

BDV11,
KDF11-B

BDV11/KDF11B BT DIAG
CVMBAFO

AH-B062F-MC
FICHE 1 OF 1

JUL 1983
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MADE IN USA



Grid of technical data tables with columns for various parameters and values.



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: PRODUCT CODE: AC-B061F-MC

: PRODUCT NAME: CVMBAF0 BDV11/KDF11B BT DIAG

: PRODUCT DATE: FEBRUARY 1983

: MAINTAINER: DIAGNOSTIC ENGINEERING

:
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: DECTAPE

: UNIBUS
: VAX

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: **D I G I T A L**
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: FUNCTIONAL DESCRIPTION:

THE BDV11 BOOTSTRAP/TERMINATOR/
DIAGNOSTIC MODULE PROVIDES THE
FOLLOWING FUNCTIONS:

: *BDV11 ONLY*

1. ROM RESIDENT HARDWARE DIAGNOSTIC TESTS.
2. PADS FOR ROM RESIDENT BOOTSTRAP ROUTINES FOR THOSE DEVICES WHICH ARE SUPPORTED BY THE LSI-11 SYSTEM.
3. A READ/WRITE STORAGE REGISTER FOR USE BY THE RESIDENT DIAGNOSTIC TESTS.
4. TWELVE DIP ROCKER SWITCHES TO SELECT TESTING AND BOOTSTRAP OPTIONS AT POWER UP.
5. AN ARRAY OF FOUR LED'S TO PROVIDE STATUS INFORMATION.
6. HALT AND REBOOT TOGGLE SWITCHES FOR USE IN SYSTEMS WITHOUT A CONSOLE.
7. SOCKETS FOR 2K WORDS OF EPROM.
8. OPTIONAL REPLACEMENT OF SYSTEM ROM BY 8K WORDS OF EPROM.
9. LINE CLOCK INTERRUPT ENABLE/DISABLE REGISTER

: *BDV11 ONLY*

: *BDV11 ONLY*

THE KDF11B BOOTSTRAP/DIAGNOSTIC MODULE
PROVIDES THE FOLLOWING FUNCTIONS:

1. ABOVE MENTIONED FUNCTIONS 1., 3., 4.(8 SWITCHES), 5., 6., 9.
2. LINE CLOCK CLEARED BY RESET INSTRUCTION
3. PAGE CONTROL REGISTER IS WRITE ONLY
4. PRIORITY LEVEL 6(THE SAME FOR KDF11A)

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.SBTTL GENERAL PROGRAM INFORMATION

: PROGRAM PURPOSE: THIS DIAGNOSTIC WILL BE USED TO ESTABLISH
: CONFIDENCE THAT THE MODULE IS FUNCTIONING
: PROPERLY. IT WILL PROVIDE CHECKSUM VERI-
: FICATION OF THE CONTENTS OF THE DIAGNOSTIC
: ROMS AND ANY ADDITIONAL ROM OR EPROM. IN
: ADDITION, IT WILL VERIFY THAT THE PROPER
: DIAGNOSTIC ROMS ARE INSERTED IN THE MODULE
: BY COMPARING THE ACTUAL CHECKWORDS IN THE
: ROMS TO THOSE SPECIFIED IN THE DIAGNOSTIC
: PROGRAM. IT WILL ALSO ACCEPT CHECKWORDS
: FROM AN OPERATOR FOR USE IN TESTING ANY
: ADDITIONAL ROM/EPROM. THE DIAGNOSTIC WILL
: ALSO TEST THE PROGRAMMABLE REGISTERS AND
: EXERCISE THE LED'S FOR OPERATOR INSPECTION.

: SYSTEM REQUIREMENTS:

HARDWARE:

LSI-11 BUS PROCESSOR:

11/03(LSI-11/02), 11/23(KDF11-A), 11/23B(KDF11-B)

MICRO PDP-11(KDF11-B)

16K WORDS OF MEMORY

CONSOLE TERMINAL

DIAGNOSTIC PROGRAM LOAD DEVICE

: RELATED DOCUMENTS AND STANDARDS:

: CHQUSB XXDP+/SUPR USER MAN (AC-F348 -MC) TO REFERENCE
: THE DIAGNOSTIC SUPERVISOR COMMAND INSTRUCTIONS.

: DIAGNOSTIC SUPERVISOR FUNCTIONAL SPEC (176-681-001)
: APT/DIAGNOSTIC SUPERVISOR INTERFACE SPEC (176-681-003)

: DIAGNOSTIC HIERARCHY PREREQUISITES: NONE, ALTHOUGH IT IS ASSUMED THAT
: THE CPU IS FUNCTIONING PROPERLY.

: ASSUMPTIONS:

--WHEN RUNNING UNDER APT, ALL ROCKER
SWITCHES ARE IN THE 'ON' POSITION.
THE EXCEPTION TO THIS OCCURS ONLY
WHEN AN OPERATOR CHANGES THE HARD-
WARE P-TABLE TO CORRESPOND TO THE NEW
SWITCH SETTINGS.

--THE ADDRESS JUMPERS ARE CONFIGURED
AND MEMORY CHIPS INSTALLED PROPERLY.
NO TWO CHIPS CAN RESPOND TO THE SAME
ADDRESS.

--THE MODULE UNDER TEST RESIDES IN THE
SAME BACKPLANE AS THAT FROM WHICH THE
LINE TIME CLOCK IS GENERATED.

--THE CPU IS WORKING PROPERLY.

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.SBTTL OPERATING INSTRUCTIONS

:1. LOADING AND STARTING PROCEDURES
: IN SYSTEMS OTHER THAN APT, THE DIAGNOSTIC PROGRAM
:AND THE DIAGNOSTIC SUPERVISOR WILL BE LOCATED ON THE XXDP+ MEDIA
:AS TWO SEPARATE FILES.

I. XXDP+ MEDIA

FOR OPERATING INSTRUCTIONS OF THE SUPERVISOR, PLEASE REFER
TO CHQUSB XXDP+/SUPR USER MAN (AC-F348 -MC).
ISSUE THE COMMAND ".R CVMBAF". THE XXDP+ MONITOR
WILL LOAD THE DIAGNOSTIC AND THE SUPERVISOR FILE
HSAAP?.SYS AND GIVE CONTROL TO THE SUPERVISOR.

II. SUPERVISOR COMMANDS

ONCE THE SUPERVISOR HAS BEEN INVOKED AT LOCATION 200,
THE FOLLOWING COMMANDS SHOULD BE USED SELECTIVELY TO
CONTROL THE RUNNING OF THE DIAGNOSTIC:

:2. TO START

START/TEST:<TESTNOS>/PASS:<PASSCNT>/UNIT:<DEVN>/FLAG:<CF>:<CF>

WHERE:

TEST ::= (DEFINES WHICH TESTS TO EXECUTE, IF NO
SPECIFICATION EXECUTE ALL TESTS)
PASS ::= (INDICATES HOW MANY PASSES TO RUN, IF NO SPEC-
IFICATION RUN UNTIL DIAGNOSTIC ESCAPE SEQUENCE)
UNIT ::= (SPECIFIES WHICH UNIT ENTRIES TO GET FROM THE
CONFIGURATION FILE, IF NO SPECIFICATION USE ALL
APPLICABLE UNIT ENTRIES)
FLAG ::= (SPECIFIES THE ERROR CONTROL/REPORT FLAG OPTIONS
TO BE USED)
<TESTNOS> ::= (LIST FOR UP TO 16 TESTS TO BE EXECUTED IN AN
ASCENDING ORDER.)
<PASSCNT> ::= (NUMBER OF PROGRAM PASSES TO EXECUTE)
<DEVN> ::= (UNIQUE, DEC STANDARD, DEVICE SPECIFIER AND
UNIT NUMBER)
<CF> ::= (ANY OF THE FOLLOWING CONTROL FLAGS:
HOE-HALT ON ERROR
LOE-LOOP ON ERROR AND ATTEMPT REPORT
IER-INHIBIT ALL ERROR REPORTS
IBE-INHIBIT BASIC AND EXTENDED ERROR REPORTS
IXE-INHIBIT EXTENDED ERROR REPORTS
PRI-DIRECT ALL ERROR, PASS, AND STATISTICAL
REPORTS TO THE LINE PRINTER.
BOE-AUDIO ERROR INDICATION
UAM-UNATTENDED MODE, NO OPERATOR INTERVENTION
PNT-PRINT NUMBER OF TEST BEING EXECUTED.)

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:3. TO RESTART
: THE RESTART COMMAND IS SIMILAR TO THE START COMMAND EXCEPT
: THAT ALL PARAMETERS ARE ASSUMED TO BE ALREADY DEFINED, AND NO
: OPERATOR DIALOGUE IS PERFORMED PRIOR TO RUNNING THE DIAGNOSTIC.
: IF THE OPERATOR WISHES TO ALTER THE TYPE OF ADDITIONAL MEMORY
: TO TEST, OR CHANGE THE ADDRESSES, LOCATION 'PASS' MUST BE
: CLEARED MANUALLY PRIOR TO RESTARTING, SINCE THIS INFORMATION
: IS SET UP ON THE FIRST PASS OF THE DIAGNOSTIC.
:
: RESTART/TEST:<TESTNOS>/PASS:<PASSCNT>/FLAG:<CF>:<CF>...
:
:4. TO RETURN TO PROGRAM
:
: TO RESUME EXECUTION OF THE DIAGNOSTIC AT THE FIRST INSTRUCTION
: FOLLOWING THE CURRENT SUPERVISOR CALL, AT WHICH TIME NEW FLAGS
: MAY BE ASSIGNED.
:
: CONTINUE/FLAG:<CF>:<CF>:...
:
:5. TO LOAD AND START THE DIAGNOSTIC
: TO LOAD AND START THE DIAGNOSTIC USING DEFAULT PARAMETERS
:
: RUN<FILESPEC>/TEST:<TESTNOS>/PASS:<PASSCNT>/UNIT:<DEVN>/FLAG:<CF>...
:
: NOTE: TEST NUMBERS AND UNIT NUMBERS MAY BE SPECIFIED
: AS SINGLE NUMBERS, RANGES OF NUMBERS (I.E. 1-6),
: OR COMBINATIONS OF BOTH.
:
: SPECIAL ENVIRONMENTS: APT
: TEST 7, THE TEST OF ALL RESIDENT MEMORY, WILL NOT RUN
: UNDER APT, AS IT REQUIRES USER INTERVENTION.
: THIS TEST DOES NOT RUN ON KDF11-B.
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: FOR MORE INFORMATION ON DRS FLAGS REFER TO XXDP+ USER'S
: MANUAL

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: PROGRAM OPTIONS:
: THE HARDWARE PARAMETERS ARE STORED IN A PARAMETER TABLE WITH
: DEFAULT VALUES. THE OPERATOR WILL HAVE THE OPTION OF CHANGING
: THESE PARAMETERS BY RESPONDING TO THE APPROPRIATE QUESTIONS
: GENERATED BY THE DIAGNOSTIC SUPERVISOR. THESE PARAMETERS
: INCLUDE THE UNIT NUMBER, INTERRUPT VECTOR, PRIORITY LEVEL, AND
: ROCKER SWITCH SETTINGS. THE DEFAULT VALUES WILL BE TYPED ALONG
: WITH THE QUESTIONS.

: THERE ARE 12 SWITCHES ON BDV11 AND ONLY 8 ON KDF11-B.
: THE ROCKER SWITCH SETTINGS ARE EXAMINED IN THE FOLLOWING

: ORDER:
: B4 B3 B2 B1 A8 A7 A6 A5 A4 A3 A2 A1
: FOR EXAMPLE, IF SWITCHES A1, A2, A6, AND B1 WERE ON, THE SWITCH
: SETTING WOULD BE:

: B4 B3 B2 B1 A8 A7 A6 A5 A4 A3 A2 A1
: 1 1 1 1

: WHICH HAS AN OCTAL VALUE OF 0443.

: THE SOFTWARE P-TABLE CONTAINS FOUR TABLES WITH FIRST ONE
: ALL ZEROES FOR MANUAL CHANGES. THE SECOND ONE HAS THE CHECKWORDS FOR
: THE 2K OF DIAGNOSTIC ROM WHICH IS RESIDENT ON THE BDV11A (#23-045E2 AND
: #23-046E2). THE PROGRAM ALSO WILL COMPARE CHECKWORDS FOR ROMS #23-
: 010E2 AND #23-011E2 OR #23-339E2 AND #23-340E2 WHICH ARE IN THE NEXT TWO
: TABLES. TO INPUT DIFFERENT CHECKWORDS, THE OPERATOR MUST RESPOND WITH
: A YES TO THE SUPERVISOR'S QUESTION "CHANGE SW (Y/N)?" . ZEROES WILL
: THEN BE PRINTED AS THE QUESTIONS ARE ASKED.

: TEST 7 (FOR BDV11 ONLY) CHECKS ALL THE ADDITIONAL MEMORY THAT
: IT IS INSTRUCTED TO TEST. THIS TEST IS SET UP BY THE OPERATOR ON THE
: FIRST PASS OF THE DIAGNOSTIC. THE DIAGNOSTIC WILL ASK IF THERE
: IS ANY ADDITIONAL MEMORY TO TEST, AND IF SO WILL ASK WHICH
: TYPE OF MEMORY IT IS. (THE OPERATOR CAN ANSWER THESE QUESTIONS
: WITH LOGICAL Y/N ANSWERS.) IF ANY ADDITIONAL MEMORY IS TO BE
: TESTED, THE OPERATOR MUST SUPPLY THE CHECKWORDS FOR THOSE
: ROMS/EPROMS. IN THE CASE OF SYSTEM ROM/EPROM, THE OPERATOR WILL
: ALSO HAVE TO INDICATE HOW MANY CHECKWORDS WILL BE INPUT (IN DECIMAL).
: NOTE THAT ONCE THIS DATA IS SET UP, THIS MEMORY WILL ALWAYS BE
: TESTED, EVEN IF THE DIAGNOSTIC IS RESTARTED, UNLESS THE LOCATION
: "PASS" IS CLEARED (SEE SEC.3 OF LOADING AND STARTING PROCEDURES).

: FOR THE MICRO PDP-11 WHEN PROMPTED:

: TESTING A KDF11-B ? Y SHOULD BE INPUT

: THE PROGRAM WILL AUTOSIZE IF THE UUT IS A MICRO PDP-11. IF IT IS FOUND TO BE
: A MICRO PDP-11 THE UUT WILL BE TESTED AS A KDF11-B. THE ONLY DIFFERENCE IS THAT THE MIC
: HAS A 8K DIAGNOSTIC ROM INSTEAD OF A 2K DIAGNOSTIC ROM IN THE 11/23B.
: THIS AUTOSIZING IS DEPENDENT ON THE FACT THAT ALL PAGES OF THE MICRO PDP-11 BOOT ROM S
: HAVE A RTS PC (207) AT LOCATION 173774. THE CHECK OF THE ROM ID FOR THE MICRO PDP-11
: IS ALSO DEPENDENT ON THE FACT THAT THE VERSION OF THE ROMS ARE STORED AS TEXT
: IN LOCATION 173004 OF PAGE ID 17436 OF THE MICRO PDP-11 BOOT ROMS.

: EXECUTION TIMES: A SINGLE ERROR-FREE PASS WILL REQUIRE
: LESS THAN 1 SEC. TO RUN UNDER APT. WHEN RUN
: IN STAND-ALONE MODE, IT WILL REQUIRE LESS

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: THAN 3 SECS. TO RUN.

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.SBTTL ERROR INFORMATION

: ERROR REPORTING PROCEDURES:
: IN GENERAL. ALL ERROR REPORTS WILL CONTAIN THE FOLLOWING
: INFORMATION:
: 1. A HEADER OF TEST IDENTIFICATION INFORMATION.
: THIS INCLUDES THE PROGRAM NAME, TYPE OF ERROR,
: ERROR NUMBER, TEST AND SUBTEST NUMBERS, UNIT
: NUMBER, AND AN OPTIONAL ADDITIONAL MESSAGE.
: 2. BASIC ERROR INFORMATION.
: THIS IS A SPECIFIC STATEMENT OF WHAT THE ERROR
: IS AND WHICH REGISTER OR ROM WAS INVOLVED.
: 3. EXTENDED ERROR INFORMATION.
: THIS IS OPTIONAL INFORMATION WHICH IS USED
: PRIMARILY TO GIVE THE EXPECTED AND ACTUAL
: CONTENTS OF THE APPROPRIATE DEVICE REGISTER
: DURING REGISTER TESTS.

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.SBTTL SUBTEST SUMMARIES

TEST NO.	SUBTEST NO.	PURPOSE
1	1	TO VERIFY THAT THE READ/WRITE REGISTER CAN HOLD ALL ZEROES.
	2	TO VERIFY THAT THE READ/WRITE REGISTER CAN HOLD ALL ONES.
	3	TO VERIFY THAT THE READ/WRITE REGISTER CAN HOLD AN ALTERNATING 1'S AND 0'S BIT PATTERN.
	4	TO VERIFY THAT THE READ/WRITE REGISTER IS BYTE ADDRESSABLE.
	5	TO VERIFY THAT THE READ/WRITE REGISTER CAN SWAP BYTES.
	6	TO VERIFY THAT THE READ/WRITE REGISTER CAN HOLD AN ALTERNATING 0' AND 1'S BIT PATTERN.
	7	TO VERIFY THAT THE READ/WRITE REGISTER IS BYTE ADDRESSABLE.
	8	TO VERIFY THAT THE READ/WRITE REGISTER CAN SWAP BYTES.
	9	TO VERIFY THAT THE READ/WRITE REGISTER CAN ROTATE A SET BIT WITHOUT PICKING UP ANY BITS.
	10	TO VERIFY THAT THE READ/WRITE REGISTER CAN ROTATE A CLEAR BIT WITHOUT PICKING UP ANY BITS.
2	1	TEST 2 IS THE SAME AS TEST 1 EXCEPT THAT THE PAGE CONTROL REGISTER IS THE REGISTER UNDER TEST.
	2	SAME AS TEST 1.
	3	SAME AS TEST 1.
	4	SAME AS TEST 1.
	5	SAME AS TEST 1.
	6	SAME AS TEST 1.
	7	SAME AS TEST 1.
	8	SAME AS TEST 1.
	9	SAME AS TEST 1.
	10	SAME AS TEST 1.
3	1	TO VERIFY THAT THE BEVENT CLAMP DISABLE ALLOWS INTERRUPTS WHEN OFF.
	2	TO VERIFY THAT THE BEVENT CLAMP DISABLE INHIBITS INTERRUPTS WHEN ON.
	3	TO VERIFY THAT PRIORITY 5 ALLOWS INTERRUPTS IF PRIORITY OF A DEVICE IS 6 (KDF11-A,KDF11-B)
	4	TO VERIFY THAT PRIORITY 6 DOESN'T ALLOW INTERRUPTS IF PRIORITY OF A DEVICE IS 6 (KDF11-A,KDF11-B)
	5	TO VERIFY THAT RESET WORKS FOR KDF11-B

BDV11 ONLY

487	:	4	1
488	:	5	1
489	:	6	1
490	:		
491	:		2
492	:		
493	:		3
494	:		4
495	:	7	1
496	:	*BDV11 ONLY*	
497	:		
498	:		
499	:		2
500	:		
501	:		
502	:		
503	:		
504	:		
505	:		
506	:		
507	:		3
508	:		
509	:		
510	:		4
511	:		
512	:		5

LIGHT DISPLAY TEST
ROCKER SWITCH TEST
TO VERIFY THAT THE LOW BYTE
DIAGNOSTIC ROM HAS GOOD DATA.
TO VERIFY THAT THE HIGH BYTE
DIAGNOSTIC ROM HAS GOOD DATA.
TO INSURE THAT THE DIAGNOSTIC
ROMS HAVE NOT BEEN INTERCHANGED.
TO DETERMINE IF THERE IS ANY
ADDITIONAL MEMORY TO TEST.
THIS INFORMATION IS OBTAINED
THROUGH USER DIALOGUE.
TO TEST THE EXPANDED DIAGNOSTIC
ROM. FIRST THE REQUIRED CHECK-
WORDS MUST BE INPUT, AND THE
STARTING LOCATION IN MEMORY.
CHECKSUMS AND CHECKWORD
VERIFICATION CONFIRMS GOOD
DATA IN ROMS.
TO TEST THE EPROM IN THE
SOCKETS. TEST PROCEDURE IS AS
IN SUBTEST 2.
TO TEST SYSTEM ROM. SAME
TEST PROCEDURE AS IN SUBTEST 2.
TO TEST SYSTEM EPROM. SAME
TEST PROCEDURE AS IN SUBTEST 2.


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521 002000
522 000000
523 000000
524 000000
525
526 .TITLE PROGRAM HEADER AND TABLES
532 .SBTTL IDENTIFICATION
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534 .SBTTL PROGRAM HEADER
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536 002000
(3) 002000
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539 :++
540 : THE PROGRAM HEADER IS THE INTERFACE BETWEEN
541 : THE DIAGNOSTIC PROGRAM AND THE SUPERVISOR.
542 :--
543 002000
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553 002000
(4) 002000
(4) 002000 103
(4) 002001 126
(4) 002002 115
(4) 002003 070
(4) 002004 101
(6) 002005 000
(6) 002006 000
(5) 002007 000
(5) 002010
(4) 002010 106
(5) 002011
(4) 002011 060
(5) 002012
(4) 002012 000000
(5) 002014
(4) 002014 000007
(5) 002016
(4) 002016 017236
(5) 002020
(4) 002020 017456
(5) 002022
(4) 002022 002144
(5) 002024
(4) 002024 002160
(5) 002026
(4) 002026 020074
(5) 002030
(4) 002030 000000
(5) 002032
(4) 002032 000000
(5) 002034
(4) 002034 000000

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SVC
SVCINS=0
SVCGBL=0
SVCTAG=0

HEADER CVMBAF,0,7,0,340

LSNAME:: :DIAGNOSTIC NAME
.ASCII /C/
.ASCII /V/
.ASCII /M/
.ASCII /8/
.ASCII /A/
.BYTE 0
.BYTE 0
.BYTE 0

LSREV:: :REVISION LEVEL
.ASCII /F/

LSDEPO:: :0
.ASCII /0/

LSUNIT:: :NUMBER OF UNITS
.WORD 0

LSTIML:: :LONGEST TEST TIME
.WORD 7

LSHPCP:: :PTR. TO H.W. QUES.
.WORD LSHARD

LSSPCP:: :PTR. TO S.W. QUES.
.WORD LSSOFT

LSHPTP:: :PTR. TO DEF. H.W. PTABLE
.WORD LSHW

LSSPTP:: :PTR. TO S.W. PTABLE
.WORD LSSW

LSLADP:: :DIAG. END ADDRESS
.WORD LSLAST

LSSTA:: :RESERVED FOR APT STATS
.WORD 0

LSCO::
.WORD 0

LSDTYP:: :DIAGNOSTIC TYPE
.WORD 0

(5) 002036	LSAPT::			:APT EXPANSION
(4) 002036 000000		.WORD	0	
(5) 002040	LSDTP::			:PTR. TO DISPATCH TABLE
(4) 002040 002124		.WORD	LSDISPATCH	
(5) 002042	LSPRIO::			:DIAGNOSTIC RUN PRIORITY
(4) 002042 000340		.WORD	340	
(5) 002044	LSENV1::			:FLAGS DESCRIBE HOW IT WAS SETUP
(4) 002044 000000		.WORD	0	
(5) 002046	LSEXP1::			:EXPANSION WORD
(4) 002046 000000		.WORD	0	
(5) 002050	LSMREV::			:SVC REV AND EDIT #
(4) 002050 003		.BYTE	CSREVISION	
(3) 002051 003		.BYTE	CSREDIT	
(5) 002052	LSEF::			:DIAG. EVENT FLAGS
(4) 002052 000000		.WORD	0	
(5) 002054 000000		.WORD	0	
(5) 002056	LSSPC::			
(4) 002056 000000		.WORD	0	
(5) 002060	LSDEVP::			: POINTER TO DEVICE TYPE LIST
(4) 002060 003200		.WORD	LSDVTYP	
(5) 002062	LSREPP::			:PTR. TO REPORT CODE
(4) 002062 000000		.WORD	0	
(5) 002064	LSEXP4::			
(4) 002064 000000		.WORD	0	
(5) 002066	LSEXP5::			
(4) 002066 000000		.WORD	0	
(5) 002070	LSAUT::			:PTR. TO ADD UNIT CODE
(4) 002070 000000		.WORD	0	
(5) 002072	LSDUT::			:PTR. TO DROP UNIT CODE
(4) 002072 000000		.WORD	0	
(5) 002074	LSLUN::			:LUN FOR EXERCISERS TO FILL
(4) 002074 000000		.WORD	0	
(5) 002076	LSDESP::			:POINTER TO DIAG. DESCRIPTION
(4) 002076 003126		.WORD	LSDESC	
(5) 002100	LSLOAD::			:GENERATE SPECIAL AUTOLOAD EMT
(4) 002100 104035		EMT	ESLOAD	
(5) 002102	LSETP::			:POINTER TO ERR_TBL
(4) 002102 000000		.WORD	0	
(5) 002104	LSICP::			:PTR. TO INIT CODE
(4) 002104 005274		.WORD	LSINIT	
(5) 002106	LSCCP::			:PTR. TO CLEAN-UP CODE
(4) 002106 005400		.WORD	LSCLEAN	
(5) 002110	LSACP::			:PTR. TO AUTO CODE
(4) 002110 005376		.WORD	LSAUTO	
(5) 002112	LSPRT::			:PTR. TO PROTECT TABLE
(4) 002112 005370		.WORD	LSPROT	
(5) 002114	LSTEST::			:TEST NUMBER
(4) 002114 000000		.WORD	0	
(5) 002116	LSDLY::			:DELAY COUNT
(4) 002116 000000		.WORD	0	
(5) 002120	LSHIME::			:PTR. TO HIGH MEM
(4) 002120 000000		.WORD	0	
554 002122		.WORD	0	
555	ENDMOD			

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569 002122
(3) 002122
570 002122
(4) 002122 000007
(3) 002124
(6) 002124 005460
(6) 002126 006324
(6) 002130 007212
(6) 002132 010606
(6) 002134 010756
(6) 002136 011610
(6) 002140 014316
571 002142
578
579
580
581
582
583
584
585
586
587 002142
(3) 002142 000005
(3) 002144
(3) 002144
588
594
595 002144 000000
596 002146 000100
597 002150 000007
598 002152 007777
599 002154 000000
600
601 002156
(3) 002156
602
603
604
605
606
607
608
609
610 002156
(3) 002156 000040
(3) 002160
(3) 002160
611

.SBTTL DISPATCH TABLE

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

BGNMOD DSPCODE
DSPCODE::
DISPATCH 7
.WORD 7
LSDISPATCH::
.WORD T1
.WORD T2
.WORD T3
.WORD T4
.WORD T5
.WORD T6
.WORD T7
ENDMOD

.SBTTL DEFAULT HARDWARE P-TABLE

;++
: THE DEFAULT HARDWARE P-TABLE CONTAINS DEFAULT VALUES OF
: THE TEST-DEVICE PARAMETERS. THE STRUCTURE OF THIS TABLE
: IS IDENTICAL TO THE STRUCTURE OF THE RUN-TIME P-TABLE.
:--

BGNHW DFPTBL
.WORD L10000-LSHW/2
LSHW::
DFPTBL::
:DEFAULT VALUES FOR UP TO SIX UNITS
.WORD 0 ;UNIT NUMBER 0
.WORD 100 ;INTERRUPT VECTOR
.WORD 7 ;PRIORITY LEVEL
.WORD 7777 ;ROCKER SWITCH SETTINGS
.WORD 0 ;BDV11 = 0, KDF11-B = 1

ENDHW
L10000:

