV    2(R0),@IOP.TABLE+14 ;
000052 017737 000000G 000000G  MOV    @HWP.TABLE,TMP.IOP.ADR ;
000060 005037 000000G          CLR    COUNTER          ;           2217
000064 012702 000000G          MOV    #PRI00,R2        ;           2218
000070 000570                    BR     13$               ; * ,PRIORITY 2220
000072 010200                    1$:   MOV    R2,R0        ; PRIORITY,* 2222
000074 104441                    TRAP   41                 ;
000076 104402                    2$:   TRAP   2                 ;
000100 013700 000000G          MOV    REG.ADR,R0       ;           2224
000104 152760 000100 000016  BISB   #100,16(R0)       ;
000112 012701 000005          MOV    #5,R1            ; *,$$TMP2 2225
000116 001410                    3$:   BEQ    6$                 ;
000120 013700 000000G          MOV    L$DLY,R0        ; *,$$TMP1
000124 001403                    BEQ    5$                 ;
000126 005066 000010          4$:   CLR    10(SP)        ; $$TMP
000132 077003                    SOB    R0,4$             ; $$TMP1,*
000134 005301                    5$:   DEC    R1              ; $$TMP2
000136 000767                    BR     3$                 ;
000140 005037 000000G          6$:   CLR    INTERRUPT.FLG ;           2226
000144 012777 160000 000010G  MOV    #-20000,@IOP.TABLE+10 ;           2228
000152 012777 000077 000012G  MOV    #77,@IOP.TABLE+12 ;           2229
000160 012701 000002          MOV    #2,R1            ; *,$$TMP2 2231
000164 001410                    7$:   BEQ    10$              ;
000166 013700 000000G          MOV    L$DLY,R0        ; *,$$TMP1
000172 001403                    BEQ    9$                 ;
000174 005066 000010          8$:   CLR    10(SP)        ; $$TMP
000200 077003                    SOB    R0,8$             ; $$TMP1,*
000202 005301                    9$:   DEC    R1              ; $$TMP2
000204 000767                    BR     7$                 ;
000206 104440                    10$:  TRAP   40                 ;           2232
000210 072027 177773          ASH    #-5,R0           ;           2233
000214 010037 000000G          MOV    R0,TEMP1         ;
000220 023727 000000G 177777  CMP    INTERRUPT.FLG,#-1 ;           2235
000226 001033                    BNE    11$               ;
000230 020227 000000G          CMP    R2,#PRI03        ; PRIORITY,* 2237
000234 101430                    BLOS   11$               ;
000236 012716 000000G          MOV    #MSG59,(SP)     ;           2240
000242 012746 000001          MOV    #1,-(SP)        ;
000246 010600                    MOV    SP,R0            ; SP,*
000250 104414                    TRAP   14                 ;

```

E10

ZQNA3  
V01.0

CZQNA0 DEQNA FUNCTIONAL TEST  
TEST 6 - INTERRUPT SANITY TEST

14 Mar-1985 13:11:16  
14-Mar-1985 13:05:35

SEQ 0121  
Page 38  
VAX-11 B1,es 16 V4.1 582  
DISK\$USER2:[MARSHALL.DEQNA]ZQNA3.BLI;4 (17)

000252	013716	000000G		MOV	COUNTER,(SP)	:		2241
000256	013746	000000G		MOV	TEMP1,-(SP)	:		
000262	013746	000000G		MOV	TMP.IOP.ADR,-(SP)	:		
000266	012746	000000G		MOV	#MSG69,-(SP)	:		
000272	012746	0000004		MOV	#4,-(SP)	:		
000276	010600			MOV	SP,R0	:	SP,*	
000300	104414			TRAP	14	:		
000302	104455			TRAP	55	:		2242
000304	001131			.WORD	1131	:		
000306	000000G			.WORD	MSG00	:		
000310	000000G			.WORD	E1\$REPORT	:		
000312	062706	000012		ADD	#12,SP	:		2239
000316	005737	000000G	11\$:	TST	INTERRUPT.FLG	:		2245
000322	001042			BNE	12\$	:		
000324	020227	000000G		CMP	R2,#PRI03	:	PRIORITY,*	2247
000330	101037			BHI	12\$	:		
000332	013700	000000G		MOV	XMIT.D.LIST,R0	:		2249
000336	042700	037777		BIC	#37777,R0	:		
000342	020027	140000		CMP	R0,#-40000	:		
000346	001430			BEQ	12\$	:		
000350	012716	000000G		MOV	#MSG59,(SP)	:		2252
000354	012746	000001		MOV	#1,-(SP)	:		
000360	010600			MOV	SP,R0	:	SP,*	
000362	104414			TRAP	14	:		
000364	013716	000000G		MOV	COUNTER,(SP)	:		2253
000370	013746	000000G		MOV	TEMP1,-(SP)	:		
000374	013746	000000G		MOV	TMP.IOP.ADR,-(SP)	:		
000400	012746	000000G		MOV	#MSG69,-(SP)	:		
000404	012746	0000004		MOV	#4,-(SP)	:		
000410	010600			MOV	SP,R0	:	SP,*	
000412	104414			TRAP	14	:		
000414	104455			TRAP	55	:		2254
000416	001132			.WORD	1132	:		
000420	000000G			.WORD	MSG00	:		
000422	000000G			.WORD	E1\$REPORT	:		
000424	062706	000012		ADD	#12,SP	:		2251
000430	004737	000000G	12\$:	JSR	PC,RESET.DEQNA	:		2256
000434	104467			TRAP	67	:		
000436	006000			ROR	R0	:		
000440	103616			BLO	2\$	:		
000442	005237	000000G		INC	COUNTER	:		2258
000446	062702	000040		ADD	#40,R2	:	*,PRIORITY	2220
000452	020227	060000G	13\$:	CMP	R2,#PRI07	:	PRIORITY,*	
000456	003605			BLE	1\$	:		
000460	012700	000000G		MOV	#PRI03,R0	:		2261
000464	104441			TRAP	41	:		
000466	062706	000012		ADD	#12,SP	:		2177
000472	000207			RTS	PC	:		

; Routine Size: 158 words, Routine Base: AB\$CODE\$ + 4020  
; Maximum stack depth per invocation: 15 words

ZQNA3  
V01.0

CZQNADO DEQNA FUNCTIONAL TEST  
TEST 6 - INTERRUPT SANITY TEST

14-Mar-1985 13:11:16  
14-Mar-1985 13:05:35

SEQ 0122  
Page 39  
VAX-11 Bliss-16 V4.1-582  
DISK\$USER2:[MARSHALL.DEQNA]ZQNA3.BLI;4 (17)

```

          .SBTTL  T6 TEST 6 - INTERRUPT SANITY TEST
000000 004737 004020'      T6::
000000      1$:      JSR      PC,$T6
000004 104466      TRAP     66
000006 006000      ROR      R0
000010 103773      BLO      1$
000012 000207      RTS      PC

```

2261

```

; Routine Size: 6 words,      Routine Base: AB$CODE$ + 4514
; Maximum stack depth per invocation: 2 words

```

; 2264 1

ZQNA3  
V01.0CZQNA0 DEQNA FUNCTIONAL TEST  
TEST 7 - ETHERNET CARRIER SENSE TEST14-Mar-1985 13:11:16  
14-Mar-1985 13:05:35VAX-11 Bliss-16 V4.1-582  
DISK#USER2:[MARSHALL.DEQNA]ZQNA3.BLI;4 (18)

SEQ 0123

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```

: 2265 1 *SBTTL 'TEST 7 ETHERNET CARRIER SENSE TEST'
: 2266 1 :
: 2267 1 :
: 2268 1 : TEST 7: ETHERNET CARRIER SENSE TEST
: 2269 1 :
: 2270 1 : DESCRIPTION:
: 2271 1 :
: 2272 1 : This test verifies that the DEQNA can transmit external loopback
: 2273 1 : packets and if not faulty FRU is can be found by executing this
: 2274 1 : by implementing the instructions printed on the operator's console.
: 2275 1 :
: 2276 1 : In order to run this test successfully the operator has to make
: 2277 1 : sure that DEQNA is connected to the transceiver. If the operator
: 2278 1 : specifies loop on error, the program re-executes the code that detected
: 2279 1 : the error until ^C is entered.
: 2280 1 :
: 2281 1 : Hardware tested: Carrier Sense circuitry
: 2282 1 : Encode/Decode ( ED ) chip
: 2283 1 :
: 2284 1 : Processing:
: 2285 1 :
: 2286 1 : BEGIN
: 2287 1 : reset device
: 2288 1 : select external loopback mode
: 2289 1 : check external hardware
: 2290 1 : IF bad hardware
: 2291 1 : THEN
: 2292 1 : print error message if not inhibited
: 2293 1 : ENDIF
: 2294 1 : read CSR
: 2295 1 : IF Ethernet Carrier Sense bit ( bit 13 ) = 1
: 2296 1 : THEN
: 2297 1 : print error message if not inhibited
: 2298 1 : ENDIF
: 2299 1 : transmit longest unchained loopback packet ( ETHERNET format )
: 2300 1 : read CSR while transmitting loopback packet
: 2301 1 : IF Ethernet Carrier Sense bit (bit 13) = 0
: 2302 1 : THEN
: 2303 1 : print error message if not inhibited
: 2304 1 : ELSE
: 2305 1 : wait until Carrer Sense bit goes to 0
: 2306 1 : ENDIF
: 2307 1 : read CSR
: 2308 1 : IF Ethernet Carrier Sense bit (bit 13) = 1
: 2309 1 : THEN
: 2310 1 : print error message if not inhibited
: 2311 1 : ENDIF
: 2312 1 : END
: 2313 1 :

```

```

; 2314 3  BGNTST;
; 2315 3
; 2316 3  IF .SWP_ILOOP
; 2317 3  THEN
; 2318 4  BEGIN
; 2319 4  RESET_DEQNA ( );
; 2320 5  IF ( NOT GET_BIT [ CSR, XC ] ) AND ( .SWP_LBC EQLU ZERO )
; 2321 4  THEN
; 2322 5  BEGIN
; 2323 5  CSR_WORD = GET_BIT [ CSR_ALL ];
; 2324 5  SELECTONE .XC_FLAG OF
; 2325 5  SET
; 2326 5  [ 0 ]:
; 2327 6  BEGIN
; 2328 6  XC_FLAG = .XC_FLAG + 1;
; 2329 6  PRINTB ( MSG59 );
; 2330 6  PRINTB ( MSG47 );
; 2331 6  ERRDF ( 0704, MSG00, ERROR$REPORT );
; 2332 5  END;
; 2333 5  [ 1 ]:
; 2334 6  BEGIN
; 2335 6  XC_FLAG = ZERO;
; 2336 6  PRINTB ( MSG59 );
; 2337 6  PRINTB ( MSG42 );
; 2338 6  ERRDF ( 0705, MSG00, ERROR$REPORT );
; 2339 5  END;
; 2340 5  TES;
; 2341 5  EXIT_TST;
; 2342 5  END
; 2343 4  ELSE
; 2344 4  XC_FLAG = ZERO;
; 2345 4
; 2346 4  !++
; 2347 4  ! RESET DEQNA AND INITIALIZE ETHERNET STATION ADDRESS RAM IF EXECUTING
; 2348 4  ! TESTS IN EXTERNAL LOOPBACK MODE.
; 2349 4  !-
; 2350 4
; 2351 4  RESET_DEQNA ( );
; 2352 4  PREP_FOR_SETUP ( );
; 2353 4  INCR INDEX1 FROM 1 TO 14 DO
; 2354 4  WRT_STATION_ADR ( .INDEX1, PHA_INDEX );
; 2355 4
; 2356 6  BGNSUB;
; 2357 6  XMIT_SETUP_PACKET ( N_MODE );
; 2358 4  ENDSUB;
; 2359 4
; 2360 4  ERR_FLAG = ZERO;
; 2361 4  INCR INDEX2 FROM 0 TO 19 DO
; 2362 5  BEGIN
; 2363 5  SEND_TEST_PACKET ( );
; 2364 5  DELAY ( 100 );
; 2365 5  CSR_WORD = GET_BIT ( CSR_ALL );
; 2366 5  IF ( .CSR_WORD AND #0'100220' ) EQLU #0'100220'

```

ZQNA3  
V01.0CZQNA0 DEQNA FUNCTIONAL TEST  
TEST 7 - ETHERNET CARRIER SENSE TEST14-Mar-1985 13:11:16  
14-Mar-1985 13:05:35SEQ 0125  
Page 42  
DISK#USER2:[MARSHALL.DEQNA]ZQNA3.BLI;4 (19)

```

: 2367 5      THEN
: 2368 6      BEGIN
: 2369 6      ERR_FLAG = ZERO;
: 2370 6      EXITLOOP;
: 2371 6      END
: 2372 5      ELSE
: 2373 5      ERR_FLAG = ONE;
: 2374 4      END;
: 2375 4
: 2376 4      IF .ERR_FLAG
: 2377 4      THEN
: 2378 5      BEGIN
: 2379 5      SELECTONE .ERR_COUNT OF
: 2380 5      SET
: 2381 5      [ 0 ]:
: 2382 6      BEGIN
: 2383 6      ERR_COUNT = 1;
: 2384 6      PRINTB ( MSG59 );
: 2385 6      PRINTB ( MSG35 );
: 2386 6      PRINTB ( MSG36 );
: 2387 6      ERRDF ( 0706, MSG00, ERROR$REPORT );
: 2388 5      END;
: 2389 5      [ 1 ]:
: 2390 6      BEGIN
: 2391 6      ERR_COUNT = 2;
: 2392 6      PRINTB ( MSG59 );
: 2393 6      PRINTB ( MSG37 );
: 2394 6      PRINTB ( MSG38 );
: 2395 6      ERRDF ( 0707, MSG00, ERROR$REPORT );
: 2396 5      END;
: 2397 5      [ 2 ]:
: 2398 6      BEGIN
: 2399 6      ERR_COUNT = 3;
: 2400 6      PRINTB ( MSG59 );
: 2401 6      PRINTB ( MSG39 );
: 2402 6      PRINTB ( MSG40 );
: 2403 6      ERRDF ( 0708, MSG00, ERROR$REPORT );
: 2404 5      END;
: 2405 5      [ 3 ]:
: 2406 6      BEGIN
: 2407 6      ERR_COUNT = 0;
: 2408 6      PRINTB ( MSG59 );
: 2409 6      PRINTB ( MSG41 );
: 2410 6      ERRDF ( 0709, MSG00, ERROR$REPORT );
: 2411 5      END;
: 2412 5      [ 4 ]:
: 2413 6      BEGIN
: 2414 6      ERR_COUNT = 0;
: 2415 6      PRINTB ( MSG59 );
: 2416 6      PRINTB ( MSG45 );
: 2417 6      ERRDF ( 0710, MSG00, ERROR$REPORT );
: 2418 5      END;
: 2419 5      TES;

```

ZQNA3  
VO1.0CZQNADO DEQNA FUNCTIONAL TEST  
TEST 7 - ETHERNET CARRIER SENSE TEST14-Mar-1985 13:11:16  
14-Mar-1985 13:05:35VAX-11 Bliss-16 V4.1-582  
DISK#USER2:[MARSHALL.DEQNA]ZQNA3.BLI;4 (19)

SEQ 0126

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```

; 2420 5      EXIT_TST;
; 2421 5      END
; 2422 4      ELSE
; 2423 4      IF .ERR_COUNT GTRU ZERO
; 2424 4      THEN
; 2425 5      BEGIN
; 2426 5          CSR_WORD = GET_BIT ( CSR_ALL );
; 2427 5          SELECTONE .ERR_COUNT OF
; 2428 5          SET
; 2429 5          [ 1 ]:
; 2430 6              BEGIN
; 2431 6                  ERR_COUNT = 4;
; 2432 6                  PRINTB ( MSG59 );
; 2433 6                  PRINTB ( MSG43 );
; 2434 6                  PRINTB ( MSG44 );
; 2435 6                  ERRDF ( 0711, MSG00, ERROR$REPORT );
; 2436 5          END;
; 2437 5      [ 2,3 ]:
; 2438 6          BEGIN
; 2439 6              ERR_COUNT = 0;
; 2440 6              PRINTB ( MSG59 );
; 2441 6              PRINTB ( MSG42 );
; 2442 6              ERRDF ( 0712, MSG00, ERROR$REPORT );
; 2443 5          END;
; 2444 5      [ 4 ]:
; 2445 6          BEGIN
; 2446 6              ERR_COUNT = 0;
; 2447 6              PRINTB ( MSG59 );
; 2448 6              PRINTB ( MSG46 );
; 2449 6              ERRDF ( 0713, MSG00, ERROR$REPORT );
; 2450 5          END;
; 2451 5      TES:
; 2452 5      EXIT_TST;
; 2453 4      END;
; 2454 4      XC_FLAG = ZERO;
; 2455 4      ERR_COUNT = ZERO;
; 2456 4
; 2457 4
; 2458 6      BGNSUB;
; 2459 6      INCR INDEX2 FROM 0 TO TIME1_LIMIT DO
; 2460 7          BEGIN
; 2461 7              RESET_DEQNA ( );
; 2462 7              TEMPS = .INDEX2;
; 2463 7
; 2464 7              !**
; 2465 7              ! CHECK ETHERNET CARRIER SENSE BIT ( CA - BIT 13 ) IN THE CSR. CA SHOULD BE
; 2466 7              ! SET TO '1' WHILE THE DEQNA IS TRANSMITTING. IF CA ISN'T SET TO '1' WITHIN
; 2467 7              ! THE EXPECTED TIME LIMIT, ERROR MESSAGE IS PRINTED OUT.
; 2468 7              !--
; 2469 7
; 2470 7              SEND_TEST_PACKET ( );
; 2471 7
; 2472 7              INCR INDEX FROM 0 TO TIME1_LIMIT DO

```



```

; 2473 7          IF GET_BIT [ CSR, CA ] EQLU ONE
; 2474 7          THEN
; 2475 8              BEGIN
; 2476 8                  TEMP2 = GET_BIT [ CSR_ALL ];
; 2477 8                  EXITLOOP;
; 2478 8              END
; 2479 7          ELSE
; 2480 7              IF .INDEX EQLU TIME1_LIMIT
; 2481 7                  THEN
; 2482 8                  BEGIN
; 2483 8                      PRINTB ( MSG59 );
; 2484 8                      PRINTB ( MSG19, GET_BIT [ CSR_ALL ] );
; 2485 8                      ERRDF ( 0701, MSG00, ERROR$REPORT );
; 2486 7                  END;
; 2487 7
; 2488 7          !**
; 2489 7          ! NOW CHECK IF THE CA BIT RESETS TO '0' WHEN THE DEQNA COMPLETES TRANSMITTING
; 2490 7          ! LOOPBACK PACKET. PRINT ERROR MESSAGE IF LOOPBACK PACKET TRANSMISSION
; 2491 7          ! EXCEEDS SELECTED TIME LIMIT.
; 2492 7          !--
; 2493 7
; 2494 7          INCR INDEX FROM 0 TO TIME2_LIMIT DO
; 2495 7              IF GET_BIT [ CSR, CA ] EQLU ZERO
; 2496 7                  THEN
; 2497 8                  BEGIN
; 2498 8                      TEMP3 = GET_BIT [ CSR_ALL ];
; 2499 8                      EXITLOOP;
; 2500 8                  END
; 2501 7              ELSE
; 2502 7                  IF .INDEX EQLU TIME2_LIMIT
; 2503 7                      THEN
; 2504 8                      BEGIN
; 2505 8                          PRINTB ( MSG59 );
; 2506 8                          PRINTB ( MSG20, GET_BIT [ CSR_ALL ] );
; 2507 8                          ERRDF ( 0702, MSG00, ERROR$REPORT );
; 2508 7                      END;
; 2509 7
; 2510 7          !**
; 2511 7          ! CHECK RECEIVE INTERRUPT REQUEST BIT ( RI - BIT 15 ) TO VERIFY THAT DEQNA
; 2512 7          ! ACTUALLY TRANSMITTED LOOPBACK PACKET.
; 2513 7          !--
; 2514 7
; 2515 7          DELAY ( 50 );
; 2516 7
; 2517 7          IF GET_BIT [ CSR, RI ] EQLU ONE
; 2518 7              THEN
; 2519 8                  BEGIN
; 2520 8                      TEMP4 = GET_BIT [ CSR_ALL ];
; 2521 8                      EXITLOOP;
; 2522 7                  END;
; 2523 6          END;
; 2524 6
; 2525 6          IF .TEMPS EQLU TIME1_LIMIT

```

ZQNA3  
V01.0

CZQNA0 DEQNA FUNCTIONAL TEST  
TEST 7 - ETHERNET CARRIER SENSE TEST

14-Mar-1985 13:11:16  
14-Mar-1985 13:05:35

SEQ 0128  
Page 45  
VAX-11 Bliss-16 V4.1-582  
DISK#USER2:(MARSHALL.DEQNA)ZQNA3.BLI;4 (19)

```

; 2526 6      THEN
; 2527 7      BEGIN
; 2528 7          PRINTB ( MSG59 );
; 2529 7          PRINTB ( MSG21, GET_BIT [ CSR_ALL ] );
; 2530 7          ERRDF ( 0703, MSG00, ERROR$REPORT );
; 2531 6      END;
; 2532 6
; 2533 6
; 2534 7      IF ( .XMIT_D_LIST [ ERRSU ] EQLU 1 ) AND ( .XMIT_D_LIST [ ABORT ] EQLU 1 )
; 2535 6      THEN
; 2536 7      BEGIN
; 2537 7          PRINTB ( MSG59 );
; 2538 7          PRINTB ( MSG71 );
; 2539 7          ERRDF ( 0714, MSG00, ERROR$REPORT );
; 2540 6      END;
; 2541 6
; 2542 6      !*
; 2543 6      ! COMPARE STATUS REGISTERS TO EXPECTED VALUES
; 2544 6      !--
; 2545 6
; 2546 6      CHK_CSR_STATUS ( CSR_STATUS, CSR_MASK ); ! 0'100220', 0'100220'
; 2547 6      XMIT_D_LIST [ STWD1 ] = .XMIT_D_LIST [ STWD1 ] AND #0'177377';
; 2548 6      CHK_XMIT_STATUS ( XFLG_STATUS, XWD1_STATUS ); ! 0'140000', 0'000000'
; 2549 6      CHK_RCV_STATUS ( RFLG_STATUS, RWD1_STATUS ); ! 0'140000', 0'020000'
; 2550 6
; 2551 6      IF .XMIT_D_LIST [ TDR ] EQLU ZERO
; 2552 6      THEN
; 2553 7      BEGIN
; 2554 7          PRINTB ( MSG59 );
; 2555 7          PRINTB ( MSG58 );
; 2556 7          ERRDF ( 0715, MSG00, ERROR$REPORT );
; 2557 6      END;
; 2558 6
; 2559 4      ENDSUB;
; 2560 3      END;
; 2561 1      ENDTST;

```

000000	004137	000000G	\$T7:	.SBTTL	\$T7 TEST 7 - ETHERNET CARRIER SENSE TEST	
000004	162706	000034		JSR	R1,\$SAVE2	2263
000010	032737	000001 000000G		SUB	#34,SP	
000016	001476			BIT	#1,SWP.ILOOP	2316
000020	004737	000000G		BEQ	4\$	
000024	013700	000000G		JSR	PC,RESET.DEQNA	2319
000030	016016	000016		MOV	REG.ADR,R0	2320
000034	032716	010000		MOV	16(R0),(SP)	: *,TMP.LOCATION
000040	001067			BIT	#10000,(SP)	: *,TMP.LOCATION
000042	005737	000000G		BNE	5\$	
000046	001064			TST	SWP.LBC	
000050	011666	000002		BNE	5\$	
000054	011637	000000G		MOV	(SP),2(SP)	: *,TMP.LOCATION 2323
000060	013700	000000G		MOV	(SP),CSR.WORD	: TMP.LOCATION,*
				MOV	XC.FLAG,R0	2324

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CZQNAO DEQNA FUNCTIONAL TEST  
TEST 7 - ETHERNET CARRIER SENSE TEST

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DISK\$USER2:(MARSHALL.DEQNA)ZQNA3.BLI;4 (19)

SEQ 0129  
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000064	001023		BNE	1\$	:	2326
000066	005237	000000G	INC	XC.FLAG	:	2328
000072	012746	000000G	MOV	#MSG59,-(SP)	:	2329
000076	012746	000001	MOV	#1,-(SP)	:	
000102	010600		MOV	SP,R0	: SP,*	
000104	104414		TRAP	14	:	
000106	012716	000000G	MOV	#MSG47,(SP)	:	2330
000112	012746	000001	MOV	#1,-(SP)	:	
000116	010600		MOV	SP,R0	: SP,*	
000120	104414		TRAP	14	:	
000122	104455		TRAP	55	:	2331
000124	001300		.WORD	1300	:	
000126	000000G		.WORD	MSG00	:	
000130	000000G		.WORD	ERROR\$REPORT	:	
000132	000425		BR	2\$	:	2327
000134	020027	000001	1\$: CMP	R0,#1	:	2333
000140	001024		BNE	3\$	:	
000142	005037	000000G	CLR	XC.FLAG	:	2335
000146	012746	000000G	MOV	#MSG59,-(SP)	:	2336
000152	012746	000001	MOV	#1,-(SP)	:	
000156	010600		MOV	SP,R0	: SP,*	
000160	104414		TRAP	14	:	
000162	012716	000000G	MOV	#MSG42,(SP)	:	2337
000166	012746	000001	MOV	#1,-(SP)	:	
000172	010600		MOV	SP,R0	: SP,*	
000174	104414		TRAP	14	:	
000176	104455		TRAP	55	:	2338
000200	001301		.WORD	1301	:	
000202	000000G		.WORD	MSG00	:	
000204	000000G		.WORD	ERROR\$REPORT	:	
000206	062706	000006	2\$: ADD	#6,SP	:	2334
000212	104463		3\$: TRAP	63	:	2340
000214	000137	007046'	4\$: JMP	49\$	:	2322
000220	005037	000000G	5\$: CLR	XC.FLAG	:	2344
000224	004737	000000G	JSR	PC,RESET.DEQNA	:	2351
000230	004737	000000G	JSR	PC,PREP.FOR.SETUP	:	2352
000234	012701	000001	MOV	#1,R1	: *,INDEX1	2353
000240	010146		6\$: MOV	R1,-(SP)	: INDEX1,*	2354
000242	012746	000023	MOV	#23,-(SP)	:	
000246	004737	000000G	JSR	PC,WRT.STATION.ADR	:	
000252	022626		CMP	(SP)*,(SP)*	:	
000254	005201		INC	R1	: INDEX1	2353
000256	020127	000016	CMP	R1,#16	: INDEX1,*	
000262	003766		BLE	6\$	:	
000264	104402		7\$: TRAP	2	:	2354
000266	012746	000200	MOV	#200,-(SP)	:	2357
000272	004737	000000G	JSR	PC,XMIT.SETUP.PACKET	:	
000276	005726		TST	(SP)*	:	2354
000300	104467		TRAP	67	:	2357
000302	006000		ROR	R0	:	
000304	103767		BLO	7\$	:	
000306	005037	000000G	CLR	ERR.FLAG	:	2360
000312	012702	000024	MOV	#24,R2	: *,INDEX2	2361

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CZQNA0 DEQNA FUNCTIONAL TEST  
TEST 7 - ETHERNET CARRIER SENSE TEST

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SEQ 0130  
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000316	004737	000000G		8:	JSR	PC,SEND.TEST.PACKET	:		2363
000322	012701	000144			MOV	#144,R1	:	*,\$\$TMP2	2364
000326	001410			9:	BEQ	12:			
000330	013700	000000G			MOV	L\$DLY,RO	:	*,\$\$TMP1	
000334	001403				BEQ	11:			
000336	005066	000032		10:	CLR	32(SP)	:	\$\$TMP	
000342	077003				SOB	RO,10:	:	\$\$TMP1,*	
000344	005301			11:	DEC	R1	:	\$\$TMP2	
000346	000767				BR	9:			
000350	013700	000000G		12:	MOV	REG.ADR,RO	:		2365
000354	016066	000016	000004		MOV	16(RO),4(SP)	:	*.TMP.LOCATION	
000362	016637	000004	000000G		MOV	4(SP),CSR.WORD	:	TMP.LOCATION,*	
000370	016600	000004			MOV	4(SP),RO	:	CSR.WORD,*	2366
000374	042700	077557			BIC	#77557,RO			
000400	020027	100220			CMP	RO,#-77560			
000404	001003				BNE	13:			
000406	005037	000000G			CLR	ERR.FLAG	:		2369
000412	000404				BR	14:			2368
000414	012737	000001	000000G	13:	MOV	#1,ERR.FLAG	:		2373
000422	077243				SOB	R2,8:	:	INDEX2,*	2371
000424	013701	000000G		14:	MOV	ERR.COUNT,R1	:		2379
000430	032737	000001	000000G		BIT	#1,ERR.FLAG	:		2376
000436	001002				BNE	15:			
000440	000137	005612'			JMP	23:			
000444	005701			15:	TST	R1	:		2381
000446	001032				BNE	16:			
000450	012737	000001	000000G		MOV	#1,ERR.COUNT	:		2383
000456	012746	000000G			MOV	#MSG59,-(SP)	:		2384
000462	012746	000001			MOV	#1,-(SP)			
000466	010600				MOV	SP,RO	:	SP,*	
000470	104414				TRAP	14			
000472	012716	000000G			MOV	#MSG35,(SP)	:		2385
000476	012746	000001			MOV	#1,-(SP)			
000502	010600				MOV	SP,RO	:	SP,*	
000504	104414				TRAP	14			
000506	012716	000000G			MOV	#MSG36,(SP)	:		2386
000512	012746	000001			MOV	#1,-(SP)			
000516	010600				MOV	SP,RO	:	SP,*	
000520	104414				TRAP	14			
000522	104455				TRAP	55	:		2387
000524	001302				.WORD	1302			
000526	000000G				.WORD	MSG00			
000530	000000G				.WORD	ERROR\$REPORT			
000532	000471				BR	18:	:		2382
000534	020127	000001		16:	CMP	R1,#1	:		2389
000540	001032				BNE	17:			
000542	012737	000002	000000G		MOV	#2,ERR.COUNT	:		2391
000550	012746	000000G			MOV	#MSG59,-(SP)	:		2392
000554	012746	000001			MOV	#1,-(SP)			
000560	010600				MOV	SP,RO	:	SP,*	
000562	104414				TRAP	14			
000564	012716	000000G			MOV	#MSG37,(SP)	:		2393
000570	012746	000001			MOV	#1,-(SP)			

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CZONADO DEQNA FUNCTIONAL TEST  
TEST 7 - ETHERNET CARRIER SENSE TEST

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SEQ 0131  
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DISK#USER2:[MARSHALL.DEQNA]ZONA3.BLI;4 (19)

000574	010600			MOV	SP,R0		; SP,*	
000576	104414			TRAP	14			
000600	012716	000000G		MOV	#MSG38,(SP)			2394
000604	012746	000001		MOV	#1,-(SP)			
000610	010600			MOV	SP,R0		; SP,*	
000612	104414			TRAP	14			
000614	104455			TRAP	55			2395
000616	001303			.WORD	1303			
000620	000000G			.WORD	MSG00			
000622	000000G			.WORD	ERROR#REPORT			
000624	000434			BR	18#			2396
000626	020127	000002	17#:	CMP	R1,#2			2397
000632	001034			BNE	19#			
000634	012737	000003	000000G	MOV	#3,ERR.COUNT			2399
000642	012746	000000G		MOV	#MSG59,-(SP)			2400
000646	012746	000001		MOV	#1,-(SP)			
000652	010600			MOV	SP,R0		; SP,*	
000654	104414			TRAP	14			
000656	012716	000000G		MOV	#MSG39,(SP)			2401
000662	012746	000001		MOV	#1,-(SP)			
000666	010600			MOV	SP,R0		; SP,*	
000670	104414			TRAP	14			
000672	012716	000000G		MOV	#MSG40,(SP)			2402
000676	012746	000001		MOV	#1,-(SP)			
000702	010600			MOV	SP,R0		; SP,*	
000704	104414			TRAP	14			
000706	104455			TRAP	55			2403
000710	001304			.WORD	1304			
000712	000000G			.WORD	MSG00			
000714	000000G			.WORD	ERROR#REPORT			
000716	062706	000010	18#:	ADD	#10,SP			2398
000722	000455			BR	22#			2379
000724	020127	000003	19#:	CMP	R1,#3			2405
000730	001023			BNE	20#			
000732	005037	000000G		CLR	ERR.COUNT			2407
000736	012746	000000G		MOV	#MSG59,-(SP)			2408
000742	012746	000001		MOV	#1,-(SP)			
000746	010600			MOV	SP,R0		; SP,*	
000750	104414			TRAP	14			
000752	012716	000000G		MOV	#MSG41,(SP)			2409
000756	012746	000001		MOV	#1,-(SP)			
000762	010600			MOV	SP,R0		; SP,*	
000764	104414			TRAP	14			
000766	104455			TRAP	55			2410
000770	001305			.WORD	1305			
000772	000000G			.WORD	MSG00			
000774	000000G			.WORD	ERROR#REPORT			
000776	000425			BR	21#			2406
001000	020127	000004	20#:	CMP	R1,#4			2412
001004	001024			BNE	22#			
001006	005037	000000G		CLR	ERR.COUNT			2414
001012	012746	000000G		MOV	#MSG59,-(SP)			2415
001016	012746	000001		MOV	#1,-(SP)			

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CZQNADO DEQNA FUNCTIONAL TEST  
TEST 7 - ETHERNET CARRIER SENSE TEST

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DISK#USER2:(MARSHALL.DEQNA)ZQNA3.BLI;4 (19)

001022	010600			MOV	SP,RO	; SP,*	
001024	104414			TRAP	14		
001026	012716	000000G		MOV	#MSG45,(SP)		2416
001032	012746	000001		MOV	#1,-(SP)		
001036	010600			MOV	SP,RO	; SP,*	
001040	104414			TRAP	14		
001042	104455			TRAP	55		2417
001044	001306			.WORD	1306		
001046	000000G			.WORD	MSG00		
001050	000000G			.WORD	ERROR#REPORT		
001052	062706	000006	21#:	ADD	#6,SP		2413
001056	104463		22#:	TRAP	63		2419
001060	000532			BR	28#		2378
001062	005701		23#:	TST	R1		2423
001064	001532			BEG	29#		
001066	013700	000000G		MOV	REG.ADR,RO		2425
001072	016066	000016	000006	MOV	16(RO),6(SP)	; *,TMP.LOCATION	
001100	016637	000006	000000G	MOV	6(SP),CSR.WORD	; TMP.LOCATION,*	
001106	020127	000001		CMP	R1,#1		2429
001112	001034			BNE	24#		
001114	012737	000004	000000G	MOV	#4,ERR.COUNT		2431
001122	012746	000000G		MOV	#MSG59,-(SP)		2432
001126	012746	000001		MOV	#1,-(SP)		
001132	010600			MOV	SP,RO	; SP,*	
001134	104414			TRAP	14		
001136	012716	000000G		MOV	#MSG43,(SP)		2433
001142	012746	000001		MOV	#1,-(SP)		
001146	010600			MOV	SP,RO	; SP,*	
001150	104414			TRAP	14		
001152	012716	000000G		MOV	#MSG44,(SP)		2434
001156	012746	000001		MOV	#1,-(SP)		
001162	010600			MOV	SP,RO	; SP,*	
001164	104414			TRAP	14		
001166	104455			TRAP	55		2435
001170	001307			.WORD	1307		
001172	000000G			.WORD	MSG00		
001174	000000G			.WORD	ERROR#REPORT		
001176	062706	000010		ADD	#10,SP		2430
001202	000450			BR	27#		2427
001204	020127	000002	24#:	CMP	R1,#2		2437
001210	002426			BLT	25#		
001212	020127	000003		CMP	R1,#3		
001216	003023			BGT	25#		
001220	005037	000000G		CLR	ERR.COUNT		2439
001224	012746	000000G		MOV	#MSG59,-(SP)		2440
001230	012746	000001		MOV	#1,-(SP)		
001234	010600			MOV	SP,RO	; SP,*	
001236	104414			TRAP	14		
001240	012716	000000G		MOV	#MSG42,(SP)		2441
001244	012746	000001		MOV	#1,-(SP)		
001250	010600			MOV	SP,RO	; SP,*	
001252	104414			TRAP	14		
001254	104455			TRAP	55		2442

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DISK#USER2:[MARSHALL.DEQNA]ZQNA3.BLI;4 (19)

001256	001310			.WORD	1310		
001260	000000G			.WORD	MSG00		
001262	000000G			.WORD	ERROR\$REPORT		
001264	000425			BR	26\$	:	2438
001266	020127	000004		CMP	R1,#4	:	2444
001272	001024			BNE	27\$		
001274	005037	000000G		CLR	ERR.COUNT	:	2446
001300	012746	000000G		MOV	#MSG59,-(SP)	:	2447
001304	012746	000001		MOV	#1,-(SP)		
001310	010600			MOV	SP,R0	: SP, *	
001312	104414			TRAP	14		
001314	012716	000000G		MOV	#MSG46,(SP)	:	2448
001320	012746	000001		MOV	#1,-(SP)		
001324	010600			MOV	SP,R0	: SP, *	
001326	104414			TRAP	14		
001330	104455			TRAP	55	:	2449
001332	001311			.WORD	1311		
001334	000000G			.WORD	MSG00		
001336	000000G			.WORD	ERROR\$REPORT		
001340	062706	000006		26\$: ADD	#6,SP	:	2445
001344	104463			27\$: TRAP	63	:	2451
001346	000137	007046'		28\$: JMP	49\$	:	2425
001352	005037	000000G		29\$: CLR	XC.FLAG	:	2455
001356	005037	000000G		CLR	ERR.COUNT	:	2456
001362	104402			30\$: TRAP	2		
001364	005002			CLR	R2	: INDEX2	2459
001366	004737	000000G		31\$: JSR	PC,RESET.DEQNA	:	2461
001372	010237	000000G		MOV	R2,TEMP5	: INDEX2, *	2462
001376	004737	000000G		JSR	PC,SEND.TEST.PACKET	:	2470
001402	005001			CLR	R1	: INDEX	2472
001404	013700	000000G		32\$: MOV	REG.ADR,R0	:	2473
001410	016066	000016	000010	MOV	16(R0),10(SP)	: *,TMP.LOCATION	
001416	032766	020000	000010	BIT	#20000,10(SP)	: *,TMP.LOCATION	
001424	001407			BEQ	33\$		
001426	016666	000010	000012	MOV	10(SP),12(SP)	: *,TMP.LOCATION	2476
001434	016637	000012	000000G	MOV	12(SP),TEMP2	: TMP.LOCATION, *	
001442	000440			BR	35\$	:	2475
001444	020127	000200		33\$: CMP	R1,#200	: INDEX, *	2480
001450	001031			BNE	34\$		
001452	012746	000000G		MOV	#MSG59,-(SP)	:	2483
001456	012746	000001		MOV	#1,-(SP)		
001462	010600			MOV	SP,R0	: SP, *	
001464	104414			TRAP	14		
001466	013700	000000G		MOV	REG.ADR,R0	:	2484
001472	016066	000016	000020	MOV	16(R0),20(SP)	: *,TMP.LOCATION	
001500	016616	000020		MOV	20(SP),(SP)	: TMP.LOCATION, *	
001504	012746	000000G		MOV	#MSG19,-(SP)		
001510	012746	000002		MOV	#2,-(SP)		
001514	010600			MOV	SP,R0	: SP, *	
001516	104414			TRAP	14		
001520	104455			TRAP	55	:	2485
001522	001275			.WORD	1275		
001524	000000G			.WORD	MSG00		

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CZQNADO DEQNA FUNCTIONAL TEST  
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DISK#USER2:[MARSHALL.DEQNA]ZQNA3.BLI;4 (19)

001526	C00000G			.WORD	ERROR\$REPORT			
001530	062706	000010		ADD	#10,SP	:		2482
001534	005201		34\$:	INC	R1	:	INDEX	2472
001536	020127	000200		CMP	R1,#200	:	INDEX,*	
001542	003720			BLE	32\$			
001544	005001		35\$:	CLR	R1	:	INDEX	2494
001546	013700	000000G	36\$:	MOV	REG.ADR,R0	:		2495
001552	016066	000016	000016	MOV	16(R0),16(SP)	:	*,TMP.LOCATION	
001560	032766	020000	000016	BIT	#20000,16(SP)	:	*,TMP.LOCATION	
001566	001007			BNE	37\$			
001570	016666	000016	000020	MOV	16(SP),20(SP)	:	*,TMP.LOCATION	2498
001576	016637	000020	000000G	MOV	20(SP),TEMP3	:	TMP.LOCATION,*	
001604	000440			BR	39\$			2497
001606	020127	002000		CMP	R1,#2000	:	INDEX,*	2502
001612	001031			BNE	38\$			
001614	012746	000000G		MOV	#MSG59,-(SP)	:		2505
001620	012746	000001		MOV	#1,-(SP)			
001624	010600			MOV	SP,R0	:	SP,*	
001626	104414			TRAP	14			
001630	013700	000000G		MOV	REG.ADR,R0	:		2506
001634	016066	000016	000026	MOV	16(R0),26(SP)	:	*,TMP.LOCATION	
001642	016616	000026		MOV	26(SP),(SP)	:	TMP.LOCATION,*	
001646	012746	000000G		MOV	#MSG20,-(SP)			
001652	012746	000002		MOV	#2,-(SP)			
001656	010600			MOV	SP,R0	:	SP,*	
001660	104414			TRAP	14			
001662	104455			TRAP	55	:		2507
001664	001276			.WORD	1276			
001666	000000G			.WORD	MSG00			
001670	000000G			.WORD	ERROR\$REPORT			
001672	062706	000010		ADD	#10,SP	:		2504
001676	005201		38\$:	INC	R1	:	INDEX	2494
001700	020127	002000		CMP	R1,#2000	:	INDEX,*	
001704	003720			BLE	36\$			
001706	012701	000062		MOV	#62,R1	:	*,\$\$TMP2	2515
001712	001410		40\$:	BEQ	43\$			
001714	013700	000000G		MOV	L\$DLY,R0	:	*,\$\$TMP1	
001720	001403			BEQ	42\$			
001722	005066	000032		CLR	32(SP)	:	\$\$TMP	
001726	077003		41\$:	SOB	R0,41\$	:	\$\$TMP1,*	
001730	005301		42\$:	DEC	R1	:	\$\$TMP2	
001732	000767			BR	40\$			
001734	013700	000000G	43\$:	MOV	REG.ADR,R0	:		2517
001740	016066	000016	000024	MOV	16(R0),24(SP)	:	*,TMP.LOCATION	
001746	100007			BPL	44\$			
001750	016666	000024	000026	MOV	24(SP),26(SP)	:	*,TMP.LOCATION	2520
001756	016637	000026	000000G	MOV	26(SP),TEMP4	:	TMP.LOCATION,*	
001764	000406			BR	45\$			2519
001766	005202		44\$:	INC	R2	:	INDEX2	2459
001770	020227	000200		CMP	R2,#200	:	INDEX2,*	
001774	003002			BGT	45\$			
001776	000137	006116'		JMP	31\$			
002002	023727	000000G	000200	45\$:	CMP	TEMP5,#200	:	2525



ZQNA3  
V01.0

CZQNA0 DEQNA FUNCTIONAL TEST  
TEST 7 - ETHERNET CARRIER SENSE TEST

14-Mar-1985 13:11:16  
14-Mar-1985 13:05:35

VAX 11 Bliss-16 V4.1 582  
DISK\$USER2:[MARSHALL.DEQNA]ZQNA3.BLI;4

002010	001031				BNE	46\$			
002012	012746	000000G			MOV	#MSG59,-(SP)	:		2528
002016	012746	000001			MOV	#1,-(SP)	:		
002022	010600				MOV	SP,R0	:	SP,*	
002024	104414				TRAP	14	:		
002026	013700	000000G			MOV	REG.ADR,R0	:		2529
002032	016066	000016	000034		MOV	16(R0),34(SP)	:	*,TMP.LOCATION	
002040	016616	000034			MOV	34(SP),(SP)	:	TMP.LOCATION,*	
002044	012746	000000G			MOV	#MSG21,-(SP)	:		
002050	012746	000002			MOV	#2,-(SP)	:		
002054	010600				MOV	SP,R0	:	SP,*	
002056	104414				TRAP	14	:		
002060	104455				TRAP	55	:		2530
002062	001277				.WORD	1277	:		
002064	000000G				.WORD	MSG00	:		
002066	000000G				.WORD	ERROR\$REPORT	:		
002070	062706	000010			ADD	#10,SP	:		2527
002074	032737	040000	000010G	46\$:	BIT	#40000,XMIT.D.LIST+10	:		2534
002102	001426				BEQ	47\$	:		
002104	032737	001000	000010G		BIT	#1000,XMIT.D.LIST+10	:		
002112	001422				BEQ	47\$	:		
002114	012746	000000G			MOV	#MSG59,-(SP)	:		2537
002120	012746	000001			MOV	#1,-(SP)	:		
002124	010600				MOV	SP,R0	:	SP,*	
002126	104414				TRAP	14	:		
002130	012716	000000G			MOV	#MSG71,(SP)	:		2538
002134	012746	000001			MOV	#1,-(SP)	:		
002140	010600				MOV	SP,R0	:	SP,*	
002142	104414				TRAP	14	:		
002144	104455				TRAP	55	:		2539
002146	001312				.WORD	1312	:		
002150	000000G				.WORD	MSG00	:		
002152	000000G				.WORD	ERROR\$REPORT	:		
002154	062706	000006			ADD	#6,SP	:		2536
002160	012746	100220		47\$:	MOV	#-77560,-(SP)	:		2546
002164	011646				MOV	(SP),-(SP)	:		
002166	004737	000000G			JSR	PC,CHK.CSR.STATUS	:		
002172	042737	000400	000010G		BIC	#400,XMIT.D.LIST+10	:		2547
002200	012716	140000			MOV	#-40000,(SP)	:		2548
002204	005046				CLR	-(SP)	:		
002206	004737	000000G			JSR	PC,CHK.XMIT.STATUS	:		
002212	012716	140000			MOV	#-40000,(SP)	:		2549
002216	012746	020000			MOV	#20000,-(SP)	:		
002222	004737	000000G			JSR	PC,CHK.RCV.STATUS	:		
002226	032737	037777	000012G		BIT	#37777,XMIT.D.LIST+12	:		2551
002234	001021				BNE	48\$	:		
002236	012716	000000G			MOV	#MSG59,(SP)	:		2554
002242	012746	000001			MOV	#1,-(SP)	:		
002246	010600				MOV	SP,R0	:	SP,*	
002250	104414				TRAP	14	:		
002252	012716	000000G			MOV	#MSG58,(SP)	:		2555
002256	012746	000001			MOV	#1,-(SP)	:		
002262	010600				MOV	SP,R0	:	SP,*	

ZQNA3  
V01.0

CZQNADO DEQNA FUNCTIONAL TEST  
TEST 7 - ETHERNET CARRIER SENSE TEST

14-Mar-1985 13:11:16  
14-Mar-1985 13:05:35

VAX-11 Bliss-16 V4.1-582  
DISK\$USER2:[MARSHALL.DEQNA]ZQNA3.BLI;4 (19)

002264	104414			TRAP	14		
002266	104455			TRAP	55		2556
002270	001313			.WORD	1313		
002272	000000G			.WORD	MSG00		
002274	000000G			.WORD	ERROR\$REPORT		
002276	022626			CMP	(SP)+,(SP)+		2553
002300	062706	000010	48\$:	ADD	#10,SP		2456
002304	104467			TRAP	67		2557
002306	006000			ROR	R0		
002310	103002			BHIS	49\$		
002312	000137	006112'		JMP	30\$		
002316	062706	000034	49\$:	ADD	#34,SP		2263
002322	000207			RTS	PC		

; Routine Size: 618 words, Routine Base: AB\$CODE\$ + 4530  
; Maximum stack depth per invocation: 25 words

000000	004737	004530'		.SBTTL	T7 TEST 7 - ETHERNET CARRIER SENSE TEST		
000000			T7::				
000004	104466		1\$:	JSR	PC,\$T7		2560
000006	006000			TRAP	66		
000010	103773			ROR	R0		
000012	000207			BLO	1\$		
				RTS	PC		

; Routine Size: 6 words, Routine Base: AB\$CODE\$ + 7054  
; Maximum stack depth per invocation: 2 words

; 2562 1  
; 2563 1

ZQNA3  
V01.0CZQNA0 DEQNA FUNCTIONAL TEST  
TEST 8 - STATION ADDRESS RAM TEST14-Mar-1985 13:11:16  
14-Mar-1985 13:05:35SEQ 0137  
Page 54  
VAX-11 Bliss-16 V4.1 582  
DISK\$USER2:[MARSHALL.DEQNA]ZQNA3.BLI;4 (20)

```

: 2564 1 *SBTTL 'TEST 8 - STATION ADDRESS RAM TEST'
: 2565 1 : **
: 2566 1 :
: 2567 1 : TEST 8: STATION ADDRESS RAM TEST
: 2568 1 :
: 2569 1 : DESCRIPTION:
: 2570 1 :
: 2571 1 : This test verifies that Station Address RAM has no static faults.
: 2572 1 : The host writes and then reads data patterns to all of the
: 2573 1 : addressable RAM ( 128 decimal bytes ). The data is checked to see
: 2574 1 : that the data pattern received is the same as the data pattern
: 2575 1 : transmitted. This test continues until all the data patterns are
: 2576 1 : exhausted. If the operator specifies loop on error, the program
: 2577 1 : re-executes the code that detected the error until tC is entered.
: 2578 1 :
: 2579 1 : The following BINARY patterns are used:
: 2580 1 :
: 2581 1 : 11111111 00000000
: 2582 1 : 10101010 01010101
: 2583 1 : 11001100 00110011
: 2584 1 : 11110000 00001111
: 2585 1 : marching 1's, propagating 1's through the RAM
: 2586 1 : marching 0's, propagating 0's through the RAM
: 2587 1 :
: 2588 1 : Hardware tested. Station Address RAM
: 2589 1 : Q-Bus to QTDC interface
: 2590 1 : CSR register - Receiver Enable (bit 0)
: 2591 1 : Portion of Receive and Transmit FIFO
: 2592 1 :
: 2593 1 : Processing:
: 2594 1 : BEGIN
: 2595 1 : reset device
: 2596 1 : select Setup mode
: 2597 1 : REPEAT for each pattern
: 2598 1 : load transmit packet with data pattern
: 2599 1 : transmit loopback packet (fill all of the RAM)
: 2600 1 : receive packet
: 2601 1 : check for expected loopback status
: 2602 1 : IF error
: 2603 1 : THEN
: 2604 1 : print error message if not inhibited
: 2605 1 : ENDF
: 2606 1 : call compare_packets
: 2607 1 : ENDREPEAT
: 2608 1 : END
: 2609 1 : --

```

ZQNA3  
V01.0

CZQNA0 DEQNA FUNCTIONAL TEST  
TEST 8 - STATION ADDRESS RAM TEST

14-Mar-1985 13:11:16  
14-Mar-1985 13:05:35

SEQ 0138  
Page 55  
VAX-11 Bliss-16 V4.1-582  
DISK#USER2:[MARSHALL.DEQNA]ZQNA3.BLI;4 (21)

```

: 2610 3  BGNTST;
: 2611 3
: 2612 3      RESET_DEQNA ( );
: 2613 3
: 2614 3      DECR INDEX1 FROM 7 TO 0 DO
: 2615 4          BEGIN
: 2616 4              INCR INDEX2 FROM 0 TO 127 DO
: 2617 4                  XMIT_BUFFER [ .INDEX2 ] = .PTRN_TABLE [ .INDEX1 ];
: 2618 4
: 2619 6              BGNSUB;
: 2620 6                  XMIT_SETUP_PACKET ( N_MODE );
: 2621 4                  ENDSUB;
: 2622 3          END;
: 2623 3
: 2624 3      !
: 2625 3      ! TEMP3 = ( N_MODE * 8 ) - 1;
: 2626 3      ! INCR INDEX1 FROM 0 TO .TEMP3 DO
: 2627 3      !     BEGIN
: 2628 3      !         P1 = ZERO;
: 2629 3      !         P2 = .INDEX1;
: 2630 3      !         WALKING_BIT ( );
: 2631 3      !         P1 = N_MODE;
: 2632 3      !         XMIT_SETUP_PACKET ( );
: 2633 3      !
: 2634 3      !         INCR INDEX FROM 0 TO .P3 DO
: 2635 3      !             XMIT_BUFFER [ .INDEX ] = ( - .XMIT_BUFFER [ .INDEX ] ) - 1;
: 2636 3      !         P1 = N_MODE;
: 2637 3      !         XMIT_SETUP_PACKET ( );
: 2638 3      !     END;
: 2639 3      INCR INDEX1 FROM 0 TO N_MODE - 1 DO
: 2640 4          BEGIN
: 2641 4              INCR INDEX FROM 0 TO N_MODE - 1 DO
: 2642 4                  XMIT_BUFFER [ .INDEX ] = ZERO;
: 2643 4                  XMIT_BUFFER [ .INDEX1 ] = 'X'FF';
: 2644 4
: 2645 6              BGNSUB;
: 2646 6                  XMIT_SETUP_PACKET ( N_MODE );
: 2647 4              ENDSUB;
: 2648 4
: 2649 4              INCR INDEX FROM 0 TO .P3 DO
: 2650 4                  XMIT_BUFFER [ INDEX ] = ( - .XMIT_BUFFER [ .INDEX ] ) - 1;
: 2651 4
: 2652 6              BGNSUB;
: 2653 6                  XMIT_SETUP_PACKET ( N_MODE );
: 2654 4              ENDSUB;
: 2655 4
: 2656 3          END;
: 2657 1  ENDTST;

```

000000 004137 000000G  
000004 004737 000000G

```

          .SBTTL  $T8 TEST 8 - STATION ADDRESS RAM TEST
          $T8:   JSR   R1,$SAVE3
                JSR   PC,RESET.DEQNA

```

2561  
2612

ZQNA3  
V01.0

CZQNA0 DLQNA FUNCTIONAL TEST  
TEST 8 - STATION ADDRESS RAM TEST

14 Mar-1985 13:11:16  
14-Mar-1985 13:05:35

SEQ 0139  
Page 56  
VAX-11 Bliss-16 V4.1-582  
DISK#USER2:[MARSHALL.DEQNA]ZQNA3.BLI;4 (21)

000010	012701	000007		MOV	#7,R1	; *,INDEX1	2614
000014	005000		1\$:	CLR	R0	; INDEX2	2616
000016	116160	000000G 000000G	2\$:	MOVB	PTRN.TABLE(R1),XMIT.BUFFER(R0)	; *(INDEX1),*(INDEX2)	2617
000024	005200			INC	R0	; INDEX2	2616
000026	020027	000177		CMP	R0,#177	; INDEX2,*	
000032	003771			BLE	2\$		
000034	104402		3\$:	TRAP	2		2617
000036	012746	000200		MOV	#200,-(SP)		2620
000042	004737	000000G		JSR	PC,XMIT.SETUP.PACKET		
000046	005726			TST	(SP)+		2617
000050	104467			TRAP	67		2620
000052	006000			ROR	R0		
000054	103767			BLO	3\$		
000056	005301			DEC	R1	; INDEX1	2614
000060	002355			BGE	1\$		
000062	005001			CLR	R1	; INDEX1	2639
000064	005000		4\$:	CLR	R0	; INDEX	2641
000066	105060	000000G	5\$:	CLRB	XMIT.BUFFER(R0)	; *(INDEX)	2642
000072	005200			INC	R0	; INDEX	2641
000074	020027	000177		CMP	R0,#177	; INDEX,*	
000100	003772			BLE	5\$		
000102	112761	000377 000000G		MOVB	#377,XMIT.BUFFER(R1)	; *,*(INDEX1)	2643
000110	104402		6\$:	TRAP	2		
000112	012746	000200		MOV	#200,-(SP)		2646
000116	004737	000000G		JSR	PC,XMIT.SETUP.PACKET		
000122	005726			TST	(SP)+		2643
000124	104467			TRAP	67		2646
000126	006000			ROR	R0		
000130	103767			BLO	6\$		
000132	005000			CLR	R0	; INDEX	2649
000134	000411			BR	8\$		
000136	012702	177777	7\$:	MOV	#-1,R2		2650
000142	005003			CLR	R3		
000144	156003	000000G		BISB	XMIT.BUFFER(R0),R3	; *(INDEX),*	
000150	160302			SUB	R3,R2		
000152	110260	000000G		MOVB	R2,XMIT.BUFFER(R0)	; *,*(INDEX)	
000156	005200			INC	R0	; INDEX	2649
000160	020037	000000G	8\$:	CMP	R0,P3	; INDEX,*	
000164	003764			BLE	7\$		
000166	104402		9\$:	TRAP	2		2650
000170	012746	000200		MOV	#200,-(SP)		2653
000174	004737	000000G		JSR	PC,XMIT.SETUP.PACKET		
000200	005726			TST	(SP)+		2650
000202	104467			TRAP	67		2653
000204	006000			ROR	R0		
000206	103767			BLO	9\$		
000210	005201			INC	R1	; INDEX1	2639
000212	020127	000177		CMP	R1,#177	; INDEX1,*	
000216	003722			BLE	4\$		
000220	000207			RTS	PC		2561

; Routine Size: 73 words. Routine Base: AB\$CODE\$ + 7070  
; Maximum stack depth per invocation: 6 words

ZQNA3  
V01.0

CZQNADO DEQNA FUNCTIONAL TEST  
TEST 8 - STATION ADDRESS RAM TEST

14-Mar-1985 13:11:16  
14-Mar-1985 13:05:35

SEQ 0140  
Page 57  
VAX-11 Bliss-16 V4.1-582  
DISK#USER2:[MARSHALL.DEQNA]ZQNA3.BLI;4 (21)

```

000000 004737 007070'      T8::      .SBTTL  T8 TEST 8 - STATION ADDRESS RAM TEST
000000      1$:      JSR      PC,$T8
000004 104466      TRAP      66
000006 006000      ROR      R0
000010 103773      BLO      1$
000012 000207      RTS      PC

```

2656

```

; Routine Size: 6 words,      Routine Base: AB$CODE$ + 7312
; Maximum stack depth per invocation: 2 words

```

; 2658 1

ZQNA3  
V01.0CZQNA0 DEQNA FUNCTIONAL TEST  
TEST 9 - PROMISCUOUS STATION ADDRESS TEST14-Mar-1985 13:11:16  
14-Mar-1985 13:05:35SEQ 0141  
Page 58  
VAX-11 Bliss-16 V4.1-582  
DISK\$USER2:[MARSHALL.DEQNA]ZQNA3.BLI:4 (22)

```

: 2659 1 *SBTTL 'TEST 9 - PROMISCUOUS STATION ADDRESS TEST'
: 2660 1 !**
: 2661 1 !
: 2662 1 ! TEST 9: PROMISCUOUS STATION ADDRESS TEST
: 2663 1 !
: 2664 1 ! DESCRIPTION:
: 2665 1 !
: 2666 1 ! This test verifies that DEQNA promiscuous addressing mode functions
: 2667 1 ! as specified. Bit patterns and addresses in and out of the range of
: 2668 1 ! setup addresses are used to assure that there is true promiscuity.
: 2669 1 ! If the operator specifies loop on error, the program re-executes the
: 2670 1 ! code that detected the error until tC is entered.
: 2671 1 !
: 2672 1 ! Hardware tested: Promiscuous addressing mode logic
: 2673 1 !
: 2674 1 ! Set of Target Addresses in HEXADECIMAL.
: 2675 1 !
: 2676 1 ! 00-00-00-00-00-00
: 2677 1 ! AA-AA-AA-AA-AA-AA
: 2678 1 ! 55-55-55-55-55-55
: 2679 1 ! FF-FF-FF-FF-FF-FF
: 2680 1 ! Walking 1, shifting 1 across the Target Station Address
: 2681 1 ! Walking 0, shifting 0 across the Target Station Address
: 2682 1 !
: 2683 1 ! Processing:
: 2684 1 !
: 2685 1 ! BEGIN
: 2686 1 ! reset device
: 2687 1 ! select internal loopback mode
: 2688 1 ! set mode to Setup
: 2689 1 ! set 'promiscuous' addressing mode bit
: 2690 1 ! REPEAT for each Target Address
: 2691 1 ! load Target Address of the packet
: 2692 1 ! disable receiver
: 2693 1 ! transmit loopback packet
: 2694 1 ! enable receiver
: 2695 1 ! check for expected loopback status
: 2696 1 ! IF error
: 2697 1 ! THEN
: 2698 1 ! print error message if not inhibited
: 2699 1 ! ENDF
: 2700 1 ! call compare_packets
: 2701 1 ! ENDREPEAT
: 2702 1 ! END
: 2703 1 !

```

ZQNA3  
V01.0

CZQNA0 DEQNA FUNCTIONAL TEST  
TEST 9 - PROMISCUOUS STATION ADDRESS TEST

14-Mar-1985 13:11:16  
14-Mar-1985 13:05:35

VAX-11 B110-16 V4.1-582  
DISK\$USER2:(MARSHALL.DEQNA)ZQNA3.BLI;4 (23)

