

KMV11-A,
KMV11-B

LOGIC DIAG
CVKMAAO

AH-T370A-MC
FICHE 1 OF 1

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KMV11A/B LOGIC DIAG
PROGRAM DOCUMENT

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IDENTIFICATION

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AUTHOR: MICHELET, GUY

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99 1.0 INTRODUCTION

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101 1.1 PROGRAM ABSTRACT

102
103
104 THIS DIAGNOSTIC WAS DESIGNED TO TEST OUT THE KMV11 MODULE
105
106 THE PROGRAM WAS IMPLEMENTED USING THE DIAGNOSTIC SUPERVISOR.
107
108 THROUGH DIALOGUE WITH THE OPERATOR, THE PROGRAM WILL ALLOW
109 MODIFICATION OF DEVICE PARAMETERS, SUCH AS UNIBUS ADDRESS,
110 VECTOR ADDRESS, AND PRIORITY LEVEL.
111

112
113 1.2 HARDWARE INTRODUCTION

114 HARDWARE DESCRIPTION:

115 M7500 = KMV11-A MODULE
116 M7501 = KMV11-B MODULE
117

118
119 KMV11-A IS A SINGLE LINE COMMUNICATION CONTROLLER FOR QBUS SYSTEMS
120 KMV11-B IS A DUAL LINE COMMUNICATION CONTROLLER FOR QBUS SYSTEMS
121

122
123 DIAGNOSTIC DESCRIPTION:

124 THE KMV11 STATIC DIAGNOSTIC IS COMPATIBLE WITH BOTH KMV11 A/B
125 IT WILL RUN IN STAND ALONE WITHOUT ANY OPERATOR INTERVENTIONS
126

127 THE PURPOSE OF THIS DIAGNOSTIC IS TO TEST ALL THE HARDWARE OF
128 THE QBUS PART OF THE INTERFACE AND THE RAM PART OF THE KMV11.
129

130 THIS DIAGNOSTIC WILL FIRST TEST QBUS ACCESS ON KMV11A(M7500) AND
131 KMV11B(M7501) CSR'S REGISTERS, THEN DATA TRANSFER FROM QBUS
132 TO DCT11 MICROPROCESSOR.
133 AFTER THAT IT WILL TEST KMV11 RAM MEMORY, DMA TRANSFERS IN/OUT
134 KMV11 AND INTERRUPT CAPABILITY.
135

136
137
138
139 2.0 HARDWARE REQUIREMENTS

140 THE FOLLOWING HARDWARE IS REQUIRED TO RUN THE STATIC LOGIC
141 TESTS ON MODULES M7500 OR M7501:
142

143 PDP-11/03,23,23 PLUS
144 16K MEMORY
145 CONSOLE TERMINAL
146 REAL TIME CLOCK
147

148
149 3.0 PRELIMINARY PROGRAM REQUIREMENTS
150

151
152 THE PROCESSOR AND MEMORY SHOULD BE THOROUGHLY TESTED PRIOR
153 TO RUNNING THIS DIAGNOSTIC.
154

155
156 4.0 GENERAL PROGRAM CONSIDERATIONS
157

158
159 4.1 DIAGNOSTIC SUPERVISOR
160

161 THIS PROGRAM IS COMPATIBLE WITH THE STANDALONE DIAGNOSTIC
162 SUPERVISOR, AND MUST BE LOADED TO BE CO-RESIDENT WITH THE
163 SUPERVISOR, OR BE PREVIOUSLY COMBINED WITH THE SUPERVISOR
164 AND LOADED AS A SINGLE FILE. IN EITHER CASE, THE COMBINED
165 PROGRAM WILL NOT EXCEED 16K OF MEMORY.
166

167
168 4.2 EXECUTION TIME
169

170 THE TOTAL TIME REQUIRED TO RUN THE M7500 OR M7501 STATIC
171 DIAGNOSTIC IS ABOUT 120 SECONDS PER PASS FOR EACH UNIT (ON
172 PDP11/23A WITH SUPERVISOR VERSION C4).
173

174
175 4.3 XXDP+
176

177 THIS PROGRAM MAY BE LOADED UNDER XXDP+, AND MAY BE RUN IN
178 DUMP MODE OR CHAIN MODE.
179

180
181 4.4 ACT/SLIDE
182

183 THIS PROGRAM MAY BE LOADED UNDER ACT OR SLIDE AND MAY BE RUN
184 IN DUMP MODE (FOR THAT DIAGNOSTIC MUST BE SETUP FIRST).
185

186 CAUTION: UNDER SLIDE THE OPERATOR MUST ALWAYS ANSWER 'YES'
187 (THE FIRST TIME) FOR HARDWARE PARAMETERS CHANGE.
188

189
190 4.5 APT
191

192 THIS PROGRAM MAY BE LOADED BY THE APT SYSTEM (INCLUDING
193 APT-RD) AND RUN IN PROGRAM MODE OR SCRIPT MODE.
194

195
196 4.6 MEMORY MANAGEMENT
197

198 MEMORY MANAGEMENT IS NOT UTILIZED IN THIS PROGRAM. IF IT IS
199 INSTALLED, IT IS DISABLED BY THE PROGRAM.
200

201
202 4.7 MEMORY PARITY OPTION
203

204 IF PARITY MEMORY IS INSTALLED, MEMORY PARITY TRAPS ARE
205 DISABLED BY THE PROGRAM.
206

207
208 4.8 ERROR LOGGING

208
209 THE NUMBER OF ERRORS WHICH HAVE OCCURRED ON EACH DEVICE
210 UNDER TEST SINCE THE LAST START OR RESTART COMMAND IS KEPT
211 IN AN ERROR LOG. THIS LOG MAY BE PRINTED BY USING THE
212 'PRINT' COMMAND (SEE SECTION 6.3.8).
213

214 5.0 PROGRAM LOAD MEDIA

215
216 THIS PROGRAM CAN BE LOADED FROM PAPER TAPE USING THE
217 ABSOLUTE LOADER OR FROM ACT, SLIDE, OR APT SYSTEMS, OR FROM
218 ANY MEDIA SUPPORTED BY XXDP+. WHEN USING THE PAPER TAPE
219 ABSOLUTE LOADER, THE PROGRAM SHOULD BE LOADED FIRST,
220 FOLLOWED BY THE DIAGNOSTIC SUPERVISOR. WHEN USING XXDP+,
221 THE DIAGNOSTIC SUPERVISOR SHOULD BE LOADED FIRST, FOLLOWED
222 BY THE DIAGNOSTIC PROGRAM.
223

224 6.0 OPERATING INSTRUCTIONS

225 6.1 LOADING AND STARTING PROCEDURES

226 6.1.1 LOADING PROCEDURES

227
228 THIS PROGRAM MAY BE LOADED FROM PAPER TAPE USING THE
229 ABSOLUTE LOADER. IT MAY ALSO BE LOADED FROM ANY XXDP+ LOAD
230 MEDIA. WHEN LOADED UNDER XXDP+, THE DIAGNOSTIC SUPERVISOR
231 WILL BE LOADED AUTOMATICALLY.
232

233 6.1.2 STARTING PROCEDURES

234
235 THE PROGRAM STARTS AT LOCATION 200. USE STANDARD DEC
236 PROCEDURES TO START THE PROGRAM.
237

238 6.1.3 STEPS FOR QUICK AND SIMPLE EXECUTION

239
240 THE DIAGNOSTIC CAN BE EXECUTED STANDALONE UNDER XXDP+
241 WITHOUT READING THE REMAINDER OF THIS DOCUMENT, AS FOLLOWS:
242

- 243
244 A) LOAD AND START DIAGNOSTIC USING RUN COMMAND
245 B) RECEIVE DIAGNOSTIC SUPERVISOR PROMPT (DR>)
246 C) ENTER STA<CR>
247 D) ANSWER HARDWARE QUESTIONS
248 E) GET END OF PASS MESSAGES OR ERROR MESSAGES
249 F) TO END EXECUTION, ENTER CONTROL/C
250

251 6.2 INITIAL DIALOGUE

252
253 AFTER THE PROGRAM AND THE SUPERVISOR ARE LOADED AND THE
254 PROGRAM IS STARTED, THE FOLLOWING IDENTIFICATION IS TYPED:
255

256
257 DRS LOADED
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DIAG. RUN-TIME SERVICES
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KMV11A/B LOGIC DIAGNOSTIC
DR>

THE OPERATOR THEN PROCEEDS BY TYPING ONE OR MORE OF THE
COMMANDS DESCRIBED IN THE FOLLOWING SECTION 6.3. (FOR MORE
DETAILED INFORMATION, REFER TO THE DIAGNOSTIC SUPERVISOR
FUNCTIONAL SPECIFICATION).

6.3 PROGRAM OPTIONS

6.3.1 START COMMAND

```
*****
STA(RT)/TESTS:<TEST-LIST>/PASS:<PASS-CNT>/FLAGS:
      <FLAG-LIST>/EOP:<INCR>
*****
```

6.3.1.1 TESTS SWITCH (/TESTS:<TEST-LIST>)

<TEST-LIST> IS A SEQUENCE OF DECIMAL NUMBERS (1:2 ETC.) OR
RANGES OF DECIMAL NUMBERS (1-5:8-10 ETC.) THAT SPECIFY THE
TESTS TO BE EXECUTED. THE NUMBERS ARE SEPARATED BY COLONS.
THE NUMBERS RANGE FROM 1 TO THE LARGEST TEST NUMBER IN THE
DIAGNOSTIC. THEY MAY BE SPECIFIED IN ANY ORDER. TESTS WILL
BE EXECUTED IN NUMERICAL ORDER REGARDLESS OF THE ORDER OF
SPECIFICATION. THE DEFAULT IS TO EXECUTE ALL TESTS. ON
THIS AND ALL SWITCHES, THE ANGLE BRACKETS <> ARE PUNCTUATION
USED IN THE DEFINITION ONLY, AND ARE NOT TO BE TYPED BY THE
OPERATOR. SEE EXAMPLE AT END OF 6.3.1.5.

6.3.1.2 PASS SWITCH (/PASS:<PASS-CNT>)

<PASS-CNT> IS A DECIMAL NUMBER INDICATING THE DESIRED NUMBER
OF PASSES. A PASS IS DEFINED AS THE EXECUTION OF THE FULL
DIAGNOSTIC (ALL SELECTED TESTS) AGAINST ALL UNITS SUBMITTED.
THE DEFAULT IS NON-ENDING EXECUTION. IN THIS CASE EXIT FROM
THE PROGRAM IS ACCOMPLISHED EITHER BY TYPING A CONTROL/C OR
BY OCCURANCE OF AN ERROR WITH THE HALT ON ERROR FLAG BEING
SET. THE EXIT IS A RETURN TO COMMAND MODE. SEE EXAMPLE AT
END OF 6.3.1.5.

6.3.1.3 FLAGS SWITCH (/FLAGS:<FLAG-LIST>)

<FLAG-LIST> IS A SEQUENCE OF ELEMENTS OF THE FORM <FLAG>,
<FLAG=1>, OR <FLAG=0>, SEPARATED BY COLONS, WHERE <FLAG> HAS
ONE OF THE FOLLOWING VALUES:

```
HOE  HALT ON ERROR, CAUSING COMMAND MODE TO BE
      ENTERED WHEN AN ERROR IS ENCOUNTERED
LOE  LOOP ON ERROR, CAUSING THE DIAGNOSTIC TO LOOP
```

328
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333 CONTINUOUSLY WITHIN THE SMALLEST DEFINED BLOCK
334 OF CODING (SEGMENT, SUBTEST, OR TEST) CONTAIN-
335 ING THE ERROR
336 IER INHIBIT ERROR REPORTING
337 IBE INHIBIT BASIC ERROR REPORTS
338 IXE INHIBIT EXTENDED ERROR REPORTS
339 PRI DIRECT ALL MESSAGES TO A LINE PRINTER
340 PNT PRINT NUMBER OF TEST BEING EXECUTED
341 BOE BELL ON ERROR
342 UAM RUN IN UNATTENDED MODE, BYPASSING MANUAL
343 INTERVENTION TESTS
344 ISR INHIBIT STATISTICAL REPORTS
345 IDU INHIBIT DROPPING OF UNITS BY DIAGNOSTIC
346 LOT LOOP ON TEST
347

348 THE FLAGS NAMED OR EQUATED TO 1 ARE SET, THOSE EQUATED TO 0
349 ARE CLEARED. A FLAG NOT SPECIFIED IS CLEARED. IF THE FLAGS
350 SWITCH IS NOT GIVEN ALL FLAGS ARE CLEARED. SEE EXAMPLE AT
351 END OF 6.3.1.5.
352

353 6.3.1.4 END OF PASS SWITCH (/EOP:<INCR>)

354 <INCR> IS A DECIMAL NUMBER INDICATING HOW OFTEN (IN TERMS OF
355 PASSES) IT IS DESIRED THAT THE END OF PASS MESSAGE BE
356 PRINTED. THE DEFAULT IS AT THE END OF EVERY PASS. SEE
357 EXAMPLE AT END OF 6.3.1.5.
358
359

360 6.3.1.5 EFFECT OF START COMMAND

361 THE EFFECT OF THE START COMMAND IS TO INITIATE THE HARDWARE
362 PARAMETER DIALOGUE, THE SOFTWARE PARAMETER DIALOGUE, AND
363 THEN THE DIAGNOSTIC TESTS THEMSELVES.
364

365 THE HARDWARE PARAMETER DIALOGUE COMMENCES WITH THE QUESTION
366 "# UNITS?" TO WHICH THE OPERATOR REPLIES WITH A DECIMAL
367 NUMBER N FROM 1 TO 16. THE TERM "UNIT" REFERS TO THE DEVICE
368 TO WHICH THIS SERIES OF DIAGNOSTICS IS DEDICATED. FOLLOWING
369 THIS ARE THE QUESTIONS WHEREBY THE P-TABLES THEMSELVES WILL
370 BE BUILT. EACH P-TABLE IS A CORE-RESIDENT TABLE CONTAINING
371 ALL THE HARDWARE INFORMATION FOR ONE UNIT. THE OPERATOR
372 MUST SUPPLY N (NUMBER OF UNITS) VALUES FOR EACH QUESTION.
373 HE MAY DO THIS BY GIVING ONE ANSWER TO EACH QUESTION (IN
374 WHICH CASE THE SERIES OF QUESTIONS WILL BE POSED N TIMES) OR
375 BY GIVING N VALUES, SEPARATED BY COMMAS, TO EACH QUESTION
376 (SERIES WILL BE POSED ONCE). EACH QUESTION IS FOLLOWED BY
377 THE RESPONSE RADIX (D FOR DECIMAL, B FOR BINARY, O FOR
378 OCTAL, L FOR YES/NO) IN PARENTHESES AND THE DEFAULT VALUE
379 AFTER THE PARENTHESES.
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FOLLOWING THE HARDWARE QUESTIONS ARE THE SOFTWARE QUESTIONS TO BUILD THE SOFTWARE TABLES, WHICH DEFINE THE MODE (QUICK VERIFY ETC.) THAT THE DIAGNOSTIC WILL EXECUTE IN.

WHEN THE QUESTION "'# UNITS?'" IS ANSWERED, MEMORY STORAGE IS ALLOCATED FOR THE P-TABLES, AND IF THERE IS NOT ENOUGH TO ACCOMMODATE THEM THE MESSAGE "TOO MANY UNITS" IS ISSUED. IN THIS CASE THE DIAGNOSTIC MUST BE EXECUTED MORE THAN ONCE TO TEST ALL UNITS.

EXAMPLE:

STA/TESTS:1:2-4:6:8-10/PASS:3/FLAGS:IER:HOE=1:UAM:LOE

THIS COMMAND WILL CAUSE THREE PASSES TO BE MADE, EACH PASS CONSISTING OF TESTS 1,2,3,4,6,8,9, AND 10 EXECUTED AGAINST ALL UNITS. THERE IS NO DIFFERENCE BETWEEN SAYING <FLAG> AND SAYING <FLAG=1>. THE NOTATION <FLAG=0> IS MEANINGFUL ONLY ON A COMMAND OTHER THAN START TO CLEAR A FLAG THAT WAS PREVIOUSLY SET. NOTE THAT ON ALL COMMANDS ONLY THE FIRST THREE LETTERS ARE SCANNED.

6.3.2 RESTART COMMAND

```
*****
RES(TART)/TESTS:<TEST-LIST>/PASS:<PASS-CNT>/FLAGS:
  <FLAG-LIST>/UNITS:<UNIT-LIST>
*****
```

6.3.2.1 TESTS, PASS, AND FLAGS SWITCHES

<TEST-LIST>, <PASS-CNT>, AND <FLAG-LIST> ARE AS IN THE START COMMAND.

6.3.2.2 UNITS SWITCH (/UNITS:<UNIT-LIST>)

<UNIT-LIST> IS A SEQUENCE OF DECIMAL NUMBERS (0,1 ETC.) OR RANGES OF DECIMAL NUMBERS (0-5, 8-10 ETC.) THAT SPECIFY THE UNITS TO BE TESTED. THE NUMBERS ARE SEPARATED BY COLONS. THE NUMBERS MAY RANGE FROM 0 THRU N-1 (N IS THE NUMBER OF UNITS SPECIFIED IN THE PREVIOUS START COMMAND). THE NUMBER INDICATES THE POSITION OF THE P-TABLE AS THE DATA WAS ENTERED DURING THE HARDWARE DIALOGUE. THE UNITS WHICH ARE SELECTED MUST NOT HAVE BEEN DROPPED BY THE DROP COMMAND. SEE THE DISCUSSION OF ADD AND DROP COMMANDS BELOW. DEFAULT IS TO TEST ALL UNITS WHICH HAVE NOT BEEN DROPPED BY A DROP COMMAND.

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6.3.2.3 EFFECT OF RESTART COMMAND

THE RESTART COMMAND DIFFERS FROM THE START COMMAND IN THAT THE P-TABLES FROM THE PREVIOUS START COMMAND (THERE MUST HAVE BEEN ONE) ARE USED, INSTEAD OF NEW ONES BEING BUILT. THE UNITS SWITCH GIVES THE ABILITY TO SELECT A SUBSET OF THESE. THE SOFTWARE DIALOGUE MAY OPTIONALLY BE REEXECUTED (OPERATOR WILL BE ASKED). THE COMMAND CAN BE USED AFTER COMMAND MODE HAS BEEN REENTERED IN ANY OF THE THREE NORMAL WAYS: A) THE REQUESTED NUMBER OF PASSES HAVE BEEN MADE B) AN ERROR WAS ENCOUNTERED WITH THE HALT ON ERROR FLAG SET C) A CONTROL/C WAS ENTERED BY THE OPERATOR.

6.3.3 CONTINUE COMMAND

CON(TINUE)/PASS:<PASS-CNT/FLAGS:<FLAG-LIST>

6.3.3.1 PASS SWITCH: (/PASS:<PASS-CNT>)

<PASS-CNT> IS SAME AS IN START COMMAND, BUT THE DEFAULT IS THE UNSATISFIED PASS-CNT FROM THE PREVIOUS START OR RESTART. IF NONE REMAINS, THE DEFAULT IS NON-ENDING EXECUTION.

6.3.3.2 FLAG SWITCH (/FLAGS:<FLAG-LIST>)

<FLAG-LIST> IS SAME AS IN START COMMAND, BUT UNSPECIFIED FLAGS RETAIN THEIR CURRENT VALUE.

6.3.3.3 EFFECT OF CONTINUE COMMAND

CONTINUE MUST FOLLOW A START OR RESTART, AND COMMAND MODE MUST HAVE BEEN ENTERED DUE TO A HALT ON ERROR OR A CONTROL/C. THE EFFECT OF THE COMMAND IS TO GO TO THE BEGINNING OF THE TEST THAT WAS BEING EXECUTED WHEN THE HALT OR CONTROL/C TOOK PLACE. SOFTWARE DIALOGUE MAY OPTIONALLY BE REEXECUTED. HARDWARE PARAMETERS MAY NOT BE CHANGED.

6.3.4 PROCEED COMMAND

PRO(CEED)/FLAGS:<FLAG-LIST>

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6.3.4.1 FLAGS SWITCH (/FLAGS:<FLAG-LIST>)

<FLAG-LIST> IS AS IN THE START COMMAND, BUT UNSPECIFIED FLAGS RETAIN THEIR CURRENT VALUE.

6.3.4.2 EFFECT OF PROCEED COMMAND

PROCEED MUST FOLLOW A START, RESTART, OR CONTINUE. COMMAND MODE MUST HAVE BEEN ENTERED VIA A HALT ON ERROR. THE EFFECT OF THE COMMAND IS TO BEGIN EXECUTION AT THE LOCATION FOLLOWING THE ERROR CALL. NEITHER HARDWARE NOR SOFTWARE PARAMETERS MAY BE ALTERED.

6.3.5 ADD COMMAND

ADD/UNITS:<UNIT-LIST>

6.3.5.1 UNITS SWITCH (/UNITS:<UNIT-LIST>)

<UNIT-LIST> IS AS IN THE RESTART COMMAND.

6.3.5.2 EFFECT OF ADD COMMAND

THE UNITS SPECIFIED ARE ADDED TO THE TEST SEQUENCE. EACH UNIT MUST HAVE A P-TABLE IN MEMORY DUE TO AN EARLIER HARDWARE DIALOGUE. THIS COMMAND MUST BE FOLLOWED BY A RESTART OR CONTINUE. THE UNITS SWITCH MUST BE SPECIFIED. THE ADD COMMAND IS MEANINGFUL ONLY FOR UNITS THAT WERE PREVIOUSLY DROPPED.

6.3.6 DROP COMMAND

DRO(P)/UNITS:<UNIT-LIST>

6.3.6.1 UNITS SWITCH (/UNITS:<UNIT-LIST>)

<UNIT-LIST> IS AS IN THE RESTART COMMAND.

6.3.6.2 EFFECT OF DROP COMMAND

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THE UNITS SPECIFIED WILL BE DROPPED FROM TESTING. THE UNITS
WILL BE RESELECTED ONLY BY THE EXECUTION OF AN ADD OR START
COMMAND. THE UNITS SWITCH MUST BE ENTERED. THIS COMMAND
MUST BE FOLLOWED BY A RESTART OR A CONTINUE COMMAND.

6.3.7 PRINT COMMAND

PRI(NT)

6.3.7.1 EFFECT OF PRINT COMMAND

THE TOTAL NUMBER OF ERRORS FOR EACH UNIT SINCE THE LAST
START OR RESTART COMMAND ARE PRINTED. THE ISR (INHIBIT
STATISTICAL REPORTING) FLAG IS CLEARED.

6.3.8 DISPLAY COMMAND

DIS(PLAY)/UNITS:<UNIT-LIST>

6.3.8.1 UNITS SWITCH (/UNITS:<UNIT-LIST>)

<UNIT-LIST> IS AS IN THE RESTART COMMAND.

6.3.8.2 EFFECT OF DISPLAY COMMAND

THE HARDWARE P-TABLES FOR ALL UNITS UNDER TEST ARE PRINTED
OUT IN THE FORMAT IN WHICH THEY WERE ENTERED. ANY UNITS
THAT WERE DROPPED BY THE OPERATOR "DROP" COMMAND ARE SO
DESIGNATED.

6.3.9 FLAGS COMMAND

FLA(GS)

6.3.9.1 EFFECT OF FLAGS COMMAND

THE CURRENT SETTINGS OF ALL FLAGS ARE PRINTED.

6.3.10 ZFLAGS COMMAND

ZFL(AGS)

6.3.10.1 EFFECT OF ZFLAGS COMMAND

ALL FLAGS ARE CLEARED.