.SBTTL SOFTWARE P-TABLE

;++
: THE SOFTWARE P-TABLE CONTAINS THE VALUES OF THE PROGRAM
: PARAMETERS THAT CAN BE CHANGED BY THE OPERATOR.
:--

BGNSW SFPTBL
.WORD L10001-LSSW/2
LSSW::
SFPTBL::

```
618
619
620           ;THE SOFTWARE P-TABLE IS USED TO STORE THE CHECKWORDS
621           ;FOR THE DIAGNOSTIC ROM WHICH IS TESTED IN TEST 6.
622 002160 000010           .BLKW 10           ;RESERVE 8 LOC. FOR INPUT CHWS.
623           ;THE CHECKWORDS CORRESPONDING TO ROM CHIPS #23-045E2 AND #23-046E2 FOLLOW:
624 002200 017042           .WORD 17042          ;ROMA: PAGE 0,1
625 002202 020656           .WORD 20656          ;ROMB: PAGE 2,3
626 002204 065162           .WORD 65162          ;ROMC: PAGE 4,5
627 002206 161744           .WORD 161744         ;ROMD: PAGE 6,7
628 002210 124453           .WORD 124453        ;ROME: PAGE 10,11
629 002212 113667           .WORD 113667        ;ROMF: PAGE 12,13
630 002214 056040           .WORD 56040         ;ROMG: PAGE 14,15
631 002216 044734           .WORD 44734         ;ROMH: PAGE 16,17
632
633           ;THE CHECKWORDS CORRESPONDING TO ROM CHIPS #23-010E2 AND #23-011E2 FOLLOW:
634 002220 031547           .WORD 31547          ;ROMA: PAGE 0,1
635 002222 014036           .WORD 14036          ;ROMB: PAGE 2,3
636 002224 065162           .WORD 65162          ;ROMC: PAGE 4,5
637 002226 124632           .WORD 124632        ;ROMD: PAGE 6,7
638 002230 032040           .WORD 32040         ;ROME: PAGE 10,11
639 002232 167124           .WORD 167124        ;ROMF: PAGE 12,13
640 002234 155461           .WORD 155461        ;ROMG: PAGE 14,15
641 002236 032257           .WORD 32257         ;ROMH: PAGE 16,17
642
643           ;THE CHECKWORDS CORRESPONDING TO ROM CHIPS #23-339E2 AND #23-340E2 FOLLOW:
644 002240 166020           .WORD 166020        ;ROMA: PAGE 0,1
645 002242 020232           .WORD 020232        ;ROMB: PAGE 2,3
646 002244 045651           .WORD 045651        ;ROMC: PAGE 4,5
647 002246 036474           .WORD 036474        ;ROMD: PAGE 6,7
648 002250 066675           .WORD 066675        ;ROME: PAGE 10,11
649 002252 163100           .WORD 163100        ;ROMF: PAGE 12,13
650 002254 005407           .WORD 005407        ;ROMG: PAGE 14,15
651 002256 022243           .WORD 022243        ;ROMH: PAGE 16,17
652
653 002260           ENDSW
(3) 002260           L10001:
654
655
656           .TITLE GLOBAL AREAS
657           .SBTTL IDENTIFICATION
658
659
660
661
662
663           .SBTTL GLOBAL EQUATES SECTION
664
665
666
667           ;++
668           ; THE GLOBAL EQUATES SECTION CONTAINS PROGRAM EQUATES THAT
669           ; ARE USED IN MORE THAN ONE TEST.
670           ;--
671
672 002260           BGNMOD GLBEQAT
(3) 002260           GLBEQAT::
673 002260           EQUALS
(1)
(1)
(1)           ;
           ; BIT DIFINITIONS
           ;
```



```
(1) 100000 BIT15== 100000
(1) 040000 BIT14== 40000
(1) 020000 BIT13== 20000
(1) 010000 BIT12== 10000
(1) 004000 BIT11== 4000
(1) 002000 BIT10== 2000
(1) 001000 BIT09== 1000
(1) 000400 BIT08== 400
(1) 000200 BIT07== 200
(1) 000100 BIT06== 100
(1) 000040 BIT05== 40
(1) 000020 BIT04== 20
(1) 000010 BIT03== 10
(1) 000004 BIT02== 4
(1) 000002 BIT01== 2
(1) 000001 BIT00== 1
(1)
(1) 001000 BIT9== BIT09
(1) 000400 BIT8== BIT08
(1) 000200 BIT7== BIT07
(1) 000100 BIT6== BIT06
(1) 000040 BIT5== BIT05
(1) 000020 BIT4== BIT04
(1) 000010 BIT3== BIT03
(1) 000004 BIT2== BIT02
(1) 000002 BIT1== BIT01
(1) 000001 BIT0== BIT00
(1)
(1)
(1) : EVENT FLAG DEFINITIONS
(1) : EF32:EF17 RESERVED FOR SUPERVISOR TO PROGRAM COMMUNICATION
(1)
(1) 000040 EF.START== 32. : START COMMAND WAS ISSUED
(1) 000037 EF.RESTART== 31. : RESTART COMMAND WAS ISSUED
(1) 000036 EF.CONTINUE== 30. : CONTINUE COMMAND WAS ISSUED
(1) 000035 EF.NEW== 29. : A NEW PASS HAS BEEN STARTED
(1) 000034 EF.PWR== 28. : A POWER-FAIL/POWER-UP OCCURRED
(1)
(1)
(1) : PRIORITY LEVEL DEFINITIONS
(1)
(1) 000340 PRI07== 340
(1) 000300 PRI06== 300
(1) 000240 PRI05== 240
(1) 000200 PRI04== 200
(1) 000140 PRI03== 140
(1) 000100 PRI02== 100
(1) 000040 PRI01== 40
(1) 000000 PRI00== 0
(1)
(1) : OPERATOR FLAG BITS
(1)
(1) 000004 EVL== 4
(1) 000010 LOT== 10
(1) 000020 ADR== 20
(1) 000040 IDU== 40
(1) 000100 ISR== 100
```

(1) 000200
 (1) 000400
 (1) 001000
 (1) 002000
 (1) 004000
 (1) 010000
 (1) 020000
 (1) 040000
 (1) 100000

UAM== 200
 BOE== 400
 PNT== 1000
 PRI== 2000
 IXE== 4000
 IBE== 10000
 IER== 20000
 LOE== 40000
 HOE== 100000

674
 682 177520
 683 177524

PCR=177520
 LSREG=177524

684 002260
 685

ENDMOD
 .SBTTL GLOBAL DATA SECTION

686
 687

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

688
 689

690
 691

692 002260
 (3) 002260

BGNMOD GLBDAT
 GLBDAT::

693 002260 000000
 694 002262 000000
 695 002264 000000
 696 002266 000000
 697 002270 000000
 698 002272 000000
 699 002274 000000
 700 002276 000001
 701 002300 000000
 702 002302 000000
 703 002304 000000
 704 002306 000000
 705 002310 000000
 706 002312 000000
 707 002314 000000
 708 002316 000100
 709 002320 000000
 710 002322 000000
 711 002324 000000
 712 002326 000000
 713 002330 000000
 714 002332 000000
 715 002334 000000
 716 002336 000001
 717 002340 000000
 718 002342 000000
 719 002344 000000
 720 002346 000000
 721 002350 000000
 722 002352 000010
 723 002372 000010
 724 002412 000100
 725 002612
 726

LCP: .WORD 0
 KDF11B: .WORD 0
 VRTPCR: .WORD 0
 BCF: .WORD 0
 REAL: .WORD 0
 LOPAG: .WORD 0
 COUNTR: .WORD 0
 ANSR: .WORD 1
 RFLAG: .WORD 0
 EXPSUM: .WORD 0
 ACTSUM: .WORD 0
 PASS: .WORD 0
 PASCT: .WORD 0
 ULIMIT: .WORD 0
 PAGE: .WORD 0
 VECT: .WORD 100
 SWSET: .WORD 0
 STORE: .WORD 0
 WORDCT: .WORD 0
 PRIOR: .WORD 0
 CKWD: .WORD 0
 BADWD: .WORD 0
 RESPND: .WORD 0
 RSET: .WORD 1
 LORANG: .WORD 0
 HIRANG: .WORD 0
 BYTLOC: .WORD 0
 ERRFLG: .WORD 0
 DELCNT: .WORD 0
 EXPDIA: .BLKW 10
 EPROM: .BLKW 10
 SYSROM: .BLKW 100
 ENDMOD

:=1 IF RUNNING ON A MICRO PDP-11(AUTOSIZED)
 :=1 IF RUNNING ON A KDF11-B
 :VIRTUAL PAGE CONTROL REGISTER

:EXPANDED DIAG. ROM CHECKWORDS
 :EPROM CHECKWORDS
 :SYSTEM ROM/EPROM CHECKWORDS


```

727
728
729
730
731
732
733
734
735
736
737
738
739
740 002612 042522 042101 053457 RWR: .ASCIZ 'READ/WRITE REGISTER ADDRESS: 177522'
      002620 044522 042524 051040
      002626 043505 051511 042524
      002634 004522 042101 051104
      002642 051505 035123 030440
      002650 033467 031065 000062
741
742 002656 040520 042507 041440 PACR: .ASCIZ /PAGE CONTROL REGISTER ADDRESS: 177520/
      002664 047117 051124 046117
      002672 051040 043505 051511
      002700 042524 004522 042101
      002706 051104 051505 035123
      002714 030440 033467 031065
      002722 000060
743
744 002724 044103 041505 051513 CKERR: .ASCIZ /CHECKSUM ERROR/
      002732 046525 042440 051122
      002740 051117 000
745
746 002743 111 041516 051117 CWDERR: .ASCIZ /INCORRECT CHECKWORD/
      002750 042522 052103 041440
      002756 042510 045503 047527
      002764 042122 000
747
748 002767 105 051122 051117 LOBYT: .ASCIZ /ERROR OCCURRED IN A LOW BYTE PAGE/
      002774 047440 041503 051125
      003002 042522 020104 047111
      003010 040440 046040 053517
      003016 041040 052131 020105
      003024 040520 042507 000
749
750 003031 105 051122 051117 HIBYT: .ASCIZ /ERROR OCCURRED IN A HIGH BYTE PAGE/
      003036 047440 041503 051125
      003044 042522 020104 047111
      003052 040440 044040 043511
      003060 020110 054502 042524
      003066 050040 043501 000105
751
752 003074 052123 051101 020124 LOADR: .ASCIZ /START OF MEMORY RANGE (K)/
      003102 043117 046440 046505
      003110 051117 020131 040522
      003116 043516 020105 045450
      003124 000051

```

```

753
754
755
756
757
758
759
760 003126
(4) 003126
(3) 003126 053103 034115 042501
(3) 003134 041040 053104 030461
(3) 003142 045534 043104 030461
(3) 003150 041055 041040 047517
(3) 003156 051524 051124 050101
(3) 003164 042040 040511 047107
(3) 003172 051517 044524 000103
(2)
761 003200
(4) 003200
(3) 003200 042102 030526 056061
(3) 003206 042113 030506 026461
(3) 003214 000102
(2)
762
768
769
770
771
772
773
774 003216 040445 042522 044507 ZERR: .ASCIZ /%REGISTER CANNOT HOLD ALL ZEROES%/
003224 052123 051105 041440
003232 047101 047516 020124
003240 047510 042114 040440
003246 046114 055040 051105
003254 042517 022523 000116
775
776 003262 040445 042522 044507 ONERR: .ASCIZ /%REGISTER CANNOT HOLD ALL ONES%/
003270 052123 051105 041440
003276 047101 047516 020124
003304 047510 042114 040440
003312 046114 047440 042516
003320 022523 000116
777
778 003324 040445 042522 044507 BDDAT: .ASCIZ /%REGISTER CANNOT HOLD GOOD DATA%/
003332 052123 051105 041440
003340 047101 047516 020124
003346 047510 042114 043440
003354 047517 020104 040504
003362 040524 047045 000
779
780 003367 045 051101 043505 BYTINS: .ASCIZ /%REGISTER IS NOT BYTE ADDRESSABLE%/
003374 051511 042524 020122
003402 051511 047040 052117
003410 041040 052131 020105
003416 042101 051104 051505

```


781 003424 040523 046102 022505
782 003432 000116

781 003434 040445 042522 044507 ROT1: .ASCIZ /%REGISTER PICKED UP AN EXTRA SET BIT%N/
782 003442 052123 051105 050040
003450 041511 042513 020104
003456 050125 040440 020116
003464 054105 051124 020101
003472 042523 020124 044502
003500 022524 000116

783 003504 040445 042522 044507 ROTO: .ASCIZ /%REGISTER PICKED UP AN EXTRA CLEAR BIT%N/
784 003512 052123 051105 050040
003520 041511 042513 020104
003526 050125 040440 020116
003534 054105 051124 020101
003542 046103 040505 020122
003550 044502 022524 000116

785 003556 040445 047125 041101 DIAGER: .ASCIZ /%UNABLE TO LOCATE CORRECT MEMORY PAG%N/
786 003564 042514 052040 020117
003572 047514 040503 042524
003600 041440 051117 042522
003606 052103 046440 046505
003614 051117 020131 040520
003622 042507 047045 000

787 003627 045 046501 046505 VIRMSG: .ASCIZ /%MEMORY RANGE: %D2%A - %D2%AK%N/
788 003634 051117 020131 040522
003642 043516 035105 022440
003650 031104 040445 026440
003656 022440 031104 040445
003664 022513 000116

789 003670 040445 054105 042520 REGDT: .ASCIZ /%EXPECTED: %06%55%RECEIVED: %06%N/
790 003676 052103 042105 020072
003704 047445 022466 032523
003712 040445 042522 042503
003720 053111 042105 020072
003726 047445 022466 000116

791 .EVEN
792 .SBTTL GLOBAL ERROR REPORT SECTION
799

800 :++
801 : THE GLOBAL ERROR REPORT SECTION CONTAINS THE PRINTB AND PRINTX CALLS
802 : THAT ARE USED IN MORE THAN ONE TEST. IT ALSO INCLUDES THE ASCII MESSAGES
803 : THAT ARE USED BY THE PRINTB AND PRINTX CALLS.
804 :--
805

806
807
808
809 003734 BGNMSG RERR1
(3) 003734 RERR1::
810 003734 PRINTB #ZERR
(7) 003734 012746 003216 MOV #ZERR,-(SP)

(6)	003740	012746	000001		MOV	#1,-(SP)
(3)	003744	010600			MOV	SP,R0
(4)	003746	104414			TRAP	CSPNTB
(4)	003750	062706	000004		ADD	#4,SP
811	003754			PRINTX	#REGDT,R1,R2	
(9)	003754	010246			MOV	R2,-(SP)
(8)	003756	010146			MOV	R1,-(SP)
(7)	003760	012746	003670		MOV	#REGDT,-(SP)
(6)	003764	012746	000003		MOV	#3,-(SP)
(3)	003770	010600			MOV	SP,R0
(4)	003772	104415			TRAP	CSPNTX
(4)	003774	062706	000010		ADD	#10,SP
812	004000			ENDMSG		
(3)	004000			L10002:		
(3)	004000	104423			TRAP	CMSG
813						
814	004002			BGNMSG	RERR2	
(3)	004002			RERR2::		
815	004002			PRINTB	#ONERR	
(7)	004002	012746	003262		MOV	#ONERR,-(SP)
(6)	004006	012746	000001		MOV	#1,-(SP)
(3)	004012	010600			MOV	SP,R0
(4)	004014	104414			TRAP	CSPNTB
(4)	004016	062706	000004		ADD	#4,SP
816	004022			PRINTX	#REGDT,R1,R2	
(9)	004022	010246			MOV	R2,-(SP)
(8)	004024	010146			MOV	R1,-(SP)
(7)	004026	012746	003670		MOV	#REGDT,-(SP)
(6)	004032	012746	000003		MOV	#3,-(SP)
(3)	004036	010600			MOV	SP,R0
(4)	004040	104415			TRAP	CSPNTX
(4)	004042	062706	000010		ADD	#10,SP
817	004046			ENDMSG		
(3)	004046			L10003:		
(3)	004046	104423			TRAP	CMSG
818						
819	004050			BGNMSG	RERR3	
(3)	004050			RERR3::		
820	004050			PRINTB	#BDDAT	
(7)	004050	012746	003324		MOV	#BDDAT,-(SP)
(6)	004054	012746	000001		MOV	#1,-(SP)
(3)	004060	010600			MOV	SP,R0
(4)	004062	104414			TRAP	CSPNTB
(4)	004064	062706	000004		ADD	#4,SP
821	004070			PRINTX	#REGDT,R1,R2	
(9)	004070	010246			MOV	R2,-(SP)
(8)	004072	010146			MOV	R1,-(SP)
(7)	004074	012746	003670		MOV	#REGDT,-(SP)
(6)	004100	012746	000003		MOV	#3,-(SP)
(3)	004104	010600			MOV	SP,R0
(4)	004106	104415			TRAP	CSPNTX
(4)	004110	062706	000010		ADD	#10,SP
822	004114			ENDMSG		
(3)	004114			L10004:		
(3)	004114	104423			TRAP	CMSG
823						

GLOBAL ERROR REPORT SECTION

824 004116
 (3) 004116
 825 004116
 (7) 004116 012746 003367
 (6) 004122 012746 000001
 (3) 004126 010600
 (4) 004130 104414
 (4) 004132 062706 000004
 826 004136
 (9) 004136 010246
 (8) 004140 010146
 (7) 004142 012746 003670
 (6) 004146 012746 000003
 (3) 004152 010600
 (4) 004154 104415
 (4) 004156 062706 000010
 827 004162
 (3) 004162
 (3) 004162 104423
 828
 829 004164
 (3) 004164
 830 004164
 (7) 004164 012746 003434
 (6) 004170 012746 000001
 (3) 004174 010600
 (4) 004176 104414
 (4) 004200 062706 000004
 831 004204
 (3) 004204
 (3) 004204 104423
 832
 833 004206
 (3) 004206
 834 004206
 (7) 004206 012746 003504
 (6) 004212 012746 000001
 (3) 004216 010600
 (4) 004220 104414
 (4) 004222 062706 000004
 835 004226
 (3) 004226
 (3) 004226 104423
 836
 837 004230
 (3) 004230
 838 004230
 (7) 004230 012746 003556
 (6) 004234 012746 000001
 (3) 004240 010600
 (4) 004242 104414
 (4) 004244 062706 000004
 839 004250
 (3) 004250
 (3) 004250 104423
 840

BGNMSG RERR4
 RERR4::
 PRINTB #BYTINS
 MOV #BYTINS,-(SP)
 MOV #1,-(SP)
 MOV SP,R0
 TRAP C\$PNTB
 ADD #4,SP
 PRINTX #REGDT,R1,R2
 MOV R2,-(SP)
 MOV R1,-(SP)
 MOV #REGDT,-(SP)
 MOV #3,-(SP)
 MOV SP,R0
 TRAP C\$PNTX
 ADD #10,SP
 ENDMSG
 L10005:
 TRAP C\$MSG
 BGNMSG RERR5
 RERR5::
 PRINTB #ROT1
 MOV #ROT1,-(SP)
 MOV #1,-(SP)
 MOV SP,R0
 TRAP C\$PNTB
 ADD #4,SP
 ENDMSG
 L10006:
 TRAP C\$MSG
 BGNMSG RERR6
 RERR6::
 PRINTB #ROTO
 MOV #ROTO,-(SP)
 MOV #1,-(SP)
 MOV SP,R0
 TRAP C\$PNTB
 ADD #4,SP
 ENDMSG
 L10007:
 TRAP C\$MSG
 BGNMSG PAGERR
 PAGERR::
 PRINTB #DIAGER
 MOV #DIAGER,-(SP)
 MOV #1,-(SP)
 MOV SP,R0
 TRAP C\$PNTB
 ADD #4,SP
 ENDMSG
 L10010:
 TRAP C\$MSG

841
842
843 004252
(9) 004252 013746 002342
(8) 004256 013746 002340
(7) 004262 012746 003627
(6) 004266 012746 000003
(3) 004272 010600
(4) 004274 104417
(4) 004276 062706 000010

VIPRI: PRINTF #VIRMSG,LORANG,HIRANG
MOV HIRANG,-(SP)
MOV LORANG,-(SP)
MOV #VIRMSG,-(SP)
MOV #3,-(SP)
MOV SP,R0
TRAP C\$PNTF
ADD #10,SP

.EVEN

.SBTTL GLOBAL SUBROUTINES SECTION

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

;++
:FUNCTIONAL DESCRIPTION:
:SUBROUTINE TO COMPUTE A CHECKSUM IN A ROM/EPROM
:INPUT: CONTENTS OF BCF
:IMPLICIT INPUTS: CONTENTS OF PCR
:OUTPUT: A CHECKSUM VALUE STORED IN LOCATION ACTSUM
:CALLING SEQUENCE: JSR PC,CHKSUM
:--

871
872 004302 012701 173776
873 004306 063701 002266
874 004312 005037 002304
875 004316 012702 173000
876 004322 063702 002266
877 004326 111204
878 004330 060437 002304
879 004334 062702 000002
880 004340 020201
881 004342 002771
882 004344 000207

CHKSUM: MOV #173776,R1 ;STORE THE HIGHEST ADDRESS IN THE ROM
ADD BCF,R1 ;FOR EITHER LOW OR HIGH BYTES
CLR ACTSUM ;CLEAR LOCATION WHICH WILL HOLD THE CHECKSUM
MOV #173000,R2 ;COMPUTE THE LOWEST ADDRESS IN THE ROM
ADD BCF,R2 ;WHERE THE DATA WILL START
1\$: MOVB (R2),R4 ;GET DATA IN BYTES
ADD R4,ACTSUM ;ADD CONTENTS OF EACH LOCATION TO THE CHECKSUM
ADD #2,R2 ;ADJUST ADDRESS
CMP R2,R1 ;COMPARE CURRENT ADDRESS WITH HIGHEST ADDRESS
BLT 1\$;BR IF LESS THAN
RTS PC ;RETURN

;++
:SUBROUTINE TO INPUT CHECKWORDS FROM THE OPERATOR
:INPUTS: NUMBER OF CHECKWORDS TO INPUT
: POINTER TO STORAGE AREA
:OUTPUTS: CHECKWORDS STORED IN PROPER TABLE
:CALLING SEQUENCE: JSR PC,INPUT
:--

891
892 004346
(7) 004346 012746 004424
(6) 004352 012746 000001

INPUT: PRINTF #INSTR ;PRINT INSTRUCTIONS
MOV #INSTR,-(SP)
MOV #1,-(SP)

GLOBAL SUBROUTINES SECTION

```

(3) 004356 010600
(4) 004360 104417
(4) 004362 062706 000004
893 004366
(3) 004366 104443
(3) 004370 000406
(4) 004372 002322
(5) 004374 000022
(5) 004376 004512
(5) 004400 177777
(5) 004402 000000
(5) 004404 177777
(3) 004406
894 004406 013722 002322
895 004412 005337 002324
896 004416 001401
897 004420 000762
898 004422 000207
899
900 004424 040445 054524 042520
004432 044440 020116 044124
004440 020105 044103 041505
004446 053513 051117 051504
004454 040440 020123 044514
004462 052123 042105 044440
004470 020116 044124 020105
004476 051120 047111 020124
004504 042523 022524 000116

901
902 004512 044103 041505 053513
004520 051117 035104 000040

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915 004526 005001
916 004530 012737 000007 002312
917 004536 113737 177520 002314
918 004544 023737 002314 002312
919 004552 003430
920 004554 022737 000057 002312
921 004562 001006
922 004564 012737 000207 002312
923 004572 012701 000020
924 004576 000762
925 004600 062737 000010 002312
926 004606 022737 000377 002312
927 004614 002004

MOV SP,R0
TRAP CSPNTF
ADD #4,SP
INLP: GMANID INWORD,STORE,0,-1,0,177777,NO
TRAP C$GMAN
BR 10000$
.WORD STORE
.WORD T$CODE
.WORD INWORD
.WORD -1
.WORD T$LOLIM
.WORD T$HILIM

10000$:
MOV STORE,(R2)+ ;PUT CHECKWORD IN TABLE
DEC WORDCT ;DECREMENT WORD COUNT
BEQ T$ ;BR IF FINISHED
BR INLP ;LOOP UNTIL TABLE IS COMPLETE
RTS PC ;RETURN

INSTR: .ASCIZ /%ATYPE IN THE CHECKWORDS AS LISTED IN THE PRINT SET%N/

INWORD: .ASCIZ /CHECKWORD: /

.EVEN

:++
:SUBROUTINE TO COMPUTE THE VIRTUAL ADDRESS OF A BAD
:PAGE IN MEMORY
:INPUTS: PAGE IN PAGE CONTROL REGISTER
: BYTE CONTROL FLAG (BCF)
:OUTPUTS: MEMORY RANGE IN WHICH ERROR OCCURRED
:CALLING SEQUENCE: JSR PC,VIRTAD
:--

VIRTAD: CLR R1 ;START AT BOTTOM OF RANGE
MOV #7,ULIMIT ;SET UPPER LIMIT OF PAGE
MOVB PCR,PAGE ;LOW PAGE ERROR
LPADD: CMP PAGE,ULIMIT ;IS PAGE <=ULIMIT
BLE OUTPUT ;BR IF YES
CMP #57,ULIMIT ;IS ULIMIT = 57
BNE T$ ;BR IF NO
MOV #207,ULIMIT ;CHANGE UPPER LIMIT
MOV #20,R1 ;ADJUST MEMORY POINTER
BR LPADD ;CHECK PAGE AGAIN
T$: ADD #10,ULIMIT ;INCREASE UPPER LIMIT
CMP #377,ULIMIT ;HAS THE UPPER LIMIT EXCEEDED THE MAX. PAGE
BGE T$ ;BR IF NO

```



```

928 004616          ERRDF 40,,PAGERR          ;COULD NOT FIND THE PAGE OF MEMORY
(4) 004616 104455   TRAP  CSERDF
(5) 004620 000050   .WORD 40
(5) 004622 000000   .WORD 0
(5) 004624 004230   .WORD PAGERR
929 004626          2$: CKLOOP
(3) 004626 104406   TRAP  CSCLP1
930 004630 005201   INC  R1          ;ADJUST POINTER
931 004632 000744   BR   LPADD      ;LOOP UNTIL UPPER LIMIT IS FOUND
932 004634 010137 002340 OUTPUT: MOV R1,LORANG ;PULL THE LOW RANGE OUT OF THE TABLE
933 004640 013737 002340 002342 MOV LORANG,HIRANG ;COPY THE DATA
934 004646 005237 002342 INC HIRANG      ;INCREMENT TO OBTAIN 1K RANGE
935 004652 005737 002300 TST RFLAG      ;IS IT ROM (2K SEGMENTS)
936 004656 001402   BEQ  3$        ;BR IF NO
937 004660 005237 002342 INC  HIRANG     ;OBTAIN 2K RANGE
938 004664 000207   3$: RTS  PC    ;RETURN
939
940
941
942
943
944
945
946
947
948
949 004666 005037 002270 MEMTST: CLR  REAL          ;CLEAR MEMORY INDICATOR
950 004672 005037 002266 LOBYTE: CLR  BCF          ;SIGNAL LOW BYTES ARE BEING CHECKED
951 004676 122737 177777 173774 CMPB #-1,@#173774 ;DOES THE ROM EXIST
952 004704 001421   BEQ  HIBYTE      ;BR IF NO
953 004706 005237 002270 INC  REAL       ;INDICATE THAT MEMORY EXISTS
954 004712 004737 004302 JSR  PC,CHKSUM  ;COMPUTE THE ACTUAL CHECKSUM
955 004716 113737 173776 002302 MOVB @#173776,EXPSUM ;GET THE STORED CHECKSUM
956 004724 063737 002304 002302 ADD  ACTSUM,EXPSUM ;ADD THE EXPECTED AND ACTUAL CHECKSUMS
957 004732 105737 002302 TSTB EXPSUM     ;TEST RESULTING CHECKBYTE
958 004736 001404   BEQ  1$        ;BR IF NO ERROR
959 004740 012737 000001 002346 MOV  #1,ERRFLG  ;SET CHECKSUM ERROR FLAG
960 004746 000207   RTS  PC    ;RETURN
961 004750          1$:
962
963 004750 012737 000001 002266 HIBYTE: MOV  #1,BCF      ;SET BCF TO DENOTE HIGH BYTES
964 004756 122737 177777 173775 CMPB #-1,@#173775 ;DOES THE ROM EXIST
965 004764 001427   BEQ  TSTCKW     ;BR IF NO
966 004766 005737 002270 TST  REAL       ;WAS THERE A LOW ROM?
967 004772 001003   BNE  2$        ;BR IF YES
968 004774 005037 002270 CLR  REAL       ;DENOTE NON-EXISTENT LOW ROM
969 005000 000207   RTS  PC    ;RETURN FOR ERROR MESSAGE
970 005002 005237 002270 2$: INC  REAL       ;INDICATE MEMORY EXISTS
971 005006 004737 004302 JSR  PC,CHKSUM  ;COMPUTE CHECKSUM
972 005012 113737 173777 002302 MOVB @#173777,EXPSUM ;GET EXPECTED CHECKSUM
973 005020 063737 002304 002302 ADD  ACTSUM,EXPSUM ;ADD THE EXPECTED AND ACTUAL CHECKSUMS
974 005026 105737 002302 TSTB EXPSUM     ;TEST RESULTING CHECKBYTE
975 005032 001404   BEQ  TSTCKW     ;BR IF EQUAL
976 005034 012737 000001 002346 MOV  #1,ERRFLG  ;SET CHECKSUM ERROR FLAG
977 005042 000207   RTS  PC    ;RETURN
978