```

: 2704 3  BGNTST;
: 2705 3
: 2706 3      !..
: 2707 3      ! RESET DEQNA AND INITIALIZE ETHERNET STATION ADDRESS RAM IF EXECUTING
: 2708 3      ! TESTS IN EXTERNAL LOOPBACK MODE.
: 2709 3      !--
: 2710 3
: 2711 3      RESET_DEQNA ( );
: 2712 3      PREP_FOR_SETUP ( );
: 2713 3      INCR INDEX1 FROM 1 TO 14 DO
: 2714 3          WRT_STATION_ADR ( .INDEX1, PHA_INDEX );
: 2715 3
: 2716 5      BGNSUB;
: 2717 5          XMIT_SETUP_PACKET ( P_MODE );
: 2718 3      ENDSUB;
: 2719 3
: 2720 3      !..
: 2721 3      ! NOW LOOPBACK 6 BYTE PACKETS AND CHECK IF THEY ARE RECEIVED PROPERLY
: 2722 3      !--
: 2723 3
: 2724 3      RBUF_LENGTH = 6;
: 2725 3      XBUF_LENGTH = - ( .RBUF_LENGTH + 1 );
: 2726 3
: 2727 3      INCR INDEX1 FROM 0 TO 99 DO
: 2728 4          BEGIN
: 2729 4              SELECTONE .INDEX1 OF
: 2730 4                  SET
: 2731 4                      [ 0 TO 3 ]:
: 2732 4                          WRT_STATION_ADR ( ZERO, .INDEX1 );
: 2733 4                      [ 4 TO 51 ]:
: 2734 4                          WALKING_BIT ( ZERO, .INDEX1 - 4, 5 );
: 2735 4                      [ 52 TO 99 ]:
: 2736 4                          WALKING_BIT ( ONE, .INDEX1 - 52, 5 );
: 2737 4                  TES;
: 2738 4
: 2739 4          WRT_STATION_ADR ( ZERO, ZERO );
: 2740 4
: 2741 6          BGNSUB;
: 2742 6              XMIT_ILOOP_PACKET ( ZERO );
: 2743 4          ENDSUB;
: 2744 4
: 2745 3      END;
: 2746 3
: 2747 3      INCR INDEX FROM 0 TO 5 DO
: 2748 3          TARGET_ADR [ .INDEX ] = ZERO;
: 2749 1  ENDTST;

```

000000	010146		.SBTTL	\$T9 TEST 9 - PROMISCUOUS STATION ADDRESS TEST	2657
000002	004737	000000G	\$T9: MOV	R1, -(SP)	2711
000006	004737	000000G	JSR	PC, RESET.DEQNA	2712
000012	012701	000001	JSR	PC, PREP.FOR.SETUP	2713
			MOV	#1, R1	



# N11

ZQNA3  
V01.0

CZQNA0 DEQNA FUNCTIONAL TEST  
TEST 9 - PROMISCUOUS STATION ADDRESS TEST

14-Mar-1985 13:11:16  
14-Mar-1985 13:05:35

SEQ 0143  
Page 60  
VAX-11 Bliss 16 V4.1-582  
DISK\$USER2:[MARSHALL.DEQNA]ZQNA3.BLI;4 (23)

000016	010146			14:	MOV	R1,-(SP)	;	INDEX1,*		2714
000020	012746	000023			MOV	#23,-(SP)				
000024	004737	000000G			JSR	PC,WRT.STATION.ADR				
000030	022626				CMP	(SP)*,(SP)*				
000032	005201				INC	R1		;	INDEX1	2713
000034	020127	000016			CMP	R1,#16		;	INDEX1,*	
000040	003766				BLE	14				
000042	104402			24:	TRAP	2		;		2714
000044	012746	000202			MOV	#202,-(SP)		;		2717
000050	004737	000000G			JSR	PC,XMIT.SETUP.PACKET				
000054	005726				TST	(SP)*		;		2714
000056	104467				TRAP	67		;		2717
000060	006000				ROR	R0				
000062	103767				BLO	24				
000064	012737	000006	000000G		MOV	#6,RBUF.LENGTH		;		2724
000072	012700	000006			MOV	#6,R0		;		2725
000076	006200				ASR	R0				
000100	005400				NEG	R0				
000102	010037	000000G			MOV	R0,XBUF.LENGTH				
000106	005001				CLR	R1		;	INDEX1	2727
000110	005701			34:	TST	R1		;	INDEX1	2731
000112	002411				BLT	44				
000114	020127	000003			CMP	R1,#3		;	INDEX1,*	
000120	003006				BGT	44				
000122	005046				CLR	-(SP)		;		2732
000124	010146				MOV	R1,-(SP)		;	INDEX1,*	
000126	004737	000000G			JSR	PC,WRT.STATION.ADR				
000132	022626				CMP	(SP)*,(SP)*				
000134	000434				BR	74		;		2729
000136	020127	000004		44:	CMP	R1,#4		;	INDEX1,*	2733
000142	002410				BLT	54				
000144	020127	000063			CMP	R1,#63		;	INDEX1,*	
000150	003005				BGT	54				
000152	005046				CLR	-(SP)		;		2734
000154	010146				MOV	R1,-(SP)		;	INDEX1,*	
000156	162716	000004			SUB	#4,(SP)				
000162	000413				BR	64				
000164	020127	000064		54:	CMP	R1,#64		;	INDEX1,*	2735
000170	002416				BLT	74				
000172	020127	000143			CMP	R1,#143		;	INDEX1,*	
000176	003013				BGT	74				
000200	012746	000001			MOV	#1,-(SP)		;		2736
000204	010146				MOV	R1,-(SP)		;	INDEX1,*	
000206	162716	000064			SUB	#64,(SP)				
000212	012746	000005		64:	MOV	#5,-(SP)				
000216	004737	000000G			JSR	PC,WALKING.BIT				
000222	062706	000006			ADD	#6,SP				
000226	005046			74:	CLR	-(SP)		;		2739
000230	005046				CLR	-(SP)				
000232	004737	000000G			JSR	PC,WRT.STATION.ADR				
000236	104402			84:	TRAP	2				
000240	005016				CLR	(SP)		;		2742
000242	004737	000000G			JSR	PC,XMIT.ILOOP.PACKET				

ZONA3  
V01.0

CZONADO DEQNA FUNCTIONAL TEST  
TEST 9 - PROMISCUOUS STATION ADDRESS TEST

14-Mar-1985 13:11:16  
14-Mar-1985 13:05:35

VAX-11 Bliss-16 V4.1-582  
DISK#USER2:[MARSHALL.DEQNA]ZONA3.BLI;4 (23)

000246	104467		TRAP	67			
000250	006000		ROR	R0			
000252	103771		BLO	8#			
000254	022626		CMP	(SP)*,(SP)*			
000256	005201		INC	R1		; INDEX1	2728
000260	020127	000143	CMP	R1,#143		; INDEX1,*	2727
000264	003711		BLE	3#			
000266	005000		CLR	R0		; INDEX	2747
000270	105060	000000G	CLRB	TARGET.ADR(R0)		; *(INDEX)	2748
000274	005200		INC	R0		; INDEX	2747
000276	020027	000005	CMP	R0,#5		; INDEX,*	
000302	003772		BLE	9#			
000304	012601		MOV	(SP)*,R1			2657
000306	000207		RTS	PC			

; Routine Size: 100 words, Routine Base: AB#CODE# + 7326  
; Maximum stack depth per invocation: 5 words

			.SBTTL	T9 TEST 9 - PROMISCUOUS STATION ADDRESS TEST			
000000	004737	007326'	T9::				
000000			1#:	JSR	PC,#T9		2748
000004	104466			TRAP	66		
000006	006000			ROR	R0		
000010	103773			BLO	1#		
000012	000207			RTS	PC		

; Routine Size: 6 words, Routine Base: AB#CODE# + 7636  
; Maximum stack depth per invocation: 2 words

; 2750 1

```

: 2751 1 *SBTTL 'TEST 10 - TRANSMIT AND RECEIVE FIFO MEMORY TEST'
: 2752 1 !**
: 2753 1 !
: 2754 1 ! TEST 10: TRANSMIT AND RECEIVE FIFO MEMORY TEST
: 2755 1 !
: 2756 1 ! DESCRIPTION:
: 2757 1 !
: 2758 1 ! This test verifies that link memory (receive FIFO and transmit
: 2759 1 ! buffer) has no static faults. The host writes and then reads
: 2760 1 ! a sequence of data patterns to the link memory. The data is then
: 2761 1 ! checked to see that the data pattern received is the same as the
: 2762 1 ! data pattern transmitted. This test continues until all the data
: 2763 1 ! patterns are exhausted. If the operator specifies loop on error, the
: 2764 1 ! program re-executes the code that detected the error until fC is
: 2765 1 ! entered.
: 2766 1 !
: 2767 1 ! Hardware tested: Transmit buffer address logic
: 2768 1 ! Transmit buffer memory ( first 1512 bytes )
: 2769 1 ! Receive FIFO address logic
: 2770 1 ! Receive FIFO memory ( first 1512 bytes )
: 2771 1 !
: 2772 1 ! The following BINARY patterns are used:
: 2773 1 !
: 2774 1 ! 11111111 00000000
: 2775 1 ! 10101010 01010101
: 2776 1 ! 11001100 00110011
: 2777 1 ! 11110000 00001111
: 2778 1 !
: 2779 1 ! Processing:
: 2780 1 !
: 2781 1 ! BEGIN
: 2782 1 ! reset device
: 2783 1 ! select internal/extended loopback mode
: 2784 1 ! REPEAT for each pattern
: 2785 1 ! write link memory with pattern - transmit loopback packet
: 2786 1 ! read link memory with pattern - receive loopback packet
: 2787 1 ! check for expected loopback status
: 2788 1 ! IF error
: 2789 1 ! THEN
: 2790 1 ! print error message if not inhibited
: 2791 1 ! ENDF
: 2792 1 ! call compare_packets
: 2793 1 ! ENDREPEAT
: 2794 1 ! END
: 2795 1 !--

```

ZQNA3  
V01.0CZQNA0 DEQNA FUNCTIONAL TEST  
TEST 10 - TRANSMIT AND RECEIVE FIFO MEMORY TEST14-Mar-1985 13:11:16  
14-Mar-1985 13:05:35SEQ 0146  
Page 63  
VAX-11 Bliss-16 V4.1-582  
DISK#USER2:(MARSHALL.DEQNA)ZQNA3.BLI;4 (25)

```

: 2796 3  BGNTST;
: 2797 3
: 2798 3  !**
: 2799 3  ! LOOPBACK 1514 BYTE PACKETS AND CHECK IF THEY ARE RECEIVED PROPERLY
: 2800 3  !--
: 2801 3
: 2802 3  RBUF_LENGTH = LONGEST_PACKET;
: 2803 3  XBUF_LENGTH = - ( .RBUF_LENGTH + -1 );
: 2804 3
: 2805 3  INCR INDEX FROM 0 TO 7 DO
: 2806 4  BEGIN
: 2807 4  RESET_DEQNA ( );
: 2808 4  TEMP1 = 0;
: 2809 4  INCR INDEX1 FROM 0 TO 189 DO
: 2810 4  INCR INDEX2 FROM 0 TO 7 DO
: 2811 5  BEGIN
: 2812 5  XMIT_BUFFER [ .TEMP1 ] = .PTRN_TABLE [ .INDEX2 ];
: 2813 5  TEMP1 = .TEMP1 + 1;
: 2814 4  END;
: 2815 4
: 2816 4  !**
: 2817 4  ! ROTATE PATTERN TABLE
: 2818 4  !--
: 2819 4
: 2820 4  TEMP2 = .PTRN_TABLE [ 0 ];
: 2821 4  INCR INDEX3 FROM 0 TO 6 DO
: 2822 4  PTRN_TABLE [ .INDEX3 ] = .PTRN_TABLE [ .INDEX3 + 1 ];
: 2823 4  PTRN_TABLE [ 7 ] = .TEMP2;
: 2824 4
: 2825 6  BGNSUB;
: 2826 6  SET_RDESCR_LIST ( .XBUF_LENGTH, VE );
: 2827 6  SET_XDESCR_LIST ( .XBUF_LENGTH, VE );
: 2828 6  SEND_ELOOP_PACKET ( ZERO );
: 2829 6  COMPARE_PACKETS ( );
: 2830 4  ENDSUB;
: 2831 4
: 2832 3  END;
: 2833 3
: 2834 3  ! INCR INDEX1 FROM 0 TO LONGEST_PACKET - 1 DO
: 2835 3  ! BEGIN
: 2836 3  ! INCR INDEX FROM 0 TO LONGEST_PACKET - 1 DO
: 2837 3  ! XMIT_BUFFER [ .INDEX ] = ZERO;
: 2838 3  ! XMIT_BUFFER [ .INDEX1 ] = *X'FF';
: 2839 3  !
: 2840 3  ! BGNSUB;
: 2841 3  ! SET_RDESCR_LIST ( .XBUF_LENGTH, VE );
: 2842 3  ! SET_XDESCR_LIST ( .XBUF_LENGTH, VE );
: 2843 3  ! SEND_ELOOP_PACKET ( ZERO );
: 2844 3  ! COMPARE_PACKETS ( );
: 2845 3  ! ENDSUB;
: 2846 3  !
: 2847 3  ! INCR INDEX FROM 0 TO .P3 DO
: 2848 3  ! XMIT_BUFFER [ .INDEX ] = ( - .XMIT_BUFFER [ .INDEX ] ) - 1;

```

ZQNA3  
V01.0

CZQNADO DEQNA FUNCTIONAL TEST 14-Mar-1985 13:11:16  
TEST 10 - TRANSMIT AND RECEIVE FIFO MEMORY TEST 14-Mar-1985 13:05:35

VAX-11 B1100-16 V4.1-582  
DISK\$USER2:[MARSHALL.DEQNA]ZQNA3.BLI;4 (25)  
Page 64  
SEQ 0147

```

: 2849 3  :
: 2850 3  :
: 2851 3  :
: 2852 3  :
: 2853 3  :
: 2854 3  :
: 2855 3  :
: 2856 3  :
: 2857 3  :
: 2858 3  :
: 2859 1  :

```

```

:
:   BGNSUB;
:   SET_RDESCR_LIST ( .XBUF_LENGTH, VE );
:   SET_XDESCR_LIST ( .XBUF_LENGTH, VE );
:   SEND_ELOOP_PACKET ( ZERO );
:   COMPARE_PACKETS ( );
:   ENDSUB;
:
:   END;
:
:   ENDTST;

```

```

000000 004137 000000G          .SBTTL $T10 TEST 10 - TRANSMIT AND RECEIVE FIFO MEMORY TEST
000004 012737 002752 000000G  $T10: JSR R1,$SAVE3 ; 2749
000012 012700 002752          MOV #2752,RBUF.LENGTH ; 2802
000016 006200          MOV #2752,R0 ; 2803
000020 005400          ASR R0
000022 010037 000000G          NEG R0
000026 012703 000010          MOV R0,XBUF.LENGTH
000032 004737 000000G          MOV #10,R3 ; *,INDEX 2805
000036 005037 000000G          JSR PC,RESET.DEQNA ; 2807
000042 012702 000276          CLR TEMP1 ; 2808
000046 005000          MOV #276,R2 ; *,INDEX1 2809
000050 013701 000000G          CLR R0 ; INDEX2 2810
000054 116061 000000G 000000G 3$: MOV TEMP1,R1 ; 2812
000062 005237 000000G          MOVB PTRN.TABLE(R0),XMIT.BUFFER(R1) ; *(INDEX2),*
000066 005200          INC TEMP1 ; 2813
000070 020027 000007          INC R0 ; INDEX2 2810
000074 003765          CMP R0,#7 ; INDEX2,*
000076 077215          BLE 3$ ; INDEX1,* 2809
000100 005037 000000G          SOB R2,2$ ; 2820
000104 113737 000000G 000000G          CLR TEMP2 ;
000112 005000          MOVB PTRN.TABLE,TEMP2 ; INDEX3 2821
000114 116060 000001G 000000G 4$: MOVB PTRN.TABLE+1(R0),PTRN.TABLE(R0) ; *(INDEX3),*(INDEX3) 2822
000122 005200          INC R0 ; INDEX3 2821
000124 020027 000006          CMP R0,#6 ; INDEX3,*
000130 003771          BLE 4$ ;
000132 113737 000000G 000007G 5$: MOVB TEMP2,PTRN.TABLE+7 ; 2823
000140 104402          TRAP 2 ;
000142 013746 000000G          MOV XBUF.LENGTH,-(SP) ; 2826
000146 012746 120000          MOV #-60000,-(SP) ;
000152 004737 000000G          JSR PC,SET.RDESCR.LIST ;
000156 013716 000000G          MOV XBUF.LENGTH,(SP) ; 2827
000162 012746 120000          MOV #-60000,-(SP) ;
000166 004737 000000G          JSR PC,SET.XDESCR.LIST ;
000172 005016          CLR (SP) ; 2828
000174 004737 000000G          JSR PC,SEND.ELOOP.PACKET ;
000200 004737 000000G          JSR PC,COMPARE.PACKETS ; 2829
000204 062706 000006          ADD #6,SP ; 2823
000210 104467          TRAP 67 ; 2829
000212 006000          ROR R0

```

ZQNA3  
V01.0

CZQNA0 DEQNA FUNCTIONAL TEST  
TEST 10 - TRANSMIT AND RECEIVE FIFO MEMORY TEST

14 Mar-1985 13:11:16  
14-Mar-1985 13:05:35

VAX 11 Bliss 16 V4.1-582  
DISK\$USER2:[MARSHALL.DEQNA]ZQNA3.BLI;4 (25)

000214 103751  
000216 077373  
000220 000207

BLO 5\$  
SOB R3.1\$  
RTS PC

; INDEX,\*  
;

2805  
2749

; Routine Size: 73 words, Routine Base: AB\$CODE\$ + 7652  
; Maximum stack depth per invocation: 8 words

000000 004737 007652'  
000000  
000004 104466  
000006 006000  
000010 103773  
000012 000207

.SBTTL T10 TEST 10 - TRANSMIT AND RECEIVE FIFO MEMORY TEST  
T10::  
1\$: JSR PC,\$T10  
TRAP 66  
ROR R0  
BLO 1\$  
RTS PC

2832

; Routine Size: 6 words, Routine Base: AB\$CODE\$ + 10074  
; Maximum stack depth per invocation: 2 words

; 2860 1

ZQNA3  
V01.0CZQNADO DEQNA FUNCTIONAL TEST  
TEST 11 - PACKET LENGTH TEST14-Mar-1985 13:11:16  
14-Mar-1985 13:05:35VAX-11 Bliss-16 V4.1-582  
DISK#USER2:[MARSHALL.DEQNA]ZQNA3.BLI;4 (26)

SEQ 0149

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```

: 2861 1 *SBTTL 'TEST 11 - PACKET LENGTH TEST'
: 2862 1 !**
: 2863 1 !
: 2864 1 ! TEST 11: PACKET LENGTH TEST
: 2865 1 !
: 2866 1 ! DESCRIPTION:
: 2867 1 !
: 2868 1 ! This test verifies that DEQNA can transmit and receive variable
: 2869 1 ! length packets ( equal to or greater than 60 bytes and equal to or
: 2870 1 ! less than 1514 bytes without the CRC ) without losing any data
: 2871 1 ! in the process. This test also verifies that the 9th bit of the
: 2872 1 ! FIFO memory is not static (stuck at 1/stuck at 0). If the operator
: 2873 1 ! specifies loop on error, the program re-executes the code that
: 2874 1 ! detected the error until tC is entered.
: 2875 1 !
: 2876 1 ! Hardware tested: Transmit and Receive RAM
: 2877 1 !
: 2878 1 ! Processing:
: 2879 1 !
: 2880 1 ! BEGIN
: 2881 1 ! reset device
: 2882 1 ! select internal/extended loopback mode
: 2883 1 ! set down_count to max. packet length
: 2884 1 ! set up_count to min. packet length
: 2885 1 ! REPEAT until down_count = min. packet length
: 2886 1 ! transmit loopback packet (packet length = down_count)
: 2887 1 ! check for expected loopback status and packet length
: 2888 1 ! IF error
: 2889 1 ! THEN
: 2890 1 ! print error message if not inhibited
: 2891 1 ! ENDIF
: 2892 1 ! call compare_packets
: 2893 1 ! transmit loopback packet (packet length = up_count)
: 2894 1 ! check for expected loopback status and packet length
: 2895 1 ! IF error
: 2896 1 ! THEN
: 2897 1 ! print error message if not inhibited
: 2898 1 ! ENDIF
: 2899 1 ! call compare_packets
: 2900 1 ! decrement down_count by 2
: 2901 1 ! increment up count by 2
: 2902 1 ! ENDREPEAT
: 2903 1 ! END
: 2904 1 !--

```

ZQNA3  
V01.0

CZQNADO DEQNA FUNCTIONAL TEST  
TEST 11 - PACKET LENGTH TEST

14-Mar 1985 13:11:16  
14-Mar-1985 13:05:35

SEQ 0150  
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VAX-11 B1:00-16 V4.1-582  
DISK\$USER2:[MARSHALL.DEQNA]ZQNA3.BLI;4 (27)

```

; 2905 3  BGNTST;
; 2906 3
; 2907 3  !**
; 2908 3  ! LOOPBACK PACKETS OF INCREASING AND DECREASING LENGTH THEN CHECK IF PROPERLY
; 2909 3  ! RECEIVED
; 2910 3  !--
; 2911 3
; 2912 3  COUNTER      = ZERO;
; 2913 3  UP_COUNTER   = SHORTEST_PACKET;
; 2914 3  DOWN_COUNTER = LONGEST_PACKET;
; 2915 3
; 2916 3  INCR INDEX1 FROM SHORTEST_PACKET TO MAX_LENGTH BY STEP1 DO
; 2917 4  BEGIN
; 2918 4    RESET_DEQNA ( );
; 2919 4    IF .COUNTER EQLU ZERO
; 2920 4      THEN
; 2921 5        BEGIN
; 2922 5          RBUF_LENGTH = .UP_COUNTER;
; 2923 5          XBUF_LENGTH = - ( .RBUF_LENGTH + -1 );
; 2924 5          INCR INDEX FROM 0 TO .UP_COUNTER - 1 DO
; 2925 5            XMIT_BUFFER [ .INDEX ] = #B'01010101';
; 2926 5          INCR INDEX FROM .UP_COUNTER TO MAX_LENGTH - 1 DO
; 2927 5            XMIT_BUFFER [ .INDEX ] = ZERO;
; 2928 5          UP_COUNTER = .UP_COUNTER + STEP1;
; 2929 5          COUNTER = ONE;
; 2930 5        END
; 2931 4      ELSE
; 2932 5        BEGIN
; 2933 5          RBUF_LENGTH = .DOWN_COUNTER;
; 2934 5          XBUF_LENGTH = - ( .RBUF_LENGTH + -1 );
; 2935 5          INCR INDEX FROM 0 TO .DOWN_COUNTER - 1 DO
; 2936 5            XMIT_BUFFER [ .INDEX ] = #B'10101010';
; 2937 5          INCR INDEX FROM .DOWN_COUNTER TO MAX_LENGTH - 1 DO
; 2938 5            XMIT_BUFFER [ .INDEX ] = ZERO;
; 2939 5          DOWN_COUNTER = .DOWN_COUNTER - STEP1;
; 2940 5          COUNTER = ZERO;
; 2941 4        END;
; 2942 4
; 2943 6  BGNSUB;
; 2944 6    SET_RDESCR_LIST ( .XBUF_LENGTH, VE );
; 2945 6    SET_XDESCR_LIST ( .XBUF_LENGTH, VE );
; 2946 6    SEND_ELOOP_PACKET ( ZERO );
; 2947 6    COMPARE_PACKETS ( );
; 2948 4  ENDSUB;
; 2949 4
; 2950 3  END;
; 2951 1  ENDTST;

```

000000	004137	000000G	\$T11:	.SBTTL	\$T11 TEST 11 - PACKET LENGTH TEST	
000004	005037	000000G		JSR	R1,\$SAVE2	;
000010	012737	000074 000000G		CLR	COUNTER	;
				MOV	#74,UP.COUNTER	;

2859  
2912  
2913



ZQNA3  
V01.0CZQNADO DEQNA FUNCTIONAL TEST  
TEST 11 - PACKET LENGTH TEST14-Mar-1985 13:11:16  
14-Mar-1985 13:05:35SEQ 0151  
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VAX-11 B1.16 V4.1-582  
DISK\$USER2:[MARSHALL.DEQNA]ZQNA3.BLI;4 (27)

000016	012737	002752	000000G		MOV	#2752,DOWN.COUNTER	:	2914
000024	012702	000074			MOV	#74,R2	: *,INDEX1	2916
000030	004737	000000G		1#:	JSR	PC,RESET.DEQNA	:	2918
000034	005737	000000G			TST	COUNTER	:	2919
000040	001033				BNE	6#	:	
000042	013700	000000G			MOV	UP.COUNTER,R0	:	2922
000046	010037	000000G			MOV	R0,RBUF.LENGTH	:	
000052	005001				CLR	R1	: INDEX	2924
000054	000404				BR	3#	:	
000056	112761	000125	000000G	2#:	MOVB	#125,XMIT.BUFFER(R1)	: *,*(INDEX)	2925
000064	005201				INC	R1	: INDEX	2924
000066	020100			3#:	CMP	R1,R0	: INDEX,*	
000070	002772				BLT	2#	:	
000072	005300				DEC	R0	:	2926
000074	000402				BR	5#	:	
000076	105060	000000G		4#:	CLRB	XMIT.BUFFER(R0)	: *(INDEX)	2927
000102	005200			5#:	INC	R0	: INDEX	2926
000104	020027	002775			CMP	R0,#2775	: INDEX,*	
000110	003772				BLE	4#	:	
000112	062737	000002	000000G		ADD	#2,UP.COUNTER	:	2928
000120	012737	000001	000000G		MOV	#1,COUNTER	:	2929
000126	000431				BR	11#	:	2919
000130	013700	000000G		6#:	MOV	DOWN.COUNTER,R0	:	2933
000134	010037	000000G			MOV	R0,RBUF.LENGTH	:	
000140	005001				CLR	R1	: INDEX	2935
000142	000404				BR	8#	:	
000144	112761	000252	000000G	7#:	MOVB	#252,XMIT.BUFFER(R1)	: *,*(INDEX)	2936
000152	005201				INC	R1	: INDEX	2935
000154	020100			8#:	CMP	R1,R0	: INDEX,*	
000156	002772				BLT	7#	:	
000160	005300				DEC	R0	:	2937
000162	000402				BR	10#	:	
000164	105060	000000G		9#:	CLRB	XMIT.BUFFER(R0)	: *(INDEX)	2938
000170	005200			10#:	INC	R0	: INDEX	2937
000172	020027	002775			CMP	R0,#2775	: INDEX,*	
000176	003772				BLE	9#	:	
000200	162737	000002	000000G		SUB	#2,DOWN.COUNTER	:	2939
000206	005037	000000G			CLR	COUNTER	:	2940
000212	013700	000000G		11#:	MOV	RBUF.LENGTH,R0	:	2923
000216	006200				ASR	R0	:	
000220	005400				NEG	R0	:	
000222	010037	000000G			MOV	R0,XBUF.LENGTH	:	
000226	104402			12#:	TRAP	2	:	2941
000230	013746	000000G			MOV	XBUF.LENGTH,-(SP)	:	2944
000234	012746	120000			MOV	#-60000,-(SP)	:	
000240	004737	000000G			JSR	PC,SET.RDESCR.LIST	:	
000244	013716	000000G			MOV	XBUF.LENGTH,(SP)	:	2945
000250	012746	120000			MOV	#-60000,-(SP)	:	
000254	004737	000000G			JSR	PC,SET.XDESCR.LIST	:	
000260	005016				CLR	(SP)	:	2946
000262	004737	000000G			JSR	PC,SEND.ELOOP.PACKET	:	
000266	004737	000000G			JSR	PC,COMPARE.PACKETS	:	2947
000272	062706	000006			ADD	#6,SP	:	2941

ZQNA3  
V01.0

CZQNADO DEQNA FUNCTIONAL TEST  
TEST 11 - PACKET LENGTH TEST

14-Mar-1985 13:11:16  
14-Mar-1985 13:05:35

VAX-11 Bliss-16 V4.1 582  
DISK#USER2:(MARSHALL.DEQNA)ZQNA3.BLI:4 (27)

000276	104467		TRAP	67	:	2947
000300	006000		ROR	R0		
000302	103751		BLO	12#		
000304	062702	000002	ADD	#2,R2	; *,INDEX1	2916
000310	020227	002776	CMP	R2,#2776	; INDEX1,*	
000314	003645		BLE	1#		
000316	000207		RTS	PC	:	2859

; Routine Size: 104 words, Routine Base: AB#CODE# + 10110  
; Maximum stack depth per invocation: 7 words

.SBTTL T11 TEST 11 - PACKET LENGTH TEST

000000	004737	010110'	T11::			
000000			1#:	JSR	PC,#T11	2950
000004	104466			TRAP	66	
000006	006000			ROR	R0	
000010	103773			BLO	1#	
000012	000207			RTS	PC	

; Routine Size: 6 words, Routine Base: AB#CODE# + 10430  
; Maximum stack depth per invocation: 2 words

; 2952 1

2953 1  
2954 1  
2955 1  
2956 1  
2957 1  
2958 1  
2959 1  
2960 1  
2961 1  
2962 1  
2963 1  
2964 1  
2965 1  
2966 1  
2967 1  
2968 1  
2969 1  
2970 1  
2971 1  
2972 1  
2973 1  
2974 1  
2975 1  
2976 1  
2977 1  
2978 1  
2979 1  
2980 1  
2981 1  
2982 1  
2983 1  
2984 1  
2985 1  
2986 1  
2987 1  
2988 1  
2989 1  
2990 1  
2991 1  
2992 1  
2993 1  
2994 1  
2995 1  
2996 1  
2997 1  
2998 1  
2999 1  
3000 1  
3001 1

\*SBTTL 'TEST 12 - NXM INTERRUPT TEST'

! \*\*

TEST 12: NXM INTERRUPT TEST

DESCRIPTION:

This test verifies that Transmit and Receive List Invalid bits (CSR bits 4 and 5) can be set and reset as specified and that both, Transmit and Receive Descriptor List addresses in the I/O page have to be valid to successfully loopback a packet.

After a software reset Transmit and Receive List Invalid bits are checked for their initial condition state (both set). Then these bits are cleared by writing Transmit and Receive Descriptor List addresses into Transmit and Receive Buffer Descriptor Registers.

First, valid loopback packet is sent to verify that UUT properly transmits and receives loopback packets. Then, a Non-Existant Memory Access ( NI ) bit is forced to " 1 " each time an invalid loopback packet is sent.

If the operator specifies loop on error, the program re-executes the code that detected the error until ^C is entered.

- Hardware tested: Q-Bus to QTDC interface
- Valid and invalid host memory address processing
- CSR register - NXM access (bit 2)
- Interrupt Enable (bit 6)
  - XMIT List Invalid (bit 4)
  - RCV List Invalid (bit 5)

Use following Descriptor List and buffer addresses:

TRANSMIT		RECEIVE	
*****		*****	
DESCR LIST ADR	BUFFER ADR	DESCR LIST ADR	BUFFER ADR
-----			
VALID	VALID	VALID	VALID
INVALID	DON'T CARE	DON'T CARE	DON'T CARE
VALID	INVALID	DON'T CARE	DON'T CARE
VALID	VALID	INVALID	DON'T CARE
VALID	VALID	VALID	INVALID
-----			

ZQNA3  
V01.0CZQNA0 DEQNA FUNCTIONAL TEST  
TEST 12 - NXM INTERRUPT TEST14-Mar-1985 13:11:16  
14-Mar-1985 13:05:35VAX-11 Bliss-16 V4.1 582  
DISK#USER2:[MARSHALL.DEQNA]ZQNA3.BLI;4 (29)

SEQ 0154

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```

: 3002 1 :
: 3003 1 : Processing:
: 3004 1 :
: 3005 1 : BEGIN
: 3006 1 : reset device ( disables device interrupt )
: 3007 1 : select internal loopback mode
: 3008 1 : read CSR
: 3009 1 : IF XMIT and RCV List Invalid bits not = 1
: 3010 1 : THEN
: 3011 1 : print error message if not inhibited
: 3012 1 : ENDIF
: 3013 1 : enable device interrupt (set CSR bit 6)
: 3014 1 : transmit valid loopback packet
: 3015 1 : check for expected loopback status
: 3016 1 : IF error
: 3017 1 : THEN
: 3018 1 : print error message if not inhibited
: 3019 1 : ENDIF
: 3020 1 : call compare_packets
: 3021 1 : REPEAT for each set of addresses in the set
: 3022 1 : transmit invalid loopback packet
: 3023 1 : IF NXM interrupt didn't occurred
: 3024 1 : THEN
: 3025 1 : print error message if not inhibited
: 3026 1 : ENDIF
: 3027 1 : check for expected loopback status
: 3028 1 : IF error
: 3029 1 : THEN
: 3030 1 : print error message if not inhibited
: 3031 1 : ENDIF
: 3032 1 : ENDREPEAT
: 3033 1 : END
: 3034 1 :

```

ZQNA3  
V01.0CZGNADO DEQNA FUNCTIONAL TEST  
TEST 12 - NXM INTERRUPT TEST14-Mar-1985 13:11:16  
14-Mar-1985 13:05:35VAX-11 Bliss-16 V4.1-582  
DISK#USER2:[MARSHALL.DEGNA]ZQNA3.BLI:4 (30)SEQ 0155  
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```

: 3035 3  BGNTST;
: 3036 3
: 3037 3  !..
: 3038 3  ! RESET DEQNA AND SELECT LOOPBACK MODE
: 3039 3  !--
: 3040 3
: 3041 3  RESET_DEQNA ( );
: 3042 3
: 3043 3  PREP_FOR_SETUP ( );
: 3044 3  INCR_INDEX FROM 1 TO 14 DO
: 3045 3  WRT_STATION_ADR ( .INDEX, PHA_INDEX );
: 3046 3
: 3047 5  BGNSUB;
: 3048 5  XMIT_SETUP_PACKET ( N_MODE );
: 3049 3  ENDSUB;
: 3050 3
: 3051 3  RBUF_LENGTH = 6;
: 3052 3  XBUF_LENGTH = - ( .RBUF_LENGTH + -1 );
: 3053 3
: 3054 3  CLR_BUFFERS ( B_SIZE );
: 3055 3  ERR_NUMBER = ZERO;
: 3056 3
: 3057 3  !..
: 3058 3  ! LOOPBACK A PACKET, VALID DESCRIPTORS AND BUFFER ADDRESSES, THEN CHECK IF
: 3059 3  ! LOOPBACK PACKET WAS PROPERLY RECEIVED AND NI BIT IN CSR = 0
: 3060 3  !--
: 3061 3
: 3062 3  RESET_DEQNA ( );
: 3063 3  WRT_STATION_ADR ( ZERO, PHA_INDEX );
: 3064 3
: 3065 5  BGNSUB;
: 3066 5  XMIT_ILOOP_PACKET ( ZERO );
: 3067 5  IF GET_BIT ( CSR, NI )
: 3068 5  THEN
: 3069 6  BEGIN
: 3070 6  CSR_WORD = GET_BIT ( CSR_ALL );
: 3071 6  PRINTB ( MSG59 );
: 3072 6  PRINTB ( MSG29 );
: 3073 6  PRINTB ( MSG28 );
: 3074 6  ERRDF ( 1201, MSG00, ERROR$REPORT );
: 3075 5  END;
: 3076 3  ENDSUB;
: 3077 3
: 3078 3  !..
: 3079 3  ! TRY TO LOOPBACK A PACKET WITH INVALID TRANSMIT DESCRIPTOR ADDRESS,
: 3080 3  ! THEN CHECK FOR NON-EXISTANT MEMORY INTERRUPT ( NI ) BIT IS SET TO 1
: 3081 3  ! -
: 3082 3
: 3083 5  BGNSUB;
: 3084 5  RESET_DEQNA ( );
: 3085 5  .IOP_TABLE [ XLO_ADR ] = NXM_LO_ADR;
: 3086 5  .IOP_TABLE [ XHI_ADR ] = NXM_HI_ADR;
: 3087 5  IF NOT GET_BIT ( CSR, NI )

```

```

3088 5      THEN
3089 5      IF ( .XMIT_D_LIST [ FLGWD ] AND XFLG_MASK ) NEQU XFLG_MASK
3090 5      THEN
3091 6          BEGIN
3092 6              CSR_WORD = GET_BIT ( CSR_ALL );
3093 6              PRINTB ( MSG59 );
3094 6              PRINTB ( MSG29 );
3095 6              PRINTB ( MSG27 );
3096 6              ERRDF ( 1202, MSG00, ERROR$REPORT );
3097 5          END;
3098 3      ENDSUB;
3099 3
3100 3      !**
3101 3      ! TRY TO LOOPBACK A PACKET WITH INVALID RECEIVE DESCRIPTOR ADDRESS,
3102 3      ! THEN CHECK IF NON-EXISTANT MEMORY INTERRUPT ( NI ) BIT IS SET TO 1
3103 3      !--
3104 3
3105 5      BGNSUB;
3106 5      RESET_DEQNA ( );
3107 5      WRT_STATION_ADR ( ZERO, PHA_INDEX );
3108 5
3109 5      .IOP_TABLE [ RLO_ADR ] = NXM_LO_ADR;
3110 5      .IOP_TABLE [ RHI_ADR ] = NXM_HI_ADR;
3111 5
3112 5      SET_XDESCR_LIST ( .XBUF_LENGTH, VE );
3113 5      .IOP_TABLE [ XLO_ADR ] = XMIT_D_LIST;
3114 5      .IOP_TABLE [ XHI_ADR ] = ZERO;
3115 5
3116 5      CHK_RIXI_STATUS ( ONE );
3117 5
3118 5      CHK_CSR_STATUS ( #0'000220', #0'000220' );
3119 5      CHK_XMIT_STATUS ( XFLG_STATUS, XWD12_STATUS );          ! 0'140000', 0'000400'
3120 5
3121 5      .IOP_TABLE [ CSR ] = EENABLE;
3122 5
3123 5      DELAY ( 20 );
3124 5      IF NOT GET_BIT ( CSR, NI )
3125 5      THEN
3126 5          IF ( .RCV_D_LIST [ FLGWD ] AND RFLG_MASK ) NEQU RFLG_MASK
3127 5          THEN
3128 6              BEGIN
3129 6                  .IOP_TABLE [ CSR ] = DISABLE;
3130 6                  CSR_WORD = GET_BIT ( CSR_ALL );
3131 6                  PRINTB ( MSG59 );
3132 6                  PRINTB ( MSG29 );
3133 6                  PRINTB ( MSG27 );
3134 6                  ERRDF ( 1203, MSG00, ERROR$REPORT );
3135 5              END;
3136 5      .IOP_TABLE [ CSR ] = DISABLE;
3137 3      ENDSUB;
3138 3
3139 3      !**
3140 3      ! TRY TO LOOPBACK A PACKET WITH INVALID TRANSMIT BUFFER ADDRESS,

```

ZONA3  
V01.0CZONADO DEQNA FUNCTIONAL TEST  
TEST 12 - NXM INTERRUPT TEST14-Mar-1985 13:11:16  
14-Mar-1985 13:05:35VAX-11 Bliss-16 V4.1-582  
DISK#USER2:(MARSHALL.DEQNA)ZONA3.BLI;4 (30)

SEQ 0157

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```

: 3141 3      : THEN CHECK IF NON-EXISTANT MEMORY INTERRUPT ( NI ) BIT IS SET TO 1
: 3142 3      : ---
: 3143 3
: 3144 5      BGNSUB;
: 3145 5      RESET_DEQNA ( );
: 3146 5      SET_XDESCR_LIST ( .XBUF_LENGTH, VENXM );
: 3147 5      XMIT_D_LIST [ LOADR ] = NXM_LO_ADR;
: 3148 5      .IOP_TABLE [ XLO_ADR ] = XMIT_D_LIST;
: 3149 5      .IOP_TABLE [ XHI_ADR ] = ZERO;
: 3150 5      DELAY ( 20 );
: 3151 5      IF NOT GET_BIT ( CSR, NI )
: 3152 5      THEN
: 3153 5          IF ( .XMIT_D_LIST [ FLGWD ] AND XFLG_MASK ) NEQU XFLG_MASK
: 3154 5          THEN
: 3155 6              BEGIN
: 3156 6                  CSR_WORD = GET_BIT ( CSR_ALL );
: 3157 6                  PRINTB ( MSG59 );
: 3158 6                  PRINTB ( MSG29 );
: 3159 6                  PRINTB ( MSG27 );
: 3160 6                  ERRDF ( 1204, MSG00, ERROR$REPORT );
: 3161 5              END;
: 3162 3      ENDSUB;
: 3163 3
: 3164 3      !**
: 3165 3      ! TRY TO LOOPBACK A PACKET WITH INVALID RECEIVE BUFFER ADDRESS.
: 3166 3      ! THEN CHECK IF NON-EXISTANT MEMORY INTERRUPT ( NI ) BIT IS SET TO 1
: 3167 3      ! ---
: 3168 3
: 3169 5      BGNSUB;
: 3170 5      RESET_DEQNA ( );
: 3171 5
: 3172 5      SET_RDESCR_LIST ( .XBUF_LENGTH, VENXM );
: 3173 5      RCV_D_LIST [ LOADR ] = NXM_LO_ADR;
: 3174 5      .IOP_TABLE [ RLO_ADR ] = RCV_D_LIST;
: 3175 5      .IOP_TABLE [ RHI_ADR ] = ZERO;
: 3176 5
: 3177 5      SET_XDESCR_LIST ( .XBUF_LENGTH, VE );
: 3178 5      .IOP_TABLE [ XLO_ADR ] = XMIT_D_LIST;
: 3179 5      .IOP_TABLE [ XHI_ADR ] = ZERO;
: 3180 5
: 3181 5      CHK_RIXI_STATUS ( ONE );
: 3182 5
: 3183 5      CHK_CSR_STATUS ( #0'000220', #0'000220' );
: 3184 5      CHK_XMIT_STATUS ( XFLG_STATUS, XWD12_STATUS );          ! 0'140000', 0'000400'
: 3185 5
: 3186 5      .IOP_TABLE [ CSR ] = EENABLE;
: 3187 5
: 3188 5      DELAY ( 20 );
: 3189 5      IF NOT GET_BIT ( CSR, NI )
: 3190 5      THEN
: 3191 5          IF ( .RCV_D_LIST [ FLGWD ] AND RFLG_MASK ) NEQU RFLG_MASK
: 3192 5          THEN
: 3193 6              BEGIN

```

ZQNA3  
V01.0

CZQNADO DEQNA FUNCTIONAL TEST  
TEST 12 - NXM INTERRUPT TEST

14-Mar-1985 13:11:16  
14-Mar-1985 13:05:35

SEQ 0158  
Page 75  
DISK\$USER2:(MARSHALL.DEQNA)ZQNA3.BLI;4 (30)

```

: 3194 6      CSR_WORD = GET_BIT ( CSR_ALL );
: 3195 6      .IOP_TABLE [ CSR ] = DISABLE;
: 3196 6      PRINTB ( MSG59 );
: 3197 6      PRINTB ( MSG29 );
: 3198 6      PRINTB ( MSG27 );
: 3199 6      ERRDF ( 1205, MSG00, ERROR$REPORT );
: 3200 5      END;
: 3201 5      .IOP_TABLE [ CSR ] = DISABLE;
: 3202 3      ENDSUB;
: 3203 3
: 3204 1      ENDTST;
    
```

```

000000 010146          $T12: .SBTTL $T12 TEST 12 - NXM INTERRUPT TEST
000002 162706 000026      MOV R1,-(SP) ; 2951
000006 004737 000000G    SUB #26,SP ;
000012 004737 000000G    JSR PC,RESET.DEQNA ; 3041
000016 012701 000001    JSR PC,PREP.FOR.SETUP ; 3043
000022 010146          1$: MOV #1,R1 ; *,INDEX 3044
000024 012746 000023    MOV R1,-(SP) ; INDEX,* 3045
000030 004737 000000G    MOV #23,-(SP)
000034 022626          JSR PC,WRT.STATION.ADR
000036 005201          CMP (SP)+,(SP)+
000040 020127 000016    INC R1 ; INDEX 3044
000044 003766          CMP R1,#16 ; INDEX,*
000046 104402          2$: BLE 1$ ;
000050 012746 000200    TRAP 2 ; 3045
000054 004737 000000G    MOV #200,-(SP) ; 3048
000060 005726          JSR PC,XMIT.SETUP.PACKET
000062 104467          TST (SP)+ ; 3045
000064 006000          TRAP 67 ; 3048
000066 103767          ROR R0 ;
000070 012737 000006 000000G BLO 2$ ;
000076 012700 000006    MOV #6,RBUF.LENGTH ; 3051
000102 006200          MOV #6,R0 ; 3052
000104 005400          ASR R0 ;
000106 010037 000000G    NEG R0 ;
000112 012746 004000    MOV R0,XBUF.LENGTH ;
000116 004737 000000G    MOV #4000,-(SP) ; 3054
000122 005037 000000G    JSR PC,CLR.BUFFERS ;
000126 004737 000000G    CLR ERR.NUMBER ; 3055
000132 005016          JSR PC,RESET.DEQNA ; 3062
000134 012746 000023    CLR (SP) ; 3063
000140 004737 000000G    MOV #23,-(SP)
000144 104402          3$: JSR PC,WRT.STATION.ADR
000146 005016          TRAP 2 ;
000150 004737 000000G    CLR (SP) ; 3066
000154 013700 000000G    JSR PC,XMIT.ILOOP.PACKET ;
000160 016066 000016 000004 MOV REG.ADR,R0 ; 3067
000166 031766 000004    MOV 16(R0),4(SP) ; *,TMP.LOCATION
000172 001436          BIT (PC),4(SP) ; *,TMP.LOCATION
000174 016666 000004 000006 BEQ 4$ ;
                                MOV 4(SP),6(SP) ; *,TMP.LOCATION 3070
    
```



ZQNA3  
V01.0

CZQNA0 DEQNA FUNCTIONAL TEST  
TEST 12 - NXM INTERRUPT TEST

14-Mar-1985 13:11:16  
14-Mar-1985 13:05:35

SEQ 0159  
Page 76  
VAX-11 B1 ss 16 V4.1 582  
DISK\$USER2:[MARSHALL.DEQNA]ZQNA3.BLI;4 (30)

000202	016637	000006	000000G		MOV	6(SP),CSR.WORD	:	TMP.LOCATION,*	
000210	012716	000000G			MOV	#MSG59,(SP)	:		3071
000214	012746	000001			MOV	#1,-(SP)	:		
000220	010600				MOV	SP,R0	:	SP,*	
000222	104414				TRAP	14	:		
000224	012716	000000G			MOV	#MSG29,(SP)	:		3072
000230	012746	000001			MOV	#1,-(SP)	:		
000234	010600				MOV	SP,R0	:	SP,*	
000236	104414				TRAP	14	:		
000240	012716	000000G			MOV	#MSG28,(SP)	:		3073
000244	012746	000001			MOV	#1,-(SP)	:		
000250	010600				MOV	SP,R0	:	SP,*	
000252	104414				TRAP	14	:		
000254	104455				TRAP	55	:		3074
000256	002261				.WORD	2261	:		
000260	000000G				.WORD	MSG00	:		
000262	000000G				.WORD	ERROR\$REPORT	:		
000264	062706	000006			ADD	#6,SP	:		3069
000270	104467			4\$:	TRAP	67	:		3075
000272	006000				ROR	R0	:		
000274	103723				BLO	3\$	:		
000276	104402			5\$:	TRAP	2	:		3076
000300	004737	000000G			JSR	PC,RESET.DEQNA	:		3084
000304	012777	160000	000010G		MOV	#-20000,@IOP.TABLE+10	:		3085
000312	012777	000077	000012G		MOV	#77,@IOP.TABLE+12	:		3086
000320	013700	000000G			MOV	REG.ADR,R0	:		3087
000324	016066	000016	000010		MOV	16(R0),10(SP)	:	*,TMP.LOCATION	
000332	032766	000004	000010		BIT	#4,10(SP)	:	*,TMP.LOCATION	
000340	001045				BNE	6\$	:		
000342	013701	000000G			MOV	XMIT.D.LIST,R1	:		3089
000346	042701	037777			BIC	#37777,R1	:		
000352	020127	140000			CMP	R1,#-40000	:		
000356	001436				BEQ	6\$	:		
000360	016666	000010	000012		MOV	10(SP),12(SP)	:	*,TMP.LOCATION	3092
000366	016637	000012	000000G		MOV	12(SP),CSR.WORD	:	TMP.LOCATION,*	
000374	012716	000000G			MOV	#MSG59,(SP)	:		3093
000400	012746	000001			MOV	#1,-(SP)	:		
000404	010600				MOV	SP,R0	:	SP,*	
000406	104414				TRAP	14	:		
000410	012716	000000G			MOV	#MSG29,(SP)	:		3094
000414	012746	000001			MOV	#1,-(SP)	:		
000420	010600				MOV	SP,R0	:	SP,*	
000422	104414				TRAP	14	:		
000424	012716	000000G			MOV	#MSG27,(SP)	:		3095
000430	012746	000001			MOV	#1,-(SP)	:		
000434	010600				MOV	SP,R0	:	SP,*	
000436	104414				TRAP	14	:		
000440	104455				TRAP	55	:		3096
000442	002262				.WORD	2262	:		
000444	000000G				.WORD	MSG00	:		
000446	000000G				.WORD	ERROR\$REPORT	:		
000450	062706	000006			ADD	#6,SP	:		3091
000454	104467			6\$:	TRAP	67	:		3097

ZQNA3  
V01.0CZQNADO DEQNA FUNCTIONAL TEST  
TEST 12 - NXM INTERRUPT TEST14 Mar 1985 13:11:16  
14-Mar 1985 13:05:35SEQ 0160  
Page 77  
VAX-11 Bliss-16 V4.1-582  
DISK#USER2:[MARSHALL.DEQNA]ZQNA3.BLI;4 (30)

000456	006000		ROR	RO			
000460	103706		BLO	5#			
000462	104402	7#:	TRAP	2			3098
000464	004737	000000G	JSR	PC,RESET.DEQNA			3106
000470	005016		CLR	(SP)			3107
000472	012746	000023	MOV	#23,-(SP)			
000476	004737	000000G	JSR	PC,WRT.STATION.ADR			
000502	012777	160000	MOV	#-20000,@IOP.TABLE+4			3109
000510	012777	000077	MOV	#77,@IOP.TABLE+6			3110
000516	013716	000000G	MOV	XBUF.LENGTH,(SP)			3112
000522	012746	120000	MOV	#-60000,-(SP)			
000526	004737	000000G	JSR	PC,SET.XDESCR.LIST			
000532	012777	000000G	MOV	#XMIT.D.LIST,@IOP.TABLE+10			3113
000540	005077	000012G	CLR	@IOP.TABLE+12			3114
000544	012716	000001	MOV	#1,(SP)			3116
000550	004737	000000G	JSR	PC,CHK.RIXI.STATUS			
000554	012716	000220	MOV	#220,(SP)			3118
000560	011646		MOV	(SP),-(SP)			
000562	004737	000000G	JSR	PC,CHK.CSR.STATUS			
000566	012716	140000	MOV	#-40000,(SP)			3119
000572	012746	000400	MOV	#400,-(SP)			
000576	004737	000000G	JSR	PC,CHK.XMIT.STATUS			
000602	012777	000001	MOV	#1,@IOF.TABLE+16			3121
000610	012701	000024	MOV	#24,R1		; *,\$\$TMP2	3123
000614	001410		BEQ	11#			
000616	013700	000000G	MOV	L#DLY,RO		; *,\$\$TMP1	
000622	001403		BEQ	10#			
000624	005066	000040	CLR	40(SP)		; \$\$TMP	
000630	077003		SOB	RO,9#		; \$\$TMP1,*	
000632	005301		DEC	R1		; \$\$TMP2	
000634	000767		BR	8#			
000636	013700	000000G	MOV	REG.ADR,RO			3124
000642	016066	000016	MOV	16(RO),24(SP)		; *,TMP.LOCATION	
000650	032766	000004	BIT	#4,24(SP)		; *,TMP.LOCATION	
000656	001047		BNE	12#			
000660	013701	000000G	MOV	RCV.D.LIST,R1			3126
000664	042701	037777	BIC	#37777,R1			
000670	020127	140000	CMP	R1,#-40000			
000674	001440		BEQ	12#			
000676	005077	000016G	CLR	@IOP.TABLE+16			3129
000702	016666	000024	MOV	24(SP),26(SP)		; *,TMP.LOCATION	3130
000710	016637	000026	MOV	26(SP),CSR.WORD		; TMP.LOCATION,*	
000716	012716	000000G	MOV	#MSG59,(SP)			3131
000722	012746	000001	MOV	#1,-(SP)			
000726	010600		MOV	SP,RO		; SP,*	
000730	104414		TRAP	14			
000732	012716	000000G	MOV	#MSG29,(SP)			3132
000736	012746	000001	MOV	#1,-(SP)			
000742	010600		MOV	SP,RO		; SP,*	
000744	104414		TRAP	14			
000746	012716	000000G	MOV	#MSG27,(SP)			3133
000752	012746	000001	MOV	#1,-(SP)			
000756	010600		MOV	SP,RO		; SP,*	

ZQNA3  
V01.0

CZQNADO DEQNA FUNCTIONAL TEST  
TEST 12 - NXM INTERRUPT TEST

14-Mar-1985 13:11:16  
14-Mar-1985 13:05:35

SEQ 0161  
Page 78  
VAX-11 Bliss-16 V4.1 582  
DISK\$USER2:[MARSHALL.DEQNA]ZQNA3.BLI;4 (30)

000760	104414			TRAP	14			
000762	104455			TRAP	55			3134
000764	002263			.WORD	2263			
000766	000000G			.WORD	MSG00			
000770	000000G			.WORD	ERROR\$REPORT			
000772	062706	000006		ADD	#6,SP			3128
000776	005077	000016G	12\$:	CLR	@IOP.TABLE+16			3136
001002	062706	000010		ADD	#10,SP			3098
001006	104467			TRAP	67			3136
001010	006000			ROR	RO			
001012	103623			BLO	7\$			
001014	104402		13\$:	TRAP	2			3137
001016	004737	000000G		JSR	PC,RESET.DEQNA			3145
001022	013716	000000G		MOV	XBUF.LENGTH,(SP)			3146
001026	012746	120077		MOV	#-57701,-(SP)			
001032	004737	000000G		JSR	PC,SET.XDESCR.LIST			
001036	012737	160000	000004G	MOV	#-20000,XMIT.D.LIST+4			3147
001044	012777	000000G	000010G	MOV	#XMIT.D.LIST,@IOP.TABLE+10			3148
001052	005077	000012G		CLR	@IOP.TABLE+12			3149
001056	012701	000024		MOV	#24,R1		; *,\$\$TMP2	3150
001062	001410		14\$:	BEQ	17\$			
001064	013700	000000G		MOV	L\$DLY,RO		; *,\$\$TMP1	
001070	001403			BEQ	16\$			
001072	005066	000032	15\$:	CLR	32(SP)		; \$\$TMP	
001076	077003			SOB	RO,15\$		; \$\$TMP1,*	
001100	005301		16\$:	DEC	R1		; \$\$TMP2	
001102	000767			BR	14\$			
001104	013700	000000G	17\$:	MOV	REG.ADR,RO			3151
001110	016066	000016	000022	MOV	16(RO),22(SP)		; *,TMP.LOCATION	
001116	032766	000004	000022	BIT	#4,22(SP)		; *,TMP.LOCATION	
001124	001045			BNE	18\$			
001126	013701	000000G		MOV	XMIT.D.LIST,R1			3153
001132	042701	037777		BIC	#37777,R1			
001136	020127	140000		CMP	R1,#-40000			
001142	001436			BEQ	18\$			
001144	016666	000022	000024	MOV	22(SP),24(SP)		; *,TMP.LOCATION	3156
001152	016637	000024	000000G	MOV	24(SP),CSR.WORD		; TMP.LOCATION,*	
001160	012716	000000G		MOV	#MSG59,(SP)			3157
001164	012746	000001		MOV	#1,-(SP)			
001170	010600			MOV	SP,RO		; SP,*	
001172	104414			TRAP	14			
001174	012716	000000G		MOV	#MSG29,(SP)			3158
001200	012746	000001		MOV	#1,-(SP)			
001204	010600			MOV	SP,RO		; SP,*	
001206	104414			TRAP	14			
001210	012716	000000G		MOV	#MSG27,(SP)			3159
001214	012746	000001		MOV	#1,-(SP)			
001220	010600			MOV	SP,RO		; SP,*	
001222	104414			TRAP	14			
001224	104455			TRAP	55			3160
001226	002264			.WORD	2264			
001230	000000G			.WORD	MSG00			
001232	000000G			.WORD	ERROR\$REPORT			

ZQNA3	CZQNA0	DEQNA	FUNCTIONAL TEST	14-Mar-1985 13:11:16	VAX-11 Bliss-16 V4.1-582	SEQ 0162
V01.0	TEST 12	- NXM	INTERRUPT TEST	14-Mar-1985 13:05:35	DISK#USER2:[MARSHALL.DEQNA]ZQNA3.BLI;4	Page 79 (30)
001234	062706	000006			ADD #6,SP	3155
001240	005726		18:		TST (SP)	3137
001242	104467				TRAP 67	3161
001244	006000				ROR R0	
001246	103662				BLO 13	
001250	104402		19:		TRAP 2	3162
001252	004737	000000G			JSR PC,RESET.DEQNA	3170
001256	013716	000000G			MOV XBUF.LENGTH,(SP)	3172
001262	012746	120077			MOV #-57701,-(SP)	
001266	004737	000000G			JSR PC,SET.RDESCR.LIST	
001272	012737	160000	000004G		MOV #-20000,RCV.D.LIST+4	3173
001300	012777	000000G	000004G		MOV #RCV.D.LIST,@IOP.TABLE+4	3174
001306	005077	000006G			CLR @IOP.TABLE+6	3175
001312	013716	000000G			MOV XBUF.LENGTH,(SP)	3177
001316	012746	120000			MOV #-60000,-(SP)	
001322	004737	000000G			JSR PC,SET.XDESCR.LIST	
001326	012777	000000G	000010G		MOV #XMIT.D.LIST,@IOP.TABLE+10	3178
001334	005077	000012G			CLR @IOP.TABLE+12	3179
001340	012716	000001			MOV #1,(SP)	3181
001344	004737	000000G			JSR PC,CHK.RIXI.STATUS	
001350	012716	000220			MOV #220,(SP)	3183
001354	011646				MOV (SP),-(SP)	
001356	004737	000000G			JSR PC,CHK.CSR.STATUS	
001362	012716	140000			MOV #-40000,(SP)	3184
001366	012746	000400			MOV #400,-(SP)	
001372	004737	000000G			JSR PC,CHK.XMIT.STATUS	
001376	012777	000001	000016G		MOV #1,@IOP.TABLE+16	3186
001404	012701	000024			MOV #24,R1	3188
001410	001410				BEQ 23	; *,\$\$TMP2
001412	013700	000000G	20:		MOV L#DLY,R0	; *,\$\$TMP1
001416	001403				BEQ 22	
001420	005066	000040	21:		CLR 40(SP)	; \$\$TMP
001424	077003				SOB R0,21	; \$\$TMP1,*
001426	005301		22:		DEC R1	; \$\$TMP2
001430	000767				BR 20	
001432	013700	000000G	23:		MOV REG.ADR,R0	; 3189
001436	016066	000016	000034		MOV 16(R0),34(SP)	; *,TMP.LOCATION
001444	032766	000004	000034		BIT #4,34(SP)	; *,TMP.LOCATION
001452	001047				BNE 24	
001454	013701	000000G			MOV RCV.D.LIST,R1	; 3191
001460	042701	037777			BIC #37777,R1	
001464	020127	140000			CMP R1,#-40000	
001470	001440				BEQ 24	
001472	016666	000034	000036		MOV 34(SP),36(SP)	; *,TMP.LOCATION
001500	016637	000036	000000G		MOV 36(SP),CSR.WORD	; TMP.LOCATION,*
001506	005077	000016G			CLR @IOP.TABLE+16	3195
001512	012716	000000G			MOV #MSG59,(SP)	3196
001516	012746	000001			MOV #1,-(SP)	
001522	010600				MOV SP,R0	; SP,*
001524	104414				TRAP 14	
001526	012716	000000G			MOV #MSG29,(SP)	3197
001532	012746	000001			MOV #1,-(SP)	
001536	010600				MOV SP,R0	; SP,*

# H13

ZQNA3  
V01.0

CZQNADO DEQNA FUNCTIONAL TEST  
TEST 12 NXM INTERRUPT TEST

14-Mar-1985 13:11:16  
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SEQ 0163  
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VAX-11 Bliss-16 V4.1-582  
DISK#USER2:[MARSHALL.DEQNA]ZQNA3.BLI;4 (30)

001540	104414			TRAP	14		
001542	012716	000000G		MOV	#MSG27,(SP)	:	3198
001546	012746	000001		MOV	#1,-(SP)		
001552	010600			MOV	SP,R0	: SP,*	
001554	104414			TRAP	14		
001556	104455			TRAP	55	:	3199
001560	002265			.WORD	2265		
001562	000000G			.WORD	MSG00		
001564	000000G			.WORD	ERROR\$REPORT		
001566	062706	000006		ADD	#6,SP	:	3193
001572	005077	000016G	24\$:	CLR	@IOP.TABLE+16	:	3201
001576	062706	000010		ADD	#10,SP	:	3162
001602	104467			TRAP	67	:	3201
001604	006000			ROR	R0		
001606	103620			BLO	19\$		
001610	062706	000032		ADD	#32,SP		2951
001614	012601			MOV	(SP)+,R1		
001616	000207			RTS	PC		

; Routine Size: 456 words, Routine Base: AB\$CODE\$ + 10444  
; Maximum stack depth per invocation: 23 words

				.SBTTL	T12 TEST 12 - NXM INTERRUPT TEST		
000000	004737	010444'	T12::				
000000			1\$:	JSR	PC,\$T12	:	3202
000004	104466			TRAP	66		
000006	006000			ROR	R0		
000010	103773			BLO	1\$		
000012	000207			RTS	PC		

; Routine Size: 6 words, Routine Base: AB\$CODE\$ + 12264  
; Maximum stack depth per invocation: 2 words

; 3205 1

ZQNA3  
V01.0CZQNA0 DEQNA FUNCTIONAL TEST  
TEST 13 - MULTIPLE AND CHAINED PACKET TEST14-Mar-1985 13:11:16  
14-Mar-1985 13:05:35VAX-11 Bliss-16 V4.1-582  
DISK#USER2:[MARSHALL.DEQNA]ZQNA3.BLI:4 (31)

SEQ 0164

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```

: 3206 1 *SBTTL 'TEST 13 - MULTIPLE AND CHAINED PACKET TEST'
: 3207 1 :
: 3208 1 :
: 3209 1 : TEST 13: MULTIPLE AND CHAINED PACKET TEST
: 3210 1 :
: 3211 1 : DESCRIPTION:
: 3212 1 :
: 3213 1 : This test verifies that the DEQNA can transmit and receive multiple,
: 3214 1 : linked and chained loopback packets.
: 3215 1 :
: 3216 1 : If the operator specifies loop on error, the program re-executes the
: 3217 1 : code that detected the error until ^C is entered.
: 3218 1 :
: 3219 1 : Hardware tested:
: 3220 1 :
: 3221 1 : Processing:
: 3222 1 :
: 3223 1 : BEGIN
: 3224 1 : reset device
: 3225 1 : select internal/extended loopback mode
: 3226 1 : transmit simple loopback packet
: 3227 1 : check for expected loopback status
: 3228 1 : IF error
: 3229 1 : THEN
: 3230 1 : print error message if not inhibited
: 3231 1 : ENDIF
: 3232 1 : call compare_packets
: 3233 1 :
: 3234 1 : transmit multiple, linked and chained loopback packet
: 3235 1 : check for expected loopback status
: 3236 1 : IF error
: 3237 1 : THEN
: 3238 1 : print error message if not inhibited
: 3239 1 : ENDIF
: 3240 1 : call compare_packets
: 3241 1 : END
: 3242 1 :