6.3.11 CONTROL CHARACTERS

A CONTROL C (C) ENTERED DURING THE EXECUTION OF A DIAGNOSTIC CAUSES A RETURN TO COMMAND MODE.

A CONTROL Z (Z) ENTERED DURING ONE OF THE THREE OPERATOR DIALOGUES- INITIAL DIALOGUE (SEE 6.2), HARDWARE DIALOGUE (SEE 6.3.1.5), OR SOFTWARE DIALOGUE (SEE 6.3.1.5) CAUSES THE DEFAULTS TO BE TAKEN FOR THE REMAINDER OF THAT DIALOGUE.

A CONTROL O (O) ENTERED DURING THE EXECUTION OF A DIAGNOSTIC CAUSES ALL TELETYPE OUTPUT TO BE SURPRESSED FOR THE REMAINDER OF THE DIAGNOSTIC OR UNTIL ANOTHER O IS TYPED, WHICH RESTORES NORMAL TELETYPE OUTPUT.

6.3.12 HARDWARE PARAMETERS

THE FOLLOWING QUESTIONS WILL BE ASKED ON A START COMMAND. THE VALUE LOCATED TO THE LEFT OF THE QUESTION MARK IS THE DEFAULT VALUE THAT WILL BE TAKEN ON A CARRIAGE RETURN RESPONSE.

2. MICRO-CPU CSR ADDRESS: (O) 177000?

THIS IS THE ADDRESS AT WHICH THE CSR REGISTERS (SELO) RESIDE ON THE UNIBUS. THE ALLOWABLE RANGE IS 160000-177776 (OCTAL), AND THE DEFAULT IS 177000.

3. MICRO CPU VECTOR ADDRESS: (O) 300?

THE ALLOWABLE RANGE IS 300-770, AND DEFAULT VALUE IS 300

4. MICRO CPU PRIORITY LEVEL: (4) 7?

DEFFAULT VALYE IS 4

NOTE:

M7500 AND M7501 MODULE MOUNTED WITH DC003 CHIPS CAN ONLY
INTERUPT ON LEVEL 4

6.3.13 SOFTWARE PARAMETERS

NO SOFTWARE PARAMETER QUESTIONS ARE ASKED IN THAT
STATIC LOGIC TESTS.

6.3.14 EXTENDED DISCUSSION OF P-TABLE DIALOGUE

THE FULL CAPABILITY OF THE HARDWARE DIALOGUE IS REVEALED BY
THE FOLLOWING DISCUSSION OF WHAT HAPPENS INTERNALLY.AS SOON AS THE QUESTION "'# UNITS?'" IS ANSWERED (WITH THE
NUMBER N, SAY) SPACE IN CORE IS ALLOCATED FOR N P-TABLES.
ALL OF THE P-TABLES ARE OF THE SAME FORMAT, AND THERE IS A
ONE-TO ONE CORRESPONDENCE BETWEEN THE HARDWARE PARAMETER
QUESTIONS AND THE SLOTS IN THE P-TABLE FORMAT.ON THE FIRST TRIP THRU THE QUESTIONS, ALL OF THE SLOTS IN
ALL OF THE P-TABLES ARE FILLED. IF THE OPERATOR TYPES IN
LESS THAN N EXPLICIT VALUES IN RESPONSE TO A PARTICULAR
QUESTION, THESE VALUES ARE PLACED IN THE P-TABLES (ONE VALUE
GOING INTO THE PROPER SLOT OF EACH P-TABLE BEGINNING WITH
THE FIRST P-TABLE) UNTIL THE STRING OF VALUES IS EXHAUSTED.
THE LAST VALUE IN THE STRING BECOMES THE NEW DEFAULT AND IS
USED TO FILL THAT SLOT IN THE REMAINING P-TABLES.ON SUBSEQUENT TRIPS THRU THE QUESTIONS, THE SAME PROCESS IS
CARRIED OUT, EXCEPT THAT THE EARLIEST P-TABLE NOT TO HAVE
RECEIVED AN EXPLICIT VALUE IN ANY OF ITS SLOTS NOW ASSUMES
THE ROLE THAT TABLE NUMBER ONE PLAYED IN THE FIRST TRIP.THE SERIES OF QUESTIONS IS REISSUED UNTIL AT LEAST ONE
QUESTION HAS RECEIVED N EXPLICIT VALUES FROM THE OPERATOR.IN GIVING A STRING OF VALUES, COMMAS WITHOUT INTERVENING
VALUES MAY BE USED TO INDICATE A REPETITION OF THE LAST
NAMED VALUE.A STRING OF VALUES MAY BE GIVEN AS A RANGE (6-10 FOR
EXAMPLE). IF THE VALUES REPRESENT PURE NUMERICAL DATA, THIS
SAMPLE RANGE TRANSLATES TO THE STRING 6,7,8,9,10 (AN
INCREMENT OF 1). IF THE VALUES ARE ADDRESSES, THE SAMPLE
RANGE TRANSLATES TO THE STRING 6,8,10 (AN INCREMENT OF 2).

KMV11A/B LOGIC DIAG
PROGRAM DOCUMENT

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NOW LET US SEE HOW WE COULD USE THESE CAPABILITIES TO CONSTRUCT A SET OF P-TABLES. ASSUME THAT WE HAVE 16 UNITS, AND THAT THERE ARE THREE HARDWARE PARAMETERS FOR EACH (THREE SLOTS IN THE P-TABLE, THREE HARDWARE QUESTIONS IN THE DIALOGUE). LET THE DESIRED VALUE FOR THE FIRST PARAMETER BE THE NUMBER 75 FOR ALL 16 TABLES. LET THE DESIRED VALUE FOR THE SECOND PARAMETER BE EQUAL TO THE UNIT NUMBER (0,1,2,...,15) EXCEPT FOR UNIT 12, WHICH SHOULD RECEIVE THE VALUE 11. LET THE DESIRED VALUE FOR THE THIRD PARAMETER BE THE NUMBER 76 FOR THE FIRST 7 UNITS AND THE NUMBER 77 FOR THE LAST 9 UNITS.

THE FOLLOWING DIALOGUE WOULD ACCOMPLISH THIS GOAL:

UNITS (D) ? 16

UNIT 1

<QUESTION 1> ? 75

<QUESTION 2> ? 0-6

<QUESTION 3> ? 76

UNIT 21

<QUESTION 1> ?

<QUESTION 2> ? 7-11,,13-15

<QUESTION 3> ? 77

THE FIRST TIME THE SERIES IS ASKED, SLOT ONE RECEIVES A 75 IN ALL 16 TABLES. SLOT TWO RECEIVES THE VALUES 0,1,2,...,6 IN TABLES 0 THRU 6 AND A CONSTANT 6 IN TABLES 7 THRU 15. SLOT THREE RECEIVES A CONSTANT 76 IN ALL 16 TABLES.

THE SECOND TIME THRU THE SERIES, TABLES 16 THRU THE END ARE GOING TO BE AFFECTED (NOTE THAT THIS PIECE OF INFORMATION IS PRINTED OUT FOR THE THE OPERATOR IN THE FORM 'UNIT XX' AT THE BEGINNING OF EACH SERIES). QUESTION 1 IS RESPONDED TO BY A <CR>, SO SLOT ONE STAYS AT CONSTANT 75 IN TABLES 7 THRU 15, SINCE NO NEW EXPLICIT VALUES ARE TYPED IN. SLOT TWO GETS THE VALUES 7,8,9,10,11 IN TABLES 7 THRU 11, AND GETS A 11 IN SLOT 12, AND GETS THE VALUES 13,14,15 IN TABLES 13 THRU 15. SLOT THREE GETS THE VALUE 77 IN TABLES 7 THRU 15.

THE DIALOGUE IS TERMINATED WHEN THE SOFTWARE RECOGNIZES THAT 16 EXPLICIT VALUES HAVE BEEN GIVEN FOR AT LEAST ONE QUESTION (NAMELY QUESTION 2).

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7.0 TEST DESCRIPTIONS

***** TEST 1 *****
*VERIFY THAT REFERENCED QBUS DEVICE REGISTERS
*DO NOT CAUSE TIME OUT TRAP
********** TEST 2 *****
*
*CLEAR ALL KMV11 REGISTERS AND CHECK
*
********** TEST 3 *****
*
*CHECK QBUS ACCESS ON KMV11 REGISTERS (FROM SEL2 TO SEL16)
*
********** TEST 4 *****
*
*CHECK Q BUS ACCESS ON REGISTER SEL0
*
********** TEST 5 *****
*
*CHECK Q BUS BYTE ACCESS ON ALL KMV11 REGISTERS
*
********** TEST 6 *****
*
*DATA TRANSFER TO REGISTER SEL 2
*
********** TEST 7 *****
*
*DATA TRANSFER TO REGISTER SEL 4
*

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```
824
825
826 ***** TEST 8 *****
827 *
828 *DATA TRANSFER TO REGISTER SEL 6
829 *
830 *****
831
832 ***** TEST 9 *****
833 *
834 *DATA TRANSFER TO REGISTER SEL 10
835 *
836 *****
837
838 ***** TEST 10 *****
839 *
840 *DATA TRANSFER TO REGISTER SEL 12
841 *
842 *****
843
844 ***** TEST 11 *****
845 *
846 *DATA TRANSFER TO REGISTER SEL 14
847 *
848 *****
849
850 ***** TEST 12 *****
851 *
852 *DATA TRANSFER TO REGISTER SEL 16
853 *
854 *****
855
856 ***** TEST 13 *****
857 *
858 *CHECK DATA TRASFERS USING ALL CSR'S REGISTERS
859 *
860 *****
861
862 ***** TEST 14 *****
863 *
864 *KMV11 RAM MEMORY TEST: MEMORY PATERN TEST
865 *
866 *****
867
868 ***** TEST 15 *****
869 *
870 *KMV11 RAM MEMORY TEST: MEMORY ADDRESS TEST
871 *
872 *****
873
874 *****
875
876 *****
877
878 *****
879
880
```

KMV11A/B LOGIC DIAG
PROGRAM DOCUMENT

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```
881
882 ***** TEST 16 *****
883 *
884 *KMV11 RAM MEMORY TEST: MEMORY ADDRESS COMPLEMENT TEST
885 *
886 *****
887
888 ***** TEST 17 *****
889 *
890 *CHECK PROM REVISION
891 *
892 *****
893
894 ***** TEST 18 *****
895 *
896 *PROM CHECKSUM TEST
897 *
898 *****
899
900 ***** TEST 19 *****
901 *
902 *DMA TRANSFER INTO KMV11
903 *
904 *****
905
906 ***** TEST 20 *****
907 *
908 *TEST DMA TRANSFERS OUT KMV11
909 *
910 *****
911
912 ***** TEST 21 *****
913 *
914 *TEST DMA TRANSFERS IN BOTH DIRECTION
915 *
916 *****
917
918 ***** TEST 22 *****
919 *
920 *TEST INTERRUPT CAPABILITY OF KMV11 MODULE ON QBUS
921 *
922 *****
923
924 ***** TEST 23 *****
925 *
926 *TEST INTERRUPT ON DCT11 MICROPROCESSOR
927 *
928 *****
929
930 *****
931
932 *****
933
934 *****
935
```

8.0 ERROR INFORMATION

8.1 ERROR REPORTING

ERRORS ARE REPORTED BY THE PROGRAM AS THEY OCCUR (IF NOT INHIBITED). THE REPORT CONFORMS TO THE DIAGNOSTIC SUPERVISOR ERROR REPORT FORMAT, AND CONSISTS OF A DESCRIPTION OF THE ERROR, THE TEST NUMBER, SUBTEST NUMBER, PC OF THE ERROR CALL, DEVICE ADDRESS, AND BASIC AND EXTENDED ERROR INFORMATION.

THE FOLLOWING EXAMPLES PROVIDE TYPICAL ERROR REPORTS:

;CZDMQ DVC FTL ERR 00045 TST 027 SUB 000 PC:022572

;MASTER CLEAR FAILED TO CLEAR PC REG, CONTENTS=000624
;CZDMQ DVC FTL ERR 00015 TST 042 SUB 000 PC:027234

;UNIT=00, FAILING UNIT ADDRESS=160170

;JUMP TEST ERROR

FROM ADDR	TO ADDR	BAD ADDR
;000402	000000	000114

FOR ALL OTHER ERRORS, THE REPORT MAY BE MORE EXTENSIVE AND REQUIRE ADDITIONAL DATA TO BE REPORTED.

9.0 HISTORY

- DESIGN STARTED ON JANUARY 82
- REVIEW ON DECEMBER 82

a

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PROGRAM DOCUMENT

```

985
993      002000      .TITLE KMV11 A/B LOGIC DIAG
994                      .=2000
995
996
997
998
999
1000      .MCALL  SVC
1001 002000      SVC                      ; INITIALIZE SUPERVISOR MACROS
1002
1003
1004
1005
1006
1007 002000      BGNMOD  KMV11A.B
1008
1009
1010      000000      $LSTIN= 0
1011      000000      $LSTTAG= 0
1012      177777      SVCINS= -1      ; LIST INSTRUCTIONS, SHIFTED RIGHT
1013      177777      SVCTST= -1     ; LIST TEST TAGS, SHIFTED RIGHT
1014      177777      SVCSUB= -1     ; LIST SUBTEST TAGS, SHIFTED RIGHT
1015      177777      SVCGBL= -1     ; LIST GLOBAL TAGS, SHIFTED RIGHT
1016      177777      SVCTAG= -1     ; LIST OTHER TAGS, SHIFTED RIGHT
1017
1018      :      CHANGE THE VALUES OF THE SVC... SYMBOLS TO BE ZERO IF YOU WISH
1019      :      TO ALIGN THE MACRO CALLS AND THEIR EXPANSIONS.  CHANGE THE
1020      :      SYMBOLS TO BE MINUS-ONE TO NOT LIST THE EXPANSIONS.  YOU MAY
1021      :      CHANGE THE SYMBOLS AT ANY POINT IN YOUR PROGRAM.
1022
1023

```

KMV11 A/B LOGIC DIAG MACRO M1200 06-JAN-83 09:39 PAGE 17
PROGRAM HEADER

```

1025      .SBTTL  PROGRAM HEADER
1026      :++
1027      : THE PROGRAM HEADER IS THE INTERFACE BETWEEN
1028      : THE DIAGNOSTIC PROGRAM AND THE SUPERVISOR.
1029      :--
1030
1031 002000      POINTER BGNSW,BGNDU,BGNSETUP
1032
1033
1034
1052
1053 002000      HEADER  VKMAAO,A,0,240.,0
1054
1055
1066
1067
1068
1069
1070      :XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
1071
1072
1073
1074
1075
1076      :++
1077      : THIS TABLE IS USED BY THE RUNTIME SERVICES
1078      : TO PROTECT THE LOAD MEDIA.
1079      :--
1080
1081 002122      BGNPROT
1082
1083 002122 000000      0      ;OFFSET INTO P-TABLE FOR CSR ADDRESS
1084 002124 177777      -1     ;OFFSET INTO P-TABLE FOR MASSBUS ADDRESS
1085 002126 177777      -1     ;OFFSET INTO P-TABLE FOR DRIVE NUMBER
1086
1087
1101
1102
1103 002130      ENDPROT
1104

```

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DISPATCH TABLE

1106
1107
1108
1109
1110
1111
1112

.SBTTL DISPATCH TABLE

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

1113 002130

DISPATCH 23

1114
1121
1122
1123
1124
1125
1126
1127

;XX

1128
1129
1130
1131
1132
1133
1134
1135
1136

.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.
:/ AND IS USED AS A "TEMPLATE" FOR BUILDING THE P-TABLE
////////////////////////////////////

1137
1138
1139
1140
1141
1142
1143
1144
1145

.ENABL AMA
BGNHW DFPTBL

1146
1147 002210

1148
1158
1159

1160 002212 177000
1161 002214 000300
1162 002216 004000
1163 002220 000001

.WORD 177000 ;KMV11,CSRS ADDRESS
.WORD 300 ;KMV11, VECTOR ADDRESS
.WORD 4000 ;INTERRUPT PRIORITY LEVEL (4)
.WORD 1

1164
1165 002222

ENDHW

KMV11 A/B LOGIC DIAG MACRO M1200 06-JAN-83 09:39 PAGE 19
 DEFAULT HARDWARE P-TABLE

1167
 1168
 1169
 1170
 1171
 1172
 1173
 1174
 1175
 1176
 1177
 1178
 1179
 1189
 1190
 1205
 1206 002222

.SBTTL GLOBAL EQUATES SECTION

////////////////////////////////////
 // THE GLOBAL EQUATES SECTION CONTAINS PROGRAM EQUATES THAT
 // ARE USED IN MORE THAN ONE TEST.
 //////////////////////////////////////

EQUALS

:
 : BIT DEFINITIONS

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

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

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

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

KMV11 A/B LOGIC DIAG
GLOBAL EQUATES SECTION

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;; PRIORITY LEVEL DEFINITIONS

000340	PRI07== 340
000300	PRI06== 300
000240	PRI05== 240
000200	PRI04== 200
000140	PRI03== 140
000100	PRI02== 100
000040	PRI01== 40
000000	PRI00== 0

;; OPERATOR FLAG BITS

000004	EVL== 4
000010	LOT== 10
000020	ADR== 20
000040	IDU== 40
000100	ISR== 100
000200	UAM== 200
000400	BOE== 400
001000	PNT== 1000
002000	PRI== 2000
004000	IXE== 4000
010000	IBE== 10000
020000	IER== 20000
040000	LOE== 40000
100000	HJE== 100000

1207
1208
1209
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1214
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1218
1219
1220
1221
1222
1223

000340

MAXPRI==340

MAINT0==54000
MAINT1==44000
MCLR==40000
DATA1== 052525
DATA2== 125252

;MASTER CLEAR = 1,MODE = 1 ,MAINT 1 = 1 ,T11=HOLD
;MASTER CLEAR = 1,MODE = 0 ,MAINT 1 = 0 ,T11=NOT HOLD

;* PROGRAM EVENT FLAG DEFINITIONS

KMV11 A/B LOGIC DIAG
GLOBAL DATA SECTION

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1225
1226
1227
1228
1229
1230
1231
1237
1238
1239
1240
1241
1242 002222
1243
1244
1245
1258
1259 002256
002256 000000
002260 000000
002262 000000
002264 000000
1260
1261
1262
1263
1264
1265
1266
1267 002266 000000
1268 002270 000015
1269 002272 000000
1270 002274 000000
1271 002276 000005
1272 002300 000000
1273 002302 000000
1274 002304 000000
1275 002306 000000
1276 002310 000000
1277 002312 000000
1278 002314 000000
1279 002316 000000

.SBTTL GLOBAL DATA SECTION

:/ THE GLOBAL DATA SECTION CONTAINS DATA THAT ARE USED
:/ IN MORE THAN ONE TEST.
:/

::*****
:* STORAGE FOR DEVICE REGISTERS
:*****
: DESCRIPT <KMV11A.B LOGIC DIAGNOSTIC>

ERRTBL
ERRTYP: .WORD 0
ERRNBR: .WORD 0
ERRMSG: .WORD 0
ERRBLK: .WORD 0

::*****
:* PROGRAM CONTROL PARAMETERS
:*****
L\$SW: .WORD 0
L\$UIT: .WORD 15
UNIT: .WORD 0
LOCK: .WORD 0 ; ADDRESS FOR LOCK CURRENT DATA
MAXERR: .WORD 5 ; MAX ERROR CNT BEFORE DROPPING UNIT
ERRCNT: .WORD 0 ; ERROR CNT
LOGDEV: .WORD 0 ; LOGICAL DEVICE NUMBER
PSTACK: .WORD 0 ; BASE LEVEL PROGRAM STACK POINTER
SAVSP: .WORD 0 ; STACK POINTER STORAGE
SAVPC: .WORD 0 ; PROGRAM COUNTER STORAGE
SAVE4: .WORD 0
SAVE6: .WORD 0
FTIME: .WORD 0

KMV11 A/B LOGIC DIAG
GLOBAL DATA SECTION

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```

1281 *****
1282 * MISCELLANEOUS STORAGE
1283 *****
1284 002320 000000 FLAG: .WORD 0
1285 002322 000000 DH1: .WORD 0
1286 002324 000000 DELCT1: .WORD 0
1287 002326 000000 DELCT2: .WORD 0
1288 002330 000000 GOOD: .WORD 0
1289 002332 000000 GOOD0: .WORD 0
1290 002334 000000 GOOD1: .WORD 0
1291 002336 000000 GOOD2: .WORD 0
1292 002340 000000 GOOD4: .WORD 0
1293 002342 000000 GOOD6: .WORD 0
1294 002344 000000 GOOD10: .WORD 0
1295 002346 000000 GOOD12: .WORD 0
1296 002350 000000 GOOD14: .WORD 0
1297 002352 000000 GOOD16: .WORD 0
1298 002354 000000 SEL0: .WORD 0
1299 002356 000000 SEL1: .WORD 0
1300 002360 000000 SEL2: .WORD 0
1301 002362 000000 SEL4: .WORD 0
1302 002364 000000 SEL6: .WORD 0
1303 002366 000000 SEL10: .WORD 0
1304 002370 000000 SEL12: .WORD 0
1305 002372 000000 SEL14: .WORD 0
1306 002374 000000 SEL16: .WORD 0
1307 002376 000000 BSEL1: .WORD 0
1308 002400 000000 RANST: .WORD 0
1309 002402 000000 RANSEL: .WORD 0
1310 002404 000000 RANMTA: .WORD 0
1311 002406 000000 RANDN: .WORD 0
1312 002410 000000 SAVPC1: .WORD 0
1313 002412 000000 SAVSTA: .WORD 0
1314 002414 000000 COUNT: .WORD 0
1315 002416 000000 NUMBER: .WORD 0
1316 002420 000000 ADDR: .WORD 0
1317 002422 000000 GDDAT: .WORD 0
1318 002424 000000 BDDAT: .WORD 0
1319
1320 002426 TTABLE: .BLKW 2000
1321 006426 RTABLE: .BLKW 2000
1322
1323 012426 000000 EXADDR: .WORD 0
1324 012430 000000 INTFLG: .WORD 0
1325 012432 000000 BAD: .WORD 0
1326 012434 000000 BSEL0: .WORD 0
1327 012436 000000 DATA: .WORD 0
1328 012440 000000 VECT: .WORD 0
1329
1330 012442 000000 KIND: .WORD 0
1331 012444 000000 CHANEL: .WORD 0
1332
1333 012446 000000 TXDATA: .WORD 0
1334 012450 000000 RXDATA: .WORD 0
1335 012452 000000 TSPEED: .WORD 0
1336 012454 000000 LENGTH: .WORD 0
1337 012456 000000 NUB: .WORD 0

```

;=0 IF KMV11A ,=1 IF KMV11B

KMV11 A/B LOGIC DIAG MACRO M1200 06-JAN-83 09:39 PAGE 21-1
GLOBAL DATA SECTION

1338 012460 000000
1339 012462 000000
1340

RXCNT: .WORD 0
MAXCNT: .WORD 0

KMV11 A/B LOGIC DIAG
GLOBAL DATA SECTION

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1364
1365
1366
1367
1368

```
*****  
;LOAD IN LOCATION 'GDREV' THE PROM VERSION NUMBER THAT IS *  
;COMPATIBLE WITH THIS DIAGNOSTIC *  
; *  
;EACH PROM CONTAIN A REV LEVEL AND A ECO LEVEL: *  
;THE REV LEVEL IS MODIFIED EACH TIME A MODIFICATION IS DONE *  
;THE ECO LEVEL IS MODIFIED WHEN THE PROM MODIFICATION NEED *  
;A DIAGNOSTIC MODIFICATION *  
*****
```

012464 000001

GDREV: .WORD 1

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1370		
1371		
1372		
1373	012466	000
1374		
1375	012470	000
1376	012471	000
1377		
1378	012472	000000
1379		
1380		
1381		
1382		
1383		
1384	012474	000000
1385	012476	000000
1386	012500	000000
1387	012502	000000
1388	012504	000000
1389	012506	000000
1390	012510	000000
1391	012512	000000
1392	012514	000000
1393	012516	000000
1394		
1395	012520	000000
1396	012522	000000
1397	012524	000000
1398	012526	000000
1399		
1400	012530	000000
1401		
1402		
1403		
1404		
1405	012532	
1406		
1407		
1408	012532	
1409	012732	
1410		
1411		
1412		
1413		
1414		
1415		
1416		