```

GLOBAL SUBROUTINES SECTION

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979 005044 005737 002270      TSTCKW: TST      REAL      :ANY MEMORY?
980 005050 001434              BEQ      5$           :BR IF NO
981 005052 022737 000001 002270      CMP      #1,REAL     :SINGLE ROM?
982 005060 001016              BNE      3$           :BR IF NO
983 005062 123737 002330 173776      CMPB     CKWD,#173776 :COMPARE CHECKBYTE ONLY
984 005070 001001              BNE      100$        :BR IF ERROR
985 005072 000207              RTS      PC           :RETURN -- NO ERROR
986 005074 005037 002332          100$: CLR      BADWD     :CLEAR LOCATION
987 005100 012737 000002 002346      MOV      #2,ERRFLG  :DENOTE CHECKSUM ERROR
988 005106 113737 173776 002332      MOVB     @#173776,BADWD :STORE BAD BYTE
989 005114 000207              RTS      PC           :RETURN
990 005116 023737 002330 173776      3$:  CMP      CKWD,#173776 :COMPARE CHECKWORD
991 005124 001406              BEQ      5$           :BR IF NO ERROR
992 005126 012737 000002 002346      4$:  MOV      #2,ERRFLG  :DENOTE CHECKSUM ERROR
993 005134 013737 173776 002332      MOV      @#173776,BADWD :STORE WRONG CHECKWORD
994 005142 000207              5$:  RTS      PC           :RETURN
995
996
997      :++
998      :SUBROUTINE TO COMPUTE THE ACTUAL STARTING PAGE
999      :OF MEMORY IN WHICH THE MEMORY CHIP IS TO BE
1000     :ADDRESSED.
1001     :INPUTS: THE LOW NUMBER IN THE MEMORY RANGE
1002     :      (I.E. X IN X-Y K)
1003     :OUTPUT: PAGE NUMBER IN PCR WHICH DENOTES WHERE TESTING
1004     :      SHOULD BEGIN.
1005     :CALLING SEQUENCE: JSR PC,SETADR
1006     :--
1007 005144 013701 002322      SETADR: MOV      STORE,R1      :COPY DATA
1008 005150 020127 000005      CMP      R1,#5       :IS THE NUMBER <=5?
1009 005154 003006              BGT      1$           :BR IF NO
1010 005156 000241              CLC                    :CLEAR C-BIT FOR ROTATE
1011 005160 006101              ROL      R1           :ROTATE TO MULTIPLY
1012 005162 006101              ROL      R1           :      BY 10 (8)
1013 005164 006101              ROL      R1           :
1014 005166 110104              MOVB     R1,R4        :COPY DATA
1015 005170 000413              BR      LOAD          :LOAD THE PCR
1016 005172 012704 000020      1$:  MOV      #20,R4    :START WITH 16 (10)
1017 005176 012705 000200      MOV      #200,R5     :CORRESPONDIGE PAGE IS 200
1018 005202 020104              LOOP:  CMP      R1,R4  :PAGE FOUND?
1019 005204 001404              BEQ      2$           :BR IF YES
1020 005206 005204              INC      R4           :NEXT PAGE
1021 005210 062705 000010      ADD      #10,R5      :NEXT PAGE
1022 005214 000772              BR      LOOP         :LOOP UNTIL PAGE IS FOUND
1023 005216 010504              2$:  MOV      R5,R4    :GET PAGE FOR PCR
1024 005220 110437 002272      LOAD:  MOVB     R4,LOPAG :LOW STARTING PAGE
1025 005224 005204              INC      R4           :INCREMENT
1026 005226 110437 002273      MOVB     R4,LOPAG+1  :HIGH STARTING PAGE
1027 005232 000207              RTS      PC
1028
1029
1030      :++
1031      :SUBROUTINE TO DELAY IN MSECS
1032      :DELAY IS USED IN TWO TESTS
1033      :TEST 3 - BEVENT CLAMP ENABLE TEST
1034      :TEST 4 - LIGHT DISPLAY TEST

```

```

1035      ;TIMING LOOP IS NOT CRITICAL FOR TESTS,SO THE SAME
1036      ;TIMER LOOP IS USED FOR LSI-11 AND 11/23.
1037      ;LOOP WILL BE 2.5 TIMES SLOWER FOR LSI-11
1038      :
1039      :CALL
1040      :
1041      :      JSR      R5,WDELAY
1042      :      40.          ;40 MSECS
1043      WDELAY: MOV      R1,-(SP)
1044      MOV      R2,-(SP)
1045      MOV      (R5)+,R2
1046      MOV      #322.,DELCNT      ;APPROX. MSEC DELAY
1047      :
1048      1$:      MOV      DELCNT,R1      ;11/23 APPROX. 1 MSEC LOOP
1049      2$:      DEC      R1          ;10% TOLERANCE
1050      3$:      BNE      3$
1051      DEC      R2
1052      BNE      2$
1053      MOV      (SP)+,R2
1054      MOV      (SP)+,R1
1055      RTS      R5
1062
1063
1069
1070
1077
1078
1084
1085
1092
1093
1099
1100
1108
1109
1115
1121
1127
1128
1134
1135
1136
1137
1138      005272
1139      (3) 005272
1140      005272
1141      (3) 005272
1142      (3) 005272 104425
1143
1144
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1146
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```

```

.TITLE MISCELLANEOUS SECTIONS
.SBTTL IDENTIFICATION

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.SBTTL REPORT CODING SECTION

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```

LSRPT:: BGNRPT
        ENDRPT
L10011: TRAP  CSRPT

```

```

.SBTTL INITIALIZE SECTION

```

```

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

```



```

1148
1149 005274
(3) 005274
1150 005274
(3) 005274 012700 000000
(3) 005300 104442
(3) 005302 010001
1151 005304 016137 000002 002316
1152 005312 016137 000004 002326
1153 005320 016137 000006 002320
1154 005326 016137 000010 002262
1155
1156
1157
1158 005334 012737 000400 177520
1159 005342 022737 000207 173774
1160 005350 001003
1161 005352 012737 000001 002260
1162 005360
(3) 005360 012700 000340
(3) 005364 104441
1183
1184
1185 005366
(3) 005366
(3) 005366 104411
1186
1187 005370
(3) 005370
1188 005370 177777
1189 005372 177777
1190 005374 177777
1191 005376
1192
1193 005376
(3) 005376
1194 005376
(3) 005376
(3) 005376 104461
1195
1196
1197
1198
1199
1200
1201
1202 005400
(3) 005400
1203
1204 005400 005037 177520
1205 005404 005037 177522
1206 005410 012737 000001 002336
1207 005416 005037 002334
1208 005422 005037 016412
1209 005426 012737 000001 002276
1210 005434 005237 002306

```

```

      BGNINIT
LSINIT::
      GPHARD #0,R1          ;GET POINTER TO BASE ADDRESS OF P-TABLE
      MOV #0,R0
      TRAP CSGPHRD
      MOV R0,R1
      MOV 2(R1),VECT      ;GET INTERRUPT VECTOR
      MOV 4(R1),PRIOR    ;GET PRIORITY LEVEL
      MOV 6(R1),SWSET    ;GET ROCKER SWITCH SETTINGS
      MOV 10(R1),KDF11B  ;GET KDF11-B INDICATOR

      :AUTOSIZE FOR MICRO PDP-11
      :
      MOV #400,@#PCR      ;CLEAR THE PAGE CONTROL REGISTER
      CMP #207,@#173774  ;ARE WE TESTING A MICRO PDP-11 ?
      BNE SS              ;NO THEN SKIP THE NEXT INSTRUCTION
      MOV #1,LCP          ;YES THEN FLAG WE ARE TESTING A MICRO PDP-11
SS:    SETPRI #PRI07      ;INHIBIT INTERRUPTS
      MOV #PRI07,R0
      TRAP CSSPRI

      ENDINIT
L10012: TRAP CSINIT

      BGNPROT
LSPROT::
      .WORD -1           ;CSR OFFSET
      .WORD -1           ;MASS BUS OFFSET
      .WORD -1           ;DRIVE OFFSET
      ENDPROT

      BGNAUTO
LSAUTO::
      ENDAUTO
L10014: TRAP CSAUTO
      .SBTTL CLEANUP CODING SECTION

      :++
      : THE CLEANUP CODING SECTION CONTAINS THE CODING THAT IS PERFORMED
      : AT THE END OF EACH PASS.
      :--

      BGNCLN
LSCLEAN::
      CLR PCR           ;CLEAR PAGE CONTROL REGISTER
      CLR RWREG        ;CLEAR READ/WRITE REGISTER
      MOV #1,RSET      ;RESTORE DEFAULT VALUE
      CLR RESPND       ;RESTORE DEFAULT
      CLR ADDON        ;RESTORE DEFAULT
      MOV #1,ANSR      ;RESTORE DEFAULT
      INC PASS         ;INCREMENT PASS COUNT

```

```

1211 005440 005237 002310          INC      PASCT          ;INCREMENT TEST 4 PASS COUNT
1212 005444          CLRVEC  VECT           ;CLEAR INTERRUPT VECTOR
   (3) 005444 013700 002316          MOV      VECT,R0
   (3) 005450 104436          TRAP    C$CVEC
1219
1220 005452          EXIT     CLN
   (3) 005452 104432          TRAP    C$EXIT
   (3) 005454 000002          .WORD  L10015-.
1221
1233
1234
1235 005456          ENDCLN
   (3) 005456          L10015: TRAP    C$CLEAN
   (3) 005456 104412
1236
1237
1238          .TITLE  HARDWARE TESTS
1244          .SBTTL  IDENTIFICATION
1245
1246          .SBTTL  TEST 1: READ/WRITE REGISTER TEST
1247          :++
1248          :TEST TO VERIFY THAT THE READ/WRITE REGISTER AT ADDRESS 177522
1249          :IS WORD AND BYTE ADDRESSABLE.
1250          :--
1251
1252          177522          RWREG=177522
1253
1254 005460          BGNTST
1255
1256 005460          BGNSUB
   (3) 005460 104402          TRAP    C$BSUB
1257 005462 005037 177522          CLR      RWREG          ;LOAD ALL ZEROS
1258 005466 001412          BEQ     1$             ;BR IF CLEAR
1259 005470 005001          CLR      R1            ;EXPECTED DATA
1260 005472 013702 177522          MOV      RWREG,R2      ;COPY CONTENTS
1261 005476          ERRDF  1,RWR,RERR1 ;REGISTER CANNOT HOLD ALL ZEROS
   (4) 005476 104455          TRAP    C$ERDF
   (5) 005500 000001          .WORD  1
   (5) 005502 002612          .WORD  RWR
   (5) 005504 003734          .WORD  RERR1
1262 005506          CKLOOP          ;LOOP ON ERROR IF SELECTED
   (3) 005506 104406          TRAP    C$CLP1
1263 005510          EXIT     TST          ;ABORT TEST IF LOOP ON ERROR NOT SELECTED
   (3) 005510 104432          TRAP    C$EXIT
   (3) 005512 000610          .WORD  L10016-.
1264 005514          1$: CKLOOP          ;LOOP ON ERROR IF SELECTED
   (3) 005514 104406          TRAP    C$CLP1
1265 005516          ENDSUB
   (3) 005516          L10017: TRAP    C$ESUB
   (3) 005516 104403
1266
1267 005520          BGNSUB
   (3) 005520 104402          TRAP    C$BSUB
1268 005522 012737 177777 177522          MOV      #-1,RWREG      ;LOAD ALL ONES
1269 005530 022737 177777 177522          CMP     #177777,RWREG   ;CHECK THE REGISTER
1270 005536 001413          BEQ     2$             ;BR IF HOLDING GOOD DATA
  
```

1271	005540	012701	177777		MOV	#-1,R1		:EXPECTED DATA
1272	005544	013702	177522		MOV	RWREG,R2		:COPY CONTENTS
1273	005550				ERRDF	2,RWR,RERR2		:REGISTER CANNOT HOLD ALL ONES
(4)	005550	104455			TRAP	C\$ERDF		
(5)	005552	000002			.WORD	2		
(5)	005554	002612			.WORD	RWR		
(5)	005556	004002			.WORD	RERR2		
1274	005560				CKLOOP			:LOOP ON ERROR IF SELECTED
(3)	005560	104406			TRAP	C\$CLP1		
1275	005562				EXIT	TST		:ABORT TEST IF ERROR AND NO LOOPING
(3)	005562	104432			TRAP	C\$EXIT		
(3)	005564	000536			.WORD	L10016-		
1276	005566			2\$:	CKLOOP			:LOOP ON ERROR IF SELECTED
(3)	005566	104406			TRAP	C\$CLP1		
1277	005570				ENDSUB			
(3)	005570			L10020:				
(3)	005570	104403			TRAP	C\$ESUB		
1278								
1279	005572				BGNSUB			
(3)	005572	104402			TRAP	C\$BSUB		
1280	005574	012737	125252	177522	MOV	#125252,RWREG		:LOAD ALTERNATING 1'S AND 0'S BIT PATTERN
1281	005602	022737	125252	177522	CMP	#125252,RWREG		:CHECK DATA
1282	005610	001413			BEQ	3\$:BR IF GOOD
1283	005612	012701	125252		MOV	#125252,R1		:EXPECTED DATA
1284	005616	013702	177522		MOV	RWREG,R2		:COPY CONTENTS
1285	005622				ERRDF	3,RWR,RERR3		:CANNOT HOLD GOOD DATA
(4)	005622	104455			TRAP	C\$ERDF		
(5)	005624	000003			.WORD	3		
(5)	005626	002612			.WORD	RWR		
(5)	005630	004050			.WORD	RERR3		
1286	005632				CKLOOP			:LOOP ON ERROR IF SELECTED
(3)	005632	104406			TRAP	C\$CLP1		
1287	005634				EXIT	TST		:ABORT TEST IF ERROR DETECTED
(3)	005634	104432			TRAP	C\$EXIT		
(3)	005636	000464			.WORD	L10016-		
1288	005640			3\$:	CKLOOP			:CHECK FOR LOOP ON ERROR AGAIN
(3)	005640	104406			TRAP	C\$CLP1		
1289	005642				ENDSUB			
(3)	005642			L10021:				
(3)	005642	104403			TRAP	C\$ESUB		
1290								
1291	005644				BGNSUB			
(3)	005644	104402			TRAP	C\$BSUB		
1292	005646	105037	177522		CLRB	RWREG		:CLEAR THE REGISTER'S LOW BYTE
1293	005652	022737	125000	177522	CMP	#125000,RWREG		:DID IT CLEAR PROPERLY?
1294	005660	001413			BEQ	4\$:BR IF YES
1295	005662	012701	125000		MOV	#125000,R1		:EXPECTED DATA
1296	005666	013702	177522		MOV	RWREG,R2		:COPY CONTENTS
1297	005672				ERRDF	4,RWR,RERR4		:DID NOT RESPOND PROPERLY TO BYTE INSTRUCTION
(4)	005672	104455			TRAP	C\$ERDF		
(5)	005674	000004			.WORD	4		
(5)	005676	002612			.WORD	RWR		
(5)	005700	004116			.WORD	RERR4		
1298	005702				CKLOOP			:LOOP ON ERROR IF SELECTED
(3)	005702	104406			TRAP	C\$CLP1		
1299	005704				EXIT	TST		:ABORT TEST IF ERROR DETECTED

(3)	005704	104432			TRAP	CSEXIT		
(3)	005706	000414			.WORD	L10016-		
1300	005710			4\$:	CKLOOP			:CHECK FOR LOOP ON ERROR AGAIN
(3)	005710	104406			TRAP	C\$CLP1		
1301	005712				ENDSUB			
(3)	005712			L10022:				
(3)	005712	104403			TRAP	C\$ESUB		
1302								
1303	005714				BGNSUB			
(3)	005714	104402			TRAP	C\$BSUB		
1304	005716	000337	177522		SWAB	RWREG		:SWAP BYTES IN THE REGISTER
1305	005722	022737	000252	177522	CMP	#252,RWREG		:GOOD DATA?
1306	005730	001407			BEQ	5\$:BR IF YES
1307	005732				ERRDF	5,RWR,RERR4		:BYTE INSTRUCTION ERROR
(4)	005732	104455			TRAP	C\$ERDF		
(5)	005734	000005			.WORD	5		
(5)	005736	002612			.WORD	RWR		
(5)	005740	004116			.WORD	RERR4		
1308	005742				CKLOOP			:LOOP ON ERROR IF SELECTED
(3)	005742	104406			TRAP	C\$CLP1		
1309	005744				EXIT	TST		:ABORT TEST IF ERROR DETECTED
(3)	005744	104432			TRAP	CSEXIT		
(3)	005746	000354			.WORD	L10016-		
1310	005750			5\$:	CKLOOP			:CHECK FOR LOOP ON ERROR AGAIN
(3)	005750	104406			TRAP	C\$CLP1		
1311	005752				ENDSUB			
(3)	005752			L10023:				
(3)	005752	104403			TRAP	C\$ESUB		
1312								
1313	005754				BGNSUB			
(3)	005754	104402			TRAP	C\$BSUB		
1314	005756	012737	052525	177522	MOV	#052525,RWREG		:LOAD AN ALTERNATING 0'S AND 1'S BIT PATTERN
1315	005764	022737	052525	177522	CMP	#052525,RWREG		:CHECK IT
1316	005772	001413			BEQ	6\$:BR IF GOOD DATA
1317	005774	012701	052525		MOV	#052525,R1		:EXPECTED DATA
1318	006000	013702	177522		MOV	RWREG,R2		:COPY CONTENTS
1319	006004				ERRDF	6,RWR,RERR3		:CANNOT HOLD GOOD DATA
(4)	006004	104455			TRAP	C\$ERDF		
(5)	006006	000006			.WORD	6		
(5)	006010	002612			.WORD	RWR		
(5)	006012	004050			.WORD	RERR3		
1320	006014				CKLOOP			:LOOP ON ERROR IF SELECTED
(3)	006014	104406			TRAP	C\$CLP1		
1321	006016				EXIT	TST		:ABORT TEST IF ERROR DETECTED
(3)	006016	104432			TRAP	CSEXIT		
(3)	006020	000302			.WORD	L10016-		
1322	006022			6\$:	CKLOOP			:CHECK FOR LOOP ON ERROR AGAIN
(3)	006022	104406			TRAP	C\$CLP1		
1323	006024				ENDSUB			
(3)	006024			L10024:				
(3)	006024	104403			TRAP	C\$ESUB		
1324								
1325	006026				BGNSUB			
(3)	006026	104402			TRAP	C\$BSUB		
1326	006030	105037	177523		CLRB	RWREG+1		:CLEAR HIGH BYTE OF REGISTER
1327	006034	022737	000125	177522	CMP	#125,RWREG		:CHECK THE RESULTING CONTENTS OF THE REGISTER

1328	006042	001413			BEG	7\$:BR IF GOOD DATA
1329	006044	012701	000125		MOV	#125,R1		:EXPECTED DATA
1330	006050	013702	177522		MOV	RWREG,R2		:COPY CONTENTS
1331	006054				ERRDF	7,RWR,RERR4		:BYTE INSTRUCTION ERROR
(4)	006054	104455			TRAP	C\$ERDF		
(5)	006056	000007			.WORD	7		
(5)	006060	002612			.WORD	RWR		
(5)	006062	004116			.WORD	RERR4		
1332	006064				CKLOOP			:LOOP ON ERROR IF SELECTED
(3)	006064	104406			TRAP	C\$CLP1		
1333	006066				EXIT	TST		:ABORT TEST IF ERROR DETECTED
(3)	006066	104432			TRAP	C\$EXIT		
(3)	006070	000232			.WORD	L10016-		
1334	006072			7\$:	CKLOOP			:CHECK FOR LOOP ON ERROR AGAIN
(3)	006072	104406			TRAP	C\$CLP1		
1335	006074				ENDSUB			
(3)	006074			L10025:	TRAP	C\$ESUB		
(3)	006074	104403						
1336								
1337	006076				BGNSUB			
(3)	006076	104402			TRAP	C\$BSUB		
1338	006100	000337	177522		SWAB	RWREG		:SWAP BYTES
1339	006104	022737	052400	177522	CMP	#052400,RWREG		:DATA GOOD?
1340	006112	001413			BEG	10\$:BR IF YES
1341	006114	012701	052400		MOV	#52400,R1		:EXPECTED DATA
1342	006120	013702	177522		MOV	RWREG,R2		:COPY CONTENTS
1343	006124				ERRDF	10,RWR,RERR4		:BYTE INSTRUCTION ERROR
(4)	006124	104455			TRAP	C\$ERDF		
(5)	006126	000012			.WORD	10		
(5)	006130	002612			.WORD	RWR		
(5)	006132	004116			.WORD	RERR4		
1344	006134				CKLOOP			:LOOP ON ERROR IF SELECTED
(3)	006134	104406			TRAP	C\$CLP1		
1345	006136				EXIT	TST		:ABORT TEST IF ERROR DETECTED
(3)	006136	104432			TRAP	C\$EXIT		
(3)	006140	000162			.WORD	L10016-		
1346	006142			10\$:	CKLOOP			:CHECK FOR LOOP ON ERROR AGAIN
(3)	006142	104406			TRAP	C\$CLP1		
1347	006144				ENDSUB			
(3)	006144			L10026:	TRAP	C\$ESUB		
(3)	006144	104403						
1348								
1349	006146				BGNSUB			
(3)	006146	104402			TRAP	C\$BSUB		
1350	006150	005037	177522		CLR	RWREG		:MAKE SURE THE C-BIT IS CLEAR
1351	006154	052737	100000	177522	BIS	#BIT15,RWREG		:SET MSB
1352	006162	013703	177522		MOV	RWREG,R3		:COPY DATA IN RWREG
1353	006166	023703	177522		ROTLP1: CMP	RWREG,R3		:ARE THEY THE SAME?
1354	006172	001005			BNE	11\$:BR IF NO
1355	006174	006003			ROR	R3		:ROTATE THE SET BIT
1356	006176	001412			BEG	12\$:BR WHEN FINISHED
1357	006200	006037	177522		ROR	RWREG		:REPEAT ROTATE
1358	006204	000770			BR	ROTLP1		:LOOP UNTIL ROTATE IS COMPLETE
1359	006206			11\$:	ERRDF	11,RWR,RERR5		
(4)	006206	104455			TRAP	C\$ERDF		
(5)	006210	000013			.WORD	11		

(5)	006212	002612				.WORD	RWR		
(5)	006214	004164				.WORD	RERR5		
1360	006216					CKLOOP			:LOOP ON ERROR IF SELECTED
(3)	006216	104406				TRAP	C\$CLP1		
1361	006220					EXIT	T\$T		:SKIP REST OF TEST
(3)	006220	104432				TRAP	C\$EXIT		
(3)	006222	000100				.WORD	L10016-		
1362	006224				12\$:	CKLOOP			:CHECK FOR LOOP ON ERROR
(3)	006224	104406				TRAP	C\$CLP1		
1363	006226					ENDSUB			
(3)	006226				L10027:				
(3)	006226	104403				TRAP	C\$ESUB		
1364									
1365	006230					BGNSUB			
(3)	006230	104402				TRAP	C\$BSUB		
1366	006232	012737	177777	177522		MOV	#-1,RWREG		:SET ALL ONES
1367	006240	042737	100000	177522		BIC	#BIT15,RWREG		:CLEAR MSB
1368	006246	013703	177522			MOV	RWREG,R3		:COPY DATA
1369	006252	023703	177522		ROTLP2:	CMP	RWREG,R3		:ARE THEY THE SAME?
1370	006256	001010				BNE	13\$:BR IF NO
1371	006260	000261				SEC			:SET C-BIT FOR ROTATE
1372	006262	006037	177522			ROR	RWREG		:ROTATE CLEAR BIT
1373	006266	006003				ROR	R3		:REPEAT
1374	006270	022703	077777			CMP	#077777,R3		:FINISHED?
1375	006274	001366				BNE	ROTLP2		:BR IF NOT YET
1376	006276	000407				BR	14\$:SUBTEST FINISHED
1377	006300				13\$:	ERRDF	12,RWR,RERR6		
(4)	006300	104455				TRAP	C\$ERDF		
(5)	006302	000014				.WORD	12		
(5)	006304	002612				.WORD	RWR		
(5)	006306	004206				.WORD	RERR6		
1378	006310					CKLOOP			:LOOP ON ERROR IF SELECTED
(3)	006310	104406				TRAP	C\$CLP1		
1379	006312					EXIT	T\$T		
(3)	006312	104432				TRAP	C\$EXIT		
(3)	006314	000006				.WORD	L10016-		
1380	006316				14\$:	CKLOOP			
(3)	006316	104406				TRAP	C\$CLP1		
1381	006320					ENDSUB			
(3)	006320				L10030:				
(3)	006320	104403				TRAP	C\$ESUB		
1382									
1383	006322					ENDTST			
(3)	006322				L10016:				
(3)	006322	104401				TRAP	C\$ETST		
1384					.SBTTL	TEST 2: PAGE CONTROL REGISTER TEST			
1385					:+:				
1386					:	TEST TO VERIFY THAT THE PAGE CONTROL REGISTER IS WORD			
1387					:	AND BYTE ADDRESSABLE.			
1388					:-:				
1389									
1390	006324					BGNTST			
1391									
1392	006324	005737	002262			TST	KDF11B		:IF THIS IS A KDF11-B...
1393	006330	001402				BEQ	15\$		
1394	006332					EXIT	T\$T		:...THEN SKIP THIS TEST

(3)	006332	104432			TRAP	CSEXIT		
(3)	006334	000654			.WORD	L10031-		
1395								
1396	006336				158:	BGNSUB		
(3)	006336	104402			TRAP	CSBSUB		
1397	006340	005037	177520		CLR	PCR		:LOAD ALL ZEROS
1398	006344	001412			BEQ	18		:BR IF CLEARED
1399	006346	005001			CLR	R1		:EXPECTED DATA
1400	006350	013702	177520		MOV	PCR,R2		:COPY CONTENTS
1401	006354				ERRDF	13,PACR,RERR1		:REGISTER CANNOT HOLD ALL ZEROS
(4)	006354	104455			TRAP	CSERDF		
(5)	006356	000015			.WORD	13		
(5)	006360	002656			.WORD	PACR		
(5)	006362	003734			.WORD	RERR1		
1402	006364				CKLOOP			:LOOP ON ERROR IF SELECTED
(3)	006364	104406			TRAP	CSCLP1		
1403	006366				EXIT	TST		:ABORT TEST IF ERROR DETECTED
(3)	006366	104432			TRAP	CSEXIT		
(3)	006370	000620			.WORD	L10031-		
1404	006372				18:	CKLOOP		:CHECK FOR LOOP ON ERROR AGAIN
(3)	006372	104406			TRAP	CSCLP1		
1405	006374				ENDSUB			
(3)	006374				L10032:	TRAP	CSESUB	
(3)	006374	104403						
1406								
1407	006376				BGNSUB			
(3)	006376	104402			TRAP	CSBSUB		
1408	006400	012737	177777	177520	MOV	#-1,PCR		:LOAD ALL ONES
1409	006406	022737	177777	177520	CMP	#177777,PCR		:CHECK FOR GOOD DATA
1410	006414	001413			BEQ	28		:BR IF GOOD
1411	006416	012701	177777		MOV	#-1,R1		:EXPECTED DATA
1412	006422	013702	177520		MOV	PCR,R2		:COPY CONTENTS
1413	006426				ERRDF	14,PACR,RERR2		:REGISTER CANNOT HOLD ALL ONES
(4)	006426	104455			TRAP	CSERDF		
(5)	006430	000016			.WORD	14		
(5)	006432	002656			.WORD	PACR		
(5)	006434	004002			.WORD	RERR2		
1414	006436				CKLOOP			:LOOP ON ERROR IF SELECTED
(3)	006436	104406			TRAP	CSCLP1		
1415	006440				EXIT	TST		:ABORT TEST IF ERROR DETECTED
(3)	006440	104432			TRAP	CSEXIT		
(3)	006442	000546			.WORD	L10031-		
1416	006444				28:	CKLOOP		:CHECK FOR LOOP ON ERROR AGAIN
(3)	006444	104406			TRAP	CSCLP1		
1417	006446				ENDSUB			
(3)	006446				L10033:	TRAP	CSESUB	
(3)	006446	104403						
1418								
1419								
1420	006450				BGNSUB			
(3)	006450	104402			TRAP	CSBSUB		
1421	006452	012737	125252	177520	MOV	#125252,PCR		:LOAD AN ALTERNATING 1'S AND 0'S BIT PATTERN
1422	006460	022737	125252	177520	CMP	#125252,PCR		:CHECK THE RESULTS
1423	006466	001413			BEQ	38		:BR IF GOOD DATA
1424	006470	012701	125252		MOV	#125252,R1		:EXPECTED DATA
1425	006474	013702	177520		MOV	PCR,R2		:COPY CONTENTS