```

ZQNA3  
V01.0CZQNADO DEQNA FUNCTIONAL TEST  
TEST 13 - MULTIPLE AND CHAINED PACKET TEST14-Mar-1985 13:11:16  
14-Mar-1985 13:05:35SEQ 0165  
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VAX-11 Bliss-16 V4.1-582  
DISK#USER2:[MARSHALL.DEQNA]ZQNA3.BLI;4 (32)

```

: 3243 3  BGNTST;
: 3244 3
: 3245 3  RBUF_LENGTH = 64;
: 3246 3  XBUF_LENGTH = - ( .RBUF_LENGTH + -1 );
: 3247 3
: 3248 3  !..
: 3249 3  ! LOOPBACK UNCHAINED PACKET, THEN CHECK IF IT WAS PROPERLY RECEIVED
: 3250 3  !--
: 3251 3
: 3252 3  RESET_DEQNA ( );
: 3253 3  INCR INDEX FROM 0 TO 63 DO
: 3254 3    XMIT_BUFFER [ .INDEX ] = .INDEX;
: 3255 3
: 3256 5  BGNSUB;
: 3257 5    SET_RDESCR_LIST ( .XBUF_LENGTH, VE );
: 3258 5    SET_XDESCR_LIST ( .XBUF_LENGTH, VE );
: 3259 5    SEND_ELOOP_PACKET ( ZERO );
: 3260 5    COMPARE_PACKETS ( );
: 3261 3  ENDSUB;
: 3262 3
: 3263 3  RESET_DEQNA ( );
: 3264 3  CLR_BUFFERS ( 512 );
: 3265 3  INCR INDEX FROM 0 TO 383 DO
: 3266 3    XMIT_BUFFER [ .INDEX ] = .INDEX;
: 3267 3
: 3268 3
: 3269 5  BGNSUB;
: 3270 5    INCR INDEX FROM 0 TO 63 DO
: 3271 5      RCV_D_LIST [ .INDEX, W_LEN ] = .RD13 [ .INDEX ];
: 3272 5    INCR INDEX FROM 0 TO 31 DO
: 3273 5      XMIT_D_LIST [ .INDEX, W_LEN ] = .TD13 [ .INDEX ];
: 3274 5
: 3275 5    XMIT_D_LIST [ 7, W_LEN ] = VE;
: 3276 5    XMIT_D_LIST [ 13, W_LEN ] = E;
: 3277 5
: 3278 5    PUT_BIT [ CSR, LB, INX_LOOPBACK ];
: 3279 5    XMIT_AND_RCV_PACKET ( );
: 3280 5    CHK_RIXI_STATUS ( ZERO );
: 3281 5    CHK_CSP_STATUS ( CSR_STATUS, CSR_MASK );      ! 0'100220', 0'100220'
: 3282 5
: 3283 5    XMIT_D_LIST [ 7, W_LEN ] = V;
: 3284 5    XMIT_D_LIST [ 12, W_LEN ] = NEWB;
: 3285 5    XMIT_D_LIST [ 13, W_LEN ] = V;
: 3286 5
: 3287 5    .IOP_TABLE [ XLO_ADR ] = XMIT_D_LIST + 24;
: 3288 5    .IOP_TABLE [ XHI_ADR ] = ZERO;
: 3289 5
: 3290 5    CHK_RIXI_STATUS ( ZERO );
: 3291 5    CHK_CSP_STATUS ( CSR_STATUS, CSR_MASK );      ! 0'100220', 0'100220'
: 3292 5
: 3293 5  !..
: 3294 5  ! CHECK IF RECEIVE BUFFER DESCRIPTOR LISTS PROPERLY VOLIDATED
: 3295 5  !--

```

ZQNA3  
VOL.0CZQNADO DEQNA FUNCTIONAL TEST  
TEST 13 - MULTIPLE AND CHAINED PACKET TEST14-Mar-1985 13:11:16  
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DISK\$USER2:[MARSHALL.DEQNA]ZQNA3.BLI;4 (32)

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3296 5
3297 5      INCR INDEX FROM 0 TO 53 DO
3298 5      IF .RCV_D_LIST [ .INDEX, W_LEN ] NEQU .RD13 [ .INDEX ]
3299 5      AND ( .RCV_D_LIST [ .INDEX, W_LEN ] AND #0'140000' ) NEQU #0'140000'
3300 5      AND .RCV_D_LIST [ .INDEX, W_LEN ] NEQU #C'020600'
3301 5      THEN
3302 6      BEGIN
3303 6          CSR_WORD = GET_BIT ( CSR_ALL );
3304 6          PRINTB ( MSG59 );
3305 6          PRINTB ( MSG48 );
3306 6          PRINTB ( MSG50, .RCV_D_LIST [ .INDEX, W_LEN ], .RD13 [ .INDEX ], .INDEX );
3307 6          ERRDF ( 1301, MSG00, ERROR$REPORT );
3308 5      END;
3309 5
3310 5      !..
3311 5      ! CHECK IF TRANSMIT BUFFER DESCRIPTOR LISTS PROPERLY VOLIDATED
3312 5      !--
3313 5
3314 5      INCR INDEX FROM 0 TO 23 DO
3315 5      IF .XMIT_D_LIST [ .INDEX, W_LEN ] NEQU .TD13 [ .INDEX ]
3316 5      AND ( .XMIT_D_LIST [ .INDEX, W_LEN ] AND #0'140000' ) NEQU #0'140000'
3317 5      AND .XMIT_D_LIST [ .INDEX, W_LEN ] NEQU #0'020414'
3318 5      AND .XMIT_D_LIST [ .INDEX, W_LEN ] NEQU #0'004140'
3319 5      THEN
3320 6      BEGIN
3321 6          CSR_WORD = GET_BIT ( CSR_ALL );
3322 6          PRINTB ( MSG59 );
3323 6          PRINTB ( MSG49 );
3324 6          PRINTB ( MSG50, .XMIT_D_LIST [ .INDEX, W_LEN ], .TD13 [ .INDEX ], .INDEX );
3325 6          ERRDF ( 1302, MSG00, ERROR$REPORT );
3326 5      END;
3327 5
3328 5      INCR INDEX FROM 0 TO 5 DO
3329 6      BEGIN
3330 6          XMIT_D_LIST [ .INDEX, W_LEN ] = .XMIT_D_LIST [ .INDEX + 24, W_LEN ];
3331 6          RCV_D_LIST [ .INDEX, W_LEN ] = .RCV_D_LIST [ .INDEX + 54, W_LEN ];
3332 5      END;
3333 5
3334 5      CHK_XMIT_STATUS ( XFLG_STATUS, XWD12_STATUS ); ! 0'140000', 0'000400'
3335 5      CHK_RCV_STATUS ( RFLG_STATUS, RWD1_STATUS ); ! 0'140000', 0'020000'
3336 5
3337 5      INCR INDEX FROM 0 TO 383 DO
3338 5      IF .XMIT_BUFFER [ .INDEX ] NEQU .RCV_BUFFER [ .INDEX ]
3339 5      THEN
3340 6      BEGIN
3341 6          CSR_WORD = GET_BIT ( CSR_ALL );
3342 6          PRINTB ( MSG59 );
3343 6          PRINTB ( MSG51 );
3344 6          PRINTB ( MSG50, .RCV_BUFFER [ .INDEX ], .XMIT_BUFFER [ .INDEX ], .INDEX );
3345 6          ERRDF ( 1303, MSG00, ERROR$REPORT );
3346 5      END;
3347 3      ENDSUB;
3348 3

```



ZQNA3  
V01.0

CZQNADO DEQNA FUNCTIONAL TEST  
TEST 13 - MULTIPLE AND CHAINED PACKET TEST

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SEQ 0167  
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VAX-11 Bliss-16 V4.1-582  
DISK\$USER2:[MARSHALL.DEQNA]ZQNA3.BLI;4 (32)

; 3349 1 ENDTST;

				.SBTTL	\$T13 TEST 13 - MULTIPLE AND CHAINED PACKET TEST		
000000	004137	000000G		\$T13: JSR	R1,\$SAVE3	:	3204
000004	162706	000006		SUB	#6,SP	:	
000010	012737	000100	000000G	MOV	#100,RBUF.LENGTH	:	3245
000016	012700	000100		MOV	#100,R0	:	3246
000022	006200			ASR	R0	:	
000024	005400			NEG	R0	:	
000026	010037	000000G		MOV	R0,XBUF.LENGTH	:	
000032	004737	000000G		JSR	PC,RESET.DEQNA	:	3252
000036	005000			CLR	R0	:	INDEX
000040	110060	000000G		1\$: MOVB	R0,XMIT.BUFFER(R0)	:	INDEX,*(INDEX)
000044	005200			INC	R0	:	INDEX
000046	020027	000077		CMP	R0,#77	:	INDEX,*
000052	003772			BLE	1\$	:	
000054	104402			2\$: TRAP	2	:	3254
000056	013746	000000G		MOV	XBUF.LENGTH,-(SP)	:	3257
000062	012746	120000		MOV	#-60000,-(SP)	:	
000066	004737	000000G		JSR	PC,SET.RDESCR.LIST	:	
000072	013716	000000G		MOV	XBUF.LENGTH,(SP)	:	3258
000076	012746	120000		MOV	#-60000,-(SP)	:	
000102	004737	000000G		JSR	PC,SET.XDESCR.LIST	:	
000106	005016			CLR	(SP)	:	3259
000110	004737	000000G		JSR	PC,SEND.ELOOP.PACKET	:	
000114	004737	000000G		JSR	PC,COMPARE.PACKETS	:	3260
000120	062706	000006		ADD	#6,SP	:	3254
000124	104467			TRAP	67	:	3260
000126	006000			ROR	R0	:	
000130	103751			BLO	2\$	:	
000132	004737	000000G		JSR	PC,RESET.DEQNA	:	3263
000136	012746	001000		MOV	#1000,-(SP)	:	3264
000142	004737	000000G		JSR	PC,CLR.BUFFERS	:	
000146	005000			CLR	R0	:	INDEX
000150	110060	000000G		3\$: MOVB	R0,XMIT.BUFFER(R0)	:	INDEX,*(INDEX)
000154	005200			INC	R0	:	INDEX
000156	020027	000577		CMP	R0,#577	:	INDEX,*
000162	003772			BLE	3\$	:	
000164	104402			4\$: TRAP	2	:	3266
000166	005000			CLR	R0	:	INDEX
000170	016060	000000G	000000G	5\$: MOV	RD13(R0),RCV.D.LIST(R0)	:	*(INDEX),*(INDEX)
000176	062700	000002		ADD	#2,R0	:	*,INDEX
000202	020027	000176		CMP	R0,#176	:	INDEX,*
000206	003770			BLE	5\$	:	
000210	005000			CLR	R0	:	INDEX
000212	016060	000000G	000000G	6\$: MOV	TD13(R0),XMIT.D.LIST(R0)	:	*(INDEX),*(INDEX)
000220	062700	000002		ADD	#2,R0	:	*,INDEX
000224	020027	000076		CMP	R0,#76	:	INDEX,*
000230	003770			BLE	6\$	:	
000232	012737	120000	000016G	MOV	#-60000,XMIT.D.LIST+16	:	3275
000240	012737	020000	000032G	MOV	#20000,XMIT.D.LIST+32	:	3276
000246	013700	000000G		MOV	REG.ADR,R0	:	3278

ZQNA3  
V01.0

CZQNA0 DEQNA FUNCTIONAL TEST  
TEST 13 - MULTIPLE AND CHAINED PACKET TEST

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VAX-11 B1, 16 V4 1-582  
DISK\$USER2:[MARSHALL.DEQNA]ZQNA3.BLI;4 (32)

000252	042760	001400	000016	BIC	#1400,16(R0)		
000260	052760	001000	000016	BIS	#1000,16(R0)		
000266	004737	000000G		JSR	PC,XMIT.AND.RCV.PACKET	:	3279
000272	005016			CLR	(SP)	:	3280
000274	004737	000000G		JSR	PC,CHK.RIXI.STATUS		
000300	012716	100220		MOV	#-77560,(SP)	:	3281
000304	011646			MOV	(SP),-(SP)		
000306	004737	000000G		JSR	PC,CHK.CSR.STATUS		
000312	012737	100000	000016G	MOV	#-100000,XMIT.D.LIST+16	:	3283
000320	012737	100000	000030G	MOV	#-100000,XMIT.D.LIST+30	:	3284
000326	012737	100000	000032G	MOV	#-100000,XMIT.D.LIST+32	:	3285
000334	012777	000030G	000010G	MOV	#XMIT.D.LIST+30,@IOP.TABLE+10	:	3287
000342	005077	000012G		CLR	@IOP.TABLE+12	:	3288
000346	005016			CLR	(SP)	:	3290
000350	004737	000000G		JSR	PC,CHK.RIXI.STATUS		
000354	012716	100220		MOV	#-77560,(SP)	:	3291
000360	011646			MOV	(SP),-(SP)		
000362	004737	000000G		JSR	PC,CHK.CSR.STATUS		
000366	005003			CLR	R3	: INDEX	3297
000370	010301			MOV	R3,R1	: INDEX,*	3298
000372	006301				R1		
000374	016100	000000G			RCV.D.LIST(R1),R0		
000400	020061	000000G			R0,RD13(R1)		
000404	001456			BEQ	R4		
000406	010002			MOV	R0,R2	:	3299
000410	042702	037777		BIC	#37777,R2		
000414	020227	140000		CMR	R2,#-40000		
000420	001450			BEQ	R4		
000422	020027	020600		CMR	R0,#20600	:	3300
000426	001445			BEQ	R4		
000430	013700	000000G		MOV	REG.ADR,R0	:	3303
000434	016066	000016	000006	MOV	16(R0),6(SP)	: *,TMP.LOCATION	
000442	016637	000006	000000G	MOV	6(SP),CSR.WORD	: TMP.LOCATION,*	
000450	012716	000000G		MOV	#MSG59,(SP)	:	3304
000454	012746	000001		MOV	#1,-(SP)		
000460	010600			MOV	SP,R0	: SP,*	
000462	104414			TRAP	14		
000464	012716	000000G		MOV	#MSG48,(SP)	:	3305
000470	012746	000001		MOV	#1,-(SP)		
000474	010600			MOV	SP,R0	: SP,*	
000476	104414			TRAP	14		
000500	010316			MOV	R3,(SP)	: INDEX,*	3306
000502	016146	000000G		MOV	RD13(R1),-(SP)		
000506	016146	000000G		MOV	RCV.D.LIST(R1),-(SP)		
000512	012746	000000G		MOV	#MSG50,-(SP)		
000516	012746	000004		MOV	#4,-(SP)		
000522	010600			MOV	SP,R0	: SP,*	
000524	104414			TRAP	14		
000526	104455			TRAP	55	:	3307
000530	002425			.WORD	2425		
000532	000000G			.WORD	MSG00		
000534	000000G			.WORD	ERROR\$REPORT		
000536	062706	000014		ADD	#14,SP	:	3302

ZQNA3  
V01.0

CZQNA3 DEQNA FUNCTIONAL TEST  
TEST 13 - MULTIPLE AND CHAINED PACKET TEST

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SEQ 0169  
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VAX-11 Bliss-16 V4.1-582  
DISK#USER2:[MARSHALL.DEQNA]ZQNA3.BLI:4 (32)

000542	005203		8\$:	INC	R3		; INDEX	3297
000544	020327	000065		CMP	R3,#65		; INDEX,*	
000550	003707			BLE	7\$			
000552	005003			CLR	R3		; INDEX	3314
000554	010301		9\$:	MOV	R3,R1		; INDEX,*	3315
000556	006301			ASL	R1			
000560	016100	000000G		MOV	XMIT.D.LIST(R1),R0			
000564	020061	000000G		CMP	R0,TD13(R1)			
000570	001461			BEQ	10\$			
000572	010002			MOV	R0,R2			3316
000574	042702	037777		BI	#37777,R2			
000600	020227	140000		CMP	R2,#-40000			
000604	001453			BEQ	10\$			
000606	020027	020414		CMP	R0,#20414			3317
000612	001450			BEQ	10\$			
000614	020027	004140		CMP	R0,#4140			3318
000620	001445			BEQ	10\$			
000622	013700	000000G		MOV	REG.ADR,R0			3321
000626	016066	000016 000010		MOV	16(R0),10(SP)		; *,TMP.LOCATION	
000634	016637	000010 000000G		MOV	10(SP),CSR.WORD		; TMP.LOCATION,*	
000642	012716	000000G		MOV	#MSG59,(SP)			3322
000646	012746	000001		MOV	#1,-(SP)			
000652	010600			MOV	SP,R0		; SP,*	
000654	104414			TRAP	14			
000656	012716	000000G		MOV	#MSG49,(SP)			3323
000662	012746	000001		MOV	#1,-(SP)			
000666	010600			MOV	SP,R0		; SP,*	
000670	104414			TRAP	14			
000672	010316			MOV	R3,(SP)		; INDEX,*	3324
000674	016146	000000G		MOV	TD13(R1),-(SP)			
000700	016146	000000G		MOV	XMIT.D.LIST(R1),-(SP)			
000704	012746	000000G		MOV	#MSG50,-(SP)			
000710	012746	000004		MOV	#4,-(SP)			
000714	010600			MOV	SP,R0		; SP,*	
000716	104414			TRAP	14			
000720	104455			TRAP	55			3325
000722	002426			.WORD	2426			
000724	000000G			.WORD	MSG00			
000726	000000G			.WORD	ERROR#REPORT			
000730	062706	000014		ADD	#14,SP			3320
000734	005203		10\$:	INC	R3		; INDEX	3314
000736	020327	000027		CMP	R3,#27		; INDEX,*	
000742	003704			BLE	9\$			
000744	005002			CLR	R2		; INDEX	3328
000746	010200		11\$:	MOV	R2,R0		; INDEX,*	3330
000750	006300			ASL	R0			
000752	010201			MOV	R2,R1		; INDEX,*	
000754	006301			ASL	R1			
000756	016160	000060G 000000G		MOV	XMIT.D.LIST+60(R1),XMIT.D.LIST(R0)			
000764	010201			MOV	R2,R1		; INDEX,*	3331
000766	006301			ASL	R1			
000770	016160	000154G 000000G		MOV	RCV.D.LIST+154(R1),RCV.D.LIST(R0)			
000776	005202			INC	R2		; INDEX	3328

ZQNA3  
V01.0

CZONADO DEQNA FUNCTIONAL TEST  
TEST 13 - MULTIPLE AND CHAINED PACKET TEST

14-Mar-1985 13:11:16  
14-Mar-1985 13:05:35

VAX 11 B1:00 16 V4.1-582  
DISK#USER2:([MARSHALL.DEQNA]ZQNA3.BLI;4 (32)

001000	020227	000005		CMP	R2,#5	; INDEX,*		
001004	003760			BLE	11#			
001006	012716	140000		MOV	#-40000,(SP)		3334	
001012	012746	000400		MOV	#400,-(SP)			
001016	004737	000000G		JSR	PC,CHK.XMIT.STATUS			
001022	012716	140000		MOV	#-40000,(SP)		3335	
001026	012746	020000		MOV	#20000,-(SP)			
001032	004737	000000G		JSR	PC,CHK.RCV.STATUS			
001036	005001			CLR	R1	; INDEX	3337	
001040	126161	000000G	000000G	12#:	CMPB	XMIT.BUFFER(R1),RCV.BUFFER(R1)	; *(INDEX),*(INDEX)	3338
001046	001447			BEQ	13#			
001050	013700	000000G		MOV	REG.ADR,R0		3341	
001054	016066	000016	000016	MOV	16(R0),16(SP)	; *,TMP.LOCATION		
001062	016637	000016	000000G	MOV	16(SP),CSR.WORD	; TMP.LOCATION,*		
001070	012716	000000G		MOV	#MSG59,(SP)		3342	
001074	012746	000001		MOV	#1,-(SP)			
001100	010600			MOV	SP,R0	; SP,*		
001102	104414			TRAP	14			
001104	012716	000000G		MOV	#MSG51,(SP)		3343	
001110	012746	000001		MOV	#1,-(SP)			
001114	010600			MOV	SP,R0	; SP,*		
001116	104414			TRAP	14			
001120	010116			MOV	R1,(SP)	; INDEX,*	3344	
001122	005046			CLR	-(SP)			
001124	116116	000000G		MOVB	XMIT.BUFFER(R1),(SP)	; *(INDEX),*		
001130	005046			CLR	-(SP)			
001132	116116	000000G		MOVB	RCV.BUFFER(R1),(SP)	; *(INDEX),*		
001136	012746	000000G		MOV	#MSG50,-(SP)			
001142	012746	000004		MOV	#4,-(SP)			
001146	010600			MOV	SP,R0	; SP,*		
001150	104414			TRAP	14			
001152	104455			TRAP	55		3345	
001154	002427			.WORD	2427			
001156	000000G			.WORD	MSG00			
001160	000000G			.WORD	ERROR#REPORT			
001162	062706	000014		ADD	#14,SP		3340	
001166	005201		13#:	INC	R1	; INDEX	3337	
001170	020127	000577		CMP	R1,#577	; INDEX,*		
001174	003721			BLE	12#			
001176	062706	000010		ADD	#10,SP		3266	
001202	104467			TRAP	67		3346	
001204	006000			ROR	R0			
001206	103002			BHIS	14#			
001210	000137	012464'		JMP	4#			
001214	062706	000010	14#:	ADD	#10,SP		3204	
001220	000207			RTS	PC			

; Routine Size: 329 words, Routine Base: AB#CODE# + 12300  
; Maximum stack depth per invocation: 20 words

ZQNA3  
V01.0

CZQNA0 DEQNA FUNCTIONAL TEST  
TEST 13 - MULTIPLE AND CHAINED PACKET TEST

14-Mar-1985 13:11:16  
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SEQ 0171  
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VAX-11 Bliss-16 V4.1 582  
DISK\$USER2:[MARSHALL.DEQNA]ZQNA3.BLI;4 (32)

```

      .SBTTL  T13 TEST 13 - MULTIPLE AND CHAINED PACKET TEST
000000 004737 012300'      T13::
000000      1$:      JSR      PC,$T13
000004 104466      TRAP     66
000006 006000      ROR      R0
000010 103773      BLO      1$
000012 000207      RTS      PC

```

3347

```

; Routine Size: 6 words,      Routine Base: AB$CODE$ + 13522
; Maximum stack depth per invocation: 2 words

```

; 3350 1

ZQNA3  
V01.0CZQNA0 DEQNA FUNCTIONAL TEST  
TEST 14 - DMA TIMING TEST14-Mar-1985 13:11:16  
14-Mar-1985 13:05:35VAX-11 Bliss-16 V4.1-582  
DISK\$USER2:[MARSHALL.DEQNA]ZQNA3.BLI;4 (33)  
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```

: 3351 1 #SBTTL 'TEST 14 - DMA TIMING TEST'
: 3352 1 !**
: 3353 1 !
: 3354 1 ! TEST 14:      DMA TIMING TEST
: 3355 1 !
: 3356 1 ! DESCRIPTION:
: 3357 1 !
: 3358 1 !     This test verifies that the DMA transfer completes within 'X' msec.
: 3359 1 !     Chained and linked 1514 byte loopback packet is used to accomplish
: 3360 1 !     this test. If the operator specifies loop on error, the program
: 3361 1 !     re-executes the code that detected the error until tC is entered.
: 3362 1 !
: 3363 1 !     NOTE: An answer to the following software question
: 3364 1 !
: 3365 1 !           SYSTEM HAS BLOCK MODE MEMORY (L)?
: 3366 1 !
: 3367 1 !           determines the value for 'X'.
: 3368 1 !
: 3369 1 !     Hardware tested:  Internal/Extended loopback
: 3370 1 !                       Transmit status - last descriptor in chain (bit 15)
: 3371 1 !                       Receive  status - last descriptor in chain (bit 15)
: 3372 1 !                       - error summary (bit 14)
: 3373 1 !
: 3374 1 !     Processing:
: 3375 1 !           BEGIN
: 3376 1 !             reset device
: 3377 1 !             select internal/extended loopback mode
: 3378 1 !             set the timeout timer to 'X' msec
: 3379 1 !             transmit chained loopback packet
: 3380 1 !             start the timer
: 3381 1 !             IF timeout
: 3382 1 !             THEN
: 3383 1 !               print error message if not inhibited
: 3384 1 !             ENDIF
: 3385 1 !             check for expected loopback status
: 3386 1 !             IF error
: 3387 1 !             THEN
: 3388 1 !               print error message if not inhibited
: 3389 1 !             ENDIF
: 3390 1 !             call compare_packets
: 3391 1 !           END
: 3392 1 ! --

```

ZQNA3  
V01.0CZQNA0 DEQNA FUNCTIONAL TEST  
TEST 14 - DMA TIMING TEST14-Mar-1985 13:11:16  
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DISK#USER2:[MARSHALL.DEQNA]ZQNA3.BLI;4 (34)  
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```

: 3393 3  BGNTST;
: 3394 3
: 3395 3  RBUF_LENGTH = LEGAL_LENGTH;
: 3396 3  XBUF_LENGTH = - ( .RBUF_LENGTH + -1 );
: 3397 3  INCR INDEX FROM 0 TO LEGAL_LENGTH - 1 DO
: 3398 3    XMIT_BUFFER [ .INDEX ] = .INDEX;
: 3399 3
: 3400 5  BGNSUB;
: 3401 5    RESET DEQNA ( );
: 3402 5    INCR INDEX FROM 0 TO 63 DO
: 3403 5      RCV_D_LIST [ .INDEX, W_LEN ] = .RD13 [ .INDEX ];
: 3404 5    INCR INDEX FROM 0 TO 31 DO
: 3405 5      XMIT_D_LIST [ .INDEX, W_LEN ] = .TD13 [ .INDEX ];
: 3406 5
: 3407 5    TEMP5 = .XMIT_D_LIST [ 27, W_LEN ];
: 3408 5    TEMP6 = .RCV_D_LIST [ 51, W_LEN ];
: 3409 5    TEMP7 = .RCV_D_LIST [ 56, W_LEN ];
: 3410 5
: 3411 5    XMIT_D_LIST [ 27, W_LEN ] = -628;
: 3412 5    RCV_D_LIST [ 51, W_LEN ] = -625;
: 3413 5    RCV_D_LIST [ 56, W_LEN ] = RCV_BUFFER + LEGAL_LENGTH - 2;
: 3414 5
: 3415 5    PUT_BIT [ CSR, LB, INX_LOOPBACK ];
: 3416 5    XMIT_AND_RCV_PACKET ( );
: 3417 5
: 3418 5    CHK_RIXI_STATUS ( ONE );
: 3419 5
: 3420 5    IF .SWP_BLOCK_MEM EQLU ONE
: 3421 5      THEN
: 3422 5        TEMP4 = #0'367'           ! ADDED 25# TO "305" TO GET "367". FIX FOR $$$
: 3423 5      ELSE                       ! CHANGE FROM 15 MHZ TO 18 MHZ CPU, BY HLM. $$$
: 3424 5        TEMP4 = 4 * #0'367';   ! $$$
: 3425 5
: 3426 5    IF .TEMP1 GTRU .TEMP4
: 3427 5      THEN
: 3428 5        BEGIN
: 3429 5          CSR_WORD = GET_BIT ( CSR_ALL );
: 3430 5          PRINTB ( MSG59 );
: 3431 5          PRINTB ( MSG52 );
: 3432 5          ERRDF ( 1401, MSG00, ERROR$REPORT );
: 3433 5        END;
: 3434 5
: 3435 5    CHK_CSR_STATUS ( CSR_STATUS, CSR_MASK );    ! 0'100220', 0'100220'
: 3436 5
: 3437 5    XMIT_D_LIST [ 27, W_LEN ] = .TEMP5;
: 3438 5    RCV_D_LIST [ 51, W_LEN ] = .TEMP6;
: 3439 5    RCV_D_LIST [ 56, W_LEN ] = .TEMP7;
: 3440 5
: 3441 5    !++
: 3442 5    ! CHECK IF TRANSMIT BUFFER DESCRIPTOR LISTS PROPERLY VOLIDATED
: 3443 5    !--
: 3444 5    INCR INDEX FROM 0 TO 23 DO
: 3445 5      IF .XMIT_D_LIST [ .INDEX, W_LEN ] NEQU .TD13 [ .INDEX ]

```

ZQNA3  
V01.0CZQNADO DEQNA FUNCTIONAL TEST  
TEST 14 - DMA TIMING TEST14-Mar-1985 13:11:16  
14-Mar-1985 13:05:35VAX-11 Bliss-16 V4.1-582  
DISK\$USER2:[MARSHALL.DEQNA]ZQNA3.BLI;4 (34)

```

: 3446 5      AND ( .XMIT_D_LIST [ .INDEX, W_LEN ] AND #0'140000' ) NEQU #0'140000'
: 3447 5      THEN
: 3448 6          BEGIN
: 3449 6              CSR_WORD = GET_BIT ( CSR_ALL );
: 3450 6              PRINTB ( MSG59 );
: 3451 6              PRINTB ( MSG49 );
: 3452 6              PRINTB ( MSG50, .XMIT_D_LIST [ .INDEX, W_LEN ], .TD13 [ .INDEX ], .INDEX );
: 3453 6              ERRDF ( 1402, MSG00, ERROR$REPORT );
: 3454 5          END;
: 3455 5
: 3456 5      !**
: 3457 5      ! CHECK IF RECEIVE BUFFER DESCRIPTOR LISTS PROPERLY VOLIDATED
: 3458 5      !--
: 3459 5      INCR INDEX FROM 0 TO 53 DO
: 3460 5          IF .RCV_D_LIST [ .INDEX, W_LEN ] NEQU .RD13 [ .INDEX ]
: 3461 5              AND ( .RCV_D_LIST [ .INDEX, W_LEN ] AND #0'140000' ) NEQU #0'140000'
: 3462 5              THEN
: 3463 6                  BEGIN
: 3464 6                      CSR_WORD = GET_BIT ( CSR_ALL );
: 3465 6                      PRINTB ( MSG59 );
: 3466 6                      PRINTB ( MSG48 );
: 3467 6                      PRINTB ( MSG50, .RCV_D_LIST [ .INDEX, W_LEN ], .RD13 [ .INDEX ], .INDEX );
: 3468 6                      ERRDF ( 1403, MSG00, ERROR$REPORT );
: 3469 5                  END;
: 3470 5
: 3471 5      INCR INDEX FROM 0 TO 5 DO
: 3472 6          BEGIN
: 3473 6              TEMP1 = .INDEX + 24;
: 3474 6              TEMP2 = .INDEX + 54;
: 3475 6              XMIT_D_LIST [ .INDEX, W_LEN ] = .XMIT_D_LIST [ .TEMP1, W_LEN ];
: 3476 6              RCV_D_LIST [ .INDEX, W_LEN ] = .RCV_D_LIST [ .TEMP2, W_LEN ];
: 3477 5          END;
: 3478 5
: 3479 5      RBUF_LENGTH = 1514;
: 3480 5      CHK_XMIT_STATUS ( XFLG_STATUS, XWD12_STATUS ); ! 0'140000', 0'000400'
: 3481 5      CHK_RCV_STATUS ( RFLG_STATUS, RWD1_STATUS ); ! 0'140000', 0'020000'
: 3482 5
: 3483 5      INCR INDEX FROM 0 TO LEGAL_LENGTH - 1 DO
: 3484 5          IF .XMIT_BUFFER [ .INDEX ] NEQU .RCV_BUFFER [ .INDEX ]
: 3485 5              THEN
: 3486 6              BEGIN
: 3487 6                  CSR_WORD = GET_BIT ( CSR_ALL );
: 3488 6                  PRINTB ( MSG59 );
: 3489 6                  PRINTB ( MSG51 );
: 3490 6                  PRINTB ( MSG50, .RCV_BUFFER [ .INDEX ], .XMIT_BUFFER [ .INDEX ], .INDEX );
: 3491 6                  ERRDF ( 1404, MSG00, ERROR$REPORT );
: 3492 5              END;
: 3493 3      ENDSUB;
: 3494 3
: 3495 1      ENDTST;

```

.SBTTL \$T14 TEST 14 - DMA TIMING TEST



ZQNA3  
V01.0CZQNA0 DEQNA FUNCTIONAL TEST  
TEST 14 - DMA TIMING TEST14-Mar-1985 13:11:16  
14-Mar-1985 13:05:35VAX-11 Bliss-16 V4.1-582  
DISK#USER2:[MARSHALL.DEQNA]ZQNA3.BLI;4 (34)  
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000000	004137	000000G		\$T14:	JSR	R1,\$SAVE2	:		3349
000004	162706	000010			SUB	#10,SP	:		
000010	012737	002752	000000G		MOV	#2752,RBUF.LENGTH	:		3395
000016	012700	002752			MOV	#2752,R0	:		3396
000022	006200				ASR	R0	:		
000024	005400				NEG	R0	:		
000026	010037	000000G			MOV	R0,XBUF.LENGTH	:		
000032	005000				CLR	R0	:	INDEX	3397
000034	110060	000000G		1\$:	MOVB	R0,XMIT.BUFFER(R0)	:	INDEX,*(INDEX)	3398
000040	005200				INC	R0	:	INDEX	3397
000042	020027	002751			CMP	R0,#2751	:	INDEX,*	
000046	003772				BLE	1\$	:		
000050	104402			2\$:	TRAP	2	:		3398
000052	004737	000000G			JSR	PC,RESET.DEQNA	:		3401
000056	005000				CLR	R0	:	INDEX	3402
000060	016060	000000G	000000G	3\$:	MOV	RD13(R0),RCV.D.LIST(R0)	:	*(INDEX),*(INDEX)	3403
000066	062700	000002			ADD	#2,R0	:	*,INDEX	3402
000072	020027	000176			CMP	R0,#176	:	INDEX,*	
000076	003770				BLE	3\$	:		
000100	005000				CLR	R0	:	INDEX	3404
000102	016060	000000G	000000G	4\$:	MOV	TD13(R0),XMIT.D.LIST(R0)	:	*(INDEX),*(INDEX)	3405
000110	062700	000002			ADD	#2,R0	:	*,INDEX	3404
000114	020027	000076			CMP	R0,#76	:	INDEX,*	
000120	003770				BLE	4\$	:		
000122	013737	000066G	000000G		MOV	XMIT.D.LIST+66,TEMP5	:		3407
000130	013737	000146G	000000G		MOV	RCV.D.LIST+146,TEMP6	:		3408
000136	013737	000160G	000000G		MOV	RCV.D.LIST+160,TEMP7	:		3409
000144	012737	176614	000066G		MOV	#-1164,XMIT.D.LIST+66	:		3411
000152	012737	176617	000146G		MOV	#-1161,RCV.D.LIST+146	:		3412
000160	012737	002750G	000160G		MOV	#RCV.BUFFER+2750,RCV.D.LIST+160	:		3413
000166	013700	000000G			MOV	REG.ADR,R0	:		3415
000172	042760	001400	000016		BIC	#1400,16(R0)	:		
000200	052760	001000	000016		BIS	#1000,16(R0)	:		
000206	004737	000000G			JSR	PC,XMIT.AND.RCV.PACKET	:		3416
000212	012746	000001			MOV	#1,-(SP)	:		3418
000216	004737	000000G			JSR	PC,CHK.RIXI.STATUS	:		
000222	023727	000000G	000001		CMP	SWP.BLOCK.MEM,#1	:		3420
000230	001004				BNE	5\$	:		
000232	012737	000367	000000G		MOV	#367,TEMP4	:		3422
000240	000403				BR	6\$	:		3420
000242	012737	001734	000000G	5\$:	MOV	#1734,TEMP4	:		3424
000250	023737	000000G	000000G	6\$:	CMP	TEMP1,TEMP4	:		3426
000256	101431				BLOS	7\$	:		
000260	013700	000000G			MOV	REG.ADR,R0	:		3429
000264	016066	000016	000002		MOV	16(R0),2(SP)	:	*,TMP.LOCATION	
000272	016637	000002	000000G		MOV	2(SP),CSR.WORD	:	TMP.LOCATION,*	
000300	012716	000000G			MOV	#MSG59,(SP)	:		3430
000304	012746	000001			MOV	#1,-(SP)	:		
000310	010600				MOV	SP,R0	:	SP,*	
000312	104414				TRAP	14	:		
000314	012716	000000G			MOV	#MSG52,(SP)	:		3431
000320	012746	000001			MOV	#1,-(SP)	:		
000324	010600				MOV	SP,R0	:	SP,*	

ZQNA3 V01.0	CZQNADO DEQNA FUNCTIONAL TEST TEST 14 - DMA TIMING TEST	14-Mar-1985 13:11:16 14-Mar-1985 13:05:35	VAX-11 Bliss-16 V4.1 582 DISK#USER2:[MARSHALL.DEQNA]ZQNA3.BLI;4	(34)	
000326	104414		TRAP	14	
000330	104455		TRAP	55	
000332	002571		.WORD	2571	3432
000334	000000G		.WORD	MSG00	
000336	000000G		.WORD	ERROR\$REPORT	
000340	022626		CMP	(SP)+,(SP)+	3428
000342	012716	100220	7\$: MOV	#-77560,(SP)	3435
000346	011646		MOV	(SP),-(SP)	
000350	004737	000000G	JSR	PC,CHK.CSR.STATUS	
000354	013737	000000G 000066G	MOV	TEMP5,XMIT.D.LIST+66	3437
000362	013737	000000G 000146G	MOV	TEMP6,RCV.D.LIST+146	3438
000370	013737	000000G 000160G	MOV	TEMP7,RCV.D.LIST+160	3439
000376	005002		CLR	R2	3444
000400	010201		8\$: MOV	R2,R1	3445
000402	006301		ASL	R1	
000404	026161	000000G 000000G	CMP	XMIT.D.LIST(R1),TD13(R1)	
000412	001454		BEQ	9\$	
000414	016100	000000G	MOV	XMIT.D.LIST(R1),R0	3446
000420	042700	037777	BIC	#37777,R0	
000424	020027	140000	CMP	R0,#-40000	
000430	001445		BEQ	9\$	
000432	013700	000000G	MOV	REG.ADR,R0	3449
000436	016066	000016 000006	MOV	16(R0),6(SP)	
000444	016637	000006 000000G	MOV	6(SP),CSR.WORD	
000452	012716	000000G	MOV	#MSG59,(SP)	3450
000456	012746	000001	MOV	#1,-(SP)	
000462	010600		MOV	SP,R0	3451
000464	104414		TRAP	14	
000466	012716	000000G	MOV	#MSG49,(SP)	
000472	012746	000001	MOV	#1,-(SP)	
000476	010600		MOV	SP,R0	3452
000500	104414		TRAP	14	
000502	010216		MOV	R2,(SP)	
000504	016146	000000G	MOV	TD13(R1),-(SP)	
000510	016146	000000G	MOV	XMIT.D.LIST(R1),-(SP)	
000514	012746	000000G	MOV	#MSG50,-(SP)	
000520	012746	000004	MOV	#4,-(SP)	
000524	010600		MOV	SP,R0	3453
000526	104414		TRAP	14	
000530	104455		TRAP	55	
000532	002572		.WORD	2572	
000534	000000G		.WORD	MSG00	
000536	000000G		.WORD	ERROR\$REPORT	
000540	062706	000014	9\$: ADD	#14,SP	3448
000544	005202		INC	R2	3444
000546	020227	000027	CMP	R2,#27	
000552	003712		BLE	8\$	
000554	005002		CLR	R2	3459
000556	010201		10\$: MOV	R2,R1	3460
000560	006301		ASL	R1	
000562	026161	000000G 000000G	CMP	RCV.D.LIST(R1),RD13(R1)	
000570	001454		BEQ	11\$	
000572	016100	000000G	MOV	RCV.D.LIST(R1),R0	3461

ZQNA3  
V01.0

CZQNA0 DEQNA FUNCTIONAL TEST  
TEST 14 - DMA TIMING TEST

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VAX-11 Bliss-16 V4.1 582  
DISK#USER2:[MARSHALL.DEQNA]ZQNA3.BLI;4 (34)

000576	042700	037777		BIC	#37777,R0		
000602	020027	140000		CMP	R0,#-40000		
000606	001445			BEQ	11\$		
000610	013700	000000G		MOV	REG.ADR,R0		3464
000614	016066	000016	000010	MOV	16(R0),10(SP)	; *,TMP.LOCATION	
000622	016637	000010	000000G	MOV	10(SP),CSR.WORD	; TMP.LOCATION,*	
000630	012716	000000G		MOV	#MSG59,(SP)		3465
000634	012746	000001		MOV	#1,-(SP)		
000640	010600			MOV	SP,R0	; SP,*	
000642	104414			TRAP	14		
000644	012716	000000G		MOV	#MSG48,(SP)		3466
000650	012746	000001		MOV	#1,-(SP)		
000654	010600			MOV	SP,R0	; SP,*	
000656	104414			TRAP	14		
000660	010216			MOV	R2,(SP)	; INDEX,*	3467
000662	016146	000000G		MOV	RD13(R1),-(SP)		
000666	016146	000000G		MOV	RCV.D.LIST(R1),-(SP)		
000672	012746	000000G		MOV	#MSG50,-(SP)		
000676	012746	000004		MOV	#4,-(SP)		
000702	010600			MOV	SP,R0	; SP,*	
000704	104414			TRAP	14		
000706	104455			TRAP	55		3468
000710	002573			.WORD	2573		
000712	000000G			.WORD	MSG00		
000714	000000G			.WORD	ERROR#REPORT		
000716	062706	000014		ADD	#14,SP		3463
000722	005202		11\$:	INC	R2	; INDEX	3459
000724	020227	000065		CMP	R2,#65	; INDEX,*	
000730	003712			BLE	10\$		
000732	005002			CLR	R2	; INDEX	3471
000734	010237	000000G		MOV	R2,TEMP1	; INDEX,*	3473
000740	062737	000030	000000G	ADD	#30,TEMP1		
000746	010237	000000G		MOV	R2,TEMP2	; INDEX,*	3474
000752	062737	000066	000000G	ADD	#66,TEMP2		
000760	010200			MOV	R2,R0	; INDEX,*	3475
000762	006300			ASL	R0		
000764	013701	000000G		MOV	TEMP1,R1		
000770	006301			ASL	R1		
000772	016160	000000G	000000G	MOV	XMIT.D.LIST(R1),XMIT.D.LIST(R0)		
001000	013701	000000G		MOV	TEMP2,R1		3476
001004	006301			ASL	R1		
001006	016160	000000G	000000G	MOV	RCV.D.LIST(R1),RCV.D.LIST(R0)		
001014	005202			INC	R2	; INDEX	3471
001016	020227	000005		CMP	R2,#5	; INDEX,*	
001022	003744			BLE	12\$		
001024	012737	002752	000000G	MOV	#2752,RBUF.LENGTH		3479
001032	012716	140000		MOV	#-40000,(SP)		3480
001036	012746	000400		MOV	#400,-(SP)		
001042	004737	000000G		JSR	PC,CHK.XMIT.STATUS		
001046	012716	140000		MOV	#-40000,(SP)		3481
001052	012746	020000		MOV	#20000,-(SP)		
001056	004737	000000G		JSR	PC,CHK.RCV.STATUS		
001062	005001			CLR	R1	; INDEX	3483

ZQNA3  
V01.0

CZQNA0 DEQNA FUNCTIONAL TEST  
TEST 14 - DMA TIMING TEST

14-Mar-1985 13:11:16  
14-Mar-1985 13:05:35

VAX-11 Bliss-16 V4.1-582  
DISK#USER2:[MARSHALL.DEQNA]ZQNA3.BLI;4

```

001064 126161 000000G 000000G      13$:  CMPB  XMIT.BUFFER(R1),RCV.BUFFER(R1) ; *(INDEX),*(INDEX)      3484
001072 001447                                BEQ  14$
001074 013700 000000G                                MOV  REG.ADR,R0 ;
001100 016066 000016 000016                                MOV  16(R0),16(SP) ; *,TMP.LOCATION      3487
001106 016637 000016 000000G                                MOV  16(SP),CSR.WORD ; TMP.LOCATION,*
001114 012716 000000G                                MOV  #MSG59,(SP) ;
001120 012746 000001                                MOV  #1,-(SP) ;
001124 010600                                MOV  SP,R0 ; SP,*
001126 104414                                TRAP 14
001130 012716 000000G                                MOV  #MSG51,(SP) ;
001134 012746 000001                                MOV  #1,-(SP) ;
001140 010600                                MOV  SP,R0 ; SP,*
001142 104414                                TRAP 14
001144 010116                                MOV  R1,(SP) ; INDEX,*      3490
001146 005046                                CLR  -(SP)
001150 116116 000000G                                MOVB XMIT.BUFFER(R1),(SP) ; *(INDEX),*
001154 005046                                CLR  -(SP)
001156 116116 000000G                                MOVB RCV.BUFFER(R1),(SP) ; *(INDEX),*
001162 012746 000000G                                MOV  #MSG50,-(SP)
001166 012746 000004                                MOV  #4,-(SP)
001172 010600                                MOV  SP,R0 ; SP,*
001174 104414                                TRAP 14
001176 104455                                TRAP 55 ;
001200 002574                                .WORD 2574
001202 000000G                                .WORD MSG00
001204 000000G                                .WORD ERROR$REPORT
001206 062706 000014                                ADD  #14,SP ;
001212 005201      14$:  INC  R1 ; INDEX      3483
001214 020127 002751                                CMP  R1,#2751 ; INDEX,*
001220 003721                                BLE  13$
001222 062706 000010                                ADD  #10,SP ;
001226 104467                                TRAP 67 ;
001230 006000                                ROR  R0 ;
001232 103002                                BHIS 15$
001234 000137 013606'                                JMP  2$
001240 062706 000010      15$:  ADD  #10,SP ;
001244 000207                                RTS  PC ;

```

; Routine Size: 339 words, Routine Base: AB\$CODE\$ + 13536  
; Maximum stack depth per invocation: 19 words

```

000000 004737 013536'      T14::
000000      1$:  JSR  PC,#T14 ;
000004 104466                                TRAP 66
000006 006000                                ROR  R0
000010 103773                                BLO  1$
000012 000207                                RTS  PC

```

; Routine Size: 6 words, Routine Base: AB\$CODE\$ + 15004

K14

ZQNA3  
V01.0

CZQNA30 DEQNA FUNCTIONAL TEST  
TEST 14 - DMA TIMING TEST

14-Mar-1985 13:11:16  
14-Mar-1985 13:05:35

SEQ 0179  
Page 96  
VAX-11 Bliss-16 V4.1-582  
DISK\$USER2:[MARSHALL.DEQNA]ZQNA3.BLI;4 (34)

; Maximum stack depth per invocation: 2 words

; 3496 1

ZQNA3  
V01.0CZQNA0 DEQNA FUNCTIONAL TEST  
TEST 15 - LONG PACKET TEST14-Mar-1985 13:11:16  
14-Mar-1985 13:05:35VAX-11 Bliss-16 V4.1-582  
DISK#USER2:(MARSHALL.DEQNA)ZQNA3.BLI:4 (35)

SEQ 0180

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```

: 3497 1 *SBTTL 'TEST 15 - LONG PACKET TEST'
: 3498 1 : **
: 3499 1 :
: 3500 1 : TEST 15: LONG PACKET TEST
: 3501 1 :
: 3502 1 : DESCRIPTION:
: 3503 1 :
: 3504 1 : This test verifies that DEQNA can detect long packets ( 1600 bytes
: 3505 1 : or more with the CRC ) when transmitted in internal/extended
: 3506 1 : loopback mode. If the operator specifies loop on error, the
: 3507 1 : program re-executes the code that detected the error until ^C is
: 3508 1 : entered.
: 3509 1 :
: 3510 1 : Hardware tested: RCV Status - error summary (long packet-bit 14)
: 3511 1 :
: 3512 1 : Processing:
: 3513 1 :
: 3514 1 : BEGIN
: 3515 1 : reset device
: 3516 1 : select internal/extended loopback mode
: 3517 1 : transmit loopback packet (legal packet length)
: 3518 1 : check for expected loopback status
: 3519 1 : IF error
: 3520 1 : THEN
: 3521 1 : print error message if not inhibited
: 3522 1 : ENDIF
: 3523 1 : call compere_packets
: 3524 1 : transmit loopback packet ( packet length > legal max. )
: 3525 1 : IF Error Summary bit ( Receice Status Word 1, bit 14 ) = 1
: 3526 1 : AND ( receive packet length is truncated )
: 3527 1 : THEN
: 3528 1 : print error message if not inhibited
: 3529 1 : ENDIF
: 3530 1 : END
: 3531 1 :--

```

```

; 3532 3  BGNTST;
; 3533 3
; 3534 3  !..
; 3535 3  ! LOOPBACK 1534 BYTE PACKET AND THEN CHECK IF PROPERLY RECEIVED.
; 3536 3  ! THIS IS THE LONGEST PACKET LENGTH WHICH DOESN'T SET 'LONGP' BIT IN
; 3537 3  ! THE RECEIVE STATUS WORD 1 ( BIT 14 ).
; 3538 3  !..
; 3539 3
; 3540 3  RBUF_LENGTH = 1534;
; 3541 3  XBUF_LENGTH = - ( .RBUF_LENGTH + -1 );
; 3542 3
; 3543 5  BGNSUB;
; 3544 5  RESET_DEQNA ( );
; 3545 5  SET_RDESCR_LIST ( .XBUF_LENGTH, VE );
; 3546 5  SET_XDESCR_LIST ( .XBUF_LENGTH, VE );
; 3547 5  SEND_ELOOP_PACKET ( ZERO );
; 3548 5  COMPARE_PACKETS ( );
; 3549 3  ENDSUB;
; 3550 3
; 3551 3  !..
; 3552 3  ! LOOPBACK 1536 BYTE PACKET AND THEN CHECK IF BITS 13 AND 14 ARE SET IN
; 3553 3  !..
; 3554 3
; 3555 3
; 3556 3  RBUF_LENGTH = 1536;
; 3557 3  XBUF_LENGTH = - ( .RBUF_LENGTH + -1 );
; 3558 3
; 3559 5  BGNSUB;
; 3560 5  RESET_DEQNA ( );
; 3561 5  SET_RDESCR_LIST ( .XBUF_LENGTH, VE );
; 3562 5  SET_XDESCR_LIST ( .XBUF_LENGTH, VE );
; 3563 5  SEND_ELOOP_PACKET ( ONE );
; 3564 5  COMPARE_PACKETS ( );
; 3565 3  ENDSUB;
; 3566 3
; 3567 1  ENDTST;

```

```

000000 012737 002776 000000G      $T15:  .SBTTL  $T15 TEST 15 - LONG PACKET TEST
000006 012700 002776              MOV     #2776,RBUF.LENGTH      ; 3540
000012 006200              ASR     R0                      ; 3541
000014 005400              NEG     R0
000016 010037 000000G      MOV     R0,XBUF.LENGTH
000022 104402              1$:   TRAP    2
000024 004737 000000G      JSR     PC,RESET.DEQNA          ; 3544
000030 013746 000000G      MOV     XBUF.LENGTH,-(SP)      ; 3545
000034 012746 120000          MOV     #-60000,-(SP)
000040 004737 000000G      JSR     PC,SET.RDESCR.LIST
000044 013716 000000G      MOV     XBUF.LENGTH,(SP)      ; 3546
000050 012746 120000          MOV     #-60000,-(SP)
000054 004737 000000G      JSR     PC,SET.XDESCR.LIST
000060 005016              CLR     (SP)                   ; 3547

```

ZQNA3  
V01.0

CZQNA0 DEQNA FUNCTIONAL TEST  
TEST 15 - LONG PACKET TEST

14-Mar-1985 13:11:16  
14-Mar-1985 13:05:35

SEQ 0182  
Page 99  
VAX-11 Bliss-16 V4.1-582  
DISK#USER2:[MARSHALL.DEQNA]ZQNA3.BLI;4 (36)

000062	004737	000000G		JSR	PC,SEND.ELOOP.PACKET		
000066	004737	000000G		JSR	PC,COMPARE.PACKETS	:	3548
000072	062706	000006		ADD	#6,SP	:	3541
000075	104467			TRAP	67	:	3548
000100	006000			ROR	RO		
000102	103747			BLO	1#		
000104	012737	003000	000000G	MOV	#3000,RBUF.LENGTH	:	3556
000112	01270C	003000		MOV	#3000,RO	:	3557
000116	006200			ASR	RO		
000120	005400			NEG	RO		
000122	010037	000000G		MOV	RO,XBUF.LENGTH		
000126	104402		2#:	TRAP	2		
000130	004737	000000G		JSR	PC,RESET.DEQNA	:	3560
000134	013746	000000G		MOV	XBUF.LENGTH,-(SP)	:	3561
000140	012746	120000		MOV	#-60000,-(SP)		
000144	004737	000000G		JSR	PC,SET.RDESCR.LIST		
000150	013716	000000G		MOV	XBUF.LENGTH,(SP)	:	3562
000154	012746	120000		MOV	#-60000,-(SP)		
000160	004737	000000G		JSR	PC,SET.XDESCR.LIST		
000164	012716	000001		MOV	#1,(SP)	:	3563
000170	004737	000000G		JSR	PC,SEND.ELOOP.PACKET		
000174	004737	000000G		JSR	PC,COMPARE.PACKETS	:	3564
000200	062706	000006		ADD	#6,SP	:	3557
000204	104467			TRAP	67	:	3564
000206	006000			ROR	RO		
000210	103746			BLO	2#		
000212	000207			RTS	PC	:	3495

; Routine Size: 70 words, Routine Base: AB#CODE# + 15020  
; Maximum stack depth per invocation: 4 words

				.SBTTL	T15 TEST 15 - LONG PACKET TEST		
000000	004737	015020'	T15::				
000000			1#:	JSR	PC,#T15	:	3565
000004	104466			TRAP	66		
000006	006000			ROR	RO		
000010	103773			BLO	1#		
000012	000207			RTS	PC		

; Routine Size: 6 words, Routine Base: AB#CODE# + 15234  
; Maximum stack depth per invocation: 2 words

; 3568 1  
; 3569 1



ZQNA3  
V01.0CZQNAO DEQNA FUNCTIONAL TEST  
TEST 16 - ODD PACKET TEST14-Mar-1985 13:11:16  
14-Mar-1985 13:05:35VAX-11 B15 16 V4.1-582  
DISK#USER2:[MARSHALL.DEQNA]ZQNA3.BLI:4 (37)

SEQ 0183

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```

: 3570 1  *SBTTL 'TEST 16 - ODD PACKET TEST'
: 3571 1  :..
: 3572 1  :
: 3573 1  : TEST 16:      ODD PACKET TEST
: 3574 1  :
: 3575 1  : DESCRIPTION:
: 3576 1  :
: 3577 1  : This test verifies that DEQNA can transmit and receive odd length
: 3578 1  : packets and packets starting and/or ending on odd addresses. Chained
: 3579 1  : and unchained descriptor lists are used to verify this. If the operator
: 3580 1  : specifies loop on error, the program re-executes the code that detected
: 3581 1  : the error until ^C is entered.
: 3582 1  :
: 3583 1  : Hardware tested:      CSR register - XMIT List Invalid (bit 4)
: 3584 1  :                               - RCV List Invalid (bit 5)
: 3585 1  :                               Transmit Descriptor bits
: 3586 1  :                               - XMIT buffer ends on odd byte
: 3587 1  :                               - XMIT buffer ends on even byte
: 3588 1  :
: 3589 1  : Set of addresses and packet lengths:
: 3590 1  :
: 3591 1  : PACKET ADDRESS      PACKET LENGTH
: 3592 1  : -----
: 3593 1  :
: 3594 1  : odd begin           odd
: 3595 1  : odd begin and end  even
: 3596 1  : odd end             odd
: 3597 1  :
: 3598 1  : Processing:
: 3599 1  :
: 3600 1  : BEGIN
: 3601 1  :   reset device
: 3602 1  :   REPEAT for internal and internal/extended loopback mode
: 3603 1  :     REPEAT for each packet address and length from set
: 3604 1  :       check for expected loopback status
: 3605 1  :       IF error
: 3606 1  :       THEN
: 3607 1  :         print error message if not inhibited
: 3608 1  :       ENDIF
: 3609 1  :       call compare_packets
: 3610 1  :     ENDREPEAT
: 3611 1  :   ENDREPEAT
: 3612 1  : END
: 3613 1  :!..

```

ZQNA3  
V01.0CZQNAO DEQNA FUNCTIONAL TEST  
TEST 16 - ODD PACKET TEST14-Mar-1985 13:11:16  
14-Mar-1985 13:05:35SEQ 0184  
Page 101  
VAX-11 Bliss-16 V4.1 582  
DISK#USER2:[MARSHALL.DEQNA]ZQNA3.BLI;4 (38)

```

: 3614 3  BGNTST;
: 3615 3
: 3616 3  !**
: 3617 3  ! RESET DEQNA AND INITIALIZE ETHERNET STATION ADDRESS RAM
: 3618 3  !--
: 3619 3
: 3620 3  RESET_DEQNA ( );
: 3621 3  PREP_FOR_SETUP ( );
: 3622 3  INCR INDEX1 FROM 1 TO 14 DO
: 3623 3    WRT_STATION_ADR ( .INDEX1, PHA_INDEX );
: 3624 3
: 3625 5  BGNSUB;
: 3626 5    XMIT_SETUP_PACKET ( P_MODE );
: 3627 3  ENDSUB;
: 3628 3
: 3629 3  RBUF_LENGTH = 6;
: 3630 3  XBUF_LENGTH = - ( .RBUF_LENGTH + -1 );
: 3631 3
: 3632 3  !**
: 3633 3  ! LOOPBACK A PACKET, THEN CHECK IF LOOPBACK PACKET WAS PROPERLY
: 3634 3  ! RECEIVED
: 3635 3  !--
: 3636 3
: 3637 3  CLR_BUFFERS ( 32 );
: 3638 3  CLR_DESCR ( );
: 3639 3  INCR INDEX FROM 0 TO 5 DO
: 3640 3    XMIT_BUFFER [ .INDEX ] = .INDEX;
: 3641 3
: 3642 5  BGNSUB;
: 3643 5    INCR INDEX FROM 0 TO 43 DO
: 3644 5      XMIT_D_LIST [ .INDEX, W_LEN ] = .TD16 [ .INDEX ];
: 3645 5      SET_RDSCR_LIST ( .XBUF_LENGTH, VE );
: 3646 5      PUT_BIT [ CSR, LB, INT_LOOPBACK ];
: 3647 5
: 3648 5      XMIT_AND_RCV_PACKET ( );
: 3649 5      CHK_RIXI_STATUS ( ONE );
: 3650 5      .IOP_TABLE [ CSR ] = ONE;
: 3651 5      CHK_RIXI_STATUS ( ZERO );
: 3652 5      .IOP_TABLE [ CSR ] = ZERO;
: 3653 5
: 3654 5      CHK_CSR_STATUS ( CSR_STATUS, CSR_MASK );      ! 0'100220', 0'100220'
: 3655 5
: 3656 5  !**
: 3657 5  ! CHECK IF TRANSMIT BUFFER DESCRIPTOR LISTS PROPERLY VOLIDATED
: 3658 5  !--
: 3659 5
: 3660 5  INCR INDEX FROM 0 TO 17 DO
: 3661 5    IF .XMIT_D_LIST [ .INDEX, W_LEN ] NEQU .TD16 [ .INDEX ]
: 3662 5      AND ( .XMIT_D_LIST [ .INDEX, W_LEN ] AND %0'140000' ) NEQU %C '40000'
: 3663 5      THEN
: 3664 6        BEGIN
: 3665 6          CSR_WORD = GET_BIT ( CSR_ALL );
: 3666 6          PRINTB ( MSG59 );

```

ZQNA3  
VO1.0CZQNA0 DEQNA FUNCTIONAL TEST  
TEST 16 - ODD PACKET TEST14-Mar 1985 13:11:16  
14-Mar-1985 13:05:35VAX-11 Bliss-16 V4.1 582  
DISK\$USER2:[MARSHALL.DEQNA]ZQNA3.BLI;4 (38)SEQ 0185  
Page 102