```

*****
;* PROGRAM CONTROL FLAGS
*****
INIFLG: .BYTE    0                ;PROGRAM INITIALIZING FLAG
        .EVEN
LOKFLG: .BYTE    0                ;LOCK ON CURRENT TEST FLAG
QV.FLG: .BYTE    0                ;QUICK VERIFY FLAG
        .EVEN
UUT:    .WORD    0                ;CURRENT UNIT UNDER TEST

*****
;* POINTERS TO KMV11 VECTORS AND REGISTERS
*****
KMVV00: 0                ;POINTER TO KMV11 INTRPT VECTOR 0
KMVLVL: 0                ;POINTER TO KMV11 INTRPT SERVICE
KMVV04: 0                ;POINTER TO KMV11 INTRPT VECTOR 04
KMVV02: 0                ;      ..      ..      ..      ..      02
KMVV06: 0                ;      ..      ..      ..      ..      06
KMTLVL: 0                ;POINTER TO KMV11 TX INTRPT SERVICE PS
KMVCSR: 0                ;POINTER TO KMV11 CONTROL STATUS REGISTER
KMVP02: 0                ;POINTER TO KMV11 PORT REGISTER - SEL2
KMVP04: 0                ;POINTER TO KMV11 PORT REGISTER - SEL4
KMVP06: 0                ;POINTER TO KMV11 PORT REGISTER - SEL6

KMVP10: 0                ;POINTER TO KMV11 PORT REG -SEL10
KMVP12: 0                ;POINTER TO PORT REG -SEL 14
KMVP14: 0                ;POINTER TO PORT REG -SEL14
KMVP16: 0                ;POINTER TO PORT REG 16

LOOP:   0                ;POINTER TO LOOP BACK CONNECTOR

***** PRIMARY REG ADRS STORAGE FOR THIS UNIT *****
;THESE LOCATIONS WILL BE LOADED FOR THE CURRENT UNIT, IN INIT CODE
REGADR:

***** STACK USED FOR SUBROUTINE LINKAGE *****
.BLKW   100
SSTACK:

```

KMV11 A/B LOGIC DIAG
GLOBAL TEXT SECTION

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```
1418 .SBTTL GLOBAL TEXT SECTION
1419
1420 ;XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
1421 ;% THE GLOBAL TEXT SECTION CONTAINS FORMAT STATEMENTS,
1422 ;% MESSAGES, AND ASCII INFORMATION THAT ARE USED IN
1423 ;% MORE THAN ONE TEST.
1424 ;XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
1425
1426 ;*****
1427 ;* NAMES OF DEVICES SUPPORTED BY PROGRAM
1428 ;*****
1429 012732 DEVTYP <M7500 OR M7501 MODULE>
1430
1431
1432 ;
1433 ; FORMAT STATEMENTS USED IN PRINT CALLS
1434 ;
1435
1442
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1446
```

KMV11 A/B LOGIC DIAG
GLOBAL SUBROUTINES

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1448 .SBTTL GLOBAL SUBROUTINES

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1461

: MACRO'S NEEDED TO CALL SUBROUTINES
:-----

.MACRO CLRMAR

ROMCLK

004000

.ENDM CLRMAR

KMV11 A/B LOGIC DIAG
GLOBAL SUBROUTINES

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```
1463 ;ROUTINE TO WAIT FOR EVENT OR TIMECJT
1464
1465
1466
1467 ;CALLING SEQUENCE: JSR PC,WAIT1
1468 ; JSR PC,WAIT2
1469
1470
1471 ;INPUTS PARAMETERS: DELCT1,DELCT2
1472
1473
1474 ; INC DELCT1 UNTIL 0
1475 ; DEC DELCT2 UNTIL 0 DELCT2= NUMB OF WAIT1 PASSES
1476
1477
1478
1479
1480
1481
1482
1483 012760 005237 002324 WAIT2: INC DELCT1
1484 012764 001375 BNE WAIT2
1485
1486 012766 BREAK
1487
1488 012770 005337 002326 DEC DELCT2
1489 012774 001371 BNE WAIT2
1490
1491 012776 000207 RTS PC
1492
1493
1494
1495
1496
1497
1498 013000 005237 002324 WAIT1: INC DELCT1
1499 013004 001375 BNE WAIT1
1500
1501 013006 000207 RTS PC
```

KMV11 A/B LOGIC DIAG
GLOBAL SUBROUTINES

MACRO M1200 06-JAN-83 09:39 PAGE 27

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;MACRO TO WAIT A FEW MS

;CALLING SEQUENCE: WAITA X 0<X<177777
; WAITB X,Y 0<X OR Y<177777

.MACRO WAITA X
 MOV #X,DELCT1 ;LOAD COUNT
 JSR PC,WAIT1 ;WAIT
.ENDM

.MACRO WAITB X,Y
 MOV #X,DELCT1
 MOV #Y,DELCT2
 JSR PC,WAIT2
.ENDM

KMV11 A/B LOGIC DIAG
GLOBAL SUBROUTINES

MACRO M1200 06-JAN-83 09:39 PAGE 28

```

1532          ;ROUTINE TO DROP UNIT AFTER 5 ERROR
1533
1534
1535          ;JSR    PC,CHKMAX
1536
1537
1538
1539
1540
1541
1542
1543
1544 013010          CHKMAX: INLOOP          ;LOOPING ON ERROR?
1545 013012          BCOMPLETE          1$    ;IF YES, EXIT
1546
1547
1548 013014          RFLAGS    R0          ;GET OPERATOR FLAG
1549 013016 032700 000040          BIT      #IDU,R0    ;IS DROPPING INHIBITED?
1550 013022 001026          BNE      1$    ;IF YES EXIT
1551
1552
1553 013024 005237 002300          INC      ERRCNT          ;UPDATE ERROR COUNT
1554 013030 023737 002300 002276          CMP      ERRCNT,MAXERR    ;TOO MANY ERROR?
1555 013036 003420          BLE      1$    ;IF NOT JUMP
1556
1557
1558 013040          PRINTF    #NERRS,MAXERR,UUT    ;TOO MANY ERROR!
1559 013070          DODU      UUT    ;DROP UNIT
1560
1561 013076          DOCLN          ;END THE SUBPASS
1562
1563 013100 000207          1$:    RTS      PC
1564
1565
1566
1567
1568
1569 013102          045      116      045 NERRS: .NLIST    BEX
1570                                     .ASCIZ    /%N%AMORE THAN %D3%A  ERRORS ON UNIT %D2/
1571                                     .LIST      BEX
1572                                     .EVEN
1573
1574

```

KMV11 A/B LOGIC DIAG
GLOBAL SUBROUTINES

MACRO M1200 06-JAN-83 09:39 PAGE 29

```

1576 ;ROUTINE TO CHECK REGISTER BSELO AND TO REPORT ERROR
1577
1578
1579
1580
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1582
1583 ;CALLING SEQUENCE: JSR PC,TSTERR
1584
1585
1586
1587 ;OUTPUT PARAMETERS: RETURN TO PC IF TEST IS OK
1588 : PC+2 IF TIMEOUT DURING TEST
1589 : PC+4 IF NO KMV11 ANSWER
1590 : PC+6 IF DATA CMP ERROR
1591
1592
1593
1594
1595
1596
1597 013152 004537 013722 TSTERR: JSR R5,CBSELO ;LOOK IF BSELO=0
1598 013156 000000 .WORD 0
1599 013160 000411 BR 1$ ;TEST IS OK ,RTS PC
1600
1601
1602 013162 122737 000200 012434 CMPB #200,BSELO ;LOOK IF BSELO=200
1603 013170 001406 BEQ 2$ ;TIMEOUT DURING TEST,RTS PC+2
1604
1605
1606 013172 122737 000100 012434 CMPB #100,BSELO ;LOOK IF BSELO=100
1607 013200 001405 BEQ 3$ ;DATA CMP ERROR,RTS PC+6
1608
1609
1610
1611 013202 000407 BR 4$ ;NO KMV11 ANSWER ,RTS PC+4
1612
1613
1614
1615 013204 000207 1$: RTS PC ;TEST OK
1616
1617
1618 013206 062716 000002 2$: ADD #2,(SP)
1619 013212 000207 RTS PC ;TIMEOUT ERROR
1620
1621
1622 013214 062716 000006 3$: ADD #6,(SP)
1623 013220 000207 RTS PC ;DATA CMP ERROR
1624
1625
1626 013222 062716 000004 4$: ADD #4,(SP)
1627 013226 000207 RTS PC ;NO KMV11 ANSWER

```

KMV11 A/B LOGIC DIAG
NUMBER GENERATOR

MACRO M1200 06-JAN-83 09:39 PAGE 30

.SBTTL NUMBER GENERATOR

DESCRIPTION:

ROUTINE TO GENERATE DATA PATTERNS,
THE TYPE OF PATTERN IS SELECTED BY R3, AND THE
PATTERN GENERATED IS RETURNED IN LOCATION 'DATA'
AND LOCATION 'GOOD'

CALLING SEQUENCE:

JSR PC,GENER

INPUT PARAMETERS:

R3 CONTAINS THE PATTERN NUMBER

R3=0	ALL ZEROES
1	ALL ONES
2	010101 ETC BIT PATTERN
3	101010 ETC BIT PATTERN
4	ROTATING 1 IN A ZERO WORD
5	ROTATING 0 IN AN ALL ONE WORD
6	PSEUDO RANDOM NUMBER
7	INCREMENTING DATA PATTERN, GOOD CONTAINS THE VALUE TO BE UPDATED

IMPLICIT INPUT PARAMETERS:

NONE

OUTPUT PARAMETERS:

THE NUMBER GENERATED IS HELD IN
DATA AND GOOD.

IMPLICIT OUTPUT PARAMETERS:

NONE

COMPLETION CODES:

NONE

POSSIBLE ERROR CODES:

NONE

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KMV11 A/B LOGIC DIAG
NUMBER GENERATOR

MACRO M1200 06-JAN-83 09:39 PAGE 30-1

```

1686
1687
1688 013230 042703 177770
1689 013234 004737 013530
1690 013240 006303
1691 013242 000173 013246
1692 013246 013266
1693 013250 013272
1694 013252 013300
1695 013254 013306
1696 013256 013314
1697 013260 013324
1698 013262 013362
1699 013264 013502
1700 013266 005000
1701 013270 000507
1702 013272 005000
1703 013274 005100
1704 013276 000504
1705 013300 012700 052525
1706 013304 000501
1707 013306 012700 125252
1708 013312 000476
1709 013314 000241
1710 013316 004737 013336
1711 013322 000472
1712 013324 000241
1713 013326 004737 013336
1714 013332 005100
1715 013334 000465
1716 013336 006037 013360
1717 013342 001003
1718 013344 012737 100000 013360
1719 013352 013700 013360
1720 013356 000207
1721 013360 000001
1722 013362 012737 000005 002402
1723 013370 004737 013402
1724 013374 013700 002406
1725 013400 000443
1726 013402 013702 002406
1727 013406 001002
1728 013410 013702 002400
1729 013414 032737 000777 002402
1730 013422 001003
1731 013424 012737 000001 002402
1732 013432 013703 002402
1733 013436 013702 002406
1734 013442 033702 002404
1735 013446 001405
1736 013450 005102 002404
1737 013452 033702
1738 013456 001401
1739 013460 000402
1740 013462 000241
1741 013464 000401
1742 013466 000261

:
:
GENER: BIC #177770,R3
        JSR PC,SAVREG
        ASL R3
        JMP @GENSEL(R3)
GENSEL: GEN0 ;ALL ZERO WORD
        GEN1 ;ALL ONE WORD
        GEN52 ;52 PATTERN
        GEN25 ;25 PATTERN
        GENR1 ;ROTATE '1' EACH CALL
        GENR0 ;ROTATE '0' EACH CALL
        GENRAN ;RANDOM NUMBER
        GENINC ;INCREMENTING COUNT
GEN0: CLR R0 ;0>R0
      BR GENEX
GEN1: CLR R0 ;NOT0>R0
      CUM R0
      BR GENEX
GEN52: MOV #52525,R0 ;5252>R0
      BR GENEX
GEN25: MOV #125252,R0 ;125252>R0
      BR GENEX
GENR1: CLC
      JSR PC,GENROT ;SHIFT 1 > R0
      BR GENEX
GENR0: CLC
      JSR PC,GENROT ;
      COM R0 ;SHIFT 0 > R0
      BR GENEX
GENROT: ROR GENISH ;ROTATE 1 PATTERN
      BNE GENER1 ;= 0?
      MOV #100000,GENISH ;YES, SET MSB
      MOV GENISH,R0 ;PUT 1 IN R0
      RTS PC ;AND EXIT
GENISH: 1
GENRAN: MOV #5,RANSEL ;SET SELECT VALUE TO 5
        JSR PC,RANGEN ;GENERATE RANDOM NUMBER IN R0
        MOV RANDN,R0
        BR GENEX
RANGEN: MOV RANDN,R2
        BNE RAN1
        MOV RANST,R2
RAN1: BIT #777,RANSEL ;IS RANDOM = 0
        BNE RAN2 ;YES, PUT RANDOM START VALUE IN
        MOV #1,RANSEL ;NO;IS RANSEL SELECT VALUE = 0
        MOV RANSEL,R3 ;YES: SET RANSEL = 1
        MOV RANDN,R2
        BIT RANMTA,R2 ;
        BEQ RANCLC ;GET R2 <0 AND 1>
        COM R2
        BIT RANMTA,R2
        BEQ RANCLC
        BR RANSEC
RANCLC: CLC
        BR RAN4
RANSEC: SEC

```

KMV11 A/B LOGIC DIAG MACRO M1200 06-JAN-83 09:39 PAGE 30-2
NUMBER GENERATOR

1743	013470	006037	002406	RAN4:	ROR	RANDN	:ROTATE C TO B15
1744	013474	005303			DEC	R3	:IS THIS NUMBER REQUIRED?
1745	013476	001357			BNE	RAN2+4	:NO, GET ANOTHER
1746	013500	000207		RANEX:	RTS	PC	:YES, EXIT
1747	013502	013700	002330	GENINC:	MOV	GOOD,R0	:INCREMENTS LOC. 'GOOD'
1748	013506	005200			INC	R0	
1749	013510	010037	002330	GENEX:	MOV	R0,GOOD	
1750	013514	004737	013610		JSR	PC,RSTREG	
1751	013520	013737	002330 012436		MOV	GOOD,DATA	
1752	013526	000207			RTS	PC	
1753							

KMV11 A/B LOGIC DIAG
SAVE REGISTERS

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.SBTTL SAVE REGISTERS

DESCRIPTION:

ROUTINE TO SAVE ALL THE GENERAL PURPOSE
REGISTERS ON THE STACK, AND LEAVE THE ADDRESS OF THE
CALLING ROUTINE ON THE STACK. THE ROUTINE WILL RUN AT
PRIORITY 7 TO AVOID ANY INTERRUPTS

CAUTION:REGISTER R0 IS NOT SAVED

CALLING SEQUENCE:

JSR PC,SAVREG

INPUT PARAMETERS:

NONE

IMPLICIT INPUT PARAMETERS:

NONE

OUTPUT PARAMETERS:

REGISTERS 0 THRU 5 ARE SAVED ON THE STACK
AND THE RETURN ADDRESS OF THE CALLING ROUTINE IS
SET AS THE LAST ENTRY ON THE STACK

IMPLICIT OUTPUT PARAMETERS:

NONE

COMPLETION CODES:

NONE

POSSIBLE ERROR CODES:

NONE

1809 013530
1810 013536
1811 013544 012637 002310

SAVREG: GETPRI SAVSTA
SETPRI MAXPRI
MOV (SP)+,SAVPC ;SAVE PC FOR RETURN FROM THIS ROUTINE

KMV11 A/B LOGIC DIAG MACRO M1200 06-JAN-83 09:39 PAGE 31-1
SAVE REGISTERS

1812	013550	012637	002410	MOV	(SP)+,SAVPC1	
1813	013554	010546		MOV	R5,-(SP)	
1814	013556	010446		MOV	R4,-(SP)	
1815	013560	010346		MOV	R3,-(SP)	
1816	013562	010246		MOV	R2,-(SP)	
1817	013564	010146		MOV	R1,-(SP)	
1818	013566	010046		MOV	R0,-(SP)	
1819	013570	013746	002410	MOV	SAVPC1,-(SP)	
1820	013574	013746	002310	MOV	SAVPC,-(SP)	;PUT PC READY FOR
1821	013600			SETPRI	SAVSTA	
1822	013606	000207		RTS	PC	;RETURN
1823						
1824						
1825						

KMV11 A/B LOGIC DIAG
RESTORE REGISTERS

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1878 013610
1879 013616
1880 013624 012637 002310
1881 013630 012637 002410
1882 013634 012600
1883 013636 012601

.SBTTL RESTORE REGISTERS

DESCRIPTION:

RESTORE TO RESTORE THE GENERAL PURPOSE
REGISTERS. THE STACK IS LEFT IN THE SAME STATE AS IT
WAS WHEN SAVREG WAS CALLED.

CAUTION: REGISTER R0 IS NOT SAVED

CALLING SEQUENCE:

JSR PC,RSTREG

INPUT PARAMETERS:

NONE

IMPLICIT INPUT PARAMETERS:

NONE

OUTPUT PARAMETERS:

R1 THRU R5 RESTORED

IMPLICIT OUTPUT PARAMETERS:

NONE

COMPLETION CODES:

NONE

POSSIBLE ERROR CODES:

NONE

RSTREG: GETPRI SAVSTA
SETPRI MAXPRI
MOV (SP)+,SAVPC
MOV (SP)+,SAVPC1
MOV (SP)+,R0
MOV (SP)+,R1

KMV11 A/B LOGIC DIAG MACRO M1200 06-JAN-83 09:39 PAGE 32-1
RESTORE REGISTERS

1884	013640	012602		MOV	(SP)+,R2	
1885	013642	012603		MOV	(SP)+,R3	
1886	013644	012604		MOV	(SP)+,R4	
1887	013646	012605		MOV	(SP)+,R5	
1888	013650	013746	002410	MOV	SAVPC1,-(SP)	
1889	013654	013746	002310	MOV	SAVPC,-(SP)	;PUT PC READY FOR
1890	013660			SETPRI	SAVSTA	
1891	013666	000207		RTS	PC	

KMV11 A/B LOGIC DIAG
RESTORE REGISTERS

MACRO M1200 06-JAN-83 09:39 PAGE 33

```

1893      ;CHECK CONTENT OF ONE OF THE 8 REGISTERS
1894
1895      ; CALLING SEQUENCE
1896      ;       JSR      R5,CKSELN      ; N = REGISTER NUMBER
1897      ;       .WORD A                A=EXPECTED CONTENT OF REGISTER N
1898
1899      ;OUTPUT PARAMETER:
1900      ;       BRANCH IN PC+2 IF ERROR DETECTED
1901      ;       BRANCH IN PC IF NO ERROR DETECTED
1902
1903
1904
1905
1906
1907 013670 012537 002330      CKSEL0: MOV      (R5)+,GOOD      ;WRITE GOOD
1908 013674 017737 176610 002354      MOV      @KMVCSR,SELO      ;READ SEL 0
1909 013702 023737 002354 002330      CMP      SELO,GOOD      ;CMP ?
1910 013710 001001      BNE      1$
1911 013712 000402      BR       2$
1912 013714 062705 000002      1$:      ADD      #2,R5
1913 013720 000205      2$:      RTS      R5
1914
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1919
1920
1921 013722 005037 002330      CBSEL0: CLR      GOOD
1922 013726 012537 002330      MOV      (R5)+,GOOD
1923 013732 117737 176552 012434      MOVB     @KMVCSR,BSEL0
1924 013740 123737 012434 002330      CMPB     BSEL0,GOOD
1925 013746 001001      BNE      1$
1926 013750 000402      BR       2$
1927 013752 062705 000002      1$:      ADD      #2,R5
1928 013756 000205      2$:      RTS      R5

```

KMV11 A/B LOGIC DIAG
RESTORE REGISTERS

MACRO M1200 06-JAN-83 09:39 PAGE 34