1426	006500				ERRDF 15,PACR,RERR3		:REGISTER CANNOT HOLD GOOD DATA
(4)	006500	104455			TRAP CSERDF		
(5)	006502	000017			.WORD 15		
(5)	006504	002656			.WORD PACR		
(5)	006506	004050			.WORD RERR3		
1427	006510				CKLOOP		:LOOP ON ERROR IF SELECTED
(3)	006510	104406			TRAP CSCLP1		
1428	006512				EXIT TST		:ABORT TEST IF ERROR DETECTED
(3)	006512	104432			TRAP CSEXIT		
(3)	006514	000474			.WORD L10031-		
1429	006516				CKLOOP		:CHECK FOR LOOP ON ERROR AGAIN
(3)	006516	104406			TRAP CSCLP1		
1430	006520				ENDSUB		
(3)	006520						
(3)	006520	104403			TRAP CSESUB		
1431							
1432	006522				BGNSUB		
(3)	006522	104402			TRAP CSBSUB		
1433	006524	105037	177520		CLRB PCR		:CLEAR THE REGISTER'S LOW BYTE
1434	006530	022737	125000	177520	CMP #125000,PCR		:COMPARE THE RESULTS
1435	006536	001413			BEQ 4\$:BR IF GOOD DATA
1436	006540	012701	125000		MOV #125000,R1		:EXPECTED DATA
1437	006544	013702	177520		MOV PCR,R2		:COPY CONTENTS
1438	006550				ERRDF 16,PACR,RERR4		:BYTE INSTRUCTION ERROR
(4)	006550	104455			TRAP CSERDF		
(5)	006552	000020			.WORD 16		
(5)	006554	002656			.WORD PACR		
(5)	006556	004116			.WORD RERR4		
1439	006560				CKLOOP		:LOOP ON ERROR IF SELECTED
(3)	006560	104406			TRAP CSCLP1		
1440	006562				EXIT TST		:ABORT TEST IF ERROR DETECTED
(3)	006562	104432			TRAP CSEXIT		
(3)	006564	000424			.WORD L10031-		
1441	006566				CKLOOP		:CHECK FOR LOOP ON ERROR
(3)	006566	104406			TRAP CSCLP1		
1442	006570				ENDSUB		
(3)	006570						
(3)	006570	104403			TRAP CSESUB		
1443							
1444	006572				BGNSUB		
(3)	006572	104402			TRAP CSBSUB		
1445	006574	000337	177520		SWAB PCR		:SWAP BYTES
1446	006600	022737	000252	177520	CMP #252,PCR		:CHECK THE RESULTS
1447	006606	001413			BEQ 5\$:BR IF GOOD DATA
1448	006610	012701	000252		MOV #252,R1		:EXPECTED DATA
1449	006614	013702	177520		MOV PCR,R2		:COPY CONTENTS
1450	006620				ERRDF 17,PACR,RERR4		:BYTE INSTRUCTION ERROR
(4)	006620	104455			TRAP CSERDF		
(5)	006622	000021			.WORD 17		
(5)	006624	002656			.WORD PACR		
(5)	006626	004116			.WORD RERR4		
1451	006630				CKLOOP		:LOOP ON ERROR IF SELECTED
(3)	006630	104406			TRAP CSCLP1		
1452	006632				EXIT TST		:ABORT TEST IF ERROR DETECTED
(3)	006632	104432			TRAP CSEXIT		
(3)	006634	000354			.WORD L10031-		

1453	006636				5\$:	CKLOOP					
(3)	006636	104406				TRAP	C\$CLP1				:CHECK FOR LOOP ON ERROR
1454	006640					ENDSUB					
(3)	006640				L10036:						
(3)	006640	104403				TRAP	C\$ESUB				
1455	006642					BGNSUB					
(3)	006642	104402				TRAP	C\$BSUB				
1456	006644	012737	052525	177520		MOV	#052525,PCR				:LOAD AN ALTERNATING 0'S AND 1'S BIT PATTERN
1457	006652	022737	052525	177520		CMP	#052525,PCR				:CHECK THE RESULTS
1458	006660	001413				BEQ	68				:BR IF GOOD DATA
1459	006662	012701	052525			MOV	#052525,R1				:EXPECTED DATA
1460	006666	013702	177520			MOV	PCR,R2				:COPY CONTENTS
1461	006672					ERRDF	20,PACR,RERR3				:REGISTER CANNOT HOLD GOOD DATA
(4)	006672	104455				TRAP	C\$ERDF				
(5)	006674	000024				.WORD	20				
(5)	006676	002656				.WORD	PACR				
(5)	006700	004050				.WORD	RERR3				
1462	006702					CKLOOP					:LOOP ON ERROR IF SELECTED
(3)	006702	104406				TRAP	C\$CLP1				
1463	006704					EXIT	TST				:ABORT TEST IF ERROR DETECTED
(3)	006704	104432				TRAP	C\$EXIT				
(3)	006706	000302				.WORD	L10031-				
1464	006710				6\$:	CKLOOP					:CHECK FOR LOOP ON ERROR
(3)	006710	104406				TRAP	C\$CLP1				
1465	006712					ENDSUB					
(3)	006712				L10037:						
(3)	006712	104403				TRAP	C\$ESUB				
1466	006714					BGNSUB					
(3)	006714	104402				TRAP	C\$BSUB				
1467	006716	105037	177521			CLRB	PCR+1				:CLEAR THE HIGH BYTE
1468	006722	022737	000125	177520		CMP	#125,PCR				:CHECK THE REGISTER CONTENTS
1469	006730	001413				BEQ	78				:BR IF GOOD DATA
1470	006732	012701	000125			MOV	#125,R1				:EXPECTED DATA
1471	006736	013702	177520			MOV	PCR,R2				:COPY CONTENTS
1472	006742					ERRDF	21,PACR,RERR4				:BYTE INSTRUCTION ERROR
(4)	006742	104455				TRAP	C\$ERDF				
(5)	006744	000025				.WORD	21				
(5)	006746	002656				.WORD	PACR				
(5)	006750	004116				.WORD	RERR4				
1473	006752					CKLOOP					:LOOP ON ERROR IF SELECTED
(3)	006752	104406				TRAP	C\$CLP1				
1474	006754					EXIT	TST				:ABORT TEST IF ERROR DETECTED
(3)	006754	104432				TRAP	C\$EXIT				
(3)	006756	000232				.WORD	L10031-				
1475	006760				7\$:	CKLOOP					:CHECK FOR LOOP ON ERROR
(3)	006760	104406				TRAP	C\$CLP1				
1476	006762					ENDSUB					
(3)	006762				L10040:						
(3)	006762	104403				TRAP	C\$ESUB				
1477	006764					BGNSUB					
(3)	006764	104402				TRAP	C\$BSUB				
1479	006766	000337	177520			SWAB	PCR				:SWAP BYTES
1480	006772	022737	052400	177520		CMP	#052400,PCR				:CHECK RESULTING CONTENTS
1481	007000	001413				BEQ	108				:BR IF GOOD DATA
1482	007002	012701	052400			MOV	#52400,R1				:EXPECTED DATA

1483	007006	013702	177520		MOV	PCR,R2		:COPY CONTENTS
1484	007012				ERRDF	22,PACR,RERR4		:BYTE INSTRUCTION ERROR
(4)	007012	104455			TRAP	C\$ERDF		
(5)	007014	000026			.WORD	22		
(5)	007016	002656			.WORD	PACR		
(5)	007020	004116			.WORD	RERR4		
1485	007022				CKLOOP			:LOOP ON ERROR IF SELECTED
(3)	007022	104406			TRAP	C\$CLP1		
1486	007024				EXIT	TST		:ABORT TEST IF ERROR DETECTED
(3)	007024	104432			TRAP	C\$EXIT		
(3)	007026	000162			.WORD	L10031-		
1487	007030			10\$:	CKLOOP			:CHECK FOR LOOP ON ERROR
(3)	007030	104406			TRAP	C\$CLP1		
1488	007032				ENDSUB			
(3)	007032			L10041:				
(3)	007032	104403			TRAP	C\$ESUB		
1489								
1490	007034				BGNSUB			
(3)	007034	104402			TRAP	C\$BSUB		
1491	007036	005037	177520		CLR	PCR		:MAKE SURE THE C-BIT IS CLEAR
1492	007042	052737	100000	177520	BIS	#BIT15,PCR		:SET MSB
1493	007050	013703	177520		MOV	PCR,R3		:COPY DATA IN PCR
1494	007054	023703	177520	ROTLP3:	CMP	PCR,R3		:ARE THEY THE SAME?
1495	007060	001005			BNE	11\$:BR IF NO
1496	007062	006003			ROR	R3		:ROTATE THE SET BIT
1497	007064	001412			BEO	12\$:BR IF FINISHED
1498	007066	006037	177520		ROR	PCR		:REPEAT ROTATE
1499	007072	000770			BR	ROTLP3		:LOOP UNTIL ROTATE IS COMPLETE
1500	007074			11\$:	ERRDF	23,PACR,RERR5		
(4)	007074	104455			TRAP	C\$ERDF		
(5)	007076	000027			.WORD	23		
(5)	007100	002656			.WORD	PACR		
(5)	007102	004164			.WORD	RERR5		
1501	007104				CKLOOP			:LOOP ON ERROR IF SELECTED
(3)	007104	104406			TRAP	C\$CLP1		
1502	007106				EXIT	TST		:SKIP REST OF TEST
(3)	007106	104432			TRAP	C\$EXIT		
(3)	007110	000100			.WORD	L10031-		
1503	007112			12\$:	CKLOOP			:CHECK FOR LOOP ON ERROR
(3)	007112	104406			TRAP	C\$CLP1		
1504	007114				ENDSUB			
(3)	007114			L10042:				
(3)	007114	104403			TRAP	C\$ESUB		
1505								
1506	007116				BGNSUB			
(3)	007116	104402			TRAP	C\$BSUB		
1507	007120	012737	177777	177520	MOV	#-1,PCR		:SET ALL ONES
1508	007126	042737	100000	177520	BIC	#BIT15,PCR		:CLEAR MSB
1509	007134	013703	177520		MOV	PCR,R3		:COPY DATA
1510	007140	023703	177520	ROTLP4:	CMP	PCR,R3		:ARE THEY THE SAME?
1511	007144	001010			BNE	13\$:BR IF NO
1512	007146	000261			SEC			:SET C-BIT FOR ROTATE
1513	007150	006037	177520		ROR	PCR		:ROTATE CLEAR BIT
1514	007154	006003			ROR	R3		:REPEAT
1515	007156	022703	077777		CMP	#077777,R3		:ALL ONES?
1516	007162	001366			BNE	ROTLP4		:BR IF NOT YET

1517 007164 000407
 1518 007166
 (4) 007166 104455
 (5) 007170 000030
 (5) 007172 002656
 (5) 007174 004206
 1519 007176
 (3) 007176 104406
 1520 007200
 (3) 007200 104432
 (3) 007202 000006
 1521 007204
 (3) 007204 104406
 1522 007206
 (3) 007206
 (3) 007206 104403
 1523 007210
 (3) 007210
 (3) 007210 104401
 1524
 1525
 1526
 1527
 1528
 1529
 1530
 1531
 1532
 1533
 1534
 1535 007212
 1536
 1537 177546
 1538
 1539 007212 005737 002306
 1540 007216 001402
 1541 007220
 (3) 007220 104432
 (3) 007222 001362
 1542 007224 005037 007716
 1543 007230
 (3) 007230 104402
 1544 007232
 (7) 007232 012746 000340
 (6) 007236 012746 007710
 (5) 007242 013746 002316
 (4) 007246 012746 000003
 (3) 007252 104437
 (2) 007254 062706 000010
 1545 007260 052737 000100 177546
 1546 007266
 (3) 007266 012700 000000
 (3) 007272 104441
 1547 007274 004537 005234
 1548 007300 000050
 1549 007302

```

13S: BR 14S ;SUBTEST FINISHED
ERRDF 24,PACR,RERR6
TRAP CSERDF
.WORD 24
.WORD PACR
.WORD RERN6
CKLOOP ;LOOP ON ERROR IF SELECTED
TRAP CSCLP1
EXIT TST
TRAP CSEXIT
.L10031-.
14S: CKLOOP
TRAP CSCLP1
ENDSUB
L10043: TRAP CSESUB
ENDTST
L10031: TRAP CSETST

.SBTTL TEST 3: BEVENT CLAMP ENABLE TEST
:++
:TEST TO VERIFY THAT THE BEVENT CLAMP CAN BE ENABLED. (IF TESTING A BDV11, THIS
:TEST ASSUMES THAT SWITCH #5 OF E21 IS IN THE ON POSITION, AND THE M8012
:MODULE IS LOCATED IN THE SAME BACKPLANE THAT THE LINE TIME CLOCK
:IS GENERATED FROM.) CHECKS PRIORITY INTERRUPT LEVEL 6 IF IT WAS
:CHANGED IN HARDWARE TABLE AND IF THE DEVICE UNDER TEST IS KDF11-B.
:--

BGNTST
BEVREG=177546
TST PASS ;IF THIS IS FIRST PASS
BEQ 18 ;THEN DO THE TEST
EXIT TST ;ELSE DON'T
TRAP CSEXIT
.L10044-.
1S: CLR ICOUNT
BGNSUB
TRAP CSBSUB
SETVEC VECT,#INTSR,#PRI07 ;SET INTERRUPT VECTOR,INHIBIT INTERRUPTS
MOV #PRI07,-(SP)
MOV #INTSR,-(SP)
MOV VECT,-(SP)
MOV #3,-(SP)
TRAP CSSVEC
ADD #10,SP
BIS #BIT06,BEVREG ;REMOVE BEVENT CLAMP
SETPRI #PRI00 ;ALLOW INTERRUPTS
MOV #PRI00,RO
TRAP CSSPRI
JSR R5,WDELAY ;DELAY APPROX. 40 MSECS.
40.
SETPRI #PRI07 ;INHIBIT FURTHER INTERRUPTS

```

(3)	007302	012700	000340		MOV	#PRI07,RO	
(3)	007306	104441			TRAP	C\$SPRI	
1550	007310	022737	000002	007716	CMP	#2,ICOUNT	:DID THE MINIMUM OF TWO INTERRUPTS OCCUR?
1551	007316	003404			BLE	2\$:BR IF YES
1552	007320				ERRDF	25,,BVERR1	:BEVENT CLAMP ENABLE FAILED
(4)	007320	104455			TRAP	C\$ENDF	
(5)	007322	000031			.WORD	25	
(5)	007324	000000			.WORD	0	
(5)	007326	007720			.WORD	BVERR1	
1553	007330				2\$: CKLOOP		:CHECK FOR LOOP ON ERROR
(3)	007330	104406			TRAP	C\$CLP1	
1554	007332	005037	007716		CLR	ICOUNT	:CLEAR INTERRUPT COUNT
1555	007336				ENDSUB		
(3)	007336				L10045: TRAP	C\$ESUB	
(3)	007336	104403					
1556							
1557	007340				BGNSUB		
(3)	007340	104402			TRAP	C\$BSUB	
1558	007342	042737	000100	177546	BIC	#BIT06,BEVREG	:SET BEVENT CLAMP
1559	007350				SETPRI	#PRI00	:ALLOW INTERRUPTS
(3)	007350	012700	000000		MOV	#PRI00,RO	
(3)	007354	104441			TRAP	C\$SPRI	
1560	007356	004537	005234		JSR	R5,WDELAY	:DELAY APPROX. 40 MSECS
1561	007362	000050			40.		:DELAY COUNT
1562	007364				SETPRI	#PRI07	:SET HIGHEST PRIORITY
(3)	007364	012700	000340		MOV	#PRI07,RO	
(3)	007370	104441			TRAP	C\$SPRI	
1563	007372	022737	000001	007716	CMP	#1,ICOUNT	:CHECK INTERRUPT COUNT
1564	007400	002004			BGE	4\$:BR IF NO INTERRUPTS OCCURRED
1565	007402				ERRDF	26,,BVERR2	:BEVENT CLAMP DID NOT PREVENT INTERRUPTS
(4)	007402	104455			TRAP	C\$ERDF	
(5)	007404	000032			.WORD	26	
(5)	007406	000000			.WORD	0	
(5)	007410	007766			.WORD	BVERR2	
1566	007412				4\$: CKLOOP		:CHECK FOR LOOP ON ERROR
(3)	007412	104406			TRAP	C\$CLP1	
1567	007414	005037	007716		CLR	ICOUNT	:CLEAR INTERRUPT COUNT
1568	007420				ENDSUB		
(3)	007420				L10046: TRAP	C\$ESUB	
(3)	007420	104403					
1569							
1570	007422	022737	000006	002326	CMP	#6,PRIOR	:WAS PRIORITY CHANGED?
1571	007430	001405			BEQ	100\$:IF YES, BRANCH
1572	007432	005737	002262		TST	KDF11B	:KDF11B ?
1573	007436	001002			BNE	100\$:IF YES, BRANCH
1574	007440				EXIT	TST	:NO,EXIT
(3)	007440	104432			TRAP	C\$EXIT	
(3)	007442	001142			.WORD	L10044-.	
1575							
1576	007444				100\$: BGNSUB		
(3)	007444	104402			TRAP	C\$BSUB	
1577	007446	052737	000100	177546	BIS	#BIT06,BEVREG	:REMOVE BEVENT CLAMP
1578	007454				SETPRI	#PRI05	:ALLOW INTERRUPTS AT 5
(3)	007454	012700	000240		MOV	#PRI05,RO	
(3)	007460	104441			TRAP	C\$SPRI	
1579	007462	004537	005234		JSR	R5,WDELAY	:DELAY APPROX. 40 MSECS.

1580	007466	000050			40.		
1581	007470				SETPRI	#PRI07	:INHIBIT FURTHER INTERRUPTS
(3)	007470	012700	000340		MOV	#PRI07,R0	
(3)	007474	104441			TRAP	CSSPRI	
1582	007476	022737	000002	007716	CMP	#2,ICOUNT	:DID THE MINIMUM OF TWO INTERRUPTS OCCUR?
1583	007504	003404			BLE	101\$:BR IF YES
1584	007506				ERRDF	52,,BVERR4	:PRIORITY IS WRONG
(4)	007506	104455			TRAP	C\$ERDF	
(5)	007510	000064			.WORD	52	
(5)	007512	000000			.WORD	0	
(5)	007514	010102			.WORD	BVERR4	
1585	007516				101\$:	CKLOOP	:CHECK FOR LOOP ON ERROR
(3)	007516	104406			TRAP	C\$CLP1	
1586	007520	005037	007716		CLR	ICOUNT	:CLEAR INTERRUPT COUNT
1587	007524				ENDSUB		
(3)	007524				L10047:		
(3)	007524	104403			TRAP	C\$ESUB	
1588							
1589	007526				BGNSUB		
(3)	007526	104402			TRAP	C\$BSUB	
1590	007530	052737	000100	177546	BIS	#BIT06,BEVREG	:REMOVE BEVENT CLAMP
1591	007536				SETPRI	#PRI06	:DON'T ALLOW INTERRUPTS
(3)	007536	012700	000300		MOV	#PRI06,R0	
(3)	007542	104441			TRAP	CSSPRI	
1592	007544	004537	005234		JSR	R5,WDELAY	:DELAY APPROX. 40 MSECS
1593	007550	000050			40.		:DELAY COUNT
1594	007552				SETPRI	#PRI07	:SET PRIORITY 7
(3)	007552	012700	000340		MOV	#PRI07,R0	
(3)	007556	104441			TRAP	CSSPRI	
1595	007560	022737	000001	007716	CMP	#1,ICOUNT	:CHECK INTERRUPT COUNT
1596	007566	002004			BGE	102\$:BR IF NO INTERRUPTS OCCURRED
1597	007570				ERRDF	53,,BVERR5	:PRIOR. 6 DIDN'T PREVENT INTERR.
(4)	007570	104455			TRAP	C\$ERDF	
(5)	007572	000065			.WORD	53	
(5)	007574	000000			.WORD	0	
(5)	007576	010150			.WORD	BVERR5	
1598	007600				102\$:	CKLOOP	:CHECK FOR LOOP ON ERROR
(3)	007600	104406			TRAP	C\$CLP1	
1599	007602	005037	007716		CLR	ICOUNT	:CLEAR INTERRUPT COUNT
1600	007606				ENDSUB		
(3)	007606				L10050:		
(3)	007606	104403			TRAP	C\$ESUB	
1601							
1602	007610	005737	002262		TST	KDF11B	:KDF11B ?
1603	007614	001002			BNE	5\$	
1604	007616				EXIT	TST	
(3)	007616	104432			TRAP	C\$EXIT	
(3)	007620	000764			.WORD	L10044-	
1605							
1606	007622				5\$:	BGNSUB	:SET INTERRUPTS
(3)	007622	104402			TRAP	C\$BSUB	
1607	007624	052737	000100	177546	BIS	#BIT06,BEVREG	
1608	007632				BRESET		:RESET INTERRUPTS
(3)	007632	104433			TRAP	C\$RESET	
1609	007634				SETPRI	#PRI00	:WITH LOW PRIORITY
(3)	007634	012700	000000		MOV	#PRI00,R0	

(3)	007640	104441		TRAP	CSSPRI	
1610	007642	004537	005234	JSR	R5,WDELAY	:DELAY APPROX. 40 MSECS
1611	007646	000050		40.		
1612	007650			SETPRI	#PRI07	
(3)	007650	012700	000340	MOV	#PRI07,R0	
(3)	007654	104441		TRAP	CSSPRI	
1613	007656	005737	007716	TST	ICOUNT	:0 INTERRUPTS ?
1614	007662	001404		BEQ	6\$:IF YES BRANCH
1615	007664			ERRDF	51,,BVERR3	:RESET DIDN'T WORK
(4)	007664	104455		TRAP	C\$ERDF	
(5)	007666	000063		.WORD	51	
(5)	007670	000000		.WORD	0	
(5)	007672	010034		.WORD	BVERR3	
1616	007674			6\$: CKLOOP		:CHECK FOR LOOP ON ERROR
(3)	007674	104406		TRAP	C\$CLP1	
1617	007676	005037	007716	CLR	ICOUNT	
1618	007702			ENDSUB		
(3)	007702			L10051:		
(3)	007702	104403		TRAP	C\$ESUB	
1619	007704			EXIT	TST	
(3)	007704	104432		TRAP	C\$EXIT	
(3)	007706	000676		.WORD	L10044-	
1620						
1621	007710			INTSR:		
1622	007710			BGNSRV	BEVENT	:INTERRUPT SERVICE ROUTINE
(3)	007710			BEVENT::		
1623	007710	005237	007716	INC	ICOUNT	:INCREMENT COUNTER
1624	007714			ENDSRV		
(3)	007714			L10052:		
(2)	007714	000002		RTI		
1625						
1626	007716	000000		ICOUNT: .WORD	0	
1627						
1628	007720			BGNMSG	BVERR1	
(3)	007720			BVERR1::		
1629	007720			PRINTB	#MSG1	
(7)	007720	012746	010216	MOV	#MSG1,-(SP)	
(6)	007724	012746	000001	MOV	#1,-(SP)	
(3)	007730	010600		MOV	SP,R0	
(4)	007732	104414		TRAP	C\$PNTB	
(4)	007734	062706	000004	ADD	#4,SP	
1630	007740			PRINTB	#INTCT,ICOUNT	
(8)	007740	013746	007716	MOV	ICOUNT,-(SP)	
(7)	007744	012746	010272	MOV	#INTCT,-(SP)	
(6)	007750	012746	000002	MOV	#2,-(SP)	
(3)	007754	010600		MOV	SP,R0	
(4)	007756	104414		TRAP	C\$PNTB	
(4)	007760	062706	000006	ADD	#6,SP	
1631	007764			ENDMSG		
(3)	007764			L10053:		
(3)	007764	104423		TRAP	C\$MSG	
1632						
1633	007766			BGNMSG	BVERR2	
(3)	007766			BVERR2::		
1634	007766			PRINTB	#MSG2	
(7)	007766	012746	010341	MOV	#MSG2,-(SP)	

(6)	007772	012746	000001	MOV	#1,-(SP)
(3)	007776	010600		MOV	SP,RO
(4)	010000	104414		TRAP	CSPNTB
(4)	010002	062706	000004	ADD	#4,SP
1635	010006			PRINTB	#INTCT,ICOUNT
(8)	010006	013746	007716	MOV	ICOUNT,-(SP)
(7)	010012	012746	010272	MOV	#INTCT,-(SP)
(6)	010016	012746	000002	MOV	#2,-(SP)
(3)	010022	010600		MOV	SP,RO
(4)	010024	104414		TRAP	CSPNTB
(4)	010026	062706	000006	ADD	#6,SP
1636	010032			ENDMSG	
(3)	010032			L10054:	
(3)	010032	104423		TRAP	CMSG
1637					
1638	010034			BGNMSG	BVERR3
(3)	010034			BVERR3::	
1639	010034			PRINTB	#MSG3
(7)	010034	012746	010415	MOV	#MSG3,-(SP)
(6)	010040	012746	000001	MOV	#1,-(SP)
(3)	010044	010600		MOV	SP,RO
(4)	010046	104414		TRAP	CSPNTB
(4)	010050	062706	000004	ADD	#4,SP
1640	010054			PRINTB	#INTCT,ICOUNT
(8)	010054	013746	007716	MOV	ICOUNT,-(SP)
(7)	010060	012746	010272	MOV	#INTCT,-(SP)
(6)	010064	012746	000002	MOV	#2,-(SP)
(3)	010070	010600		MOV	SP,RO
(4)	010072	104414		TRAP	CSPNTB
(4)	010074	062706	000006	ADD	#6,SP
1641	010100			ENDMSG	
(3)	010100			L10055:	
(3)	010100	104423		TRAP	CMSG
1642					
1643	010102			BGNMSG	BVERR4
(3)	010102			BVERR4::	
1644	010102			PRINTB	#MSG4
(7)	010102	012746	010462	MOV	#MSG4,-(SP)
(6)	010106	012746	000001	MOV	#1,-(SP)
(3)	010112	010600		MOV	SP,RO
(4)	010114	104414		TRAP	CSPNTB
(4)	010116	062706	000004	ADD	#4,SP
1645	010122			PRINTB	#INTCT,ICOUNT
(8)	010122	013746	007716	MOV	ICOUNT,-(SP)
(7)	010126	012746	010272	MOV	#INTCT,-(SP)
(6)	010132	012746	000002	MOV	#2,-(SP)
(3)	010136	010600		MOV	SP,RO
(4)	010140	104414		TRAP	CSPNTB
(4)	010142	062706	000006	ADD	#6,SP
1646	010146			ENDMSG	
(3)	010146			L10056:	
(3)	010146	104423		TRAP	CMSG
1647					
1648	010150			BGNMSG	BVERR5
(3)	010150			BVERR5::	
1649	010150			PRINTB	#MSG5