```

: 3667 6          PRINTB ( MSG49 );
: 3668 6          PRINTB ( MSG50, .XMIT_D_LIST [ .INDEX, W_LEN ], .TD16 [ .INDEX ], .INDEX );
: 3669 6          ERRDF ( 1602, MSG00, ERROR$REPORT );
: 3670 5          END;
: 3671 5
: 3672 5
: 3673 5          INCR INDEX FROM 0 TO 5 DO
: 3674 5              XMIT_D_LIST [ .INDEX, W_LEN ] = .XMIT_D_LIST [ .INDEX + 18, W_LEN ];
: 3675 5
: 3676 5          CHK_XMIT_STATUS ( XFLG_STATUS, XWD12_STATUS ); ! 0'140000', 0'000400'
: 3677 5          CHK_RCV_STATUS ( RFLG_STATUS, RWD13_STATUS ); ! 0'140000', 0'000000'
: 3678 5
: 3679 5          INCR INDEX FROM 0 TO 5 DO
: 3680 5              IF .XMIT_BUFFER [ .INDEX ] NEQU .RCV_BUFFER [ .INDEX ]
: 3681 5                  THEN
: 3682 6                      BEGIN
: 3683 6                          CSR_WORD = GET_BIT ( CSR_ALL );
: 3684 6                          PRINTB ( MSG59 );
: 3685 6                          PRINTB ( MSG51 );
: 3686 6                          PRINTB ( MSG50, .RCV_BUFFER [ .INDEX ], .XMIT_BUFFER [ .INDEX ], .INDEX );
: 3687 6                          ERRDF ( 1603, MSG00, ERROR$REPORT );
: 3688 5                      END;
: 3689 3          ENDSUB;
: 3690 3
: 3691 3          RESET_DEQNA ( );
: 3692 3          CLR_BUFFERS ( 32 );
: 3693 3          RBUF_LENGTH = 16;
: 3694 3          XBUF_LENGTH = - ( .RBUF_LENGTH + -1 );
: 3695 3          INCR INDEX FROM 0 TO 19 DO
: 3696 3              XMIT_BUFFER [ .INDEX ] = .INDEX;
: 3697 3
: 3698 5          BGNSUB;
: 3699 5              INCR INDEX FROM 0 TO 43 DO
: 3700 5                  XMIT_D_LIST [ .INDEX, W_LEN ] = .TD16 [ .INDEX ];
: 3701 5
: 3702 5              XMIT_D_LIST [ 19, W_LEN ] = V;
: 3703 5              XMIT_D_LIST [ 25, W_LEN ] = C;
: 3704 5
: 3705 5              SET_RDESCR_LIST ( .XBUF_LENGTH, VE );
: 3706 5              PUT_BIT [ CSR, LB, INX_LOOPBACK ];
: 3707 5              XMIT_AND_RCV_PACKET ( );
: 3708 5              CHK_RIXI_STATUS ( ZERO );
: 3709 5
: 3710 5              CHK_CSR_STATUS ( CSR_STATUS, CSR_MASK ); ! 0'100220', 0'100220'
: 3711 5
: 3712 5              XMIT_D_LIST [ 19, W_LEN ] = VE;
: 3713 5              XMIT_D_LIST [ 25, W_LEN ] = E;
: 3714 5
: 3715 5              !++
: 3716 5              ! CHECK IF TRANSMIT BUFFER DESCRIPTOR LISTS PROPERLY VOLIDATED
: 3717 5              !--
: 3718 5
: 3719 5          INCR INDEX FROM 0 TO 35 DO

```

ZQNA3  
V01.0CZQNA00 DEQNA FUNCTIONAL TEST  
TEST 16 - ODD PACKET TEST14-Mar-1985 13:11:16  
14-Mar-1985 13:05:35VAX-11 Bliss 16 V4.1-582  
DISK#USER2:[MARSHALL.DEQNA]ZQNA3.BLI;4SEQ 0186  
Page 103  
(38)

```

: 3720 5      IF .XMIT_D_LIST [ .INDEX, W_LEN ] NEQU .TD16 [ .INDEX ]
: 3721 5      AND ( .XMIT_D_LIST [ .INDEX, W_LEN ] AND #0'140000' ) NEQU #0'140000'
: 3722 5      THEN
: 3723 6          BEGIN
: 3724 6              CSR_WORD = GET_BIT ( CSR_ALL );
: 3725 6              PRINTB ( MSG59 );
: 3726 6              PRINTB ( MSG49 );
: 3727 6              PRINTB ( MSG50, .XMIT_D_LIST [ .INDEX, W_LEN ], .TD16 [ .INDEX ], .INDEX );
: 3728 6              ERRDF ( 1604, MSG00, ERROR$REPORT );
: 3729 5          END;
: 3730 5
: 3731 5      INCR INDEX FROM 0 TO 5 DO
: 3732 5          XMIT_D_LIST [ .INDEX, W_LEN ] = .XMIT_D_LIST [ .INDEX + 36, W_LEN ];
: 3733 5
: 3734 5      CHK_XMIT_STATUS ( XFLG_STATUS, XWD12_STATUS ); ! 0'140000', 0'000400'
: 3735 5      CHK_RCV_STATUS ( RFLG_STATUS, RWD1_STATUS ); ! 0'140000', 0'020000'
: 3736 5
: 3737 5
: 3738 5      INCR INDEX FROM 0 TO 5 DO
: 3739 5          IF .XMIT_BUFFER [ .INDEX ] NEQU .RCV_BUFFER [ .INDEX ]
: 3740 5          THEN
: 3741 6              BEGIN
: 3742 6                  CSR_WORD = GET_BIT ( CSR_ALL );
: 3743 6                  PRINTB ( MSG59 );
: 3744 6                  PRINTB ( MSG51 );
: 3745 6                  PRINTB ( MSG50, .RCV_BUFFER [ .INDEX ], .XMIT_BUFFER [ .INDEX ], .INDEX );
: 3746 6                  ERRDF ( 1605, MSG00, ERROR$REPORT );
: 3747 5              END;
: 3748 5
: 3749 5      INCR INDEX FROM 6 TO 9 DO
: 3750 5          IF .RCV_BUFFER [ .INDEX ] NEQU ZERO
: 3751 5          THEN
: 3752 6              BEGIN
: 3753 6                  CSR_WORD = GET_BIT ( CSR_ALL );
: 3754 6                  PRINTB ( MSG59 );
: 3755 6                  PRINTB ( MSG51 );
: 3756 6                  PRINTB ( MSG50, .RCV_BUFFER [ .INDEX ], .XMIT_BUFFER [ .INDEX ], .INDEX );
: 3757 6                  ERRDF ( 1606, MSG00, ERROR$REPORT );
: 3758 5              END;
: 3759 5
: 3760 5      INCR INDEX FROM 0 TO 5 DO
: 3761 5          IF .RCV_BUFFER [ .INDEX + 10 ] NEQU .TARGET1_ADR [ .INDEX + 114 ]
: 3762 5          THEN
: 3763 6              BEGIN
: 3764 6                  CSR_WORD = GET_BIT ( CSR_ALL );
: 3765 6                  PRINTB ( MSG59 );
: 3766 6                  PRINTB ( MSG51 );
: 3767 6                  PRINTB ( MSG50, .RCV_BUFFER [ .INDEX ], .XMIT_BUFFER [ .INDEX ], .INDEX );
: 3768 6                  ERRDF ( 1607, MSG00, ERROR$REPORT );
: 3769 5              END;
: 3770 3      ENDSUB;
: 3771 3
: 3772 1      ENDTST;

```

F15

ZQNA3  
V01.0

CZQNA0 DEQNA FUNCTIONAL TEST  
TEST 16 - ODD PACKET TEST

14-Mar-1985 13:11:16  
14-Mar-1985 13:05:35

SEQ 0187  
Page 104  
VAX-11 Bliss 16 V4.1-582  
DISK\$USER2:[MARSHALL.DEQNA]7QNA3.BLI;4 (38)

000000	004137	000000G		.SBTTL	\$T16 TEST 16 - ODD PACKET TEST		
000004	162706	000014	\$T16:	JSR	R1,\$SAVE2	;	3567
000010	004737	000000G		SUB	#14,SP	;	
000014	004737	000000G		JSR	PC,RESET.DEQNA	;	3620
000020	012701	000001		JSR	PC,PREP.FOR.SETUP	;	3621
000024	010146		1\$:	MOV	#1,R1	; *,INDEX1	3622
000026	012746	000023		MOV	R1,-(SP)	; INDEX1,*	3623
000032	004737	000000G		MOV	#23,-(SP)		
000036	022626			JSR	PC,WRT.STATION.ADR		
000040	005201			CMP	(SP)+,(SP)+		
000042	020127	000016		INC	R1	; INDEX1	3622
000046	003766			CMP	R1,#16	; INDEX1,*	
000050	104402		2\$:	BLE	1\$		
000052	012746	000202		TRAP	2		3623
000056	004737	000000G		MOV	#202,-(SP)		3626
000062	005726			JSR	PC,XMIT.SETUP.PACKET		
000064	104467			TST	(SP)+		3623
000066	006000			TRAP	67		3626
000070	103767			ROR	R0		
000072	012737	000006	000000G	BLO	2\$		
000100	012700	000006		MOV	#6,RBUF.LENGTH		3629
000104	006200			MOV	#6,R0		3630
000106	005400			ASR	R0		
000110	010037	000000G		NEG	R0		
000114	012746	000040		MOV	R0,XBUF.LENGTH		
000120	004737	000000G		MOV	#40,-(SP)		3637
000124	004737	000000G		JSR	PC,CLR.BUFFERS		
000130	005000			JSR	PC,CLR.DESCR		3638
000132	110060	000000G	3\$:	CLR	R0	; INDEX	3639
000136	005200			MOVB	R0,XMIT.BUFFER(R0)	; INDEX,*(INDEX)	3640
000140	020027	000005		INC	R0	; INDEX	3639
000144	003772			CMP	R0,#5	; INDEX,*	
000146	104402		4\$:	BLE	3\$		
000150	005000			TRAP	2		3640
000152	016060	000000G	000000G	5\$:	MOV	R0	; INDEX
000160	062700	000002		MOV	TD16(R0),XMIT.D.LIST(R0)	; *(INDEX),*(INDEX)	3643
000164	020027	000126		ADD	#2,R0	; *,INDEX	3643
000170	003770			CMP	R0,#126	; INDEX,*	
000172	013716	000000G		BLE	5\$		
000176	012746	120000		MOV	XBUF.LENGTH,(SP)		3645
000202	004737	000000G		MOV	#-60000,-(SP)		
000206	013700	000000G		JSR	PC,SET.RDESCR.LIST		
000212	042760	001400	000016	MOV	REG.ADR,R0		3646
000220	004737	000000G		BIC	#1400,16(R0)		
000224	012716	000001		JSR	PC,XMIT.AND.RCV.PACKET		3648
000230	004737	000000G		MOV	#1,(SP)		3649
000234	012777	000001	000016G	JSR	PC,CHK.RIXI.STATUS		
000242	005016			MOV	#1,@IOP.TABLE+16		3650
000244	004737	000000G		CLR	(SP)		3651
000250	005077	000016G		JSR	PC,CHK.RIXI.STATUS		
				CLR	@IOP.TABLE+16		3652

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ZQNA3 V01.0	CZQNADO TEST 16 - ODD PACKET TEST	DEQNA TEST 16 - ODD PACKET TEST	FUNCTIONAL TEST	14-Mar-1985 13:11:16 14-Mar-1985 13:05:35	VAX-11 Bliss-16 V4.1-582 DISK#USER2:[MARSHALL.DEQNA]ZQNA3.BLI;4	3654 3660 3661 3662 3665 3666 3667 3668 3669 3664 3660 3673 3674 3673 3676 3677
000254	012716	100220		MOV	#-77560, (SP)	
000260	011646			MOV	(SP), -(SP)	
000262	004737	000000G		JSR	PC,CHK.CSR.STATUS	
000266	005002			CLR	R2	; INDEX
000270	010201		6\$:	MOV	R2,R1	; INDEX,*
000272	006301			ASL	R1	
000274	026161	000000G	000000G	CMP	XMIT.D.LIST(R1),TD16(R1)	
000302	001454			BEQ	7\$	
000304	016100	000000G		MOV	XMIT.D.LIST(R1),R0	
000310	042700	037777		BIC	#37777,R0	
000314	020027	140000		CMP	R0,#-40000	
000320	001445			BEQ	7\$	
000322	013700	000000G		MOV	REG.ADR,R0	
000326	016066	000016	000006	MOV	16(R0),6(SP)	; *,TMP.LOCATION
000334	016637	000006	000000G	MOV	6(SP),CSR.WORD	; TMP.LOCATION,*
000342	012716	000000G		MOV	#MSG59,(SP)	
000346	012746	000001		MOV	#1, -(SP)	
000352	010600			MOV	SP,R0	; SP,*
000354	104414			TRAP	14	
000356	012716	000000G		MOV	#MSG49,(SP)	
000362	012746	000001		MOV	#1, -(SP)	
000366	010600			MOV	SP,R0	; SP,*
000370	104414			TRAP	14	
000372	010216			MOV	R2,(SP)	; INDEX,*
000374	016146	000000G		MOV	TD16(R1), -(SP)	
000400	016146	000000G		MOV	XMIT.D.LIST(R1), -(SP)	
000404	012746	000000G		MOV	#MSG50, -(SP)	
000410	012746	000004		MOV	#4, -(SP)	
000414	010600			MOV	SP,R0	; SP,*
000416	104414			TRAP	14	
000420	104455			TRAP	55	
000422	003102			.WORD	3102	
000424	000000G			.WORD	MSG00	
000426	000000G			.WORD	ERROR\$REPORT	
000430	062706	000014		ADD	#14,SP	
000434	005202		7\$:	INC	R2	; INDEX
000436	020227	000021		CMP	R2,#21	; INDEX,*
000442	003712			BLE	6\$	
000444	005002			CLR	R2	; INDEX
000446	010201		8\$:	MOV	R2,R1	; INDEX,*
000450	006301			ASL	R1	
000452	010200			MOV	R2,R0	; INDEX,*
000454	006300			ASL	R0	
000456	016061	000044G	000000G	MOV	XMIT.D.LIST+44(R0),XMIT.D.LIST(R1)	
000464	005202			INC	R2	; INDEX
000466	020227	000005		CMP	R2,#5	; INDEX,*
000472	003765			BLE	8\$	
000474	012716	140000		MOV	#-40000,(SP)	
000500	012746	000400		MOV	#400, -(SP)	
000504	004737	000000G		JSR	PC,CHK.XMIT.STATUS	
000510	012716	140000		MOV	#-40000,(SP)	
000514	005046			CLR	-(SP)	
000516	004737	000000G		JSR	PC,CHK.RCV.STATUS	

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CZQNA0 DEQNA FUNCTIONAL TEST  
TEST 16 - ODD PACKET TEST

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SEQ 0189  
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VAX-11 Bliss-16 V4.1-582  
DISK#USER2:[MARSHALL.DEQNA]ZQNA3.BLI;4 (38)

000522	005001				CLR	R1		; INDEX	3679
000524	126161	000000G	000000G	9\$:	CMPB	XMIT.BUFFER(R1),RCV.BUFFER(R1)		; *(INDEX),*(INDEX)	3680
000532	001447				BEQ	10\$			
000534	013700	000000G			MOV	REG.ADR,R0			3683
000540	016066	000016	000014		MOV	16(R0),14(SP)		; *,TMP.LOCATION	
000546	016637	000014	000000G		MOV	14(SP),CSR.WORD		; TMP.LOCATION,*	
000554	012716	000000G			MOV	#MSG59,(SP)			3684
000560	012746	000001			MOV	#1,-(SP)			
000564	010600				MOV	SP,R0		; SP,*	
000566	104414				TRAP	14			
000570	012716	000000G			MOV	#MSG51,(SP)			3685
000574	012746	000001			MOV	#1,-(SP)			
000600	010600				MOV	SP,R0		; SP,*	
000602	104414				TRAP	14			
000604	010116				MOV	R1,(SP)		; INDEX,*	3686
000606	005046				CLR	-(SP)			
000610	116116	000000G			MOVB	XMIT.BUFFER(R1),(SP)		; *(INDEX),*	
000614	005046				CLR	-(SP)			
000616	116116	000000G			MOVB	RCV.BUFFER(R1),(SP)		; *(INDEX),*	
000622	012746	000000G			MOV	#MSG50,-(SP)			
000626	012746	000004			MOV	#4,-(SP)			
000632	010600				MOV	SP,R0		; SP,*	
000634	104414				TRAP	14			
000636	104455				TRAP	55			3687
000640	003103				.WORD	3103			
000642	000000G				.WORD	MSG00			
000644	000000G				.WORD	ERROR#REPORT			
000646	062706	000014			ADD	#14,SP			3682
000652	005201			10\$:	INC	R1		; INDEX	3679
000654	020127	000005			CMP	R1,#5		; INDEX,*	
000660	003721				BLE	9\$			
000662	062706	000010			ADD	#10,SP			3640
000666	104467				TRAP	67			3688
000670	006000				ROR	R0			
000672	103002				BHIS	11\$			
000674	000137	015416'			JMP	4\$			
000700	004737	000000G		11\$:	JSR	PC,RESET.DEQNA			3691
000704	012716	000040			MOV	#40,(SP)			3692
000710	004737	000000G			JSR	PC,CLR.BUFFERS			
000714	012737	000020	000000G		MOV	#20,RBUF.LENGTH			3693
000722	012700	000020			MOV	#20,R0			3694
000726	006200				ASR	R0			
000730	005400				NEG	R0			
000732	010037	000000G			MOV	R0,XBUF.LENGTH			
000736	005000				CLR	R0		; INDEX	3695
000740	110060	000000G		12\$:	MOVB	R0,XMIT.BUFFER(R0)		; INDEX,*(INDEX)	3696
000744	005200				INC	R0		; INDEX	3695
000746	020027	000023			CMP	R0,#23		; INDEX,*	
000752	003772				BLE	12\$			
000754	104402			13\$:	TRAP	2			3696
000756	005000				CLR	R0		; INDEX	3699
000760	016060	000000G	000000G	14\$:	MOV	TD16(R0),XMIT.D.LIST(R0)		; *(INDEX),*(INDEX)	3700
000766	062700	000002			ADD	#2,R0		; *,INDEX	3699

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CZQNA0 DEQNA FUNCTIONAL TEST  
TEST 16 - ODD PACKET TEST

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SEQ 0190  
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VAX-11 Bliss-16 V4.1 582  
DISK\$USER2:[MARSHALL.DEQNA]ZQNA3.BLI;4 (38)

000772	020027	000126		CMP	R0,#126	:	INDEX,*	
000776	003770			BLE	14\$	:		
001000	012737	100000	000046G	MOV	#-100000,XMIT.D.LIST+46	:		3702
001006	012737	040000	000062G	MOV	#40000,XMIT.D.LIST+62	:		3703
001014	013716	000000G		MOV	XBUF.LENGTH,(SP)	:		3705
001020	012746	120000		MOV	#-60000,-(SP)	:		
001024	004737	000000G		JSR	PC,SET.RDESCR.LIST	:		
001030	013700	000000G		MOV	REG.ADR,R0	:		3706
001034	042760	001400	000016	BIC	#1400,16(R0)	:		
001042	052760	001000	000016	BIS	#1000,16(R0)	:		
001050	004737	000000G		JSR	PC,XMIT.AND.RCV.PACKET	:		3707
001054	005016			CLR	(SP)	:		3708
001056	004737	000000G		JSR	PC,CHK.RIXI.STATUS	:		
001062	012716	100220		MOV	#-77560,(SP)	:		3710
001066	011646			MOV	(SP),-(SP)	:		
001070	004737	000000G		JSR	PC,CHK.CSR.STATUS	:		
001074	012737	120000	000046G	MOV	#-60000,XMIT.D.LIST+46	:		3712
001102	012737	020000	000062G	MOV	#20000,XMIT.D.LIST+62	:		3713
001110	005002			CLR	R2	:	INDEX	3719
001112	010201			MOV	R2,R1	:	INDEX,*	3720
001114	006301			ASL	R1	:		
001116	026161	000000G	000000G	CMP	XMIT.D.LIST(R1),TD16(R1)	:		
001124	001454			BEQ	16\$	:		
001126	016100	000000G		MOV	XMIT.D.LIST(R1),R0	:		3721
001132	042700	037777		BIC	#37777,R0	:		
001136	020027	140000		CMP	R0,#-40000	:		
001142	001445			BEQ	16\$	:		
001144	013700	000000G		MOV	REG.ADR,R0	:		3724
001150	016066	000016	000012	MOV	16(R0),12(SP)	:	*,TMP.LOCATION	
001156	016637	000012	000000G	MOV	12(SP),CSR.WORD	:	TMP.LOCATION,*	
001164	012716	000000G		MOV	#MSG59,(SP)	:		3725
001170	012746	000001		MOV	#1,-(SP)	:		
001174	010600			MOV	SP,R0	:	SP,*	
001176	104414			TRAP	14	:		
001200	012716	000000G		MOV	#MSG49,(SP)	:		3726
001204	012746	000001		MOV	#1,-(SP)	:		
001210	010600			MOV	SP,R0	:	SP,*	
001212	104414			TRAP	14	:		
001214	010216			MOV	R2,(SP)	:	INDEX,*	3727
001216	016146	000000G		MOV	TD16(R1),-(SP)	:		
001222	016146	000000G		MOV	XMIT.D.LIST(R1),-(SP)	:		
001226	012746	000000G		MOV	#MSG50,-(SP)	:		
001232	012746	000004		MOV	#4,-(SP)	:		
001236	010600			MOV	SP,R0	:	SP,*	
001240	104414			TRAP	14	:		
001242	104455			TRAP	55	:		3728
001244	003104			.WORD	3104	:		
001246	000000G			.WORD	MSG00	:		
001250	000000G			.WORD	ERROR\$REPORT	:		
001252	062706	000014		ADD	#14,SP	:		3723
001256	005202			INC	R2	:	INDEX	3719
001260	020227	000043		CMP	R2,#43	:	INDEX,*	
001264	003712			BLE	15\$	:		

15\$:

16\$:



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CZQNADO DEQNA FUNCTIONAL TEST  
TEST 16 - ODD PACKET TEST

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VAX-11 B1111-16 V4.1-582  
DISK\$USER2:[MARSHALL.DEQNA]ZQNA3.BLI;4 (38)

001266	005002			CLR	R2		; INDEX	3731
001270	010201		17:	MOV	R2,R1		; INDEX *	3732
001272	006301			ASL	R1			
001274	010200			MOV	R2,R0		; INDEX, *	
001276	006300			ASL	R0			
001300	016061	000110G	000000G	MOV	XMIT.D.LIST+110(R0),XMIT.D.LIST(R1)			
001306	005202			INC	R2		; INDEX	3731
001310	020227	000005		CMP	R2,#5		; INDEX, *	
001314	003765			BLE	17:			
001316	012716	140000		MOV	#-40000,(SP)			3734
001322	012746	000400		MOV	#400,-(SP)			
001326	004737	000000G		JSR	PC,CHK.XMIT.STATUS			
001332	012716	140000		MOV	#-40000,(SP)			3735
001336	012746	020000		MOV	#20000,-(SP)			
001342	004737	000000G		JSR	PC,CHK.RCV.STATUS			
001346	005001			CLR	R1		; INDEX	3738
001350	126161	000000G	000000G	18:	CMPB	XMIT.BUFFER(R1),RCV.BUFFER(R1)	; *(INDEX),*(INDEX)	3739
001356	001447			BEQ	19:			
001360	013700	000000G		MOV	REG.ADR,R0			3742
001364	016066	000016	000020	MOV	16(R0),20(SP)		; *,TMP.LOCATION	
001372	016637	000020	000000G	MOV	20(SP),CSR.WORD		; TMP.LOCATION, *	
001400	012716	000000G		MOV	#MSG59,(SP)			3743
001404	012746	000001		MOV	#1,-(SP)			
001410	010600			MOV	SP,R0		; SP, *	
001412	104414			TRAP	14			
001414	012716	000000G		MOV	#MSG51,(SP)			3744
001420	012746	000001		MOV	#1,-(SP)			
001424	010600			MOV	SP,R0		; SP, *	
001426	104414			TRAP	14			
001430	010116			MOV	R1,(SP)		; INDEX, *	3745
001432	005046			CLR	-(SP)			
001434	116116	000000G		MOV	XMIT.BUFFER(R1),(SP)		; *(INDEX), *	
001440	005046			CLR	-(SP)			
001442	116116	000000G		MOV	RCV.BUFFER(R1),(SP)		; *(INDEX), *	
001446	012746	000000G		MOV	#MSG50,-(SP)			
001452	012746	000004		MOV	#4,-(SP)			
001456	010600			MOV	SP,R0		; SP, *	
001460	104414			TRAP	14			
001462	104455			TRAP	55			3746
001464	003105			.WORD	3105			
001466	000000G			.WORD	MSG00			
001470	000000G			.WORD	ERROR\$REPORT			
001472	062706	000014		ADD	#14,SP			3741
001476	005201		19:	INC	R1		; INDEX	3738
001500	020127	000005		CMP	R1,#5		; INDEX, *	
001504	003721			BLE	18:			
001506	012701	000006		MOV	#6,R1		; *,INDEX	3749
001512	105761	000000G	20:	TSTB	RCV.BUFFER(R1)		; *(INDEX)	3750
001516	001447			BEQ	21:			
001520	013700	000000G		MOV	REG.ADR,R0			3753
001524	016066	000016	000022	MOV	16(R0),22(SP)		; *,TMP.LOCATION	
001532	016637	000022	000000G	MOV	22(SP),CSR.WORD		; TMP.LOCATION, *	
001540	012716	000000G		MOV	#MSG59,(SP)			3754

ZQNA3 V01.0	CZQNADO DEQNA FUNCTIONAL TEST TEST 16 - ODD PACKET TEST	14-Mar-1985 13:11:16 14-Mar-1985 13:05:35	VAX-11 Bliss-16 V4.1-582 DISK#USER2:[MARSHALL.DEQNA]ZQNA3.BLI;4 (38)		
001544	012746 000001	MOV	#1,-(SP)		
001550	010600	MOV	SP,R0	; SP,*	
001552	104414	TRAP	14		
001554	012716 000000G	MOV	#MSG51,(SP)		3755
001560	012746 000001	MOV	#1,-(SP)		
001564	010600	MOV	SP,R0	; SP,*	
001566	104414	TRAP	14		
001570	010116	MOV	R1,(SP)	; INDEX,*	3756
001572	005046	CLR	-(SP)		
001574	116116 000000G	MOVB	XMIT.BUFFER(R1),(SP)	; *(INDEX),*	
001600	005046	CLR	-(SP)		
001602	116116 000000G	MOVB	RCV.BUFFER(R1),(SP)	; *(INDEX),*	
001606	012746 000000G	MOV	#MSG50,-(SP)		
001612	012746 000004	MOV	#4,-(SP)		
001616	010600	MOV	SP,R0	; SP,*	
001620	104414	TRAP	14		
001622	104455	TRAP	55		3757
001624	003106	.WORD	3106		
001626	000000G	.WORD	MSG00		
001630	000000G	.WORD	ERROR\$REPORT		
001632	062706 000014	ADD	#14,SP		3752
001636	005201	INC	R1	; INDEX	3749
001640	020127 000011	CMP	R1,#11	; INDEX,*	
001644	003722	BLE	20\$		
001646	005001	CLR	R1	; INDEX	3760
001650	126161 000012G 000162G	22\$: CMPB	RCV.BUFFER+12(R1),TARGET.ADR+162(R1);	; *(INDEX),*(INDEX)	3761
001656	001447	BEQ	23\$		
001660	013700 000000G	MOV	REG.ADR,R0		3764
001664	016066 000016 000024	MOV	16(R0),24(SP)	; *,TMP.LOCATION	
001672	016637 000024 000000G	MOV	24(SP),CSR.WORD	; TMP.LOCATION,*	
001700	012716 000000G	MOV	#MSG59,(SP)		3765
001704	012746 000001	MOV	#1,-(SP)		
001710	010600	MOV	SP,R0	; SP,*	
001712	104414	TRAP	14		
001714	012716 000000G	MOV	#MSG51,(SP)		3766
001720	012746 000001	MOV	#1,-(SP)		
001724	010600	MOV	SP,R0	; SP,*	
001726	104414	TRAP	14		
001730	010116	MOV	R1,(SP)	; INDEX,*	3767
001732	005046	CLR	-(SP)		
001734	116116 000000G	MOVB	XMIT.BUFFER(R1),(SP)	; *(INDEX),*	
001740	005046	CLR	-(SP)		
001742	116116 000000G	MOVB	RCV.BUFFER(R1),(SP)	; *(INDEX),*	
001746	012746 000000G	MOV	#MSG50,-(SP)		
001752	012746 000004	MOV	#4,-(SP)		
001756	010600	MOV	SP,R0	; SP,*	
001760	104414	TRAP	14		
001762	104455	TRAP	55		3768
001764	003107	.WORD	3107		
001766	000000G	.WORD	MSG00		
001770	000000G	.WORD	ERROR\$REPORT		
001772	062706 000014	ADD	#14,SP		3763

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CZQNA0 DEQNA FUNCTIONAL TEST  
TEST 16 - ODD PACKET TEST

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VAX-11 G1ies-16 V4.1-582  
DISK#USER2:(MARSHALL.DEQNA)ZQNA3.BLI;4 (38)  
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001776	005201		23:	INC	R1				
002000	020127	000005		CMP	R1,#5		; INC		3760
002004	003721			BLE	22:		; INC ,*		
002006	062706	000010		ADD	#10,SP				
002012	104467			TRAP	67				3696
002014	006000			ROR	R0				3769
002016	103002			BHIS	24:				
002020	000137	016224'		JMP	13:				
002024	062706	000016	24:	ADD	#16,SP				
002030	000207			RTS	PC				3567

; Routine Size: 525 words, Routine Base: AB#CODE# + 15250  
 ; Maximum stack depth per invocation: 22 words

000000	004737	015250'		.SBTTL	T16 TEST 16 - ODD PACKET TEST				
000000			T16::						
000004	104466		1:	JSR	PC,#T16				3770
000006	006000			TRAP	66				
000010	103773			ROR	R0				
000012	000207			BLO	1:				
				RTS	PC				

; Routine Size: 6 words, Routine Base: AB#CODE# + 17302  
 ; Maximum stack depth per invocation: 2 words

; 3773 1

```

: 3774 1 *SBTTL 'TEST 17 - STATION ADDRESS TEST'
: 3775 1 :..
: 3776 1 :
: 3777 1 : TEST 17: STATION ADDRESS TEST
: 3778 1 :
: 3779 1 : DESCRIPTION:
: 3780 1 :
: 3781 1 : This test verifies that DEQNA accepts only packets with legitimate
: 3782 1 : 'multicast' and 'non-multicast' addresses and discards those with
: 3783 1 : illegitimate 'multicast' and 'non-multicast' addresses.
: 3784 1 :
: 3785 1 : Station Address RAM is loaded with a set of Target Addresses and
: 3786 1 : Mode bits. Target Addresses in and out of the set are used to
: 3787 1 : loopback packets. If the operator specifies loop on error, the
: 3788 1 : program re-executes the code that detected the error until tC is
: 3789 1 : entered.
: 3790 1 :
: 3791 1 : Hardware tested: Address Filter Circuitry
: 3792 1 :
: 3793 1 : Set of 'multicast' addresses in HEXADECIMAL:
: 3794 1 :
: 3795 1 : 01-00-00-00-00-00
: 3796 1 : AB-AA-AA-AA-AA-AA
: 3797 1 : 55-55-55-55-55-55
: 3798 1 : FF-FF-FF-FF-FF-FF
: 3799 1 : Walking 1
: 3800 1 :
: 3801 1 : Processing:
: 3802 1 :
: 3803 1 : BEGIN
: 3804 1 : reset device
: 3805 1 : select internal loopback mode
: 3806 1 : set mode to Setup
: 3807 1 : load Station Address RAM with 'multicast' addresses
: 3808 1 : REPEAT for each complemented and uncomplemented 'multicast'
: 3809 1 : address in the set
: 3810 1 : load address
: 3811 1 : disable receiver
: 3812 1 : transmit loopback packet
: 3813 1 : enable receiver
: 3814 1 : check for expected loopback status
: 3815 1 : IF error
: 3816 1 : THEN
: 3817 1 : print error message if not inhibited
: 3818 1 : ENDF
: 3819 1 : call compare_packets
: 3820 1 : ENDREPEAT
: 3821 1 : END
: 3822 1 :!..

```

ZQNA3  
V01.0CZQNA0 DEQNA FUNCTIONAL TEST  
TEST 17 - STATION ADDRESS TEST14-Mar-1985 13:11:16  
14-Mar-1985 13:05:35VAX-11 Bliss-16 V4.1-582  
DISK#USER2:[MARSHALL.DEQNA]ZQNA3.BLI:4 (40)

SEQ 0195

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```

; 3823 3  BGNTST;
; 3824 3
; 3825 3      !..
; 3826 3      ! RESET DEQNA AND INITIALIZE ETHERNET STATION ADDRESS RAM TO ALL MULTICAST
; 3827 3      ! MODE.
; 3828 3      !--
; 3829 3
; 3830 3      RESET_DEQNA ( );
; 3831 3      PREP_FOR_SETUP ( );
; 3832 3      INCR INDEX1 FROM 6 TO 19 DO
; 3833 3          WRT_STATION_ADR ( .INDEX1 - 5, .INDEX1 );
; 3834 3
; 3835 5      BGNSUB;
; 3836 5          XMIT_SETUP_PACKET ( N_MODE );
; 3837 3      ENDSUB;
; 3838 3
; 3839 3      !..
; 3840 3      ! NOW LOOPBACK 6 BYTE PACKETS AND CHECK IF THEY ARE RECEIVED PROPERLY
; 3841 3      !--
; 3842 3
; 3843 3      RBUF_LENGTH = 6;
; 3844 3      XBUF_LENGTH = - ( .RBUF_LENGTH + -1 );
; 3845 3
; 3846 3      INCR INDEX1 FROM 6 TO 19 DO
; 3847 4          BEGIN
; 3848 4              WRT_STATION_ADR ( ZERO, .INDEX1 );
; 3849 4
; 3850 6              BGNSUB;
; 3851 6                  XMIT_ILOOP_PACKET ( ZERO );
; 3852 4              ENDSUB;
; 3853 4
; 3854 4              INCR INDEX2 FROM 0 TO 5 DO
; 3855 5                  BEGIN
; 3856 5                      XMIT_BUFFER [ .INDEX2 ] = ( -.XMIT_BUFFER [ .INDEX2 ] ) - 1;
; 3857 5                      TARGET_ADR [ .INDEX2 ] = .XMIT_BUFFER [ .INDEX2 ];
; 3858 4                  END;
; 3859 4
; 3860 6              BGNSUB;
; 3861 6                  XMIT_ILOOP_PACKET ( ONE );
; 3862 4              ENDSUB;
; 3863 3          END;
; 3864 3
; 3865 3      TEMP4 = 14;
; 3866 3      INCR INDEX3 FROM 0 TO 3 DO
; 3867 4          BEGIN
; 3868 4              IF .INDEX3 EQLU 3
; 3869 4                  THEN
; 3870 4                      TEMP4 = 6;
; 3871 4                      RESET_DEQNA ( );
; 3872 4                      PREP_FOR_SETUP ( );
; 3873 4                      INCR INDEX4 FROM 1 TO .TEMP4 DO
; 3874 5                          BEGIN
; 3875 5                              WALKING_BIT ( ZERO, .INDEX4 + ( .INDEX3 * 14 ) - 1, 5 );

```

```

: 3876 5      WRT_STATION ADR ( .INDEX4, ZERO );
: 3877 4      END;
: 3878 4
: 3879 6      BGNSUB;
: 3880 6      XMIT_SETUP_PACKET ( N_MODE );
: 3881 4      ENDSUB;
: 3882 4
: 3883 4      RBUF_LENGTH = 6;
: 3884 4      XBUF_LENGTH = - ( .RBUF_LENGTH + -1 );
: 3885 4
: 3886 4      INCR INDEX4 FROM 1 TO .TEMP4 DO
: 3887 5      BEGIN
: 3888 5      WALKING_BIT ( ZERO, .INDEX4 + ( .INDEX3 * 14 ) 1, 5 );
: 3889 5      WRT_STATION_ADR ( ZERO, ZERO );
: 3890 5
: 3891 7      BGNSUB;
: 3892 7      XMIT_ILOOP_PACKET ( ZERO );
: 3893 5      ENDSUB;
: 3894 4      END;
: 3895 4
: 3896 4      INCR INDEX2 FROM 0 TO 5 DO
: 3897 5      BEGIN
: 3898 5      XMIT_BUFFER [ .INDEX2 ] = ( -.XMIT_BUFFER [ .INDEX2 ] ) - 1;
: 3899 5      TARGET_ADR [ .INDEX2 ] = .XMIT_BUFFER [ .INDEX2 ];
: 3900 5
: 3901 7      BGNSUB;
: 3902 7      XMIT_ILOOP_PACKET ( ONE );
: 3903 5      ENDSUB;
: 3904 4      END;
: 3905 3      END;
: 3906 3
: 3907 3      INCR INDEX2 FROM 0 TO 5 DO
: 3908 3      TARGET_ADR [ .INDEX2 ] = ZERO;
: 3909 3
: 3910 1      ENDTST;

```

000000	004137	000000G	\$T17:	JSR	R1,\$SAVE4	:	3772
000004	004737	000000G		JSR	PC,RESET.DEQNA	:	3830
000010	004737	000000G		JSR	PC,PREP.FOR.SETUP	:	3831
000014	012701	000006		MOV	#6,R1	; *,INDEX1	3832
000020	010146		1\$:	MOV	R1,-(SP)	; INDEX1,*	3833
000022	162716	000005		SUB	#5,(SP)		
000026	010146			MOV	R1,-(SP)	; INDEX1,*	
000030	004737	000000G		JSR	PC,WRT.STATION.ADR		
000034	022626			CMP	(SP)+,(SP)+		
000036	005201			INC	R1	; INDEX1	3832
000040	020127	000023		CMP	R1,#23	; INDEX1,*	
000044	003765			BLE	1\$		
000046	104402		2\$:	TRAP	2		3833
000050	012746	000200		MOV	#200,-(SP)		3836
000054	004737	000000G		JSR	PC,XMIT.SETUP.PACKET		

C16

ZQNA3 V01.0	CZQNA0 DEQNA FUNCTIONAL TEST TEST 17 - STATION ADDRESS TEST	14-Mar-1985 13:11:16 14-Mar-1985 13:05:35	VAX-11 Bliss-16 V4.1-582 DISK#USER2:[MARSHALL.DEQNA]ZQNA3.BL1;4 (40)	SEQ 0197 Page 114
000060	005726		TST (SP)+	; 3833
000062	104467		TRAP 67	; 3836
000064	006000		ROR R0	
000066	103767		BLO 2\$	
000070	012737	000006 000000G	MOV #6,RBUF.LENGTH	; 3843
000076	012700	000006	MOV #6,R0	; 3844
000102	006200		ASR R0	
000104	005400		NEG R0	
000106	010037	000000G	MOV R0,XBUF.LENGTH	
000112	012702	000006	MOV #6,R2	; *,INDEX1 3846
000116	005046		CLR -(SP)	; 3848
000120	010246		MOV R2,-(SP)	; INDEX1,*
000122	004737	000000G	JSR PC,WRT.STATION.ADR	
000126	104402		TRAP 2	
000130	005016		CLR (SP)	; 3851
000132	004737	000000G	JSR PC,XMIT.ILOOP.PACKET	
000136	104467		TRAP 67	
000140	006000		ROR R0	
000142	103771		BLO 4\$	
000144	005000		CLR R0	; INDEX2 3854
000146	012701	000000G	MOV #XMIT.BUFFER,R1	; 3856
000152	060001		ADD R0,R1	; INDEX2,*
000154	012703	177777	MOV #-1,R3	
000160	005004		CLR R4	
000162	151104		BISB (R1),R4	
000164	160403		SUB R4,R3	
000166	110311		MOVB R3,(R1)	
000170	110360	000000G	MOVB R3,TARGET.ADR(R0)	; *,*(INDEX2) 3857
000174	005200		INC R0	; INDEX2 3854
000176	020027	000005	CMP R0,#5	; INDEX2,*
000202	003761		BLE 5\$	
000204	104402		TRAP 2	; 3858
000206	012716	000001	MOV #1,(SP)	; 3861
000212	004737	000000G	JSR PC,XMIT.ILOOP.PACKET	
000216	104467		TRAP 67	
000220	006000		ROR R0	
000222	103770		BLO 6\$	
000224	022626		CMP (SP)+,(SP)+	; 3847
000226	005202		INC R2	; INDEX1 3846
000230	020227	000023	CMP R2,#23	; INDEX1,*
000234	003730		BLE 3\$	
000236	012737	000016 000000G	MOV #16,TEMP4	; 3865
000244	005004		CLR R4	; INDEX3 3866
000246	022727	000000 000003	CMP #0,#3	; 3868
000254	001003		BNE 8\$	
000256	012737	000006 000000G	MOV #6,TEMP4	; 3870
000264	004737	000000G	JSR PC,RESET.DEQNA	; 3871
000270	004737	000000G	JSR PC,PREP.FOR.SETUP	; 3872
000274	013702	000000G	MOV TEMP4,R2	; 3873
000300	010401		MOV R4,R1	; INDEX3,* 3875
000302	070127	000016	MUL #16,R1	
000306	005003		CLR R3	; INDEX4 3873
000310	000417		BR 10\$	

ZQNA3  
V01.0

CZQNADO DEQNA FUNCTIONAL TEST  
TEST 17 - STATION ADDRESS TEST

14-Mar-1985 13:11:16  
14-Mar-1985 13:05:35

SEQ 0198  
Page 115  
DISK#USER2:[MARSHALL.DEQNA]ZQNA3.BLI:4 (40)

000312	005046		9\$:	CLR	-(SP)		3875
000314	010100			MOV	R1,R0		
000316	060300			ADD	R3,R0	; INDEX4,*	
000320	010046			MOV	R0,-(SP)		
000322	005316			DEC	(SP)		
000324	012746	000005		MOV	#5,-(SP)		
000330	004737	000000G		JSR	PC,WALKING.BIT		
000334	010316			MOV	R3,(SP)	; INDEX4,*	3876
000336	005046			CLR	-(SP)		
000340	004737	000000G		JSR	PC,WRT.STATION.ADR		
000344	062706	000010		ADD	#10,SP		3874
000350	005203		10\$:	INC	R3	; INDEX4	3873
000352	020302			CMP	R3,R2	; INDEX4,*	
000354	003756			BLE	9\$		
000356	104402		11\$:	TRAP	2		3877
000360	012746	000200		MOV	#200,-(SP)		3880
000364	004737	000000G		JSR	PC,XMIT.SETUP.PACKET		
000370	005726			TST	(SP)+		3877
000372	104467			TRAP	67		3880
000374	006000			ROR	R0		
000376	103767			BLO	11\$		
000400	012737	000006	000000G	MOV	#6,RBUF.LENGTH		3883
000406	012700	000006		MOV	#6,R0		3884
000412	006200			ASR	R0		
000414	005400			NEG	R0		
000416	010037	000000G		MOV	R0,XBUF.LENGTH		
000422	013703	000000G		MOV	TEMP4,R3		3886
000426	005002			CLR	R2	; INDEX4	
000430	000426			BR	14\$		
000432	005046		12\$:	CLR	-(SP)		3888
000434	010100			MOV	R1,R0		
000436	060200			ADD	R2,R0	; INDEX4,*	
000440	010046			MOV	R0,-(SP)		
000442	005316			DEC	(SP)		
000444	012746	000005		MOV	#5,-(SP)		
000450	004737	000000G		JSR	PC,WALKING.BIT		
000454	005016			CLR	(SP)		3889
000456	005046			CLR	-(SP)		
000460	004737	000000G		JSR	PC,WRT.STATION.ADR		
000464	104402		13\$:	TRAP	2		
000466	005016			CLR	(SP)		3892
000470	004737	000000G		JSR	PC,XMIT.ILOOP.PACKET		
000474	104467			TRAP	67		
000476	006000			ROR	R0		
000500	103771			BLO	13\$		
000502	062706	000010		ADD	#10,SP		3887
000506	005202		14\$:	INC	R2	; INDEX4	3886
000510	020203			CMP	R2,R3	; INDEX4,*	
000512	003747			BLE	12\$		
000514	005001			CLR	R1	; INDEX2	3896
000516	012700	000000G	15\$:	MOV	#XMIT.BUFFER,R0		3898
000522	060100			ADD	R1,R0	; INDEX2,*	
000524	012702	177777		MOV	#-1,R2		



ZQNA3  
V01.0

CZQNADO DEQNA FUNCTIONAL TEST  
TEST 17 - STATION ADDRESS TEST

14-Mar-1985 13:11:16  
14-Mar-1985 13:05:35

SEQ 0199  
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VAX-11 Bliss 16 V4.1-582  
DISK\$USER2:[MARSHALL.DEQNA]ZQNA3.BLI;4 (40)

000530	005003		CLR	R3		
000532	151003		BISB	(R0),R3		
000534	160302		SUB	R3,R2		
000536	110210		MOVB	R2,(R0)		
000540	110261	000000G	MOVB	R2,TARGET.ADR(R1)	; *,*(INDEX2)	3899
000544	104402		TRAP	2		
000546	012746	000001	MOV	#1,-(SP)		3902
000552	004737	000000G	JSR	PC,XMIT.ILOOP.PACKET		
000556	005726		TST	(SP)+		3899
000560	104467		TRAP	67		3902
000562	006000		ROR	R0		
000564	103767		BLO	16‡		
000566	005201		INC	R1	; INDEX2	3896
000570	020127	000005	CMP	R1,#5	; INDEX2,*	
000574	003750		BLE	15‡		
000576	005204		INC	R4	; INDEX3	3866
000600	020427	000003	CMP	R4,#3	; INDEX3,*	
000604	003623		BLE	7‡		
000606	005000		CLR	R0	; INDEX2	3907
000610	105060	000000G	CLRB	TARGET.ADR(R0)	; *(INDEX2)	3908
000614	005200		INC	R0	; INDEX2	3907
000616	020027	000005	CMP	R0,#5	; INDEX2,*	
000622	003772		BLE	17‡		
000624	000207		RTS	PC		3772

; Routine Size: 203 words, Routine Base: AB\$CODE\$ + 17316  
; Maximum stack depth per invocation: 11 words

			.SBTTL	T17 TEST 17 - STATION ADDRESS TEST		
000000	004737	017316'	T17::			
000000			1‡:	JSR PC,\$T17		3908
000004	104466			TRAP 66		
000006	006000			ROR R0		
000010	103773			BLO 1‡		
000012	000207			RTS PC		

; Routine Size: 6 words, Routine Base: AB\$CODE\$ + 20144  
; Maximum stack depth per invocation: 2 words

; 3911 1  
; 3912 1

ZQNA3  
V01.0CZQNADO DEQNA FUNCTIONAL TEST  
TEST 18 - ALL MULTICAST STATION ADDRESS TEST14-Mar-1985 13:11:16  
14-Mar-1985 13:05:35VAX-11 Bliss-16 V4 1-582  
DISK#USER2:(MARSHALL.DEQNA)ZQNA3.BLI;4 (41)

SEQ 0200

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```

: 3913 1 *SBTTL 'TEST 18 - ALL MULTICAST STATION ADDRESS TEST'
: 3914 1 !**
: 3915 1 !
: 3916 1 ! TEST 18: ALL MULTICAST STATION ADDRESS TEST
: 3917 1 !
: 3918 1 ! DESCRIPTION:
: 3919 1 !
: 3920 1 ! This test verifies that DEQNA recognizes 'all multicast' addresses of
: 3921 1 ! the node and discards loopback packets with non-enabled addresses.
: 3922 1 ! If the operator specifies loop on error, the program re-executes the
: 3923 1 ! code that detected the error until tC is entered.
: 3924 1 !
: 3925 1 ! Hardware tested: All Multicast Addressing
: 3926 1 ! I8051 Microprocessor
: 3927 1 ! Address Filter Circuitry
: 3928 1 !
: 3929 1 ! Set of 'all multicast' addresses:
: 3930 1 !
: 3931 1 ! DEQNA Physical Addr FF-FF-FF-FF-FF-FF
: 3932 1 ! AA-00-00-00-00-00 55-55-55-55-55-55
: 3933 1 ! AA-00-02-AA-AA-AA AA-AA-AA-AA-AA-AA
: 3934 1 ! AA-00-05-55-55-55 01-00-00-00-00-00
: 3935 1 ! AA-00-04-FF-FF-FF AB-AA-AA-AA-AA-AA
: 3936 1 ! AA-00-04-00-00-00 FF-00-01-02-03-04
: 3937 1 ! AA-00-04-18-81-18 00-F4-FA-44-44-55
: 3938 1 !
: 3939 1 ! Processing:
: 3940 1 !
: 3941 1 ! BEGIN
: 3942 1 ! reset device
: 3943 1 ! select internal loopback mode
: 3944 1 ! set mode to Setup
: 3945 1 ! load Station Address RAM with 'all multicast' addresses
: 3946 1 ! REPEAT for 'all multicast' addresses in and out of set
: 3947 1 ! load 'all multicast' address of the packet
: 3948 1 ! disable receiver
: 3949 1 ! transmit loopback packet
: 3950 1 ! enable receiver
: 3951 1 ! check for expected loopback status
: 3952 1 ! IF error
: 3953 1 ! THEN
: 3954 1 ! print error message if not inhibited
: 3955 1 ! ENDIF
: 3956 1 ! call compare_packets
: 3957 1 ! ENDREPEAT
: 3958 1 ! END
: 3959 1 !--

```

ZQNA3  
V01.0CZQNA0 DEQNA FUNCTIONAL TEST  
TEST 18 - ALL MULTICAST STATION ADDRESS TEST14-Mar-1985 13:11:16  
14-Mar-1985 13:05:35SEQ 0201  
Page 118  
VAX-11 Bliss-16 V4.1-582  
DISK#USER2:[MARSHALL.DEQNA]ZQNA3.BLI;4 (42)

```

: 3960 3  BGNTST;
: 3961 3
: 3962 3  !**
: 3963 3  ! RESET DEQNA AND INITIALIZE ETHERNET STATION ADDRESS RAM IF EXECUTING
: 3964 3  ! TESTS IN EXTERNAL LOOPBACK MODE.
: 3965 3  !--
: 3966 3
: 3967 3  RESET_DEQNA ( );
: 3968 3  PREP_FOR_SETUP ( );
: 3969 3  INCR INDEX1 FROM 1 TO 13 DO
: 3970 3    WRT_STATION_ADR ( .INDEX1, .INDEX1 );
: 3971 3    WRT_STATION_ADR ( 14, PHA_INDEX );
: 3972 3
: 3973 5  BGNSUB;
: 3974 5    XMIT_SETUP_PACKET ( A_MODE );
: 3975 3  ENDSUB;
: 3976 3
: 3977 3  !**
: 3978 3  ! NOW LOOPBACK 6 BYTE PACKETS AND CHECK IF THEY ARE RECEIVED PROPERLY
: 3979 3  !--
: 3980 3
: 3981 3  RBUF_LENGTH = 6;
: 3982 3  XBUF_LENGTH = - ( .RBUF_LENGTH + -1 );
: 3983 3
: 3984 3  INCR INDEX FROM 6 TO 19 DO
: 3985 4    BEGIN
: 3986 4      WRT_STATION_ADR ( ZERO, .INDEX );
: 3987 4
: 3988 6      BGNSUB;
: 3989 6        XMIT_ILOOP_PACKET ( ZERO );
: 3990 4      ENDSUB;
: 3991 4
: 3992 4      INCR INDEX2 FROM 0 TO 3 DO
: 3993 5        BEGIN
: 3994 5          XMIT_BUFFER [ .INDEX2 ] = ( -.XMIT_BUFFER [ .INDEX2 ] ) - 1;
: 3995 5          TARGET_ADR [ .INDEX2 ] = .XMIT_BUFFER [ .INDEX2 ];
: 3996 4        END;
: 3997 4
: 3998 4      XMIT_BUFFER [ ZERO ] = .XMIT_BUFFER [ ZERO ] AND #0'177774';
: 3999 4      TARGET_ADR [ ZERO ] = .XMIT_BUFFER [ ZERO ];
: 4000 4
: 4001 6      BGNSUB;
: 4002 6        XMIT_ILOOP_PACKET ( ONE );
: 4003 4      ENDSUB;
: 4004 4
: 4005 3    END;
: 4006 3
: 4007 3    INCR INDEX2 FROM 0 TO 5 DO
: 4008 3      TARGET_ADR [ .INDEX2 ] = ZERO;
: 4009 3
: 4010 1  ENDTST;

```



ZQNA3  
V01.0

CZQNA0 DEQNA FUNCTIONAL TEST  
TEST 18 - ALL MULTICAST STATION ADDRESS TEST

14-Mar-1985 13:11:16  
14-Mar-1985 13:05:35

SEQ 0203  
Page 120  
VAX-11 Bliss-16 V4.1-582  
DISK\$USER2:([MARSHALL.DEQNA]ZQNA3.BLI;4 (42)

000240	104467		TRAP	67			
000242	006000		ROR	R0			
000244	103770		BLO	6\$			
000246	005726		TST	(SP)+			
000250	005202		INC	R2		; INDEX	3985
000252	020227	000023	CMP	R2,#23		; INDEX,*	3984
000256	003722		BLE	3\$			
000260	005000		CLR	R0		; INDEX2	4007
000262	105060	000000G	CLRB	TARGET.ADR(R0)		; *(INDEX2)	4008
000266	005200		INC	R0		; INDEX2	4007
000270	020027	000005	CMP	R0,#5		; INDEX2,*	
000274	003772		BLE	7\$			
000276	022626		CMP	(SP)+,(SP)+			
000300	000207		RTS	PC			3910

; Routine Size: 97 words, Routine Base: AB\$CODE\$ + 20160  
; Maximum stack depth per invocation: 10 words

			.SBTTL	T18 TEST 18 - ALL MULTICAST STATION ADDRESS TEST			
000000	004737	020160'	T18::				
000000			1\$:	JSR	PC,\$T18		4008
000004	104466			TRAP	66		
000006	006000			ROR	R0		
000010	103773			BLO	1\$		
000012	000207			RTS	PC		

; Routine Size: 6 words, Routine Base: AB\$CODE\$ + 20462  
; Maximum stack depth per invocation: 2 words

; 4011 1  
; 4012 1

ZQNA3  
V01.0CZQNA0 DEQNA FUNCTIONAL TEST  
TEST 19 - RUNT PACKET TEST14-Mar-1985 13:11:16  
14-Mar-1985 13:05:35VAX-11 Bliss-16 V4.1-582  
DISK#USER2:[MARSHALL.DEQNA]ZQNA3.BLI;4 (43)SEQ 0204  
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```

: 4013 1 *SBTTL 'TEST 19 RUNT PACKET TEST'
: 4014 1 !**
: 4015 1 !
: 4016 1 ! TEST 19: RUNT PACKET TEST
: 4017 1 !
: 4018 1 ! DESCRIPTION:
: 4019 1 !
: 4020 1 ! This test verifies that the DEQNA can detect runt packets in FIFO.
: 4021 1 ! If the operator specifies loop on error, the program re-executes the
: 4022 1 ! code that detected the error until fC is entered.
: 4023 1 !
: 4024 1 ! Hardware tested: EPP
: 4025 1 ! Address Filter Circuitry
: 4026 1 !
: 4027 1 ! Station Address table:
: 4028 1 !
: 4029 1 ! DEQNA Physical Addr
: 4030 1 ! AA-00-00-00-00-00
: 4031 1 ! AA-00-02-AA-AA-AA
: 4032 1 ! AA-00-05-55-55-55
: 4033 1 ! AA-00-04-FF-FF-FF
: 4034 1 ! AA-00-04-00-00-00
: 4035 1 ! AA-00-04-18-81-18
: 4036 1 !
: 4037 1 ! Processing:
: 4038 1 !
: 4039 1 ! BEGIN
: 4040 1 ! reset device
: 4041 1 ! select internal loopback mode
: 4042 1 ! load Station Address RAM with Station Addresses from table
: 4043 1 ! load packet with valid Station Address
: 4044 1 ! disable receiver
: 4045 1 ! transmit loopback packet
: 4046 1 ! enable receiver
: 4047 1 ! check for expected loopback status
: 4048 1 ! IF error
: 4049 1 ! THEN
: 4050 1 ! print error message if not inhibited
: 4051 1 ! ENDIF
: 4052 1 ! load packet with invalid Station Address
: 4053 1 ! disable receiver
: 4054 1 ! transmit loopback packet
: 4055 1 ! enable receiver
: 4056 1 ! check for expected loopback status
: 4057 1 ! IF error
: 4058 1 ! THEN
: 4059 1 ! print error message if not inhibited
: 4060 1 ! ENDIF
: 4061 1 ! END
: 4062 1 ! --

```

ZQNA3  
V01.0CZQNA0 DEQNA FUNCTIONAL TEST  
TEST 19 - RUNT PACKET TEST14-Mar-1985 13:11:16  
14-Mar-1985 13:05:35VAX-11 Bliss-16 V4.1-582  
DISK\$USER2:[MARSHALL.DEQNA]ZQNA3.BLI;4 (44)