```

1930 ;ROUTINE TO CHECK ALL REGISTER FROM SEL0 TO SEL16
1931
1932
1933 ;CALLING SEQUENCE:
1934 JSR R5,CKALL
1935 .WORD A      A = EXPECTED VALUE FOR SEL0
1936 .WORD B      B      "      "      SEL2
1937 .WORD C      C      "      "      SEL4
1938 .WORD D      D      "      "      SEL6
1939 .WORD E      E      "      "      SEL10
1940 .WORD F      F      "      "      SEL12
1941 .WORD G      G      "      "      SEL14
1942 .WORD H      H      "      "      SEL16
1943
1944
1945 ;OUTPUT PARAMETER:
1946 BRANCH IN PC+2 IF ERROR
1947 BRANCH IN PC IF NO ERROR
1948
1949
1950
1951 013760 012537 002332 CKALL: MOV (R5)+,GOOD0
1952 013764 012537 002336 MOV (R5)+,GOOD2
1953 013770 012537 002340 MOV (R5)+,GOOD4
1954 013774 012537 002342 MOV (R5)+,GOOD6
1955 014000 012537 002344 MOV (R5)+,GOOD10
1956 014004 012537 002346 MOV (R5)+,GOOD12
1957 014010 012537 002350 MOV (R5)+,GOOD14
1958 014014 012537 002352 MOV (R5)+,GOOD16
1959
1960 014020 017737 176464 002354 MOV @KMVCSR,SEL0 ;READ SEL0
1961 014026 000240 NOP
1962 014030 000240 NOP
1963 014032 000240 NOP
1964 014034 017737 176452 002360 MOV @KMVP02,SEL2 ;READ SEL2
1965 014042 000240 NOP
1966 014044 000240 NOP
1967 014046 000240 NOP
1968 014050 017737 176440 002362 MOV @KMVP04,SEL4 ;READ SEL4
1969 014056 000240 NOP
1970 014060 000240 NOP
1971 014062 000240 NOP
1972 014064 017737 176426 002364 MOV @KMVP06,SEL6 ;READ SEL6
1973 014072 000240 NOP
1974 014074 000240 NOP
1975 014076 000240 NOP
1976 014100 017737 176414 002366 MOV @KMVP10,SEL10 ;READ SEL10
1977 014106 000240 NOP
1978 014110 000240 NOP
1979 014112 000240 NOP
1980 014114 017737 176402 002370 MOV @KMVP12,SEL12 ;READ SEL12
1981 014122 000240 NOP
1982 014124 000240 NOP
1983 014126 000240 NOP
1984 014130 017737 176370 002372 MOV @KMVP14,SEL14 ;READ SEL14
1985 014136 000240 NOP
1986 014140 000240 NOP

```

KMV11 A/B LOGIC DIAG MACRO M1200 06-JAN-83 09:39 PAGE 34-1
 RESTORE REGISTERS

1987	014142	000240			NOP		
1988	014144	017737	176356	002374	MOV	@KMVP16,SEL16	;READ SEL16
1989							
1990							
1991	014152	023737	002354	002332	CMP	SEL0,GOOD0	
1992	014160	001035			BNE	1\$	
1993	014162	023737	002360	002336	CMP	SEL2,GOOD2	
1994	014170	001031			BNE	1\$	
1995	014172	023737	002362	002340	CMP	SEL4,GOOD4	
1996	014200	001025			BNE	1\$	
1997	014202	023737	002364	002342	CMP	SEL6,GOOD6	
1998	014210	001021			BNE	1\$	
1999	014212	023737	002366	002344	CMP	SEL10,GOOD10	
2000	014220	001015			BNE	1\$	
2001	014222	023737	002370	002346	CMP	SEL12,GOOD12	
2002	014230	001011			BNE	1\$	
2003	014232	023737	002372	002350	CMP	SEL14,GOOD14	
2004	014240	001005			BNE	1\$	
2005	014242	023737	002374	002352	CMP	SEL16,GOOD16	
2006	014250	001001			BNE	1\$	
2007							
2008	014252	000402			BR	2\$	
2009	014254	062705	000002		ADD	#2,R5	
2010	014260	000205			RTS	R5	

KMV11 A/B LOGIC DIAG
RESTORE REGISTERS

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```

2012                                     ;ROUTINE TO CHECK SEL2 TO SEL16
2013
2014
2015
2016
2017
2018 014262 012537 002336          CKREG: MOV      (R5)+,GOOD2
2019 014266 012537 002340          MOV      (R5)+,GOOD4
2020 014272 012537 002342          MOV      (R5)+,GOOD6
2021 014276 012537 002344          MOV      (R5)+,GOOD10
2022 014302 012537 002346          MOV      (R5)+,GOOD12
2023 014306 012537 002350          MOV      (R5)+,GOOD14
2024 014312 012537 002352          MOV      (R5)+,GOOD16
2025
2026
2027 014316 017737 176170 002360    MOV      @KMVP02,SEL2
2028 014324 000240                    NOP
2029 014326 000240                    NOP
2030 014330 000240                    NOP
2031 014332 000240                    NOP
2032 014334 017737 176154 002362    MOV      @KMVP04,SEL4
2033 014342 000240                    NOP
2034 014344 000240                    NOP
2035 014346 000240                    NOP
2036 014350 000240                    NOP
2037 014352 017737 176140 002364    MOV      @KMVP06,SEL6
2038 014360 000240                    NOP
2039 014362 000240                    NOP
2040 014364 000240                    NOP
2041 014366 000240                    NOP
2042 014370 017737 176124 002366    MOV      @KMVP10,SEL10
2043 014376 000240                    NOP
2044 014400 000240                    NOP
2045 014402 000240                    NOP
2046 014404 000240                    NOP
2047 014406 017737 176110 002370    MOV      @KMVP12,SEL12
2048 014414 000240                    NOP
2049 014416 000240                    NOP
2050 014420 000240                    NOP
2051 014422 000240                    NOP
2052 014424 017737 176074 002372    MOV      @KMVP14,SEL14
2053 014432 000240                    NOP
2054 014434 000240                    NOP
2055 014436 000240                    NOP
2056 014440 000240                    NOP
2057 014442 017737 176060 002374    MOV      @KMVP16,SEL16
2058
2059
2060
2061
2062 014450 023737 002360 002336    CMP      SEL2,GOOD2
2063 014456 001031                    BNE      1$
2064 014460 023737 002362 002340    CMP      SEL4,GOOD4
2065 014466 001025                    BNE      1$
2066 014470 023737 002364 002342    CMP      SEL6,GOOD6
2067 014476 001021                    BNE      1$
2068 014500 023737 002366 002344    CMP      SEL10,GOOD10

```

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2069	014506	001015			BNE	1\$
2070	014510	023737	002370	002346	CMP	SEL12,GOOD12
2071	014516	001011			BNE	1\$
2072	014520	023737	002372	002350	CMP	SEL14,GOOD14
2073	014526	001005			BNE	1\$
2074	014530	023737	002374	002352	CMP	SEL16,GOOD16
2075	014536	001001			BNE	1\$
2076	014540	000402			BR	2\$
2077						
2078	014542	062705	000002	1\$:	ADD	#2,R5
2079	014546	000205		2\$:	RTS	R5

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RESTORE REGISTERS

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```

2081                ;ROUTINE TO CLEAR KMV11 MODULE
2082
2083
2084                ;CALLING SEQUENCE:
2085                ;      JSR PC,CLRKMV
2086
2087                ;ROUTINE DESCRIPTION: CLEAR ALL CSR'S REGISTERS AND CHECK IF = 0
2088
2089
2090
2091 014550 005077 175734 CLRKMV: CLR      @KMVCSR
2092 014554 012777 054000 175726      MOV      #MAINT0,@KMVCSR      ;SET MAINTENANCE MODE
2093 014562      WAITA      0
2094
2095 014574 012702 000010      MOV      #10,R2
2096 014600 013701 012510      MOV      KMVCSR,R1      ;LOAD ADDRESS
2097 014604 005021      1$:  CLR      (R1)+      ;CLEAR
2098 014606 000240      NOP
2099 014610 000240      NOP
2100 014612 000240      NOP
2101 014614 005302      DEC      R2      ;ALL DONE
2102 014616 001372      BNE      1$      ;NO
2103 014620 004537 013760      JSR      R5,CKALL      ;CHECK ALL REG = 0
2104 014624 000000      .WORD      0
2105 014626 000000      .WORD      0
2106 014630 000000      .WORD      0
2107 014632 000000      .WORD      0
2108 014634 000000      .WORD      0
2109 014636 000000      .WORD      0
2110 014640 000000      .WORD      0
2111 014642 000000      .WORD      0
2112 014644 000404      BR       2$
2113 014646      ERRHRD 2,EM0002,PRALL      ;OK BRANCH AT END
2114 014656 000207      2$:  RTS      PC      ;CSR'S REGISTERS CAN'T BE CLEARED
2115

```

KMV11 A/B LOGIC DIAG
RESTORE REGISTERS

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```

2117 ;ROUTINE TO SET MAINTENANCE MODE C ON KMV11
2118
2119
2120
2121
2122 ;CALLING SEQUENCE:
2123 ; JSR PC,MAINMO
2124
2125
2126
2127
2128 ;MAINT0 = MASTER CLEAR=1 +MAINT1=1 +MODE = 1 ;DCT11 = HOLD
2129
2130
2131
2132 ;TEST DESCRIPTION:SET MAINTENANCE MODE 0 AND CHECK THAT MASTER CLEAR
2133 ; IS RESET BY DCT11 MICRO PROCESSOR
2134 ;
2135 ;
2136 ; GIVE AN ERROR IF NOT RESET
2137
2138
2139
2140 014660 012777 054000 175622 MAINMO: MOV #MAINT0,@KMVCSR ;LOAD MAINT0
2141 014666 012737 177000 002324 MOV #177000,DELCT1
2142 014674 012737 000001 002326 MOV #1,DELCT2
2143 014702 004737 012760 JSR PC,WAIT2 ;WAIT
2144 014706 004537 013670 JSR R5,CKSELO ;CHECK SELO=0 BUT MODE BIT + MAINT1 BIT
2145 014712 014000 .WORD 14000
2146 014714 000404 BR 1$
2147 014716 ERRHRD 3,EM0001,PRSELO
2148 014726 000207 1$: RTS PC

```

KMV11 A/B LOGIC DIAG
RESTORE REGISTERS

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```

2150          ;ROUTINE TO SET MAINT MODE 1 AND CHECK DCT11 CLEAR SELO AFTER HAVING DECODED
2151
2152
2153
2154          ;CALLING SEQUENCE:
2155          ;      JSR PC,MAINM1
2156
2157
2158
2159          ;GIVE AN ERROR IF MASTER CLEAR IS NOT CLEAR BY DCT11
2160          ;
2161          ;MAINT1= MASTER CLEAR=1 + MAINT 1 =0 + MODE = 1 : T11=NOT IN HOLD
2162
2163
2164
2165
2166
2167
2168 014730 005077 175554      MAINM1: CLR      @KMVCSR
2169 014734 000240              NOP
2170 014736 000240              NOP
2171 014740 012777 044000 175542      MOV      #MAINT1,@KMVCSR      ;LOAD ADDRESS
2172 014746 012737 177700 002324      MOV      #177700,DELCT1
2173 014754 012737 000001 002326      MOV      #1,DELCT2
2174 014762 004737 012760              JSR      PC,WAIT2
2175 014766 004537 013670              JSR      R5,CKSELO      ;CHECK SELO=0 BIT MODE BIT =1
2176 014772 004000              .WORD 4000
2177 014774 000404              BR      1$      ;OK BRANCH
2178 014776              ERRHRD 4,EM0001,PRSELO
2179 015006 000207      1$:      RTS      PC
2180
2181
2182
2183
2184

```

KMV11 A/B LOGIC DIAG
RESTORE REGISTERS

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;ROUTINE TO SET TEST NUMBER ON BSELO

;CALLING SEQUENCE:
: JSR R5,TSTNUB
: .WORD A

A=TEST MICRO PROGRAM NUMBER

2186
2187
2188
2189
2190
2191
2192
2193
2194
2195
2196
2197
2198
2199

2200	015010	012537	012456	
2201	015014	053777	012456	175466
2202	015022	012737	170000	002324
2203	015030	012737	000001	002326
2204	015036	004737	012760	
2205	015042	000205		

TSTNUB: MOV (R5)+,NUB
BIS NUB,@KMVCSR
MOV #170000,DELCT1
MOV #1,DELCT2
JSR PC,WAIT2
RTS R5

;LOAD TEST NUMBER

;WAIT

KMV11 A/B LOGIC DIAG
RESTORE REGISTERS

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2207
2208
2209
2210
2211
2212
2213
2214
2215
2216
2217
2218
2219
2220
2221
2222
2223
2224
2225
2226
2227
2228
2229
2230
2231
2232
2233
2234
2235
2236
2237
2238
2239
2240
2241
2242
2243
2244
2245
2246
2247
2248
2249
2250
2251
2252
2253
2254
2255
2256
2257
2258
2259
2260
2261
2262
2263

;ROUTINE TO WRITE OR READ ONE OF THE KMV11 REGISTERS

;CALLING SEQUENCE:

;JSR R5,WRITE

;WORD A

;WORD B

A=ADDRESS TO WRITE
B=DATA TO WRITE

;JSR R5,READ

;WORD A

A=ADDRESS TO READ

;MICRO DIAG NB 47 DESCRIPTION:

;WRITE: PUT ADDRESS TO WRITE IN SEL2

;PUT DATA TO WRITE IN SEL4

;SET BIT 0 OF SEL6(WRITE BIT)

;SET TEST NB 44

;KMV11 CLEAR BSELO WHEN DONE

;READ: PUT ADDRESS TO READ IN SEL2

;CLEAR BIT 0 IN SEL6

;SET TEST 47

;KMV11 READ ADDRESS IN SEL2 AND CLEAR BSELO WHEN DONE
;THE READ DATA IS LOAD IN LOCATION 'BAD' AND 'DATA'

WRITE: MOV (R5)+,@KMVP02

MOV (R5)+,@KMVP04

MOV #1,@KMVP06

;WRITE ADDRESS

;DATA

;BIT WRITE

JSR R5,TSTNUB

.WORD 47

;SEND TEST NB 44

RTS R5

;RETURN

READ: MOV (R5)+,@KMVP02

CLR @KMVP04

CLR @KMVP06

;SET ADDRESS TO READ

JSR R5,TSTNUB

.WORD 47

;SEND TEST NB 44

NOP

015044 012577 175442
015050 012577 175440
015054 012777 000001 175434
015062 004537 015010
015066 000047
015070 000205
015072 012577 175414
015076 005077 175412
015102 005077 175410
015106 004537 015010
015112 000047
015114 000240

KMV11 A/B LOGIC DIAG MACRO M1200 06-JAN-83 09:39 PAGE 40-1
RESTORE REGISTERS

2264	015116	000240				NOP		
2265								
2266								
2267	015120	004737	013152			JSR	PC,TSTERR	;CHECK BSEL 0
2268	015124	000410				BR	1\$	;OK
2269	015126	000402				BR	2\$	
2270	015130	000401				BR	2\$	
2271	015132	000400				BR	2\$	
2272								
2273	015134				2\$:	ERRHRD	5,EM0024	;NO KMV ANSWER
2274	015144	000205				RTS	R5	
2275								
2276	015146	017737	175342	012432	1\$:	MOV	@KMVP04,BAD	;READ DATA IN BAD
2277	015154	013737	012432	012436		MOV	BAD,DATA	;READ DATA IN 'DATA' LOCATION
2278								
2279	015162	000205				RTS	R5	
2280								
2281								
2282								
2283								

KMV11 A/B LOGIC DIAG
RESTORE REGISTERS

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```
2285      .MACRO ROMCLK
2286      .LIST
2287      JSR      R5,.ROMCLK      ;CLOCK INSTRUCTION
2288      .NLIST
2289      .ENDM
2290
2291      .MACRO ED$CALL XY
2292      .LIST
2293      ;***** TEST'XY' *****
2294      .NLIST
2295      .ENDM
2296
2297
2298
2299      .MACRO BADHEAD
2300      .RADIX 10
2301      ED$CALL \T$TESTNUM+1
2302      .RADIX 8
2303      .ENDM
2304
2305
2306
```

KMV11 A/B LOGIC DIAG MACRO M1200 06-JAN-83 09:39 PAGE 42
GLOBAL ERROR REPORT SECTION

```

2308 .SBTTL GLOBAL ERROR REPORT SECTION
2309
2310 ;////////////////////////////////////
2311 ;/ THE GLOBAL ERROR REPORT SECTION CONTAINS ERROR MESSAGES
2312 ;/ THAT ARE USED IN MORE THAN ONE TEST.
2313 ;////////////////////////////////////
2314
2315 .NLIST BEX
2316
2317
2318
2319 015164 045 116 045 TFM36: .ASCIZ /%N%AREGISTER ADDRESS ERROR,ADDR = %06%A,UNIT = %02/
2320
2321 015247 040 102 125 TIM: .ASCIZ / BUS TIMEOUT /
2322
2323 015265 115 101 123 EM0001: .ASCIZ /MASTER CLEAR FAIL TO RESET: DCT11 CAN'T CLEAR MASTER CLEAR /
2324
2325 015361 040 113 115 EM0002: .ASCIZ / KMV11 REGISTERS CAN'T BE CLEARED /
2326
2327 015424 040 104 101 EM0003: .ASCIZ / DATA COMPARE ERROR ON KMV11 REGISTER (SEL2 TO SEL16)/
2328
2329 015512 040 104 101 EM0004: .ASCIZ / DATA COMPARE ERROR ON BSEL0 WHEN ACCESSED BY QBUS/
2330
2331 015575 040 122 105 EM0005: .ASCIZ / REGISTER SEL2 CAN'T BE ACCESSED CORRECTLY BY MICRO PROGRAM/
2332
2333 015671 105 122 122 EM0006: .ASCIZ /ERROR WHEN TESTING SEL4,DCT11 CAN'T ACCESS SEL4 CORRECTLY/
2334
2335 015764 105 122 122 EM0007: .ASCIZ /ERROR WHEN TESTING SEL6,DCT11 CAN'T ACCESS SEL6 CORRECTLY/
2336
2337 016056 105 122 122 EM0010: .ASCIZ /ERROR WHEN TESTING SEL10,DCT11 CAN'T ACCESS SEL10 CORRECTLY/
2338
2339 016152 105 122 122 EM0011: .ASCIZ /ERROR WHEN TESTING SEL12,DCT11 CAN'T ACCESS SEL12 CORRECTLY/
2340
2341 016246 105 122 122 EM0012: .ASCIZ /ERROR WHEN TESTING SEL14,DCT11 CAN'T ACCESS SEL14 CORRECTLY/
2342
2343 016342 105 122 122 EM0013: .ASCIZ /ERROR WHEN TESTING SEL16,DCT11 CAN'T ACCESS SEL16 CORRECTLY/
2344
2345 016436 040 104 101 EM0015: .ASCIZ / DATA COMPARE ERROR IN RAM MEMORY TEST /
2346
2347 016506 040 124 111 EM0016: .ASCIZ / TIMEOUT DURING DMA TRANSFER /
2348
2349 016544 040 104 101 EM0020: .ASCIZ / DATA COMPARE ERROR AFTER DMA TRANSFER INTO KMV11 /
2350
2351 016630 040 104 101 EM0021: .ASCIZ / DATA COMPARE ERROR AFTER DMA TRANSFER IN BOTH DIRECTION /
2352
2353 016722 111 116 124 EM0022: .ASCIZ /INTERUPT OCCUR AT WRONG LEVEL /
2354
2355 016762 116 117 040 EM0023: .ASCIZ /NO INTERUPT OCCUR /
2356
2357 017005 116 117 040 EM0024: .ASCIZ /NO ANSWER FROM KMV11 MODULE , MICRO TEST NOT EXECUTED /
2358
2359 017075 124 111 115 EM0025: .ASCIZ /TIMEOUT DURING KMV11 MICRO TEST /
2360
2361 017136 111 116 124 EM0026: .ASCIZ /INTERUPT ON DCT11 WITH ILLEGAL VECTOR WHEN ACCESSING BSEL2 /
2362
2363 017232 116 117 040 EM0027: .ASCIZ /NO KMV11 ANSWER ,DCT11 RECEIVE NO INTERUPT /
2364

```

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GLOBAL ERROR REPORT SECTION

2365	017307	111	114	114	EM0028: .ASCIIZ /ILLEGAL INTERRUPT OCCURED /
2366					
2367	017341	104	101	124	EM0030: .ASCIIZ /DATA COMPARE ERROR DURING DMA TRANSFER OUT KMV11 /
2368					
2369	017423	105	122	122	EM0031: .ASCIIZ /ERROR DURING BYTE ACCES ON KMV11 REGISTERS /
2370					
2371	017477	111	116	124	EM0032: .ASCIIZ /INTERUPT ON DCT11 WITH ILLEGAL VECTOR WHEN ACCESSING BSELO /
2372					
2373	017573	122	101	115	EM0033: .ASCIIZ /RAM MEMORY ERROR WHEN TRANSFERING BUFFER IN DMA /
2374					
2375	017654	120	122	117	EM0034: .ASCIIZ /PROM REVISION IS NOT COMPATIBLE WITH DIAGNOSTIC REVISION /
2376					
2377	017746	040	103	110	EM0134: .ASCIIZ / CHECK PROM AND DIAGNOSTIC REVISION /
2378					
2379	020013	040	040	120	EM0035: .ASCIIZ / PROM CHECKSUM ERROR /
2380					
2381					
2382					

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GLOBAL ERROR REPORT SECTION

```

2384 020042      045      116      045 MSEL0: .ASCIZ /%N% SEL0 = %06% SHOULD BE = %06%/
2385
2386 020107      045      116      045 MREG0: .ASCIZ /%N% SEL0 = %06% SHOULD BE = %06/
2387 020152      045      116      045 MREG2: .ASCIZ /%N% SEL2 = %06% SHOULD BE = %06/
2388 020215      045      116      045 MREG4: .ASCIZ /%N% SEL4 = %06% SHOULD BE = %06/
2389 020260      045      116      045 MREG6: .ASCIZ /%N% SEL6 = %06% SHOULD BE = %06/
2390 020323      045      116      045 MREG10: .ASCIZ /%N% SEL10 = %06% SHOULD BE = %06/
2391 020366      045      116      045 MREG12: .ASCIZ /%N% SEL12 = %06% SHOULD BE = %06/
2392 020431      045      116      045 MREG14: .ASCIZ /%N% SEL14 = %06% SHOULD BE = %06/
2393 020474      045      116      045 MREG16: .ASCIZ /%N% SEL16 = %06% SHOULD BE = %06/
2394
2395
2396 020537      045      116      045 MSEL2: .ASCIZ /%N% SEL2 = %06% SHOULD BE = %06/
2397
2398 020602      045      116      045 MSEL4: .ASCIZ /%N% SEL4 = %06% SHOULD BE = %06/
2399
2400 020645      045      116      045 MSEL10: .ASCIZ /%N% SEL10 = %06% SHOULD BE = %06/
2401
2402 020707      045      116      045 MRAM1: .ASCIZ /%N% RAM ADDRESS =%06%, EXTENDED ADDRESS =%06/
2403 020771      045      116      045 MRAM2: .ASCIZ /%N% BDDAT = %06% SHOULD CONTENT = %06/
2404
2405 021051      045      116      045 MINT: .ASCIZ /%N% GOOD = %06% BAD = %06/
2406
2407 021103      045      116      045 MBSEL0: .ASCIZ /%N% BSEL0 = %06% SHOULD BE = %06/
2408
2409 021145      045      116      045 MINTR: .ASCIZ /%N% DCT11 ILLEGAL INTERRUPT WHEN ADDRESS =%06% IS WRITTEN/
2410
2411 021240      045      116      045 MDMA1: .ASCIZ /%N% DMA ERROR AT ADDRESS =%06% EXTADDRESS =%06/
2412 021323      045      116      045 MDMA2: .ASCIZ /%N% BDDAT = %06% SHOULD BE = %06/
2413
2414 021371      045      116      045 MBYTE: .ASCIZ /%N% AT ADDRESS ADDR =%06%, GOOD = %06%, BAD = %06/
2415
2416 021453      045      116      045 MDMAR1: .ASCIZ /%N% RAM MEMORY LOCATION =%06% IS MODIFIED DURING /
2417 021542      045      116      045 MDMAR2: .ASCIZ /%N% DMA TRANSFER IN BOTH DIRECTION /
2418 021610      045      116      045 MDMAR3: .ASCIZ /%N% READ DATA =%06% SHOULD BE = %06/
2419
2420 021666      045      116      045 MCHECK: .ASCIZ /%N% CHECKSUM IS =%06% SHOULD BE ZERO /
2421
2422 021737      045      116      045 MDMAF: .ASCIZ /%N% ADDR = %06% ,GDDAT = %06% ,BDDAT = %06/
2423
2424
2425

```

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GLOBAL ERROR REPORT SECTION

```

2427
2428      .EVEN
2429
2430
2431
2432
2433      -----
2434      : MACRO'S NEEDED TO REPORT ERRORS
2435      -----
2436 022022      BGNMSG  PRSELO      ;REPORT CONTENT OF SELO
2437 022022      PRINTB  #MSELO,SELO,GOOD
2438 022052 004737 013010      JSR      PC,CHKMAX      ;CHECK IF MAX ERROR?
2439 022056      ENDMSG
2440
2441
2442 022060      BGNMSG  PRRAM      ;RAM ERROR REPORT
2443 022060      PRINTB  #MRAM1,ADDR,EXADDR
2444 022110      PRINTB  #MRAM2,BDDAT,GOOD
2445 022140 004737 013010      JSR      PC,CHKMAX      ;CHECK IF MAX ERROR?
2446 022144      ENDMSG
2447
2448
2449
2450 022146      BGNMSG  PRBYTE     ;BYTE ACCES REPORT
2451 022146      PRINTB  #MBYTE,ADDR,GOOD,BAD
2452 022202 004737 013010      JSR      PC,CHKMAX      ;CHECK IF MAX ERROR?
2453 022206      ENDMSG
2454
2455
2456 022210      BGNMSG  PDMARA     ;DMA IN RAM ERROR REPORT
2457 022210      PRINTB  #MDMAR1,ADDR
2458 022234      PRINTB  #MDMAR2
2459 022254      PRINTB  #MDMAR3,BDDAT,GOOD
2460 022304      BREAK
2461 022306 004737 013010      JSR      PC,CHKMAX      ;CHECK IF MAX ERROR?
2462 022312      ENDMSG
2463
2464
2465 022314      BGNMSG  PCHECK     ;CHECKSUM ERROR REPORT
2466 022314      PRINTB  #MCHECK,BAD
2467 022340 004737 013010      JSR      PC,CHKMAX      ;CHECK IF MAX ERROR?
2468 022344      ENDMSG
2469
2470
2471
2472
2473 022346      BGNMSG  PADFLT     ;ADDRESS TEST
2474 022346      PRINTB  #TFM36,ADDR,UNIT
2475 022376 004737 013010      JSR      PC,CHKMAX
2476 022402      ENDMSG
2477
2478
2479
2480
2481