(7)	010150	012746	010532		MOV	#MSG5,-(SP)
(6)	010154	012746	000001		MOV	#1,-(SP)
(3)	010160	010600			MOV	SP,RO
(4)	010162	104414			TRAP	CSPNTB
(4)	010164	062706	000004		ADD	#4,SP
1650	010170				PRINTB	#INICT,ICOUNT
(8)	010170	013746	007716		MOV	ICOUNT,-(SP)
(7)	010174	012746	010272		MOV	#INTCT,-(SP)
(6)	010200	012746	000002		MOV	#2,-(SP)
(3)	010204	010600			MOV	SP,RO
(4)	010206	104414			TRAP	CSPNTB
(4)	010210	062706	000006		ADD	#6,SP
1651	010214				ENDMSG	
(3)	010214			L10057:		
(3)	010214	104423			TRAP	C\$MSG
1652						
1653	010216	040445	042502	042526	MSG1:	.ASCIZ /%ABEVENT CLAMP FAILED TO ALLOW INTERRUPTS%/
	010224	052116	041440	040514		
	010232	050115	043040	044501		
	010240	042514	020104	047524		
	010246	040440	046114	053517		
	010254	044440	052116	051105		
	010262	052522	052120	022523		
	010270	000116				
1654	010272	040445	052516	041115	INTCT:	.ASCIZ /%ANUMBER OF INTERRUPTS RECEIVED: %03%/
	010300	051105	047440	020106		
	010306	047111	042524	051122		
	010314	050125	051524	051040		
	010322	041505	044505	042526		
	010330	035104	022440	031517		
	010336	047045	000			
1655	010341	045	041101	053105	MSG2:	.ASCIZ /%ABEVENT CLAMP DID NOT PREVENT INTERRUPTS%/
	010346	047105	020124	046103		
	010354	046501	020120	044504		
	010362	020104	047516	020124		
	010370	051120	053105	047105		
	010376	020124	047111	042524		
	010404	051122	050125	051524		
	010412	047045	000			
1656	010415	045	051101	051505	MSG3:	.ASCIZ /%ARESET DID NOT PREVENT INTERRUPTS%/
	010422	052105	042040	042111		
	010430	047040	052117	050040		
	010436	042522	042526	052116		
	010444	044440	052116	051105		
	010452	052522	052120	022523		
	010460	000116				
1657	010462	040445	051120	047511	MSG4:	.ASCIZ /%APRIORITY 5 DID NOT ALLOW INTERRUPTS%/
	010470	044522	054524	032440		
	010476	042040	042111	047040		
	010504	052117	040440	046114		
	010512	053517	044440	052116		
	010520	051105	052522	052120		
	010526	022523	000116			
1658	010532	040445	051120	047511	MSG5:	.ASCIZ /%APRIORITY 6 DID NOT PREVENT INTERRUPTS%/
	010540	044522	054524	033040		
	010546	042040	042111	047040		

010554	052117	050040	042522			
010562	042526	052116	044440			
010570	052116	051105	052522			
010576	052120	022523	000116			
1659						
1660	010604				.EVEN	
(3)	010604				ENDTST	
(3)	010604	104401		L10044:		
1661					TRAP CSETST	
1662					.SBTTL TEST 4: LIGHT DISPLAY TEST	
1663					:++	
1664					:TEST TO VERIFY THAT THE FOUR RED LED'S ARE WORKING AND CAN BE	
1665					:TURNED ON INDIVIDUALLY.	
1666					:--	
1667	010606				BGNTST	
1668						
1669	010606	005037	177524		CLR LSREG ;TURN ON ALL FOUR LED'S	
1670	010612	004537	005234		JSR R5,WDELAY ;DELAY APPROX. 200MS	
1671	010616	000310			200.	
1672	010620				BREAK ;CHECK SUPERVISOR FOR CONTROL REQUESTS	
(3)	010620	104422			TRAP CSBRK	
1673	010622	012737	000017	177524	MOV #17,LSREG ;TURN OFF ALL FOUR LED'S	
1674	010630	004537	005234		JSR R5,WDELAY ;DELAY APPROX. 200 MS	
1675	010634	000310			200.	
1676	010636				MANUAL ;IS MANUAL INTERVENTION ALLOWED?	
(3)	010636	104450			TRAP CSMANI	
1677	010640				BCOMPLETE 2\$;BR IF YES	
(2)	010640	103410			BCS 2\$	
1678	010642	022737	000030	002310	CMP #30,PASCT ;IS PASS COUNT >= 30?	
1679	010650	003402			BLE 1\$;BR IF YES	
1680	010652				EXIT TST	
(3)	010652	104432			TRAP CSEXIT	
(3)	010654	000100			.WORD L10060-	
1681	010656	005037	002310	1\$:	CLR PASCT ;EXIT TEST	
1682	010662	012737	000016	177524	2\$:	MOV #16,LSREG ;TURN ON THE LED CORRESPONDING TO THE LSB
1683	010670	004537	005234		JSR R5,WDELAY ;DELAY APPROX. 200MS	
1684	010674	000310			200.	
1685	010676				BREAK ;CHECK SUPR FOR CONTROL REQUESTS	
(3)	010676	104422			TRAP CSBRK	
1686	010700	012737	000015	177524	MOV #15,LSREG ;TURN ON 2ND LED	
1687	010706	004537	005234		JSR R5,WDELAY ;DELAY APPROX 200 MS	
1688	010712	000310			200.	
1689	010714				BREAK ;CHECK SUPERVISOR FOR CONTROL COMMANDS	
(3)	010714	104422			TRAP CSBRK	
1690	010716	012737	000013	177524	MOV #13,LSREG ;TURN ON 3RD LED	
1691	010724	004537	005234		JSR R5,WDELAY ;DELAY APPROX 200MS	
1692	010730	000310			200.	
1693	010732				BREAK ;CHECK SUPR FOR CONTROL REQUESTS	
(3)	010732	104422			TRAP CSBRK	
1694	010734	012737	000007	177524	MOV #7,LSREG ;TURN ON LED CORRESPONDING TO MSB	
1695	010742	004537	005234		JSR R5,WDELAY ;DELAY APPROX 200MS	
1696	010746	000310			200.	
1697	010750				EXIT TST ;EXIT	
(3)	010750	104432			TRAP CSEXIT	
(3)	010752	000002			.WORD L10060-	
1698						

1699	010754					ENDTST		
(3)	010754					L10060:		
(3)	010754	104401				TRAP	CSETST	
1700								
1701						.SBTTL	TEST 5: ROCKER SWITCHES TEST	
1702						:	TEST TO CONFIRM THE ROCKER SWITCH SETTINGS. THIS TEST ASSUMES THAT,	
1703						:	IN MANUFACTURING, THE ROCKER SWITCHES ARE ALL IN THE ON POSITION.	
1704						:	THIS INCLUDES BOTH E21 AND E15 ON THE BDV11, OR SWITCH E102 ON THE KDF11-B. IN	
1705						:	MANUFACTURING, THIS TEST WILL VERIFY THAT ALL SWITCHES CAN BE READ AS ON. IN,	
1706						:	OTHER ENVIRONMENTS THE OPERATOR MAY SPECIFY WHAT THE SWITCH SETTINGS ARE BEFORE	
1707						:	THE DIAGNOSTIC IS STARTED (SEE PROGRAM OPTIONS UNDER OPERATING	
1708						:	INSTRUCTIONS). SWITCHES A1-AB CORRESPOND TO E15 AND SWITCHES	
1709						:	B1-B4 TO E21 ON THE BDV11.	
1710	010756					BGNTST		
1711								
1712	010756					MANUAL		:IS MANUAL INTERVENTION ALLOWED?
(3)	010756	104450				TRAP	CSMANI	
1713	010760					BCOMPLETE	PRTSW	:BR IF YES
(2)	010760	103420				BCS	PRTSW	
1714	010762	005737	002262			TST	KDF11B	:IF THIS IS A KDF11-B...
1715	010766	001402				BEQ	3\$	
1716	010770	105037	002321			CLRB	SWSET+1	:...THEN JUST LOOK AT 8 SWITCHES
1717	010774	023737	002320	177524	3\$:	CMP	SWSET,LSREG	:ALL SWITCHES SHOULD BE ON 8 BITS 0-11..
1718								:... (OR BITS 0-7 IF ON A KDF11-B)...
1719								:... SHOULD BE SET.
1720	011002	001404				BEQ	1\$:BR IF SWITCH READINGS ARE OK
1721	011004					ERRDF	27,,SWERR	:CANNOT READ SWITCHES PROPERLY
(4)	011004	104455				TRAP	CSERDF	
(5)	011006	000033				.WORD	27	
(5)	011010	000000				.WORD	0	
(5)	011012	011354				.WORD	SWERR	
1722	011014				1\$:	CKLOOP		:CHECK FOR LOOP ON ERROR
(3)	011014	104406				TRAP	C\$CLP1	
1723	011016					EXIT	TST	:EXIT
(3)	011016	104432				TRAP	C\$EXIT	
(3)	011020	000566				.WORD	L10061-	
1724	011022	013737	177524	011350	PRTSW:	MOV	LSREG,TEMP	:COPY CONTENTS OF LSREG
1725	011030	005037	011352			CLR	SWCHON	:CLEAR MASK
1726	011034	012737	000014	011346		MOV	#14,SWCNT	:SET SWITCH COUNT
1727	011042	005737	002262			TST	KDF11B	:IF THIS IS A KDF11-B...
1728	011046	001403				BEQ	LP	
1729	011050	012737	000010	011346		MOV	#10,SWCNT	:...THEN JUST TEST FOR 8 SWITCHES
1730	011056	032737	000001	011350	LP:	BIT	#BIT0,TEMP	:TEST FOR SWITCH SET
1731	011064	001412				BEQ	2\$:BR IF NOT SET
1732	011066	005737	002262			TST	KDF11B	:SEE IF WE ARE ON A KDF11B
1733	011072	001404				BEQ	4\$:BRANCH IF NOT
1734	011074	052737	004000	011352		BIS	#BIT11,SWCHON	:SET CORRESPONDING BIT IN MASK
1735	011102	000403				BR	2\$	
1736	011104	052737	100000	011352	4\$:	BIS	#BIT15,SWCHON	:IF SET, THEN SET CORRESPONDING BIT IN MASK
1737	011112	000241			2\$:	CLC		:CLEAR C-BIT FOR ROTATE
1738	011114	006037	011352			ROR	SWCHON	:ROTATE SWSET
1739	011120	006037	011350			ROR	TEMP	:GET READY TO TEST NEXT SWITCH
1740	011124	005337	011346			DEC	SWCNT	:DECREMENT SWITCH COUNT
1741	011130	001352				BNE	LP	:LOOP UNTIL ALL SWITCHES HAVE BEEN CHECKED
1742	011132	000241				CLC		:CLEAR C-BIT FOR ROTATE
1743	011134	006037	011352			ROR	SWCHON	:ROTATE DATA

1744	011140	006037	011352	ROR	SWCHON	:ROTATE DATA
1745	011144	006037	011352	ROR	SWCHON	:ROTATE DATA
1746	011150			PRINTF	#READN,SWCHON	:PRINT SWITCH SETTINGS
(8)	011150	013746	011352	MOV	SWCHON,-(SP)	
(7)	011154	012746	011406	MOV	#PEADN,-(SP)	
(6)	011160	012746	000002	MOV	#2,-(SP)	
(3)	011164	010600		MOV	SP,R0	
(4)	011166	104417		TRAP	CSPNTF	
(4)	011170	062706	000006	ADD	#6,SP	
1747						
1748	011174	013702	011352	MOV	SWCHON,R2	:COPY SWITCH SETTINGS
1749	011200	012701	000001	MOV	#1,R1	:SET SWITCH NUMBER = 1
1750	011204	032702	000001	BIT	#BIT0,R2	:IS THIS SWITCH ON?
1751	011210	001411		BEQ	TAG2	:BR IF NO
1752	011212			PRINTF	#MESSG1,R1	:PRINT SWITCH NUMBER
(8)	011212	010146		MOV	R1,-(SP)	
(7)	011214	012746	011441	MOV	#MESSG1,-(SP)	
(6)	011220	012746	000002	MOV	#2,-(SP)	
(3)	011224	010600		MOV	SP,R0	
(4)	011226	104417		TRAP	CSPNTF	
(4)	011230	062706	000006	ADD	#6,SP	
1753	011234	005201		TAG2:	INC R1	:INCREMENT SWITCH NUMBER
1754	011236	006002		ROR	R2	:ROTATE SWITCH REGISTER
1755	011240	022701	000010	CMP	#10,R1	::FINISHED WITH E15 ON BDV11
1756						::OR E102 ON KDF11-B?
1757	011244	002357		BGE	TAG1	:BR IF NO
1758	011246	005737	002262	TST	KDF11B	:SEE IF WE ARE ON A KDF11-B
1759	011252	001023		BNE	TAG4A	:BRANCH IF YES
1760	011254	012701	000001	MOV	#1,R1	:RESET SWITCH NUMBER FOR E21 ON BDV11
1761	011260	032702	000001	TAG3:	BIT #BIT0,R2	:IS THIS SWITCH SET?
1762	011264	001411		BEQ	TAG4	:BR IF NO
1763	011266			PRINTF	#MESSG2,R1	:PRINT SWITCH NUMBER
(8)	011266	010146		MOV	R1,-(SP)	
(7)	011270	012746	011454	MOV	#MESSG2,-(SP)	
(6)	011274	012746	000002	MOV	#2,-(SP)	
(3)	011300	010600		MOV	SP,R0	
(4)	011302	104417		TRAP	CSPNTF	
(4)	011304	062706	000006	ADD	#6,SP	
1764	011310	005201		TAG4:	INC R1	:INCREMENT SWITCH NUMBER
1765	011312	006002		ROR	R2	:ROTATE SWITCH REGISTER
1766	011314	022701	000004	CMP	#4,R1	:FINISHED?
1767	011320	002357		BGE	TAG3	:BR IF NO
1768	011322			TAG4A:	PRINTF #NEWLIN	
(7)	011322	012746	011467	MOV	#NEWLIN,-(SP)	
(6)	011326	012746	000001	MOV	#1,-(SP)	
(3)	011332	010600		MOV	SP,R0	
(4)	011334	104417		TRAP	CSPNTF	
(4)	011336	062706	000004	ADD	#4,SP	
1769						
1770	011342			EXIT TST		
(3)	011342	104432		TRAP	CSEXIT	
(3)	011344	000242		.WORD	L10061-	
1771						
1772	011346	000000		SWCNT:	.WORD 0	
1773	011350	000000		TEMP:	.WORD 0	
1774	011352	000000		SWCHON:	.WORD 0	

1775
 1776 011354
 (3) 011354
 1777 011354
 (9) 011354 013746 177524
 (8) 011360 013746 002320
 (7) 011364 012746 011472
 (6) 011370 012746 000003
 (3) 011374 010600
 (4) 011376 104414
 (4) 011400 062706 000010
 1778 011404
 (3) 011404
 (3) 011404 104423
 1779
 1780 011406 047045 040445 053523
 011414 052111 044103 051505
 011422 047440 020116 020072
 011430 047445 022466 020101
 011436 020072 000
 1781 011441 045 040501 042045
 011446 022461 026101 000040
 1782 011454 040445 022502 030504
 011462 040445 020054 000
 1783 011467 045 000116
 1784 011472 040445 044504 020104
 011500 047516 020124 042522
 011506 047503 047107 055111
 011514 020105 046101 020114
 011522 053523 052111 044103
 011530 051505 040440 020123
 011536 047117 047045
 1785 011542 040445 054105 042520
 011550 052103 042105 020072
 011556 047445 022466 032523
 011564 040445 042522 042503
 011572 053111 042105 022472
 011600 033117 047045 000
 1786 011606
 1787 011606
 (3) 011606
 (3) 011606 104401
 1788
 1789
 1790
 1791
 1792
 1793
 1794
 1795
 1796
 1797 011610
 1798
 1799 011610
 (3) 011610 104402
 1800 011612

BGNMSG SWERR
 SWERR::
 PRINTB #SERR1,SWSET,LSREG
 MOV LSREG,-(SP)
 MOV SWSET,-(SP)
 MOV #SERR1,-(SP)
 MOV #3,-(SP)
 MOV SP,RO
 TRAP C\$PNTB
 ADD #10,SP
 ENDMSG
 L10062:
 TRAP C\$MSG
 READN: .ASCIZ /%XNASWITCHES ON : %06XA : /
 MESSG1: .ASCIZ /%AA%D1XA, /
 MESSG2: .ASCIZ /%AB%D1XA, /
 NEWLIN: .ASCIZ /%N/
 SERR1: .ASCII /%ADID NOT RECOGNIZE ALL SWITCHES AS ON%N/
 .ASCIZ /%AEXPECTED: %06XS5%ARECEIVED:%06XN/
 .EVEN
 ENDTST
 L10061:
 TRAP C\$SETST
 .SBTTL TEST 6: 2K OR 8K DIAGNOSTIC ROM
 :++
 :TEST TO PERFORM CHECKSUM AND CHECKWORD VERIFICATION ON THE 2K OR 8K
 :OF DIAGNOSTIC ROM. IN UNATTENDED MODE, THE ROM WILL BE ADDRESSED
 :FROM 0-2K. IN STAND-ALONE MODE, THE OPERATOR MAY CHANGE THE
 :ADDRESS BY RESPONDING TO QUESTIONS GENERATED ON THE FIRST PASS.
 :THE DIAGNOSTIC ROM IS 8K FOR THE MICRO PDP-11.
 :--
 BGNTST
 BGNSUB
 TRAP C\$BSUB
 MANUAL ;MANUAL INTERVENTION OK?

(3)	011612	104450				TRAP	CSMANI			
1801	011614					BNCOMPLETE	STRT		:BR IF NO	
(2)	011614	103014				BCC	STRT			
1802	011616	005737	002306			TST	PASS		:FIRST PASS?	
1803	011622	001032				BNE	RSTRT		:BR IF NO	
1804	011624					GMANIL	DADDR,RSET,1,YES			
(3)	011624	104443				TRAP	CSGMAN			
(3)	011626	000404				BR	10000\$			
(4)	011630	002336				.WORD	RSET			
(5)	011632	000130				.WORD	TSCODE			
(5)	011634	014272				.WORD	DADDR			
(5)	011636	000001				.WORD	1			
(3)	011640							10000\$:		
1805	011640	005737	002336			TST	RSET		:STANDARD JUMPERS?	
1806	011644	001404				BEQ	GETAD		:BR IF NO	
1807	011646	012737	000400	012724	STRT:	MOV	#400,DRLP		:STORE STARTING ADDRESS	
1808	011654	000415				BR	RSTRT		:GO PERFORM TEST	
1809	011656				GETAD:	GMANID	LOADR,STORE,D,-1,0,24,NO			
(3)	011656	104443				TRAP	CSGMAN			
(3)	011660	000406				BR	10001\$			
(4)	011662	002322				.WORD	STORE			
(5)	011664	000042				.WORD	TSCODE			
(5)	011666	003074				.WORD	LOADR			
(5)	011670	177777				.WORD	-1			
(5)	011672	000000				.WORD	TSLOLIM			
(5)	011674	000024				.WORD	TSHILIM			
(3)	011676							10001\$:		
1810	011676	004737	005144			JSR	PC,SETADR		:GET STARTING ADDRESS	
1811	011702	013737	002272	012724		MOV	LOPAG,DRLP		:STORE STARTING ADDRESS	
1812	011710	013737	012724	002264	RSTRT:	MOV	DRLP,VRTPCR		:SET UP PCR	
1813	011716	013737	002264	177520		MOV	VRTPCR,PCR			
1814	011724	005737	002260		DRTST:	TST	@LCP		:ARE WE RUNNING ON A MICRO PDP-11 ?	
1815	011730	001404				BEQ	5\$:NO,THEN WE ONLY HAVE 8 CHECKWORDS	
1816	011732	012737	000040	002274		MOV	#40,COUNTR		:YES,FOR MICRO PDP-11 WE HAVE 32 CHECKWORDS	
1817	011740	000403				BR	10\$:GO CHECK THEM	
1818	011742	012737	000010	002274	5\$:	MOV	#10,COUNTR		:8 CHECKWORDS TO CHECK	
1819	011750	012705	002160		10\$:	MOV	#SFPTBL,R5		:LOCATION OF CHECKWORDS	
1820	011754	012737	000001	002300		MOV	#1,RFLAG		:INDICATE ROM	
1821	011762	005037	002266		DLOOP:	CLR	BCF		:SIGNAL LOW BYTES ARE BEING CHECKED	
1822	011766	122737	177777	173774		CMPB	#-1,@#173774		:DOES THE ROM EXIST?	
1823	011774	001007				BNE	1\$:BR IF YES	
1824	011776					ERRDF	30,,DERR1		:LOW BYTE DIAGNOSTIC ROM NOT FOUND	
(4)	011776	104455				TRAP	CSERDF			
(5)	012000	000036				.WORD	30			
(5)	012002	000000				.WORD	0			
(5)	012004	012726				.WORD	DERR1			
1825	012006					CKLOOP			:LOOP ON ERROR IF SELECTED	
(3)	012006	104406				TRAP	CSCLP1			
1826	012010					EXIT	TST		:EXIT TEST,ROM NOT FOUND	
(3)	012010	104432				TRAP	CSEXIT			
(3)	012012	002302				.WORD	L10063-.			
1827	012014				1\$:	CKLOOP			:CHECK FOR LOOP ON ERROR	
(3)	012014	104406				TRAP	CSCLP1			
1828	012016	004737	004302			JSR	PC,CHKSUM		:COMPUTE THE ACTUAL CHECKSUM	
1829	012022	113737	173776	002302		MOVB	@#173776,EXPSUM		:GET THE STORED CHECKSUM	
1830	012030	063737	002304	002302		ADD	ACTSUM,EXPSUM		:ADD THE EXPECTED AND ACTUAL CHECKSUMS	

1831	012036	105737	002302		TSTB	EXPSUM		:BYTE RESULT = 0?
1832	012042	001404			BEQ	2\$:BR IF YES
1833	012044				ERRDF	31,,DERR2		:CHECKSUM ERROR IN DIAGNOSTIC ROM
(4)	012044	104455			TRAP	C\$ERDF		
(5)	012046	000037			.WORD	31		
(5)	012050	000000			.WORD	0		
(5)	012052	012754			.WORD	DERR2		
1834	012054			2\$:	CKLOOP			:CHECK FOR LOOP ON ERROR
(3)	012054	104406			TRAP	C\$CLP1		
1835	012056				ENDSUB			
(3)	012056			L10064:				
(3)	012056	104403			TRAP	C\$ESUB		
1836								
1837								
1838	012060				BGNSUB			
(3)	012060	104402			TRAP	C\$BSUB		
1839	012062	012737	000001	002266	MOV	#1,BCF		:SET BCF TO DENOTE HIGH BYTES
1840	012070	122737	177777	173775	CMPB	#-1,@#173775		:DOES THE ROM EXIST?
1841	012076	001007			BNE	3\$:BR IF YES
1842	012100				ERRDF	32,,DERR3		:HIGH BYTE DIAGNOSTIC ROM NOT FOUND
(4)	012100	104455			TRAP	C\$ERDF		
(5)	012102	000040			.WORD	32		
(5)	012104	000000			.WORD	0		
(5)	012106	013002			.WORD	DERR3		
1843	012110				CKLOOP			:LOOP ON ERROR IF SELECTED
(3)	012110	104406			TRAP	C\$CLP1		
1844	012112				EXIT	TST		:EXIT TEST, ROM NOT FOUND
(3)	012112	104432			TRAP	C\$EXIT		
(3)	012114	002200			.WORD	L10063-		
1845	012116			3\$:	CKLOOP			:CHECK FOR LOOP ON ERROR
(3)	012116	104406			TRAP	C\$CLP1		
1846	012120	004737	004302		JSR	PC,CHKSUM		:COMPUTE THE ACTUAL CHECKSUM
1847	012124	113737	173777	002302	MOVB	@#173777,EXPSUM		:GET EXPECTED CHECKSUM
1848	012132	063737	002304	002302	ADD	ACTSUM,EXPSUM		:ADD THE EXPECTED AND ACTUAL CHECKSUMS
1849	012140	105737	002302		TSTB	EXPSUM		:BYTE RESULT = 0?
1850	012144	001404			BEQ	4\$:BR IF YES
1851	012146				ERRDF	33,,DERR4		:CHECKSUM ERROR IN DIAGNOSTIC ROM
(4)	012146	104455			TRAP	C\$ERDF		
(5)	012150	000041			.WORD	33		
(5)	012152	000000			.WORD	0		
(5)	012154	013030			.WORD	DERR4		
1852	012156			4\$:	CKLOOP			
(3)	012156	104406			TRAP	C\$CLP1		
1853	012160				ENDSUB			
(3)	012160			L10065:				
(3)	012160	104403			TRAP	C\$ESUB		
1854								
1855	012162				BGNSUB			
(3)	012162	104402			TRAP	C\$BSUB		
1856	012164	062737	001002	002264	ADD	#1002,VRTPCR		:NEXT PAGE IN PCR
1857	012172	013737	002264	177520	MOV	VRTPCR,PCR		
1858	012200	005337	002274		DEC	COUNTR		:DECREMENT CHECKWORD COUNT
1859	012204	001266			BNE	DLOOP		:LOOP UNTIL ALL 20 PAGES HAVE BEEN CHECKED
1860	012206				ENDSUB			
(3)	012206			L10066:				
(3)	012206	104403			TRAP	C\$ESUB		

```
1861
1862
1863
1864 012210          ;GET THE CHECKWORDS FROM THE ROMS AND PUT INTO TABLE 'CHKWRD'
      (3) 012210 104402 BGNSUB
1865 012212 012702 013104 TRAP CSBSUB
1866 012216 012737 000001 002264 MOV #CHKWRD,R2
1867 012224 005737 002260 MOV #1,VRTPCR
1868 012230 001404 BEQ @LCP ;ARE WE TESTING A MICRO PDP-11 ?
1869 012232 012737 000040 002274 BEQ 10$ ;NO THEN WE HAVE 8 CHECKWORDS
1870 012240 000403 MOV #40,COUNTR ;YES,WE HAVE 32 CHECKWORDS
1871 012242 012737 000010 002274 10$: BR 5$ ;SKIP NEXT INSTRUCTION
1872 012250 013737 002264 177520 5$: MOV #10,COUNTR
1873 012256 013722 173376 MOV VRTPCR,PCR
1874 012262 062737 000002 002264 MOV @#173376,(R2)+
1875 012270 005337 002274 ADD #2,VRTPCR
1876 012274 001365 DEC COUNTR
1877 012276 BNE 5$
      (3) 012276 L10067: ENDSUB
      (3) 012276 104403 TRAP CSBSUB
1878
1879
1880
1881 012300          ;TRY TO IDENTIFY THE ROM CHIPS
      (3) 012300 104402 BGNSUB
1882 012302 005737 002260 TRAP CSBSUB
1883 012306 001424 TST @LCP ;ARE WE TESTING A MICRO PDP-11 ?
1884 012310 012737 020440 177520 BEQ 5$ ;NO THEN GO TRY TO IDENTIFY ROM CHIPS
1885 012316 012700 173004 MOV #20440,@PCR ;YES,THEN ACCESS THE CORRECT PAGE
1886 012322 012701 013214 MOV #173004,R0 ;. GET POINTER TO THE MESSAGE
1887 012326 005710 1$: MOV #LCPTBL+4,R1 ;. GET POINTER TO THE TABLE
1888 012330 001402 TST (R0) ;. ARE WE DONE GETTING MESSAGE YET ?
1889 012332 112021 BEQ 2$ ;. YES,THEN GO PRINT IT OUT
1890 012334 000774 MOVB (R0)+,(R1)+ ;. FILL UP THE TABLE
1891 012336 2$: BR 1$ ;. SEE IF WE ARE THRU THE TABLE
      (7) 012336 012746 013210 PRINTF #LCPTBL ;. PRINT OUT THE ROM REVISION
      (6) 012342 012746 000001 MOV #LCPTBL,-(SP)
      (3) 012346 010600 MOV #1,-(SP)
      (4) 012350 104417 MOV SP,R0
      (4) 012352 062706 000004 TRAP CSPNTF
1892 012356 000557 ADD #4,SP
1893 012360 013701 013204 5$: BR 11$ ;. EXIT THE SUBTEST
1894 012364 012737 002200 013206 MOV TABLES,R1
1895 012372 020127 000001 6$: MOV #SFPTBL+20,PNTR
1896 012376 001455 CMP R1,#1 ;CHECK IF IS THE LAST TABLE
1897 012400 013700 013206 BEQ 119$ ;YES, GO CKECK WITH OPERATOR'S INPUT
1898 012404 012702 013104 MOV PNTR,R0
1899 012410 012737 000010 002274 MOV #CHKWRD,R2
1900 012416 022022 7$: MOV #10,COUNTR
1901 012420 001071 CMP (R0)+,(R2)+ ;ARE THE CHECKWORDS EQUAL?
1902 012422 005337 002274 BNE 9$ ;BRANCH IF NOT
1903 012426 001373 DEC COUNTR ;DONE CHECKING THIS TABLE?
1904 012430 020127 000004 BNE 7$ ;BRANCH IF NOT
1905 012434 001011 CMP R1,#4 ;DID THE FIRST TABLE OF CHECKWORDS COMPARE?
1906 012436 012746 013604 BNE 8$ ;BRANCH IF NOT
      (7) 012436 012746 013604 PRINTF #TABL1 ;PRINT OUT ROM CHIP NUMBERS
      MOV #TABL1,-(SP)
```