SEQ 0205

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```

; 4063 3  BGNTST;
; 4064 3
; 4065 3  !**
; 4066 3  !  RESET DEQNA AND INITIALIZE ETHERNET STATION ADDRESS RAM IF EXECUTING
; 4067 3  !  TESTS IN EXTERNAL LOOPBACK MODE.
; 4068 3  !--
; 4069 3
; 4070 3  RESET_DEQNA ( );
; 4071 3  PREP_FOR_SETUP ( );
; 4072 3  INCR_INDEX1 FROM 6 TO 19 DO
; 4073 3  WRT_STATION_ADR ( .INDEX1 - 5, PHA_INDEX );
; 4074 3
; 4075 5  BGNSUB;
; 4076 5  XMIT_SETUP_PACKET ( N_MODE );
; 4077 3  ENDSUB;
; 4078 3
; 4079 3  !**
; 4080 3  !  NOW LOOPBACK 6 BYTE PACKETS AND CHECK IF THEY ARE RECEIVED PROPERLY
; 4081 3  !--
; 4082 3
; 4083 3  RBUF_LENGTH = 6;
; 4084 3  XBUF_LENGTH = - ( .RBUF_LENGTH + -1 );
; 4085 3
; 4086 3  WRT_STATION_ADR ( ZERO, PHA_INDEX );
; 4087 3
; 4088 5  BGNSUB;
; 4089 5  XMIT_ILOOP_PACKET ( ZERO );
; 4090 3  ENDSUB;
; 4091 3
; 4092 5  BGNSUB;
; 4093 5  WRT_STATION_ADR ( ZERO, 2 );
; 4094 5
; 4095 5  .IOP_TABLE [ CSR ] = ONE;
; 4096 5
; 4097 5  SET_RDESCR_LIST ( .XBUF_LENGTH, VE );
; 4098 5  .IOP_TABLE [ RLO_ADR ] = RCV_D_LIST;
; 4099 5  .IOP_TABLE [ RHI_ADR ] = ZERO;
; 4100 5
; 4101 5  SET_XDESCR_LIST ( .XBUF_LENGTH, VE );
; 4102 5  .IOP_TABLE [ XLO_ADR ] = XMIT_D_LIST;
; 4103 5  .IOP_TABLE [ XHI_ADR ] = ZERO;
; 4104 5
; 4105 5  CHK_RIXI_STATUS ( ZERO );
; 4106 5  CHK_CSR_STATUS ( CSR_STATUS, CSR_MASK );           ! 0'100220', 0'100220'
; 4107 5  CHK_XMIT_STATUS ( XFLG_STATUS, XWD12_STATUS );   ! 0'140000', 0'000400'
; 4108 5  CHK_RCV_STATUS ( RFLG_STATUS, RWD16_STATUS );    ! 0'140000', 0'044000'
; 4109 5
; 4110 5  .IOP_TABLE [ CSR ] = ZERO;
; 4111 3  ENDSUB;
; 4112 3
; 4113 1  ENDTST;

```





M16

ZQNA3  
V01.0

CZQNADO DEQNA FUNCTIONAL TEST  
TEST 19 RUNT PACKET TEST

14-Mar-1985 13:11:16  
14-Mar-1985 13:05:35

SEQ 0207  
Page 124  
VAX-11 Bliss-16 V4.1-582  
DISK\$USER2:[MARSHALL.DEQNA]ZQNA3.BLI;4 (44)

000254	004737	000000G	JSR	PC,CHK.CSR.STATUS		
000260	012716	140000	MOV	#-40000,(SP)	:	4107
000264	012746	000400	MOV	#400,-(SP)		
000270	004737	000000G	JSR	PC,CHK.XMIT.STATUS		
000274	012716	140000	MOV	#-40000,(SP)	:	4108
000300	012746	044000	MOV	#44000,-(SP)		
000304	004737	000000G	JSR	PC,CHK.RCV.STATUS		
000310	005077	000016G	CLR	@IOP.TABLE+16	:	4110
000314	062706	000014	ADD	#14,SP	:	4090
000320	104467		TRAP	67	:	4110
000322	006000		ROR	R0		
000324	103706		BLO	4\$		
000326	022626		CMP	(SP)+,(SP)+	:	4010
000330	012601		MOV	(SP)+,R1		
000332	000207		RTS	PC		

; Routine Size: 110 words, Routine Base: AB\$CODE\$ + 20476  
; Maximum stack depth per invocation: 10 words

000000	004737	020476'	T19::	.SBTTL T19 TEST 19 - RUNT PACKET TEST		
000000			1\$:	JSR PC,\$T19	:	4111
000004	104466			TRAP 66		
000006	006000			ROR R0		
000010	103773			BLO 1\$		
000012	000207			RTS PC		

; Routine Size: 6 words, Routine Base: AB\$CODE\$ + 21032  
; Maximum stack depth per invocation: 2 words

; 4114 1  
; 4115 1

ZGNA3  
V01.0CZONADO DEQNA FUNCTIONAL TEST  
TEST 20 - FIFO OVERFLOW TEST14-Mar-1985 13:11:16  
14-Mar-1985 13:05:35VAX-11 Bliss-16 V4.1-582  
DISK#USER2:[MARSHALL.DEQNA]ZGNA3.BLI;4 (45)

SEQ 0208

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```

: 4116 1 *SBTTL 'TEST 20 - FIFO OVERFLOW TEST'
: 4117 1 !..
: 4118 1 !
: 4119 1 ! TEST 20: FIFO OVERFLOW TEST
: 4120 1 !
: 4121 1 ! DESCRIPTION:
: 4122 1 !
: 4123 1 ! This test verifies that the Ethernet Protocol Processor can
: 4124 1 ! detect receive FIFO overflow condition. If the operator specifies
: 4125 1 ! loop on error, the program re-executes the code that detected the
: 4126 1 ! error until ^C is entered.
: 4127 1 !
: 4128 1 ! Hardware tested: RCV Status wd 1 - error summary (bit 14),
: 4129 1 ! FIFO overflow (bit 0),
: 4130 1 ! Byte FIFO in the EDLC,
: 4131 1 ! and discard packet (bit 12)
: 4132 1 !
: 4133 1 ! Processing:
: 4134 1 ! BEGIN
: 4135 1 ! reset device
: 4136 1 ! select loopback mode
: 4137 1 ! enable receiver ( set CSR bit 0)
: 4138 1 ! transmit loopback packet
: 4139 1 ! transmit another loopback packet
: 4140 1 ! check for expected loopback status
: 4141 1 ! IF error
: 4142 1 ! THEN
: 4143 1 ! print error message if not inhibited
: 4144 1 ! ENDF
: 4145 1 !
: 4146 1 ! reset device
: 4147 1 ! transmit loopback packet
: 4148 1 ! transmit a packet
: 4149 1 ! setup Receive Descriptor List
: 4150 1 ! enable receiver (set CSR BIT 0)
: 4151 1 ! check for expected loopback status
: 4152 1 ! IF error
: 4153 1 ! THEN
: 4154 1 ! print error message if not inhibited
: 4155 1 ! ENDF
: 4156 1 ! turn of 3 LED's on the module
: 4157 1 ! END
: 4158 1 ! --

```

```

: 4159 3  BGNTST;
: 4160 3
: 4161 3      !..
: 4162 3      ! RESET DEQNA AND INITIALIZE ETHERNET STATION ADDRESS RAM
: 4163 3      !--
: 4164 3
: 4165 3      RESET_DEQNA ( );
: 4166 3      PREP_FOR_SETUP ( );
: 4167 3      INCR INDEX1 FROM 1 TO 14 DO
: 4168 3          WRT_STATION_ADR ( .INDEX1, PHA_INDEX );
: 4169 3
: 4170 5      BGNSUB;
: 4171 5          XMIT_SETUP_PACKET ( P_MODE );
: 4172 3      ENDSUB;
: 4173 3
: 4174 3      !..
: 4175 3      ! LOOPBACK 2 6-BYTE PACKETS IN INTERNAL LOOPBACK MODE CHECK IF PACKETS
: 4176 3      ! WERE RECEIVED PROPERLY, SHOULD TRANSMIT AND RECEIVE PROPERLY.
: 4177 3      !--
: 4178 3
: 4179 3      RBUF_LENGTH = 6;
: 4180 3      XBUF_LENGTH = - ( .RBUF_LENGTH + -1 );
: 4181 3
: 4182 3      INCR INDEX FROM 2 TO 3 DO
: 4183 4          BEGIN
: 4184 4              WRT_STATION_ADR ( ZERO, .INDEX );
: 4185 4
: 4186 6              BGNSUB;
: 4187 6                  XMIT_ILOOP_PACKET ( ZERO );
: 4188 4              ENDSUB;
: 4189 3          END;
: 4190 3
: 4191 3      !..
: 4192 3      ! FORCE RECEIVE FIFO OVERFLOW ( RCV STATUS WD 1 - BIT 0 ) BY TRANSMITTING
: 4193 3      ! 2 ND 6-BYTE PACKET IN INTERNAL LOOPBACK MODE BEFORE RECEIVING FIRST PACKET
: 4194 3      !--
: 4195 3
: 4196 5      BGNSUB;
: 4197 5          .IOP_TABLE [ CSR ] = ZERO;
: 4198 5
: 4199 5          WRT_STATION_ADR ( ZERO, 2 );
: 4200 5
: 4201 5          SET_XDESCR_LIST ( .XBUF_LENGTH, VE );
: 4202 5          .IOP_TABLE [ XLO_ADR ] = XMIT_D_LIST;
: 4203 5          .IOP_TABLE [ XHI_ADR ] = ZERO;
: 4204 5
: 4205 5          CHK_RIXI_STATUS ( ONE );
: 4206 5          WRT_STATION_ADR ( ZERO, 3 );
: 4207 5
: 4208 5          SET_XDESCR_LIST ( .XBUF_LENGTH, VE );
: 4209 5          .IOP_TABLE [ XLO_ADR ] = XMIT_D_LIST;
: 4210 5          .IOP_TABLE [ XHI_ADR ] = ZERO;
: 4211 5

```

ZQNA3  
V01.0

CZQNA0 DEQNA FUNCTIONAL TEST  
TEST 20 - FIFO OVERFLOW TEST

14-Mar-1985 13:11:16  
14 Mar-1985 13:05:35

VAX-11 Bliss-16 V4.1-582  
DISK\$USER2:[MARSHALL.DEQNA]ZQNA3.BLI:4 (46)

SEQ 0210

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```

; 4212 5      SET_RDESCR_LIST ( .XBUF_LENGTH, VE );
; 4213 5      .IOP_TABLE [ RLO_ADR ] = RCV_D_LIST;
; 4214 5      .IOP_TABLE [ RHI_ADR ] = ZERO;
; 4215 5
; 4216 5      .IOP_TABLE [ CSR ] = ONE;
; 4217 5
; 4218 5      CHK_RIXI_STATUS ( ZERO );
; 4219 5      CHK_CSR_STATUS ( CSR_STATUS, CSR_MASK      );      ! 0'100220', 0'100220'
; 4220 5      CHK_XMIT_STATUS ( XFLG_STATUS, XWD12_STATUS );      ! 0'140000', 0'000400'
; 4221 5      CHK_RCV_STATUS ( RFLG_STATUS, RWD15_STATUS );      ! 0'140000', 0'000001'
; 4222 5
; 4223 5      .IOP_TABLE [ CSR ] = ZERO;
; 4224 3      ENDSUB;
; 4225 3
; 4226 3      RESET_DEQNA ( );
; 4227 3
; 4228 3      TURN_OFF_LED ( N_MODE );
; 4229 3      TURN_OFF_LED ( LED1 );
; 4230 3      TURN_OFF_LED ( LED2 );
; 4231 3      TURN_OFF_LED ( LED3 );
; 4232 3
; 4233 1      ENDTST;

```

```

000000 010146          .SBTTL $T20 TEST 20 - FIFO OVERFLOW TEST
000002 004737 000000G $T20: MOV R1, -(SP) ; 4113
000006 004737 000000G JSR PC, RESET.DEQNA ; 4165
000012 012701 000001 JSR PC, PREP.FOR.SETUP ; 4166
000016 010146          MOV #1, R1 ; *, INDEX1 4167
000020 012746 000023 1$: MOV R1, -(SP) ; INDEX1,* 4168
000024 004737 000000G JSR PC, WRT.STATION.ADR
000030 022626          CMP (SP)+, (SP)+
000032 005201          INC R1 ; INDEX1 4167
000034 020127 000016 CMP R1, #16 ; INDEX1,*
000040 003766          BLE 1$
000042 104402          2$: TRAP 2 ; 4168
000044 012746 000202 MOV #202, -(SP) ; 4171
000050 004737 000000G JSR PC, XMIT.SETUP.PACKET
000054 005726          TST (SP)+ ; 4168
000056 104467          TRAP 67 ; 4171
000060 006000          ROR R0
000062 103767          BLO 2$
000064 012737 000006 000000G MOV #6, RBUF.LENGTH ; 4179
000072 012700 000006 MOV #6, R0 ; 4180
000076 006200          ASR R0
000100 005400          NEG R0
000102 010037 000000G MOV R0, XBUF.LENGTH
000106 012701 000002 MOV #2, R1 ; *, INDEX 4182
000112 005046          3$: CLR -(SP) ; 4184
000114 010146          MOV R1, -(SP) ; INDEX,*
000116 004737 000000G JSR PC, WRT.STATION.ADR
000122 104402          4$: TRAP 2

```

E1

ZQNA3  
V01.0

CZQNA0 DEQNA FUNCTIONAL TEST  
TEST 20 - FIFO OVERFLOW TEST

14-Mar-1985 13:11:16  
14-Mar-1985 13:05:35

SEQ 0211  
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VAX-11 Bliss-16 V4.1-582  
DISK#USER2:(MARSHALL.DEQNA)ZQNA3.BLI;4 (46)

000124	005016		CLR	(SP)			
000126	004737	000000G	JSR	PC,XMIT.ILOOP.PACKET			4187
000132	104467		TRAP	67			
000134	006000		ROR	R0			
000136	103771		BLO	4\$			
000140	022626		CMP	(SP)+,(SP)+			4183
000142	005201		INC	R1		; INDEX	4182
000144	020127	000003	CMP	R1,#3		; INDEX,*	
000150	003760		BLE	3\$			
000152	104402		TRAP	2			
000154	005077	000016G	CLR	@IOP.TABLE+16			4189
000160	005046		CLR	-(SP)			4197
000162	012746	000002	MOV	#2,-(SP)			4199
000166	004737	000000G	JSR	PC,WRT.STATION.ADR			
000172	013716	000000G	MOV	XBUF.LENGTH,(SP)			
000176	012746	120000	MOV	#-60000,-(SP)			4201
000202	004737	000000G	JSR	PC,SET.XDESCR.LIST			
000206	012777	000000G	MOV	#XMIT.D.LIST,@IOP.TABLE+10			4202
000214	005077	000012G	CLR	@IOP.TABLE+12			4203
000220	012716	000001	MOV	#1,(SP)			4205
000224	004737	000000G	JSR	PC,CHK.RIXI.STATUS			
000230	005016		CLR	(SP)			
000232	012746	000003	MOV	#3,-(SP)			4206
000236	004737	000000G	JSR	PC,WRT.STATION.ADR			
000242	013716	000000G	MOV	XBUF.LENGTH,(SP)			
000246	012746	120000	MOV	#-60000,-(SP)			4208
000252	004737	000000G	JSR	PC,SET.XDESCR.LIST			
000256	012777	000000G	MOV	#XMIT.D.LIST,@IOP.TABLE+10			4209
000264	005077	000012G	CLR	@IOP.TABLE+12			4210
000270	013716	000000G	MOV	XBUF.LENGTH,(SP)			4212
000274	012746	120000	MOV	#-60000,-(SP)			
000300	004737	000000G	JSR	PC,SET.RDESCR.LIST			
000304	012777	000000G	MOV	#RCV.D.LIST,@IOP.TABLE+4			4213
000312	005077	000006G	CLR	@IOP.TABLE+6			4214
000316	012777	000001	MOV	#1,@IOP.TABLE+16			4216
000324	005016		CLR	(SP)			4218
000326	004737	000000G	JSR	PC,CHK.RIXI.STATUS			
000332	012716	100220	MOV	#-77560,(SP)			4219
000336	011646		MOV	(SP),-(SP)			
000340	004737	000000G	JSR	PC,CHK.CSR.STATUS			
000344	012716	140000	MOV	#-40000,(SP)			4220
000350	012746	000400	MOV	#400,-(SP)			
000354	004737	000000G	JSR	PC,CHK.XMIT.STATUS			
000360	012716	140000	MOV	#-40000,(SP)			4221
000364	012746	000001	MOV	#1,-(SP)			
000370	004737	000000G	JSR	PC,CHK.RCV.STATUS			
000374	005077	000016G	CLR	@IOP.TABLE+16			4223
000400	062706	000022	ADD	#22,SP			4189
000404	104467		TRAP	67			4223
000406	006000		ROR	R0			
000410	103660		BLO	5\$			
000412	004737	000000G	JSR	PC,RESET.DEQNA			4226
000416	012746	000200	MOV	#200,-(SP)			4228

F1

ZQNA3  
V01.0

CZQNA0 DEQNA FUNCTIONAL TEST  
TEST 20 - FIFO OVERFLOW TEST

14-Mar-1985 13:11:16  
14-Mar-1985 13:05:35

SEQ 0212  
Page 129  
VAX-11 Bliss-16 V4.1-582  
DISK\$USER2:[MARSHALL.DEQNA]ZQNA3.BLI;4 (46)

000422	004737	000000G	JSR	PC,TURN.OFF.LED		
000426	012716	000204	MOV	#204,(SP)	:	4229
000432	004737	000000G	JSR	PC,TURN.OFF.LED		
000436	012716	000210	MOV	#210,(SP)	:	4230
000442	004737	000000G	JSR	PC,TURN.OFF.LED		
000446	012716	000214	MOV	#214,(SP)	:	4231
000452	004737	000000G	JSR	PC,TURN.OFF.LED		
000456	005726		TST	(SP)+	:	4113
000460	012601		MOV	(SP)+,R1		
000462	000207		RTS	PC		

; Routine Size: 154 words, Routine Base: AB\$CODE\$ + 21046  
; Maximum stack depth per invocation: 11 words

			.SBTTL	T20 TEST 20 - FIFO OVERFLOW TEST		
000000	004737	021046'	T20::			
000000			1\$:	JSR	PC,\$T20	4231
000004	104466			TRAP	66	
000006	006000			ROR	RO	
000010	103773			BLO	1\$	
000012	000207			RTS	PC	

; Routine Size: 6 words, Routine Base: AB\$CODE\$ + 21532  
; Maximum stack depth per invocation: 2 words

; 4234 1

ZQNA3  
V01.0CZQNA0 DEQNA FUNCTIONAL TEST  
TEST 21 - SANITY TIMER TEST14-Mar-1985 13:11:16  
14-Mar-1985 13:05:35VAX-11 Bliss-16 V4.1-582  
DISK\$USER2:[MARSHALL.DEQNA]ZQNA3.BLI:4 (47)SFQ 0213  
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```

: 4235 1 *SBTTL 'TEST 21 - SANITY TIMER TEST'
: 4236 1 :
: 4237 1 :
: 4238 1 : TEST 21: SANITY TIMER TEST
: 4239 1 :
: 4240 1 : DESCRIPTION:
: 4241 1 :
: 4242 1 : This test verifies that the Sanity Timer times out after a pre-set
: 4243 1 : ( supplied by the operator ) timeout period. The Sanity Timer uses
: 4244 1 : DCOK line on the Q-Bus to force the power_fail interrupt of the
: 4245 1 : processor which in turn causes the processor to reboot itself.
: 4246 1 :
: 4247 1 : Hardware tested: Sanity Timer Logic
: 4248 1 :
: 4249 1 : Processing:
: 4250 1 :
: 4251 1 : BEGIN
: 4252 1 :     reset device
: 4253 1 :     store Console Terminal and Power_fail interrupt vectors
: 4254 1 :     ( location 24 and 60 octal )
: 4255 1 :     enable Console Terminal interrupt
: 4256 1 :     arm for Power_fail interrupt
: 4257 1 :     inform the operator about the test procedure
: 4258 1 :     set the Sanity Timer to timeout value supplied by the
: 4259 1 :     operator
: 4260 1 :     enable the Sanity Timer
: 4261 1 :     wait
: 4262 1 :     IF Power-fail interrupt occurred
: 4263 1 :     THEN
: 4264 1 :         print 'SANITY TIMER TIMED OUT AS EXPECTED'
: 4265 1 :     ELSE
: 4266 1 :         force Console Terminal input interrupt by typing "Q"
: 4267 1 :         print error message if not inhibited
: 4268 1 :     ENDIF
: 4269 1 :     disable Sanity Timer
: 4270 1 :     restore Console Terminal and Power_fail interrupt vectors
: 4271 1 :     ( location 24 and 60 octal )
: 4272 1 : END
: 4273 1 :

```

ZQNA3  
V01.0CZQNA0 DEQNA FUNCTIONAL TEST  
TEST 21 - SANITY TIMER TEST14-Mar 1985 13:11:16  
14 Mar-1985 13:05:35VAX-11 Bliss-16 V4.1-582  
DISK\$USER2:[MARSHALL.DEQNA]ZQNA3.BLI;4 (48)SEQ 0214  
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```

: 4274 3  BGNTST;
: 4275 3
: 4276 3  IF .SWP_TIMER
: 4277 3  THEN
: 4278 4    BEGIN
: 4279 4
: 4280 4      !**
: 4281 4      ! RESET DEQNA AND INITIALIZE ETHERNET STATION ADDRESS RAM
: 4282 4      !--
: 4283 4
: 4284 4      RESET_DEQNA ( );
: 4285 4      !**
: 4286 4      ! SETUP FOR POWER FAIL AND CONSOLE TERMINAL INTERRUPTS
: 4287 4      !--
: 4288 4
: 4289 4      SETVEC ( PF_VEC_LOC, PWR_INT, PRI07 );           ! POWER FAIL
: 4290 4      SETVEC ( KB_VEC_LOC, KBD_INT, PRI05 );           ! CONSOLE TERMINAL
: 4291 4      SETPRI ( PRI00 );                               ! SET PROCESSOR PRI LEVEL
: 4292 4      PREP_FOR_SETUP ( );
: 4293 4      INCR_INDEX1 FROM 1 TO 14 DO
: 4294 4          WRT_STATION_ADR ( .INDEX1, PHA_INDEX );
: 4295 4
: 4296 6  BGNSUB;
: 4297 6      PUT_BIT [ CSR, SE, EENABLE ];
: 4298 6      XMIT_SETUP_PACKET ( #0'200' + ( .SWP_TOUT_VAL + 4 ) );
: 4299 6
: 4300 6  SELECTONE .SWP_TOUT_VAL OF
: 4301 6  SET
: 4302 6  [ 0,1 ]:
: 4303 7      BEGIN
: 4304 7          TEMP1 = 1;
: 4305 7          PRINTB ( MSG32, .TEMP1 );
: 4306 6      END;
: 4307 6  [ 2 ]:
: 4308 7      BEGIN
: 4309 7          TEMP1 = 4;
: 4310 7          PRINTB ( MSG32, .TEMP1 );
: 4311 6      END;
: 4312 6  [ 3 ]:
: 4313 7      BEGIN
: 4314 7          TEMP1 = 16;
: 4315 7          PRINTB ( MSG32, .TEMP1 );
: 4316 6      END;
: 4317 6  [ 4 ]:
: 4318 7      BEGIN
: 4319 7          TEMP1 = 1;
: 4320 7          PRINTB ( MSG55, .TEMP1 );
: 4321 6      END;
: 4322 6  [ 5 ]:
: 4323 7      BEGIN
: 4324 7          TEMP1 = 4;
: 4325 7          PRINTB ( MSG55, .TEMP1 );
: 4326 6      END;

```



ZQNA3  
V01.0CZQNA0 DEQNA FUNCTIONAL TFST  
TEST 21 - SANITY TIMER TEST14-Mar-1985 13:11:16  
14-Mar-1985 13:05:35VAX-11 Bliss-16 V4.1-582  
DISK\$USER2:[MARSHALL.DEQNA]ZQNA3.BLI:4 (48)

SEQ 0215

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```

: 4327 6      [ 6 ]:
: 4328 7      BEGIN
: 4329 7      TEMP1 = 16;
: 4330 7      PRINTB ( MSG55, .TEMP1 );
: 4331 6      END;
: 4332 6      [ 7 ]:
: 4333 7      BEGIN
: 4334 7      TEMP1 = 1;
: 4335 7      PRINTB ( MSG56, .TEMP1 );
: 4336 6      END;
: 4337 6      TES;
: 4338 6
: 4339 6      PRINTB ( MSG57 );
: 4340 6      INTERRUPT_FLG = -1;
: 4341 6      WAIT_FOR_TIMEOUT ( );
: 4342 6
: 4343 6      !++
: 4344 6      ! PUT DEQNA IN NORMAL MODE AND CHECK STATUS
: 4345 6      !--
: 4346 6
: 4347 6      PUT_BIT [ CSR, SE, DISABLE ];
: 4348 6      PREP_FOR_SETUP ( );
: 4349 6      INCR_INDEX1 FROM 1 TO 14 DO
: 4350 6      WRT_STATION_ADR ( .INDEX1, PHA_INDEX );
: 4351 6
: 4352 8      BGNSEG;
: 4353 8      XMIT_SETUP_PACKET ( N_MODE );
: 4354 6      ENDSEG;
: 4355 6
: 4356 6      CLRVEC ( PF_VEC_LOC );
: 4357 6      CLRVEC ( KB_VEC_LOC );
: 4358 6
: 4359 6      IF .INTERRUPT_FLG
: 4360 6      THEN
: 4361 7      BEGIN
: 4362 8      PRINTB ( MSG33 )
: 4363 7      END
: 4364 6      ELSE
: 4365 7      BEGIN
: 4366 7      CSR_WORD = GET_BIT ( CSR_ALL );
: 4367 7      PRINTB ( MSG59 );
: 4368 7      PRINTB ( MSG34 );
: 4369 7      ERRDF ( 2101, MSG00, ERROR$REPORT );
: 4370 6      END;
: 4371 4      ENDSUB;
: 4372 3      END;
: 4373 3
: 4374 1      ENDTST;

```

000000 010146  
000002 005746

```

.SBTTL $T21 TEST 21 - SANITY TIMER TEST
$T21:  MOV R1, -(SP) ;
      TST (SP)

```

4233

ZQNA3	CZQNA0	DEQNA	FUNCTIONAL TEST	14-Mar-1985 13:11:16	VAX-11 Bliss-16 V4.1-582	SEQ 0216
V01.0	TEST 21	- SANITY	TIMER TEST	14-Mar 1985 13.05:35	DISK\$USER2:[MARSHALL.DEQNA]ZQNA3.BLI;4	Page 133 (48)
000004	032737	000001	000000G		BIT #1,SWP.TIMER	4276
000012	001002				BNE 1\$	
000014	000137	022546'			JMP 17\$	
000020	004737	000000G		1\$:	JSR PC,RESET.DEQNA	4284
000024	012746	000000G			MOV #PRI07,-(SP)	4289
000030	012746	000000G			MOV #PWR.INT,-(SP)	
000034	012746	000024			MOV #24,(SP)	
000040	012746	000003			MOV #3,-(SP)	
000044	104437				TRAP 37	
000046	012716	000000G			MOV #PRI05,(SP)	4290
000052	012746	000000G			MOV #KBD.INT,-(SP)	
000056	012746	000060			MOV #60,-(SP)	
000062	012746	000003			MOV #3,-(SP)	
000066	104437				TRAP 37	
000070	012700	000000G			MOV #PRI00,R0	4291
000074	104441				TRAP 41	
000076	004737	000000G			JSR PC,PREP.FOR.SETUP	4292
000102	012701	000001			MOV #1,R1	*.INDEX1
000106	010116			2\$:	MOV R1,(SP)	INDEX1,*
000110	012746	000023			MOV #23,-(SP)	
000114	004737	000000G			JSR PC,WRT.STATION.ADR	
000120	005726				TST (SP)+	
000122	005201				INC R1	INDEX1
000124	020127	000016			CMP R1,#16	INDEX1,*
000130	003766				BLE 2\$	
000132	104402			3\$:	TRAP 2	
000134	013700	000000G			MOV REG.ADR,R0	4294
000140	052760	002000	000016		BIS #2000,16(R0)	4297
000146	013700	000000G			MOV SWP.TOUT.VAL,R0	4298
000152	072027	000004			ASH #4,R0	
000156	010016				MOV R0,(SP)	
000160	062716	000200			ADD #200,(SP)	
000164	004737	000000G			JSR PC,XMIT.SETUP.PACKET	
000170	013701	000000G			MOV SWP.TOUT.VAL,R1	4300
000174	002417				BLT 4\$	4302
000176	020127	000001			CMP R1,#1	
000202	003014				BGT 4\$	
000204	012737	000001	000000G		MOV #1,TEMP1	4304
000212	012716	000001			MOV #1,(SP)	4305
000216	012746	000000G			MOV #MSG32,-(SP)	
000222	012746	000002			MOV #2,-(SP)	
000226	010600				MOV SP,R0	SP,*
000230	104414				TRAP 14	
000232	000531				BR 10\$	4303
000234	020127	000002		4\$:	CMP R1,#2	4307
000240	001014				BNE 5\$	
000242	012737	000004	000000G		MOV #4,TEMP1	4309
000250	012716	000004			MOV #4,(SP)	4310
000254	012746	000000G			MOV #MSG32,-(SP)	
000260	012746	000002			MOV #2,-(SP)	
000264	010600				MOV SP,R0	SP,*
000266	104414				TRAP 14	
000270	0005'2				BR 10\$	4308

ZQNA3	CZQNA3	DEQNA	FUNCTIONAL TEST	14-Mar-1985 13:11:16	VAX-11 Bliss-16 V4.1-582	SEQ 0217	
V01.0	TEST 21 - SANITY TIMER TEST			14-Mar-1985 13:05:35	DISK\$USER2:[MARSHALL.DEQNA]ZQNA3.BLI;4	Page 134 (48)	
000272	020127	000003		5\$:	CMP R1,#3		4312
000276	001014				BNE 6\$		
000300	012737	000020	000000G		MOV #20,TEMP1		4314
000306	012716	000020			MOV #20,(SP)		4315
000312	012746	000000G			MOV #MSG32,-(SP)		
000316	012746	000002			MOV #2,-(SP)		
000322	010600				MOV SP,R0	; SP,*	
000324	104414				TRAP 14		
000326	000473				BR 10\$		4313
000330	020127	000004		6\$:	CMP R1,#4		4317
000334	001014				BNE 7\$		
000336	012737	000001	000000G		MOV #1,TEMP1		4319
000344	012716	000001			MOV #1,(SP)		4320
000350	012746	000000G			MOV #MSG55,-(SP)		
000354	012746	000002			MOV #2,-(SP)		
000360	010600				MOV SP,R0	; SP,*	
000362	104414				TRAP 14		
000364	000454				BR 10\$		4318
000366	020127	000005		7\$:	CMP R1,#5		4322
000372	001014				BNE 8\$		
000374	012737	000004	000000G		MOV #4,TEMP1		4324
000402	012716	000004			MOV #4,(SP)		4325
000406	012746	000000G			MOV #MSG55,-(SP)		
000412	012746	000002			MOV #2,-(SP)		
000416	010600				MOV SP,R0	; SP,*	
000420	104414				TRAP 14		
000422	000435				BR 10\$		4323
000424	020127	000006		8\$:	CMP R1,#6		4327
000430	001014				BNE 9\$		
000432	012737	000020	000000G		MOV #20,TEMP1		4329
000440	012716	000020			MOV #20,(SP)		4330
000444	012746	000000G			MOV #MSG55,-(SP)		
000450	012746	000002			MOV #2,-(SP)		
000454	010600				MOV SP,R0	; SP,*	
000456	104414				TRAP 14		
000460	000416				BR 10\$		4328
000462	020127	000007		9\$:	CMP R1,#7		4332
000466	001014				BNE 11\$		
000470	012737	000001	000000G		MOV #1,TEMP1		4334
000476	012716	000001			MOV #1,(SP)		4335
000502	012746	000000G			MOV #MSG56,-(SP)		
000506	012746	000002			MOV #2,-(SP)		
000512	010600				MOV SP,R0	; SP,*	
000514	104414				TRAP 14		
000516	022626			10\$:	CMP (SP)+,(SP)+		4333
000520	012716	000000G		11\$:	MOV #MSG57,(SP)		4339
000524	012746	000001			MOV #1,-(SP)		
000530	010600				MOV SP,R0	; SP,*	
000532	104414				TRAP 14		
000534	012737	177777	000000G		MOV #-1,INTERRUPT.FLG		4340
000542	004737	000000G			JSR PC,WAIT.FOR.TIMEOUT		4341
000546	013700	000000G			MOV REG,ADR,R0		4347
000552	042760	002000	000016		BIC #2000,16(R0)		

ZQNA3  
V01.0

CZQNA0 DEQNA FUNCTIONAL TEST  
TEST 21 - SANITY TIMER TEST

14-Mar-1985 13:11:16  
14-Mar-1985 13:05:35

SEQ 0218  
Page 135  
VAX-11 Bliss-16 V4.1 582  
DISK\$USER2:[MARSHALL.DEQNA]ZQNA3.BLI;4 (48)

000560	004737	000000G		JSR	PC,PREP.FOR.SETUP	:	4348
000564	012701	000001		MOV	#1,R1	: *.INDEX1	4349
000570	010116		12\$:	MOV	R1,(SP)	: INDEX1,*	4350
000572	012746	000023		MOV	#23,-(SP)		
000576	004737	000000G		JSR	PC,MRT.STATION.ADR		
000602	005726			TST	(SP)*		
000604	005201			INC	R1	: INDEX1	4349
000606	020127	000016		CMP	R1,#16	: INDEX1,*	
000612	003766			BLE	12\$		
000614	104404		13\$:	TRAP	4	:	4350
000616	012716	000200		MOV	#200,(SP)	:	4353
000622	004737	000000G		JSR	PC,XMIT.SETUP.PACKET		
000626	104470			TRAP	70		
000630	006000			ROR	R0		
000632	103770			BLO	13\$		
000634	012700	000024		MOV	#24,R0	:	4356
000640	104436			TRAP	36		
000642	012700	000060		MOV	#60,R0	:	4357
000646	104436			TRAP	36		
000650	032737	000001 000000G		BIT	#1,INTERRUPT.FLG	:	4359
000656	001407			BEQ	14\$		
000660	012716	000000G		MOV	#MSG33,(SP)	:	4362
000664	012746	000001		MOV	#1,-(SP)		
000670	010600			MOV	SP,R0	: SP,*	
000672	104414			TRAP	14		
000674	000431			BR	15\$	:	4359
000676	013700	000000G	14\$:	MOV	REG.ADR,R0	:	4366
000702	016066	000016 000020		MOV	16(R0),20(SP)	: *.TMP.LOCATION	
000710	016637	000020 000000G		MOV	20(SP),CSR.WORD	: TMP.LOCATION,*	
000716	012716	000000G		MOV	#MSG59,(SP)	:	4367
000722	012746	000001		MOV	#1,-(SP)		
000726	010600			MOV	SP,R0	: SP,*	
000730	104414			TRAP	14		
000732	012716	000000G		MOV	#MSG34,(SP)	:	4368
000736	012746	000001		MOV	#1,-(SP)		
000742	010600			MOV	SP,R0	: SP,*	
000744	104414			TRAP	14		
000746	104455			TRAP	55	:	4369
000750	004065			.WORD	4065		
000752	000000G			.WORD	MSG00		
000754	000000G			.WORD	ERROR\$REPORT		
000756	005726			TST	(SP)*	:	4365
000760	022626		15\$:	CMP	(SP)*,(SP)*	:	4294
000762	104467			TRAP	67	:	4370
000764	006000			ROR	R0		
000766	103002			BHIS	16\$		
000770	000137	021700'		JMP	3\$		
000774	062706	000016	16\$:	ADD	#16,SP	:	4278
001000	005726		17\$:	TST	(SP)*	:	4233
001002	012601			MOV	(SP)*,R1		
001004	000207			RTS	PC		

: Routine Size: 259 words. Routine Base: AB\$CODE\$ + 21546

ZONA3  
V01.0

CZONADO DEQNA FUNCTIONAL TEST  
TEST 21 - SANITY TIMER TEST

14-Mar-1985 13:11:16  
14-Mar-1985 13:05:35

SEQ 0219  
Page 136  
VAX-11 Bl:ss 16 V4.1 582  
DISK:USER2:(MARSHALL.DEQNA)ZONA3.BLI:4 (48)

; Maximum stack depth per invocation: 14 words

```

000000 004737 021546'      T21::      .SBTTL  T21 TEST 21 - SANITY TIMER TEST
000000      1$:      JSR      PC,$T21
000004 104466      TRAP     66
000006 006000      ROR      R0
000010 103773      BLO      1$
000012 000207      RTS      PC

```

4372

; Routine Size: 6 words, Routine Base: AB:CODE: - 22554  
; Maximum stack depth per invocation: 2 words

```

; 4375 1
; 4376 1 END
; 4377 0 ELUDOP:

```

OTS external references  
.GLOBL \$SAVE4, \$SAVE3, \$SAVE2

PSECT SUMMARY

Psect Name	Words	Attributes
AB:CODE:	4796	RO, I, LCL, REL, CON

Library Statistics

File	Symbols			Pages Mapped	Processing Time
	Total	Loaded	Percent		
DISK:USER2:(MARSHALL.DEQNA)QNALIB.L16:15	223	142	63	14	00:00.1

COMMAND QUALIFIERS

BLISS/PDP11 ZONA3.BLI/LIST=ZONA3.LIS/OBJECT=ZONA3.OBJ/SOURCE=PAGE:53

N1

ZONA3  
V01.0

CZONADO DEONA FUNCTIONAL TEST  
TEST 21 - SANITY TIMER TEST

14-Mar-1985 13:11:16

VAX-11 Bliss-16 V4.1-582

SEQ 0220  
Page 137

; Size: 4796 code - 0 data words  
; Run Time: 01:59.9  
; Elapsed Time: 07:33.3  
; Lines/CPU Min: 2190  
; Lexemes/CPU-Min: 26074  
; Memory Used: 437 pages  
; Compilation Complete

ZQNA4

CZQNA40 DEQNA FUNCTIONAL TEST

14-Mar-1985 13:18:55  
14-Mar-1985 13:06:01

SEQ 0221  
Page 1  
VAX-11 B1:00-16 V4.1-582  
DISK#USER2:(MARSHALL.DEQNA)ZQNA4.BLI;4 (1)

```

: 0001 0  MODULE ZQNA4 (#TITLE 'CZQNA40 DEQNA FUNCTIONAL TEST'
: 0002 0          IDENT = 'V01.0',
: 0003 0          ADDRESSING_MODE(ABSOLUTE)
: 0004 0          ) =
: 0005 0  #SBTTL 'GLOBAL ROUTINE DECLARATION MODULE'
: 0006 0
: 0007 1  BEGIN
: 0008 1
: 0009 1  LIBRARY 'QNALIB';           ! QNALIB LIBRARY
: 0010 1  REQUIRE 'BLSMAC.REQ';     ! DIAGNOSTIC SUPERVISOR LIBRARY
: 1500 1  !<BLF/NOFORMAT>
: 1501 1

```

ZQNA4  
V01.0CZQNA0 DEQNA FUNCTIONAL TEST  
GLOBAL ROUTINE DECLARATION MODULE14-Mar-1985 13:18:55  
14-Mar-1985 13:06:01VAX-11 Bliss-16 V4.1 582  
DISK#USER2:{MARSHALL.DEQNA}ZQNA4.BLI;4 (2)

SEQ 0222

Page 2

(2)

```

: 1502 1 PSECT
: 1503 1 CODE = AC#CODE#;
: 1504 1
: 1505 1 FORWARD ROUTINE
: 1506 1 XMIT_AND_RCV_PACKET : NOVALUE;
: 1507 1
: 1508 1 !..
: 1509 1 ! EXTERNAL DATA USED BY THIS MODULE
: 1510 1 !..
: 1511 1
: 1512 1 EXTERNAL
: 1513 1
: 1514 1 !..
: 1515 1 ! COMMUNICATION AREA DECLARATIONS
: 1516 1 !..
: 1517 1
: 1518 1 RCV_D_LIST : BLOCK [ D_SIZE, WORD ] FIELD ( DL_FIELDS ),
: 1519 1 XMIT_D_LIST : BLOCK [ D_SIZE, WORD ] FIELD ( DL_FIELDS ),
: 1520 1 DESCR_LIST : BLOCK [ DESCR_SIZE, WORD ] FIELD ( DL_FIELDS ),
: 1521 1 RCV_BUFFER : VECTOR [ B_SIZE, BYTE ],
: 1522 1 XMIT_BUFFER : VECTOR [ B_SIZE, BYTE ],
: 1523 1 DATA_BUFFER : VECTOR [ BUF_SIZE, BYTE ],
: 1524 1 SETUP_BUFFER : VECTOR [ SETUP_SIZE, WORD ],
: 1525 1 IOP_TABLE : VECTOR [ 8, WORD ],
: 1526 1 BD_PROM_DESCR : VECTOR [ BD_D_SIZE, WORD ],
: 1527 1 STATION_ADR : VECTOR [ 4, WORD ],
: 1528 1 TARGET_ADR : VECTOR [ T_SIZE, BYTE ],
: 1529 1 PHYS_ADR : VECTOR [ 22, BYTE ],
: 1530 1
: 1531 1 !..
: 1532 1 ! HARDWARE AND SOFTWARE P-TABLE STORAGE DECLARATIONS
: 1533 1 !..
: 1534 1
: 1535 1 HWP_TABLE : REF BLOCK [ HWP_SIZE, WORD ] FIELD ( HWP_FIELDS ),
: 1536 1 SWP_TABLE : REF BLOCK [ SWP_SIZE, WORD ] FIELD ( SWP_FIELDS ),
: 1537 1
: 1538 1 REG_ADR : REF REG_STR FIELD ( IOP_FIELDS ),
: 1539 1 GET_ADR : REF ADR_STR FIELD ( IOP_FIELDS ),
: 1540 1 IOP_DATA : REF REG_STR FIELD ( IOP_FIELDS ),
: 1541 1

```



ZQNA4  
VO1.0CZQNA0 DEQNA FUNCTIONAL TEST  
GLOBAL ROUTINE DECLARATION MODULE14 Mar-1985 13:18:55  
14-Mar-1985 13:06:01VAX-11 Bliss 16 V4.1-582  
DISK\$USER2:[MARSHALL.DEQNA]ZQNA4.BLI:4 (3)

SEQ 0223

Page 3

```

: 1542 1
: 1543 1
: 1544 1
: 1545 1
: 1546 1
: 1547 1
: 1548 1
: 1549 1
: 1550 1
: 1551 1
: 1552 1
: 1553 1
: 1554 1
: 1555 1
: 1556 1
: 1557 1
: 1558 1
: 1559 1
: 1560 1
: 1561 1
: 1562 1
: 1563 1
: 1564 1
: 1565 1
: 1566 1
: 1567 1
: 1568 1
: 1569 1
: 1570 1
: 1571 1
: 1572 1
: 1573 1
: 1574 1
: 1575 1
: 1576 1
: 1577 1

!..
!
MISCELLANEOUS DATA DECLARATIONS
!
XBUF_LENGTH,      RBUF_LENGTH,      INTERRUPT_FLG,      COUNTER,
SWP_BLOCK_MEM,    SWP_TOUT_VAL,      SWP_ILOOP,          SWP_TIMER,
UP_COUNTER,       DOWN_COUNTER,      CHECKSUM,           ERR_NUMBER,
ERR_COUNT,        ERR_FLAG,          CSR_WORD,           PRI00,
PRI01,            PRI02,             PRI03,              PRI04,
PRI05,            PRI06,             PRI07,              DEQNA_NO : WORD,

!..
!
TEMPORARY STORAGE DATA DECLARATIONS
!
P1,                P2,                P3,                P4,
TMP_IOP_ADR,       TMP_REG_DATA,      TEMP1,             TEMP2,
TEMP3,             TEMP4,             TEMP5,             TEMP6,
TEMP7,             TEMP8,             TEMP9,             TADR1,
TADR2,
TBYTE1,           TBYTE2,           TBYTE3,           TBYTE4 : WORD,
: BYTE,

!..
!
DIAGNOSTIC ERROR MESSAGES DECLARED EXTERNALLY
!
MSG00,
MSG01, MSG02, MSG03, MSG04, MSG05, MSG06, MSG07, MSG08, MSG09, MSG10,
MSG11, MSG12, MSG13, MSG14, MSG15, MSG16, MSG17, MSG18, MSG19, MSG20,
MSG21, MSG22, MSG23, MSG24, MSG25, MSG26, MSG27, MSG28, MSG29, MSG30,
MSG31, MSG32, MSG33, MSG34, MSG35, MSG36, MSG37, MSG38, MSG39, MSG40,
MSG41, MSG42, MSG43, MSG44, MSG45, MSG46, MSG47, MSG48, MSG49, MSG50,
MSG51, MSG52, MSG53, MSG54, MSG55, MSG56, MSG57, MSG58, MSG59, MSG60,
MSG61, MSG62, MSG63, MSG64, MSG65, MSG66, MSG67, MSG68, MSG69, MSG70;

```

ZQNA4  
VO1.0

CZQNAO DEQNA FUNCTIONAL TEST  
GLOBAL ROUTINE - ERROR\$REPORT ( )

14-Mar-1985 13:18:55  
14-Mar-1985 13:06:01

VAX-11 B1100-16 V4.1-502  
DISK\$USER2:[MARSHALL.DEQNA]ZQNA4.BLI;4

```

: 1578 1 *SBTTL 'GLOBAL ROUTINE - ERROR$REPORT ( )'
: 1579 1
: 1580 1 !..
: 1581 1 !
: 1582 1 ! GLOBAL ROUTINE : ERROR$REPORT
: 1583 1 !
: 1584 1 ! DESCRIPTION:
: 1585 1 !
: 1586 1 ! This routine reports errors to the operator
: 1587 1 !
: 1588 1 !--
: 1589 1
: 1590 1 *SBTTL 'GLOBAL ROUTINE - ERROR$REPORT ( )'
: 1591 1
: 1592 1 BGNMSG (ERROR$REPORT);

```

```

.TITLE ZQNA4 CZQNAO DEQNA FUNCTIONAL TEST
.IDENT /VO1.0/
.ENABL AMA

.GLOBL RCV.D.LIST, XMIT.D.LIST, DESCR.LIST
.GLOBL RCV.BUFFER, XMIT.BUFFER, DATA.BUFFER
.GLOBL SETUP.BUFFER, IOP.TABLE, BD.PROM.DESCR
.GLOBL STATION.ADR, TARGET.ADR, PHYS.ADR
.GLOBL HWP.TABLE, SWP.TABLE, REG.ADR
.GLOBL GET.ADR, IOP.DATA, XBUF.LENGTH
.GLOBL RBUF.LENGTH, INTERRUPT.FLG, COUNTER
.GLOBL SWP.BLOCK.MEM, SWP.TOUT.VAL, SWP.ILOOP
.GLOBL SWP.TIMER, UP.COUNTER, DOWN.COUNTER
.GLOBL CHECKSUM, ERR.NUMBER, ERR.COUNT
.GLOBL ERR.FLAG, CSR.WORD, PRI00, PRI01
.GLOBL PRI02, PRI03, PRI04, PRI05, PRI06
.GLOBL PRI07, DEQNA.NO, P1, P2, P3, P4
.GLOBL TMP.IOP.ADR, TMP.REG.DATA, TEMP1
.GLOBL TEMP2, TEMP3, TEMP4, TEMP5, TEMP6
.GLOBL TEMP7, TEMP8, TEMP9, TADR1, TADR2
.GLOBL TBYTE1, TBYTE2, TBYTE3, TBYTE4
.GLOBL MSG00, MSG01, MSG02, MSG03, MSG04
.GLOBL MSG05, MSG06, MSG07, MSG08, MSG09
.GLOBL MSG10, MSG11, MSG12, MSG13, MSG14
.GLOBL MSG15, MSG16, MSG17, MSG18, MSG19
.GLOBL MSG20, MSG21, MSG22, MSG23, MSG24
.GLOBL MSG25, MSG26, MSG27, MSG28, MSG29
.GLOBL MSG30, MSG31, MSG32, MSG33, MSG34
.GLOBL MSG35, MSG36, MSG37, MSG38, MSG39
.GLOBL MSG40, MSG41, MSG42, MSG43, MSG44
.GLOBL MSG45, MSG46, MSG47, MSG48, MSG49
.GLOBL MSG50, MSG51, MSG52, MSG53, MSG54
.GLOBL MSG55, MSG56, MSG57, MSG58, MSG59
.GLOBL MSG60, MSG61, MSG62, MSG63, MSG64
.GLOBL MSG65, MSG66, MSG67, MSG68, MSG69
.GLOBL MSG70

```



ZQNA4  
V01.0

CZQNA0 DEQNA FUNCTIONAL TEST  
GLOBAL ROUTINE - ERROR\$REPORT ( )

14-Mar-1985 13:18:55  
14-Mar-1985 13:06:01

VAX-11 B1,ss-16 V4.1-582  
DISK\$USER2:[MARSHALL.DEQNA]ZQNA4.BLI;4

SEQ 0226  
Page 6  
(4)

000114	013746	000006G	MOV	XMIT.D.LIST+6,-(SP)		
000120	012746	000000G	MOV	#MSG07,-(SP)		
000124	012746	000003	MOV	#3,-(SP)		
000130	010600		MOV	SP,R0	; SP,*	
000132	104414		TRAP	14		
000134	013716	000010G	MOV	RCV.D.LIST+10,(SP)		
000140	042716	000360	BIC	#360,(SP)		1599
000144	013746	000010G	MOV	XMIT.D.LIST+10,-(SP)		
000150	042716	020017	BIC	#20017,(SP)		
000154	012746	000000G	MOV	#MSG08,-(SP)		
000160	012746	000003	MOV	#3,-(SP)		
000164	010600		MOV	SP,R0	; SP,*	
000166	104414		TRAP	14		
000170	005016		CLR	(SP)		
000172	113716	000012G	MOVB	RCV.D.LIST+12,(SP)		1600
000176	013746	000012G	MOV	XMIT.D.LIST+12,-(SP)		
000202	042716	140000	BIC	#140000,(SP)		
000206	012746	000000G	MOV	#MSG09,-(SP)		
000212	012746	000003	MOV	#3,-(SP)		
000216	010600		MOV	SP,R0	; SP,*	
000220	104414		TRAP	14		
000222	013716	000000G	MOV	CSR.WORD,(SP)		
000226	042716	044000	BIC	#44000,(SP)		1601
000232	012746	000000G	MOV	#MSG10,-(SP)		
000236	012746	000002	MOV	#2,-(SP)		
000242	010600		MOV	SP,R0	; SP,*	
000244	104414		TRAP	14		
000246	017716	000000G	MOV	#HWP.TABLE,(SP)		
000252	012746	000000G	MOV	#MSG11,-(SP)		1602
000256	012746	000002	MOV	#2,-(SP)		
000262	010600		MOV	SP,R0	; SP,*	
000264	104414		TRAP	14		
000266	062706	000060	ADD	#60,SP		1592
000272	000207		RTS	PC		

; Routine Size: 94 words, Routine Base: AC\$CODE\$ + 0010  
; Maximum stack depth per invocation: 26 words

; 1605 1  
; 1606 1

ZQNA4  
V01.0

CZQNAO DEQNA FUNCTIONAL TEST  
GLOBAL ROUTINE - E1\$REPORT ( )

14 Mar-1985 13:18:55  
14-Mar-1985 13:06:01

VAX-11 Bliss 16 V4.1-582  
DISK\$USER2:[MARSHALL.DEQNA]ZQNA4.BLI:4

SEQ 0227  
Page 7  
(5)

```

; 1607 1 #SBTTL 'GLOBAL ROUTINE - E1$REPORT ( )'
; 1608 1
; 1609 1 !..
; 1610 1 !
; 1611 1 GLOBAL ROUTINE : E1$REPORT
; 1612 1 !
; 1613 1 DESCRIPTION:
; 1614 1 !
; 1615 1 This routine reports errors to the operator
; 1616 1 !
; 1617 1 !..
; 1618 1
; 1619 1 #SBTTL 'GLOBAL ROUTINE - E1$REPORT ( )'
; 1620 1
; 1621 1 BGNMSG ( E1$REPORT );

```

```

000000 004737 000000V          .SBTTL E1$REPORT GLOBAL ROUTINE - E1$REPORT ( )
                                E1$REPORT::
                                JSR    PC,M$E1$REPORT          ;          1621
000004 104423                TRAP   23
000006 000207                RTS    PC

```

```

; Routine Size: 4 words,      Routine Base: AC$CODE$ + 0304
; Maximum stack depth per invocation: 2 words

```

```

; 1622 2
; 1623 2 TEMP1 = 1;
; 1624 2
; 1625 1 ENDMSG;

```

```

000000 012737 000001 000000G    .SBTTL M$E1$REPORT GLOBAL ROUTINE - E1$REPORT ( )
                                M$E1$REPORT:
                                MOV    #1,TEMP1
000006 000207                RTS    PC          ;          1623
                                           ;          1621

```

```

; Routine Size: 4 words,      Routine Base: AC$CODE$ + 0314
; Maximum stack depth per invocation: 0 words

```

```

; 1626 1
; 1627 1

```

ZQNA4  
V01.0CZQNA0 DEQNA FUNCTIONAL TEST  
GLOBAL ROUTINE - RESET\_DEQNA ( )14-Mar-1985 13:18:55  
14-Mar-1985 13:06:01VAX-11 Bliss-16 V4.1-582  
DISK\$USER2:[MARSHALL.DEQNA]ZQNA4.BLI;4SEQ 0228  
Page 8  
(6)

```

: 1628 1 #SBTTL 'GLOBAL ROUTINE - RESET_DEQNA ( )'
: 1629 1
: 1630 1 GLOBAL ROUTINE RESET_DEQNA : NOVALUE =
: 1631 1
: 1632 1 !..
: 1633 1 !
: 1634 1 ! GLOBAL ROUTINE : RESFT_DEQNA
: 1635 1 !
: 1636 1 ! DESCRIPTION:
: 1637 1 !
: 1638 1 ! This routine verifies that DEQNA can be reset by setting bit 1 in the
: 1639 1 ! CSR register. After the reset, CSR is checked for nominal
: 1640 1 ! status.
: 1641 1 !
: 1642 1 ! Hardware tested: Q-Bus DMA Interface
: 1643 1 !
: 1644 1 ! Processing:
: 1645 1 !
: 1646 1 ! BEGIN
: 1647 1 ! set Software Reset (SR) bit in CSR and check for
: 1648 1 ! expected CSR status
: 1649 1 ! IF error
: 1650 1 ! THEN
: 1651 1 ! print error message if not inhibited
: 1652 1 ! ENDIF
: 1653 1 ! clear SR bit in CSR and check for expected CSR status
: 1654 1 ! IF error
: 1655 1 ! THEN
: 1656 1 ! print error message if not inhibited
: 1657 1 ! ENDIF
: 1658 1 ! END
: 1659 1 !
: 1660 1 ! INPUT PARAMETERS:
: 1661 1 !
: 1662 1 !--

```

ZQNA4  
V01.0CZQNADO DEQNA FUNCTIONAL TEST  
GLOBAL ROUTINE - RESET\_DEQNA ( )14-Mar-1985 13:18:55  
14-Mar-1985 13:06:01VAX-11 Bliss-16 V4.1-582  
DISK\$USER2:[MARSHALL.DEQNA]ZQNA4.BLI;4 (7)

SEQ 0229

Page 9

```

; 1663 1
; 1664 1 !**
; 1665 1 !
; 1666 1 ! RESET THE DEVICE AND CHECK CONTENTS OF CSR FOR NOMINAL STATUS
; 1667 1 !
; 1668 1 !--
; 1669 1
; 1670 2 BEGIN
; 1671 2
; 1672 2 PUT_BIT ( CSR, ALL_BITS, ZERO );
; 1673 2 PUT_BIT ( CSR, SR, SET_IT );
; 1674 2
; 1675 2 DELAY ( TIME6_LIMIT );
; 1676 2 TEMP1 = GET_BIT [ CSR_ALL ] AND CSR2_MASK;
; 1677 2
; 1678 2 IF .TEMP1 NEQU CSR1_STATUS
; 1679 2 THEN
; 1680 3 BEGIN
; 1681 3 ERR_FLAG = ONE;
; 1682 3 CSR_WORD = GET_BIT [ CSR_ALL ];
; 1683 3 PRINTB ( MSG59 );
; 1684 3 PRINTB ( MSG31 );
; 1685 3 PRINTB ( MSG30, .GET_ADR [ CSR_ALL ], .TEMP1, CSR2_STATUS );
; 1686 3 ERRDF ( 0001, MSG00, E1$REPORT );
; 1687 2 END;
; 1688 2
; 1689 2 !**
; 1690 2 !
; 1691 2 ! CLEAR SOFTWARE RESET BIT IN THE CSR AND CHECK FOR EXPECTED STATUS
; 1692 2 !
; 1693 2 !--
; 1694 2
; 1695 2 PUT_BIT ( CSR, SR, CLR_IT );
; 1696 2 DELAY ( TIME6_LIMIT );
; 1697 2 TEMP2 = GET_BIT [ CSR_ALL ] AND CSR2_MASK;
; 1698 2 IF .TEMP2 NEQU CSR2_STATUS
; 1699 2 THEN
; 1700 3 BEGIN
; 1701 3 ERP_FLAG = ONE;
; 1702 3 CSR_WORD = GET_BIT [ CSR_ALL ];
; 1703 3 PRINTB ( MSG59 );
; 1704 3 PRINTB ( MSG31 );
; 1705 3 PRINTB ( MSG30, .GET_ADR [ CSR_ALL ], .TEMP1, CSR2_STATUS );
; 1706 3 ERRDF ( 0002, MSG00, E1$REPORT );
; 1707 2 END;
; 1708 2
; 1709 1 END;

```

.GLOBL L\$DLY

.SBTTL RESET.DEQNA GLOBAL ROUTINE - RESET\_DEQNA ( )

ZQNA4  
V01.0

CZQNA0 DEQNA FUNCTIONAL TEST  
GLOBAL ROUTINE - RESET\_DEQNA ( )

14-Mar-1985 13:18:55  
14-Mar-1985 13:06:01

SEQ 0230  
Page 10  
VAX-11 Bliss 16 V4.1-582  
DISK\$USER2:[MARSHALL.DEQNA]ZQNA4.BLI;4 (7)

```

000000 004137 000000G      RESET.DEQNA::
                                JSR    R1,$SAVE2
000004 162706 000016      SUB    #16,SP
                                MOV    REG.ADR,R0
000010 013700 000000G      MOV    #16,R2
000014 012702 000016      ADD    R0,R2
000020 060002      CLR    (R2)
000022 005012      BISB  #2,(R2)
000024 152712 000002      MOV    #1,R1
000030 012701 000001      1$:  BEQ    4$
000034 001410      MOV    L$DLY,R0
000036 013700 000000G      BEQ    3$
000042 001403      CLR    14(SP)
000044 005066 000014      SOB   R0,2$
000050 077003      3$:  DEC   R1
000052 005301      BR    1$
000054 000767      4$:  MOV   (R2),(SP)
000056 011216      MOV   (SP),TEMP1
000060 011637 000000G      BIC   #10000,TEMP1
000064 042737 010000 000000G      CMP   TEMP1,#62
000072 023727 000000G 000062      BEQ   5$
000100 001453      MOV   #1,ERR.FLAG
000102 012737 000001 000000G      MOV   (SP),2(SP)
000110 011666 000002      MOV   (SP),CSR.WORD
000114 011637 000000G      MOV   #MSG59,-(SP)
000120 012746 000000G      MOV   #1,-(SP)
000124 012746 000001      MOV   SP,R0
000130 010600      TRAP  14
000132 104414      MOV   #MSG31,(SP)
000134 012716 000000G      MOV   #1,-(SP)
000140 012746 000001      MOV   SP,R0
000144 010600      TRAP  14
000146 104414      MOV   #60,(SP)
000150 012716 000060      MOV   TEMP1,-(SP)
000154 013746 000000G      MOV   GET.ADR,14(SP)
000160 013766 000000G 000014      ADD   #16,14(SP)
000166 062766 000016 000014      MOV   14(SP),-(SP)
000174 016646 000014      MOV   #MSG30,-(SP)
000200 012746 000000G      MOV   #4,-(SP)
000204 012746 000004      MOV   SP,R0
000210 010600      TRAP  14
000212 104414      TRAP  55
000214 104455      .WORD 1
000216 000001      .WORD MSG00
000220 000000G      .WORD E1$REPORT
000222 000304'      ADD   #16,SP
000224 062706 000016      5$:  MOV   REG.ADR,R0
000230 013700 000000G      BICB #2,16(R0)
000234 142760 000002 000016      MOV   #1,R2
000242 012702 000001      6$:  BEQ   9$
000246 001410      MOV   L$DLY,R1
000250 013701 000000G      BEQ   8$
000254 001403      7$:  CLR   14(SP)
000256 005066 000014

```

1630

1672

1673

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1684

1685

1686

1680

1695

1696



ZQNA4  
V01.0

CZQNA40 DEQNA FUNCTIONAL TEST  
GLOBAL ROUTINE - RESET\_DEQNA ( )

14-Mar-1985 13:18:55  
14-Mar-1985 13:06:01

SEQ 0231  
Page 11  
VAX-11 Bliss-16 V4.1-582  
DISK#USER2:(MARSHALL.DEQNA)ZQNA4.BLI;4 (7)

000262	077103			S08	R1,74	:	##TMP1,*		
000264	005302			84:	DEC	R2	:	##TMP2	
000266	000767				BR	64			
000270	016066	000016	000006	94:	MOV	16(R0),6(SP)	:	*,TMP.LOCATION	1697
000276	016637	000006	000000G		MOV	6(SP),TEMP2	:	TMP.LOCATION,*	
000304	042737	010000	000000G		BIC	#10000,TEMP2			
000312	023727	000000G	000060		CMF	TEMP2,#60	:		1698
000320	001455				BEQ	104			
000322	012737	000001	000000G		MOV	#1,ERR.FLAG	:		1701
000330	016666	000006	000010		MOV	6(SP),10(SP)	:	*,TMP.LOCATION	1702
000336	016637	000010	000000G		MOV	10(SP),CSR.WORD	:	TMP.LOCATION,*	
000344	012746	000000G			MOV	#MSG59,-(SP)	:		1703
000350	012746	000001			MOV	#1,-(SP)			
000354	010600				MOV	SP,R0	:	SP,*	
000356	104414				TRAP	14			
000360	012716	000000G			MOV	#MSG31,(SP)	:		1704
000364	012746	000001			MOV	#1,-(SP)			
000370	010600				MOV	SP,R0	:	SP,*	
000372	104414				TRAP	14			
000374	012716	000060			MOV	#60,(SP)	:		1705
000400	013746	000000G			MOV	TEMP1,-(SP)			
000404	013766	000000G	000022		MOV	GET.ADR,22(SP)	:	*,TMP.LOCATION	
000412	062766	000016	000022		ADD	#16,22(SP)	:	*,TMP.LOCATION	
000420	016646	000022			MOV	22(SP),-(SP)	:	TMP.LOCATION,*	
000424	012746	000000G			MOV	#MSG30,-(SP)			
000430	012746	000004			MOV	#4,-(SP)			
000434	010600				MOV	SP,R0	:	SP,*	
000436	104414				TRAP	14			
000440	104455				TRAP	55			1706
000442	000002				.WORD	2			
000444	000000G				.WORD	MSC00			
000446	006304'				.WORD	E1\$REPORT			
000450	062706	000016			ADD	#16,SP	:		1700
000454	062706	000016		104:	ADD	#16,SP	:		1630
000460	000207				RTS	PC			