```

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GLOBAL ERROR REPORT SECTION

2483	022404		BGNMSG	PRALL		;CSR'S CONTENT REPORT
2484	022404		PRINTB	#MREG0,SEL0,GOOD0		
2485	022434		PRINTB	#MREG2,SEL2,GOOD2		
2486	022464		PRINTB	#MREG4,SEL4,GOOD4		
2487	022514		PRINTB	#MREG6,SEL6,GOOD6		
2488	022544		PRINTB	#MREG10,SEL10,GOOD10		
2489	022574		PRINTB	#MREG12,SEL12,GOOD12		
2490	022624		PRINTB	#MREG14,SEL14,GOOD14		
2491	022654		PRINTB	#MREG16,SEL16,GOOD16		
2492	022704		BREAK			
2493	022706	004737 013010	JSR	PC,CHKMAX		;CHECK IF MAX ERROR?
2494	022712		ENDMSG			
2495						
2496						
2497						
2498						
2499						
2500						
2501						
2502						
2503	022714		BGNMSG	PRREG		;CSR'S REPORT BUT SELO
2504	022714		PRINTB	#MREG2,SEL2,GOOD2		
2505	022744		PRINTB	#MREG4,SEL4,GOOD4		
2506	022774		PRINTB	#MREG6,SEL6,GOOD6		
2507	023024		PRINTB	#MREG10,SEL10,GOOD10		
2508	023054		PRINTB	#MREG12,SEL12,GOOD12		
2509	023104		PRINTB	#MREG14,SEL14,GOOD14		
2510	023134		PRINTB	#MREG16,SEL16,GOOD16		
2511	023164		BREAK			
2512	023166	004737 013010	JSR	PC,CHKMAX		;CHECK IF MAX ERROR?
2513	023172		ENDMSG			
2514						
2515						
2516						
2517						
2518						
2519						
2520						
2521	023174		BGNMSG	PBSELO		;BSELO REPORT
2522	023174		PRINTB	#MBSELO,BSELO,GOOD		
2523	023224	004737 013010	JSR	PC,CHKMAX		;CHECK IF MAX ERROR?
2524	023230		ENDMSG			
2525						
2526						
2527						
2528						
2529						
2530	023232		BGNMSG	PINTR		;INTERUPT REPORT
2531	023232		PRINTB	#MINTR,ADDR		
2532	023256	004737 013010	JSR	PC,CHKMAX		;CHECK IF MAX ERROR?
2533	023262		ENDMSG			
2534						
2535						
2536						

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GLOBAL ERROR REPORT SECTION

```
2538
2539 023264      BGNMSG  PRDMA      ;DMA ERROR REPORT
2540 023264      PRINTB  #MDMA1,ADDR,EXADDR
2541 023314      PRINTB  #MDMA2,BDDAT,GOOD
2542 023344      JSR      PC,CHKMAX
2543 023350      BREAK
2544 023352      ENDMSG
2545
2546
2547 023354      BGNMSG  PDMAF      ;DMA SHORT REPORT
2548 023354      PRINTB  #MDMAF,ADDR,GDDAT,BDDAT
2549 023410      ENDMSG
2550
2551
2552
2553
```

KMV11 A/B LOGIC DIAG
REPORT CODING SECTION

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2555
2556
2557
2558
2559
2560
2561
2562
2563 023412
2564
2570
2571 023412
2572
2579
2580 023416
2581
2582

.SBTTL REPORT CODING SECTION

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

BGNRPT

EXIT RPT

ENDRPT

KMV11 A/B LOGIC DIAG
INITIALIZE SECTION

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```

2584      .SBTTL  INITIALIZE SECTION
2585
2586      ;////////////////////////////////////
2587      ;// THE INITIALIZE SECTION CONTAINS THE CODING THAT IS PERFORMED
2588      ;// AT THE BEGINNING OF EACH PASS.
2589      ;////////////////////////////////////
2590
2591 023420      BGNINIT
2592
2593
2628
2629      .EVEN
2630
2631
2632
2633
2634      ;INITIALIZE SUBROUTINE STACK
2635 023420 012705 012732      MOV      #SSTACK,R5
2636      ;STORE BASE LEVEL PROGRAM STACK POINTER
2637 023424 010637 002304      MOV      SP,PSTACK
2638 023430 005737 002316      TST      FTIME
2639 023434 001011            BNE      1$
2640 023436 013737 000004 002312      MOV      @#4,SAVE4
2641 023444 013737 000006 002314      MOV      @#6,SAVE6
2642 023452 012737 000001 002316      MOV      #1,FTIME
2643 023460 013737 002312 000004 1$: MOV      SAVE4,@#4
2644 023466 013737 002314 000006      MOV      SAVE6,@#6
2645
2646 023474      READEF #EF.START          ;START COMMAND?
2647 023502      BCOMPLETE          SETUP ;IF YES BRANCH
2648
2649 023504      READEF #EF.CONTINUE       ;CONTINUE COMMAND?
2650 023512      BCOMPLETE          END
2651
2652
2653 023514      READEF #EF.NEW             ;NEW PASS?
2654 023522      BNCOMPLETE          NEXT  ;IF NOT EXIT SETUP
2655
2656 023524 012737 177777 012472 SETUP: MOV      #-1,UUT          ;INITIALISE UNIT NUMBER
2657
2658 023532 005237 012472      NEXT:  INC      UUT              ;POINT NEXT UNIT
2659 023536 023737 012472 002270      CMP      UUT,LSUIT        ;ALL DONE?
2660 023544 001521            BEQ      ABORT          ;IF YES END OF PASS
2661
2662 023546 013701 012472      MOV      UUT,R1
2663 023552      PRINTF #RUNNING,R1
2664      .EVEN
2665
2666 023574      GPWARD UUT,R1          ;GET P TABLE
2667 023604      BNCOMPLETE          NEXT  ;IF NOT AVAILABLE GET NEXT
2668
2669
2670 023606      GETPRM:
2671
2672 023606 011137 012510      MOV      (R1),KMVCSR      ;GET ADDRESS OF KMV11
2673
2674 023612 011137 012512      MOV      (R1),KMVP02      ;GET POINTER TO KMV11 SELC2 REG

```

KMV11 A/B LOGIC DIAG MACRO M1200 06-JAN-83 09:39 PAGE 48-1
INITIALIZE SECTION

```

2675 023616 062737 000002 012512      ADD      #2,KMVP02      ;GET POINTER TO KMV11 PORT REG - SEL 4
2676                                     ;GET POINTER TO KMV11 PORT REG - SEL 6
2677 023624 011137 012514      MOV      (R1),KMVP04
2678 023630 062737 000004 012514      ADD      #4,KMVP04
2679                                     ;GET POINTER TO KMV11 PORT REG - SEL 6
2680 023636 011137 012516      MOV      (R1),KMVP06
2681 023642 062737 000006 012516      ADD      #6,KMVP06
2682                                     ;GET POINTER TO KMV11 REG 10
2683 023650 011137 012520      MOV      (R1),KMVP10
2684 023654 062737 000010 012520      ADD      #10,KMVP10
2685                                     ;GET POINTER TO KMV11 REG 12
2686 023662 011137 012522      MOV      (R1),KMVP12
2687 023666 062737 000012 012522      ADD      #12,KMVP12
2688                                     ;GET POINTER TO KMV11 REG 14
2689 023674 011137 012524      MOV      (R1),KMVP14
2690 023700 062737 000014 012524      ADD      #14,KMVP14
2691                                     ;GET POINTER TO KMV11 REG 16
2692 023706 012137 012526      MOV      (R1)+,KMVP16
2693 023712 062737 000016 012526      ADD      #16,KMVP16
2694                                     ;GET POINTER TO VECTOR 0
2695 023720 011137 012474      MOV      (R1),KMVV00
2696                                     ;GET POINTER TO VECTOR 2
2697 023724 011137 012502      MOV      (R1),KMVV02
2698 023730 062737 000002 012502      ADD      #2,KMVV02
2699                                     ;GET POINTER TO VECTOR 4
2700 023736 011137 012500      MOV      (R1),KMVV04
2701 023742 062737 000004 012500      ADD      #4,KMVV04
2702                                     ;GET POINTER TO VECTOR 6
2703 023750 012137 012504      MOV      (R1)+,KMVV06
2704 023754 062737 000006 012504      ADD      #6,KMVV06
2705                                     ;GET POINTER TO TX PRIORITY LEVEL
2706 023762 012137 012476      MOV      (R1)+,KMVLVL
2707 023766 062737 000006 012506      ADD      #6,KMTLVL
2708                                     ;GET LOOPBACK PARAMETERS:
2709 023774 011137 012530      MOV      (R1),LOOP
2710
2711 024000 005037 002300      CLR      ERRCNT      ;CLEAR ERROR COUNT
2712 024004      EXIT      INIT
2713
2714
2715
2716 024010      ABORT:  DOCLN      ;CLEAN UP AND ABORT PASS
2717 024012      EXIT INIT      ;EXIT
2718
2719
2720 024016      045      116      045  RUNNING: .NLIST  BEX
2721                                     .ASCIZ  /%N% RUNNING ON UNIT %D2% PASS TIME = 2 MINUTES/
2722                                     .LIST   BEX
2723                                     .EVEN
2724
2725
2726 024100      END:      ENDINIT
2727
2728
2729
2730

```

KMV11 A/B LOGIC DIAG MACRO M1200 06-JAN-83 09:39 PAGE 49
AUTODROP SECTION

```

2732      .SBTTL AUTODROP SECTION
2733
2734      ;++
2735      ; THIS CODE IS EXECUTED IMMEDIATELY AFTER THE INITIALIZE CODE IF
2736      ; THE 'ADR' FLAG WAS SET. THE UNIT(S) UNDER TEST ARE CHECKED TO
2737      ; SEE IF THEY WILL RESPOND. THOSE THAT DON'T ARE IMMEDIATELY
2738      ; DROPPED FROM TESTING.
2739      ;--
2740      .EVEN      BGNAUTO
2741 024102
2742
2749
2750
2751
2752      ;CHECK IF EXISTING DEVICE
2753
2754
2755 024102 013701 012510      MOV      KMVCSR,R1      ;R1 CONTAINS BASE KMV11 ADDRESS
2756 024106 012705 000007      MOV      #7,R5      ;7 REGISTERS TO BE TESTED
2757 024112 012737 024144 000004      MOV      #2$,4      ;SET OUT TIMEOUT TRAP
2758 024120 012737 000340 000006      MOV      #340,6      ;LEVEL 7
2759 024126 005711      1$:      TST      (R1)      ;REFERENCE DEVICE REGISTERS
2760 024130 000240      NOP
2761 024132 062701 000002      ADD      #2,R1      ;NEXT REGISTER
2762 024136 005305      DEC      R5      ;DEC REGISTER COUNT
2763 024140 001372      BNE      1$      ;BR IF NOT LAST REGISTER
2764 024142 000405      BR      3$
2765
2766 024144 062706 000004      2$:      ADD      #4,SP
2767 024150      DODU      LOGDEV
2768
2769 024156 013737 002312 000004      3$:      MOV      SAVE4,4
2770 024164 013737 002314 000006      MOV      SAVE6,6
2771
2772
2773
2774
2775 024172      ENDAUTO
2776
2777
2778
2779

```

KMV11 A/B LOGIC DIAG MACRO M1200 06-JAN-83 09:39 PAGE 50
CLEANUP CODING SECTION

```
2781      .SBTTL  CLEANUP CODING SECTION
2782
2783      ://////////
2784      :/ THE CLEANUP CODING SECTION CONTAINS THE CODING THAT IS PERFORMED
2785      :/ AT THE END OF EACH PASS.
2786      ://////////
2787
2788 024174      BGNCLN
2789
2790
2810
2811
2812
2813 024174      BRESET
2814
2815 024176      ENDCLN
2816
2817
2818
2819
2820
```

KMV11 A/B LOGIC DIAG
DROP UNIT SECTION

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```

2822      .SBTTL  DROP UNIT SECTION
2823
2824      ://////////
2825      :// THE DROP-UNIT SECTION CONTAINS THE CODING THAT CAUSES A DEVICE
2826      :// TO NO LONGER BE TESTED.
2827      ://////////
2828
2829 024200      BGNDU
2830
2831
2832
2841
2842
2854
2855      .EVEN
2856
2857 024200      PRINTF  #DROPD,RO      ;UNIT DROPPED
2858
2859 024222      EXIT    DU
2860
2861
2862
2863
2864
2865 024226      045      116      045  DROPD: .NLIST  BEX
2866      .ASCIZ  /%N% UNIT %D2% DROPPED/
2867      .LIST   BEX
2868      .EVEN
2869 024256      ENDDU
2870
2871
2872
2873
2874

```

KMV11 A/B LOGIC DIAG
ADD UNIT SECTION

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2876
2877
2878
2879
2880
2881
2882
2883
2884
2885
2894
2895 024260
2896 024260
2897
2898
2899
2900
2901
2902

.SBTTL ADD UNIT SECTION

////////////////////////////////////
:// THE ADD-UNIT SECTION CONTAINS THE CODING THAT CAUSES A DEVICE
:// TO BE (A) TESTED FOR THE FIRST TIME, OR (B) RESUMED IN TESTING. IF
:// 'EF.AUNIT' IS SET, THE UNIT WILL BE TESTED AS A NEW UNIT.
////////////////////////////////////

BGNAU
ENDAU

KMV11 A/B LOGIC DIAG
ADD UNIT SECTION

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```
2904
2905      .SBTTL  HARDWARE TESTS
2906
2907
2908
2909      ;START OF CODE BLOCK WHICH IS USED AS DATA
2910 024262 ROMMAP:;++
2911      ; TEST TO ...
2912      ;--
2913
2920
2926
2927      ;      BGNTST
2928
2934
2935      ;      EXIT    TST
2936
2948
2949      ;      .EVEN
2950      ;      ENDTST
2951
2957
```

KMV11 A/B LOGIC DIAG
HARDWARE TESTS

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2959 024262

2960

2961

2962 024262

2963

2964 024262

2965 024262 013701 012510

2966 024266 012705 000007

2967 024272 012737 024330 000004

2968 024300 012737 000340 000006

2969 024306 005711

2970 024310 000240

2971 024312

2972 024316 062701 000002

2973 024322 005305

2974 024324 001370

2975 024326 000413

2976

2977 024330 062706 000004

2978 024334 010137 002420

2979 024340 013737 012472 002272

2980 024346

2981

2982 024356 013737 002312 000004

2983 024364 013737 002314 000006

2984 024372

2985

2986 024376

2987

2988

BADHEAD

***** TEST1 *****

;*VERIFY THAT REFERENCING QBUS DEVICE REGISTERS

;*DOES NOT CAUSE A TIME OUT TRAP

BADHEAD

***** TEST1 *****

BGNTST

MOV KMVCSR,R1

;R1 CONTAINS KMV11 ADDRESSES

MOV #7,R5

;7 REGISTERS TO BE TESTED

MOV #2\$,4

;SET OUT TIMEOUT TRAP

MOV #340,6

;LEVEL 7

1\$: TST (R1)

;REFERENCE DEVICE REGISTERS

NOP

ESCAPE

TST #2,R1

;NEXT REGISTER

ADD R5

;DEC REGISTER COUNT

DEC R5

;BP IF NOT LAST REGISTER

BNE 1\$

BR 3\$

2\$: ADD #4,SP

MOV R1,ADDR

;REPORT ADDRESS LOCATION

MOV UUT,UNIT

;REPORT UNIT NUMBER

ERRHRD 0,TIM,PADFLT

;BUS TIMEOUT,ADDRESS PROBLEM ON THIS UNIT

3\$: MOV SAVE4,4

MOV SAVE6,6

ESCAPE TST

ENDTST

.EVEN

KMV11 A/B LOGIC DIAG MACRO M1200 06-JAN-83 09:39 PAGE 55
HARDWARE TESTS

```

2990 024400      BADHEAD
2991             :***** TEST2 *****
2992 024400      :CLEAR ALL KMV11 REGISTERS AND CHECK
                BADHEAD
                :***** TEST2 *****

2993
2994
2995
2996
2997
2998 024400      BGNTST
2999 024400      BGNSUB

3000
3001 024402      RESTST:
3002 024402      005077 166102      CLR      @KMVCSR
3003 024406      012777 054000 166074  MOV      #MAINT0,@KMVCSR      ;SET MASTER CLEAR TO EXIT
3004
3005 024414      WAITA 0      ;SELF TEST IF RUNNING
3006
3007
3008
3009 024426      012702 000010      MOV      #10,R2      ;LOAD NUMBER OF REGISTER
3010 024432      013701 012510      MOV      KMVCSR,R1
3011 024436      005021      3$:      CLR      (R1)+      ;CLR KMV11 REGISTERS
3012 024440      000240      NOP
3013 024442      000240      NOP
3014 024444      005302      DEC      R2
3015 024446      001373      BNE      3$      ;ALL DONE?
3016
3017 024450      0C4537 013760      JSR      R5,CKALL      ;CHECK ALL REGISTERS = 0
3018 024454      000000      .WORD 0
3019 024456      000000      .WORD 0
3020 024460      000000      .WORD 0
3021 024462      000000      .WORD 0
3022 024464      000000      .WORD 0
3023 024466      000000      .WORD 0
3024 024470      000000      .WORD 0
3025 024472      000000      .WORD 0
3026 024474      000406      BR      2$      ;OK BRANCH
3027 024476      ERRHRD 1,EM0002,PRALL ;REGISTERS FAIL TO RESET
3028 024506      ESCAPE SUB
3029
3030 024512      000240      2$:      NOP
3031 024514      ENDSUB
3032
3033
3034 024516      BGNSUB
3035 024520      004737 014550      JSR      PC,CLRKMV      ;CLEAR REGISTERS
3036
3037 024524      012777 054000 165756  MOV      #MAINT0,@KMVCSR      ;SET MASTER CLEAR,MODE BIT AND MAINT
3038
3039 024532      WAITA 0
3040
3041 024544      004537 013670      JSR      R5,CKSELO      ;CHECK MASTER CLR IS RESET BY DCT11
3042 024550      014000      .WORD 14000
3043
3044 024552      000406      BR      1$      ;YES

```

KMV11 A/B LOGIC DIAG MACRO M1200 06-JAN-83 09:39 PAGE 55-1
HARDWARE TESTS

3045 024554

3046 024564

3047

3048 024570

3049 024570

3050 024572

3051

3052

3053

3054

ERRHRD 6,EM0001,PRSELO
ESCAPE SUB

;MASTER CLR FAIL TO RESET

1\$:
ENDSUB
ENDTST

KMV11 A/B LOGIC DIAG MACRO M1200 06-JAN-83 09:39 PAGE 56
HARDWARE TESTS