(6)	012442	012746	000001			MOV	#1,-(SP)		
(3)	012446	010600				MOV	SP,R0		
(4)	012450	104417				TRAP	CSPNTF		
(4)	012452	062706	000004			ADD	#4,SP		
1907	012456	000517				BR	11\$		
1908	012460	020127	000003	8\$:		CMP	R1,#3		:DID THE SECOND TABLE OF CHECKWORDS COMPARE?
1909	012464	001011				BNE	20\$:BRANCH IF NOT
1910	012466					PRINTF	#TABL2		:PRINT OUT ROM CHIP NUMBERS
(7)	012466	012746	013703			MOV	#TABL2,-(SP)		
(6)	012472	012746	000001			MOV	#1,-(SP)		
(3)	012476	010600				MOV	SP,R0		
(4)	012500	104417				TRAP	CSPNTF		
(4)	012502	062706	000004			ADD	#4,SP		
1911	012506	000503				BR	11\$		
1912	012510			20\$:		PRINTF	#TABL3		
(7)	012510	012746	014002			MOV	#TABL3,-(SP)		
(6)	012514	012746	000001			MOV	#1,-(SP)		
(3)	012520	010600				MOV	SP,R0		
(4)	012522	104417				TRAP	CSPNTF		
(4)	012524	062706	000004			ADD	#4,SP		
1913	012530	000472				BR	11\$		
1914	012532	012700	002160	119\$:		MOV	#SFPTBL,R0		:PREPARE TO CHECK INPUT TABLE
1915	012536	012702	013104			MOV	#CHKWRD,R2		:STORE ADDRESS OF INPUT TABLE
1916	012542	012737	000010	002274	50\$:	MOV	#10,COUNTR		:DO FOR 8 CHECKWORDS
1917	012550	022022			121\$:	CMP	(R0)+,(R2)+		:COMPARE INPUT AND FOUND CHWS
1918	012552	001014				BNE	9\$:IF NOT, BRANCH
1919	012554	005337	002274			DEC	COUNTR		:ALL DONE?
1920	012560	001373				BNE	121\$:IF NOT, BRANCH TO CONTINUE
1921	012562					PRINTF	#OPTBL		:PRINT MSG TO INDICATE IT'S OPERATOR'S CHKWRD
(7)	012562	012746	013524			MOV	#OPTBL,-(SP)		
(6)	012566	012746	000001			MOV	#1,-(SP)		
(3)	012572	010600				MOV	SP,R0		
(4)	012574	104417				TRAP	CSPNTF		
(4)	012576	062706	000004			ADD	#4,SP		
1922	012602	000445				BR	11\$:IF DONE, BRANCH TO EXIT
1923	012604	062737	000020	013206	9\$:	ADD	#20,PNTR		
1924	012612	005301				DEC	R1		:ANY MORE TABLES TO CHECK?
1925	012614	001266				BNE	6\$:BRANCH IF YES
1926	012616					MANUAL			:APT MODE?
(3)	012616	104450				TRAP	C\$MANI		
1927	012620					B\$COMPLETE	100\$:PRINT UNKNOWN
(2)	012620	103405				BCS	100\$		
1928	012622					ERRDF	34,,DERR5		:CHECKWORD ERROR
(4)	012622	104455				TRAP	C\$ERDF		
(5)	012624	000042				.WORD	34		
(5)	012626	000000				.WORD	0		
(5)	012630	013056				.WORD	DERR5		
1929	012632					CKLOOP			:ROMS DO NOT MATCH
(3)	012632	104406				TRAP	C\$CLP1		
1930	012634			100\$:		PRINTF	#UNKNWN		:PRINT OUT UNIDENTIFIED ROM CHIPS CHECKWORDS
(7)	012634	012746	014101			MOV	#UNKNWN,-(SP)		
(6)	012640	012746	000001			MOV	#1,-(SP)		
(3)	012644	010600				MOV	SP,R0		
(4)	012646	104417				TRAP	CSPNTF		
(4)	012650	062706	000004			ADD	#4,SP		
1931	012654	012737	000010	002274	60\$:	MOV	#10,COUNTR		

1932	012662	012701	013104
1933	012666		
(8)	012666	012146	
(7)	012670	012746	014165
(6)	012674	012746	000002
(3)	012700	010600	
(4)	012702	104417	
(4)	012704	062706	000006
1934	012710	005337	002274
1935	012714	001364	
1936	012716		
(3)	012716		
(3)	012716	104403	
1937			
1938			
1939			
1940	012720		
(3)	012720	104432	
(3)	012722	001372	
1941			
1942	012724	000000	
1943			
1944	012726		
(3)	012726		
1945	012726		
(8)	012726	012746	014246
(7)	012732	012746	013266
(6)	012736	012746	000002
(3)	012742	010600	
(4)	012744	104414	
(4)	012746	062706	000006
1946	012752		
(3)	012752		
(3)	012752	104423	
1947			
1948	012754		
(3)	012754		
1949	012754		
(8)	012754	012746	002724
(7)	012760	012746	013344
(6)	012764	012746	000002
(3)	012770	010600	
(4)	012772	104414	
(4)	012774	062706	000006
1950	013000		
(3)	013000		
(3)	013000	104423	
1951			
1952	013002		
(3)	013002		
1953	013002		
(8)	013002	012746	014246
(7)	013006	012746	013404
(6)	013012	012746	000002
(3)	013016	010600	
(4)	013020	104414	

```

61$:  MOV    #CHKWRD,R1
10$:  PRINTF  #CHECKW,(R1)+
      MOV    (R1)+,-(SP)
      MOV    #CHECKW,-(SP)
      MOV    #?,-(SP)
      MOV    SP,R0
      TRAP   CSPNTF
      ADD    #6,SP
      DEC    COUNTR
      BNE    10$
11$:  ENDSUB
L10070: TRAP   CSESUB

      EXIT   TST
      TRAP   CSEXIT
      .WORD  L10063-.

DRLP:  .WORD  0

BGNMSG DERR1
DERR1::
PRINTB #LRAERR,#NODR
      MOV    #NODR,-(SP)
      MOV    #LRAERR,-(SP)
      MOV    #2,-(SP)
      MOV    SP,R0
      TRAP   CSPNTB
      ADD    #6,SP

ENDMSG L10071:
      TRAP   CSMSG

BGNMSG DERR2
DERR2::
PRINTB #LOWROM,#CKERR
      MOV    #CKERR,-(SP)
      MOV    #LOWROM,-(SP)
      MOV    #2,-(SP)
      MOV    SP,R0
      TRAP   CSPNTB
      ADD    #6,SP

ENDMSG L10072:
      TRAP   CSMSG

BGNMSG DERR3
DERR3::
PRINTB #HRAERR,#NODR
      MOV    #NODR,-(SP)
      MOV    #HRAERR,-(SP)
      MOV    #2,-(SP)
      MOV    SP,R0
      TRAP   CSPNTB
  
```

HARDWARE TESTS MACY11 30(1046)
CVMSAF.P11 29-MAR-83 11:38

29-MAR-83 11:38 PAGE 10-39
TEST 6: 2K OR 8K DIAGNOSTIC ROM

SEQ 0052

(4) 013022 062706 000006
 1954 013026
 (3) 013026
 (3) 013026 104423
 1955
 1956 013030
 (3) 013030
 1957 013030
 (8) 013030 012746 002724
 (7) 013034 012746 013463
 (6) 013040 012746 000002
 (3) 013044 010600
 (4) 013046 104414
 (4) 013050 062706 000006
 1958 013054
 (3) 013054
 (3) 013054 104423
 1959
 1960 013056
 (3) 013056
 1961 013056
 (7) 013056 012746 014174
 (6) 013062 012746 000001
 (3) 013066 010600
 (4) 013070 104414
 (4) 013072 062706 000004
 1962 013076 004737 004526
 1963 013102
 (3) 013102
 (3) 013102 104423
 1964
 1965
 1966 013104 000040
 1967
 1968 013204 000004
 1969 013206 000000
 1970
 1971
 1972
 1973
 1974
 1975 013210 040445 020040 020040
 013216 020040 020040 020040
 013224 020040 020040 020040
 013232 020040 020040 020040
 013240 020040 020040 020040
 013246 020040 020040 020040
 013254 020040 020040 020040
 013262 022440 000116
 1976
 1977 013266 052045 047045 040445
 013274 040503 047116 052117
 013302 040440 041503 051505
 013310 020123 047514 020127
 013316 054502 042524 042040
 013324 040511 047107 051517

ADD #6,SP
 ENDMSG
 L10073: TRAP CSMSG
 BGNMSG DERR4
 DERR4::
 PRINTB #HIROM,#CKERR
 MOV #CKERR,-(SP)
 MOV #HIROM,-(SP)
 MOV #2,-(SP)
 MOV SP,R0
 TRAP CSPNTB
 ADD #6,SP
 ENDMSG
 L10074: TRAP CSMSG
 BGNMSG DERR5
 DERR5::
 PRINTB #MISTAK
 MOV #MISTAK,-(SP)
 MOV #1,-(SP)
 MOV SP,R0
 TRAP CSPNTB
 ADD #4,SP
 JSR PC,VIRTAD
 ENDMSG
 L10075: TRAP CSMSG

.EVEN
 CHKWRD: .BLKW 40 ;TABLE TO STORE THE CHECKWORDS
 TABLES: .WORD 4 ;NUMBER OF CHECKWORD TABLES
 PNTR: .WORD 0 ;WILL BE USED AS A POINTER

:: LCPTBL WILL GET FILLED WITH THE ASCIZ DATA THAT TELLS THE MICRO PDP-11 ROM REVISION
 ::

LCPTBL: .ASCIZ /%A %N/

LRAERR: .ASCIZ /%T%N%ACANNOT ACCESS LOW BYTE DIAGNOSTIC ROM%N/

	013332	044524	020103	047522	
	013340	022515	000116		
1978					
1979	013344	052045	047045	040445	LOWROM: .ASCIZ /%X%N%ZALOW BYTE DIAGNOSTIC ROM%N/
	013352	047514	020127	054502	
	013360	042524	042040	040511	
	013366	047107	051517	044524	
	013374	020103	047522	022515	
	013402	000116			
1980					
1981	013404	052045	047045	040445	HRAERR: .ASCIZ /%X%N%ZACANNOT ACCESS HIGH BYTE DIAGNOSTIC ROM%N/
	013412	040503	047116	052117	
	013420	040440	041503	051505	
	013426	020123	044510	044107	
	013434	041040	052131	020105	
	013442	044504	043501	047516	
	013450	052123	041511	051040	
	013456	046517	047045	000	
1982					
1983	013463	045	022524	022516	HIROM: .ASCIZ /%X%N%ZAHIGH BYTE DIAGNOSTIC ROM%N/
	013470	044101	043511	020110	
	013476	054502	042524	042040	
	013504	040511	047107	051517	
	013512	044524	020103	047522	
	013520	022515	000116		
1984					
1985	013524	047045	040445	044103	OPTBL: .ASCIZ /%X%N%ZACHECKWORDS CORRESPOND TO OPERATOR'S INPUT%N/
	013532	041505	053513	051117	
	013540	051504	041440	051117	
	013546	042522	050123	047117	
	013554	020104	047524	047440	
	013562	042520	040522	047524	
	013570	023522	020123	047111	
	013576	052520	022524	000116	
1986					
1987	013604	047045	040445	044103	TABL1: .ASCIZ /%X%N%ZACHECKWORDS CORRESPOND TO ROM CHIPS #23-045E2 & #23-046E2%N/
	013612	041505	053513	051117	
	013620	051504	041440	051117	
	013626	042522	050123	047117	
	013634	020104	047524	051040	
	013642	046517	041440	044510	
	013650	051520	021440	031462	
	013656	030055	032464	031105	
	013664	023040	021440	031462	
	013672	030055	033064	031105	
	013700	047045	000		
1988					
1989	013703	045	022516	041501	TABL2: .ASCIZ /%X%N%ZACHECKWORDS CORRESPOND TO ROM CHIPS #23-010E2 & #23-011E2%N/
	013710	042510	045503	047527	
	013716	042122	020123	047503	
	013724	051122	051505	047520	
	013732	042116	052040	020117	
	013740	047522	020115	044103	
	013746	050111	020123	031043	
	013754	026463	030460	042460	
	013762	020062	020046	031043	

1990	013770	026463	030460	042461	
1991	013776	022462	000116		
1991	014002	047045	040445	044103	TABL3: .ASCIZ /%N%ACHECKWORDS CORRESPOND TO ROM CHIPS #23-339E2 & #23-340E2%N/
	014010	041505	053513	051117	
	014016	051504	041440	051117	
	014024	042522	050123	047117	
	014032	020104	047524	051040	
	014040	046517	041440	044510	
	014046	051520	021440	031462	
	014054	031455	034463	031105	
	014062	023040	021440	031462	
	014070	031455	030064	031105	
	014076	047045	000		
1992					
1993	014101	045	022516	052501	UNKNWN: .ASCIZ /%N%UNKNOWN ROM CHIPS FOUND. THEIR CHECKWORDS ARE:/
	014106	045516	047516	047127	
	014114	051040	046517	041440	
	014122	044510	051520	043040	
	014130	052517	042116	020056	
	014136	052040	042510	051111	
	014144	041440	042510	045503	
	014152	047527	042122	020123	
	014160	051101	035105	000	
1994					
1995	014165	045	022516	030517	CHECKW: .ASCIZ /%N%012/
	014172	000062			
1996					
1997	014174	040445	047111	047503	MISTAK: .ASCIZ /%N%INCORRECT CHECKWORD IN DIAGNOSTIC ROM%N/
	014202	051122	041505	020124	
	014210	044103	041505	053513	
	014216	051117	020104	047111	
	014224	042040	040511	047107	
	014232	051517	044524	020103	
	014240	047522	022515	000116	
1998					
1999	014246	047516	026516	054105	NODR: .ASCIZ /NON-EXISTENT MEMORY/
	014254	051511	042524	052116	
	014262	046440	046505	051117	
	014270	000131			
2000					
2001	014272	052123	047101	040504	DADDR: .ASCIZ /STANDARD JUMPERS/
	014300	042122	045040	046525	
	014306	042520	051522	000	
2002					
2003		014314			.EVEN
2004	014314				ENDTST
(3)	014314				L10063:
(3)	014314	104401			TRAP CSETST
2005					.SBTTL TEST 7: TEST ALL ADDITIONAL MEMORY
2006					:++
2007					:TEST TO LOCATE AND VERIFY CHECKSUMS IN ALL RESIDENT MEMORY
2008					:ON A PAGE BASIS. THERE ARE FOUR STORAGE AREAS ASSOCIATED
2009					:WITH THIS TEST WHICH HOLD THE CHECKWORDS OF ALL THE MEMORY
2010					:THAT IS TO BE TESTED. THESE TABLES WILL HAVE DEFAULT VALUES
2011					:ONLY IF THE ASSOCIATED MEMORY CHIP IS A STANDARD COMPONENT

2012
2013
2014
2015
2016
2017
2018
2019
2020
2021
2022
2023
2024
2025
2026
2027
2028
2029 014316
2030
2031 014316
(3) 014316 104402
2032 014320 005737 002262
2033 014324 001402
2034 014326
(3) 014326 104432
(3) 014330 002702
2035 014332
(3) 014332 104450
2036 014334
(2) 014334 103112
2037 014336 005037 016412
2038 014342 005737 002306
2039 014346 001422
2040 014350 005737 016416
2041 014354 001153
2042 014356 005737 016420
2043 014362 001402
2044 014364 000137 015260
2045 014370 005737 016422
2046 014374 001402
2047 014376 000137 015634
2048 014402 005737 016424
2049 014406 001465
2050 014410 000137 016200
2051 014414
(3) 014414 104443
(3) 014416 000404
(4) 014420 016412
(5) 014422 000130
(5) 014424 016753
(5) 014426 000001
(3) 014430
2052 014430 005737 016412
2053 014434 001452
2054 014436
(3) 014436 104443

:ON THE BOARD. IF NO DEFAULT VALUES EXIST, THE OPERATOR MUST
:INPUT THE CHECKWORDS AS LISTED ON THE PRINT SET. THE MEMORY
:WILL BE TESTED IN THE FOLLOWING LOCATIONS BY DEFAULT:
:
:EXPANDABLE DIAGNOSTIC ROM 2-4K
:EPROM IN SOCKETS 4-6K
:SYSTEM ROM 16-32K
:SYSTEM EPROM 16-24K
:
:THE TEST WILL FIRST VERIFY THE CHECKSUMS IN ALL RESIDENT ROM,
:THEN COMPARE THE ACTUAL CHECKWORDS. ERROR INFORMATION WILL
:INCLUDE THE SPECIFIC TYPE OF ERROR THAT OCCURS, THE VIRTUAL
:ADDRESS, AND WHETHER IT WAS THE HIGH BYTE OR LOW BYTE ROM/EPROM.
:THIS INFORMATION SHOULD ALLOW A KNOWLEDGEABLE OPERATOR TO ISOLATE
:THE ERROR DOWN TO A SINGLE ROM/EPROM WITH THE AID OF THE
:ADDRESS MAP IN THE PRINT SET.
:--

```

BGNTST
BGNSUB
TRAP CSBSUB
TST KDF11B ;IF THIS IS A KDF11-B...
BEQ 1$ ;...THEN SKIP THIS TEST
EXIT TST
TRAP CSEXIT
.WORD L10076-.
1$: MANUAL ;UNDER APT?
TRAP CSMANI
BNCOMPLETE DFLTST ;SKIP TEST IF YES
BCC DFLTST
CLR ADDON ;RESTORE DEFAULT
TST PASS ;FIRST PASS?
BEQ GET ;BR IF YES
TST LOD1 ;EXPANDED DIAGNOSTIC ROM?
BNE LD1 ;BR IF YES
TST LOD2 ;EPROM IN SOCKETS?
BEQ P1 ;BR IF NO
JMP LD2 ;TEST EPROM
P1: TST LOD3 ;SYSTEM ROM ?
BEQ P2 ;BR IF NO
JMP LD3 ;TEST ROM
P2: TST LOD4 ;SYSTEM EPROM?
BEQ DFLTST ;EXIT IF NO
JMP LD4 ;TEST EPROM
GET: GMANIL EXEC,ADDON,1,YES
TRAP CSGMAN
BR 10000$
.WORD ADDON
.WORD TSCODE
.WORD EXEC
.WORD 1
10000$: TST ADDON ;ADDITIONAL MEMORY?
BEQ DFLTST ;BR IF NO
DIAIN: GMANIL EXPND,RESPND,1,NO
TRAP CSGMAN

```

(3)	014440	000404			BR	10001\$	
(4)	014442	002334			.WORD	RESPND	
(5)	014444	000120			.WORD	T\$CODE	
(5)	014446	017002			.WORD	EXPND	
(5)	014450	000001			.WORD	1	
(3)	014452			10001\$:			
2055	014452	005737	002334		TST	RESPND	:EXPANDED DIAGNOSTIC ROM?
2056	014456	001045			BNE	EXPROM	:BR IF YES
2057	014460			EPRIN:	GMANIL	EPRM,RESPND,1,NO	
(3)	014460	104443			TRAP	CSGMAN	
(3)	014462	000404			BR	10002\$	
(4)	014464	002334			.WORD	RESPND	
(5)	014466	000120			.WORD	T\$CODE	
(5)	014470	017032			.WORD	EPRM	
(5)	014472	000001			.WORD	1	
(3)	014474			10002\$:			
2058	014474	005737	002334		TST	RESPND	:EPROM IN SOCKETS?
2059	014500	001402			BEQ	SYSRIN	:BR IF NO
2060	014502	000137	015126		JMP	EPRM	:JUMP TO ACCEPT INPUT
2061	014506			SYSRIN:	GMANIL	SYSR,RESPND,1,NO	
(3)	014506	104443			TRAP	CSGMAN	
(3)	014510	000404			BR	10003\$	
(4)	014512	002334			.WORD	RESPND	
(5)	014514	000120			.WORD	T\$CODE	
(5)	014516	017053			.WORD	SYSR	
(5)	014520	000001			.WORD	1	
(3)	014522			10003\$:			
2062	014522	005737	002334		TST	RESPND	:SYSTEM ROM?
2063	014526	001402			BEQ	SYSEIN	:BR IF NO
2064	014530	000137	015474		JMP	SYSRT	:INPUT CHECKWORDS
2065	014534			SYSEIN:	GMANIL	SYSE,RESPND,1,NO	
(3)	014534	104443			TRAP	CSGMAN	
(3)	014536	000404			BR	10004\$	
(4)	014540	002334			.WORD	RESPND	
(5)	014542	000120			.WORD	T\$CODE	
(5)	014544	017066			.WORD	SYSE	
(5)	014546	000001			.WORD	1	
(3)	014550			10004\$:			
2066	014550	005737	002334		TST	RESPND	:SYSTEM EPROM?
2067	014554	001402			BEQ	DFLTST	:BR IF NO
2068	014556	000137	016040		JMP	SYSET	:INPUT CHECKWORDS
2069	014562			DFLTST:	EXIT	TST	:NO ADDTL. MEMORY -- EXIT
(3)	014562	104432			TRAP	C\$EXIT	
(3)	014564	002446			.WORD	L10076-	
2070	014566			L10077:	ENDSUB		
(3)	014566				TRAP	C\$ESUB	
(3)	014566	104403					
2071							
2072							
2073	014570				BGNSUB		
(3)	014570	104402			TRAP	C\$BSUB	
2074	014572	005037	002346	EXPROM:	CLR	ERRFLG	:CLEAR ERROR FLAG
2075	014576	012737	000010	002324	MOV	#10,WORDCT	:COUNT 8 CHECKWORDS
2076	014604	012702	002352		MOV	#EXPDIAR2	:POINTER TO STORAGE TABLE
2077	014610	004737	004346		JSR	PC,INPUT	:INPUT CHECKWORDS
2078	014614				GMANIL	EXADD,ANSR,1,YES	

(3)	014614	104443				TRAP	CSGMAN		
(3)	014616	000404				BR	10000\$		
(4)	014620	002276				.WORD	ANSR		
(5)	014622	000130				.WORD	TSCODE		
(5)	014624	017103				.WORD	EYADD		
(5)	014626	000001				.WORD	1		
(3)	014630								
2079	014630	005737	002276			10000\$: TST	ANSR		:STANDARD MEMORY RANGE?
2080	014634	001020				BNE	1\$:BR IF YES
2081	014636	005237	002276			INC	ANSR		:RESTORE DEFAULT VALUE
2082	014642					GMANID	LOADR,STORE,D,-1,0,30,NO		
(3)	014642	104443				TRAP	CSGMAN		
(3)	014644	000406				BR	10001\$		
(4)	014646	002322				.WORD	STORE		
(5)	014650	000042				.WORD	TSCODE		
(5)	014652	003074				.WORD	LOADR		
(5)	014654	177777				.WORD	-1		
(5)	014656	000000				.WORD	TSLOLIM		
(5)	014660	000030				.WORD	TSHILIM		
(3)	014662					10001\$: JSR	PC,SETADR		:GET FIRST PAGE ADDRESS
2083	014662	004737	005144			MOV	LOPAG,LOD1		:STORE LOW PAGE NO.
2084	014666	013737	002272	016416		BR	LD1		:SKIP NEXT INSTRUCTION
2085	014674	000403				1\$: MOV	#010420,LOD1		:STANDARD PAGE = 20,21 2-4K RANGE
2086	014676	012737	010420	016416		LD1: MOV	LOD1,PCR		:LOAD STARTING PAGE
2087	014704	013737	016416	177520		MOV	#1,RFLAG		:INDICATE ROM
2088	014712	012737	000001	002300		MOV	#EXPDIA,R3		:POINTER TO CHECKWORDS
2089	014720	012703	002352			MOV	#10,COUNTR		:PAGE COUNT
2090	014724	012737	000010	002274		EXPTST: MOV	(R3)+,CKWD		:GET CHECKWORD FOR THIS PAGE
2091	014732	012337	002330			JSR	PC,MENTST		:TEST MEMORY
2092	014736	004737	004666			TST	REAL		:DOES THE MEMORY EXIST?
2093	014742	005737	002270			BEQ	E3		:BR IF NO
2094	014746	001457				TST	ERRFLG		:ANY OTHER ERRORS?
2095	014750	005737	002346			BEQ	NOERR		:BR IF NO
2096	014754	001421				JSR	PC,VIRTAD		:GET ADDRESS OF ERROR
2097	014756	004737	004526			TST	BCF		:LOW BYTE PAGE?
2098	014762	005737	002266			BNE	HIGH		:BR IF NO
2099	014766	001004				MOV	#LOBYT,BYTLOC		:SET POINTER FOR ERROR MSG.
2100	014770	012737	002767	002344		BR	DATOUT		:PRINT ERROR MESSAGE
2101	014776	000403				HIGH: MOV	#HIBYT,BYTLOC		:POINTER FOR ERROR MSG.
2102	015000	012737	003031	002344		DATOUT: CMP	#1,ERRFLG		:CHECKSUM ERROR?
2103	015006	022737	000001	002346		BEQ	E1		:BR IF YES
2104	015014	001420				BR	E2		:ELSE CHECKWORD ERROR
2105	015016	000425				NOERR: ADD	#1002,PCR		:ADJUST PCR
2106	015020	062737	001002	177520		DEC	COUNTR		:DEC PAGE COUNT
2107	015026	005337	002274			BNE	EXPTST		:LOOP UNTIL ALL PAGES ARE TESTED
2108	015032	001337				MORE: TST	PASS		:FIRST PASS?
2109	015034	005737	002306			BNE	1\$:BR IF NO
2110	015040	001002				1\$: JMP	EPRIN		:TEST ANY ADDITIONAL MEMORY
2111	015042	000137	014460			JMP	P1		:FIND ANY ADDITIONAL MEMORY
2112	015046	000137	014370			EXIT	SUB		:END OF SUBTEST
2113	015052					TRAP	C\$EXIT		
(3)	015052	104432				.WORD	L10100-		
(3)	015054	000046				E1: ERRDF	35,EXPND,CKSME		
2114	015056					TRAP	C\$ERDF		
(4)	015056	104455				.WORD	35		
(5)	015060	000043							

(5)	015062	017002							
(5)	015064	016430							
2115	015066								
(3)	015066	104406							
2116	015070	000761							
2117	015072								
(4)	015072	104455		E2:					
(5)	015074	000044							
(5)	015076	017002							
(5)	015100	016466							
2118	015102								
(3)	015102	104406							
2119	015104	000753							
2120	015106			E3:					
(4)	015106	104455							
(5)	015110	000045							
(5)	015112	017002							
(5)	015114	016550							
2121	015116								
(3)	015116	104406							
2122	015120	000745							
2123	015122								
(3)	015122			L10100:					
(3)	015122	104403							
2124									
2125	015124								
(3)	015124	104402							
2126	015126	005037	002346	EPRMT:					
2127	015132								
(3)	015132	104443							
(3)	015134	000406							
(4)	015136	016426							
(5)	015140	000042							
(5)	015142	016711							
(5)	015144	177777							
(5)	015146	000001							
(5)	015150	000010							
(3)	015152			10000\$:					
2128	015152	013737	016426 002324						
2129	015160	012702	002372						
2130	015164	004737	004346						
2131	015170								
(3)	015170	104443							
(3)	015172	000404							
(4)	015174	002276							
(5)	015176	000130							
(5)	015200	017131							
(5)	015202	000001							
(3)	015204			10001\$:					
2132	015204	005737	002276						
2133	015210	001020							
2134	015212	005237	002276						
2135	015216								
(3)	015216	104443							
(3)	015220	000406							
(4)	015222	002322							