; Routine Size: 153 words, Routine Base: AC\$CODE\$ - 0324  
; Maximum stack depth per invocation: 19 words

; 1710 1

ZONA4  
VOL.0

CZONADO DEQNA FUNCTIONAL TEST  
GLOBAL ROUTINE VER\_DESCR\_STATUS ( )

14-Mar 1985 13:18:55  
14-Mar 1985 13:06:01

SEQ 0232  
Page 12  
VAX-11 Blues-16 V4.1-582  
DISK\$USER2:(MARSHALL.DEQNA)ZONA4.BLI;4 (8)

```

: 1711 1  *SBTTL 'GLOBAL ROUTINE - VER_DESCR_STATUS ( )'
: 1712 1
: 1713 1  GLOBAL ROUTINE VER_DESCR_STATUS : NOVALUE =
: 1714 1
: 1715 1  !..
: 1716 1  !
: 1717 1  ! GLOBAL ROUTINE : VER_DESCR_STATUS
: 1718 1  !
: 1719 1  ! DESCRIPTION:
: 1720 1  !
: 1721 1  ! This routine compares expected receive descriptor to actual receive
: 1722 1  ! descriptor.
: 1723 1  !
: 1724 1  ! INPUT PARAMETERS:
: 1725 1  !
: 1726 1  ! TEST_NU test number in which error occurred.
: 1727 1  !
: 1728 1  !!--
: 1729 1
: 1730 1
: 1731 2  BEGIN
: 1732 2
: 1733 2  INCR INDEX FROM 0 TO BD_D_SIZE - 1 DO
: 1734 3  BEGIN
: 1735 3  TEMP1 = .DESCR_LIST [ .INDEX, W_LEN ];
: 1736 3  TEMP2 = .DESCR_LIST [ .INDEX, W_LEN ] AND RFLG_MASK;
: 1737 4  IF ( .TEMP2 NEQU RFLG_MASK ) AND ( .TEMP1 NEQU .BD_PROM_DESCR [ .INDEX ] )
: 1738 3  THEN
: 1739 4  BEGIN
: 1740 4  CSR_WORD = GET_BIT [ CSR_ALL ];
: 1741 4  PRINTB ( MSG59 );
: 1742 4  PRINTB ( MSG48 );
: 1743 4  PRINTB ( MSG50, .TEMP1, .BD_PROM_DESCR [ .INDEX ], .INDEX );
: 1744 4  ERRDF ( 0003, MSG00, ERROR$REPORT );
: 1745 3  END;
: 1746 2  END;
: 1747 2
: 1748 1  END;

```

```

                                .SBTTL VER_DESCR.STATUS GLOBAL ROUTINE - VER_DESCR_STATUS ( )
000000 004137 000000G          VER_DESCR.STATUS::
                                JSR    R1,$SAVE2                ;                1713
000004 005746                    TST    -(SP)
000006 005002                    CLR    R2                ; INDEX          1733
000010 010201          1$:      MOV    R2,R1                ; INDEX,*        1735
000012 006301                    ASL    R1
000014 016137 000000G 000000G    MOV    DESCR.LIST(R1),TEMP1
000022 016137 000000G 000000G    MOV    DESCR.LIST(R1),TEMP2                ;                1736
000030 042737 037777 000000G    BIC    #37777,TEMP2
000036 023727 000000G 140000    CMP    TEMP2,#-40000                ;                1737
000044 001447                    BEQ    2$
000046 026161 000000G 000000G    CMP    DESCR.LIST(R1),BD.PROM.DESCR(R1)

```

ZQNA4  
V01.0

CZGNADO DEQNA FUNCTIONAL TEST  
GLOBAL ROUTINE - VER\_DESCR\_STATUS ( )

14-Mar-1985 13:16:55  
14-Mar-1985 13:06:01

VAX-11 Blis-16 V4.1-582  
DISK#USER2:[MARSHALL.DEQNA]ZQNA4.BLI;4 (8)

000054	001443		BEG	24			
000056	013700	000000G	MOV	REG.ADR,R0	:		1740
000062	016016	000016	MOV	16(R0),(SP)	:	*.TMP.LOCATION	
000066	011637	000000G	MOV	(SP),CSR.WORD	:	TMP.LOCATION,*	
000072	012746	000000G	MOV	#MSG59,-(SP)	:		1741
000076	012746	000001	MOV	#1,-(SP)	:		
000102	010600		MOV	SP,R0	:	SP,*	
000104	104414		TRAP	14	:		
000106	012716	000000G	MOV	#MSG48,(SP)	:		1742
000112	012746	000001	MOV	#1,-(SP)	:		
000116	010600		MOV	SP,R0	:	SP,*	
000120	104414		TRAP	14	:		
000122	010216		MOV	R2,(SP)	:	INDEX,*	1743
000124	016146	000000G	MOV	BD.PROM.DESCR(R1),-(SP)	:		
000130	013746	000000G	MOV	TEMP1,-(SP)	:		
000134	012746	000000G	MOV	#MSG50,-(SP)	:		
000140	012746	000004	MOV	#4,-(SP)	:		
000144	010600		MOV	SP,R0	:	SP,*	
000146	104414		TRAP	14	:		
000150	104455		TRAP	55	:		1744
000152	000003		.WORD	3	:		
000154	000000G		.WORD	MSG00	:		
000156	000000'		.WORD	ERROR#REPORT	:		
000160	062706	000016	ADD	#16,SP	:		1739
000164	005202		INC	R2	:	INDEX	1733
000166	020227	000017	CMP	R2,#17	:	INDEX,*	
000172	003706		BLE	14	:		
000174	005726		TST	(SP),	:		1713
000176	000207		RTS	PC	:		

; Routine Size: 64 words, Routine Base: AC#CODE\$ + 1006  
; maximum stack depth per invocation: 13 words

; 1749 1

```

; 1750 1 *SBTTL 'GLOBAL ROUTINE - CLR_DESCR ( )'
; 1751 1
; 1752 1 GLOBAL ROUTINE CLR_DESCR : NOVALUE =
; 1753 1
; 1754 1 !..
; 1755 1 !
; 1756 1 ! GLOBAL ROUTINE : CLR_DESCR
; 1757 1 !
; 1758 1 ! DESCRIPTION:
; 1759 1 !
; 1760 1 ! This routine initializes transmit and receive descriptor lists to 0.
; 1761 1 !--
; 1762 1
; 1763 1
; 1764 2 BEGIN
; 1765 2
; 1766 2 INCR INDEX FROM 0 TO D_SIZE - 1 DO
; 1767 3 BEGIN
; 1768 3 XMIT_D_LIST [ .INDEX, W_LEN ] - 0;
; 1769 3 RCV_D_LIST [ .INDEX, W_LEN ] - 0;
; 1770 2 END;
; 1771 2
; 1772 1 END;
    
```

000000	005000		.SBTTL CLR.DESCR GLOBAL ROUTINE - CLR_DESCR ( )		
			CLR.DESCR::		
000002	005060	000000G	1\$: CLR RO	; INDEX	1766
000006	005060	000000G	CLR XMIT.D.LIST(RO)	; *(INDEX)	1768
000012	062700	000002	CLR RCV.D.LIST(RO)	; *(INDEX)	1769
000016	020027	000176	ADD #2,RO	; *,INDEX	1766
000022	003767		CMP RO,#176	; INDEX,*	
000024	000207		BLE 1\$		
			RTS PC		1752

; Routine Size: 11 words, Routine Base: AC\$CODE\$ + 1206  
 ; Maximum stack depth per invocation: 0 words

```

; 1773 1
; 1774 1
    
```

ZQNA4  
V01.0

CZQNADO DEQNA FUNCTIONAL TEST  
GLOBAL ROUTINE - CLR\_BUFFERS ( P1 )

14-Mar-1985 13:18:55  
14 Mar-1985 13:06:01

SEQ 0235  
Page 15  
VAX-11 Bliss-16 V4.1-582  
DISK#USER2:[MARSHALL.DEQNA]ZQNA4.BLI;4 (10)

```

: 1775 1 *SBTTL 'GLOBAL ROUTINE - CLR_BUFFERS ( P1 )'
: 1776 1
: 1777 1 GLOBAL ROUTINE CLR_BUFFERS ( P1 ) : NOVALUE =
: 1778 1
: 1779 1 !**
: 1780 1 !
: 1781 1 ! GLOBAL ROUTINE : CLR_BUFFERS
: 1782 1 !
: 1783 1 ! DESCRIPTION:
: 1784 1 !
: 1785 1 ! This routine initializes transmit and receive buffers to 0.
: 1786 1 !
: 1787 1 ! INPUT PARAMETERS:
: 1788 1 !
: 1789 1 ! P1 - number of bytes to clear.
: 1790 1 !
: 1791 1 !--
: 1792 1
: 1793 1
: 1794 2 BEGIN
: 1795 2
: 1796 2 INCR INDEX FROM 0 TO .P1 - 1 DO
: 1797 3 BEGIN
: 1798 3 RCV_BUFFER [ .INDEX ] = 0;
: 1799 3 XMIT_BUFFER [ .INDEX ] = 0;
: 1800 2 END;
: 1801 2
: 1802 1 END;

```

000000	005000		.SBTTL CLR_BUFFERS GLOBAL ROUTINE - CLR_BUFFERS ( P1 )	
			CLR_BUFFERS::	
000002	000405		CLR R0	; INDEX 1796
			BR 2\$	
000004	105060	000000G	1\$: CLRB RCV_BUFFER(R0)	; *(INDEX) 1798
000010	105060	000000G	CLRb XMIT_BUFFER(R0)	; *(INDEX) 1799
000014	005200		INC R0	; INDEX 1796
000016	020066	000002	2\$: CMP R0,2(SP)	; INDEX,P1
000022	002770		BLT 1\$	
000024	000207		RTS PC	; 1777

```

; Routine Size: 11 words, Routine Base: AC$CODE$ + 1234
; Maximum stack depth per invocation: 0 words

```

```

: 1803 1
: 1804 1

```

ZQNA4  
V01.0CZQNA0 DEQNA FUNCTIONAL TEST  
GLOBAL ROUTINE - CHK\_RIXI\_STATUS ( P1 )14-Mar 1985 13:18:55  
14-Mar-1985 13:06:01VAX-11 Bliss-16 V4.1-582  
DISK\$USER2:[MARSHALL.DEQNA]ZQNA4.BLI;4 (11)

SEQ 0236

Page 16

```

: 1805 1 *SBTTL 'GLOBAL ROUTINE - CHK_RIXI_STATUS ( P1 )'
: 1806 1
: 1807 1 GLOBAL ROUTINE CHK_RIXI_STATUS ( P1 ) : NOVALUE =
: 1808 1
: 1809 1 !**
: 1810 1 !
: 1811 1 ! GLOBAL ROUTINE : CHK_RIXI_STATUS
: 1812 1 !
: 1813 1 ! DESCRIPTION:
: 1814 1 !
: 1815 1 ! This routine verifies that XI ( bit 7 ) and RI ( bit 15 )
: 1816 1 ! of the CSR status word are set to 1 shortly after transmission of a
: 1817 1 ! loopback packet is complete. If either bit isn't set, an error
: 1818 1 ! message is printed.
: 1819 1 !
: 1820 1 ! INPUT PARAMETERS:
: 1821 1 !
: 1822 1 ! P1 - 0: check XI and RI
: 1823 1 ! - 1: ckeck XI
: 1824 1 ! - 2: check RI
: 1825 1 !
: 1826 1 ! TEST_NO - test number in which error occurred.
: 1827 1 !--
: 1828 1
: 1829 2 BEGIN
: 1830 2
: 1831 2 !**
: 1832 2 ! CHECK TRANSMIT INTERRUPT REQUEST BIT ( XI - BIT 7 ) TO VERIFY THAT DEQNA
: 1833 2 ! ACTUALLY COMPLETED TRANSMISSION OF A LOOPBACK PACKET.
: 1834 2 !--
: 1835 2
: 1836 3 IF ( .P1 EQLU 0 ) OR ( .P1 EQLU 1 )
: 1837 2 THEN
: 1838 2 INCR INDEX FROM 0 TO TIME2_LIMIT DO
: 1839 2 IF GET_BIT [ CSR, XI ] EQLU ONE
: 1840 2 THEN
: 1841 3 BEGIN
: 1842 3 TEMP1 = .INDEX;
: 1843 3 EXITLOOP;
: 1844 3 END
: 1845 2 ELSE
: 1846 2 IF .INDEX EQLU TIME3_LIMIT
: 1847 2 THEN
: 1848 3 BEGIN
: 1849 3 ERR_FLAG = ONE;
: 1850 3 CSR_WORD = GET_BIT [ CSR_ALL ];
: 1851 3 PRINTB ( MSG59 );
: 1852 3 PRINTB ( MSG29 );
: 1853 3 PRINTB ( MSG26 );
: 1854 3 ERRDF ( 0004, MSG00, ERROR$REPORT );
: 1855 2 END;
: 1856 2
: 1857 2 !**

```

ZQNA4  
V01.0

CZQNA0 DEQNA FUNCTIONAL TEST  
GLOBAL ROUTINE - CHK\_RIXI\_STATUS ( P1 )

14-Mar-1985 13:18:55  
14-Mar-1985 13:06:01

VAX-11 B1100-16 V4.1-582  
DISK#USER2:(MARSHALL.DEQNA)ZQNA4.BLI;4 (11)

SEQ 0237

Page 17

```

; 1858 2 ! CHECK RECEIVE INTERRUPT REQUEST BIT ( RI - BIT 15 ) TO VERIFY THAT DEQNA
; 1859 2 ! ACTUALLY RECEIVED TRANSMITTED LOOPBACK PACKET.
; 1860 2 !--
; 1861 2
; 1862 3 IF ( .P1 EQLU 0 ) OR ( .P1 EQLU 2 )
; 1863 2 THEN
; 1864 2 INCR INDEX FROM 0 TO TIME2_LIMIT DO
; 1865 2 IF GET_BIT [ CSR, RI ] EQLU ONE
; 1866 2 THEN
; 1867 3 BEGIN
; 1868 3 TEMP2 = .INDEX;
; 1869 3 EXITLOOP;
; 1870 3 END
; 1871 2 ELSE
; 1872 2 IF .INDEX EQLU TIME2_LIMIT
; 1873 2 THEN
; 1874 3 BEGIN
; 1875 3 ERR_FLAG = ONE;
; 1876 3 CSR_WORD = GET_BIT [ CSR_ALL ];
; 1877 3 PRINTB ( MSG59 );
; 1878 3 PRINTB ( MSG29 );
; 1879 3 PRINTB ( MSG25 );
; 1880 3 ERRDF ( 0005, MSG00, ERROR$REPORT );
; 1881 2 END;
; 1882 1 END;

```

```

000000 004137 000000G .SBTTL CHK.RIXI.STATUS GLOBAL ROUTINE - CHK_RIXI_STATUS ( P1 )
CHK.RIXI.STATUS:
000004 162706 000010 JSR R1,$SAVE3 ; 1807
000010 016602 000022 SUB #10,SP
000014 005003 MOV 22(SP),R2 ; P1,* 1836
000016 005702 CLR R3
000020 001002 TST R2
000022 005203 BNE 1$
000024 000403 INC R3
000026 020227 000001 1$: BR 2$
000032 001062 BNE 6$
000034 005001 2$: CLR R1 ; INDEX 1838
000036 013700 000000G 3$: MOV REG.ADR,R0 ; 1839
000042 016016 000016 MOV 16(R0),(SP) ; *,TMP.LOCATION
000046 105716 TSTB (SP) ; TMP.LOCATION
000050 100003 BPL 4$
000052 010137 000000G MOV R1,TEMP1 ; INDEX,* 1842
000056 000450 BR 6$ ; 1841
000060 020127 002000 4$: CMP R1,#2000 ; INDEX,* 1846
000064 001041 BNE 5$
000066 012737 000001 000000G MOV #1,ERR.FLAG ; 1849
000074 016066 000016 000002 MOV 16(R0),2(SP) ; *,TMP.LOCATION 1850
000102 016637 000002 000000G MOV 2(SP),CSR.WORD ; TMP.LOCATION,*
000110 012746 000000G MOV #MSG59,-(SP) ; 1851
000114 012746 000001 MOV #1,-(SP)

```

ZQNA4 V01.0	CZQNAO DEQNA FUNCTIONAL TEST GLOBAL ROUTINE - CHK_RIXI_STATUS ( P1 )	14-Mar-1985 13:18:55 14-Mar 1985 13:06:01	VAX-11 Bliss 16 V4.1-582 DISK#USER2:(MARSHALL.DEQNA)ZQNA4.BLI;4 (11)	SEQ 0238 Page 18
000120	010600		MOV SP,R0	; SP,*
000122	104414		TRAP 14	
000124	012716	000000G	MOV #MSG29,(SP)	
000130	012746	000001	MOV #1,-(SP)	
000134	010600		MOV SP,R0	; SP,*
000136	104414		TRAP 14	
000140	012716	000000G	MOV #MSG26,(SP)	
000144	012746	000001	MOV #1,-(SP)	
000150	010600		MOV SP,R0	; SP,*
000152	104414		TRAP 14	
000154	104455		TRAP 55	
000156	000004		.WORD 4	
000160	000000G		.WORD MSG00	
000162	000000'		.WORD ERROR\$REPORT	
000164	062706	000010	ADD #10,SP	
000170	005201		5\$: INC R1	; INDEX
000172	020127	002000	CMP R1,#2000	; INDEX,*
000176	003717		BLE 3\$	
000200	006003		6\$: ROR R3	
000202	103403		BLO 7\$	
000204	020227	000002	CMP R2,#2	
000210	001062		BNE 11\$	
000212	005001		7\$: CLR R1	; INDEX
000214	013700	000000G	8\$: MOV REG.ADR,R0	
000220	016066	000016 000004	MOV 16(R0),4(SP)	; *,TMP.LOCATION
000226	100003		BPL 9\$	
000230	010137	000000G	MOV R1,TEMP2	; INDEX,*
000234	000450		BR 11\$	
000236	020127	002000	9\$: CMP R1,#2000	; INDEX,*
000242	001041		BNE 10\$	
000244	012737	000001 000000G	MOV #1,ERR.FLAG	
000252	016066	000016 000006	MOV 16(R0),6(SP)	; *,TMP.LOCATION
000260	016637	000006 000000G	MOV 6(SP),CSR.WORD	; TMP.LOCATION,*
000266	012746	000000G	MOV #MSG59,-(SP)	
000272	012746	000001	MOV #1,-(SP)	
000276	010600		MOV SP,R0	; SP,*
000300	104414		TRAP 14	
000302	012716	000000G	MOV #MSG29,(SP)	
000306	012746	000001	MOV #1,-(SP)	
000312	010600		MOV SP,R0	; SP,*
000314	104414		TRAP 14	
000316	012716	000000G	MOV #MSG25,(SP)	
000322	012746	000001	MOV #1,-(SP)	
000326	010600		MOV SP,R0	; SP,*
000330	104414		TRAP 14	
000332	104455		TRAP 55	
000334	000005		.WORD 5	
000336	000000G		.WORD MSG00	
000340	000000'		.WORD ERROR\$REPORT	
000342	062706	000010	ADD #10,SP	
000346	005201		10\$: INC R1	; INDEX
000350	020127	002000	CMP R1,#2000	; INDEX,*
000354	003717		BLE 8\$	



ZQNA4	CZQNAO DEQNA FUNCTIONAL TEST	14-Mar-1985 13:18:55	VAX-11 Bliss-16 V4.1-582	SEQ 0239
V01.0	GLOBAL ROUTINE - CHK_RIXI_STATUS ( P1 )	14-Mar-1985 13:06:01	DISK\$USER2:[MARSHALL.DEQNA]ZQNA4.BLI;4	Page 19 (11)

000356	062706	000010	11\$:	ADD	#10,SP		
000362	000207			RTS	PC	:	1807

; Routine Size: 122 words, Routine Base: AC\$CODE\$ + 1262  
 ; Maximum stack depth per invocation: 14 words

; 1883 1

```

1884 1 *SBTTL 'GLOBAL ROUTINE - CHK_CSR_STATUS ( P1, P2 )'
1885 1
1886 1 GLOBAL ROUTINE CHK_CSR_STATUS ( P1, P2 ) : NOVALUE =
1887 1
1888 1 !**
1889 1 !
1890 1 ! GLOBAL ROUTINE : CHK_CSR_STATUS
1891 1 !
1892 1 ! DESCRIPTION:
1893 1 !
1894 1 ! This routine checks CSR status words for expected status.
1895 1 !
1896 1 ! INPUT PARAMETERS:
1897 1 !
1898 1 ! P1 - expected CSR status
1899 1 ! P2 - CSR mask
1900 1 ! TEST_NO - test number in which error occurred.
1901 1 !
1902 1 !--
1903 1
1904 2 BEGIN
1905 2
1906 2 !**
1907 2 ! SAVE CSR, RESET TRANSMIT AND RECEIVE REQUEST BITS IN THE CSR
1908 2 !--
1909 2
1910 2 DELAY ( 5 );
1911 2
1912 2 CSR_WORD = GET_BIT [ CSR_ALL ];
1913 2
1914 2 PUT_BIT [ CSR, RI, ONE ];
1915 2 PUT_BIT [ CSR, XI, ONE ];
1916 2
1917 2 TEMP1 = .CSR_WORD AND .P2;
1918 2
1919 2 IF .TEMP1 NEQU .P1
1920 2 THEN
1921 3 BEGIN
1922 3 ERR_FLAG = ONE;
1923 3 PRINTB ( MSG59 );
1924 3 PRINTB ( MSG12, .TEMP1, .P1 );
1925 3 ERRDF ( 0006, MSG00, ERROR$REPORT );
1926 2 END;
1927 1 END;

```

```

000000 010146          .SBTTL CHK_CSR.STATUS GLOBAL ROUTINE - CHK_CSR_STATUS ( P1, P2 )
CHK_CSR.STATUS::
000002 024646          MOV R1, -(SP) ; 1886
000004 012701 000005   CMP -(SP), -(SP)
000010 001410          MOV #5, R1 ; *,$$TMP2 1910
000012 013700 000000G 1$: BEQ 4$
MOV L$DLY, R0 ; *,$$TMP1

```

ZQNA4  
V01.0

CZQNA40 DEQNA FUNCTIONAL TEST  
GLOBAL ROUTINE - CHK\_CSR\_STATUS ( P1, P2 )

14-Mar-1985 13:18:55  
14-Mar-1985 13:06:01

SEQ 0241  
Page 21  
VAX-11 Bliss-16 V4.1-582  
DISK\$USER2:[MARSHALL.DEQNA]ZQNA4.BLI;4 (12)

```

000016 001403          BEQ      3$
000020 005066 000002    2$:    CLR      2(SP)          ; $$TMP
000024 077003          SOB      R0,2$          ; $$TMP1,*
000026 005301          3$:    DEC      R1              ; $$TMP2
000030 000767          BR       1$
000032 013700 000000G  4$:    MOV      REG.ADR,R0      ;
000036 062700 000016    ADD      #16,R0          ;
000042 011016          MOV      (R0),(SP)       ; *,TMP.LOCATION
000044 011637 000000G  MOV      (SP),CSR.WORD
000050 052710 100200    BIS      #100200,(R0)   ;
000054 011637 000000G  MOV      (SP),TEMP1     ; CSR.WORD,*
000060 016600 000010    MOV      10(SP),R0      ; P2,*
000064 005100          COM      R0
000066 040037 000000G  BIC      R0,TEMP1
000072 023766 000000G 000012  CMP      TEMP1,12(SP)   ; *,P1
000100 001431          BEQ      5$
000102 012737 000001 000000G  MOV      #1,ERR.FLAG    ;
000110 012746 000000G  MOV      #MSG59,-(SP)   ;
000114 012746 000001    MOV      #1,-(SP)
000120 010600          MOV      SP,R0          ; SP,*
000122 104414          TRAP    14
000124 016616 000016    MOV      16(SP),(SP)    ; P1,*
000130 013746 000000G  MOV      TEMP1,-(SP)
000134 012746 000000G  MOV      #MSG12,-(SP)
000140 012746 000003    MOV      #3,-(SP)
000144 010600          MOV      SP,R0          ; SP,*
000146 104414          TRAP    14
000150 104455          TRAP    55
000152 000006          .WORD   6
000154 000000G  .WORD   MSG00
000156 000000'  .WORD   ERROR$REPORT
000160 062706 000012    ADD      #12,SP
000164 022626          5$:    CMP      (SP)+,(SP)+
000166 012601          MOV      (SP)+,R1
000170 000207          RTS      PC

```

; Routine Size: 61 words, Routine Base: AC\$CODE\$ + 1646  
; Maximum stack depth per invocation: 10 words

; 1928 1  
; 1929 1

ZQNA4  
V01.0CZQNADO DEQNA FUNCTIONAL TEST  
GLOBAL ROUTINE - CHK\_XMIT\_STATUS ( P1, P2 )14-Mar 1985 13:18:55  
14-Mar-1985 13:06:01VAX-11 Bliss-16 V4.1-582  
DISK\$USER2:[MARSHALL.DEQNA]ZQNA4.BLI;4SEQ 0242  
Page 22  
(13)

```

: 1930 1 *SBTTL 'GLOBAL ROUTINE - CHK_XMIT_STATUS ( P1, P2 )'
: 1931 1
: 1932 1 GLOBAL ROUTINE CHK_XMIT_STATUS ( P1, P2 ) : NOVALUE =
: 1933 1
: 1934 1 !**
: 1935 1 !
: 1936 1 ! GLOBAL ROUTINE :      CHK_XMIT_STATUS
: 1937 1 !
: 1938 1 ! DESCRIPTION:
: 1939 1 !
: 1940 1 !       This routine checks transmit status words for expected status
: 1941 1 !
: 1942 1 ! INPUT PARAMETERS:
: 1943 1 !
: 1944 1 !       P1      - XMIT flag word
: 1945 1 !       P2      - expected XMIT status word 1
: 1946 1 !       TEST_NO - test number in which error occurred.
: 1947 1 !
: 1948 1 !
: 1949 1 !--
: 1950 1
: 1951 2 BEGIN
: 1952 2
: 1953 2 !**
: 1954 2 ! MASK OUT DON'T CARE BITS IN THE XMIT FLAG WORD AND COMPARE TO EXPECTED
: 1955 2 ! XMIT FLAG STATUS. IF STATUS NOT EQUAL THEN PRINT 'BAD XMIT FLAG WORD
: 1956 2 ! STATUS'
: 1957 2 !--
: 1958 2
: 1959 2 TEMP2 = .XMIT_D_LIST [ FLGWD ] AND XFLG_MASK;          ! 0'140000'
: 1960 2
: 1961 2 IF .TEMP2 NEQU .P1
: 1962 2 THEN
: 1963 3 BEGIN
: 1964 3     ERR_FLAG = ONE;
: 1965 3     CSR_WORD = GET_BIT [ CSR_ALL ];
: 1966 3     PRINTB ( MSG59 );
: 1967 3     PRINTB ( MSG13, .TEMP2, XFLG_MASK );
: 1968 3     ERRDF ( 0007, MSG00, ERROR$REPORT );
: 1969 3 END;
: 1970 2
: 1971 2 !**
: 1972 2 ! MASK OUT DON'T CARE BITS IN THE XMIT STATUS WD1 AND COMPARE TO EXPECTED
: 1973 2 ! XMIT STATUS WD1. IF STATUS NOT EQUAL THEN PRINT 'BAD XMIT STATUS WORD 1'
: 1974 2 !--
: 1975 2
: 1976 2 IF .XMIT_D_LIST [ STWD1 ] GTRU ZERO
: 1977 2 THEN
: 1978 2     TEMP3 = .XMIT_D_LIST [ STWD1 ] AND XWD1_MASK          ! 0'157760'
: 1979 2 ELSE
: 1980 2     TEMP3 = .XMIT_D_LIST [ STWD1 ] AND X1_MASK;          ! 0'100000'
: 1981 2
: 1982 2 IF .TEMP3 NEQU .P2

```

ZQNA4  
V01.0

CZQNAO DEQNA FUNCTIONAL TEST  
GLOBAL ROUTINE - CHK\_XMIT\_STATUS ( P1, P2 )

14-Mar-1985 13:18:55  
14-Mar-1985 13:06:01

SEQ 0243  
Page 23  
VAX-11 Bliss-16 V4.1-582  
DISK\$USER2:[MARSHALL.DEQNA]ZQNA4.BLI;4 (13)

```

; 1983 2 THEN
; 1984 3 BEGIN
; 1985 3 ERR_FLAG = ONE;
; 1986 3 CSR_WORD = GET_BIT [ CSR_ALL ];
; 1987 3 PRINTB ( MSG59 );
; 1988 3 PRINTB ( MSG14, .TEMP3, .P2 );
; 1989 3 ERRDF ( 0008, MSG00, ERROR$REPORT );
; 1990 2 END;
; 1991 2
; 1992 1 END,

```

```

000000 024646 .SBTTL CHK.XMIT.STATUS GLOBAL ROUTINE - CHK_XMIT_STATUS ( P1, P2 )
CHK.XMIT.STATUS:
000002 013737 000000G 000000G CMP -(SP),-(SP) ; 1932
000010 042737 037777 000000G MOV XMIT.D.LIST,TEMP2 ; 1959
000016 023766 000000G 000010 BIC #37777,TEMP2
000024 001437 000000G 000010 CMP TEMP2,10(SP) ; *,P1 1961
000026 012737 000001 000000G BEQ 1$
000034 013700 000000G MOV #1,ERR.FLAG ; 1964
000040 016016 000016 MOV REG.ADR,R0 ; 1965
000044 011637 000000G MOV 16(R0),(SP) ; *,TMP.LOCATION
000050 012746 000000G MOV (SP),CSR.WORD ; TMP.LOCATION,*
000054 012746 000001 MOV #MSG59,-(SP) ; 1966
000060 010600 MOV #1,-(SP)
000062 104414 MOV SP,R0 ; SP,*
000064 012716 140000 TRAP 14
000070 013746 000000G MOV #-40000,(SP) ; 1967
000074 012746 000000G MOV TEMP2,-(SP)
000100 012746 000003 MOV #MSG13,-(SP)
000104 010600 MOV #3,-(SP)
000106 104414 MOV SP,R0 ; SP,*
000110 104455 TRAP 14
000112 000007 TRAP 55 ; 1968
000114 000000G .WORD 7
000116 000000' .WORD MSG00
000120 062706 000012 .WORD ERROR$REPORT
000124 013700 000010G 1$: ADD #12,SP ; 1963
000130 001406 000000G MOV XMIT.D.LIST+10,R0 ; 1976
000132 010037 000000G BEQ 2$
000136 042737 020017 000000G MOV R0,TEMP3 ; 1978
000144 000405 BR 3$
000146 010037 000000G 2$: MOV R0,TEMP3 ; 1976
000152 042737 077777 000000G BIC #77777,TEMP3 ; 1980
000160 023766 000000G 3$: CMP TEMP3,6(SP) ; *,P2 1982
000166 001441 BEQ 4$
000170 012737 000001 000000G MOV #1,ERR.FLAG ; 1985
000176 013700 000000G MOV REG.ADR,R0 ; 1986
000202 016066 000016 000002 MOV 16(R0),2(SP) ; *,TMP.LOCATION
000210 016637 000002 000000G MOV 2(SP),CSR.WORD ; TMP.LOCATION,*
000216 012746 000000G MOV #MSG59,-(SP) ; 1987
000222 012746 000001 MOV #1,-(SP)

```

ZQNA4  
V01.0

CZQNA0 DEQNA FUNCTIONAL TEST  
GLOBAL ROUTINE - CHK\_XMIT\_STATUS ( P1, P2 )

14-Mar-1985 13:18:55  
14-Mar-1985 13:06:01

SEQ 0244  
Page 24  
VAX-11 Blis-16 V4.1-582  
DISK#USER2:[MARSHALL.DEQNA]ZQNA4.BLI;4 (13)

000226	010600		MOV	SP,R0	; SP,*	
000230	104414		TRAP	14		
000232	016616	000012	MOV	12(SP),(SP)	; P2,*	
000236	013746	000000G	MOV	TEMP3,-(SP)		1988
000242	012746	000000G	MOV	MSG14,-(SP)		
000246	012746	000003	MOV	#3,-(SP)		
000252	010600		MOV	SP,R0	; SP,*	
000254	104414		TRAP	14		
000256	104455		TRAP	55		1989
000260	000010		.WORD	10		
000262	000000G		.WORD	MSG00		
000264	000000'		.WORD	ERROR#REPORT		
000266	062706	000012	ADD	#12,SP		1984
000272	022626		4\$: CMP	(SP)*,(SP)*		1932
000274	000207		RTS	PC		

; Routine Size: 95 words, Routine Base: AC#CODE# + 2040  
; Maximum stack depth per invocation: 9 words

; 1993 1  
; 1994 1

ZQNA4  
V01.0CZONADO DEQNA FUNCTIONAL TEST  
GLOBAL ROUTINE - CHK\_RCV\_STATUS ( P1, P2 )14-Mar 1985 13:18:55  
14-Mar-1985 13:06:01VAX-11 B1:ss 16 V4.1-582  
DISK\$USER2:[MARSHALL.DEQNA]ZQNA4.BLI;4 (14)SEQ 0245  
Page 25

```

: 1995 1 *SBTTL 'GLOBAL ROUTINE - CHK_RCV_STATUS ( P1, P2 )'
: 1996 1
: 1997 1 GLOBAL ROUTINE CHK_RCV_STATUS ( P1, P2 ) : NOVALUE =
: 1998 1
: 1999 1 !..
: 2000 1
: 2001 1 GLOBAL ROUTINE : CHK_RCV_STATUS
: 2002 1
: 2003 1 DESCRIPTION:
: 2004 1
: 2005 1 This routine checks receive status words for expected status.
: 2006 1
: 2007 1 INPUT PARAMETERS:
: 2008 1
: 2009 1 P1 - expected RCV flag word
: 2010 1 P2 - expected RCV status word 1
: 2011 1 TEST_NO - test number in which error occurred.
: 2012 1
: 2013 1 !..
: 2014 1
: 2015 2 BEGIN
: 2016 2
: 2017 2 !..
: 2018 2 ! MASK OUT DON'T CARE BITS IN THE RCV FLAG WORD AND COMPARE TO EXPECTED
: 2019 2 ! RCV FLAG STATUS. IF STATUS NOT EQUAL THEN PRINT 'BAD RCV FLAG WORD
: 2020 2 ! STATUS'
: 2021 2 !..
: 2022 2
: 2023 2 TEMP1 = .RCV_D_LIST [ FLGWD ] AND RFLG_MASK; ! 0'140000'
: 2024 2
: 2025 2 IF .TEMP1 NEQU .P1
: 2026 2 THEN
: 2027 3 BEGIN
: 2028 3 ERR_FLAG = ONE;
: 2029 3 CSR_WORD = GET_BIT [ CSR_ALL ];
: 2030 3 PRINTB ( MSG59 );
: 2031 3 PRINTB ( MSG15, .TEMP1, RFLG_MASK );
: 2032 3 ERRDF ( 0009, MSG00, ERROR$REPORT );
: 2033 2 END;
: 2034 2
: 2035 2 !..
: 2036 2 ! MASK OUT DON'T CARE BITS IN THE RCV STATUS WD1 AND COMPARE TO EXPECTED
: 2037 2 ! RCV STATUS WD1. IF STATUS NOT EQUAL THEN PRINT 'BAD RCV STATUS WORD 1'
: 2038 2 !..
: 2039 2
: 2040 2 IF .RCV_D_LIST [ STWD1 ] GEQU ZERO
: 2041 2 THEN
: 2042 2 TEMP2 = .RCV_D_LIST [ STWD1 ] AND R2_MASK ! 0'174017'
: 2043 2 ELSE
: 2044 2 TEMP2 = .RCV_D_LIST [ STWD1 ] AND .P2;
: 2045 2
: 2046 2 IF .TEMP2 NEQU .P2
: 2047 2 THEN

```

ZONA4  
V01.0

CZONADO DEQNA FUNCTIONAL TEST  
GLOBAL ROUTINE - CHK\_RCV\_STATUS ( P1, P2 )

14-Mar-1985 13:18:55  
14-Mar-1985 13:06:01

SEQ 0246  
Page 26  
DISK\$USER2:[MARSHALL.DEQNA]ZONA4.BLI;4 (14)

```

; 2048 3 BEGIN
; 2049 3 ERR_FLAG = ONE;
; 2050 3 CSR_WORD = GET_BIT [ CSR_ALL ];
; 2051 3 PRINTB ( MSG59 );
; 2052 3 PRINTB ( MSG16, .TEMP2, .P2 );
; 2053 3 IRRDF ( 0010, MSG00, ERROR$REPORT );
; 2054 2 END;
; 2055 2
; 2056 1 END;

```

```

000000 024646 .SBTTL CHK.RCV.STATUS GLOBAL ROUTINE - CHK_RCV_STATUS ( P1, P2 )
CHK.RCV.STATUS:
000002 013737 000000G 000000G CMP -(SP),-(SP) ; 1997
000010 042737 037777 000000G MOV RCV.D.LIST,TEMP1 ; 2023
000016 023766 000000G 000010 BIC #37777,TEMP1 ;
000024 001437 BEQ 1$ ; *,P1 2025
000026 012737 000001 000000G MOV #1,ERR.FLAG ;
000034 013700 000000G MOV REG.ADR,R0 ; 2028
000040 016016 000016 MOV 16(R0),(SP) ; 2029
000044 011637 000000G MOV (SP),CSR.WORD ; *,TMP.LOCATION
000050 012746 000000G MOV #MSG59,-(SP) ; TMP.LOCATION,*
000054 012746 000001 MOV #1,-(SP) ; 2030
000060 010600 MOV SP,R0 ; SP,*
000062 104414 TRAP 14 ;
000064 012716 140000 MOV #-40000,(SP) ; 2031
000070 013746 000000G MOV TEMP1,-(SP) ;
000074 012746 000000G MOV #MSG15,-(SP) ;
000100 012746 000003 MOV #3,-(SP) ;
000104 010600 MOV SP,R0 ; SP,*
000106 104414 TRAP 14 ;
000110 104455 TRAP 55 ; 2032
000112 000011 .WORD 11 ;
000114 000000G .WORD MSG00 ;
000116 000000' .WORD ERROR$REPORT ;
000120 062706 000012 ADD #12,SP ; 2027
000124 013700 000010G 1$: MOV RCV.D.LIST+10,R0 ; 2040
000130 010037 000000G MOV R0,TEMP2 ; 2042
000134 042737 003764 000000G BIC #3764,TEMP2 ;
000142 023766 000000G 000006 CMP TEMP2,6(SP) ; *,P2 2046
000150 001441 BEQ 2$ ;
000152 012737 000001 000000G MOV #1,ERR.FLAG ; 2049
000160 013700 000000G MOV REG.ADR,R0 ; 2050
000164 016066 000016 000002 MOV 16(R0),2(SP) ; *,TMP.LOCATION
000172 016637 000002 000000G MOV 2(SP),CSR.WORD ; TMP.LOCATION,*
000200 012746 000000G MOV #MSG59,-(SP) ; 2051
000204 012746 000001 MOV #1,-(SP) ;
000210 010600 MOV SP,R0 ; SP,*
000212 104414 TRAP 14 ;
000214 016616 000012 MOV 12(SP),(SP) ; P2,* 2052
000220 013746 000000G MOV TEMP2,-(SP) ;
000224 012746 000000G MOV #MSG16,-(SP) ;

```



```

000230 012746 000003      MOV      #3,-(SP)
000234 010600      MOV      SP,R0      ; SP,*
000236 104414      TRAP     14
000240 104455      TRAP     55
000242 000012      .WORD   12
000244 000000G     .WORD   MSG00
000246 000000'     .WORD   ERROR$REPORT
000250 062706 000012      ADD      #12,SP
000254 022626      2$:    CMP      (SP)+,(SP)+      ;
000256 000207      RTS      PC      ;

```

; Routine Size: 88 words, Routine Base: AC\$CODE\$ + 2336  
 ; Maximum stack depth per invocation: 9 words

; 2057 1

ZQNA4  
V01.0CZQNA0 DEQNA FUNCTIONAL TEST  
GLOBAL ROUTINE - COMPARE\_PACKETS ( )14-Mar-1985 13:18:55  
14-Mar-1985 13:06:01VAX-11 Bliss-16 V4.1-582  
DISK#USER2:[MARSHALL.DEQNA]ZQNA4.BLI;4 (15)

SEQ 0248

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```

: 2058 1 *SBTTL 'GLOBAL ROUTINE - COMPARE_PACKETS ( )'
: 2059 1
: 2060 1 GLOBAL ROUTINE COMPARE_PACKETS : NOVALUE =
: 2061 1
: 2062 1 !**
: 2063 1 !
: 2064 1 ! GLOBAL ROUTINE : COMPARE_PACKETS
: 2065 1 !
: 2066 1 ! DESCRIPTION:
: 2067 1 !
: 2068 1 ! This routine compares contents of transmit packet to the contents
: 2069 1 ! of receive packet and prints an error message if the don't compare.
: 2070 1 !--
: 2071 1
: 2072 2 BEGIN
: 2073 2
: 2074 2 !**
: 2075 2 ! GET RECEIVE BYTE LENGTH ( RBL ) FROM RCV DISCRIPTOR AND COMPUTE WORD
: 2076 2 ! LENGTH. THEN COMPARE ACTUAL TO EXPECTED RCV WORD LENGTH.
: 2077 2 !--
: 2078 2
: 2079 2 TEMP3 = 0;
: 2080 2
: 2081 2 IF GET_BIT [ CSR, LB ] GTRU ZERO
: 2082 2 THEN
: 2083 2 TEMP3 = .RCV_D_LIST [ STWD1 ] AND RHL_MASK; ! 0'003400'
: 2084 2
: 2085 2 IF ( .CSR_WORD AND #0'01' ) EQLU ZERO
: 2086 2 THEN
: 2087 3 TEMP3 = .TEMP3 + ( .RCV_D_LIST [ STWD2 ] AND RLL_MASK ) ! 0'000377'
: 2088 2 ELSE
: 2089 2 TEMP3 = 6;
: 2090 2
: 2091 2 IF .TEMP3 NEQU .RBUF_LENGTH
: 2092 2 THEN
: 2093 3 BEGIN
: 2094 3 ERR_FLAG = ONE;
: 2095 3 CSR_WORD = GET_BIT [ CSR_ALL ];
: 2096 3 PRINTB ( MSG59 );
: 2097 3 PRINTB ( MSG17, .TEMP3, .RBUF_LENGTH );
: 2098 3 ERRDF ( 0011, MSG00, ERROR$REPORT );
: 2099 2 END;
: 2100 2
: 2101 2 INCR INDEX FROM 0 TO .TEMP3 - 1 DO
: 2102 3 BEGIN
: 2103 3 IF .RCV_D_LIST [ STWD1 ] EQLU NEWS
: 2104 3 THEN
: 2105 3 RCV_BUFFER [ .INDEX ] = ZERO;
: 2106 3
: 2107 3 IF .XMIT_BUFFER [ .INDEX ] NEQU .RCV_BUFFER [ .INDEX ]
: 2108 3 THEN
: 2109 3 IF .RCV_D_LIST [ LONGP ] EQLU ONE
: 2110 3 THEN

```

ZQNA4  
V01.0

CZQNADO DEQNA FUNCTIONAL TEST  
GLOBAL ROUTINE - COMPARE\_PACKETS ( )

14-Mar-1985 13:18:55  
14-Mar-1985 13:06:01

VAX-11 B11ss-16 V4.1-582  
DISK\$USER2:[MARSHALL.DEQNA]ZQNA4.BLI;4 (15)

SEQ 0249

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```

; 2111 4      BEGIN
; 2112 4      TEMPS = .INDEX;
; 2113 4      EXITLOOP;
; 2114 4      END
; 2115 3      ELSE
; 2116 4      BEGIN
; 2117 4      ERR_FLAG = ONE;
; 2118 4      CSR_WORD = GET_BIT [ CSR_ALL ];
; 2119 4      PRINTB ( MSG59 );
; 2120 4      PRINTB ( MSG51 );
; 2121 4      PRINTB ( MSG50, .RCV_BUFFER [ .INDEX ], .XMIT_BUFFER [ .INDEX ], .INDEX );
; 2122 4      ERRDF ( 0012, MSG00, ERROR$REPORT );
; 2123 3      END;
; 2124 2      END;
; 2125 1      END;
    
```

```

000000 004137 000000G      .SBTTL COMPARE_PACKETS GLOBAL ROUTINE - COMPARE_PACKETS ( )
                                COMPARE_PACKETS::
000004 024646                JSR      R1,$SAVE2                ; 2060
000006 005037 000000G      CMP      -(SP),-(SP)                ;
000012 013700 000000G      CLR      TEMP3                    ; 2079
000016 016046 000016      MOV      REG.ADR,R0                ;
000022 032716 001400      MOV      16(R0),-(SP)              ; *,TMP.LOCATION
000026 001406                BIT      #1400,(SP)                ; *,TMP.LOCATION
000030 013737 000010G 000000G      BEQ      1$                      ;
000036 042737 174377 000000G      MOV      RCV.D.LIST+10,TEMP3      ; 2083
000044 032737 000001 000000G      BIC      #174377,TEMP3            ;
000052 001006                1$: BIT      #1,CSR.WORD            ; 2085
000054 005001                BNE      2$                      ;
000056 153701 000012G      CLR      R1                      ; 2087
000062 060137 000000G      BISB    RCV.D.LIST+12,R1          ;
000066 000403                ADD      R1,TEMP3                 ;
000070 012737 000006 000000G      BR      3$                      ; 2085
000076 023737 000000G 000000G      MOV      #6,TEMP3                 ; 2089
000104 001437                3$: CMP      TEMP3,RBUF.LENGTH      ; 2091
000106 012737 000001 000000G      BEQ      4$                      ;
000114 016066 000016 000002      MOV      #1,ERR.FLAG              ;
000122 016637 000002 000000G      MOV      16(R0),2(SP)              ; *,TMP.LOCATION
000130 012746 000000G      MOV      2(SP),CSR.WORD            ; TMP.LOCATION,*
000134 012746 000001      MOV      #MSG59,-(SP)              ; 2096
000140 010600                MOV      #1,-(SP)                  ;
000142 104414                MOV      SP,R0                     ; SP,*
000144 013716 000000G      TRAP    14                        ;
000150 013746 000000G      MOV      RBUF.LENGTH,(SP)          ; 2097
000154 012746 000000G      MOV      TEMP3,-(SP)               ;
000160 012746 000003      MOV      #MSG17,-(SP)              ;
000164 010600                MOV      #3,-(SP)                  ;
000166 104414                MOV      SP,R0                     ; SP,*
000170 104455                TRAP    14                        ;
000172 000013                TRAP    55                        ; 2098
000174 000000G      .WORD   13
                                .WORD   MSG00
    
```

ZQNA4	CZQNA0 DEQNA FUNCTIONAL TEST	14-Mar 1985 13:18:55	VAX-11 Bliss-16 V4.1-582	SEQ 0250	
V01.0	GLOBAL ROUTINE - COMPARE_PACKETS ( )	14-Mar-1985 13:06:01	DISK\$USER2:(MARSHALL.DEQNA)ZQNA4.BLI;4	Page 30 (15)	
000176	000000'		.WORD	ERROR\$REPORT	
000200	062706	000012	ADD	#12,SP	
000204	013702	000000G	4\$: MOV	TEMP3,R2	2093
000210	005001		CLR	R1	2101
000212	000474		BR	9\$	; INDEX
000214	023727	000010G 100000	5\$: CMP	RCV.D.LIST+10,#-100000	
000222	001002		BNE	6\$	2103
000224	105061	000000G	CLRB	RCV.BUFFER(R1)	; *(INDEX)
000230	126161	000000G 000000G	6\$: CMPB	XMIT.BUFFER(R1),RCV.BUFFER(R1)	; *(INDEX),*(INDEX)
000236	001461		BEQ	8\$	2107
000240	032737	040000 000010G	BIT	#40000,RCV.D.LIST+10	
000246	001403		BEQ	7\$	2109
000250	010137	000000G	MOV	R1,TEMP5	; INDEX,*
000254	000455		BR	10\$	2112
000256	012737	000001 000000G	7\$: MOV	#1,ERR.FLAG	2111
000264	013700	000000G	MOV	REG.ADR,R0	2117
000270	016066	000016 000004	MOV	16(R0),4(SP)	; *,TMP.LOCATION
000276	016637	000004 000000G	MOV	4(SP),CSR.WORD	; TMP.LOCATION,*
000304	012746	000000G	MOV	#MSG59,-(SP)	
000310	012746	000001	MOV	#1,-(SP)	2119
000314	010600		MOV	SP,R0	; SP,*
000316	104414		TRAP	14	
000320	012716	000000G	MOV	#MSG51,(SP)	
000324	012746	000001	MOV	#1,-(SP)	2120
000330	010600		MOV	SP,R0	; SP,*
000332	104414		TRAP	14	
000334	010116		MOV	R1,(SP)	; INDEX,*
000336	005046		CLR	-(SP)	2121
000340	116116	000000G	MOVB	XMIT.BUFFER(R1),(SP)	; *(INDEX),*
000344	005046		CLR	-(SP)	
000346	116116	000000G	MOVB	RCV.BUFFER(R1),(SP)	; *(INDEX),*
000352	012746	000000G	MOV	#MSG50,-(SP)	
000356	012746	000004	MOV	#4,-(SP)	
000362	010600		MOV	SP,R0	; SP,*
000364	104414		TRAP	14	
000366	104455		TRAP	55	
000370	000014		.WORD	14	2122
000372	000000G		.WORD	MSG0C	
000374	000000'		.WORD	ERROR\$REPORT	
000376	062706	000016	ADD	#16,SP	
000402	005201		8\$: INC	R1	2116
000404	020102		9\$: CMP	R1,R2	2101
000406	002702		BLT	5\$	; INDEX,*
000410	062706	000006	10\$: ADD	#6,SP	
000414	000207		RTS	PC	2060

; Routine Size: 135 words, Routine Base: AC\$CODE\$ + 261F  
; Maximum stack depth per invocation: 15 words

; 2126 1  
; 2127 1

```

: 2128 1 *SBTTL 'GLOBAL ROUTINE - SET_RDESCR_LIST ( P1, P2)'
: 2129 1
: 2130 1 GLOBAL ROUTINE SET_RDESCR_LIST ( P1, P2 ) : NOVALUE =
: 2131 1
: 2132 1 !++
: 2133 1
: 2134 1 GLOBAL ROUTINE : SET_RDESCR_LIST
: 2135 1
: 2136 1 DESCRIPTION:
: 2137 1
: 2138 1 This routine initializes receive descriptor list.
: 2139 1
: 2140 1 INPUT PARAMETERS:
: 2141 1
: 2142 1 P1 - expected Ethernet packet length in words
: 2143 1 P2 - expected RCV Descriptor List settings
: 2144 1
: 2145 1 !--
: 2146 1
: 2147 2 BEGIN
: 2148 2
: 2149 2 RCV_D_LIST [ FLGWD ] = NEWB;
: 2150 2 RCV_D_LIST [ DBITS ] = .P2;
: 2151 2 RCV_D_LIST [ LOADR ] = RCV_BUFFER;
: 2152 2 RCV_D_LIST [ TWDL ] = .P1;
: 2153 2 RCV_D_LIST [ STWD1 ] = 0;
: 2154 2 RCV_D_LIST [ STWD2 ] = 0;
: 2155 2 RCV_D_LIST [ DLINK ] = V;
: 2156 2 RCV_D_LIST [ BSTAT ] = F;
: 2157 2
: 2158 1 END;

```

```

000000 012737 100000 000000G .SBTTL SET.RDESCR.LIST GLOBAL ROUTINE - SET_RDESCR_LIST ( P1, P2)
SET.RDESCR.LIST:
000006 016637 000002 000002G MOV #-100000,RCV.D.LIST ;
000014 012737 000000G 000004G MOV 2(SP),RCV.D.LIST+2 ; P2,*
000022 016637 000004 000006G MOV #RCV.BUFFER,RCV.D.LIST+4 ;
000030 005037 000010G CLR 4(SP),RCV.D.LIST+6 ; P1,*
000034 005037 000012G CLR RCV.D.LIST+10 ;
000040 012737 100000 000014G MOV #-100000,RCV.D.LIST+14 ;
000046 012737 020000 000016G MOV #20000,RCV.D.LIST+16 ;
000054 000207 RTS PC ;

```

: Routine Size: 23 words, Routine Base: AC#CODE# + 3234  
: Maximum stack depth per invocation: 0 words

```

: 2159 1

```

ZQNA4  
V01.0

CZQNADO DEQNA FUNCTIONAL TEST  
GLOBAL ROUTINE - SET\_XDESCR\_LIST ( P1, P2 )

14-Mar-1985 13:18:55  
14-Mar-1985 13:06:01

SEQ 0252  
Page 32  
VAX-11 Bliss-16 V4.1-582  
DISK#USER2:[MARSHALL.DEQNA]ZQNA4.BLI;4 (17)

```

; 2160 1 *SBTTL 'GLOBAL ROUTINE - SET_XDESCR_LIST ( P1, P2 )'
; 2161 1
; 2162 1 GLOBAL ROUTINE SET_XDESCR_LIST ( P1, P2 ) : NOVALUE =
; 2163 1
; 2164 1 !**
; 2165 1 !
; 2166 1 GLOBAL ROUTINE : SET_XDESCR_LIST
; 2167 1 !
; 2168 1 ! DESCRIPTION:
; 2169 1 !
; 2170 1 ! This routine initializes transmit descriptor list.
; 2171 1 !
; 2172 1 ! INPUT PARAMETERS:
; 2173 1 !
; 2174 1 ! P1 - expected Ethernet packet length in words
; 2175 1 ! P2 - expected XMIT Descriptor List settings
; 2176 1 !
; 2177 1 !--
; 2178 1 -
; 2179 2 BEGIN
; 2180 2
; 2181 2 XMIT_D_LIST [ FLGWD ] = NEWB;
; 2182 2 XMIT_D_LIST [ DBITS ] = .P2;
; 2183 2 XMIT_D_LIST [ LOADR ] = XMIT_BUFFER;
; 2184 2 XMIT_D_LIST [ TWDL ] = .P1;
; 2185 2 XMIT_D_LIST [ STWD1 ] = 0;
; 2186 2 XMIT_D_LIST [ STWD2 ] = 0;
; 2187 2 XMIT_D_LIST [ DLINK ] = V;
; 2188 2 XMIT_D_LIST [ BSTAT ] = E;
; 2189 2
; 2190 1 END;

```

```

; .SBTTL SET.XDESCR.LIST GLOBAL ROUTINE - SET_XDESCR_LIST ( P1, P2 )
000000 012737 100000 000000G SET.XDESCR.LIST::
; MOV #-100000,XMIT.D.LIST ;
; MOV 2(SP),XMIT.D.LIST+2 ; P2.* 2181
; MOV #XMIT.BUFFER,XMIT.D.LIST+4 ; 2182
; MOV 4(SP),XMIT.D.LIST+6 ; P1.* 2183
; CLR XMIT.D.LIST+10 ; 2184
; CLR XMIT.D.LIST+12 ; 2185
; MOV #-100000,XMIT.D.LIST+14 ; 2186
; MOV #20000,XMIT.D.LIST+16 ; 2187
; RTS PC ; 2188
; ; 2189
; ; 2190

```

; Routine Size: 23 words, Routine Base: AC#CODE# + 3312  
; Maximum stack depth per invocation: 0 words

; 2191 1

ZQNA4  
V01.0CZQNA0 DEQNA FUNCTIONAL TEST  
GLOBAL ROUTINE - WALKING\_BIT ( P1, P2, P3 )14-Mar-1985 13:18:55  
14-Mar-1985 13:06:01VAX-11 Bliss-16 V4.1-582  
DISK#USER2:[MARSHALL.DEQNA]ZQNA4.BLI;4 (18)SEQ 0253  
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```

: 2192 1 *SBTTL 'GLOBAL ROUTINE - WALKING_BIT ( P1, P2, P3 )'
: 2193 1
: 2194 1 GLOBAL ROUTINE WALKING_BIT ( P1, P2, P3 ) : NOVALUE =
: 2195 1
: 2196 1 !**
: 2197 1 !
: 2198 1 ! GLOBAL ROUTINE : WALKING_BIT
: 2199 1 !
: 2200 1 ! DESCRIPTION:
: 2201 1 !
: 2202 1 ! This routine sets bit to 0 or 1 in a specified bit position of the
: 2203 1 ! Ethernet Station Address. For example,
: 2204 1 !
: 2205 1 ! if
: 2206 1 ! .P1 = 0 and .P2 = 15 .P3 = 5
: 2207 1 ! then
: 2208 1 ! Ethernet Station Address = FF-FF-FF-FF-7F-FF
: 2209 1 !
: 2210 1 ! INPUT PARAMETERS:
: 2211 1 !
: 2212 1 ! P1 - bit ( 0 or 1 )
: 2213 1 ! P2 - bit position from base address
: 2214 1 ! P3 - # of bytes to be tested using this pattern
: 2215 1 !
: 2216 1 !--
: 2217 1
: 2218 2 BEGIN
: 2219 2
: 2220 2 SELECTONE .P2 OF
: 2221 2 SET
: 2222 2 [ 0 TO 7 ]:
: 2223 2 TEMP1 = 0;
: 2224 2 [ 8 TO ( .P3 + 1 ) * 8 ]:
: 2225 2 TEMP1 = .P2 / 8;
: 2226 2 TES;
: 2227 2
: 2228 2 TEMP2 = .P2 MOD 8;
: 2229 2
: 2230 2 IF .P1 EGLU ZERO
: 2231 2 THEN
: 2232 3 BEGIN
: 2233 3 TBYTE1 = %B'00000000';
: 2234 3 SELECTONE .TEMP2 OF
: 2235 3 SET
: 2236 3 [ 0 ]: TBYTE3 = %0'001';
: 2237 3 [ 1 ]: TBYTE3 = %0'002';
: 2238 3 [ 2 ]: TBYTE3 = %0'004';
: 2239 3 [ 3 ]: TBYTE3 = %0'010';
: 2240 3 [ 4 ]: TBYTE3 = %0'020';
: 2241 3 [ 5 ]: TBYTE3 = %0'040';
: 2242 3 [ 6 ]: TBYTE3 = %0'100';
: 2243 3 [ 7 ]: TBYTE3 = %0'200';
: 2244 3 TES;

```

ZQNA4  
V01.0

CZQNA0 DEQNA FUNCTIONAL TEST  
GLOBAL ROUTINE - WALKING\_BIT ( P1, P2, P3 )

14-Mar-1985 13:18:55  
14-Mar 1985 13:06:01

SEQ 0254  
Page 34  
VAX-11 Bliss-16 V4.1-582  
DISK#USER2:[MARSHALL.DEQNA]ZQNA4.BLI;4 (18)

```

; 2245 3      END
; 2246 2      ELSE
; 2247 3      BEGIN
; 2248 3      TBYTE1 = #B'11111111';
; 2249 3      SELECTONE .TEMP2 OF
; 2250 3      SET
; 2251 3      [ 0 ]: TBYTE3 = #O'376';
; 2252 3      [ 1 ]: TBYTE3 = #O'375';
; 2253 3      [ 2 ]: TBYTE3 = #O'373';
; 2254 3      [ 3 ]: TBYTE3 = #C'367';
; 2255 3      [ 4 ]: TBYTE3 = #O'357';
; 2256 3      [ 5 ]: TBYTE3 = #O'337';
; 2257 3      [ 6 ]: TBYTE3 = #O'277';
; 2258 3      [ 7 ]: TBYTE3 = #O'177';
; 2259 3      TES;
; 2260 2      END;
; 2261 2
; 2262 2      INCR INDEX FROM 0 TO .P3 DO
; 2263 2      TARGET_ADR [ .INDEX ] = .TBYTE1;
; 2264 2
; 2265 2      TEMP3 = .P3 - .TEMP1;
; 2266 2      TARGET_ADR [ .TEMP3 ] = .TBYTE3;
; 2267 2
; 2268 1      END;

```