```

3056 024574      BADHEAD
3057              ;***** TEST3 *****
3058 024574      ;CHECK QBUS ACCESS ON KMV11 REGISTERS (FROM SEL2 TO SEL16)
3059              BADHEAD
3060              ;***** TEST3 *****
3061
3062 024574      STARS 1
3063              ;SET MAINT MODE =0 ;DCT11 DECODE AND GOES IN HOLD
3064              ;PROCESSOR SEND ROTATING PATTERN TO EACH REGISTERS AND CHECK
3065 024574      STARS 1
3066
3067
3068
3069
3070
3071 024574      BGNTST
3072 024574      004737 014550      TSTREG: JSR      PC,CLRKMV      ;CLEAR REGISTERS
3073 024600      004737 014660      JSR      PC,MAINMO     ;SET MAINT MODE 0
3074 024604      012737 000007      MOV      #7,COUNT      ;NUMBER OF REG
3075 024612      012704 024650      MOV      #CHECK,R4
3076 024616      062704 000004      ADD      #4,R4
3077 024622      013701 012512      MOV      KMVP02,R1      ;POINT GOOD VALUE OF SEL2
3078              ;LOAD SEL2 ADDRESS
3079 024626      005003      TSELA:  CLR      R3
3080              ;SELECT FIRST PATTERN
3081 024630      BREAK
3082
3083 024632      004737 013230      TSELB:  JSR      PC,GENER      ;GENER PATTERN
3084
3085
3086 024636      013711 012436      1$:      MOV      DATA,(R1)      ;LOAD PATTERN IN REG
3087 024642      013714 012436      MOV      DATA,(R4)      ;LOAD GOOD VALUE
3088 024646      000240      NOP
3089
3090
3091 024650      004537 014262      CHECK:  JSR      R5,CKREG      ;CHECK ALL REGISTER BUT SELO
3092 024654      000000      .WORD      0
3093 024656      000000      .WORD      0
3094 024660      000000      .WORD      0
3095 024662      000000      .WORD      0
3096 024664      000000      .WORD      0
3097 024666      000000      .WORD      0
3098 024670      000000      .WORD      0
3099 024672      000406      BR      1$
3100 024674      ERRHRD 7,EM0003,PRREG      ;IF GOOD BR
3101 024704      ESCAPE  TST
3102
3103 024710      005203      1$:      INC      R3
3104 024712      022703 000007      CMP      #7,R3
3105 024716      001345      BNE      TSELB      ;NEW PATTERN
3106              ;ALL DONE
3107 024720      005021      CLR      (R1)+
3108 024722      005024      CLR      (R4)+
3109 024724      005337 002414      DEC      COUNT
3110 024730      001336      BNE      TSELA      ;SELECT NEW REG
3111              ;POINT NEW GOOD VALUE
3112              ;ALL REG TESTED
3113              ;NO BR

```

KMV11 A/B LOGIC DIAG MACRO M1200 06-JAN-83 09:39 PAGE 56-1
HARDWARE TESTS

3111 024732

ENDTST

KMV11 A/B LOGIC DIAG
HARDWARE TESTS

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3113 024734

BADHEAD

:***** TEST4 *****

3114

:CHECK QBUS ACCES ON SELO REGISTER

3115 024734

BADHEAD

:***** TEST4 *****

3116

3117

3118

3119 024734

STARS 1

:SET MAINT MODE 0 ;DCT11=HOLD

:SEND ROTATING PATTERN IN SELO (EXCEPT BIT 11,12,14) AND CHECK

3120

STARS 1

3121

3122 024734

3123

3124

3125

3126

3127 024734

BGNTST

3128 024734

004737 014550

JSR PC,CLRKMV

:CLEAR REG

3129 024740

004737 014660

JSR PC,MAINMO

:LOAD MAINT MODE 0

3130 024744

005003

CLR R3

:FIRST PATTERN

3131 024746

012704 025014

MOV #CHECK1,R4

:POINT SEL 0

3132 024752

062704 000004

ADD #4,R4

3133 024756

012737 000015

002414

TCSRNB:

MOV #15,COUNT

:SELECT NB 0 PATTERN

3134

3135 024764

BREAK

3136

3137 024766

004737 013230

TCSR:

JSR PC,GENER

:GENERATE A PATTERN

3138 024772

042737 054000

012436

BIC #54000,DATA

:MASK MCLR,MODE,MAINT1

3139 025000

013714 012436

MOV DATA,(R4)

3140 025004

013777 012436

165476

MOV DATA,@KMVCSR

:WRITE PATTERN

3141 025012

000240

NOP

3142 025014

004537 013760

CHECK1:

JSR R5,CKALL

:CHECK

3143 025020

000000

.WORD 0

3144 025022

000000

.WORD 0

3145 025024

000000

.WORD 0

3146 025026

000000

.WORD 0

3147 025030

000000

.WORD 0

3148 025032

000000

.WORD 0

3149 025034

000000

.WORD 0

3150 025036

000000

.WORD 0

3151 025040

000411

BR 1\$

3152 025042

ERRHRD 8,EM0004,PRALL

3153 025052

ESCAPE TST

3154

3155 025056

005337 002414

DEC COUNT

:DONE ENOUGH

3156 025062

001341

BNE TCSR

3157

3158

3159 025064

005203

1\$:

INC R3

:NEW PATTERN

3160 025066

022703 000007

CMP #7,R3

:ALL DONE

3161 025072

001331

BNE TCSRNB

:NO BR

3162 025074

ENDTST

KMV11 A/B LOGIC DIAG MACRO M1200 06-JAN-83 09:39 PAGE 58
HARDWARE TESTS

3164 025076

BADHEAD

***** TESTS *****

3165

;CHECK QBUS BYTE ACCES ON ALL KMV11 REGISTERS

3166 025076

BADHEAD

***** TESTS *****

3167

3168

3169

3170

3171

3172

3173

3174

3175

3176

3177

3178

3179

3180

3181

3182

3183

3184

3185

3186

3187

3188

3189

3190

3191

3192

3193

3194

3195

3196

3197

3198

3199

3200

3201

3202

3203

3204

3205

3206

3207

3208

3209

3210

3211

3212

3213

3214

3215

3216

3217

3218

STARS 1

;SET MAINT MODE 0 ;DCT11=HOLD

;WRITE PATTERN IN EACH BYTE ON KMV11 REGISTERS AND CHECK

;QBUS SEND VARIOUS PATTERN IN ALL BYTE ADDRESS

STARS 1

BGNTST

TBYTE: JSR PC,CLRKMV

JSR PC,MAINMO

;SET MAINT MODE0

MOV KMVCSR,R1

;LOAD KMV CSR ADDRESS

MOV #15,R4

;LOAD NUMBER OF REGISTERS

1\$: MOV #377,GOOD

;SELECT A PATTERN

BICB #130,GOOD

;WRITE 1ST BYTE

BISB GOOD,(R1)

CLR BAD

WAITA 177700

BREAK

MOVB (R1),BAD

;READ REG

BICB #130,BAD

;MASK UNUSED BITS

CMPB GOOD,BAD

;COMPARE

BEQ 3\$

;IF = BRANCH

MOV R1,ADDR

;PREPARE ERROR REPORT

ERRHRD 9,EM0031,PRBYTE

;DATA CMP ERROR WHEN ACCESSING A BYTE

ESCAPE TST

3\$:

INC R1

;SELECT NEW REGISTER

DEC R4

;DONE ALL?

BNE 1\$

KMV11 A/B LOGIC DIAG MACRO M1200 06-JAN-83 09:39 PAGE 58-1
HARDWARE TESTS

3219 025226
3220

ENDTST

KMV11 A/B LOGIC DIAG MACRO M1200 06-JAN-83 09:39 PAGE 59
HARDWARE TESTS

3222 025230

BADHEAD

:***** TEST6 *****

3223

:DATA TRANSFER ON REGISTER SEL 2

3224 025230

BADHEAD

:***** TEST6 *****

3225

3226

3227 025230

STARS 1

:SET MAINT1 ;DCT11 DECODE ,CLEAR SELO AND WAIT FOR TEST NUMBER

3228

:THE HOST WRITE A PATTERN IN SEL2

3229

:THE HOST WRITE A TEST NUMBER IN BSELO

3230

3231

:IF DCT11 READ CORRECT VALUE ,IT CLEAR BSELO

3232

:IF ERROR SET 100 IN BSELO IF DATA CMP ERROR

3233

BSELO =TST NUMBER IF NO KMV11 ANSWER

3234

3235

3236

3237

:BSELO=1 = MICRO DIAG TEST 1 ;DCT11 MUST READ 052525 IN SEL2

3238

:BSELO=2 = MICRO DIAG TEST 2 ;DCT11 MUST READ 125252 IN SEL2

3239 025230

STARS 1

3240

3241

3242

3243

3244

3245 025230

BGNTST

3246 025230

004737

014550

JSR

PC,CLRKMV

:CLEAR REG

3247 025234

004737

014730

JSR

PC,MAINM1

:SET MAINT MODE 1

3248

3249 025240

BGNSUB

3250 025242

012777

052525

165242

MOV

#DATA1,@KMVP02

:SEND 052525

3251 025250

004537

015010

JSR

R5,TSTNUB

:SEND TEST NUMB 1

3252 025254

000001

.WORD

1

3253 025256

004537

013722

JSR

R5,CBSELO

:CHECK BSELO = 0

3254 025262

000000

.WORD

0

3255 025264

000425

BR

1\$

:TEST OK BR AT END

3256 025266

004537

013722

JSR

R5,CBSELO

:CHECK BSELO=100

3257 025272

000100

.WORD

100

3258 025274

000401

BR

2\$

3259 025276

000410

BR

3\$

3260

3261

3262

3263 025300

2\$:

ERRHRD

10,EM0005

:DATA CMP ERROR

3264 025310

004737

013010

JSR

PC,CHKMAX

:CHECK IF TOO MANY ERROR

3265 025314

ESCAPE

SUB

3266

3267 025320

3\$:

ERRHRD

11,EM0024

:NO KMV11 ANSWER

3268 025330

004737

013010

JSR

PC,CHKMAX

:CHECK IF TOO MANY ERROR

3269 025334

ESCAPE

SUB

3270 025340

000240

1\$:

NOP

3271 025342

ENDSUB

3272

3273

3274 025344

BGNSUB

3275 025346

004737

014730

JSR

PC,MAINM1

:SET MAINT MODE 1

3276 025352

012777

125252

165132

MOV

#DATA2,@KMVP02

:SEND 125252

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HARDWARE TESTS

3277	025360	004537	015010		JSR	R5,TSTNUB		;SEND TEST NUB 2
3278	025364	000002			.WORD	2		
3279	025366	004537	013722		JSR	R5,CBSELO		;CHECK DCT11 HAS ANSWERED
3280	025372	000000			.WORD	0		;BY CLEARING SELO
3281	025374	000425			BR	1\$		;OK BR
3282	025376	004537	013722		JSR	R5,CBSELO		;CHECK IF =100
3283	025402	000100			.WORD	100		
3284	025404	000401			BR	2\$		
3285	025406	000410			BR	3\$		
3286								
3287								
3288								
3289	025410			2\$:	ERRHRD	12,EM0005		;DATA CMP ERROR ON SEL2
3290	025420	004737	013010		JSR	PC,CHKMAX		;CHECK IF TOO MANY ERROR
3291	025424				ESCAPE	SUB		
3292								
3293	025430			3\$:	ERRHRD	13,EM0024		;NO KMV11 ANSWER
3294	025440	004737	013010		JSR	PC,CHKMAX		;CHECK IF TOO MANY ERROR
3295	025444				ESCAPE	SUB		
3296								
3297	025450	000240		1\$:	NOP			
3298	025452			ENDSUB				
3299	025454			ENDTST				

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HARDWARE TESTS

```

3301 025456      BADHEAD
3302              :***** TEST7 *****
3303 025456      :CHECK DATA TRANSFER ON REGISTER SEL4
3304              BADHEAD
3305              :***** TEST7 *****
3306
3307 025456      STARS 1
3308              ;SET MAINT1 ;DCT11 DECODE AND CLEAR SELO
3309
3310              ;THE HOST SEND ROTATING PATTERN IN SEL4,AND SET TEST NUMBER 3 IN BSELO
3311
3312              ;DCT11 READ SEL4 , WRITE CONTENT OF SEL4 INTO SEL2 , CLEAR SELO WHEN DONE, AND
3313              ;WAIT FOR NEW PATTERN
3314
3315
3316
3317              :
3318              :
3319              :
3320              :
3321              :
3322 025456      :
3323              :
3324              :
3325 025456      :
3326 025456      :
3327 025460      004737 014550      BGNTST
3328 025464      004737 014730      BGNSUB
3329 025470      005003
3330
3331 025472      012737 000005 002414 TGENE1: MOV      #5,COUNT      ;NB OF PATTERN
3332 025500      :
3333
3334 025502      004737 013230      GENE1: JSR      PC,GENER      ;GENER 1ST PATTERN
3335 025506      013777 012436 165000 :MOV      DATA,@KMVP04    ;LOAD SEL4
3336 025514      004537 015010      :JSR      R5,TSTNUB      ;SET TEST NUMB 3
3337 025520      000003      :
3338 025522      004537 013722      :JSR      R5,CBSELO      ;LOOK IF ANSWER
3339 025526      000000      :
3340 025530      000404      :
3341 025532      :
3342 025542      000240      :
3343 025544      :
3344
3345
3346 025546      :
3347 025550      012704 025570      :
3348 025554      013764 012436 000006 :
3349 025562      013764 012436 000004 :
3350
3351 025570      004537 014262      TSEL4: JSR      R5,CKREG      ;CHECK SEL2 = SEL4
3352 025574      000000      :
3353 025576      000000      :
3354 025600      000000      :
3355 025602      000000      :

```

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HARDWARE TESTS

3356	025604	000000			.WORD	0	
3357	025606	000000			.WORD	0	
3358	025610	000000			.WORD	0	
3359	025612	000406			BR	2\$	
3360	025614				ERRHRD	15,EM0006,PRREG	
3361	025624				ESCAPE	SUB	
3362							
3363							
3364	025630	005337	002414	2\$:	DEC	COUNT	;DONE ENOUGH?
3365	025634	001322			BNE	GENE1	
3366							
3367	025636	005203			INC	R3	;NEW PATTERN
3368	025640	022703	000007		CMP	#7,R3	;ALL DONE
3369	025644	001312			BNE	TGENE1	;NO BR
3370	025646						
3371	025650			ENDSUB			
				ENDTST			

KMV11 A/B LOGIC DIAG
HARDWARE TESTS

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3373 025652

BADHEAD

3374

:***** TEST8 *****

3375 025652

: CHECK DATA TRANSFER ON REGISTER SEL6

BADHEAD

:***** TEST8 *****

3376

3377

3378 025652

STARS 1

3379

:SET MAINT1 ;DCT11 DECODE AND CLEAR SELO

3380

3381

:THE HOST SENDS A ROTATING PATTERN IN SEL6,AND SET TEST NUMBER 4 IN BSELO

3382

3383

:DCT11 READ SEL6 , WRITE CONTENT OF SEL6 IN SEL2 , CLEAR SELO WHEN DONE, AND

3384

:WAIT FOR NEW PATTERN

3385

3386

3387

3388

AFTER TEST

BSELO=100 IF ERROR DURING TEST

3389

BSELO=0 IF TEST HAS BEEN EXECUTED (IN THAT CASE

3390

CHECK IF CONTENT OF SEL4 IS CORRECT)

3391

:BSEL 0 = 4 ;MICRO DIAG NB 4 ;DCT11 TAKE CONTENT OF SEL6 AND PUT IT IN SEL 2.

3392

STARS 1

3393 025652

3394

3395

3396

3397 025652

BGNTST

3398 025652

BGNSUB

3399 025654

004737 014550

JSR PC,CLRKMV

;CLEAR REG

3400 025660

004737 014730

JSR PC,MAINM1

;SET MAINT MODE 1

3401 025664

012703 000001

MOV #1,R3

;SELECT 1ST PATTERN

3402 025670

012737 000005

002414

TGENE2:

MOV #5,COUNT

;NUMBER OF PATTERN

3403 025676

BREAK

3404

3405

3406 025700

004737 013230

164604

GENE2:

JSR PC,GENER

;GENERATE 1ST PATTERN

3407 025704

013777 012436

MOV DATA,@KMVP06

;LOAD SEL6

3408 025712

004537 015010

JSR R5,TSTNUB

;SET TEST NUMB 4

3409 025716

000004

.WORD 4

;LOOK IF ANSWER

3410 025720

004537 013722

JSR R5,CBSELO

;LOOK IF ANSWER

3411 025724

000000

.WORD 0

;LOOK IF ANSWER

3412 025726

000404

BR 1\$

;OK BR

3413 025730

000240

1\$:

ERRHRD 16,EM0024,PBSELO

;NO KMV11 ANSWER,BSELO NOT = 0

3414 025740

1\$:

NOP

3415 025742

ENDSUB

3416

3417

3418 025744

BGNSUB

3419 025746

012704 025766

MOV #TSEL6,R4

;POINT GOOD VALUE

3420 025752

013764 012436

000010

MOV DATA,10(R4)

;WRITE GOOD VALUE FOR SEL2 AND SEL6

3421 025760

013764 012436

000004

MOV DATA,4(R4)

;WRITE GOOD VALUE FOR SEL2 AND SEL6

3422

3423 025766

004537 014262

TSEL6:

JSR R5,CKREG

;CHECK SEL2 = SEL6

3424 025772

000000

.WORD 0

3425 025774

000000

.WORD 0

3426 025776

000000

.WORD 0

3427 026000

000000

.WORD 0

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HARDWARE TESTS

3428	026002	000000			.WORD	0	
3429	026004	000000			.WORD	0	
3430	026006	000000			.WORD	0	
3431	026010	000406			BR	2\$	
3432	026012				ERRHRD	17,EM0007,PRREG	
3433	026022				ESCAPE	SUB	
3434	026026	005337	002414	2\$:	DEC	COUNT	
3435	026032	001322			BNE	GENE2	
3436							
3437	026034	005203			INC	R3	;NEW PATTERN
3438	026036	022703	000006		CMP	#6,R3	;ALL DONE
3439	026042	001312			BNE	TGENE2	;NO BR
3440	026044						
3441	026046			ENDSUB			
				ENDTST			

KMV11 A/B LOGIC DIAG
HARDWARE TESTS

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```

3443 026050      BADHEAD
3444              :***** TEST9 *****
3445 026050      :TEST TO CHECK DATA TRANSFER ON REGISTER SEL10
3446              BADHEAD
3447              :***** TEST9 *****
3448 026050      STARS 1
3449              :SET MAINT1 ;DCT11 DECODE AND CLEAR SELO
3450              :
3451              :THE HOST SENDS A ROTATING PATTERN IN SEL10,AND SET TEST NUMBER 5 IN BSELO
3452              :
3453              :DCT11 READ SEL10 , WRITE CONTENT OF SEL10 IN SEL2 , CLEAR SELO WHEN DONE, AND
3454              :WAIT FOR NEW PATTERN
3455              :
3456              :
3457              :
3458              :
3459              :
3460              :
3461              :
3462              :
3463 026050      :
3464              :
3465              :
3466              :
3467 026050      :
3468 026050      :
3469 026052      004737 014550      JSR      PC,CLRKMV      ;CLEAR REG
3470 026056      004737 014730      JSR      PC,MAINM1     ;SET MAINT MODE 1
3471 026062      012703 000001      MOV      #1,R3         ;SELECT FIRST PATTERN
3472              :
3473 026066      012737 000005 002414 TGENE3: MOV      #5,COUNT
3474 026074      :
3475              :
3476              :
3477 026076      004737 013230      GENE3: JSR      PC,GENER      ;GENERATE A 1ST PATTERN
3478 026102      042737 040000 012436 BIC      #40000,DATA    ;MASK BIT 14
3479 026110      013777 012436 164402 MOV      DATA,@KMVP10 ;LOAD SEL10
3480 026116      004537 015010      JSR      R5,TSTNUB      ;SET TEST NUMB 5
3481 026122      000005              :
3482 026124      004537 013722      .WORD      5
3483 026130      000000              :
3484 026132      000406              :
3485 026134      :
3486 026144      :
3487 026150      000240              :
3488 026152      :
3489              :
3490              :
3491 026154      :
3492 026156      012704 026176      BGNSUB      MOV      #TSEL10,R4 ;POINT GOOD VALUE
3493 026162      013764 012436 000012      MOV      DATA,12(R4)
3494 026170      013764 012436 000004      MOV      DATA,4(R4) ;WRITE GOOD VALUE FOR SEL2 AND SEL10
3495              :
3496 026176      004537 014262      TSEL10: JSR      R5,CKREG ;CHECK SEL2 = SEL10
3497 026202      000000      .WORD      0

```

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HARDWARE TESTS

3498	026204	000000			.WORD	0	
3499	026206	000000			.WORD	0	
3500	026210	000000			.WORD	0	
3501	026212	000000			.WORD	0	
3502	026214	000000			.WORD	0	
3503	026216	000000			.WORD	0	
3504	026220	000406			BR	2\$	
3505	026222				ERRHRD	21,EM0010,PRREG	;DATA CMP ERROR IN SEL10
3506	026232				ESCAPE	SUB	
3507							
3508	026236	005337	002414	2\$:	DEC	COUNT	
3509	026242	001315			BNE	GENE3	
3510							
3511	026244	005203			INC	R3	;NEW PATTERN
3512	026246	022703	000006		CMP	#6,R3	;ALL DONE
3513	026252	001305			BNE	TGENE3	;NO BR
3514	026254			ENDSUE			
3515	026256			ENDTST			

KMV11 A/B LOGIC DIAG
HARDWARE TESTS

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3517 026260

BADHEAD

3518

:***** TEST10 *****
:TEST TO CHECK DATA TRANSFER ON REGISTER SEL12

3519 026260

BADHEAD

:***** TEST10 *****

3520

3521

3522 026260

STARS 1

3523

:SET MAINT1 ;DCT11 DECODE AND CLEAR SELO

3524

3525

:THE HOST SENDS A ROTATING PATTERN IN SEL12,AND SET TEST NUMBER 6 IN BSELO

3526

3527

:DCT11 READ SEL12 , WRITE CONTENT OF SEL12 IN SEL 2 , CLEAR SELO WHEN DONE, AND

3528

:WAIT FOR NEW PATTERN

3529

3530

3531

3532

: AFTER TEST

BSELO=100 IF ERROR DURING TEST

3533

BSELO=0 IF TEST HAS BEEN EXECUTED (IN THAT CASE
CHECK IF CONTENT OF SEL10 IS CORRECT)

3534

3535

3536

:BSEL 0 = 6 ;MICRO DIAG NB 6 ;DCT11 TAKE CONTENT OF SEL12 AND PUT IT IN SEL 2.

3537 026260

STARS 1

3538

3539

3540

3541 026260

BGNTST

3542 026260

BGNSUB

3543 026262

004737 014550

JSR

PC,CLRKMV

:CLEAR REG

3544 026266

004737 014730

JSR

PC,MAINM1

:SET MAINT MODE 1

3545 026272

012703 000001

MOV

#1,R3

3546

3547 026276

012737 000005

002414

TGENE4:

MOV

#5,COUNT

3548 026304

BREAK

3549

3550

3551 026306

004737 013230

164202

GENE4:

JSR

PC,GENER

:GENERATE A 1ST PATTERN

3552 026312

013777 012436

MOV

DATA,@KMVP12

:LOAD SEL12

3553 026320

004537 015010

JSR

R5,TSTNUB

:SET TEST NUMB 6

3554 026324

000006

.WORD

6

3555 026326

004537 013722

JSR

R5,CBSELO

:LOOK IF ANSWER

3556 026332

000000

.WORD

0

3557 026334

000406

BR

1\$

:OK BR

3558 026336

ERRHRD

22,EM0024,PBSELO

:NO KMV11 ANSWER

3559 026346

ESCAPE

SUB

3560 026352

000240

1\$:

NOP

3561 026354

ENDSUB

3562

3563

3564 026356

BGNSUB

3565 026360

012704 026400

MOV

#TSEL12,R4

:POINT GOOD VALUE

3566 026364

013764 012436

000014

MOV

DATA,14(R4)

:WRITE GOOD VALUE FOR SEL2 AND SEL12

3567 026372

013764 012436

000004

MOV

DATA,4(R4)

3568

3569 026400

004537 014262

TSEL12:

JSR

R5,CKREG

:CHECK SEL2 = SEL12

3570 026404

000000

.WORD

0

3571 026406

000000

.WORD

0

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HARDWARE TESTS

3572	026410	000000			.WORD	0	
3573	026412	000000			.WORD	0	
3574	026414	000000			.WORD	0	
3575	026416	000000			.WORD	0	
3576	026420	000000			.WORD	0	
3577	026422	000406			BR	2\$	
3578	026424				ERRHRD	23,EM0011,PRREG	;DATA CMP ERROR IN SEL12
3579	026434				ESCAPE	SUB	
3580							
3581							
3582	026440	005337	002414	2\$:	DEC	COUNT	
3583	026444	001320			BNE	GENE4	
3584							
3585	026446	005203			INC	R3	;NEW PATTERN
3586	026450	022703	000006		CMP	#6,R3	;ALL DONE
3587	026454	001310			BNE	TGENE4	;NO BR
3588	026456			ENDSUB			
3589	026460			ENDTST			

KMV11 A/B LOGIC DIAG
HARDWARE TESTS

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```

3591 026462      BADHEAD
3592              ;***** TEST11 *****
3593 026462      BADHEAD
3594              ;***** TEST11 *****
3595
3596 026462      STARS 1
3597              ;SET MAINT1 ;DCT11 DECODE AND CLEAR SELO
3598
3599              ;THE HOST SEND ROTATING PATTERN IN SEL14,AND SET TEST NUMBER 6 IN BSELO
3600
3601              ;DCT11 READ SEL14 , WRITE CONTENT OF SEL14 IN SEL 2 , CLEAR SELO WHEN DONE, AND
3602              ;WAIT FOR NEW PATTERN
3603
3604
3605
3606
3607              AFTER TEST      BSELO=100 IF ERROR DURING TEST
3608              BSELO=0      IF TEST HAS BEEN EXECUTED (IN THAT CASE
3609              CHECK IF CONTENT OF SEL12 IS CORRECT)
3610
3611 026462      ;BSEL 0 = 6 ;MICRO DIAG NB 6 ;DCT11 TAKE CONTENT OF SEL14 AND PUT IT IN SEL 12.
3612      STARS 1
3613
3614 026462      BGNTST
3615 026462      BGNSUB
3616 026464      004737 014550      JSR      PC,CLRKMV      ;CLEAR REG
3617 026470      004737 014730      JSR      PC,MAINM1     ;SET MAINT MODE 1
3618 026474      012703 000001      MOV      #1,R3         ;SELECT FIRST PATTERN
3619
3620 026500      012737 000005 002414 TGENE5: MOV      #5,COUNT      ;SELECT NB OF PATTERN
3621 026506      BREAK
3622
3623
3624 026510      004737 013230      GENE5: JSR      PC,GENER      ;GENERATE A 1ST PATTERN
3625 026514      013777 012436 164002 MOV      DATA,@KMVP14    ;LOAD SEL14
3626 026522      004537 015010      JSR      R5,TSTNUB      ;SET TEST NUMB 7
3627 026526      000007      .WORD      7
3628 026530      004537 013722      JSR      R5,CBSELO      ;LOOK IF ANSWER
3629 026534      000000      .WORD      0
3630 026536      000406      BR      1$                     ;OK BR
3631 026540      ERRHRD      24,EM0024,PBSELO      ;NO KMV11 ANSWER
3632 026550      ESCAPE      SUB
3633
3634 026554      000240      1$:      NOP
3635 026556      ENDS:JB
3636
3637
3638 026560      BGNSUB
3639 026562      012704 026602      MOV      #TSEL14,R4      ;POINT GOOD VALUE
3640 026566      013764 012436 000016 MOV      DATA,16(R4)
3641 026574      013764 012436 000004 MOV      DATA,4(R4)      ;WRITE GOOD VALUE FOR SEL2 AND SEL4
3642
3643 026602      004537 014262      TSEL14: JSR      R5,CKREG      ;CHECK SEL2 = SEL14
3644 026606      000000      .WORD      0
3645 026610      000000      .WORD      0