(5)	015224	000042				.WORD	TSCODE	
(5)	015226	003074				.WORD	LOADR	
(5)	015230	177777				.WORD	-1	
(5)	015232	000000				.WORD	TSLOLIM	
(5)	015234	000030				.WORD	TMHILIM	
(3)	015236				100028:			
2136	015236	004737	005144			JSR	PC,SETADR	:GET FIRST PAGE ADDRESS
2137	015242	013737	002272	016420		MOV	LOPAG,LOD2	:STORE LOW PAGE NO.
2138	015250	000403				BR	LD2	:SKIP NEXT INSTRUCTION
2139	015252	012737	020440	016420	18:	MOV	#020440,LOD2	:STANDARD PAGE = 40,41 4-6K RANGE
2140	015260	013737	016420	177520	LD2:	MOV	LOD2,PCR	:LOAD STARTING ADDRESS
2141	015266	013737	016426	002274		MOV	WORD,COUNTR	:PAGE COUNT
2142	015274	005037	002300			CLR	RFLAG	:INDICATE EPROM
2143	015300	012703	002372			MOV	#EPROM,R3	:POINT TO CHECKWORDS
2144	015304	012337	002330		EPRTST:	MOV	(R3)+,CKWD	:GET CHECKWORD FOR THIS PAGE
2145	015310	004737	004666			JSR	PC,MENTST	:TEST MEMORY
2146	015314	005737	002270			TST	REAL	:DOES THE MEMORY EXIST?
2147	015320	001455				BEQ	E6	:BR IF NO
2148	015322	005737	002346			TST	ERRFLG	:ANY OTHER ERRORS?
2149	015326	001421				BEQ	NONE	:BR IF NO
2150	015330	004737	004526			JSR	PC,VIRTAD	:GET ADDRESS OF ERROR
2151	015334	005737	002266			TST	BCF	:LOW BYTE PAGE?
2152	015340	001004				BNE	HIADD	:BR IF NO
2153	015342	012737	002767	002344		MOV	#LOBYT,BYTLOC	:SET POINTER FOR ERROR MSG.
2154	015350	000403				BR	PRIOUT	:PRINT ERROR MESSAGE
2155	015352	012737	003031	002344	HIADD:	MOV	#HIBYT,BYTLOC	:POINTER FOR ERROR MSG.
2156	015360	022737	000001	002346	PRIOUT:	CMP	#1,ERRFLG	:CHECKSUM ERROR?
2157	015366	001416				BEQ	E4	:BR IF YES
2158	015370	000423				BR	E5	:ELSE CHECKWORD ERROR
2159	015372	062737	001002	177520	NONE:	ADD	#1002,PCR	:ADJUST PAGE IN PCR
2160	015400	005337	002274			DEC	COUNTR	:DEC PAGE COUNT
2161	015404	001337				BNE	EPRTST	:LOOP UNTIL FINISHED
2162	015406	005737	002306		ADDTL:	TST	PASS	:FIRST PASS?
2163	015412	001002				BNE	18	:BR IF NO
2164	015414	000137	014506			JMP	SYSRIN	:TEST ANY ADDITIONAL MEMORY
2165	015420	000137	014402		18:	JMP	P2	:FIND ANY ADDITIONAL MEMORY
2166	015424				E4:	ERRDF	40,EPRM,CKSME	
(4)	015424	104455				TRAP	CSERDF	
(5)	015426	000050				.WORD	40	
(5)	015430	017032				.WORD	EPRM	
(5)	015432	016430				.WORD	CKSME	
2167	015434					CKLOOP		
(3)	015434	104406				TRAP	CSCLP1	
2168	015436	000763				BR	ADDTL	
2169	015440				E5:	ERRDF	41,EPRM,CWKDE	
(4)	015440	104455				TRAP	CSERDF	
(5)	015442	000051				.WORD	41	
(5)	015444	017032				.WORD	EPRM	
(5)	015446	016466				.WORD	CWKDE	
2170	015450					CKLOOP		
(3)	015450	104406				TRAP	CSCLP1	
2171	015452	000755				BR	ADDTL	
2172	015454				E6:	ERRDF	42,EPRM,NONXT	
(4)	015454	104455				TRAP	CSERDF	
(5)	015456	000052				.WORD	42	
(5)	015460	017032				.WORD	EPRM	

2199	015672	005737	002270			TST	REAL		: DOES THE MEMORY EXIST?
2200	015676	001450				BEQ	E11		: BR IF NO
2201	015700	005737	002346			TST	ERRFLG		: ANY OTHER ERRORS?
2202	015704	001421				BEQ	PASSED		: BR IF NO
2203	015706	004737	004526			JSR	PC.VIRTAD		: GET ADDRESS OF ERROR
2204	015712	005737	002266			TST	BCF		: LOW BYTE PAGE?
2205	015716	001004				BNE	HIGHB		: BR IF NO
2206	015720	012737	002767	002344		MOV	#LOBYT,BYTLOC		: SET POINTER FOR ERROR MSG.
2207	015726	000403				BR	MSGOUT		: PRINT ERROR MESSAGE
2208	015730	012737	003031	002344	HIGHB:	MOV	#HIBYT,BYTLOC		: POINTER FOR ERROR MSG.
2209	015736	022737	000001	002346	MSGOUT:	CMP	#1,ERRFLG		: CHECKSUM ERROR?
2210	015744	001411				BEQ	E7		: BR IF YES
2211	015746	000416				BR	E10		: ELSE CHECKWORD ERROR
2212	015750	062737	001002	177520	PASSED:	ADD	#1002,PCR		: ADJUST PAGE IN PCR
2213	015756	005337	002274			DEC	COUNTR		: DEC PAGE COUNT
2214	015762	001337				BNE	SYRTST		: LOOP UNTIL FINISHED
2215	015764				NEXT:	EXIT	TST		: TEST IS FINISHED
(3)	015764	104432				TRAP	CSEXIT		
(3)	015766	001244				.WORD	L10076-		
2216	015770				E7:	ERRDF	43,SYSR,CKSME		
(4)	015770	104455				TRAP	CSETRDF		
(5)	015772	000053				.WORD	43		
(5)	015774	017053				.WORD	SYSR		
(5)	015776	016430				.WORD	CKSME		
2217	016000					CKLOOP			
(3)	016000	104406				TRAP	CSCLP1		
2218	016002	000770				BR	NEXT		
2219	016004				E10:	ERRDF	44,SYSR,CWKDE		
(4)	016004	104455				TRAP	CSETRDF		
(5)	016006	000054				.WORD	44		
(5)	016010	017053				.WORD	SYSR		
(5)	016012	016466				.WORD	CWKDE		
2220	016014					CKLOOP			
(3)	016014	104406				TRAP	CSCLP1		
2221	016016	000762				BR	NEXT		
2222	016020				E11:	ERRDF	45,SYSR,NONXT		
(4)	016020	104455				TRAP	CSETRDF		
(5)	016022	000055				.WORD	45		
(5)	016024	017053				.WORD	SYSR		
(5)	016026	016550				.WORD	NONXT		
2223	016030					CKLOOP			
(3)	016030	104406				TRAP	CSCLP1		
2224	016032	000754				BR	NEXT		
2225	016034					ENDSUB			
(3)	016034				L10102:	TRAP	CSESUB		
(3)	016034	104403							
2226									
2227	016036					BGNSUB			
(3)	016036	104402				TRAP	CSBSUB		
2228	016040	005037	002346		SYSET:	CLR	ERRFLG		: CLEAR ERROR FLAG
2229	016044					GMANID	RWDCT,RESPND,D,-1,10,40,NO		
(3)	016044	104443				TRAP	CSGMAN		
(3)	016046	000406				BR	100008		
(4)	016050	002334				.WORD	RESPND		
(5)	016052	000042				.WORD	TSCODE		
(5)	016054	016711				.WORD	RWDCT		

(4)	016446	104414				TRAP	CSPNTB
(4)	016450	062706	000006			ADD	#6,SP
2290	016454	004737	004526		JSR	PC,VIRTAD	
2291	016460	004737	004252		JSR	PC,VIPRI	
2292	016464				ENDMSG		
(3)	016464				L10104:		
(3)	016464	104423			TRAP	C\$MSG	
2293							
2294	016466				BGNMSG	CWKDE	
(3)	016466				CWKDE::		
2295	016466				PRINTB	#ERMS	
(7)	016466	012746	016602		MOV	#ERMS,-(SP)	
(6)	016472	012746	000001		MOV	#1,-(SP)	
(3)	016476	010600			MOV	SP,RO	
(4)	016500	104414			TRAP	CSPNTB	
(4)	016502	062706	000004		ADD	#4,SP	
2296	016506	004737	004526		JSR	PC,VIRTAD	
2297	016512	004737	004252		JSR	PC,VIPRI	
2298	016516				PRINTB	#REGDT,CKWD,BADWD	
(9)	016516	013746	002332		MOV	BADWD,-(SP)	
(8)	016522	013746	002330		MOV	CKWD,-(SP)	
(7)	016526	012746	003670		MOV	#REGDT,-(SP)	
(6)	016532	012746	000003		MOV	#3,-(SP)	
(3)	016536	010600			MOV	SP,RO	
(4)	016540	104414			TRAP	CSPNTB	
(4)	016542	062706	000010		ADD	#10,SP	
2299	016546				ENDMSG		
(3)	016546				L10105:		
(3)	016546	104423			TRAP	C\$MSG	
2300							
2301	016550				BGNMSG	NONXT	
(3)	016550				NONXT::		
2302	016550				PRINTB	#LOST	
(7)	016550	012746	016661		MOV	#LOST,-(SP)	
(6)	016554	012746	000001		MOV	#1,-(SP)	
(3)	016560	010600			MOV	SP,RO	
(4)	016562	104414			TRAP	CSPNTB	
(4)	016564	062706	000004		ADD	#4,SP	
2303	016570	004737	004526		JSR	PC,VIRTAD	
2304	016574	004737	004252		JSR	PC,VIPRI	
2305	016600				ENDMSG		
(3)	016600				L10106:		
(3)	016600	104423			TRAP	C\$MSG	
2306							
2307	016602	040445	047111	047503	ERMS:	.ASCIZ	/XAINCORRECT CHECKWORDZN/
	016610	051122	041505	020124			
	016616	044103	041505	053513			
	016624	051117	022504	000116			
2308							
2309	016632	040445	044103	041505	ERM6:	.ASCIZ	/XACHECKSUM ERRORZNXTZN/
	016640	051513	046525	042440			
	016646	051122	051117	047045			
	016654	052045	047045	000			
2310							
2311	016661	045	047101	047117	LOST:	.ASCIZ	/XANON-EXISTENT MEMORYZN/
	016666	042455	044530	052123			

	016674	047105	020124	042515	
	016702	047515	054522	047045	
	016710	000			
2312					
2313	016711	110	053517	046440	RWDCT: .ASCIZ /HOW MANY CHECKWORDS WILL BE INPUT/
	016716	047101	020131	044103	
	016724	041505	053513	051117	
	016732	051504	053440	046111	
	016740	020114	042502	044440	
	016746	050116	052125	000	
2314					
2315	016753	101	054516	040440	EXEC: .ASCIZ /ANY ADDITIONAL MEMORY /
	016760	042104	052111	047511	
	016766	040516	020114	042515	
	016774	047515	054522	000040	
2316					
2317	017002	054105	040520	042116	EXPND: .ASCIZ /EXPANDED DIAGNOSTIC ROM/
	017010	042105	042040	040511	
	017016	047107	051517	044524	
	017024	020103	047522	000115	
2318					
2319	017032	050105	047522	020115	EPRM: .ASCIZ /EPROM IN SOCKETS/
	017040	047111	051440	041517	
	017046	042513	051524	000	
2320					
2321	017053	123	051531	042524	SYSR: .ASCIZ /SYSTEM ROM/
	017060	020115	047522	000115	
2322					
2323	017066	054523	052123	046505	SYSE: .ASCIZ /SYSTEM EPROM/
	017074	042440	051120	046517	
	017102	000			
2324					
2325	017103	105	050130	047101	EXADD: .ASCIZ /EXPANDED ROM IN 2-4K /
	017110	042504	020104	047522	
	017116	020115	047111	031040	
	017124	032055	020113	000	
2326					
2327	017131	105	051120	046517	EPADD: .ASCIZ /EPROM IN 4-6K /
	017136	044440	020116	026464	
	017144	045466	000040		
2328					
2329	017150	054523	052123	046505	SRR: .ASCIZ /SYSTEM ROM START AT 16K/
	017156	051040	046517	051440	
	017164	040524	052122	040440	
	017172	020124	033061	000113	
2330					
2331	017200	054523	052123	046505	SYEE: .ASCIZ /SYSTEM EPROM START AT 16K/
	017206	042440	051120	046517	
	017214	051440	040524	052122	
	017222	040440	020124	033061	
	017230	000113			

2332
2333
2334
2335
(3)

.EVEN
ENDTST
L10076:

(3) 017232 104401

TRAP CSETST

2342
2343
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.TITLE PARAMETER CODING
.SBTTL IDENTIFICATION

.SBTTL HARDWARE PARAMETER CODING SECTION

:++
: THE HARDWARE PARAMETER CODING SECTION CONTAINS MACROS
: THAT ARE USED BY THE SUPERVISOR TO BUILD P-TABLES. THE
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: WITH THE OPERATOR.
:--

2404 017234
(3) 017234 000107
(3) 017236

BGNHRD
.WORD L10107-LSHARD/2
LSHARD::

2405
2411 017236
(4) 017236 000032
(4) 017240 017316
(4) 017242 160000
(4) 017244 000000
(4) 017246 000016
2412 017250
(4) 017250 001032
(4) 017252 017332
(4) 017254 177777
(4) 017256 000066
(4) 017260 000100
2413 017262
(4) 017262 002032
(4) 017264 017363
(4) 017266 177777
(4) 017270 000006
(4) 017272 000007
2414 017274
(4) 017274 003032
(4) 017276 017403
(4) 017300 177777
(4) 017302 000000
(4) 017304 007777
2415 017306
(4) 017306 004120

GPRMD UNIT,0,0,160000,0,16,YES
.WORD TSCODE
.WORD UNIT
.WORD 160000
.WORD TSLOLIM
.WORD TSHILIM
GPRMD INTVEC,2,0,-1,66,100,YES
.WORD TSCODE
.WORD INTVEC
.WORD -1
.WORD TSLOLIM
.WORD TSHILIM
GPRMD LEV,4,0,-1,6,7,YES
.WORD TSCODE
.WORD LEV
.WORD -1
.WORD TSLOLIM
.WORD TSHILIM
GPRMD RKS,6,0,-1,0,7777,YES
.WORD TSCODE
.WORD RKS
.WORD -1
.WORD TSLOLIM
.WORD TSHILIM
GPRML PAX,10,1,NO
.WORD TSCODE

(4)	017310	017432			.WORD	PAX
(4)	017312	000001			.WORD	1
2416						
2417	017314				EXIT HRD	
(7)	017314	060004			.WORD	TSCODE
2418						
2425	017316	047125	052111	047040	UNIT:	.ASCIZ /UNIT NUMBER/
	017324	046525	042502	000122		
2426	017332	047111	042524	051122	INTVEC:	.ASCIZ /INTERRUPT VECTOR ADDRESS/
	017340	050125	020124	042526		
	017346	052103	051117	040440		
	017354	042104	042522	051523		
	017362	000				
2427	017363	111	052116	051105	LEV:	.ASCIZ /INTERRUPT LEVEL/
	017370	052522	052120	046040		
	017376	053105	046105	000		
2428	017403	122	041517	042513	RKSW:	.ASCIZ /ROCKER SWITCH SETTINGS/
	017410	020122	053523	052111		
	017416	044103	051440	052105		
	017424	044524	043516	000123		
2429	017432	042524	052123	047111	PAX:	.ASCIZ /TESTING A KDF11-B/
	017440	020107	020101	042113		
	017446	030506	026461	000102		

2430 .EVEN
 2431
 2432 017454 ENDHRD
 (2) .EVEN
 (3) 017454

L10107:
 .SBTTL SOFTWARE PARAMETER CODING SECTION

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2444	017454				BGNSFT	
(3)	017454	000161			.WORD	L10110-LSSOFT/2
(3)	017456				LSSOFT::	
2445	017456				GPRMD	CKW1,0,0,-1,0,177777,YES
(4)	017456	000032			.WORD	TSCODE
(4)	017460	017600			.WORD	CKW1
(4)	017462	177777			.WORD	-1
(4)	017464	000000			.WORD	TSLOLIM
(4)	017466	177777			.WORD	TSHILIM
2446	017470				GPRMD	CKW2,2,0,-1,0,177777,YES
(4)	017470	001032			.WORD	TSCODE
(4)	017472	017655			.WORD	CKW2
(4)	017474	177777			.WORD	-1
(4)	017476	000000			.WORD	TSLOLIM
(4)	017500	177777			.WORD	TSHILIM
2447	017502				GPRMD	CKW3,4,0,-1,0,177777,YES
(4)	017502	002032			.WORD	TSCODE

(4)	017504	017673				.WORD	CKW3	
(4)	017506	177777				.WORD	-1	
(4)	017510	000000				.WORD	TSLOLIM	
(4)	017512	177777				.WORD	TSHILIM	
2448	017514					GPRMD	CKW4,6,0,-1,0,177777,YES	
(4)	017514	003032				.WORD	TSCUDE	
(4)	017516	017711				.WORD	CKW4	
(4)	017520	177777				.WORD	-1	
(4)	017522	000000				.WORD	TSLOLIM	
(4)	017524	177777				.WORD	TSHILIM	
2449	017526					GPRMD	CKW5,10,0,-1,0,177777,YES	
(4)	017526	004032				.WORD	TSCODE	
(4)	017530	017727				.WORD	CKW5	
(4)	017532	177777				.WORD	-1	
(4)	017534	000000				.WORD	TSLOLIM	
(4)	017536	177777				.WORD	TSHILIM	
2450	017540					GPRMD	CKW6,12,0,-1,0,177777,YES	
(4)	017540	005032				.WORD	TSCODE	
(4)	017542	017745				.WORD	CKW6	
(4)	017544	177777				.WORD	-1	
(4)	017546	000000				.WORD	TSLOLIM	
(4)	017550	177777				.WORD	TSHILIM	
2451	017552					GPRMD	CKW7,14,0,-1,0,177777,YES	
(4)	017552	006032				.WORD	TSCODE	
(4)	017554	017763				.WORD	CKW7	
(4)	017556	177777				.WORD	-1	
(4)	017560	000000				.WORD	TSLOLIM	
(4)	017562	177777				.WORD	TSHILIM	
2452	017564					GPRMD	CKW8,16,0,-1,0,177777,YES	
(4)	017564	007032				.WORD	TSCODE	
(4)	017566	020001				.WORD	CKW8	
(4)	017570	177777				.WORD	-1	
(4)	017572	000000				.WORD	TSLOLIM	
(4)	017574	177777				.WORD	TSHILIM	
2453								
2454	017576					EXIT SFT		
(7)	017576	111004				.WORD	TSCODE	
2461								
2462	017600	044103	041505	053513	CKW1:	.ASCIZ	/CHECKWORDS FOR DIAGNOSTIC ROM. CHECKWORD 1: /	
	017606	051117	051504	043040				
	017614	051117	042040	040511				
	017622	047107	051517	044524				
	017630	020103	047522	027115				
	017636	041440	042510	045503				
	017644	047527	042122	030440				
	017652	020072	000					
2463	017655	103	042510	045503	CKW2:	.ASCIZ	/CHECKWORD 2: /	
	017662	047527	042122	031040				
	017670	020072	000					
2464	017673	103	042510	045503	CKW3:	.ASCIZ	/CHECKWORD 3: /	
	017700	047527	042122	031440				
	017706	020072	000					
2465	017711	103	042510	045503	CKW4:	.ASCIZ	/CHECKWORD 4: /	
	017716	047527	042122	032040				
	017724	020072	000					
2466	017727	103	042510	045503	CKW5:	.ASCIZ	/CHECKWORD 5: /	

	017734	047527	042122	032440		
	017742	020072	000			
2467	017745	103	042510	045503	CKW6:	.ASCIZ /CHECKWORD 6: /
	017752	047527	042122	033040		
	017760	020072	000			
2468	017763	103	042510	045503	CKW7:	.ASCIZ /CHECKWORD 7: /
	017770	047527	042122	033440		
	017776	020072	000			
2469	020001	103	042510	045503	CKW8:	.ASCIZ /CHECKWORD 8: /
	020006	047527	042122	034040		
	020014	020072	000			
2470		020020				.EVEN
2477						
2478						
2479	020020					ENDSFT
(2)						.EVEN
(3)	020020				L10110:	
2480						
2481		020070			.=. +50	
2482	020070					LASTAD
(2)						.EVEN
(4)	020070	000000				.WORD 0
(4)	020072	000000				.WORD 0
(3)	020074				L\$LAST::	
2483						
2484		000001				.END

FSINIT= 000006	521#	1149	1185										
FSJMP = 000050	521#	1220	1263	1275	1287	1299	1309	1321	1333	1345	1361	1379	1394
	1403	1415	1428	1440	1452	1463	1474	1486	1502	1520	1541	1574	1604
	1619	1680	1697	1723	1770	1826	1844	1940	2034	2069	2113	2215	2265
	2268	2271	2274	2277	2417	2454							
FSMOD = 000000	521#	536	554	569	571	672	684	692	725				
FSMSG = 000011	521#	809	812	814	817	819	822	824	827	829	831	833	835
	837	839	1628	1631	1633	1636	1638	1641	1643	1646	1648	1651	1776
	1778	1944	1946	1948	1950	1952	1954	1956	1958	1960	1963	2288	2292
	2294	2299	2301	2305									
FSPROT= 000021	521#	1187	1191										
FSPWR = 000017	521#												
FSRPT = 000012	521#	1138	1139										
FSSEG = 000003	521#												
FSSOFT= 000005	521#	2444	2454	2479									
FSSRV = 000010	521#	1622	1624										
FSSUB = 000002	521#	1256	1265	1267	1277	1279	1289	1291	1301	1303	1311	1313	1323
	1325	1335	1337	1347	1349	1363	1365	1381	1396	1405	1407	1417	1420
	1430	1432	1442	1444	1454	1455	1465	1466	1476	1478	1488	1490	1504
	1506	1522	1543	1555	1557	1568	1576	1587	1589	1600	1606	1618	1799
	1835	1838	1853	1855	1860	1864	1877	1881	1936	2031	2070	2073	2123
	2125	2175	2177	2225	2227	2275							
FSSW = 000014	521#	610	653										
FSTEST= 000001	521#	1254	1383	1390	1523	1535	1660	1667	1699	1710	1787	1797	2004
	2029	2335											
GET 014414	2039	2051#											
GETAD 011656	1806	1809#											
GLBDAT 002260 G	692#												
GLBEQA 002260 G	672#												
GSCNTO= 000200	521#												
GSDLM= 000372	521#												
GSDISP= 000003	521#												
GSEXCP= 000400	521#												
GSHILI= 000002	521#												
GSLOLI= 000001	521#												
GSNO = 000000	521#	893	1809	2054	2057	2061	2065	2082	2127	2135	2179	2188	2229
	2238	2415											
GSOFFS= 000400	521#	893	1804	1809	2051	2054	2057	2061	2065	2078	2082	2127	2131
	2135	2179	2184	2188	2229	2234	2238	2411	2412	2413	2414	2415	2445
	2446	2447	2448	2449	2450	2451	2452						
GSOFSI= 000376	521#	893	1804	1809	2051	2054	2057	2061	2065	2078	2082	2127	2131
	2135	2179	2184	2188	2229	2234	2238	2411	2412	2413	2414	2415	2445
	2446	2447	2448	2449	2450	2451	2452						
GSPRMA= 000001	521#												
GSPRMD= 000002	521#	893	1809	2082	2127	2135	2179	2188	2229	2238	2411	2412	2413
	2414	2445	2446	2447	2448	2449	2450	2451	2452				
GSPRML= 000000	521#	1804	2051	2054	2057	2061	2065	2078	2131	2184	2234	2415	
GSRADA= 000140	521#												
GSRADB= 000000	521#												
GSRADD= 000040	521#	1809	2082	2127	2135	2179	2188	2229	2238				
GSRADL= 000120	521#	1804	2051	2054	2057	2061	2065	2078	2131	2184	2234	2415	
GSRADO= 000020	521#	893	2411	2412	2413	2414	2445	2446	2447	2448	2449	2450	2451
	2452												
GSXFER= 000004	521#	2417	2454										
GSYES = 000010	521#	1804	2051	2078	2131	2184	2234	2411	2412	2413	2414	2445	2446
	2447	2448	2449	2450	2451	2452							

PARAMETER CODING
CVMBAF.P11

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CROSS REFERENCE TABLE -- USER SYMBOLS

SEQ 0080

RERR3	004050 G	819#	1285	1319	1426	1461									
RERR4	004116 G	824#	1297	1307	1331	1343	1438	1450	1472	1484					
RERR5	004164 G	829#	1359	1500											
RERR6	004206 G	833#	1377	1518											
RESPND	002334	715#	1207*	2054	2055	2057	2058	2061	2062	2065	2066	2179	2180	2181	
		2229	2230	2231											
RFLAG	002300	701#	935	1820*	2088*	2142*	2194*	2244*							
RKSW	017403	2414	2428#												
ROTL P1	006166	1353#	1358												
ROTL P2	006252	1369#	1375												
ROTL P3	007054	1494#	1499												
ROTL P4	007140	1510#	1516												
ROTO	003504	784#	834												
ROT1	003434	782#	830												
RSET	002336	716#	1206*	1804	1805										
RSTRT	011710	1803	1808	1812#											
RWDCT	016711	2127	2179	2229	2313#										
RWR	002612	740#	1261	1273	1285	1297	1307	1319	1331	1343	1359	1377			
RWREG =	177522	1205*	1252#	1257*	1260	1268*	1269	1272	1280*	1281	1284	1292*	1293	1296	
		1304*	1305	1314*	1315	1318	1326*	1327	1330	1338*	1339	1342	1350*	1351*	
		1352	1353	1357*	1366*	1367*	1368	1369	1372*						
SERR1	011472	1777	1784#												
SETADR	005144	1007#	1810	2083	2136	2189	2239								
SFPTBL	002160 G	610#	1819	1894	1914										
SRR	017150	2184	2329#												
STORE	002322	710#	893	894	1007	1809	2082	2135	2188	2238					
STRT	011646	1801	1807#												
SVCGBL =	000000	521#	523#	536	553	569	570	587	610	672	692	760	761	809	
		814	819	824	829	833	837	1138	1149	1187	1193	1202	1622	1628	
		1633	1638	1643	1648	1776	1944	1948	1952	1956	1960	2288	2294	2301	
		2404	2444	2482#											
SVCINS =	000000	521#	522#	553	570	587	610	760	761	810	811	812	815	816	
		817	820	821	822	825	826	827	830	831	834	835	838	839	
		843	892	893	928	929	1139	1150	1162	1185	1194	1212	1220	1235	
		1256	1261	1262	1263	1264	1265	1267	1273	1274	1275	1276	1277	1279	
		1285	1286	1287	1288	1289	1291	1297	1298	1299	1300	1301	1303	1307	
		1308	1309	1310	1311	1313	1319	1320	1321	1322	1323	1325	1331	1332	
		1333	1334	1335	1337	1343	1344	1345	1346	1347	1349	1359	1360	1361	
		1362	1363	1365	1377	1378	1379	1380	1381	1383	1394	1396	1401	1402	
		1403	1404	1405	1407	1413	1414	1415	1416	1417	1420	1426	1427	1428	
		1429	1430	1432	1438	1439	1440	1441	1442	1444	1450	1451	1452	1453	
		1454	1455	1461	1462	1463	1464	1465	1466	1472	1473	1474	1475	1476	
		1478	1484	1485	1486	1487	1488	1490	1500	1501	1502	1503	1504	1506	
		1518	1519	1520	1521	1522	1523	1541	1543	1544	1546	1549	1552	1553	
		1555	1557	1559	1562	1565	1566	1568	1574	1576	1578	1581	1584	1585	
		1587	1589	1591	1594	1597	1598	1600	1604	1606	1608	1609	1612	1615	
		1616	1618	1619	1624	1629	1630	1631	1634	1635	1636	1639	1640	1641	
		1644	1645	1646	1649	1650	1651	1660	1672	1676	1677	1680	1685	1689	
		1693	1697	1699	1712	1713	1721	1722	1723	1746	1752	1763	1768	1770	
		1777	1778	1787	1799	1800	1801	1804	1809	1824	1825	1826	1827	1833	
		1834	1835	1838	1842	1843	1844	1845	1851	1852	1853	1855	1860	1864	
		1877	1881	1891	1906	1910	1912	1921	1926	1927	1928	1929	1930	1933	
		1936	1940	1945	1946	1949	1950	1953	1954	1957	1958	1961	1963	2004	
		2031	2034	2035	2036	2051	2054	2057	2061	2065	2069	2070	2073	2078	
		2082	2113	2114	2115	2117	2118	2120	2121	2123	2125	2127	2131	2135	
		2166	2167	2169	2170	2172	2173	2175	2177	2179	2184	2188	2215	2216	