```

000000 004137 000000G      .SBTTL WALKING.BIT GLOBAL ROUTINE - WALKING_BIT ( P1, P2, P3 )
                                WALKING_BIT::
000004 016602 000012      JSR      R1,$SAVE2                ;
000010 002406                MOV      12(SP),R2                ; P2,*
000012 020227 000007      BLT      1$                      ;
000016 003003                CMP      R2,#7                    ;
000020 005037 000000G      BGT      1$
000024 000421                CLR      TEMP1                    ;
000026 020227 000010      BR      2$                      ;
000032 002416      1$:    CMP      R2,#10            ;
000034 016600 000010      BLT      2$                      ;
000040 072027 000003      MOV      10(SP),R0                ; P3,*
000044 062700 000010      ASH      #3,R0
000050 020200                ADD      #10,R0
000052 003006                CMP      R2,R0
000054 010201                BGT      2$
000056 006700                MOV      R2,R1                    ;
000060 071027 000010      SXT      R0                        ;
000064 010037 000000G      DIV      #10,R0
000070 010201      2$:    MOV      R0,TEMP1
000072 006700                MOV      R2,R1                    ;
000074 071027 000010      SXT      R0
000100 010137 000000G      DIV      #10,R0
000104 010100                MOV      R1,TEMP2
000106 005766 000014      MOV      R1,R0                    ; TEMP2,*
000112 001071                TST      14(SP)                   ; P1
                                BNE      10$

```



ZQNA4 V01.0		CZQNA0 DEQNA FUNCTIONAL TEST GLOBAL ROUTINE - WALKING_BIT ( P1, P2, P3 )		14-Mar-1985 13:18:55 14-Mar-1985 13:06:01	VAX-11 Bliss-16 V4.1-582 DISK#USER2:[MARSHALL.DEQNA]ZQNA4.BLI;4	SEQ 0255 Page 35 (18)
000114	005037	000000G		CLR	TBYTE1	2233
000120	005700			TST	R0	2236
000122	001004			BNE	3‡	
000124	012737	000001	000000G	MOV	#1, TBYTE3	
000132	000552			BR	18‡	2234
000134	020027	000001		3‡: CMP	R0, #1	2237
000140	001004			BNE	4‡	
000142	012737	000002	000000G	MOV	#2, TBYTE3	
000150	000543			BR	18‡	2234
000152	020027	000002		4‡: CMP	R0, #2	2238
000156	001004			BNE	5‡	
000160	012737	000004	000000G	MOV	#4, TBYTE3	
000166	000534			BR	18‡	2234
000170	020027	000003		5‡: CMP	R0, #3	2239
000174	001004			BNE	6‡	
000176	012737	000010	000000G	MOV	#10, TBYTE3	
000204	000525			BR	18‡	2234
000206	020027	000004		6‡: CMP	R0, #4	2240
000212	001004			BNE	7‡	
000214	012737	000020	000000G	MOV	#20, TBYTE3	
000222	000516			BR	18‡	2234
000224	020027	000005		7‡: CMP	R0, #5	2241
000230	001004			BNE	8‡	
000232	012737	000040	000000G	MOV	#40, TBYTE3	
000240	000507			BR	18‡	2234
000242	020027	000006		8‡: CMP	R0, #6	2242
000246	001004			BNE	9‡	
000250	012737	000100	000000G	MOV	#100, TBYTE3	
000256	000500			BR	18‡	2234
000260	020027	000007		9‡: CMP	R0, #7	2243
000264	001075			BNE	18‡	
000266	012737	000200	000000G	MOV	#200, TBYTE3	
000274	000471			BR	18‡	2234
000276	012737	000377	000000G	10‡: MOV	#377, TBYTE1	2248
000304	005700			TST	R0	2251
000306	001004			BNE	11‡	
000310	012737	000376	000000G	MOV	#376, TBYTE3	
000316	000460			BR	18‡	2249
000320	020027	000001		11‡: CMP	R0, #1	2252
000324	001004			BNE	12‡	
000326	012737	000375	000000G	MOV	#375, TBYTE3	
000334	000451			BR	18‡	2249
000336	020027	000002		12‡: CMP	R0, #2	2253
000342	001004			BNE	13‡	
000344	012737	000373	000000G	MOV	#373, TBYTE3	
000352	000442			BR	18‡	2249
000354	020027	000003		13‡: CMP	R0, #3	2254
000360	001004			BNE	14‡	
000362	012737	000367	000000G	MOV	#367, TBYTE3	
000370	000433			BR	18‡	2249
000372	020027	000004		14‡: CMP	R0, #4	2255
000376	001004			BNE	15‡	
000400	012737	000357	000000G	MOV	#357, TBYTE3	

ZQNA4  
V01.0

CZQNADO DEQNA FUNCTIONAL TEST  
GLOBAL ROUTINE - WALKING\_BIT ( P1, P2, P3 )

14-Mar-1985 13:18:55  
14-Mar-1985 13:06:01

SEQ 0256  
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VAX-11 B1133-16 V4.1-582  
DISK#USER2:[MARSHALL.DEQNA]ZQNA4.BLI;4 (18)

000406	000424			BR	18\$			
000410	020027	000005		15\$: CMP	R0,#5			2249
000414	001004			BNE	16\$			2256
000416	012737	000337	000000G	MOV	#337,TBYTE3			
000424	000415			BR	18\$			
000426	020027	000006		16\$: CMP	R0,#6			2249
000432	001004			BNE	17\$			2257
000434	012737	000277	000000G	MOV	#277,TBYTE3			
000442	000406			BR	18\$			
000444	020027	000007		17\$: CMP	R0,#7			2249
000450	001003			BNE	18\$			2258
000452	012737	000177	000000G	MOV	#177,TBYTE3			
000460	005000			18\$: CLR	R0		; INDEX	2262
000462	000404			BR	20\$			
000464	113760	000000G	000000G	19\$: MOVB	TBYTE1,TARGET.ADR(R0)		; *,*(INDEX)	2263
000472	005200			INC	R0		; INDEX	2262
000474	020066	000010		20\$: CMP	R0,10(SP)		; INDEX,P3	
000500	003771			BLE	19\$			
000502	016637	000010	000000G	MOV	10(SP),TEMP3		; P3,*	2265
000510	163737	000000G	000000G	SUB	TEMP1,TEMP3			
000516	013700	000000G		MOV	TEMP3,R0			2266
000522	113760	000000G	000000G	MOVB	TBYTE3,TARGET.ADR(R0)			
000530	000207			RTS	PC			2194

; Routine Size: 173 words, Routine Base: AC#CODE# + 3370  
; Maximum stack depth per invocation: 4 words

; 2269 1

ZQNA4  
V01.0

CZQNA0 DEQNA FUNCTIONAL TEST  
GLOBAL ROUTINE - WRT\_STATION\_ADR ( P1, P2 )

14-Mar-1985 13:18:55  
14-Mar-1985 13:06:01

SEQ 0257  
Page 37  
VAX-11 B1:00-16 V4.1-582  
DISK#USER2:MARSHALL.DEQNA}ZQNA4.BLI:4 (19

```

; 2270 1 #SBTTL 'GLOBAL ROUTINE - WRT_STATION_ADR ( P1, P2 )'
; 2271 1
; 2272 1 GLOBAL ROUTINE WRT_STATION_ADR ( P1, P2 ). NOVALUE *
; 2273 1
; 2274 1 !..
; 2275 1 !
; 2276 1 ! GLOBAL ROUTINE : WRT_STATION_ADR
; 2277 1 !
; 2278 1 ! DESCRIPTION:
; 2279 1 !
; 2280 1 ! This routine writes Station Address to XMIT_BUFFER.
; 2281 1 !
; 2282 1 ! INPUT PARAMETERS:
; 2283 1 !
; 2284 1 ! P1 - Ethernet Station Address index (1:14) in Station Address RAM
; 2285 1 ! P2 - Ethernet Station Address index ( 0:19 ) in the TARGET_ADR table
; 2286 1 !
; 2287 1 !--
; 2288 1
; 2289 2 BEGIN
; 2290 2
; 2291 2 TEMP1 = .P2 * 6;
; 2292 2
; 2293 2 SELECTONE .P1 OF
; 2294 2 SET
; 2295 2 [ 0 TO 7 ]:
; 2296 2 TEMP2 = .P1;
; 2297 2 [ 8 TO 14 ]:
; 2298 2 TEMP2 = .P1 * 57;
; 2299 2 TES;
; 2300 2
; 2301 2 IF .TEMP2 EQLU ZERO
; 2302 2 THEN
; 2303 2 INCR INDEX FROM 0 TO 5 DO
; 2304 3 BEGIN
; 2305 3 XMIT_BUFFER [ .INDEX ] = .TARGET_ADR [ .INDEX * .TEMP1 ];
; 2306 3 END
; 2307 2 ELSE
; 2308 2 INCR INDEX FROM 0 TO 5 DO
; 2309 3 BEGIN
; 2310 3 TEMP3 = .INDEX * 8 * .TEMP2;
; 2311 3 XMIT_BUFFER [ .TEMP3 ] = .TARGET_ADR [ .INDEX * .TEMP1 ];
; 2312 2 END;
; 2313 1 END;

```

000000	004137	000000G	.SBTTL WRT.STATION.ADR GLOBAL ROUTINE	WRT_STATION_ADR ( P1, P2 )	
			WRT.STATION.ADR::		
			JSR R1,\$SAVE3	:	2272
000004	016601	000012	MOV 12(SP),R1	: P2,*	2291
000010	070127	000006	MUL #6,R1		
000014	010137	000000G	MOV R1,TEMP1		
000020	016600	000014	MOV 14(SP),R0	: P1,*	2293

ZQNA4  
V01.0

CZQNA40 DEQNA FUNCTIONAL TEST  
GLOBAL ROUTINE - WRT\_STATION\_ADR ( P1, P2 )

14-Mar-1985 13:18:55  
14-Mar-1985 13:06:01

VRX-11 Class-16 V4.1-582  
DISK:USER2:[MARSHALL.DEQNA]ZQNA4.BLI:4 (19)

SEQ 0258  
Page 38

000024	002406		BLT	1#				
000026	020027	000007	CMP	R0,#7	:			2295
000032	003003		BGT	1#				
000034	010037	000000G	MOV	R0,TEMP2	:			2296
000040	000413		BR	2#	:			2293
000042	020027	000010	CMP	R0,#10	:			2297
000046	002410		BLT	2#				
000050	020027	000016	CMP	R0,#16				
000054	003005		BGT	2#				
000056	010037	000000G	MOV	R0,TEMP2	:			2298
000062	062737	000071 000000G	ADD	#71,TEMP2				
000070	013703	000000G	MOV	TEMP2,R3	:			2301
000074	001014		JNE	4#				
000076	005000		CLR	R0	:	INDEX		2303
000100	010001		MOV	R0,R1	:	INDEX,*		2305
000102	063701	000000G	ADD	TEMP1,R1				
000106	116160	000000G 000000G	MOVB	TARGET.ADR(R1),XMIT.BUFFER(R0)	:	*,*(INDEX)		
000114	005200		INC	R0	:	INDEX		2303
000116	020027	000005	CMP	R0,#5	:	INDEX,*		
000122	003766		BLE	3#				
000124	000207		RTS	PC	:			2301
000126	005002		CLR	R2	:	INDEX		2308
000130	010200		MOV	R2,R0	:	INDEX,*		2310
000132	072027	000003	ASH	#3,R0				
000136	060300		ADD	R3,R0				
000140	010037	000000G	MOV	R0,TEMP3				
000144	010201		MOV	R2,R1	:	INDEX,*		2311
000146	063701	000000G	ADD	TEMP1,R1				
000152	116160	000000G 000000G	MOVB	TARGET.ADR(R1),XMIT.BUFFER(R0)				
000160	005202		INC	R2	:	INDEX		2308
000162	020227	000005	CMP	R2,#5	:	INDEX,*		
000166	003760		BLE	5#				
000170	000207		RTS	PC	:			2272

| Routine Size: 61 words. Routine Base: AC:CODE: \* 4122  
| Maximum stack depth per invocation: 5 words

| 2314 1

ZONA4  
V01.0

CZONADO DEQNA FUNCTIONAL TEST  
GLOBAL ROUTINE - PREP\_FOR\_SETUP ( )

14-Mar-1985 13:18:55  
14-Mar-1985 13:06:01

VAX-11 Bliss-16 V4.1-582  
DISK#USER2:[MARSHALL.DEQNA]ZONA4.BLI;4 (20)

SEQ 0259  
Page 39

```

; 2315 1 #SBTTL 'GLOBAL ROUTINE - PREP_FOR_SETUP ( ) '
; 2316 1
; 2317 1 GLOBAL ROUTINE PREP_FOR_SETUP : NOVALUE =
; 2318 1
; 2319 1 !..
; 2320 1
; 2321 1 GLOBAL ROUTINE : PREP_FOR_SETUP
; 2322 1
; 2323 1 DESCRIPTION:
; 2324 1
; 2325 1 This routine retrieves Ethernet Station Address from the Ethernet's
; 2326 1 Station Address PROM, saves copy of Ethernet Station Address PROM
; 2327 1 in the TARGET_ADR vector, initializes transmit and receive buffers
; 2328 1 to zero and finally sets buffer length to select promiscuous mode.
; 2329 1
; 2330 1 INPUT PARAMETERS:
; 2331 1
; 2332 1 none
; 2333 1 !..
; 2334 1
; 2335 2 BEGIN
; 2336 2
; 2337 2 !..
; 2338 2 ! RETRIEVE ETHERNET PHYSICAL STATION ADDRESS AND SAVE A COPY OF IT IN THE
; 2339 2 ! 'TARGET_ADR' VECTOR.
; 2340 2 !..
; 2341 2
; 2342 2 INCR INDEX FROM 0 TO 5 DO
; 2343 3 BEGIN
; 2344 3 TBYTE1 = .REG_ADR [ .INDEX, ST_ADDR ];
; 2345 3 TARGET_ADR [ ( PHA_INDEX * 6 ) + .INDEX ] = .TBYTE1;
; 2346 2 END;
; 2347 2
; 2348 2 CLR_BUFFERS ( 256 );
; 2349 2
; 2350 1 END;

```

```

000000 010146 .SBTTL PREP.FOR.SETUP GLOBAL ROUTINE - PREP_FOR_SETUP ( )
PREP.FOR.SETUP::
MOV R1, -(SP) ;
TST -(SP) ;
CLR R1 ; INDEX
1$: MOV R1, R0 ; INDEX,*
ASL R0 ;
ADD REG_ADR, R0 ; *,TMP.LOCATION
MOV (R0), (SP) ;
CLR TBYTE1 ;
MOVB (SP), TBYTE1 ;
MOVB (SP), TARGET_ADR+162(R1) ; *,*(INDEX)
INC R1 ; INDEX
CMP R1, #5 ; INDEX,*
BLE 1$

```

ZQNA4  
V01.0

CZQNA0 DEQNA FUNCTIONAL TEST  
GLOBAL ROUTINE PREP FOR SETUP ( )

14-Mar-1985 13:18:55  
14-Mar-1985 13:06:01

SEQ 0260  
Page 40  
VAX-11 B110-16 V4.1-582  
DISK#USER2:[MARSHALL.DEQNA]ZQNA4.BLI;4 (20)

000044	012746	000400	MOV	#400,-(SP)	:	2348
000050	004737	001234	JSR	PC,CLR.BUFFERS	:	
000054	022626		CMP	(SP)+,(SP)+	:	2317
000056	012601		MOV	(SP)+,R1	:	
000060	000207		RTS	PC	:	

: Routine Size: 25 words. Routine Base: AC#CODE# + 4314  
: Maximum stack depth per invocation: 4 words

: 2351 1  
: 2352 1  
: 2353 1

ZQNA4  
V01.0CZQNADO DEQNA FUNCTIONAL TEST  
GLOBAL ROUTINE - FORM\_HEX\_ADR ( P3 )14-Mar-1985 13:18:55  
14-Mar-1985 13:06:01VAX-11 B110-16 V4.1-582  
DISK\$USER2:(MARSHALL.DEQNA)ZQNA4.BLI;4 (21)SEQ 0261  
Page 41

```

: 2354 1 *SBTTL 'GLOBAL ROUTINE - FORM_HEX_ADR ( P3 ) '
: 2355 1
: 2356 1 GLOBAL ROUTINE FORM_HEX_ADR ( P3 ) : NOVALUE =
: 2357 1
: 2358 1 !..
: 2359 1 !
: 2360 1 ! GLOBAL ROUTINE : FORM_HEX_ADR
: 2361 1 !
: 2362 1 ! DESCRIPTION:
: 2363 1 !
: 2364 1 ! This routine retrieves Ethernet Station Address from the Ethernet's
: 2365 1 ! Station Address PROM, saves its copy in the TARGET_ADR vector.
: 2366 1 !
: 2367 1 ! INPUT PARAMETERS:
: 2368 1 !
: 2369 1 ! P3 - Index to Station Address in the TARGET_ADR vector
: 2370 1 !--
: 2371 1
: 2372 2 BEGIN
: 2373 2
: 2374 2 !..
: 2375 2 ! RETRIEVE ETHERNET PHYSICAL STATION ADDRESS AND SAVE A COPY OF IT IN THE
: 2376 2 ! 'TARGET_ADR' AND 'STATION_ADR' VECTORS.
: 2377 2 !--
: 2378 2
: 2379 2 IF .P3 EQLU ZERO
: 2380 2 THEN
: 2381 2 TEMP5 = 0
: 2382 2 ELSE
: 2383 2 TEMP5 = .P3 * 6;
: 2384 2
: 2385 2 INCR INDEX5 FROM 0 TO 5 DO
: 2386 3 BEGIN
: 2387 3 TBYTE1 = .REG_ADR [ .INDEX5, ST_ADDR ];
: 2388 3 TARGET_ADR [ ( PHA_INDEX * 6 ) + .INDEX5 ] = .TBYTE1;
: 2389 2 END;
: 2390 2
: 2391 2 COUNTER = ZERO;
: 2392 2
: 2393 2 INCR INDEX5 FROM 0 TO 5 BY 2 DO
: 2394 3 BEGIN
: 2395 3 TEMP1 = .TARGET_ADR [ .TEMP5 + .INDEX5 ];
: 2396 3 TEMP1 = .TEMP1 + 8;
: 2397 3 TEMP2 = .TARGET_ADR [ .TEMP5 + .INDEX5 + 1 ];
: 2398 3 STATION_ADR [ .COUNTER ] = .TEMP1 OR ( .TEMP2 AND #0'000377' );
: 2399 3 COUNTER = .COUNTER + 1;
: 2400 2 END;
: 2401 2
: 2402 2 !..
: 2403 2 ! PRINT ETHERNET STATION ADDRESS ON THE CONSOLE
: 2404 2 !--
: 2405 2
: 2406 2 COUNTER = 18;

```

ZQNA4  
V01.0

CZQNAO DEQNA FUNCTIONAL TEST  
GLOBAL ROUTINE - FORM\_HEX\_ADR ( P3 )

14-Mar-1985 13:18:55  
14-Mar-1985 13:06:01

SEQ 0262  
Page 42  
VAX-11 Bliss-16 V4.1-582  
DISK\$USER2:[MARSHALL.DEQNA]ZQNA4.BLI;4 (21)

```

; 2407 2    PHYS_ADR [ 0 ] = #C'#';
; 2408 2    PHYS_ADR [ 1 ] = #C'A';
; 2409 2    PHYS_ADR [ 19 ] = #C' ';
; 2410 2    PHYS_ADR [ 20 ] = #C'#';
; 2411 2    PHYS_ADR [ 21 ] = #C'N';
; 2412 2
; 2413 2    DECR INDEX1 FROM 2 TO 0 DO
; 2414 3      BEGIN
; 2415 3        TEMP3 = .STATION_ADR [ .INDEX1 ];
; 2416 3        INCR INDEX2 FROM 0 TO 1 DO
; 2417 4          BEGIN
; 2418 4            INCR INDEX3 FROM 0 TO 1 DO
; 2419 5              BEGIN
; 2420 5                TEMP1 = .TEMP3 AND #X'F';
; 2421 5                IF .TEMP1 LEQU #DECIMAL'9'
; 2422 5                  THEN
; 2423 5                    TBYTE1 = #C'0' + .TEMP1
; 2424 5                  ELSE
; 2425 5                    TBYTE1 = #C'A' + ( .TEMP1 - #DECIMAL'10' );
; 2426 5                    PHYS_ADR [ .COUNTER ] = .TBYTE1;
; 2427 5                    COUNTER = .COUNTER - 1;
; 2428 5                    TEMP3 = .TEMP3 + ( -4 );
; 2429 4                  END;
; 2430 4                END;
; 2431 4              IF .COUNTER GTRU 2
; 2432 4                THEN
; 2433 4                  PHYS_ADR [ .COUNTER ] = #C'-' ;
; 2434 4                COUNTER = .COUNTER - 1;
; 2435 4              END;
; 2436 4            END;
; 2437 3          END;
; 2438 2        END;
; 2439 2      END;
; 2440 1    END;

```

```

                                .SBTTL  FORM.HEX.ADR GLOBAL ROUTINE - FORM_HEX_ADR ( P3 )
000000  004137  000000G          FORM.HEX.ADR::
                                JSR     R1,$SAVE3                ;                2356
                                TST     -(SP)
                                MOV     14(SP),R0                ; P3,*                2379
                                BNE     1$
                                CLR     TEMP5                    ;                2381
                                BR      2$                        ;                2379
000020  000405                    1$: MOV     R0,R1                ;                2383
000022  010001                    MUL     #6,R1
000024  070127  000006          MOV     R1,TEMP5
000030  010137  000000G          CLR     R0                ; INDEX5                2385
000034  005000                    2$: MOV     R0,R1                ; INDEX5,*                2387
000036  010001                    3$: ASL     R1
000040  006301
000042  063701  000000G          ADD     REG.ADR,R1
000046  011116          MOV     (R1),(SP)                ; *.TMP.LOCATION
000050  005037  000000G          CLR     TBYTE1

```



ZQNA4  
V01.0

CZQNA0 DEQNA FUNCTIONAL TEST  
GLOBAL ROUTINE - FORM\_HEX\_ADR ( P3 )

14-Mar-1985 13:18:55  
14-Mar-1985 13:06:01

SEQ J263  
Page 43  
VAX-11 Bliss-16 V4.1 582  
DISK#USER2:[MARSHALL.DEQNA]ZQNA4.BLI;4 (21)

000054	111637	000000G		MOVB	(SP),TBYTE1				
000060	111660	000162G		MOVB	(SP),TARGET.ADR+162(R0)	:	*(INDEX5)	2388	
000064	005200			INC	R0	:	INDEX5	2385	
000066	020027	000005		CMP	R0,#5	:	INDEX5,*		
000072	003761			BLE	3#				
000074	005037	000000G		CLR	COUNTER	:		2391	
000100	005002			CLR	R2	:	INDEX5	2393	
000102	010201		4#:	MOV	R2,R1	:	INDEX5,*	2395	
000104	063701	000000G		ADD	TEMP5,R1				
000110	116137	000000G	000000G	MOVB	TARGET.ADR(R1),TEMP1				
000116	105037	000001G		CLRB	TEMP1+1				
000122	013700	000000G		MOV	TEMP1,R0	:		2396	
000126	072027	000010		ASH	#10,R0				
000132	010037	000000G		MOV	R0,TEMP1				
000136	116137	000001G	000000G	MOVB	TARGET.ADR+1(R1),TEMP2	:		2397	
000144	105037	000001G		CLRB	TEMP2+1				
000150	013701	000000G		MOV	COUNTER,R1	:		2398	
000154	006301			ASL	R1				
000156	005000			CLR	R0				
000160	153700	000000G		BISB	TEMP2,R0				
000164	053700	000000G		BIS	TEMP1,R0				
000170	010061	000000G		MOV	R0,STATION.ADR(R1)				
000174	005237	000000G		INC	COUNTER	:		2399	
000200	062702	000002		ADD	#2,R2	:	*,INDEX5	2393	
000204	020227	000005		CMP	R2,#5	:	INDEX5,*		
000210	003734			BLE	4#				
000212	012737	000022	000000G	MOV	#22,COUNTER	:		2406	
000220	112737	000045	000000G	MOVB	#45,PHYS.ADR	:		2407	
000226	112737	000101	000001G	MOVB	#101,PHYS.ADR+1	:		2408	
000234	112737	000040	000023G	MOVB	#40,PHYS.ADR+23	:		2409	
000242	112737	000045	000024G	MOVB	#45,PHYS.ADR+24	:		2410	
000250	112737	000116	000025G	MOVB	#116,PHYS.ADR+25	:		2411	
000256	012701	000004		MOV	#4,R1	:	*,INDEX1	2413	
000262	016137	000000G	000000G	5#:	MOV	STATION.ADR(R1),TEMP3	:	*(INDEX1),*	2415
000270	012703	000002		MOV	#2,R3	:	*,INDEX2	2416	
000274	012702	000002		6#:	MOV	#2,R2	:	*,INDEX3	2418
000300	013737	000000G	000000G	7#:	MOV	TEMP3,TEMP1	:		2420
000306	042737	177760	000000G	BIC	#177760,TEMP1				
000314	013700	000000G		MOV	TEMP1,R0	:		2421	
000320	020027	000011		CMP	R0,#11				
000324	101006			BHI	8#				
000326	010037	000000G		MOV	R0,TBYTE1	:		2423	
000332	062737	000060	000000G	ADD	#60,TBYTE1				
000340	000405			BR	9#	:		2421	
000342	010037	000000G		8#:	MOV	R0,TBYTE1	:	2425	
000346	062737	000067	000000G	ADD	#67,TBYTE1				
000354	013700	000000G		9#:	MOV	COUNTER,R0	:	2426	
000360	113760	000000G	000000G	MOVB	TBYTE1,PHYS.ADR(R0)				
000366	005337	000000G		DEC	COUNTER	:		2427	
000372	013700	000000G		MOV	TEMP3,R0	:		2428	
000376	072027	177774		ASH	#-4,R0				
000402	010037	000000G		MOV	R0,TEMP3				
000406	077244			SOB	R2,7#	:	INDEX3,*	2418	

ZQNA4  
V01.0

CZQNA0 DEQNA FUNCTIONAL TEST  
GLOBAL ROUTINE - FORM\_HEX\_ADR ( P3 )

14-Mar-1985 13:18:55  
14 Mar-1985 13:06:01

SEQ 0264  
Page 44  
VAX-11 Bliss-16 V4.i-582  
DISK\$USER2:[MARSHALL.DEQNA]ZQNA4.BLI;4 (21)

000410	013702	000000G		MOV	COUNTER,R2	:		
000414	020227	000002		CMP	R2,#2	:		2431
000420	101403			BLOS	10\$	:		
000422	112762	000055	000000G	MOVB	#55,PHYS.ADR(R2)	:		2433
000430	005337	000000G	10\$:	DEC	COUNTER	:		2435
000434	077361			S0B	R3,6\$	:	INDEX2,*	2416
00C436	162701	000002		SUB	#2,R1	:	*,INDEX1	2413
000442	100307			BPL	5\$	:		
000444	005726			TST	(SP)+	:		
000446	000207			RTS	PC	:		2356

; Routine Size: 148 words, Routine Base: AC\$CODE\$ + 4376  
; Maximum stack depth per invocation: 6 words

; 2441 1  
; 2442 1

ZQNA4  
V01.0CZQNA0 DEQNA FUNCTIONAL TEST  
GLOBAL ROUTINE - XMIT\_SETUP\_PACKET ( P1 )14 Mar-1985 13:18:55  
14-Mar-1985 13:06:01SEQ 0265  
Page 45  
VAX-11 Bliss-16 V4.1-582  
DISK\$USER2:[MARSHALL.DEQNA]ZQNA4.BLI;4 (22)

```

: 2443 1 *SBTTL 'GLOBAL ROUTINE - XMIT_SETUP_PACKET ( P1 )'
: 2444 1
: 2445 1 GLOBAL ROUTINE XMIT_SETUP_PACKET ( P1 ) : NOVALUE =
: 2446 1
: 2447 1 !**
: 2448 1 !
: 2449 1 ! GLOBAL ROUTINE : XMIT_SETUP_PACKET
: 2450 1 !
: 2451 1 ! DESCRIPTION:
: 2452 1 !
: 2453 1 ! This routine initializes descriptor lists to transmit and receive
: 2454 1 ! unchained Setup loopback packet. After loopback packet has been
: 2455 1 ! received DEQNA CSR, transmit and receive status registers are
: 2456 1 ! checked for proper status. Finally, transmit and receive packets
: 2457 1 ! are compared to verify that they are identical.
: 2458 1 !
: 2459 1 ! XMIT_D_LIST [ 0 ] = NEWB RCV_D_LIST [ 0 ] = NEWB
: 2460 1 ! XMIT_D_LIST [ 1 ] = VSE RCV_D_LIST [ 1 ] = VE
: 2461 1 ! XMIT_D_LIST [ 2 ] = XMIT_BUFFER RCV_D_LIST [ 2 ] = RCV_BUFFER
: 2462 1 ! XMIT_D_LIST [ 3 ] = .XBUF_LENGTH RCV_D_LIST [ 3 ] = .XBUF_LENGTH
: 2463 1 ! XMIT_D_LIST [ 4 ] = 0 RCV_D_LIST [ 4 ] = 0
: 2464 1 ! XMIT_D_LIST [ 5 ] = 0 RCV_D_LIST [ 5 ] = 0
: 2465 1 ! XMIT_D_LIST [ 6 ] = V RCV_D_LIST [ 6 ] = V
: 2466 1 ! XMIT_D_LIST [ 7 ] = E RCV_D_LIST [ 7 ] = E
: 2467 1 !
: 2468 1 !
: 2469 1 ! INPUT PARAMETERS:
: 2470 1 !
: 2471 1 ! P1 - transmit buffer length in bytes
: 2472 1 !
: 2473 1 !--
: 2474 1
: 2475 2 BEGIN
: 2476 2
: 2477 2 CLR_DESCR ( );
: 2478 2 RBUF_LENGTH = .P1;
: 2479 2 XBUF_LENGTH = - ( .RBUF_LENGTH + -1 );
: 2480 2 SET_RDESCR_LIST ( .XBUF_LENGTH, VE );
: 2481 2 SET_XDESCR_LIST ( .XBUF_LENGTH, VSE );
: 2482 2
: 2483 2 IF .P1 EQLU A_MODE
: 2484 2 THEN
: 2485 3 BEGIN
: 2486 3 XBUF_LENGTH = - ( ( .RBUF_LENGTH + -1 ) + 1 );
: 2487 3 SET_XDESCR_LIST ( .XBUF_LENGTH, VSEL );
: 2488 3 SET_RDESCR_LIST ( .XBUF_LENGTH, VE );
: 2489 2 END;
: 2490 2
: 2491 2 XMIT_AND_RCV_PACKET ( );
: 2492 2
: 2493 2 !**
: 2494 2 ! COMPARE STATUS REGISTERS TO EXPECTED VALUES
: 2495 2 !--

```

ZQNA4  
V01.0

CZQNAO DEQNA FUNCTIONAL TEST  
GLOBAL ROUTINE - XMIT\_SETUP\_PACKET ( P1 )

14-Mar-1985 13:18:55  
14-Mar-1985 13:06:01

SEQ 0266  
Page 46  
VAX-11 Bliss-16 V4.1-582  
DISK\$USER2:[MARSHALL.DEQNA]ZQNA4.BLI;4 (22)

```

; 2496 2
; 2497 2      CHK_RIXI_STATUS ( ONE );
; 2498 2      CHK_CSR_STATUS ( CSR_STATUS, CSR_MASK );           ! 0'100220', 0'100220'
; 2499 2      CHK_RCV_STATUS ( RFLG_STATUS, RWD1_STATUS );       ! 0'140000', 0'020000'
; 2500 2
; 2501 2      TEMP1 = XWD12_STATUS;                               ! 0'000400'
; 2502 2      IF .XMIT_D_LIST [ STE16 ]
; 2503 2      THEN
; 2504 2      TEMP1 = #0'002400';
; 2505 2      CHK_XMIT_STATUS ( XFLG_STATUS, .TEMP1 );           ! 0'140000', ???????
; 2506 2
; 2507 2      COMPARE_PACKETS ( );
; 2508 2
; 2509 1      END;

```

```

000000 004737 001206'          .SBTTL XMIT.SETUP.PACKET GLOBAL ROUTINE XMIT_SETUP_PACKET ( P1 )
                                XMIT.SETUP.PACKET:
000004 016637 000002 000000G   JSR      PC,CLR.DESCR          ;
000012 016600 000002          MOV      2(SP),RBUF.LENGTH    ; P1,*
000016 006200          MOV      2(SP),RO            ; RBUF.LENGTH,*
000020 005400          ASR      RO
000022 010037 000000G   NEG      RO
000026 010046          MOV      RO,XBUF.LENGTH
000030 012746 120000          MOV      RO,-(SP)           ; XBUF.LENGTH,*
000034 004737 003234'   JSR      PC,SET.RDESCR.LIST
000040 013716 000000G   MOV      XBUF.LENGTH,(SP)
000044 012746 130000          MOV      #-50000,-(SP)
000050 004737 003312'   JSR      PC,SET.XDESCR.LIST
000054 026627 000010 000201  CMP      10(SP),#201        ; P1,*
000062 001023          BNE
000064 013700 000000G   MOV      RBUF.LENGTH,RO
000070 006200          ASR      RO
000072 005200          INC      RO
000074 005400          NEG      RO
000076 010037 000000G   MOV      RO,XBUF.LENGTH
000102 010016          MOV      RO,(SP)           ; XBUF.LENGTH,*
000104 012746 130200          MOV      #-47600,-(SP)
000110 004737 003312'   JSR      PC,SET.XDESCR.LIST
000114 013716 000000G   MOV      XBUF.LENGTH,(SP)
000120 012746 120000          MOV      #-60000,-(SP)
000124 004737 003234'   JSR      PC,SET.RDESCR.LIST
000130 022626          CMP      (SP)+,(SP)+
000132 004737 000000V   JSR      PC,XMIT.AND.RCV.PACKET 1$:
000136 012716 000001          MOV      #1,(SP)
000142 004737 001262'   JSR      PC,CHK.RIXI.STATUS
000146 012716 100220          MOV      #-77560,(SP)
000152 011646          MOV      (SP),-(SP)
000154 004737 001646'   JSR      PC,CHK.CSR.STATUS
000160 012716 140000          MOV      #-40000,(SP)
000164 012746 020000          MOV      #20000,-(SP)
000170 004737 002336'   JSR      PC,CHK.RCV.STATUS

```

ZQNA4  
V01.0

CZQNA0 DEQNA FUNCTIONAL TEST  
GLOBAL ROUTINE - XMIT\_SETUP\_PACKET ( P1 )

14-Mar-1985 13:18:55  
14-Mar-1985 13:06:01

SEQ 0267  
Page 47  
VAX-11 Bliss-16 V4.1-582  
DISK\$USER2:[MARSHALL.DEQNA]ZQNA4.BLI:4 (22)

000174	012737	000400	000000G		MOV	#400,TEMP1	:	2501
000202	032737	002000	000010G		BIT	#2000,XMIT.D.LIST+10	:	2502
000210	001403				BEQ	2#	:	
000212	012737	002400	000000G		MOV	#2400,TEMP1	:	2504
000220	012716	140000		2#:	MOV	#-40000,(SP)	:	2505
000224	013746	000000G			MOV	TEMP1,-(SP)	:	
000230	004737	002040'			JSR	PC,CHK.XMIT.STATUS	:	
000234	004737	002616'			JSR	PC,COMPARE.PACKETS	:	2507
000240	062706	000014			ADD	#14,SP	:	2475
000244	000207				RTS	PC	:	2445

; Routine Size: 83 words, Routine Base: AC\$CODE\$ + 5046  
; Maximum stack depth per invocation: 7 words

; 2510 1  
; 2511 1

```

: 2512 1 *SBTTL 'GLOBAL ROUTINE - SEND_ELOOP_PACKET ( P3 ) '
: 2513 1
: 2514 1 GLOBAL ROUTINE SEND_ELOOP_PACKET ( P3 ) . NOVALUE =
: 2515 1
: 2516 1 !**
: 2517 1 !
: 2518 1 ! GLOBAL ROUTINE : SEND_ELOOP_PACKET
: 2519 1 !
: 2520 1 ! DESCRIPTION:
: 2521 1 !
: 2522 1 ! This routine initializes transmit and receive descriptor lists and
: 2523 1 ! then initiates transmissin of a loopback packet. After
: 2524 1 ! loopback packet is received DEQNA CSR, transmit and receive status r
: 2525 1 ! egisters are checked for proper status. Finally, transmit and receive
: 2526 1 ! packets are compared to verify that they are identical.
: 2527 1 !
: 2528 1 ! XMIT_D_LIST [ ^ ] = NEWB RCV_D_LIST [ 0 ] = NEWB
: 2529 1 ! XMIT_D_LIST [ 1 ] = VE RCV_D_LIST [ 1 ] = VE
: 2530 1 ! XMIT_D_LIST [ 2 ] = XMIT_BUFFER RCV_D_LIST [ 2 ] = RCV_BUFFER
: 2531 1 ! XMIT_D_LIST [ 3 ] = .XBUF_LENGTH RCV_D_LIST [ 3 ] = .XBUF_LENGTH
: 2532 1 ! XMIT_D_LIST [ 4 ] = 0 RCV_D_LIST [ 4 ] = 0
: 2533 1 ! XMIT_D_LIST [ 5 ] = 0 RCV_D_LIST [ 5 ] = 0
: 2534 1 ! XMIT_D_LIST [ 6 ] = V RCV_D_LIST [ 6 ] = V
: 2535 1 ! XMIT_D_LIST [ 7 ] = E RCV_D_LIST [ 7 ] = E
: 2536 1
: 2537 1
: 2538 1 ! INPUT PARAMETERS:
: 2539 1 !
: 2540 1 ! P3 -
: 2541 1 !--
: 2542 1
: 2543 2 BEGIN
: 2544 2
: 2545 2 PUT_BIT ( CSR, LB, INX_LOOPBACK );
: 2546 2 XMIT_AND_RCV_PACKET ( );
: 2547 2
: 2548 2 !**
: 2549 2 ! COMPARE STATUS REGISTERS TO EXPECTED VALUES
: 2550 2 !--
: 2551 2
: 2552 2 CHK_RIXI_STATUS ( ZERO );
: 2553 2 CHK_CSR_STATUS ( CSR_STATUS, CSR_MASK ); ! 0'100220', 0'100220'
: 2554 2 CHK_XMIT_STATUS ( XFLG_STATUS, XWD12_STATUS ); ! 0'140000', 0'000400'
: 2555 2
: 2556 2 IF .P3 EQLU ZERO
: 2557 2 THEN
: 2558 3 BEGIN
: 2559 3 CHK_RCV_STATUS ( RFLG_STATUS, RWD1_STATUS ); ! 0'140000', 0'020000'
: 2560 3 END
: 2561 2 ELSE
: 2562 3 BEGIN
: 2563 3 TEMP1 = RWD14_STATUS; ! 0'060000'
: 2564 3 IF .RCV_D_LIST [ STWD1 ] AND *0'070001' EQLU *0'070001'

```

ZQNA4  
V01.0

CZQNA0 DEQNA FUNCTIONAL TEST  
GLOBAL ROUTINE - SEND\_ELOOP\_PACKET ( P3 )

14-Mar-1985 13:18:55  
14-Mar-1985 13:06:01

SEQ 0269  
Page 49  
VAX 11 Bliss-16 V4.1-582  
DISK\$USER2:[MARSHALL.DEQNA]ZQNA4.BLI;4 (23)

```

; 2565 3      THEN
; 2566 3      TEMP1 = #0'070001';
; 2567 3      CHK_RCV_STATUS ( RFLG_STATUS, .TEMP1 );      ! 0'140000', ??????
; 2568 2      END;
; 2569 1      END;

```

```

000000 013700 000000G      .SBTTL SEND.ELOOP.PACKET GLOBAL ROUTINE - SEND_ELOOP_PACKET ( P3 )
SEND.ELOOP.PACKET::
000004 042760 001400 000016      MOV      REG.ADR,R0      ;      2545
000012 052760 001000 000016      BIC      #1400,16(R0)
000020 004737 000000V      BIS      #1000,16(R0)
000024 005046      JSR      PC,XMIT.AND.RCV.PACKET      ;      2546
000026 004737 001262'      CLR      -(SP)      ;      2552
000032 012716 190220      JSR      PC,CHK.RIXI.STATUS
000036 011640      MOV      #-77560,(SP)      ;      2553
000040 004737 001646'      JSR      PC,CHK.CSR.STATUS
000044 012716 140000      MOV      #-40000,(SP)      ;      2554
000050 012746 000400      MOV      #400,-(SP)
000054 004737 002040'      JSR      PC,CHK.XMIT.STATUS
000060 005766 000010      TST      10(SP)      ; P3      2556
000064 001005      BNE      1$
000066 012716 140000      MOV      #-40000,(SP)      ;      2559
000072 012746 020000      MOV      #20000,-(SP)
000076 000416      BR      3$
000100 012737 060000 000000G      1$: MOV      #60000,TEMP1      ;      2563
000106 032737 000001 000010G      BIT      #1,RCV.D.LIST+10      ;      2564
000114 001403      BEQ      2$
000116 012737 070001 000000G      MOV      #70001,TEMP1      ;      2566
000124 012716 140000      2$: MOV      #-40000,(SP)      ;      2567
000130 013746 000000G      MOV      TEMP1,-(SP)
000134 004737 002336'      3$: JSR      PC,CHK.RCV.STATUS
000140 062706 000010      ADD      #10,SP      ;      2543
000144 000207      RTS      PC      ;      2514

```

```

; Routine Size: 51 words,      Routine Base: AC$CODE$ + 5314
; Maximum stack depth per invocation: 5 words

```

; 2570 1

ZQNA4  
V01.0CZONADO DEQNA FUNCTIONAL TEST  
GLOBAL ROUTINE - SEND\_TEST\_PACKET14-Mar-1985 13:18:55  
14-Mar-1985 13:06:01VAX-11 Bliss 16 V4.1-582  
DISK#USER2:(MARSHALL.DEQNA)ZQNA4.BLI;4 (24)SEQ 0270  
Page 50

```

: 2571 1 #SBTTL 'GLOBAL ROUTINE - SEND_TEST_PACKET '
: 2572 1
: 2573 1 GLOBAL ROUTINE SEND_TEST_PACKET : NOVALUE =
: 2574 1
: 2575 1 !..
: 2576 1 !
: 2577 1 ! GLOBAL ROUTINE : SEND_TEST_PACKET
: 2578 1 !
: 2579 1 ! DESCRIPTION:
: 2580 1 !
: 2581 1 ! This routine initializes transmit and receive descriptor lists and
: 2582 1 ! then initiates transmission of an external loopback packet.
: 2583 1 !
: 2584 1 ! XMIT_D_LIST [ 0 ] = NEWB RCV_D_LIST [ 0 ] = NEWB
: 2585 1 ! XMIT_D_LIST [ 1 ] = VE RCV_D_LIST [ 1 ] = VE
: 2586 1 ! XMIT_D_LIST [ 2 ] = XMIT_BUFFER RCV_D_LIST [ 2 ] = RCV_BUFFER
: 2587 1 ! XMIT_D_LIST [ 3 ] = .XBUF_LENGTH RCV_D_LIST [ 3 ] = .XBUF_LENGTH
: 2588 1 ! XMIT_D_LIST [ 4 ] = 0 RCV_D_LIST [ 4 ] = 0
: 2589 1 ! XMIT_D_LIST [ 5 ] = 0 RCV_D_LIST [ 5 ] = 0
: 2590 1 ! XMIT_D_LIST [ 6 ] = V RCV_D_LIST [ 6 ] = V
: 2591 1 ! XMIT_D_LIST [ 7 ] = E RCV_D_LIST [ 7 ] = E
: 2592 1 !
: 2593 1 !
: 2594 1 ! INPUT PARAMETERS:
: 2595 1 !
: 2596 1 ! None
: 2597 1 !--
: 2598 1
: 2599 2 BEGIN
: 2600 2
: 2601 2 !..
: 2602 2 ! WRITE ETHERNET STATION ADDRESS AND DATA PATTERN INTO THE TRANSMIT BUFFER
: 2603 2 !--
: 2604 2
: 2605 2 RESET_DEQNA ( );
: 2606 2
: 2607 2 INCR INDEX FROM 0 TO 5 DO
: 2608 3 BEGIN
: 2609 3 XMIT_BUFFER [ .INDEX ] = .TARGET_ADR [ ( PHA_INDEX * 6 ) * .INDEX ];
: 2610 3 XMIT_BUFFER [ .INDEX + 6 ] = .TARGET_ADR [ ( PHA_INDEX * 6 ) * .INDEX ];
: 2611 2 END;
: 2612 2
: 2613 2 XMIT_BUFFER [ PKT_TYPE ] = LPB_PKT;
: 2614 2 XMIT_BUFFER [ PKT_TYPE + 1 ] = SKIP_CNT;
: 2615 2 XMIT_BUFFER [ PKT_TYPE + 2 ] = RFC;
: 2616 2
: 2617 2 !..
: 2618 2 ! CONVERT SETUP PACKET SIZE FROM BYTE COUNT TO WORD COUNT AND SET UP
: 2619 2 ! DESCRIPTOR LISTS
: 2620 2 !--
: 2621 2
: 2622 2 RBUF_LENGTH = PKT_LENGTH * 14;
: 2623 2 XBUF_LENGTH = ( .RBUF_LENGTH + -1 );

```



ZQNA4  
V01.0

CZQNA0 DEQNA FUNCTIONAL TEST  
GLOBAL ROUTINE - SEND\_TEST PACKET

14-Mar-1985 13:18:55  
14-Mar-1985 13:06:01

SEQ 0271  
Page 51  
VAX-11 B1100-16 V4.1 S82  
DISK1USER2:(MARSHALL.DEQNA)ZQNA4.BLI:4 (24)

```

; 2624 2
; 2625 2   SET_RDESCR_LIST ( .XBUF_LENGTH, VE );
; 2626 2   SET_XDESCR_LIST ( .XBUF_LENGTH, VE );
; 2627 2
; 2628 2   !..
; 2629 2   ! SET DEQNA TO EXTERNAL LOOPBACK MODE AND SEND LOOPBACK PACKET
; 2630 2   !..
; 2631 2
; 2632 2   PUT_BIT ( CSR, LB, EXT_LOOPBACK );
; 2633 2   XMIT_AND_RCV_PACKET ( );
; 2634 2
; 2635 1   END;
    
```

Address	Offset	Label	Instruction	Comment	Address
000000	004737	000324	.SBTTL SEND_TEST_PACKET GLOBAL ROUTINE	SEND_TEST_PACKET	
			SEND_TEST_PACKET::		
			JSR PC,RESET.DEQNA		2605
000004	005000		CLR RO	; INDEX	2607
000006	116060	000162G 000000G	11: MOVB TARGET.ADR-162(RO),XMIT.BUFFER(RO)	; *(INDEX),*(INDEX)	2609
000014	116060	000162G 000006G	MOVB TARGET.ADR-162(RO),XMIT.BUFFER-6(RO)	; *(INDEX),*(INDEX)	2610
000022	005200		INC RO	; INDEX	2607
000024	020027	000005	CMP RO,#5	; INDEX,*	
000030	003766		BLE 11		
000032	112737	000220 000014G	MOVB #220,XMIT.BUFFER-14		2613
000040	105037	000015G	CLRB XMIT.BUFFER-15		2614
000044	112737	000001 000016G	MOVB #1,XMIT.BUFFER-16		2615
000052	012737	002752 000000G	MOV #2752,RBUF.LENGTH		2622
000060	012700	002752	MOV #2752,RO		2623
000064	006200		ASR RO		
000066	005400		NEG RO		
000070	010037	000000G	MOV RO,XBUF.LENGTH		
000074	010046		MOV RO,-(SP)	; XBUF.LENGTH,*	2625
000076	012746	120000	MOV #-60000,-(SP)		
000102	004737	003234	JSR PC,SET.RDESCR.LIST		
000106	013716	000000G	MOV XBUF.LENGTH,(SP)		2626
000112	012746	120000	MOV #-60000,-(SP)		
000116	004737	003312	JSR PC,SET.XDESCR.LIST		
000122	013700	000000G	MOV REG.ADR,RO		2632
000126	052760	001400 000016	BIS #1400,16(RO)		
000134	004737	000000V	JSR PC,XMIT.AND.RCV.PACKET		2633
000140	062706	000006	ADD #6,SP		2599
000144	000207		RTS PC		2573

! Routine Size: 51 words, Routine Base: AC1CODE1 - 5462  
! Maximum stack depth per invocation: 4 words

! 2636 1

ZQNA4  
V01.0

CZQNA0 DEQNA FUNCTIONAL TEST  
GLOBAL ROUTINE - XMIT\_AND\_RCV\_PACKET

14-Mar-1985 13:18:55  
14-Mar-1985 13:06:01

SEQ 0272  
Page 52  
VAX-11 B1100-16 V4.1-582  
DISK#USER2:[MARSHALL.DEQNA]ZQNA4.BLI;4 (25)

```

; 2637 1 #SBTTL 'GLOBAL ROUTINE - XMIT_AND_RCV_PACKET
; 2638 1
; 2639 1 GLOBAL ROUTINE XMIT_AND_RCV_PACKET : NOVALUE =
; 2640 1
; 2641 1 !..
; 2642 1 !
; 2643 1 ! GLOBAL ROUTINE : XMIT_AND_RCV_PACKET
; 2644 1 !
; 2645 1 ! DESCRIPTION:
; 2646 1 !
; 2647 1 ! This routine initiates transmit and receive operations.
; 2648 1 !
; 2649 1 ! INPUT PARAMETERS:
; 2650 1 !
; 2651 1 !
; 2652 1 !
; 2653 1 !
; 2654 1 !--
; 2655 1
; 2656 2 BEGIN
; 2657 2
; 2658 2 .IOP_TABLE [ RLO_ADR ] = RCV_D_LIST;
; 2659 2 .IOP_TABLE [ RHI_ADR ] = 0;
; 2660 2
; 2661 2 .IOP_TABLE [ XLO_ADR ] = XMIT_D_LIST;
; 2662 2 .IOP_TABLE [ XHI_ADR ] = 0;
; 2663 2
; 2664 1 END;

```

```

000000 012777 000000G 000004G .SBTTL XMIT.AND.RCV.PACKET GLOBAL ROUTINE - XMIT_AND_RCV_PACKET
XMIT.AND.RCV.PACKET::
000006 005077 000006G MOV #RCV.D.LIST,@IOP.TABLE+4 ; 2658
000012 012777 000000G 000010G CLR @IOP.TABLE+6 ; 2659
000020 005077 000012G MOV #XMIT.D.LIST,@IOP.TABLE+10 ; 2661
000024 000207 000012G CLR @IOP.TABLE+12 ; 2662
RTS PC ; 2639

```

! Routine Size: 11 words, Routine Base: AC#CODE# + 5630  
! Maximum stack depth per invocation: 0 words

```

; 2665 1
; 2666 1

```

ZQNA4  
V01.0CZQNA0 DEQNA FUNCTIONAL TEST  
GLOBAL ROUTINE - XMIT\_ILOOP\_PACKET ( P3 )14-Mar-1985 13:18:55  
14-Mar-1985 13:06:01VAX-11 B1100-16 V4.1-582  
DISK#USER2:[MARSHALL.DEQNA]ZQNA4.BLI;4 (26)SEQ 0273  
Page 53

```

: 2667 1  *SBTTL 'GLOBAL ROUTINE - XMIT_ILOOP_PACKET ( P3 ) '
: 2668 1
: 2669 1  GLOBAL ROUTINE XMIT_ILOOP_PACKET ( P3 ) : NOVALUE =
: 2670 1
: 2671 1  !..
: 2672 1  !
: 2673 1  ! GLOBAL ROUTINE : XMIT_ILOOP_PACKET
: 2674 1  !
: 2675 1  ! D.SCRPTION:
: 2676 1  !
: 2677 1  ! This routine
: 2678 1  !
: 2679 1  ! INPUT PARAMETERS:
: 2680 1  !
: 2681 1  ! P3 - selector
: 2682 1  !
: 2683 1  !..
: 2684 1
: 2685 2  BEGIN
: 2686 2
: 2687 2  CLR_DESCR ( );
: 2688 2
: 2689 2  SET_RDESCR_LIST ( .XBUF_LENGTH, VE );
: 2690 2  SET_XDESCR_LIST ( .XBUF_LENGTH, VE );
: 2691 2
: 2692 2  XMIT_AND_RCV_PACKET ( );
: 2693 2
: 2694 2  .IOP_TABLE [ CSR ] = EENABLE;
: 2695 2
: 2696 2  IF .P3 EQLU ONE
: 2697 2  THEN
: 2698 3  BEGIN
: 2699 3  CHK_RIXI_STATUS ( ONE );
: 2700 3  CHK_CSR_STATUS ( CSR_STATUS, CSR_MASK ); ! 0'100220', 0'100220'
: 2701 3  CHK_RCV_STATUS ( RFLG_STATUS, RWD16_STATUS ); ! 0'140000', 0'044000'
: 2702 3  END
: 2703 2  ELSE
: 2704 3  BEGIN
: 2705 3  CHK_RIXI_STATUS ( ZERO );
: 2706 3  CHK_CSR_STATUS ( CSR_STATUS, CSR_MASK ); ! 0'100220', 0'100220'
: 2707 3  CHK_RCV_STATUS ( RFLG_STATUS, RWD13_STATUS ); ! 0'140000', 0'000000'
: 2708 2  END;
: 2709 2
: 2710 2  CHK_XMIT_STATUS ( XFLG_STATUS, XWD12_STATUS ); ! 0'140000', 0'000400'
: 2711 2  COMPARE_PACKETS ( );
: 2712 2  .IOP_TABLE [ CSR ] = DISABLE;
: 2713 2
: 2714 1  END;

```

000000 004737 001206'

```

.SBTTL XMIT.ILOOP.PACKET GLOBAL ROUTINE - XMIT_ILOOP_PACKET ( P3 )
XMIT.ILOOP.PACKET::
JSR PC,CLR.DESCR

```

2687

ZQNA4 V01.0	CZQNA0 DEQNA FUNCTIONAL TEST GLOBAL ROUTINE XMIT_ILOOP_PACKET ( P3 )	14-Mar-1985 13:18:55 14-Mar-1985 13:06:01	VAX-11 Bliss-16 V4.1-582 DISK#USER2:[MARSHALL.DEQNA]ZQNA4.BLI:4 (26)	SEQ 0274 Page 54	
000004	013746 000000G	MOV	XBUF.LENGTH, -(SP)	;	2689
000010	012746 120000	MOV	#-60000, -(SP)	;	
000014	004737 003234'	JSR	PC, SET.RDESCR.LIST	;	
000020	013716 000000G	MOV	XBUF.LENGTH, (SP)	;	2690
000024	012746 120000	MOV	#-60000, -(SP)	;	
000030	004737 003312'	JSR	PC, SET.XDESCR.LIST	;	
000034	004737 005630'	JSR	PC, XMIT.AND.RCV.PACKET	;	2692
000040	012777 000001 000016G	MOV	#1, @IOP.TABLE+16	;	2694
000046	026627 000010 000001	CMP	10(SP), #1	;	2696
000054	001016	BNE	1#	;	
000056	012716 000001	MOV	#1, (SP)	;	2699
000062	004737 001262'	JSR	PC, CHK.RIXI.STATUS	;	
000066	012716 100220	MOV	#-77560, (SP)	;	2700
000072	011646	MOV	(SP), -(SP)	;	
000074	004737 001646'	JSR	PC, CHK.CSR.STATUS	;	
000100	012716 140000	MOV	#-40000, (SP)	;	2701
000104	012746 044000	MOV	#44000, -(SP)	;	
000110	000413	BR	2#	;	
000112	005016	1#:	CLR (SP)	;	2705
000114	004737 001262'	JSR	PC, CHK.RIXI.STATUS	;	
000120	012716 100220	MOV	#-77560, (SP)	;	2706
000124	011646	MOV	(SP), -(SP)	;	
000126	004737 001646'	JSR	PC, CHK.CSR.STATUS	;	
000132	012716 140000	MOV	#-40000, (SP)	;	2707
000136	005046	CLR	-(SP)	;	
000140	004737 002336'	2#:	JSR PC, CHK.RCV.STATUS	;	
000144	012716 140000	MOV	#-40000, (SP)	;	2710
000150	012746 000400	MOV	#400, -(SP)	;	
000154	004737 002040'	JSR	PC, CHK.XMIT.STATUS	;	
000160	004737 002616'	JSR	PC, COMPARE.PACKETS	;	2711
000164	005077 000016G	CLR	@IOP.TABLE+16	;	2712
000170	062706 000014	ADD	#14, SP	;	2685
000174	000207	RTS	PC	;	2669

; Routine Size: 63 words, Routine Base: AC#CODE# + 5656  
; Maximum stack depth per invocation: 7 words

; 2715 1  
; 2716 1

```

; 2717 1 #SBTTL 'GLOBAL ROUTINE - TURN_OFF_LED ( P1 )'
; 2718 1
; 2719 1 GLOBAL ROUTINE TURN_OFF_LED ( P1 ) : NOVALUE =
; 2720 1
; 2721 1 !..
; 2722 1 !
; 2723 1 ! GLOBAL ROUTINE : TURN_OFF_LED
; 2724 1 !
; 2725 1 ! DESCRIPTION:
; 2726 1 !
; 2727 1 ! This routine
; 2728 1 !
; 2729 1 ! INPUT PARAMETERS:
; 2730 1 !
; 2731 1 ! P1 -
; 2732 1 !
; 2733 1 !--
; 2734 1
; 2735 2 BEGIN
; 2736 2
; 2737 2 PREP_FOR_SETUP ( );
; 2738 2
; 2739 2 INCR INDEX1 FROM 1 TO 14 DO
; 2740 2 WRT_STATION_ADR ( .INDEX1, PHA_INDEX );
; 2741 2
; 2742 2 XMIT_SETUP_PACKET ( .P1 );
; 2743 2
; 2744 2
; 2745 1 END;

```

```

000000 010146 .SBTTL TURN.OFF.LED GLOBAL ROUTINE - TURN_OFF_LED ( P1 )
TURN.OFF.LED::
000002 004737 004314' MOV R1,-(SP) ;
000006 012701 000001 JSR PC,PREP.FOR.SETUP ;
000012 010146 1$: MOV #1,R1 ; *,INDEX1
000014 012746 000023 MOV R1,-(SP) ; INDEX1,*
000020 004737 004122' MOV #23,-(SP)
000024 022626 JSR PC,WRT.STATION.ADR
000026 005201 CMP (SP)+,(SP)+
000030 020127 000016 INC R1 ; INDEX1
000034 003766 CMP R1,#16 ; INDEX1,*
000036 016646 000004 BLE 1$
000042 004737 005046' MOV 4(SP),-(SP) ; P1,*
000046 005726 JSR PC,XMIT.SETUP.PACKET
000050 012601 TST (SP)+ ;
000052 000207 MOV (SP)+,R1 ;
RTS PC ;

```

; Routine Size: 22 words, Routine Base: AC\$CODE\$ + 6054  
; Maximum stack depth per invocation: 4 words

ZQNA4 CZQNAO DEQNA FUNCTIONAL TEST 14-Mar-1985 13:18:55 VAX-11 Bliss-16 V4.1-582 SEQ 0276  
 V01.0 GLOBAL ROUTINE - TURN OFF\_LED ( P1 ) 14-Mar-1985 13:06:01 DISK\$USER2:[MARSHALL.DEQNA]ZQNA4.BLI;4 Page 56  
 (27)

```

: 2746 1
: 2747 1
: 2748 1   END
: 2749 0   ELUDOM

```

```

:
:           OTS external references
:             .GLOBL $SAVE3, $SAVE2

```

## PSECT SUMMARY

```

:
: Psect Name      Words      Attributes
: AC$CODE$       1580      RO , I , LCL, REL, CON

```

## Library Statistics

File	Symbols		Pages Mapped	Processing Time
	Total	Loaded Percent		
DISK\$USER2:[MARSHALL.DEQNA]QNALIB.L16;15	223	133 59	14	00:00.1

## COMMAND QUALIFIERS

```

: BLISS/PDP11 ZQNA4.BLI/LIST=ZQNA4.LIS/OBJECT=ZQNA4.OBJ/SOURCE=PAGE:53

```

```

: Size:          1580 code + 0 data words
: Run Time:      00:46.2
: Elapsed Time: 03:40.0
: Lines/CPU Min: 3567
: Lexemes/CPU-Min: 25672
: Memory Used:  235 pages
: Compilation Complete

```

ZQNAS

CZQNADO DEQNA FUNCTIONAL TEST

14-Mar-1985 13:22:42  
14-Mar-1985 13:07:52VAX-11 Bliss-16 V4.1-582  
DISK#USER2:[MARSHALL.DEQNA]ZQNAS.BLI:4 (1)

SEQ 0277

Page 1