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HARDWARE TESTS

3646	026612	000000			.WORD	0	
3647	026614	000000			.WORD	0	
3648	026616	000000			.WORD	0	
3649	026620	000000			.WORD	0	
3650	026622	000000			.WORD	0	
3651	026624	000406			BR	2\$	
3652	026626				ERRHRD	25,EM0012,PRREG	;DATA CMP ERROR IN SEL14
3653	026636				ESCAPE	SUB	
3654							
3655							
3656	026642	005337	002414	2\$:	DEC	COUNT	;DONE ENOUGH?
3657	026646	001320			BNE	GENE5	
3658							
3659	026650	005203			INC	R3	;NEW PATTERN
3660	026652	022703	000006		CMP	#6,R3	;ALL DONE
3661	026656	001310			BNE	TGENE5	;NO BR
3662	026660			ENDSUB			
3663	026662			ENDTST			

KMV11 A/B LOGIC DIAG
HARDWARE TESTS

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```

3665 026664      BADHEAD
3666              :***** TEST12 *****
3667 026664      :CHECK DATA TRANSFER ON REGISTER SEL16
3668              BADHEAD
3669              :***** TEST12 *****
3670 026664      STARS 1
3671              :SET MAINT1 ;DCT11 DECODE AND CLEAR SELO
3672              :
3673              :THE HOST SENDS A ROTATING PATTERN IN SEL16,AND SET TEST NUMBER 7 IN BSELO
3674              :
3675              :DCT11 READ SEL16 , WRITE CONTENT OF SEL16 IN SEL 2 , CLEAR SELO WHEN DONE, AND
3676              :WAIT FOR NEW PATTERN
3677              :
3678              :
3679              :
3680              :
3681              :
3682              :
3683              :
3684              :
3685              :
3686              :
3687 026664      :
3688 026664      :
3689 026666      :
3690 026672      :
3691 026676      :
3692              :
3693 026702      :
3694 026710      :
3695              :
3696              :
3697 026712      :
3698 026716      :
3699 026724      :
3700 026730      :
3701 026732      :
3702 026736      :
3703 026740      :
3704 026742      :
3705 026752      :
3706              :
3707 026756      :
3708 026760      :
3709              :
3710              :
3711 026762      :
3712 026764      :
3713 026770      :
3714 026776      :
3715              :
3716 027004      :
3717 027010      :
3718 027012      :
3719 027014      :

```

004737	014550		BGNTST				
004737	014730		BGNSUB				
012703	000001			JSR	PC,CLRKMV		:CLEAR REG
				JSR	PC,MAINM1		:SET MAINT MODE 1
				MOV	#1,R3		:SELECT FIRST PATTERN
012737	000005	002414	TGENE6:	MOV	#5,CCUNT		
				BREAK			
004737	013230		GENE6:	JSR	PC,GENER		:GENERATE 1ST PATTERN
013777	012436	163602		MOV	DATA,@MVP16		:LOAD SEL16
004537	015010			JSR	R5,TSTNUB		:SET TEST NUMB 10
000010				.WORD	10		
004537	013722			JSR	R5,CBSELO		:LOOK IF ANSWFR
000000				.WORD	0		
000406				BR	1\$		:OK BR
				ERRHRD	26,EM0024,PBSELO		:NO KMV11 ANSWER
				ESCAPE	SUB		
			1\$:	NOP			
			ENDSUB				
			BGNSUB				
012704	027004			MOV	#TSEL16,R4		:POINT GOOD VALUE
013764	012436	000020		MOV	DATA,20(R4)		
013764	012436	000004		MOV	DATA,4(R4)		:WRITE GOOD VALUE FOR SEL2 AND SEL16
			TSEL16:	JSR	R5,CKREG		:CHECK SEL2 = SEL16
004537	014262			.WORD	0		
000000				.WORD	0		
000000				.WORD	0		

KMV11 A/B LOGIC DIAG MACRO M1200 06-JAN-83 09:39 PAGE 65-1
HARDWARE TESTS

3720	027016	000000			.WORD	0	
3721	027020	000000			.WORD	0	
3722	027022	000000			.WORD	0	
3723	027024	000000			.WORD	0	
3724	027026	000406			BR	2\$	
3725	027030				ERRHRD	27,EM0013,PRREG	
3726	027040				ESCAPE	SUB	
3727							
3728							
3729	027044	005337	002414	2\$:	DEC	COUNT	;DONE ENOUGH?
3730	027050	001320			BNE	GENE6	
3731							
3732	027052	005203			I'VC	R3	;NEW PATTERN
3733	027054	022703	000006		CMP	#6,R3	;ALL DONE
3734	027060	001310			BNE	TGENE6	;NO BR
3735	027062			ENDSUB			
3736	027064			ENDTST			
3737							
3738							
3739							

KMV11 A/B LOGIC DIAG MACRO M1200 06-JAN-83 09:39 PAGE 66
HARDWARE TESTS

3741 027066

BADHEAD

3742

***** TEST13 *****

3743 027066

; CHECK DATA TRANSFER ON ALL REGISTERS

BADHEAD

***** TEST13 *****

3744

3745

3746

3747

3748

3749 027066

STARS 1

;SET MAINT1 DCT11 CLEAR BSELO

;SEND DIFFERENT PATTERN IN SEL2, SEND TEST 11

;DCT11 READ SEL2 AND WRITE A CALCULATED VALUE IN SEL4 TO SEL16

;(SEL4)=SEL2+SEL2

;(SEL6)=SEL4+SEL2

;(SEL10)=SEL6+SEL2

;(SEL12)=SEL10+SEL2

;(SEL14)=SEL12+SEL2

;(SEL16)=SEL14+SEL2

;DCT11 CLEAR BSELO WHEN DONE

;=MICRO DIAG NUMBER 11

3760

3761

3762

3763

3764

3765

3766 027066

STARS 1

3767

3768

3769

3770

3771 027066

BGNTST

3772 027066

004737 014550

JSR

PC,CLRKMV

;CLEAR REG

3773 027072

004737 014730

JSR

PC,MAINM1

;SET MAINT1

3774

3775

3776 027076

012703 000004

MOV

#4,R3

;PREPARE INCREMENTING PATTERN

3777 027102

012737 000007

002416

MOV

#7,NUMBER

;SELECT NUMBER FOR DIFFERENT PATTERN

3778

3779

3780

3781 027110

004737 013230

RGALL:

JSR

PC,GENER

;PREPARE ONE RANDOM PATTERN

3782

3783 027114

013777 012436

163370

MOV

DATA,@KMVP02

;WRITE PATTERN IN SEL2

3784 027122

013737 012436

002336

MOV

DATA,GOOD2

3785 027130

004537 015010

JSR

R5,TSTNUB

;SEND TEST NB11

3786 027134

000011

.WORD

11

3787

3788

3789 027136

012737 177700

002324

MOV

#177700,DELCT1

3790 027144

004737 013000

JSR

PC,WAIT1

3791

3792

3793 027150

BREAK

3794

3795 027152

004537 013722

JSR

R5,CBSELO

;LOOK IF TEST DONE

KMV11 A/B LOGIC DIAG MACRO M1200 06-JAN-83 09:39 PAGE 66-1
HARDWARE TESTS

3796	027156	000000			.WORD	0	
3797	027160	000406			BR	1\$	:YES BRANCH
3798	027162				ERRHRD	28,EM0024,PBSELO	:NO KMV11 ANSWER
3799	027172				ESCAPE	TST	
3800							
3801							
3802	027176	017737	163310	002360	1\$: MOV	@KMVP02,SEL2	:READ SEL2 TO SEL16
3803	027204	017737	163304	002362	MOV	@KMVP04,SEL4	
3804	027212	017737	163300	002364	MOV	@KMVP06,SEL6	
3805	027220	017737	163274	002366	MOV	@KMVP10,SEL10	
3806	027226	017737	163270	002370	MOV	@KMVP12,SEL12	
3807	027234	017737	163264	002372	MOV	@KMVP14,SEL14	
3808	027242	017737	163260	002374	MOV	@KMVP16,SEL16	
3809							
3810							
3811	027250	013737	002336	002340	MOV	GOOD2,GOOD4	
3812	027256	063737	002336	002340	ADD	GOOD2,GOOD4	
3813							
3814	027264	013737	002340	002342	MOV	GOOD4,GOOD6	:WHAT IS GOOD6
3815	027272	063737	002336	002342	ADD	GOOD2,GOOD6	
3816							
3817	027300	013737	002342	002344	MOV	GOOD6,GOOD10	:WHAT IS GOOD10
3818	027306	063737	002336	002344	ADD	GOOD2,GOOD10	
3819							
3820	027314	013737	002344	002346	MOV	GOOD10,GOOD12	: " " GOOD12
3821	027322	063737	002336	002346	ADD	GOOD2,GOOD12	
3822							
3823	027330	013737	002346	002350	MOV	GOOD12,GOOD14	: " " GOOD14
3824	027336	063737	002336	002350	ADD	GOOD2,GOOD14	
3825							
3826	027344	013737	002350	002352	MOV	GOOD14,GOOD16	: " " GOOD16
3827	027352	063737	002336	002352	ADD	GOOD2,GOOD16	
3828							
3829							
3830	027360	023737	002336	002360	CMP	GOOD2,SEL2	
3831	027366	001031			BNE	2\$	
3832	027370	023737	002340	002362	CMP	GOOD4,SEL4	
3833	027376	001025			BNE	2\$	
3834	027400	023737	002342	002364	CMP	GOOD6,SEL6	
3835	027406	001021			BNE	2\$	
3836	027410	023737	002344	002366	CMP	GOOD10,SEL10	
3837	027416	001015			BNE	2\$	
3838	027420	023737	002346	002370	CMP	GOOD12,SEL12	
3839	027426	001011			BNE	2\$	
3840	027430	023737	002350	002372	CMP	GOOD14,SEL14	
3841	027436	001005			BNE	2\$	
3842	027440	023737	002352	002374	CMP	GOOD16,SEL16	
3843	027446	001001			BNE	2\$	
3844	027450	000410			BR	3\$	
3845							
3846							
3847	027452				2\$: BREAK		
3848	027454				ERRHRD	29,EM0003,PRREG	
3849	027464				BREAK		
3850	027466				ESCAPE	TST	
3851							
3852							

KMV11 A/B LOGIC DIAG MACRO M1200 06-JAN-83 09:39 PAGE 66-2
HARDWARE TESTS

3853 027472 005337 002416
3854 027476
3855 027500 001203
3856 027502

3\$: DEC NUMBER
 BREAK
 BNE RGALL
ENDTST

;ALL PATTERN DONE?

KMV11 A/B LOGIC DIAG MACRO M1200 06-JAN-83 09:39 PAGE 67
HARDWARE TESTS

3858 027504

BADHEAD

3859

***** TEST14 *****

3860 027504

;KMV11 RAM MEMORY TEST: MEMORY PATTERN TEST

BADHEAD

***** TEST14 *****

3861

3862

3863

3864

3865 027504

3866

3867

3868

3869

3870

3871

3872

3873

3874

3875

3876

3877

3878

3879

3880

3881

3882

3883

3884

3885

3886

3887

3888

3889

3890 027504

3891

3892

3893

3894

3895 027504

3896 027504

3897 027510

3898

3899 027514

3900 027516

3901 027522

3902 027526

3903

3904

3905 027534

3906 027540

3907

3908 027542

3909

3910

3911 027562

3912 027566

STARS 1

;SET MAINT MODE 1 ;DCT11 DECODE AND CLEAR SEL 0

;THE HOST WRITES IN SEL2 THE PATTERN TO BE WRITTEN IN ALL MEMORY

;AND SETS TEST NUMBER TO 13

;DCT11 WRITE ALL THE MEMORY WITH THIS VALUE,CHECK IF OK AND

;WHEN DONE CLEAR BSELO IF TEST OK

;IF ERROR SEL2 = EXPECTED VALUE OF LOCATION IN ERROR

SEL4 = READ VALUE OF LOCATION IN ERROR

SEL6 = ADDRESS IN ERROR

;BSELO = 13 , MICRO DIAGNOSTIC TEST NUMBER 13

DCT11 SEND PATTERN IN RAM MEMORY AND CHECK

PATTERN DESCRIPTION:

. ALL ZERO

. ALL ONE

. 10101010 PATTERN

. 01010101 PATTERN

. ROTATING 1

. ROTATING 0

STARS 1

BGNTST

RAMPAT:

JSR

JSR

CLR

CLR

JSR

MOV

JSR

.WORD

WAITB

JSR

BR

PC,CLRKMV

PC,MAINM1

R3

COUNT

PC,GENER

DATA,@KMVP02

R5,TSTNUB

13

0.1

PC,TSTERR

1\$

;CLEAR REG

;SET MAINT1

;SELECT 1ST PATTERN

;MAKE PATTERN

;WRITE PATTERN IN SEL2

;SET TEST NB 13

;CHECK BSELO=WHICH ERROR?

;TEST OK

KMV11 A/B LOGIC DIAG MACRO M1200 06-JAN-83 09:39 PAGE 67-1
HARDWARE TESTS

```

3913 027570 000420          BR      2$
3914
3915 027572 000427          BR      3$
3916
3917
3918
3919
3920
3921 027574 017737 162716 002420      MOV      @KMVP06,ADDR      ;READ ADDRESS OF RAM
3922 027602 017737 162704 002422      MOV      @KMVP02,GDDAT    ;READ EXPECTED DATA (GDDAT)
3923 027610 017737 162700 002424      MOV      @KMVP04,BDDAT    ;READ BAD VALUE OF DATA (BDDAT)
3924
3925 027616          ERRHRD  30,EM0015,PRRAM ;DATA CMP ERROR ON ONE RAM LOCATION
3926 027626          ESCAPE  TST
3927
3928
3929
3930
3931
3932 027632 005037 002330      2$:    CLR GOOD
3933 027636          ERRHRD  31,EM0025,PBSEL0 ;TIMEOUT ERROR
3934 027646          ESCAPE  TST
3935
3936
3937
3938
3939
3940 027652 005037 002330      3$:    CLR      GOOD
3941 027656          ERRHRD  32,EM0024,PBSEL0 ;NO KMV11 ANSWER
3942 027666          ESCAPE  TST
3943
3944
3945
3946
3947
3948 027672 005237 002414      1$:    INC      COUNT
3949 027676 022737 000015 002414      CMP      #15,COUNT      ;SEND 1 WORDS IN THE SAME PATTERN
3950 027704 001306          BNE      4$      ;15 WORDS DONE BR
3951
3952 027706 005037 002414          CLR      COUNT
3953 027712 005203          INC      R3      ;TRY WITH A NEW PATTERN
3954 027714 022703 000006          CMP      #6,R3      ;ALL DONE ?
3955 027720 001300          BNE      4$      ;NO BR
3956 027722          ENDTST

```

KMV11 A/B LOGIC DIAG MACRO M1200 06-JAN-83 09:39 PAGE 68
HARDWARE TESTS

```

3958 027724      BADHEAD
3959              :***** TEST15 *****
3960 027724      :KMV11 RAM MEMORY TEST: MEMORY ADDRESS TEST
3961              BADHEAD
3962              :***** TEST15 *****
3963
3964
3965 027724      STARS 1
3966              ;SET MAINT MODE 1 ;DCT11 DECODE AND CLEAR SEL 0
3967
3968              ;THE HOST SETS TEST NB 14 IN BSEL10
3969              ;DCT11 WRITE ADDRESS VALUE IN EACH ADDRESS LOCATIONS FOR ALL
3970              ;THE KMV11 RAM.(EXAMPLE: 1000=1000,1002=1002.....).
3971              ;DCT11 CLEAR BSEL0 IF TEST IS OK
3972              ;BSEL0= 100 IF DATA COMPARE ERROR DURING CHECK
3973
3974              ;IF ERROR SEL2 = EXPECTED VALUE OF LOCATION IN ERROR
3975              ;SEL4 = READ VALUE OF LOCATION IN ERROR
3976              ;SEL6 = ADDRESS IN ERROR
3977
3978
3979
3980
3981              ;BSEL0 = 14 , MICRO DIAGNOSTIC TEST NUMBER 14
3982              ;DCT11 WRITE ADDRESS VALUE IN ADDRESS LOCATION AND CHECK
3983 027724      STARS 1
3984
3985
3986
3987
3988 027724      BGNTST
3989 027724      RAMADD: JSR      PC,CLRKMV      ;CLEAR REG
3990 027730      004737 014550      JSR      PC,MAINM1      ;SET MAINT1
3991
3992 027734      004537 015010      JSR      R5,TSTNUB      ;SET TEST NB 14
3993 027740      000014      .WORD      14
3994
3995 027742      WAITB      0.1
3996
3997
3998
3999 027762      004737 013152      JSR      PC,TSTERR      ;CHECK BSEL0
4000 027766      000441      BR      1$      ;TEST OK
4001 027770      000420      BR      2$      ;TIMEOUT ERROR
4002 027772      000427      BR      3$      ;NO KMV11 ANSWER
4003
4004
4005
4006 027774      017737 162516 002420      MOV      @KMVP06,ADDR      ;READ ADDRESS OF RAM
4007 030002      017737 162504 002330      MOV      @KMVP02,GOOD      ;READ EXPECTED DATA (GDDAT)
4008 030010      017737 162500 002424      MOV      @KMVP04,BDDAT      ;READ BAD VALUE OF DATA (BDDAT)
4009
4010 030016      ERRHRD      33,EM0015,PRRAM      ;DATA CMP ERROR ON ONE RAM LOCATION
4011 030026      ESCAPE      TST
4012

```

KMV11 A/B LOGIC DIAG MACRO M1200 05-JAN-83 09:39 PAGE 68-1
HARDWARE TESTS

4013						
4014						
4015						
4016						
4017	030032	005037	002330	2\$:	CLR GOOD	
4018	030036				ERRHRD 34,EM0025,PBSELO	;TIMEOUT ERROR
4019	030046				ESCAPE TST	
4020						
4021						
4022						
4023						
4024	030032	005037	002330	3\$:	CLR GOOD	
4025	030056				ERRHRD 35,EM0024,PBSELO	;NO KMV11 ANSWER
4026	030066				ESCAPE TST	
4027	030072	000240		1\$:	NOP	
4028	030074			ENDTST		

KMV11 A/B LOGIC DIAG
HARDWARE TESTS

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4030 030076

BADHEAD

4031

***** TEST16 *****
;KMV11 RAM MEMORY TEST: MEMORY ADDRESS COMPLEMENT TEST

4032 030076

BADHEAD

***** TEST16 *****

4033

4034

4035

4036

4037 030076

STARS 1

4038

;SET MAINT MODE 1 ;DCT11 DECODE AND CLEAR SEL 0

4039

;SET TEST NUMBER 15 ;DCT11 EXECUTE TEST

4040

;DCT11 WRITE COMPLEMENT ADDRESS VALUE IN EACH ADDRESS LOCATION AND CHECK.

4041

4042

;DCT11 CLEAR BSELO IF TEST OK AND PUT 100 IN BSELO IF DATA COMPARE ERROR

4043

4044

;IF ERROR SEL2 = EXPECTED VALUE OF LOCATION IN ERROR

4045

SEL4 = READ VALUE OF LOCATION IN ERROR

4046

SEL6 = ADDRESS IN ERROR

4047

4048

4049

4050

4051

;BSELO = 15 , MICRO DIAGNOSTIC TEST NUMBER 15

4052

DCT11 WRITE COMPL. ADDRESS IN ADDRESS IN RAM MEMORY AND CHECK

4053 030076

STARS 1

4054

4055

4056

4057

4058 030076

BGNTST

4059 030076

004737 014550

RAMCAD:

JSR PC,CLRKMV

;CLEAR REG

4060 030102

004737 014730

JSR PC,MAINM1

;SET MAINT1

4061

4062 030106

004537 015010

JSR R5,TSTNUB

;SET TEST NB 15

4063 030112

000015

.WORD

15

4064

4065 030114

WAITB

0,1

4066

4067

4068

4069 030134

004737 013152

JSR PC,TSTERR

;CHECK BSELO,WHICH ERROR

4070 030140

000441

BR

1\$

;TEST OK

4071 030142

000420

BR

2\$

;TIMEOUT ERROR

4072 030144

000427

BR

3\$

;NO KMV11 ANSWER

4073

4074

4075 030146

017737 162344 002420

MOV

@KMVP06,ADDR

;READ ADDRESS OF RAM

4076 030154

017737 162332 002330

MOV

@KMVP02,GOOD

;READ EXPECTED DATA (GDDAT)

4077 030162

017737 162326 002424

MOV

@KMVP04,BDDAT

;READ BAD VALUE OF DATA (BDDAT)

4078

4079 030170

ERRHRD

36,EM0015,PRRAM

;DATA CMP ERROR ON ONE RAM LOCATION

4080 030200

ESCAPE

TST

4081

4082

4083

4084

KMV11 A/B LOGIC DIAG MACRO M120G 06-JAN-83 09:39 PAGE 69-1
HARDWARE TESTS

4085	030204	005037	002330	2\$:	CLR	GOOD	
4086	030210				ERRHRD	37,EM0025,PBSELO	;TIMEOUT ERROR
4087	030220				ESCAPE	TST	
4088							
4089							
4090							
4091							
4092							
4093	030224	005037	002330	3\$:	CLP	GOOD	
4094	030230				ERRHRD	38,EM0024,PBSELO	;NO KMV11 ANSWER
4095	030240				ESCAPE	TST	
4096							
4097							
4098							
4099							
4100	030244	000240		1\$:	NOP		
4101	030246			ENDTST			
4102							
4103							

KMV11 A/B LOGIC DIAG
HARDWARE TESTS

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4105 030250

BADHEAD

4106

4107 030250

***** TEST17 *****
:CHECK PROM REVISION TO SEE IF COMPATIBLE WITH DIAGNOSTIC
BADHEAD
***** TEST17 *****

4108

4109

4110

4111

4112 030250

4113

4114

4115

4116 030250

4117

4118

4119

4120

4121

4122 030250

4123 030250 004737 014550

4124 030254 004737 014730

4125

4126

4127 030260 004537 015072

4128 030264 160002

4129

4130

4131 030266 023737 012464 012432

4132 030274 001406

4133

4134 030276

4135 030306

4136 030312

4137 030312

STARS 1

:READ LOCATION 2 OF THE PROM (ADDRESS 160002) WHICH CONTENTS PROM VERSION
NUMBER

:CHECK IF DIAGNOSTIC AND PROM ARE COMPATIBLE AND GIVE AN ERROR IF NOT
STARS 1

BGNTST

JSR PC,CLRKMV
JSR PC,MAINM1

:CLEAR ALL REGISTERS
:SET MAINT MODE

REVPRO: JSR R5,READ
.WORD 160002

:READ LOCATION 160002

CMP GDREV,BAD
BEQ 1\$

:LOOK IF COMPATIBLE
:YES

ERRHRD 39,EM0034
ESCAPE TST

:REPORT THE ERROR

1\$:
ENDTST

KMV11 A/B LOGIC DIAG
HARDWARE TESTS

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```

4139
4140 030314      BADHEAD
                  ;***** TEST18 *****
4141              ;PROM CHECKSUM TEST
4142 030314      BADHEAD
                  ;***** TEST18 *****

4143
4144
4145
4146
4147 030314      STARS 1
4148              ;DIAGNOSIC READS ALL PROM'S LOCATIONS AND ADDS THEN TOGETHER
4149              ;RESULT MUST BE ZERO
4150              ;
4151              ;
4152              ;TEST 33 DESCRIPTION:
4153              ;DCT11 ADD ALL PROMS LOCATIONS ,IF RESULT IS ZERO=CLEAR BSELO
4154              ;IF CHECKSUM ERROR =SET 100 IN BSELO
4155 030314      STARS 1
4156
4157
4158
4159
4160
4161
4162
4163
4164 030314      BGNTST
4165 030314      004737 014550      JSR      PC,CLRKMV      ;CLEAR REGISTERS
4166 030320      004737 014730      JSR      PC,MAINM1     ;SET MAINTENANCE MODE
4167
4168
4169 030324      004537 015010      PROMCK: JSR      R5,TSTNUB
4170 030330      000033              .WORD      33          ;SET TEST 33
4171
4172 030332              WAITB      0,1
4173
4174 030352      004737 013152      JSR      PC,TSTERR      ;TEST IF ERROR
4175 030356      000427              BR        1$          ;TEST OK
4176 030360      000412              BR        2$          ;TIMEOUT ERROR
4177 030362      000417              BR        3$          ;NO ANSWER FROM KMV11
4178
4179
4180 030364      017737 162122 012432  MOV      @KMVP02,BAD      ;CHECKSUM ERROR
4181 030372              ERRHRD    40,EM0035,PCHECK
4182 030402              ESCAPE     TST
4183
4184
4185 030406      2$:      ERRHRD    41,EM0025      ;TIMEOUT DURING TEST
4186 030416              ESCAPE     TST
4187
4188
4189 030422      3$:      ERRHRD    42,EM0024      ;NO KMV ANSWER
4190 030432              ESCAPE     TST
4191
4192
4193 030436      000240      1$:      NOP

```

KMV11 A/B LOGIC DIAG
HARDWARE TESTS

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4194
4195 030440
4196
4197
4198
4199
4200
4201
4202
4203

ENDTST

KMV11 A/B LOGIC DIAG
HARDWARE TESTS

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4205
4206 030442

BADHEAD

***** TEST19 *****

4207
4208 030442

;TEST DMA TRANSFER IN KMV11

BADHEAD

***** TEST19 *****

4209
4210
4211
4212
4213 030442

STARS 1

;SET MAINT1 ;DCT11 DECODE AND CLEAR BSELO

;LOAD FIRST ADDRESS OF TX TABLE IN SEL12 , TABLE LENGTH IN SEL14,

;TX TABLE EXTENDED ADDRESS IN BSEL 10.