		2217	2219	2220	2222	2223	2225	2227	2229	2234	2238	2265	2266	2267
		2268	2269	2270	2271	2272	2273	2274	2275	2277	2289	2292	2295	2298
		2299	2302	2305	2335	2404	2411	2412	2413	2414	2415	2417	2432	2444
		2445	2446	2447	2448	2449	2450	2451	2452	2454	2479	2482		
SVCSUB=	177777	521#	1256	1267	1279	1291	1303	1313	1325	1337	1349	1365	1396	1407
		1420	1432	1444	1455	1466	1478	1490	1506	1543	1557	1576	1589	1606
SVCTAG=	000000	1799	1838	1855	1864	1881	2031	2073	2125	2177	2227			
		521#	524#	601	653	812	817	822	827	831	835	839	893	1139
		1185	1194	1235	1265	1277	1289	1301	1311	1323	1335	1347	1363	1381
		1383	1405	1417	1430	1442	1454	1465	1476	1488	1504	1522	1523	1555
		1568	1587	1600	1618	1624	1631	1636	1641	1646	1651	1660	1699	1778
		1787	1804	1809	1835	1853	1860	1877	1936	1946	1950	1954	1958	1963
		2004	2051	2054	2057	2061	2065	2070	2078	2082	2123	2127	2131	2135
		2175	2179	2184	2188	2225	2229	2234	2238	2275	2292	2299	2305	2335
		2432	2479											
SVCTST=	177777	521#	1254	1390	1535	1667	1710	1797	2029					
SWCHON	011352	1725*	1734*	1736*	1738*	1743*	1744*	1745*	1746	1748	1774#			
SWCNT	011346	1726*	1729*	1740*	1772#									
SWERR	011354	1721	1776#											
SWSET	002320	709#	1153*	1716*	1717	1777								
SYEE	017200	2234	2331#											
SYETST	016224	2247#	2264											
SYRTST	015662	2197#	2214											
SYSE	017066	2065	2266	2269	2272	2323#								
SYSEIN	014534	2063	2065#											
SYSET	016040	2068	2228#											
YSR	017053	2061	2216	2219	2222	2321#								
YSRIN	014506	2059	2061#	2164										
YSROM	002412	724#	2182	2195	2232	2245								
YSRT	015474	2064	2178#											
SLSYM=	010000	521#	601#	653#	812#	817#	822#	827#	831#	835#	839#	893#	1139#	1185#
		1194#	1235#	1265#	1277#	1289#	1301#	1311#	1323#	1335#	1347#	1363#	1381#	1383#
		1405#	1417#	1430#	1442#	1454#	1465#	1476#	1488#	1504#	1522#	1523#	1555#	1568#
		1587#	1600#	1618#	1624#	1631#	1636#	1641#	1646#	1651#	1660#	1699#	1778#	1787#
		1804#	1809#	1835#	1853#	1860#	1877#	1936#	1946#	1950#	1954#	1958#	1963#	2004#
		2051#	2054#	2057#	2061#	2065#	2070#	2078#	2082#	2123#	2127#	2131#	2135#	2175#
		2179#	2184#	2188#	2225#	2229#	2234#	2238#	2275#	2292#	2299#	2305#	2335#	2432#
		2479#												
TABLES	013204	1893	1968#											
TABL1	013604	1906	1987#											
TABL2	013703	1910	1989#											
TABL3	014002	1912	1991#											
TAG1	011204	1750#	1757											
TAG2	011234	1751	1753#											
TAG3	011260	1761#	1767											
TAG4	011310	1762	1764#											
TAG4A	011322	1759	1768#											
TEMP	011350	1724*	1730	1739*	1773#									
TSTCKW	005044	965	975	979#										
TSARGC=	000001	553#	810#	811#	815#	816#	820#	821#	825#	826#	830#	834#	838#	843#
		892#	1629#	1630#	1634#	1635#	1639#	1640#	1644#	1645#	1649#	1650#	1746#	1752#
		1763#	1768#	1777#	1891#	1906#	1910#	1912#	1921#	1930#	1933#	1945#	1949#	1953#
		1957#	1961#	2289#	2295#	2298#	2302#							
TSCODE=	111004	893#	1804#	1809#	2051#	2054#	2057#	2061#	2065#	2078#	2082#	2127#	2131#	2135#
		2179#	2184#	2188#	2229#	2234#	2238#	2411#	2412#	2413#	2414#	2415#	2417#	2445#
		2446#	2447#	2448#	2449#	2450#	2451#	2452#	2454#					

TSTAGL= 177777
TSTAGN= 010111

521#	521#	587#	610#	809#	814#	819#	824#	829#	833#	837#	1138#	1149#	1187#
1193#	1202#	1254#	1256#	1267#	1279#	1291#	1303#	1313#	1325#	1337#	1349#	1365#	1385#
1390#	1396#	1407#	1420#	1432#	1444#	1455#	1466#	1478#	1490#	1506#	1535#	1543#	1557#
1557#	1576#	1589#	1606#	1622#	1628#	1633#	1638#	1643#	1648#	1667#	1710#	1776#	1797#
1797#	1799#	1838#	1855#	1864#	1881#	1944#	1948#	1952#	1956#	1960#	2029#	2031#	2073#
2073#	2125#	2177#	2227#	2288#	2294#	2301#	2404#	2444#	2444#	2444#	2444#	2444#	2444#

TSTEMP= 000005

554#	570#	571#	601#	653#	684#	725#	812#	817#	822#	827#	831#	835#	839#
839#	893#	1139#	1185#	1191#	1194#	1220#	1235#	1263#	1265#	1275#	1277#	1287#	1289#
1289#	1299#	1301#	1309#	1311#	1321#	1323#	1333#	1335#	1345#	1347#	1361#	1363#	1379#
1379#	1381#	1383#	1394#	1403#	1405#	1415#	1417#	1428#	1430#	1440#	1442#	1452#	1454#
1454#	1463#	1465#	1474#	1476#	1486#	1488#	1502#	1504#	1520#	1522#	1523#	1541#	1555#
1555#	1568#	1574#	1587#	1600#	1604#	1618#	1619#	1624#	1631#	1636#	1641#	1646#	1651#
1651#	1660#	1680#	1697#	1699#	1723#	1770#	1778#	1787#	1804#	1809#	1826#	1835#	1844#
1844#	1853#	1860#	1877#	1936#	1940#	1946#	1950#	1954#	1958#	1963#	2004#	2034#	2051#
2051#	2054#	2057#	2061#	2065#	2069#	2070#	2078#	2082#	2113#	2123#	2127#	2131#	2135#
2135#	2175#	2179#	2184#	2188#	2215#	2225#	2229#	2234#	2238#	2265#	2268#	2271#	2274#
2274#	2275#	2277#	2292#	2299#	2305#	2335#	2411#	2412#	2413#	2414#	2415#	2417#	2432#
2432#	2445#	2446#	2447#	2448#	2449#	2450#	2451#	2452#	2454#	2479#	2479#	2479#	2479#

TSTEST= 000007

521#	1254#	1256	1267	1279	1291	1303	1313	1325	1337	1349	1365	1390#	1396
1396	1407	1420	1432	1444	1455	1466	1478	1490	1506	1535#	1543	1557	1576
1576	1589	1606	1667#	1710#	1797#	1799	1838	1855	1864	1881	2029#	2031	2073
2073	2125	2177	2227	2482	2482	2482	2482	2482	2482	2482	2482	2482	2482

TSTSTM= 177777

521#	810	811	812	815	816	817	820	821	822	825	826	827	830
830	831	834	835	838	839	843	892	893	928	929	1139	1150	1162
1162	1185	1194	1212	1220	1235	1256	1261	1262	1263	1264	1265	1267	1273
1273	1274	1275	1276	1277	1279	1285	1286	1287	1288	1289	1291	1297	1298
1298	1299	1300	1301	1303	1307	1308	1309	1310	1311	1313	1319	1320	1321
1321	1322	1323	1325	1331	1332	1333	1334	1335	1337	1343	1344	1345	1346
1346	1347	1349	1359	1360	1361	1362	1363	1365	1377	1378	1379	1380	1381
1381	1383	1394	1396	1401	1402	1403	1404	1405	1407	1413	1414	1415	1416
1416	1417	1420	1426	1427	1428	1429	1430	1432	1438	1439	1440	1441	1442
1442	1444	1450	1451	1452	1453	1454	1455	1461	1462	1463	1464	1465	1466
1466	1472	1473	1474	1475	1476	1478	1484	1485	1486	1487	1488	1490	1500
1500	1501	1502	1503	1504	1506	1518	1519	1520	1521	1522	1523	1541	1543
1543	1544	1546	1549	1552	1553	1555	1557	1559	1562	1565	1566	1568	1574
1574	1576	1578	1581	1584	1585	1587	1589	1591	1594	1597	1598	1600	1604
1604	1606	1608	1609	1612	1615	1616	1618	1619	1629	1630	1631	1634	1635
1635	1636	1639	1640	1641	1644	1645	1646	1649	1650	1651	1660	1672	1676
1676	1680	1685	1689	1693	1697	1699	1712	1721	1722	1723	1746	1752	1763
1763	1768	1770	1777	1778	1787	1799	1800	1804	1809	1824	1825	1826	1827
1827	1833	1834	1835	1838	1842	1843	1844	1845	1851	1852	1853	1855	1860
1860	1864	1877	1881	1891	1906	1910	1912	1921	1926	1928	1929	1930	1933
1933	1936	1940	1945	1946	1949	1950	1953	1954	1957	1958	1961	1963	2004
2004	2031	2034	2035	2051	2054	2057	2061	2065	2069	2070	2073	2078	2082
2082	2113	2114	2115	2117	2118	2120	2121	2123	2125	2127	2131	2135	2166
2166	2167	2169	2170	2172	2173	2175	2177	2179	2184	2188	2215	2216	2217
2217	2219	2220	2222	2223	2225	2227	2229	2234	2238	2265	2266	2267	2268
2268	2269	2270	2271	2272	2273	2274	2275	2277	2289	2292	2295	2298	2299
2299	2302	2305	2335	2335	2335	2335	2335	2335	2335	2335	2335	2335	2335

TSTSTS= 000001
TSSAUT= 010014
TSSCLE= 010015
TSSHAR= 010107
TSSHW = 010000
TSSINI= 010012

521#	1254#	1390#	1535#	1667#	1710#	1797#	2029#	521#	1193#	1202#	1235	2404#	587#	1149#
1193#	1194	1235	2432	587#	601	1149#	1185	1193#	1194	1220	1235	2404#	587#	1149#
1202#	1220	1235	2432	587#	601	1149#	1185	1193#	1194	1220	1235	2404#	587#	1149#
2404#	2417	2432	2432	587#	601	1149#	1185	1193#	1194	1220	1235	2404#	587#	1149#
587#	601	1149#	1185	1193#	1194	1220	1235	2404#	2417	2432	2432	587#	601	1149#
1149#	1185	1193#	1194	1220	1235	2404#	2417	2432	2432	587#	601	1149#	1185	1193#

BAMPL	1677	1713	1927												
BNAUT	1193														
BGNCLN	1202														
BGNHRD	2404														
BGNHW	587														
BGNINI	1149														
BGNMOD	536	569	672	692											
BGNMSG	809	814	819	824	829	833	837	1628	1633	1638	1643	1648	1776	1944	1948
	1952	1956	1960	2288	2294	2301									
BGNPRO	1187														
BGNRPT	1138														
BGNSFT	2444														
BGNSRV	1622														
BGNSUB	1256	1267	1279	1291	1303	1313	1325	1337	1349	1365	1396	1407	1420	1432	1444
	1455	1466	1478	1490	1506	1543	1557	1576	1589	1606	1799	1838	1855	1864	1881
	2031	2073	2125	2177	2227										
BGNSW	610														
BGNTST	1254	1390	1535	1667	1710	1797	2029								
BNCOMP	1801	2036													
BREAK	1672	1685	1689	1693											
BRESET	1608														
CKLOOP	929	1262	1264	1274	1276	1286	1288	1298	1300	1308	1310	1320	1322	1332	1334
	1344	1346	1360	1362	1378	1380	1402	1404	1414	1416	1427	1429	1439	1441	1451
	1453	1462	1464	1473	1475	1485	1487	1501	1503	1519	1521	1553	1566	1585	1598
	1616	1722	1825	1827	1834	1843	1845	1852	1929	2115	2118	2121	2167	2170	2173
	2217	2220	2223	2267	2270	2273									
CLRVEC	1212														
DESCRI	760														
DEVTYP	761														
DISPAT	570														
ENDAUT	1194														
ENDCLN	1235														
ENDHRD	2432														
ENDHW	601														
ENDINI	1185														
ENDMOD	554	571	684	725											
ENDMSG	812	817	822	827	831	835	839	1631	1636	1641	1646	1651	1778	1946	1950
	1954	1958	1963	2292	2299	2305									
ENDPRO	1191														
ENRPT	1139														
ENDSFT	2479														
ENDSRV	1624														
ENDSUB	1265	1277	1289	1301	1311	1323	1335	1347	1363	1381	1405	1417	1430	1442	1454
	1465	1476	1488	1504	1522	1555	1568	1587	1600	1618	1835	1853	1860	1877	1936
	2070	2123	2175	2225	2275										
ENDSW	653														
ENDTST	1383	1523	1660	1699	1787	2004	2335								
EQUALS	673														
ERRDF	928	1261	1273	1285	1297	1307	1319	1331	1343	1359	1377	1401	1413	1426	1438
	1450	1461	1472	1484	1500	1518	1552	1565	1584	1597	1615	1721	1824	1833	1842
	1851	1928	2114	2117	2120	2166	2169	2172	2216	2219	2222	2266	2269	2272	
EXIT	1220	1263	1275	1287	1299	1309	1321	1333	1345	1361	1379	1394	1403	1415	1428
	1440	1452	1463	1474	1486	1502	1520	1541	1574	1604	1619	1680	1697	1723	1770
	1826	1844	1940	2034	2069	2113	2215	2265	2268	2271	2274	2277	2417	2454	
GMANID	893	1809	2082	2127	2135	2179	2188	2229	2238						
GMANIL	1804	2051	2054	2057	2061	2065	2078	2131	2184	2234					

GPHARD	1150														
GPRMD	893#	1809#	2082#	2127#	2135#	2179#	2188#	2229#	2238#	2411	2412	2413	2414	2445	2446
	2447	2448	2449	2450	2451	2452									
GPRML	1804#	2051#	2054#	2057#	2061#	2065#	2078#	2131#	2184#	2234#	2415				
HEADER	553														
LASTAD	2482														
MANUAL	1676	1712	1800	1926	2035										
MSBYTE	553#														
MSCHEC	1220#	1263#	1275#	1287#	1299#	1309#	1321#	1333#	1345#	1361#	1379#	1394#	1403#	1415#	1428#
	1440#	1452#	1463#	1474#	1486#	1502#	1520#	1541#	1574#	1604#	1619#	1680#	1697#	1723#	1770#
	1826#	1844#	1940#	2034#	2069#	2113#	2215#	2265#	2268#	2271#	2274#	2277#	2417#	2454#	
MSCNTO	893#	1804#	1809#	2051#	2054#	2057#	2061#	2065#	2078#	2082#	2127#	2131#	2135#	2179#	2184#
	2188#	2229#	2234#	2238#	2411#	2412#	2413#	2414#	2415#	2445#	2446#	2447#	2448#	2449#	2450#
	2451#	2452#													
MSCOUN	810#	811#	815#	816#	820#	821#	825#	826#	830#	834#	838#	843#	892#	1629#	1630#
	1634#	1635#	1639#	1640#	1644#	1645#	1649#	1650#	1746#	1752#	1763#	1768#	1777#	1891#	1906#
	1910#	1912#	1921#	1930#	1933#	1945#	1949#	1953#	1957#	1961#	2289#	2295#	2298#	2302#	
MSDATA	553#	760#	761#												
MSDECR	554#	571#	601#	653#	684#	725#	812#	817#	822#	827#	831#	835#	839#	1139#	1185#
	1191#	1194#	1235#	1265#	1277#	1289#	1301#	1311#	1323#	1335#	1347#	1363#	1381#	1383#	1405#
	1417#	1430#	1442#	1454#	1465#	1476#	1488#	1504#	1522#	1523#	1555#	1568#	1587#	1600#	1618#
	1624#	1631#	1636#	1641#	1646#	1651#	1660#	1699#	1778#	1787#	1835#	1853#	1860#	1877#	1936#
	1946#	1950#	1954#	1958#	1963#	2004#	2070#	2123#	2175#	2225#	2275#	2292#	2299#	2305#	2335#
	2432#	2479#													
MSDEFA	893#	1804#	1809#	2051#	2054#	2057#	2061#	2065#	2078#	2082#	2127#	2131#	2135#	2179#	2184#
	2188#	2229#	2234#	2238#	2411#	2412#	2413#	2414#	2415#	2445#	2446#	2447#	2448#	2449#	2450#
	2451#	2452#													
MSENDE	554#	571#	601#	653#	684#	725#	812#	817#	822#	827#	831#	835#	839#	1139#	1185#
	1194#	1235#	1265#	1277#	1289#	1301#	1311#	1323#	1335#	1347#	1363#	1381#	1383#	1405#	1417#
	1430#	1442#	1454#	1465#	1476#	1488#	1504#	1522#	1523#	1555#	1568#	1587#	1600#	1618#	1624#
	1631#	1636#	1641#	1646#	1651#	1660#	1699#	1778#	1787#	1835#	1853#	1860#	1877#	1936#	1946#
	1950#	1954#	1958#	1963#	2004#	2070#	2123#	2175#	2225#	2275#	2292#	2299#	2305#	2335#	2432#
	2479#														
MSERRI	928#	1261#	1273#	1285#	1297#	1307#	1319#	1331#	1343#	1359#	1377#	1401#	1413#	1426#	1438#
	1450#	1461#	1472#	1484#	1500#	1518#	1552#	1565#	1584#	1597#	1615#	1721#	1824#	1833#	1842#
	1851#	1928#	2114#	2117#	2120#	2166#	2169#	2172#	2216#	2219#	2222#	2266#	2269#	2272#	
MSEXCP	893#	1809#	2082#	2127#	2135#	2179#	2188#	2229#	2238#	2411#	2412#	2413#	2414#	2445#	2446#
	2447#	2448#	2449#	2450#	2451#	2452#									
MSEXIT	1220#	1263#	1275#	1287#	1299#	1309#	1321#	1333#	1345#	1361#	1379#	1394#	1403#	1415#	1428#
	1440#	1452#	1463#	1474#	1486#	1502#	1520#	1541#	1574#	1604#	1619#	1680#	1697#	1723#	1770#
	1826#	1844#	1940#	2034#	2069#	2113#	2215#	2265#	2268#	2271#	2274#	2277#	2417#	2454#	
MSEXSE	1220#	1263#	1275#	1287#	1299#	1309#	1321#	1333#	1345#	1361#	1379#	1394#	1403#	1415#	1428#
	1440#	1452#	1463#	1474#	1486#	1502#	1520#	1541#	1574#	1604#	1619#	1680#	1697#	1723#	1770#
	1826#	1844#	1940#	2034#	2069#	2113#	2215#	2265#	2268#	2271#	2274#	2277#	2417#	2454#	
MSEXTJ	1220#	1263#	1275#	1287#	1299#	1309#	1321#	1333#	1345#	1361#	1379#	1394#	1403#	1415#	1428#
	1440#	1452#	1463#	1474#	1486#	1502#	1520#	1541#	1574#	1604#	1619#	1680#	1697#	1723#	1770#
	1826#	1844#	1940#	2034#	2069#	2113#	2215#	2265#	2268#	2271#	2274#	2277#	2417#	2454#	
MSGEN	536#	553#	569#	570#	587#	601#	610#	653#	672#	692#	760#	761#	809#	812#	814#
	817#	819#	822#	824#	827#	829#	831#	833#	835#	837#	839#	893#	1138#	1139#	1149#
	1185#	1187#	1193#	1194#	1202#	1235#	1254#	1256#	1265#	1267#	1277#	1279#	1289#	1291#	1301#
	1303#	1311#	1313#	1323#	1325#	1335#	1337#	1347#	1349#	1363#	1365#	1381#	1383#	1390#	1396#
	1405#	1407#	1417#	1420#	1430#	1432#	1442#	1444#	1454#	1455#	1465#	1466#	1476#	1478#	1488#
	1490#	1504#	1506#	1522#	1523#	1535#	1543#	1555#	1557#	1568#	1576#	1587#	1589#	1600#	1606#
	1618#	1622#	1624#	1628#	1631#	1633#	1636#	1638#	1641#	1643#	1646#	1648#	1651#	1660#	1667#
	1699#	1710#	1776#	1778#	1787#	1797#	1799#	1804#	1809#	1835#	1838#	1853#	1855#	1860#	1864#
	1877#	1881#	1936#	1944#	1946#	1948#	1950#	1952#	1954#	1956#	1958#	1960#	1963#	2004#	2029#

	2031#	2051#	2054#	2057#	2061#	2065#	2070#	2073#	2078#	2082#	2123#	2125#	2127#	2131#	2135#
	2175#	2177#	2179#	2184#	2188#	2225#	2227#	2229#	2234#	2238#	2275#	2288#	2292#	2294#	2299#
MSGENB	2301#	2305#	2335#	2404#	2432#	2444#	2479#	2482#							
	893#	1804#	1809#	2051#	2054#	2057#	2061#	2065#	2078#	2082#	2127#	2131#	2135#	2179#	2184#
MSGETS	2188#	2229#	2234#	2238#											
	554#	571#	601#	653#	684#	725#	812#	817#	822#	827#	831#	835#	839#	1139#	1185#
	1191#	1194#	1235#	1265#	1277#	1289#	1301#	1311#	1323#	1335#	1347#	1363#	1381#	1383#	1405#
	1417#	1430#	1442#	1454#	1465#	1476#	1488#	1504#	1522#	1523#	1555#	1568#	1587#	1600#	1618#
	1624#	1631#	1636#	1641#	1646#	1651#	1660#	1699#	1778#	1787#	1835#	1853#	1860#	1877#	1936#
	1946#	1950#	1954#	1958#	1963#	2004#	2070#	2123#	2175#	2225#	2275#	2292#	2299#	2305#	2335#
MSGETT	2417#	2432#	2454#	2479#											
	1220#	1263#	1275#	1287#	1299#	1309#	1321#	1333#	1345#	1361#	1379#	1394#	1403#	1415#	1428#
	1440#	1452#	1463#	1474#	1486#	1502#	1520#	1541#	1574#	1604#	1619#	1680#	1697#	1723#	1770#
MSGNGB	1826#	1844#	1940#	2034#	2069#	2113#	2215#	2265#	2268#	2271#	2274#	2277#	2417#	2454#	
	536#	553#	569#	570#	587#	610#	672#	692#	760#	761#	809#	814#	819#	824#	829#
	833#	837#	1138#	1149#	1187#	1193#	1202#	1622#	1628#	1633#	1638#	1643#	1648#	1776#	1944#
MSGNIN	1948#	1952#	1956#	1960#	2288#	2294#	2301#	2404#	2444#	2482#					
	553#	570#	587#	610#	760#	761#	810#	811#	812#	815#	816#	817#	820#	821#	822#
	825#	826#	827#	830#	831#	834#	835#	838#	839#	843#	892#	893#	928#	929#	1139#
	1150#	1162#	1185#	1194#	1212#	1220#	1235#	1256#	1261#	1262#	1263#	1264#	1265#	1267#	1273#
	1274#	1275#	1276#	1277#	1279#	1285#	1286#	1287#	1288#	1289#	1291#	1297#	1298#	1299#	1300#
	1301#	1303#	1307#	1308#	1309#	1310#	1311#	1313#	1319#	1320#	1321#	1322#	1323#	1325#	1331#
	1332#	1333#	1334#	1335#	1337#	1343#	1344#	1345#	1346#	1347#	1349#	1359#	1360#	1361#	1362#
	1363#	1365#	1377#	1378#	1379#	1380#	1381#	1383#	1394#	1396#	1401#	1402#	1403#	1404#	1405#
	1407#	1413#	1414#	1415#	1416#	1417#	1420#	1426#	1427#	1428#	1429#	1430#	1432#	1438#	1439#
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	1466#	1472#	1473#	1474#	1475#	1476#	1478#	1484#	1485#	1486#	1487#	1488#	1490#	1500#	1501#
	1502#	1503#	1504#	1506#	1518#	1519#	1520#	1521#	1522#	1523#	1541#	1543#	1544#	1546#	1549#
	1552#	1553#	1555#	1557#	1559#	1562#	1565#	1566#	1568#	1574#	1576#	1578#	1581#	1584#	1585#
	1587#	1589#	1591#	1594#	1597#	1598#	1600#	1604#	1606#	1608#	1609#	1612#	1615#	1616#	1618#
	1619#	1624#	1629#	1630#	1631#	1634#	1635#	1636#	1639#	1640#	1641#	1644#	1645#	1646#	1649#
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	1722#	1723#	1746#	1752#	1763#	1768#	1770#	1777#	1778#	1787#	1799#	1800#	1801#	1804#	1809#
	1824#	1825#	1826#	1827#	1833#	1834#	1835#	1838#	1842#	1843#	1844#	1845#	1851#	1852#	1853#
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	1933#	1936#	1940#	1945#	1946#	1949#	1950#	1953#	1954#	1957#	1958#	1961#	1963#	2004#	2031#
	2034#	2035#	2036#	2051#	2054#	2057#	2061#	2065#	2069#	2070#	2073#	2078#	2082#	2113#	2114#
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	2169#	2170#	2172#	2173#	2175#	2177#	2179#	2184#	2188#	2215#	2216#	2217#	2219#	2220#	2222#
	2223#	2225#	2227#	2229#	2234#	2238#	2265#	2266#	2267#	2268#	2269#	2270#	2271#	2272#	2273#
	2274#	2275#	2277#	2289#	2292#	2295#	2298#	2299#	2302#	2305#	2335#				
MSWORD	553#	570#	893#	928#	1220#	1261#	1263#	1273#	1275#	1285#	1287#	1297#	1299#	1307#	1309#
	1319#	1321#	1331#	1333#	1343#	1345#	1359#	1361#	1377#	1379#	1394#	1401#	1403#	1413#	1415#
	1426#	1428#	1438#	1440#	1450#	1452#	1461#	1463#	1472#	1474#	1484#	1486#	1500#	1502#	1518#
	1520#	1541#	1552#	1565#	1574#	1584#	1597#	1604#	1615#	1619#	1680#	1697#	1721#	1723#	1770#
	1804#	1809#	1824#	1826#	1833#	1842#	1844#	1851#	1928#	1940#	2034#	2051#	2054#	2057#	2061#
	2065#	2069#	2078#	2082#	2113#	2114#	2117#	2120#	2127#	2131#	2135#	2166#	2169#	2172#	2179#
	2184#	2188#	2215#	2216#	2219#	2222#	2229#	2234#	2238#	2265#	2266#	2268#	2269#	2271#	2272#
	2274#	2277#	2411#	2412#	2413#	2414#	2415#	2417#	2445#	2446#	2447#	2448#	2449#	2450#	2451#
	2452#	2454#	2482												
MSXFER	2417#	2454#													
POINTE	543														
PRINTB	810	815	820	825	830	834	838	1629	1630	1634	1635	1639	1640	1644	1645
	1649	1650	1777	1945	1949	1953	1957	1961	2289	2295	2298	2302			
PRINTF	843	892	1746	1752	1763	1768	1891	1906	1910	1912	1921	1930	1933		
PRINTX	811	816	821	826											
SETPRI	1162	1546	1549	1559	1562	1578	1581	1591	1594	1609	1612				
SETVEC	1544														
SVC	520#	521													
XFER	1220#	1263#	1275#	1287#	1299#	1309#	1321#	1333#	1345#	1361#	1379#	1394#	1403#	1415#	1428#
	1440#	1452#	1463#	1474#	1486#	1502#	1520#	1541#	1574#	1604#	1619#	1680#	1697#	1723#	1770#
	1826#	1844#	1940#	2034#	2069#	2113#	2215#	2265#	2268#	2271#	2274#	2277#	2417#	2454#	

. ABS. 020074 000

ERRORS DETECTED: 0

CVMBAF, CVMBAF/CRF/NL:TOC=SVC.M11/ML, CVMBAF.P11
RUN-TIME: 30 29 3 SECONDS
RUN-TIME RATIO: 107/64=1.6
CORE USED: 18K (36 PAGES)