```
: 0001 0  MODULE ZQNAS (*TITLE 'CZQNADO DEQNA FUNCTIONAL TEST'
: 0002 0          IDENT = 'V01.0',
: 0003 0          ADDRESSING_MODE(Absolute)
: 0004 0          ) =
: 0005 0  *SBTTL 'LAST ADDRESS AND SETUP SECTION'
: 0006 0
: 0007 1  BEGIN
: 0008 1
: 0009 1  LIBRARY 'QNALIB';          ! QNALIB LIBRARY
: 0010 1  REQUIRE 'BLSMAC.REQ';     ! DIAGNOSTIC SUPERVISOR LIBRARY
: 1500 1  !<BLF/NOFORMAT>
: 1501 1
```

ZQNAS  
V01.0

CZQNADO DEQNA FUNCTIONAL TEST  
LAST ADDRESS AND SETUP SECTION

14 Mar-1985 13:22:42  
14-Mar-1985 13:07:52

SEQ 0278  
Page 2  
VAX-11 Bliss-16 V4.1-582  
DISK\$USER2:[MARSHALL.DEQNA]ZQNAS.BLI:4 (2)

: 1502 2 LASTAD  
: 1503 2 BGNSETUP(1);  
: P 1504 2 BGNPTAB  
: P 1505 2 %o'174440',%o'700'  
: 1506 2 ENDPTAB  
: 1507 1 ENDSETUP

: NUMBER OF P TABLES

.TITLE ZQNAS CZQNADO DEQNA FUNCTIONAL TEST  
.IDENT /V01.0/  
.ENABL AMA

000000  
000000 000014' .PSECT \$XYZ\$, RO  
000002 000000C BL\$LAS: .WORD T\$FREE  
000004 000000 .WORD <<T\$FREE-<BL\$LAS+4>>/2>  
000006 000002 P.AAA: .WORD 0 ; Plit count word  
000010 174440 .WORD 2  
000012 000700 P.AAB: .WORD -3340  
000014 000000 T\$FREE: .WORD 700  
0

000004' L\$LAST== BL\$LAS+4  
000001 T\$PTHV== 1  
000004' \$\$LAS1= P.AAA  
000010' \$REM2= P.AAB

000000 000207 .SBTTL \$END.LINK LAST ADDRESS AND SETUP SECTION  
\$END.LINK: :  
RTS PC ;

1499

: Routine Size: 1 word, Routine Base: \$XYZ\$ + 0016  
: Maximum stack depth per invocation: 0 words

: 1508 1  
: 1509 1 END  
: 1510 0 ELUDOM

PSECT SUMMARY

Psect Name Words Attributes  
\$XYZ\$ 8 RO, I, LCL, REL, CON

Library Statistics



ZQNA5  
V01.C

CZQNA0 DEQNA FUNCTIONAL TEST  
LAST ADDRESS AND SETUP SECTION

14-Mar 1985 13:22:42  
14-Mar-1985 13:07:52

SEQ 0279  
VAX-11 Bliss 16 V4.1-582  
Page 3  
DISK\$USER2:[MARSHALL.DEQNA]ZQNA5.BLI:4 (2)

File	Total	Symbols Loaded	Percent	Pages Mapped	Processing Time
DISK\$USER2:[MARSHALL.DEQNA]QNALIB.L16;15	223	3	1	14	00:00.1

COMMAND QUALIFIERS

BLISS/PDP11 ZQNA5.BLI/LIST=ZQNA5.LIS/OBJECT=ZQNA5.OBJ/SOURCE=PAGE:53

```

; Size:          1 code + 7 data words
; Run Time:      00:06.2
; Elapsed Time:  00:16.5
; Lines/CPU Min: 14707
; Lexemes/CPU-Min: 78262
; Memory Used:   98 pages
; Compilation Complete

```

```

; 0001 0  !**
; 0002 0  !
; 0003 0  ! DEFINE DATA STRUCTURES IN THIS SECTION
; 0004 0  !
; 0005 0  !--
; 0006 0
; 0007 0  STRUCTURE                                ! DEFINE ACCESS ALGORITHM
; 0008 0  REG_STR [ 0, P, S, E ]=
; 0009 1  BEGIN
; 0010 1  LOCAL TMP_LOCATION;
; 0011 1  TMP_LOCATION = .(REG_STR + *UPVAL * 0) <0,*BPVAL,0>;
; 0012 1  TMP_LOCATION
; 0013 0  END < P, S, E >;
; 0014 0
; 0015 0
; 0016 0  STRUCTURE                                ! DEFINE ACCESS ALGORITHM
; 0017 0  ADR_STR [ 0, P, S, E ]=
; 0018 1  BEGIN
; 0019 1  LOCAL TMP_LOCATION;
; 0020 1  TMP_LOCATION = (ADR_STR + *UPVAL * 0) <0,*BPVAL,0>;
; 0021 1  TMP_LOCATION
; 0022 0  END < P, S, E >;
; 0023 0
; 0024 0  STRUCTURE                                ! DEFINE ACCESS ALGORITHM
; 0025 0  LBLOCK [ 0, P, S, E, I ]=
; 0026 1  BEGIN
; 0027 1  CASE I FROM 0 TO 2 OF
; 0028 1  SET
; 0029 1  [ 0 ]:
; 0030 1  ( LBLOCK + 0 * *UPVAL );
; 0031 1  [ 1 ]:
; 0032 1  ( .LBLOCK + 0 * *UPVAL );
; 0033 1  [ 2 ]:
; 0034 1  ( .LBLOCK + 0 * *UPVAL );
; 0035 1  TES;
; 0036 0  END < P, S, E >;

```

```

: 0037 0      !++
: 0038 0      !
: 0039 0      ! MACRO DEFINITIONS
: 0040 0      !
: 0041 0      !--
: 0042 0
: 0043 0      MACRO
: 0044 0
: M 0045 0      TST_BIT ( ADDR, EXPECTED ) =
: M 0046 0      ( IF ( .ADDR AND EXPECTED ) EQLU EXPECTED
: M 0047 0      THEN
: M 0048 0      TRUE
: M 0049 0      ELSE
: 0050 0      FALSE )*,
: 0051 0
: 0052 0
: M 0053 0      PUT_BIT ( OFFSET, POSITION, IMAGE ) =
: M 0054 0      BEGIN
: M 0055 0      ( .REG_ADR + *UPVAL * OFFSET ) < *FIELDEXPAND ( POSITION ) > = IMAGE;
: 0056 0      END*,
: 0057 0
: M 0058 0      GET_STATION_ADR ( OFFSET, POSITION, IMAGE ) =
: M 0059 0      BEGIN
: M 0060 0      ( .STATION_ADR + OFFSET ) < *FIELDEXPAND ( POSITION ) > = IMAGE;
: 0061 0      END*,
: 0062 0
: 0063 0
: 0064 0      !++
: 0065 0      !
: 0066 0      ! THIS MACRO GETS BITS SPECIFIED BY THE FIELD NAME " POSITION "
: 0067 0      ! AND MEMORY LOC SPECIFIED BY ( .REG_ADR + *UPVAL * OFFSET )
: 0068 0      !
: 0069 0      !--
: 0070 0
: M 0071 0      GET_BIT ( OFFSET, POSITION ) =
: M 0072 0      .REG_ADR [ OFFSET, POSITION ] *;
: 0073 0
: 0074 0

```

```

: 0075 0
: 0076 0
: 0077 0
: 0078 0
: 0079 0
: 0080 0
: 0081 0
: 0082 0
: 0083 0
: 0084 0
: 0085 0
: 0086 0
: 0087 0
: 0088 0
: 0089 0
: 0090 0
: 0091 0
: 0092 0
: 0093 0
: 0094 0
: 0095 0
: 0096 0
: 0097 0
: 0098 0
: 0099 0
: 0100 0
: 0101 0
: 0102 0
: 0103 0
: 0104 0
: 0105 0
: 0106 0
: 0107 0
: 0108 0
: 0109 0
: 0110 0
: 0111 0
: 0112 0
: 0113 0
: 0114 0
: 0115 0
: 0116 0
: 0117 0
: 0118 0
: 0119 0
: 0120 0
: 0121 0
: 0122 0
: 0123 0
: 0124 0
: 0125 0
: 0126 0
: 0127 0

```

!++  
! PROGRAM LITERALS  
!--  
LITERAL

NO	= 0.	!
YES	= 1.	!
FALSE	= 0.	!
TRUE	= 1.	!
ZERO	= 0.	!
ONE	= 1.	!
DISABLE	= 0.	!
EENABLE	= 1.	!
P_CLOCK	= 1.	!
L_CLOCK	= 1.	!
NO_CLOCK	= 0.	!
CLEAR_FLG	= 0.	!
SET_FLG	= 1.	!
PWR_DELAY	= 10000.	!
M1_DELAY	= 10.	!
M2_DELAY	= 20.	!
M3_DELAY	= 30.	!
M4_DELAY	= 40.	!
M5_DELAY	= 50.	!
K	= 1024.	!
TIME1_LIMIT	= 128.	! DELAY - LOOP ITERATION COUNT
TIME2_LIMIT	= 1 * K.	! DELAY - LOOP ITERATION COUNT
TIME3_LIMIT	= 1 * K.	! DELAY - LOOP ITERATION COUNT
TIME4_LIMIT	= 512.	! DELAY - LOOP ITERATION COUNT
TIME5_LIMIT	= 16 * K.	! DELAY - 16K LOOP ITERATION COUNT
TIME6_LIMIT	= 1.	! DELAY - LOOP ITERATION COUNT
TIME7_LIMIT	= 10.	! DELAY - LOOP ITERATION COUNT
TIME8_LIMIT	= 50.	! DELAY - LOOP ITERATION COUNT
TIME9_LIMIT	= 100.	! DELAY - LOOP ITERATION COUNT
STEP1	= 2.	!
RLO_ADR	= 2.	!
RHI_ADR	= 3.	!
XLO_ADR	= 4.	!
XHI_ADR	= 5.	!
IOP_LO_ADR	= 2.	!
IOP_HI_ADR	= 3.	!
IOP_SIZE	= 16'.	! I/O PAGE REGISTER SIZE
IOP_ADR	= 0.	! OFFSET TO DEVICE ADDRESS
IOP_VEC	= 2.	! OFFSET TO DEVICE VECTOR ADDRESS

L6

14-Mar-1985 13:08:53  
12-Mar-1985 13:43:16

VAX-11 Bliss-16 V4.1 582  
[MARSHALL.DEQNA]QNALTB.R16:6

```
: 0128 0      IOP_BRL      = 4,      : OFFSET TO DEVICE BR LEVEL  
: 0129 0      INT_VEC      = 6,      :  
: 0130 0  
: 0131 0      CSR          = 7,      :  
: 0132 0      WORD_LIMIT   = $0 177777', :  
: 0133 0
```

```

0134 0
0135 0
0136 0
0137 0
0138 0
0139 0
0140 0
0141 0
0142 0
0143 0
0144 0
0145 0
0146 0
0147 0
0148 0
0149 0
0150 0
0151 0
0152 0
0153 0
0154 0
0155 0
0156 0
0157 0
0158 0
0159 0
0160 0
0161 0
0162 0
0163 0
0164 0
0165 0
0166 0
0167 0
0168 0
0169 0
0170 0
0171 0
0172 0
0173 0
0174 0
0175 0
0176 0
0177 0
0178 0
0179 0
0180 0
0181 0
0182 0
0183 0
0184 0

```

...  
DESCRITOR LIST DEFINITIONS  
!--

```

D_FLAG_WD      = 0.      : STATUS WORD 0, FLAG WORD
D_DESCR_BITS   = 1.
D_HI_ADR       = 1.
D_LO_ADR       = 2.
D_WD_COUNT     = 3.
D_WD1_STATUS   = 4.
D_WD2_STATUS   = 5.

D1_OFFSET     = 18.
D2_OFFSET     = 36.

T_SIZE        = 120.
DESCR_SIZE    = 128.
D_SIZE        = DESCR_SIZE / 2.
BD_D_SIZE     = 16.
BUF_SIZE      = 4096.
B_SIZE        = BUF_SIZE / 2.
SETUP_SIZE    = 256.
BYTE_COUNT    = - ( BUF_SIZE / 4 ).
PROM_SIZE     = 4096.
CHSUM_OFFSET  = 6.

SA_RBL        = #0'177775'. : STATION ADR RCV BUF LENGTH - 3 WDS

PKT_LENGTH    = 1500.      : PACKET LENGTH
MAX_LENGTH    = 1534.      : PACKET LENGTH
LEGAL_LENGTH  = 1514.      : LEGAL PACKET LENGTH
ILLEGAL_LENGTH = 1536.      : ILLEGAL PACKET LENGTH
LPB_PKT       = #0'0220'.  : LOOPBACK PACKET
PKT_TYPE      = 12.        : PACKET TYPE
SKIP_CNT      = 0.
RFC           = 1.
PKT_DATA      = 15.
SHORTEST_PACKET = 60.      : SHORTEST SETUP PACKET LENGTH
LONGEST_PACKET = 1514.     : LONGEST SETUP PACKET LENGTH
LSPL          = 1514.     : LONGEST SETUP PACKET LENGTH
PHA_INDEX     = 19.        : PHYSICAL ADDRESS INDEX IN THE
                                : TARGET_ADR VECTOR

KB_VEC_LOC    = #0'000060'. : INPUT CONSOLE TERMINAL VECTOR LOC
PF_VEC_LOC    = #0'000024'. : POWER FAIL VECTOR LOCATION
CPU_LED       = #0'177524'. : TURN OFF CPU LFD LIT ON DCOK
KB_ADDR       = #0'177560'. : CONSOLE TERMINAL INPUT ADDRESS
KB_ENABLE     = #0'000100'. : ENABLE CONSOLE TERMINAL INPUT

```

```

0185 0  :
0186 0  :
0187 0  : TRANSMIT, RECEIVE AND CSR STATUS AND MASK WORD DEFINITIONS
0188 0  :
0189 0  :
0190 0  :
0191 0  CSR_STATUS      = #0'100220' ,
0192 0  CSR1_STATUS     = #0'000062' ,
0193 0  CSR2_STATUS     = #0'000060' ,
0194 0  CSR_MASK       = #0'100220' ,
0195 0  CSR1_MASK      = #0'010376' ,
0196 0  CSR2_MASK      = #0'167777' ,
0197 0  CSR3_MASK      = #0'010000' ,
0198 0  :
0199 0  PATRN1         = #0'001411' ,
0200 0  PATRN2         = #0'001471' ,
0201 0  :
0202 0  NXM_LO_ADR     = #0'160000' ,
0203 0  NXM_HI_ADR     = #0'000077' ,
0204 0  :
0205 0  XFLG_MASK      = #0'140000' ,
0206 0  X1_MASK        = #0'100000' ,
0207 0  XWD1_MASK      = #0'157760' ,
0208 0  XWD2_MASK      = #0'037777' ,
0209 0  XFLG_STATUS   = #0'140000' ,
0210 0  XWD11_STATUS  = #0'000000' ,
0211 0  XWD12_STATUS  = #0'000400' ,
0212 0  :
0213 0  :
0214 0  XWD14_STATUS  = #0'047600' ,
0215 0  :
0216 0  RFLG_MASK      = #0'140000' ,
0217 0  R1_MASK        = #0'100000' ,
0218 0  R2_MASK        = #0'174013' ,
0219 0  RWD1_MASK      = #0'140000' ,
0220 0  RWD2_MASK      = #0'177417' ,
0221 0  RWD1_STATUS    = #0'020000' ,
0222 0  RWD11_STATUS   = #0'100000' ,
0223 0  RWD12_STATUS   = #0'160000' ,
0224 0  RWD13_STATUS   = #0'000000' ,
0225 0  RWD14_STATUS   = #0'060000' ,
0226 0  RWD15_STATUS   = #0'000001' ,
0227 0  RWD16_STATUS   = #0'044000' ,
0228 0  :
0229 0  RFLG_STATUS    = #0'140000' ,
0230 0  :
0231 0  :
0232 0  RHL_MASK       = #0'003400' ,
0233 0  RLL_MASK       = #0'000377' ,

```

! N.M. CHANGED FROM 174017 TO 174013

14-Mar-1985 13:08:53  
12-Mar-1985 13:43:16

VAX-11 B1, 16 V4.1-582  
[MARSHALL.DEQNA]QNALIB.R16;6

```

: 0234 0      :...
: 0235 0      :
: 0236 0      : BUFFER DESCRIPTOR / CHAIN DESCRIPTOR BIT DEFINITIONS
: 0237 0      :
: 0238 0      : ---
: 0239 0
: 0240 0      V          = %0'100000'      ! VALID ADDRESS IF 1
: 0241 0      C          = %0'040000'      ! CHAIN ADDRESS IF 1
: 0242 0      E          = %0'020000'      ! END OF MESSAGE IF 1
: 0243 0      S          = %0'010000'      ! SETUP MODE PACKET IF 1
: 0244 0
: 0245 0      NEWB       = %0'100000'      ! BUFFER NOT USED IF 1
: 0246 0      LASTD     = %0'100000'      ! LAST DESCRIPTOR IN CHAIN
: 0247 0      VE        = %0'120000'      :
: 0248 0      VL        = %0'100200'      :
: 0249 0      VH        = %0'100100'      :
: 0250 0      VC        = %0'140000'      :
: 0251 0      VML       = %0'100300'      :
: 0252 0      VSE       = %0'130000'      :
: 0253 0      VSEL      = %0'130200'      :
: 0254 0      VENXM     = %0'120077'      :
: 0255 0
: 0256 0      XLRL_SET   = %8'11'        ! XMIT AND RCV LISTS INVALID
: 0257 0      ILEL_SET   = %8'11'        ! INTERNAL AND EXTERNAL LOOPBACK BITS
: 0258 0      ILEL_CLR   = %8'00'        ! INTERNAL AND EXTERNAL LOOPBACK BITS
: 0259 0
: 0260 0      INT_LOOPBACK = %8'00'      ! INTERNAL LOOPBACK MODE
: 0261 0      INX_LOOPBACK = %8'10'      ! INTERNAL/EXTENDED LOOPBACK MODE
: 0262 0      EXT_LOOPBACK = %8'11'      ! EXTERNAL LOOPBACK MODE
: 0263 0
: 0264 0      N_MODE     = %0'000200'      ! ENABLE NORMAL MODE OF OPERATION
: 0265 0      P_MODE     = %0'000202'      ! ENABLE PROMISCUOUS MODE OF OPERATION
: 0266 0      A_MODE     = %0'000201'      ! ENABLE ALL MULTICAST MODE OF OPERATION
: 0267 0      LED1      = %0'000204'      ! TURN OFF LED 1
: 0268 0      LED2      = %0'000210'      ! TURN OFF LED 2
: 0269 0      LED3      = %0'000214'      ! TURN OFF LED 3
: 0270 0

```



```
: 0271 0      !**  
: 0272 0      ! STATION ADDRESS CONSTANTS  
: 0273 0      !--  
: 0274 0  
: 0275 0      SADR1 = 0.      ! HIGH STATION ADDRESS BITS  
: 0276 0      SADR2 = 1.      ! MIDDLE BITS  
: 0277 0      SADR3 = 2.      ! LOW STATION ADDRESS BITS  
: 0278 0      CHSUM = 3.      ! ACTUAL CHECKSUM INDEX  
: 0279 0  
: 0280 0      !**  
: 0281 0      ! HARDWARE AND SOFTWARE P-TABLE EQUATES  
: 0282 0      !--  
: 0283 0  
: 0284 0      SWP_SIZE = 5.      ! SOFTWARE P-TABLE SIZE ( WORDS )  
: 0285 0      HWP_SIZE = 2.      ! HARDWARE P TABLE SIZE ( WORDS )  
: 0286 0  
: 0287 0  
: 0288 0      SET_IT = 1.  
: 0289 0      CLR_IT = 0;  
: 0290 0
```

```

: 0291 0
: 0292 0
: 0293 0
: 0294 0
: 0295 0
: 0296 0
: 0297 0
: 0298 0
: 0299 0
: 0300 0
: 0301 0
: 0302 0
: 0303 0
: 0304 0
: 0305 0
: 0306 0
: 0307 0
: 0308 0
: 0309 0
: 0310 0
: 0311 0
: 0312 0
: 0313 0
: 0314 0
: 0315 0
: 0316 0
: 0317 0
: 0318 0
: 0319 0
: 0320 0
: 0321 0
: 0322 0
: 0323 0
: 0324 0
: 0325 0
: 0326 0
: 0327 0
: 0328 0
: 0329 0
: 0330 0
: 0331 0
: 0332 0
: 0333 0
: 0334 0
: 0335 0

```

!..  
! THE CONTROL AND STATUS REGISTER BIT DEFINITIONS  
!--

FIELD

IOP\_FIELDS =

SET

RE = [ 0, 1, 0 ], ! RECEIVER ENABLE R/W ( ACTIVE HIGH )

SR = [ 1, 1, 0 ], ! SOFTWARE RESET R/W ( ACTIVE HIGH )

NI = [ 2, 1, 0 ], ! NXM INTERRUPT R ( ACTIVE HIGH )

BD = [ 3, 1, 0 ], ! BOOT/DIAGNOSTIC ROM R/W ( ACTIVE HIGH )

XL = [ 4, 1, 0 ], ! XMIT LIST INVALID R ( ACTIVE HIGH )

RL = [ 5, 1, 0 ], ! RCV LIST INVALID R ( ACTIVE HIGH )

IE = [ 6, 1, 0 ], ! INTERRUPT ENABLE R/W ( ACTIVE HIGH )

XI = [ 7, 1, 0 ], ! XMIT INTERRUPT REQUEST R/W ( ACTIVE HIGH )

IL = [ 8, 1, 0 ], ! INTERNAL LOOPBACK MODE R/W ( ACTIVE LOW )

EL = [ 9, 1, 0 ], ! EXTERNAL LOOPBACK MODE R/W ( ACTIVE HIGH )

SE = [ 10, 1, 0 ], ! SANITY TIMER ENABLE R/W ( ACTIVE HIGH )

X1 = [ 11, 1, 0 ], ! RESERVED, UNUSABLE

XC = [ 12, 1, 0 ], ! TRANSCEIVER PWR R ( ACTIVE HIGH )

CA = [ 13, 1, 0 ], ! CARRIER R ( ACTIVE HIGH )

X2 = [ 14, 1, 0 ], ! RESERVED, UNUSABLE

RI = [ 15, 1, 0 ], ! RCV INTERRUPT REQUEST R/W ( ACTIVE HIGH )

LB = [ 8, 2, 0 ], ! LOOPBACK BITS

XLRL = [ 4, 2, 0 ], ! XMIT AND RCV LISTS INVALID BITS

ALL\_BITS = [ 0, 16, 0 ], ! FETCH WHOLE WORD

LO\_NIBBLE = [ 0, 0, 0 ], !

HI\_NIBBLE = [ 0, 4, 0 ], !

LO\_BYTE = [ 0, 8, 0 ], !

HI\_BYTE = [ 0, 16, 0 ], ! GET WORD, ALL BITS

ST\_ADDR = [ 0, 8, 0 ], ! STATION ADDRESS LOW BYTE

ST\_WORD = [ 0, 16, 0 ], ! GET WORD, ALL BITS

RCV\_LO = [ 2, 0, 16, 0 ], ! RCV BUFFER DESCRIPTOR LIST LOW ADDRESS

PCV\_HI = [ 3, 0, 8, 0 ], ! RCV BUFFER DESCRIPTOR LIST HIGH ADDRESS

XMIT\_LO = [ 4, 0, 16, 0 ], ! XMIT BUFFER DESCRIPTOR LIST LOW ADDRESS

XMIT\_HI = [ 5, 0, 8, 0 ], ! XMIT BUFFER DESCRIPTOR LIST HIGH ADDRESS

VEC\_ADR = [ 2, 8, 0 ], ! INTERRUPT VECTOR ADDRESS

VEC\_ALL = [ 6, 0, 16, 0 ], ! INTERRUPT VECTOR ADDRESS

CSR\_ALL = [ 7, 0, 16, 0 ], ! CONTROL AND STATUS REGISTER

TES;

```

: 0336 0 :...
: 0337 0 :
: 0338 0 : TRANSMIT AND RECEIVE DESCRIPTOR LIST FIELDS
: 0339 0 :
: 0340 0 :
: 0341 0 :
: 0342 0 : FIELD
: 0343 0 :   DL_FIELDS =
: 0344 0 :     SET
: 0345 0 :     FLGWD = [ 0, 0, 16, 0 ],      ! XMIT OF RCV FLAG WORD
: 0346 0 :
: 0347 0 :     DBITS = [ 1, 0, 16, 0 ],     ! DESCRIPTOR BITS
: 0348 0 :     H_BIT = [ 1, 6, 1, 0 ],     ! XMIT BUFFER BEGINS ON BYTE BOUNDARY
: 0349 0 :     L_BIT = [ 1, 7, 1, 0 ],     ! XMIT BUFFER ENDS ON BYTE BOUNDARY
: 0350 0 :     S_BIT = [ 1, 12, 1, 0 ],    ! SET-UP PACKET IF 1
: 0351 0 :     E_BIT = [ 1, 13, 1, 0 ],    ! LAST DESCRIPTOR IN CHAIN ( END )
: 0352 0 :     C_BIT = [ 1, 14, 1, 0 ],    ! DESCRIPTOR HAS CHAIN ADDRESS IF 1
: 0353 0 :     V_BIT = [ 1, 15, 1, 0 ],    ! VALID ADDRESS IF 1
: 0354 0 :
: 0355 0 :     LOADR = [ 2, 0, 16, 0 ],    ! LOW 16 BITS OF XMIT OR RCV BUFFER ADDRESS
: 0356 0 :
: 0357 0 :     TWDL = [ 3, 0, 16, 0 ],    ! XMIT OR RCV PACKET WORD LENGTH
: 0358 0 :
: 0359 0 :     STWD1 = [ 4, 0, 16, 0 ],    ! XMIT OR RCV STATUS WORD 1
: 0360 0 :     OVF = [ 4, 0, 1, 0 ],       ! FIFO BUFFER OVERFLOW
: 0361 0 :     ABORT = [ 4, 9, 1, 0 ],     !
: 0362 0 :     STE16 = [ 4, 10, 1, 0 ],   ! SANITY TIMER ON AT POWER_UP
: 0363 0 :     NOCAR = [ 4, 11, 1, 0 ],   ! NO CARRIER
: 0364 0 :     RUNT = [ 4, 11, 1, 0 ],    ! RUNT PACKET IN FIFO
: 0365 0 :     ESETUP = [ 4, 13, 1, 0 ],  ! CONTROL SET_UP OR LOOPBACK PACKET
: 0366 0 :     LONGP = [ 4, 14, 1, 0 ],   ! LONG PACKET
: 0367 0 :     ERRSU = [ 4, 14, 1, 0 ],   ! ERROR SUMMARY
: 0368 0 :     LSTD = [ 4, 15, 1, 0 ],    ! LAST DESCRIPTOR LIST IN CHAIN
: 0369 0 :
: 0370 0 :     STWD2 = [ 5, 0, 16, 0 ],   ! XMIT OR RCV STATUS WORD 2
: 0371 0 :     TDR = [ 5, 0, 14, 0 ],     !
: 0372 0 :     RBLL = [ 5, 0, 8, 0 ],     ! RECEIVE BYTE LENGTH ( LOW 8 BITS )
: 0373 0 :
: 0374 0 :     DLINK = [ 6, 0, 16, 0 ],   ! DESCRIPTOR LINK PRE-FILL STATUS WD
: 0375 0 :
: 0376 0 :     BSTAT = [ 7, 0, 16, 0 ],  ! BUFFER STATE ! XMIT ODD/EVEN ! HIGH ORDER ADR
: 0377 0 :
: 0378 0 :     B_LEN = [ 0, 8, 0 ],       !
: 0379 0 :     W_LEN = [ 0, 16, 0 ],      !
: 0380 0 :     TES;

```

14-Mar-1985 13:08:53  
12-Mar-1985 13:43:16

VAX-11 Bliss-16 V4.1 582  
[MARSHALL.DEQNA]QNALIB.R16:6

SEQ 0290  
Page 11  
(10)

```

: 0381 0      :++
: 0382 0      :
: 0383 0      :   HARDWARE P-TABLE FIELD DEFINITIONS
: 0384 0      :
: 0385 0      :   --
: 0386 0      :
: 0387 0      :   FIELD
: 0388 0      :     HWP_FIELDS =
: 0389 0      :       SET
: 0390 0      :         ADDR   = [ 0, 0, 16, 0 ],      ! I/O PAGE BASE ADDRESS
: 0391 0      :         VEC    = [ 1, 0, 16, 0 ],      ! INTERRUPT VECTOR ADDRESS
: 0392 0      :         BRL    = [ 2, 0, 16, 0 ]      ! BR LEVEL
: 0393 0      :       TES;
: 0394 0      :
: 0395 0      :
: 0396 0      :   :++
: 0397 0      :   :
: 0398 0      :   SOFTWARE P-TABLE FIELD DEFINITIONS
: 0399 0      :   :
: 0400 0      :   :--
: 0401 0      :
: 0402 0      :   FIELD
: 0403 0      :     SWP_FIELDS =
: 0404 0      :       SET
: 0405 0      :         ERR_CNT = [0,0,16,0]          ! # OF ERRORS BEFORE DROPPING DEQNA
: 0406 0      :       TES;
: 0407 0
: 0408 0

```

#### COMMAND QUALIFIERS

```

:
:   BLISS/PDP11 QNALIB.R16/LIST=QNALIB.LIS/LIBRARY=QNALIB.L16/SOURCE=PAGE:53
:
: Run Time:      00:03.5
: Elapsed Time:  00:11.6
: Lines/CPU Min: 7075
: Lexemes/CPU-Min: 33815
: Memory Used:  44 pages
: Library Precompilation Complete

```

Partition name : DUMMY  
 Identification : V01.0  
 Task UIC : [202,34]  
 Task attributes: -HD  
 Total address windows: 1.  
 Task image size : 11264. words  
 Task address limits: 002000 055713  
 R-W disk blk limits: 000002 000055 000054 00044.

\*\*\* Root segment: ZQNA1

R/W mem limits: 002000 055713 053714 22476.  
 Disk blk limits: 000002 000055 000054 00044.

Memory allocation synopsis:

Section	Title	Ident	File
\$CODE\$:(RO,I,LCL,REL,CON)	002000 000406 00262.		
	002000 000242 00162.	ZQNA1	V01.0 ZQNA1.OBJ;1
	002242 000144 00100.	ZQNA2	V01.0 ZQNA2.OBJ;1
\$GLOB\$:(RW,D,LCL,REL,CON)	002406 012504 05444.		
	002406 012504 05444.	ZQNA1	V01.0 ZQNA1.OBJ;1
\$PLIT\$:(RO,D,LCL,REL,CON)	015112 007036 03614.		
	015112 007036 03614.	ZQNA1	V01.0 ZQNA1.OBJ;1
AA\$COD:(RO,I,LCL,REL,CON)	024150 000370 00248.		
	024150 000370 00248.	ZQNA2	V01.0 ZQNA2.OBJ;1
AB\$COD:(RO,I,LCL,REL,CON)	024540 022570 09592.		
	024540 022570 09592.	ZQNA3	V01.0 ZQNA3.OBJ;1
AC\$COD:(RO,I,LCL,FEL,CON)	047330 006130 03160.		
	047330 006130 03160.	ZQNA4	V01.0 ZQNA4.OBJ;1
. BLK.:(RW,I,LCL,REL,CON)	055460 000000 00000.		
\$XYZ\$:(RO,I,LCL,REL,CON)	055460 000234 00156.		
	055460 000214 00140.	CZQNAA	2.4 B16SAV.OBJ;1
	055674 000020 00016.	ZQNAA5	V01.0 ZQNAA5.OBJ;1

Global symbols:

ADR 000020	BIT1 000002	BIT8 000400	COUNTE 015016-R	ERRBLK 002204-R	GP#1 002312-R	INTERR 015012-R
BD.PRO 014300-R	BIT10 002000	BIT9 001000	CSR.WO 015030-R	ERRMSG 002202-R	GP#2 002322-R	IOP.DA 015002-R
BIT0 000001	BIT11 004000	BL\$LAS 055674-R	DATA.B 003006-R	ERRNBR 002200-R	GP#3 002336-R	IOP.TA 014034-R
BIT00 000001	BIT12 010000	BOE 000400	DEQNA. 015014-R	ERROR\$ 047330-R	GP#4 002346-R	ISR 000100
BIT01 000002	BIT13 020000	BUF.LE 015026-R	DESCR. 002406-R	ERRTYP 002176-R	GP#5 002362-R	IXE 004000
BIT02 000004	BIT14 040000	CHECKS 015024-R	DFSTBL 002210-R	ERR.CO 015040-R	GP#6 002370-R	KBD.IN 055646-R
BIT03 000010	BIT15 100000	CHK.CS 051176-R	DOWN.C 015022-R	ERR.FL 015036-R	GP#7 002376-R	LOE 040000
BIT04 000020	BIT2 000004	CHK.RC 051666-R	D\$PCNT 002122-R	ERR.NU 015034-R	HOE 100000	LOT 000010
BIT05 000040	BIT3 000010	CHK.RI 050612-R	EF.CON 000036	ETH.ST 014054-R	HP.TAB 002210-R	L\$ACP 002110-R
BIT06 000100	BIT4 000020	CHK.XM 051370-R	EF.NEW 000035	EVL 000004	HWP.TA 014774-R	L\$APT 002036-R
BIT07 000200	BIT5 000040	CLR.BU 050564-R	EF.PWR 000034	E1\$REP 047634-R	IBE 010000	L\$AU 024520-R
BIT08 000400	BIT6 000100	CLR.DE 050536-R	EF.RES 000037	FORM.H 053726-R	IDU 000040	L\$AUT 002070-R
BIT09 001000	BIT7 000200	COMPAR 052146-R	EF.STA 000040	GET.AD 015004-R	IER 020000	L\$AUTO 024462 R

L#CCP	002106-R	L#MREV	002050-R	MSG11	016574-R	MSG45	021702-R	PRI02	000100	SWP.IL	002226-R	T15	041774-R
L#CLEA	024474-R	L#NAME	002000-R	MSG12	016660-R	MSG46	021760-R	PRI03	000140	SWP.LB	002222-R	T16	044042-R
L#CO	002032-R	L#NDHR	002332-R	MSG13	016724-R	MSG47	022030-R	PRI04	000200	SWP.TA	014776-R	T17	044704-R
L#DEPO	002011-R	L#NDHW	002214-R	MSG14	017010-R	MSG48	022104-R	PRI05	000240	SWP.TI	002220-R	T18	045222-R
L#DESC	002260-R	L#NDSF	002404-R	MSG15	017100-R	MSG49	022142-R	PRI06	000300	SWP.TO	002224-R	T19	045572-R
L#DESP	002076-R	L#NDSW	002232-R	MSG16	017162-R	MSG50	022200-R	PRI07	000340	TADR1	015106-R	T2	026032-R
L#DEVP	002060-R	L#PRIO	002042-R	MSG17	017250-R	MSG51	022262-R	PTRN.T	014100-R	TADR2	015110-R	T20	046272-R
L#DISP	002124-R	L#PROT	002234-R	MSG18	017336-R	MSG52	022314-R	PWR.IN	055604-R	TARGET	014110-R	T21	047314-R
L#DLY	002116-R	L#PRT	002112-R	MSG19	017362-R	MSG53	022360-R	P1	015070-R	TBYTE1	015102-R	T3	026616-R
L#DTP	002040-R	L#REPP	002062-R	MSG20	017450-R	MSG54	022410-R	P2	015072-R	TBYTE2	015103-R	T4	027664-R
L#DTYP	002034-R	L#REV	002010-R	MSG21	017540-R	MSG55	022460-R	P3	015074-R	TBYTE3	015104-R	T5	030544-R
L#DU	024506-R	L#RPT	024160-R	MSG22	017620-R	MSG56	022522-R	P4	015076-R	TBYTE4	015105-R	T6	031254-R
L#DUT	002072-R	L#SFTL	002334-R	MSG23	017704-R	MSG57	022560-R	P5	015100-R	TD13	014470-R	T7	033614-R
L#DVTY	002242-R	L#SOFT	002336-R	MSG24	017762-R	MSG58	022650-R	QST01	015112-R	TD16	014340-R	T8	034052-R
L#EF	002052-R	L#SPC	002056-R	MSG25	020036-R	MSG59	022714-R	QST02	015142-R	TEMP1	015046-R	T9	034376-R
L#ENVI	002044-R	L#SPCP	002020-R	MSG26	020100-R	MSG60	023026-R	QST03	015172-R	TEMP2	015050-R	UAM	000200
L#ERRT	002176-R	L#SPTP	002024-R	MSG27	020142-R	MSG61	023070-R	QST04	015234-R	TEMP3	015052-R	UP.COU	015020-R
L#ETP	002102-R	L#STA	002030-R	MSG28	020204-R	MSG62	023132-R	QST05	015276-R	TEMP4	015054-R	VER.DE	050336-R
L#EXP1	002046-R	L#SW	002220-R	MSG29	020250-R	MSG63	023222-R	QST06	015340-R	TEMP5	015056-R	WAIT.F	055566-R
L#EXP4	002064-R	L#SWLE	002216-R	MSG30	020276-R	MSG64	023316-R	QST07	015402-R	TEMP6	015060-R	WALKIN	052720-R
L#EXP5	002066-R	L#TEST	002114-R	MSG31	020364-R	MSG65	023352-R	RBUF.L	015010-R	TEMP7	015062-R	WRT.ST	053452-R
L#HARD	002312-R	L#TIML	002014-R	MSG32	020450-R	MSG66	023416-R	RCV.BU	003006-R	TEMP8	015064-R	XBUF.L	015006-R
L#HIME	002120-R	L#UNIT	002012-R	MSG33	020512-R	MSG67	023504-R	RCV.D.	002406-R	TEMP9	015066-R	XC.FLA	015032-R
L#HPCP	002016-R	MSG00	015444-R	MSG34	020566-R	MSG68	023606-R	RD13	014574-R	TMP.IO	015042-R	XMIT.A	055160-R
L#HPTP	002022-R	MSG01	015502-R	MSG35	020642-R	MSG69	023704-R	REG.AD	015000-R	TMP.RE	015044-R	XMIT.B	007006-R
L#HRDL	002310-R	MSG02	015564-R	MSG36	020740-R	MSG70	024004-R	RESET.	047654-R	TURN.O	055404-R	XMIT.D	002606-R
L#HW	002210-R	MSG03	015652-R	MSG37	021044-R	MSG71	024070-R	SEND.E	054644-R	T#FREE	055710-R	XMIT.I	055206-R
L#HWLE	002206-R	MSG04	015756-R	MSG38	021136-R	NXM.IN	024530-R	SEND.T	055012-R	T#PTHV	000001	XMIT.S	054376-R
L#ICP	002104-R	MSG05	016050-R	MSG39	021216-R	PHYS.A	013006-R	SETUP.	013034-R	T1	025202-R	\$END.L	055712-R
L#INIT	024450-R	MSG06	016142-R	MSG40	021302-R	PNT	001000	SET.RD	052564-R	T10	034634-R	\$SAVE2	055460-R
L#LADP	002026-R	MSG07	016234-R	MSG41	021372-R	PREP.F	053644-R	SET.XD	052642-R	T11	035170-R	\$SAVE3	055474-R
L#LAST	055700-R	MSG08	016326-R	MSG42	021434-R	PRI	002000	SP.TAB	002220-R	T12	037024-R	\$SAVE4	055512-R
L#LOAD	002100-R	MSG09	016420-R	MSG43	021514-R	PRI00	000000	STATIO	014070-R	T13	040262-R	\$SAVE5	055532-R
L#LUN	002074-R	MSG10	016512-R	MSG44	021600-R	PRI01	000040	SWP.BL	002230-R	T14	041544-R		

## \*\*\* Task builder statistics:

Total work file references: 87112.  
 Work file reads: 0.  
 Work file writes: 0.  
 Size of core pool: 23454. words (91. pages)  
 Size of work file: 3328. words (13. pages)

Elapsed time:00:00:39

ZQNADO CREATED BY TKB ON 14-MAR-85 AT 13:24 PAGE 1

SEQ 0293

## GLOBAL CROSS REFERENCE

CREF V02

SYMBOL	VALUE	REFERENCES...
FDR	000020	# ZQNA1 # ZQNA2
BD.PRO	014300-R	# ZQNA1 ZQNA3 ZQNA4
BIT0	000001	# ZQNA1 # ZQNA2
BIT00	000001	# ZQNA1 # ZQNA2
BIT01	000002	# ZQNA1 # ZQNA2
BIT02	000004	# ZQNA1 # ZQNA2
BIT03	000010	# ZQNA1 # ZQNA2
BIT04	000020	# ZQNA1 # ZQNA2
BIT05	000040	# ZQNA1 # ZQNA2
BIT06	000100	# ZQNA1 # ZQNA2
BIT07	000200	# ZQNA1 # ZQNA2
BIT08	000400	# ZQNA1 # ZQNA2
BIT09	001000	# ZQNA1 # ZQNA2
BIT1	000002	# ZQNA1 # ZQNA2
BIT10	002000	# ZQNA1 # ZQNA2
BIT11	004000	# ZQNA1 # ZQNA2
BIT12	010000	# ZQNA1 # ZQNA2
BIT13	020000	# ZQNA1 # ZQNA2
BIT14	040000	# ZQNA1 # ZQNA2
BIT15	100000	# ZQNA1 # ZQNA2
BIT2	000004	# ZQNA1 # ZQNA2
BIT3	000010	# ZQNA1 # ZQNA2
BIT4	000020	# ZQNA1 # ZQNA2
BIT5	000040	# ZQNA1 # ZQNA2
BIT6	000100	# ZQNA1 # ZQNA2
BIT7	000200	# ZQNA1 # ZQNA2
BIT8	000400	# ZQNA1 # ZQNA2
BIT9	001000	# ZQNA1 # ZQNA2
BL#LAS	055674-R	# ZQNA5
BOE	000400	# ZQNA1 # ZQNA2
BUF.LE	015026-R	# ZQNA1
CHECKS	015024-R	# ZQNA1 ZQNA3 ZQNA4
CHK.CS	051176-R	ZQNA3 # ZQNA4
CHK.RC	051666-R	ZQNA3 # ZQNA4
CHK.RI	050612-R	ZQNA3 # ZQNA4
CHK.XM	051370-R	ZQNA3 # ZQNA4
CLR.BU	050564-R	ZQNA3 # ZQNA4
CLR.DE	050536-R	ZQNA3 # ZQNA4
COMPAR	052146-R	ZQNA3 # ZQNA4
COUNTE	015016-R	# ZQNA1 ZQNA3 ZQNA4
CSR.WO	015030-R	# ZQNA1 ZQNA3 ZQNA4
DATA.B	003006-R	# ZQNA1 ZQNA3 ZQNA4
DEQNA.	015014-R	# ZQNA1 ZQNA3 ZQNA4
DESCR.	002406-R	# ZQNA1 ZQNA3 ZQNA4
DFSTBL	002210-R	# ZQNA1
DOWN.C	015022-R	# ZQNA1 ZQNA3 ZQNA4
D#PCNT	002122-R	# ZQNA1
EF.CON	000036	# ZQNA1 # ZQNA2
EF.NEW	000035	# ZQNA1 # ZQNA2
EF.PWR	000034	# ZQNA1 # ZQNA2
EF.RES	000037	# ZQNA1 # ZQNA2
EF.STA	000040	# ZQNA1 # ZQNA2

GLOBAL CROSS REFERENCE

CREF V02

SYMBOL	VALUE	REFERENCES...
ERRBLK	002204-R	# ZQNA1
ERRMSG	002202-R	# ZQNA1
ERRNBR	002200-R	# ZQNA1
ERROR#	047330-R	ZQNA3 # ZQNA4
ERRTYP	002176-R	# ZQNA1
ERR.CO	015040-R	# ZQNA1 ZQNA3 ZQNA4
ERR.FL	015036-R	# ZQNA1 ZQNA3 ZQNA4
ERR.NU	015034-R	# ZQNA1 ZQNA3 ZQNA4
ETH.ST	014054-R	# ZQNA1
EVL	000004	# ZQNA1 # ZQNA2
E1#REP	047634-R	ZQNA3 # ZQNA4
FORM.H	053726-R	ZQNA3 # ZQNA4
GET.AD	015004-R	# ZQNA1 ZQNA2 ZQNA3 ZQNA4
GP#1	002312-R	# ZQNA2
GP#2	002322-R	# ZQNA2
GP#3	002336-R	# ZQNA2
GP#4	002346-R	# ZQNA2
GP#5	002362-R	# ZQNA2
GP#6	002370-R	# ZQNA2
GP#7	002376-R	# ZQNA2
HOE	100000	# ZQNA1 # ZQNA2
HP.TAB	002210-R	# ZQNA1
HWP.TA	014774-R	# ZQNA1 ZQNA2 ZQNA3 ZQNA4
IBE	010000	# ZQNA1 # ZQNA2
IDU	000040	# ZQNA1 # ZQNA2
IER	020000	# ZQNA1 # ZQNA2
INTERR	015012-R	CZQNAA # ZQNA1 ZQNA2 ZQNA3 ZQNA4
IOP.DA	015002-R	# ZQNA1 ZQNA2 ZQNA3 ZQNA4
IOP.TA	014034-R	# ZQNA1 ZQNA2 ZQNA3 ZQNA4
ISR	000100	# ZQNA1 # ZQNA2
IXE	004000	# ZQNA1 # ZQNA2
KBD.IN	055646-R	# CZQNAA ZQNA3
LOE	040000	# ZQNA1 # ZQNA2
LOT	000010	# ZQNA1 # ZQNA2
L#ACP	002110-R	# ZQNA1
L#APT	002036-R	# ZQNA1
L#AU	024520-R	ZQNA1 # ZQNA2
L#AUT	002070-R	# ZQNA1
L#AUTO	024462-R	ZQNA1 # ZQNA2
L#CCP	002106-R	# ZQNA1
L#CLEA	024474-R	ZQNA1 # ZQNA2
L#CO	002032-R	# ZQNA1
L#DEPO	002011-R	# ZQNA1
L#DESC	002260-R	ZQNA1 # ZQNA2
L#DESP	002076-R	# ZQNA1
L#DEVP	002060-R	# ZQNA1
L#DISP	002124-R	# ZQNA1
L#DLY	002116-R	# ZQNA1 ZQNA2 ZQNA3 ZQNA4
L#DTP	002040-R	# ZQNA1
L#DTYP	002034-R	# ZQNA1
L#DU	024506-R	ZQNA1 # ZQNA2
L#DUT	002072-R	# ZQNA1



ZQNADO CREATED BY TKB ON 14-MAR-85 AT 13:24 PAGE 3

SEQ 0295

GLOBAL CROSS REFERENCE

CREF V02

SYMBGL	VALUE	REFERENCES...		
L#DVTY	002242-R	ZQNA1	#	ZQNA2
L#EF	002052-R	# ZQNA1		
L#ENVI	002044-R	# ZQNA1		
L#ERRT	002176-R	# ZQNA1		
L#ETP	002102-R	# ZQNA1		
L#EXP1	002046-R	# ZQNA1		
L#EXP4	002064-R	# ZQNA1		
L#EXP5	002066-R	# ZQNA1		
L#HARD	002312-R	ZQNA1	#	ZQNA2
L#HIME	002120-R	# ZQNA1		
L#HPCP	002016-R	# ZQNA1		
L#HPTP	002022-R	# ZQNA1		
L#HRDL	002310-R	# ZQNA2		
L#HW	002210-R	# ZQNA1		
L#HWLE	002206-R	# ZQNA1		
L#ICP	002104-R	# ZQNA1		
L#INIT	024450-R	ZQNA1	#	ZQNA2
L#LADP	002026-R	# ZQNA1		
L#LAST	055700-R	ZQNA1	#	ZQNA5
L#LOAD	002100-R	# ZQNA1		
L#LUN	002074-R	# ZQNA1		
L#MREV	002050-R	# ZQNA1		
L#NAME	002000-R	# ZQNA1		
L#NDHR	002332-P	# ZQNA2		
L#NDHW	002214-R	# ZQNA1		
L#NDSF	002404-R	# ZQNA2		
L#NDSW	002232-R	# ZQNA1		
L#PRIO	002042-R	# ZQNA1		
L#PROT	002234-R	# ZQNA1		
L#PRT	002112-R	# ZQNA1		
L#REPP	002062-R	# ZQNA1		
L#REV	002010-R	# ZQNA1		
L#RPT	024160-R	ZQNA1	#	ZQNA2
L#SFTL	002334-R	# ZQNA2		
L#SOFT	002336-R	ZQNA1	#	ZQNA2
L#SPC	002056-R	# ZQNA1		
L#SPCP	002020-R	# ZQNA1		
L#SPTP	002024-R	# ZQNA1		
L#STA	002030-R	# ZQNA1		
L#SW	002220-R	# ZQNA1		
L#SWLE	002216-R	# ZQNA1		
L#TEST	002114-R	# ZQNA1		
L#TIML	002014-R	# ZQNA1		
L#UNIT	002012-R	# ZQNA1		
MSG00	015444-R	# ZQNA1	ZQNA3	ZQNA4
MSG01	015502-R	# ZQNA1	ZQNA3	ZQNA4
MSG02	015564-R	# ZQNA1	ZQNA3	ZQNA4
MSG03	015652-R	# ZQNA1	ZQNA3	ZQNA4
MSG04	015756-R	# ZQNA1	ZQNA3	ZQNA4
MSG05	016050-R	# ZQNA1	ZQNA3	ZQNA4
MSG06	016142-R	# ZQNA1	ZQNA3	ZQNA4
MSG07	016234-R	# ZQNA1	ZQNA3	ZQNA4

GLOBAL CROSS REFERENCE CREF V02

SYMBOL	VALUE	REFERENCES...
MSG08	016326-R	# ZQNA1 ZQNA3 ZQNA4
MSG09	016420-R	# ZQNA1 ZQNA3 ZQNA4
MSG10	016512-R	# ZQNA1 ZQNA3 ZQNA4
MSG11	016574-R	# ZQNA1 ZQNA3 ZQNA4
MSG12	016660-R	# ZQNA1 ZQNA3 ZQNA4
MSG13	016724-R	# ZQNA1 ZQNA3 ZQNA4
MSG14	017010-R	# ZQNA1 ZQNA3 ZQNA4
MSG15	017100-R	# ZQNA1 ZQNA3 ZQNA4
MSG16	017162-R	# ZQNA1 ZQNA3 ZQNA4
MSG17	017250-R	# ZQNA1 ZQNA3 ZQNA4
MSG18	017336-R	# ZQNA1 ZQNA3 ZQNA4
MSG19	017362-R	# ZQNA1 ZQNA3 ZQNA4
MSG20	017450-R	# ZQNA1 ZQNA3 ZQNA4
MSG21	017540-R	# ZQNA1 ZQNA3 ZQNA4
MSG22	017620-R	# ZQNA1 ZQNA3 ZQNA4
MSG23	017704-R	# ZQNA1 ZQNA3 ZQNA4
MSG24	017762-R	# ZQNA1 ZQNA3 ZQNA4
MSG25	020036-R	# ZQNA1 ZQNA3 ZQNA4
MSG26	020100-R	# ZQNA1 ZQNA3 ZQNA4
MSG27	020142-R	# ZQNA1 ZQNA3 ZQNA4
MSG28	020204-R	# ZQNA1 ZQNA3 ZQNA4
MSG29	020250-R	# ZQNA1 ZQNA3 ZQNA4
MSG30	020276-R	# ZQNA1 ZQNA3 ZQNA4
MSG31	020364-R	# ZQNA1 ZQNA3 ZQNA4
MSG32	020450-R	# ZQNA1 ZQNA3 ZQNA4
MSG33	020512-R	# ZQNA1 ZQNA3 ZQNA4
MSG34	020566-R	# ZQNA1 ZQNA3 ZQNA4
MSG35	020642-R	# ZQNA1 ZQNA3 ZQNA4
MSG36	020740-R	# ZQNA1 ZQNA3 ZQNA4
MSG37	021044-R	# ZQNA1 ZQNA3 ZQNA4
MSG38	021136-R	# ZQNA1 ZQNA3 ZQNA4
MSG39	021216-R	# ZQNA1 ZQNA3 ZQNA4
MSG40	021302-R	# ZQNA1 ZQNA3 ZQNA4
MSG41	021372-R	# ZQNA1 ZQNA3 ZQNA4
MSG42	021434-R	# ZQNA1 ZQNA3 ZQNA4
MSG43	021514-R	# ZQNA1 ZQNA3 ZQNA4
MSG44	021600-R	# ZQNA1 ZQNA3 ZQNA4
MSG45	021702-R	# ZQNA1 ZQNA3 ZQNA4
MSG46	021760-R	# ZQNA1 ZQNA3 ZQNA4
MSG47	022030-R	# ZQNA1 ZQNA3 ZQNA4
MSG48	022104-R	# ZQNA1 ZQNA3 ZQNA4
MSG49	022142-R	# ZQNA1 ZQNA3 ZQNA4
MSG50	022200-R	# ZQNA1 ZQNA3 ZQNA4
MSG51	022262-R	# ZQNA1 ZQNA3 ZQNA4
MSG52	022314-R	# ZQNA1 ZQNA3 ZQNA4
MSG53	022360-R	# ZQNA1 ZQNA3 ZQNA4
MSG54	022410-R	# ZQNA1 ZQNA2 ZQNA3 ZQNA4
MSG55	022460-R	# ZQNA1 ZQNA3 ZQNA4
MSG56	022522-R	# ZQNA1 ZQNA3 ZQNA4
MSG57	022560-R	# ZQNA1 ZQNA3 ZQNA4
MSG58	022650-R	# ZQNA1 ZQNA3 ZQNA4
MSG59	022714-R	# ZQNA1 ZQNA3 ZQNA4

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SYMBOL	VALUE	REFERENCES...
MSG60	023026-R	• ZQNA1 ZQNA3 ZQNA4
MSG61	023070-R	• ZQNA1 ZQNA3 ZQNA4
MSG62	023132-R	• ZQNA1 ZQNA3 ZQNA4
MSG63	023222-R	• ZQNA1 ZQNA3 ZQNA4
MSG64	023316-R	• ZQNA1 ZQNA3 ZQNA4
MSG65	023352-R	• ZQNA1 ZQNA3 ZQNA4
MSG66	023416-R	• ZQNA1 ZQNA3 ZQNA4
MSG67	023504-R	• ZQNA1 ZQNA3 ZQNA4
MSG68	023606-R	• ZQNA1 ZQNA3 ZQNA4
MSG69	023704-R	• ZQNA1 ZQNA3 ZQNA4
MSG70	024004-R	• ZQNA1 ZQNA3 ZQNA4
MSG71	024070-R	• ZQNA1 ZQNA3
NXM.IN	024530-R	• ZQNA2 ZQNA3
PHYS.A	013006-R	• ZQNA1 ZQNA3 ZQNA4
PNT	001000	• ZQNA1 • ZQNA2
PREP.F	053644-R	ZQNA3 • ZQNA4
PRI	002000	• ZQNA1 • ZQNA2
PRI00	000000	• ZQNA1 • ZQNA2 ZQNA3 ZQNA4
PRI01	000040	• ZQNA1 • ZQNA2 ZQNA3 ZQNA4
PRI02	000100	• ZQNA1 • ZQNA2 ZQNA3 ZQNA4
PRI03	000140	• ZQNA1 • ZQNA2 ZQNA3 ZQNA4
PRI04	000200	• ZQNA1 • ZQNA2 ZQNA3 ZQNA4
PRI05	000240	• ZQNA1 • ZQNA2 ZQNA3 ZQNA4
PRI06	000300	• ZQNA1 • ZQNA2 ZQNA3 ZQNA4
PRI07	000340	• ZQNA1 • ZQNA2 ZQNA3 ZQNA4
PTRN.T	014100-R	• ZQNA1 ZQNA3
PWR.IN	055604-R	• CZQNA ZQNA3
P1	015070-R	• ZQNA1 ZQNA3 ZQNA4
P2	015072-R	• ZQNA1 ZQNA3 ZQNA4
P3	015074-R	• ZQNA1 ZQNA3 ZQNA4
P4	015076-R	• ZQNA1 ZQNA3 ZQNA4
P5	015100-R	• ZQNA1
QST01	015112-R	• ZQNA1 ZQNA2
QST02	015142-R	• ZQNA1 ZQNA2
QST03	015172-R	• ZQNA1 ZQNA2
QST04	015234-R	• ZQNA1 ZQNA2
QST05	015276-R	• ZQNA1 ZQNA2
QST06	015340-R	• ZQNA1 ZQNA2
QST07	015402-R	• ZQNA1 ZQNA2
RBUF.L	015010-R	• ZQNA1 ZQNA3 ZQNA4
RCV.BU	003006-R	• ZQNA1 ZQNA3 ZQNA4
RCV.D.	002406-R	• ZQNA1 ZQNA3 ZQNA4
RD13	014574-R	• ZQNA1 ZQNA3
REG.AD	015000-R	• ZQNA1 ZQNA2 ZQNA3 ZQNA4
RESET.	047654-R	ZQNA2 ZQNA3 • ZQNA4
SEND.E	054644-R	ZQNA3 • ZQNA4
SEND.T	055012 R	ZQNA3 • ZQNA4
SETUP.	013034-R	• ZQNA1 ZQNA4
SET.WD	052564 R	ZQNA3 • ZQNA4
SET.XD	052642 R	ZQNA3 • ZQNA4
SP.TAB	002220-R	• ZQNA1
STATIO	014070 R	• ZQNA1 ZQNA3 ZQNA4

GLOBAL CROSS REFERENCE

CREF V02

SYMBOL	VALUE	REFERENCES...
SWP.BL	002230-R	* ZQNA1 ZQNA3 ZQNA4
SWP.IL	002226-R	* ZQNA1 ZQNA3 ZQNA4
SWP.LB	002222-R	* ZQNA1 ZQNA3
SWP.TA	014776-R	* ZQNA1 ZQNA2 ZQNA3 ZQNA4
SWP.TI	002220-R	* ZQNA1 ZQNA3 ZQNA4
SWP.TO	002224-R	* ZQNA1 ZQNA3 ZQNA4
TADR1	015106-R	* ZQNA1 ZQNA3 ZQNA4
TADR2	015110-R	* ZQNA1 ZQNA3 ZQNA4
TARGET	014110-R	* ZQNA1 ZQNA3 ZQNA4
TBYTE1	015102-R	* ZQNA1 ZQNA3 ZQNA4
TBYTE2	015103-R	* ZQNA1 ZQNA3 ZQNA4
TBYTE3	015104-R	* ZQNA1 ZQNA3 ZQNA4
TBYTE4	015105-R	* ZQNA1 ZQNA3 ZQNA4
TD13	014470-R	* ZQNA1 ZQNA3
TD16	014340-R	* ZQNA1 ZQNA3
TEMP1	015046-R	* CZQNAA * ZQNA1 ZQNA2 ZQNA3 ZQNA4
TEMP2	015050-R	* ZQNA1 ZQNA2 ZQNA3 ZQNA4
TEMP3	015052-R	* ZQNA1 ZQNA2 ZQNA3 ZQNA4
TEMP4	015054-R	* ZQNA1 ZQNA2 ZQNA3 ZQNA4
TEMP5	015056-R	* ZQNA1 ZQNA2 ZQNA3 ZQNA4
TEMP6	015060-R	* CZQNAA * ZQNA1 ZQNA2 ZQNA3 ZQNA4
TEMP7	015062-R	* ZQNA1 ZQNA2 ZQNA3 ZQNA4
TEMP8	015064-R	* ZQNA1 ZQNA2 ZQNA3 ZQNA4
TEMP9	015066-R	* ZQNA1 ZQNA2 ZQNA3 ZQNA4
TMP.IO	015042-R	* ZQNA1 ZQNA2 ZQNA3 ZQNA4
TMP.RE	015044-R	* ZQNA1 ZQNA2 ZQNA3 ZQNA4
TURN.O	055404-R	ZQNA3 * ZQNA4
T#FREE	055710-R	* ZQNA5
T#PTHV	000001	ZQNA1 * ZQNA5
T1	025202-R	ZQNA1 * ZQNA3
T10	034634-R	ZQNA1 * ZQNA3
T11	035170-R	ZQNA1 * ZQNA3
T12	037024-R	ZQNA1 * ZQNA3
T13	040262-R	ZQNA1 * ZQNA3
T14	041544-R	ZQNA1 * ZQNA3
T15	041774-R	ZQNA1 * ZQNA3
T16	044042-R	ZQNA1 * ZQNA3
T17	044704-R	ZQNA1 * ZQNA3
T18	045222-R	ZQNA1 * ZQNA3
T19	045572-R	ZQNA1 * ZQNA3
T2	026032-R	ZQNA1 * ZQNA3
T20	046272-R	ZQNA1 * ZQNA3
T21	047314-R	ZQNA1 * ZQNA3
T3	026616-R	ZQNA1 * ZQNA3
T4	027664-R	ZQNA1 * ZQNA3
T5	030544-R	ZQNA1 * ZQNA3
T6	031254-R	ZQNA1 * ZQNA3
T7	033614-R	ZQNA1 * ZQNA3
T8	034052-R	ZQNA1 * ZQNA3
T9	034376-R	ZQNA1 * ZQNA3
UAM	000200	* ZQNA1 * ZQNA2
UP.COU	015020-R	* ZQNA1 ZQNA3 ZQNA4

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SYMBOL	VALUE	REFERENCES...
VFR.DE	050336-R	ZQNA3 # ZQNA4
WAIT.F	055566-R	# CZQNAA ZQNA3
WALKIN	052720-R	ZQNA3 # ZQNA4
WRT.ST	053452-R	ZQNA3 # ZQNA4
XBUF.L	015006-R	# ZQNA1 ZQNA3 ZQNA4
XC.FLA	015032-R	# ZQNA1 ZQNA3
XMIT.A	055160-R	ZQNA3 # ZQNA4
XMIT.B	007006-R	# ZQNA1 ZQNA3 ZQNA4
XMIT.D	002606-R	# ZQNA1 ZQNA3 ZQNA4
XMIT.I	055206-R	ZQNA3 # ZQNA4
XMIT.S	054376-R	ZQNA3 # ZQNA4
#END.L	055712-R	# ZQNA5
#SAVE2	055460-R	# CZQNAA ZQNA3 ZQNA4
#SAVE3	055474-R	# CZQNAA ZQNA3 ZQNA4
#SAVE4	055512-R	# CZQNAA ZQNA2 ZQNA3
#SAVE5	055532-R	# CZQNAA