4214
4215
4216
4217
4218
4219

;SET TEST NUMBER (16 OR 17) IN BSELO

;DCT11 EXECUTE THE DMA TRANSFER OF THE TABLE IN KMV11 RAM AND CHECK.

;WHEN DONE CLEAR BSELO IF TEST OK

4220
4221
4222
4223
4224
4225

;SET 200 IN BSELO IF TIMEOUT DURING TEST

;SET 100 IN BSELO IF ERROR DURING TRANSFER

;IN THAT CASE SEL2=EXPECTED VALUE

;SEL4=READ VALUE

;SEL6=ADDRESS LOCATION OF ERROR

;BSEL10=EXTENDED ADDRESS

4226
4227
4228
4229
4230

;TEST DESCRIPTION: PDP GENERATE AN INCREMENTING PATTERN TABLE OF 1K WORDS

;SEND STARTING ADDRESS AND TABLE LENGTH TO KMV11

;KMV11 START DMA TRANSFER AND CHECK

4231
4232
4233
4234 030442

;TEST 16 = TABLE CONTENT INCREMENTING PATTERN FROM 0

;TEST 17 = EACH LOCATION CONTENT ADDRESS VALUE OF LOCATION

STARS 1

4235
4236
4237
4238
4239 030442

BGNTST

DMAIN: JSR PC,CLRKMV

;CLEAR REG

JSR PC,MAINM1

;SET MAINT 1

4240 030442 004737 014550
4241 030446 004737 014730
4242 030452
4243 030454 012701 002426

BGNSUB

MOV #TTABLE,R1

;POINT TX TABLE

CLR R2

;CLR TABLE

4244 030460 005002
4245 030462 010221
4246 030464 005202
4247 030466 022702 002000
4248 030472 001373

1\$: MOV R2,(R1)+

;MAKE AN INCREMENTING PATTERN FROM 0

INC R2

CMP #2000,R2

;TABLE LENGTH=1K WORDS

BNE 1\$

4249
4250
4251
4252 030474 012777 002426 162020
4253 030502 012777 002000 162014

MOV #TTABLE,@KMVP12

;SET TX TABLE ADDRESS

MOV #2000,@KMVP14

;SET TABLE LENGTH

CLR @KMVP10

;CLEAR EXTENDED ADDRESS

JSR R5,TSTNUB

;SEND TEST NB 16

4254 030510 005077 162004
4255 030514 004537 015010
4256 030520 000016
4257
4258
4259 030522

.WORD 16

WAITB 0.1

;WAIT FOR TEST EXECUTION

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HARDWARE TESTS

```

4260
4261
4262
4263 030542 004737 013152      JSR      PC,TSTERR      ;CHECK BSELO ,WHICH ERROR
4264 030546 000444              BR       2$      ;TEST OK
4265 030550 000423              BR       3$      ;TIMEOUT ERROR
4266 030552 000432              BR       4$      ;NO KMV11 ANSWER
4267
4268
4269
4270
4271
4272 030554 017737 161732 002330  MOV      @KMVP02,GOOD      ;READ GOOD DATA
4273 030562 017737 161726 002424  MOV      @KMVP04,BDDAT      ;READ BAD DATA
4274 030570 017737 161722 002420  MOV      @KMVP06,ADDR      ;READ ERROR ADDRESS
4275 030576 117737 161716 012426  MOV      @KMVP10,EXADDR     ;READ EXTENDED ADDRESS
4276 030604              ERRHRD  43,EM0020,PRDMA ;DATA CMP ERROR DURING DMA IN TX
4277 030614              ESCAPE  SUB
4278
4279
4280
4281
4282
4283 030620 005037 002330      3$:    CLR      GOOD              ;TIMEOUT ERROR
4284 030624              ERRHRD  44,EM0016,PBSELO
4285 030634              ESCAPE  SUB
4286
4287
4288 030640 005037 002330      4$:    CLR      GOOD              ;NO KMV ANSWER
4289 030644              ERRHRD  45,EM0024,PBSELO
4290 030654              ESCAPE  SUB
4291
4292
4293 030660 000240      2$:    NOP
4294 030662      ENDSUB
4295
4296
4297
4298 030664      BGNSUB
4299 030666 004737 014730      JSR      PC,MAINM1
4300 030672 012704 002426      MOV      #TTABLE,R4      ;POINT TTABLE
4301 030676 012702 002000      MOV      #2000,R2      ;TABLE LENGTH
4302 030702 010401      1$:    MOV      R4,R1
4303 030704 010124      MOV      R1,(R4)+      ;TABLE LOCATION CONTENT TABLE LOCATION ADDRESS
4304 030706 005302      DEC      R2
4305 030710 001374      BNE      1$
4306
4307
4308 030712 012777 002426 161602  MOV      #TTABLE,@KMVP12      ;SEND TABLE ADDRESS
4309 030720 012777 002000 161576  MOV      #2000,@KMVP14      ;.. .. LENGTH
4310 030726 004537 015010      JSR      R5,TSTNUB      ;SET TEST NB 17
4311 030732 000017      .WORD  17
4312
4313
4314 030734      WAITB  0,1      ;WAIT FOR TEST EXECUTION
4315
4316

```

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HARDWARE TESTS

4317	030754	004737	013152		JSR	PC,TSTERR		;CHECK BSELO
4318	030760	000444			BR	2\$		;TEST OK
4319	030762	000423			BR	3\$		;TIMEOUT ERROR
4320	030764	000432			BR	4\$		;NO KMV ANSWER
4321								
4322								
4323								
4324								
4325	030766	017737	161520	002330	MOV	@KMVP02,GOOD		;READ GOOD DATA
4326	030774	017737	161514	002424	MOV	@KMVP04,BDDAT		; " BAD "
4327	031002	017737	161510	002420	MOV	@KMVP06,ADDR		; " ERROR ADDRESS
4328	031010	117737	161504	012426	MOVB	@KMVP10,EXADDR		; " EXTENDED ADDRESS
4329								
4330	031016				ERRHRD	46,EM0020,PRDMA		;DATA CMP ERROR
4331	031026				ESCAPE	SUB		
4332								
4333								
4334								
4335	031032	005037	002330		3\$: CLR	GOOD		
4336	031036				ERRHRD	47,EM0016,PBSELO		;TIMEOUT ERROR
4337	031046				ESCAPE	SUB		
4338								
4339								
4340								
4341								
4342	031052	005037	002330		4\$: CLR	GOOD		
4343	031056				ERRHRD	48,EM0024,PBSELO		;NO KMV ANSWER
4344	031066				ESCAPE	SUB		
4345								
4346								
4347								
4348								
4349	031072	000240			2\$: NOP			
4350	031074				ENDSUB			
4351	031076				ENDTST			

KMV11 A/B LOGIC DIAG
HARDWARE TESTS

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4353 031100

BADHEAD

4354

;***** TEST20 *****

4355 031100

;TEST DMA TRANSFER OUT KMV11

BADHEAD

;***** TEST20 *****

4356

4357

4358

4359

4360 031100

STARS 1

4361

;SET MAINT1 ;DCT11 DECODE AND CLEAR BSELO

4362

;LOAD FIRST ADDRESS OF RX TABLE IN SEL12 AND RX TABLE LENGTH IN SEL14

4363

;EXTENDED ADDRESS IN BSEL10

4364

4365

;SET TEST NUMBER 20,21 ;DCT11 EXECUTE TEST

4366

;WHEN DONE CLEAR BSELO IF TEST OK

4367

;SET 200 IN BSELO IF TIMEOUT DURING TEST

4368

4369

4370

4371

;TEST 20 DESCRIPTION: DCT11 SEND IN DMA AN INCREMENTING PATTERN (OF 1K WORDS)
IN HOST MEMORY. THIS PATTERN STARS AT ADDRESS FOUND
IN SEL12 (RX TABLE)

4372

4373

4374

4375

4376

4377

4378

;TEST 21 DESCRIPTION: IDEM BUT TABLE CONTENT ADDRESS VALUE OF EACH LOCATION

4379 031100

STARS 1

4380

4381

4382

4383

4384 031100

BGNTST

4385 031100

BGNSUB

4386 031102 004737 014550

DMAOUT:

JSR

PC,CLRKMV

;CLEAR REG

4387 031106 004737 014730

JSR

PC,MAINM1

;SET MAINT 1

4388 031112 005037 002320

CLR

FLAG

4389 031116 012701 006426

MOV

#RTABLE,R1

;POINT RX TABLE

4390 031122 012702 002000

MOV

#2000,R2

;CLR RX TABLE

4391 031126 005021

1\$:

CLR

(R1)+

4392 031130 005302

DEC

R2

4393 031132 001375

BNE

1\$

4394

4395

4396

4397 031134 012777 006426 161360

MOV

#RTABLE,@KMVP12

;SET RX TABLE ADDRESS

4398 031142 012777 002000 161354

MOV

#2000,@KMVP14

;SET TABLE LENGTH

4399 031150 105077 161344

CLRB

@KMVP10

;CLEAR EXTENDED ADDRESS

4400 031154 004537 015010

JSR

R5,TSTNUB

;SEND TEST NB 20

4401 031160 000020

.WORD

20

4402

4403

4404

4405 031162

WAITB 0,1

;WAIT FOR TEST EXECUTION

4406

4407

KMV11 A/B LOGIC DIAG MACRO M12C2 06-JAN-83 09:39 PAGE 73-1
HARDWARE TESTS

```

4408 031202 004737 013152      JSR      PC,TSTERR      ;CHECK BSELO;WHICH ERROR
4409 031206 000423              BR      2$          ;TEST OK
4410 031210 000402              BR      5$          ;TIMEOUT ERROR
4411 031212 000411              BR      6$          ;NO KMV ANSWER
4412 031214 000420              BR      2$
4413
4414
4415 031216 005037 002330      5$:    CLR      GOOD
4416 031222              ERRHRD  49,EM0016,PBSELO      ;TIMEOUT ERROR
4417 031232              ESCAPE  SUB
4418
4419
4420
4421 031236 005037 002330      6$:    CLR      GOOD
4422 031242              ERRHRD  50,EM0024,PBSELO      ;NO KMV ANSWER
4423 031252              ESCAPE  SUB
4424
4425
4426
4427
4428
4429 031256 012701 006426      2$:    MOV      #RTABLE,R1      ;CHECK RX TABLE
4430 031262 005037 002422              CLR      GDDAT      ;1ST WORD
4431
4432 031266 010137 002420      3$:    MOV      R1,ADDR
4433 031272 023711 002422              CMP      GDDAT,(R1)      ;COMPARE
4434 031276 001431              BEQ      4$          ;GOOD BR
4435
4436 031300 011137 002424              MOV      (R1),BDDAT
4437
4438 031304 005737 002320              TST      FLAG
4439 031310 001007              BNE      7$          ;LOOK IF 1ST MESSAGE OR EXTENDED ONE
4440 031312              ERRHRD  51,EM0030,PRDMA
4441
4442 031322 005237 002320              INC      FLAG
4443 031326 000415              BR      4$
4444
4445 031330              7$:    ERRHRD  51,0,PDMAF      ;DATA CMP ERROR
4446 031340              BREAK
4447 031342 005237 002320              INC      FLAG
4448 031346 022737 000010 002320      CMP      #10,FLAG      ;REPORT 10 FIRST ERROR
4449 031354 001002              BNE      4$
4450 031356              ESCAPE  SUB
4451
4452
4453
4454
4455 031362 005237 002422      4$:    INC      GDDAT      ;CHECK NEW LOCATION
4456 031366 062701 000002              ADD      #2,R1
4457 031372 022737 002000 002422      CMP      #2000,GDDAT      ;ALL DONE
4458 031400 001332              BNE      3$
4459 031402              ENDSUB
4460
4461
4462
4463
4464

```

KMV11 A/B LOGIC DIAG MACRO M1200 06-JAN-83 09:39 PAGE 73-2
HARDWARE TESTS

```

4465 031404          BGNSUB
4466 031406 005037 002320      CLR      FLAG
4467 031412 004737 014730      JSR      PC,MAINM1
4468 031416 012777 006426 161076  MOV      #RTABLE,@KMVP12      ;LOAD RX TABLE IN SEL12
4469 031424 005077 161070      CLR      @KMVP10
4470 031430 012777 002000 161066  MOV      #2000,@KMVP14      ;LOAD TABLE LENGTH
4471
4472
4473 031436 012702 002000      MOV      #2000,R2      ;TABLE LENGTH
4474 031442 012701 006426      MOV      #RTABLE,R1
4475 031446 005021          10$:  CLR      (R1)+      ;CLEAR RX TABLE
4476 031450 005302          DEC      R2
4477 031452 001375          BNE      10$
4478
4479
4480
4481
4482 031454 004537 015010      JSR      R5,TSTNUB      ;LOAD TEST NB21
4483 031460 000021          .WORD    21
4484
4485 031462          WAITB     0,1      ;WAIT FOR TEST EXECUTION
4486
4487
4488 031502 004737 013152      JSR      PC,TSTERR      ;CHECK BSELO;WHICH ERROR
4489 031506 000423          BR       2$      ;TEST OK
4490 031510 000402          BR       5$      ;TIMEOUT ERROR
4491 031512 000411          BR       6$      ;NO ANSWER
4492 031514 000420          BR       2$      ;DATA CMP ERROR
4493
4494
4495
4496 031516 005037 002330          5$:  CLR      GOOD      ;TIMEOUT ERROR
4497 031522          ERRHRD   52,EM0016,PBSELO
4498 031532          ESCAPE    SUB
4499
4500
4501
4502 031536 005037 002330          6$:  CLR      GOOD      ;NO KMV11 ANSWER
4503 031542          ERRHRD   53,EM0024,PBSELO
4504 031552          ESCAPE    SUB
4505
4506
4507
4508
4509
4510
4511 031556 012702 002000          2$:  MOV      #2000,R2
4512 031562 012737 006426 002420  MOV      #RTABLE,ADDR      ;VERIFY RX TABLE
4513 031570 012737 006426 002422  MOV      #RTABLE,GDDAT
4514
4515 031576 023737 002422 002420  3$:  CMP      GDDAT,ADDR      ;CMP TABLE
4516 031604 001432          BEQ      4$
4517 031606 017737 150606 002424  MOV      @ADDR,BDDAT      ;READ BAD DATA
4518
4519
4520 031614 005737 002320      TST      FLAG
4521 031620 001007          BNE      1$      ;LOOK IF 1ST REPORT

```

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HARDWARE TESTS

```

4522
4523
4524 031622          ERRHRD  54,EM0030,PRDMA      ;DATA CMP ERROR IN RX TABLE
4525 031632 005237 002320 INC      FLAG
4526 031636 000415 BR      4$
4527
4528 031640          1$: ERRHRD  54,0,PDMAF        ;SHORT ERROR REPORT
4529 031650          BREAK
4530 031652 005237 002320 INC      FLAG
4531 031656 022737 000010 002320 CMP      #10,FLAG      ;REPORT 10 ERROR
4532 031664 001002 BNE      4$
4533 031666          ESCAPE SUB
4534
4535
4536 031672 062737 000002 002422 4$: ADD      #2,GDDAT      ;VERIFY NEXT LOCATION
4537 031700 062737 000002 002420 ADD      #2,ADDR
4538 031706 005302 DEC      R2
4539 031710 001332 BNE      3$      ;ALL DONE:
                                        ;NO BRANCH
4540
4541 031712          ENDSUB
4542 031714          ENDTST
4543

```

KMV11 A/B LOGIC DIAG
HARDWARE TESTS

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4545 031716

BADHEAD

4546

4547 031716

***** TEST21 *****
:TEST DMA TRANSFER IN BOTH DIRECTION
BADHEAD
***** TEST21 *****

4548

4549

4550

4551

4552

4553 031716

4554

4555

4556

4557

4558

4559

4560

4561

4562

4563

4564

4565

4566

4567

4568

4569

4570

4571

4572

4573

4574

4575

4576

4577

4578

4579

4580

4581

4582

4583

4584

4585

4586 031716

4587

4588

4589

4590

4591 031716

4592 031716

4593 031724

4594

4595 031730

4596 031734

4597 031740

4598 031744

4599

012737 065000 012462
005037 002320

012703 000002
004737 014550
005037 002414

STARS 1

:SET MAINT1 ; DCT11 DECODE AND CLEAR BSELO
:THE HOST SET ALL THE PARAMETERS IN CSR'S
:LOAD TX TABLE ADDRESS IN SEL12, TABLE LENGTH IN SEL14, EXTENDED ADDRESS IN BSEL10
:EXTENDED ADDRESS OF RX TABLE IN BSEL2, ADDRESS OF RX TABLE IN SEL4 AND
:RAM STARTING ADDRESS FOR TRANSFER IN SEL6.

:LOAD TEST NUMBER 22 ; DCT11 EXECUTE TEST
: WHEN DONE CLEAR BSELO IF TEST OK OR SET 200 IN BSELO IF TIMEOUT DURING DMA.

:TEST DESCRIPTION:
: HOST COMPUTER GENERATES DIFFERENT 1K WORD TABLES ,GIVES ALL PARAMETERS IN
: THE CSR'S AND SET TEST 22 IN BSELO
: DCT11 TAKES SEL6 AS THE STARTING ADDRESS FOR THE DIFFERENT TRANSFERS IN KMV11
: RAM MEMORY (DMA INTO KMV11) AND TRANSFER THIS TABLE IN DMA BACK TO HOST
: MEMORY (DMA OUT).

: DATA TRANSFER ARE MADE IN DIFFERENT AREAS IN RAM AND DCT11 CHECKS
: THAT THE UNUSED PART OF THE RAM IS NOT MODIFIED

: WHEN TRANSFER IN BOTH DIRECTION HAS BEEN DONE ,DCT11 CLEAR BSELO AND
: HOST COMPARES RX AND TX TABLE

:ERROR REPORT IN BSELO: 200=TIMEOUT DURING DMA
100=UNUSED MEMORY MODIFIED DURING TRANSFER
IN THAT CASE SEL2 =GOOD
SEL4 =BAD
SEL6 = ADDRESS

STARS 1

BGNTST

MOV #65000,MAXCNT ;RAM MEMORY MAX LENGTH
CLR FLAG

DMATWO: MOV #2,R3 ;SELECT 1ST PATTERN
JSR PC,CLRKMV ;CLEAR REG
CLR COUNT ;SELECT RAM STARTING ADDRESS FOR TX
BREAK

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HARDWARE TESTS

```

4600 031746 004737 014750          TWODMA: JSR      PC,MAINM1          ;SET MAINT 1
4601
4602
4603
4604 031752 012702 002000          MOV      #2000,R2
4605 031756 012701 006426          MOV      #RTABLE,R1
4606 031762 005021          10$: CLR      (R1)+          ;CLEAR RX TABLE
4607 031764 005302          DEC      R2
4608 031766 001375          BNE      10$
4609
4610
4611
4612
4613
4614
4615 031770 012702 002000          MOV      #2000,R2
4616 031774 012701 002426          MOV      #TTABLE,R1
4617 032000 004737 013230          1$: JSR      PC,GENER          ;MAKE A PATTERN
4618
4619 032004 013721 012436          MOV      DATA,(R1)+          ;WRITE ONE TABLE LOCATION
4620 032010 005302          DEC      R2          ;ALL LOCATION DONE?
4621 032012 001372          BNE      1$          ;NO
4622
4623 032014 005077 160500          CLR      @KMVP10          ;CLEAR EXTENDED ADDRESS
4624 032020 013777 002414 160500  MOV      COUNT,@KMVP16          ;LOAD STATING ADDRESS IN RAM
4625
4626 032026 012777 002426 160466  MOV      #TTABLE,@KMVP12          ;SEND TX TABLE ADDRESS
4627 032034 012777 002000 160462  MOV      #2000,@KMVP14          ;SEND TABLE LENGTH
4628 032042 012777 006426 160444  MOV      #RTABLE,@KMVP04          ;SEND RX TABLE IN SEL4
4629 032050 005077 160436          CLR      @KMVP02          ;CLR RX TABLE EXT ADDRESS
4630 032054 004537 015010          JSR      R5,TSTNUB          ;LOAD TEST NB 22
4631 032060 000022          .WORD      22
4632
4633 032062 012737 070000 002324  MOV      #70000,DELCT1          ; SET DELAY COUNTER
4634 032070 117700 160414          11$: MOVB     @KMVCSR,R0          ; GET BSELO
4635 032074 105700          TSTB     R0          ; SEE IF TEST DONE OR CSR/DMA INTERFERENCE
4636 032076 001452          BEQ      3$          ; CHECK XMT/RCV BUFFER
4637 032100 005237 002324          INC      DELCT1          ; UPDATE TIMEOUT COUNTER
4638 032104 001371          BNE      11$          ; BR IF NOT TIMED OUT
4639 032106 000407          BR       6$          ; TIME-OUT
4640
4641 032110          BREAK
4642
4643
4644 032112 004737 013152          JSR      PC,TSTERR          ;CHECK BSELO;WHICH ERROR
4645 032116 000442          BR       3$          ;TEST OK
4646 032120 000402          BR       6$          ;TIME OUT
4647 032122 000411          BR       7$          ;NO KMV11 ANSWER
4648 032124 000420          BR       20$          ;PROBLEM IN THE UNUSED PART OF RAM:
4649          ;DMA TRANSFER MODIFY UNUSED RAM
4650          ; LOCATIONS.
4651
4652
4653
4654 032126 005037 002330          6$: CLR      GOOD          ;TIMEOUT ERROR
4655 032132          ERRHRD  55,EM0016,PBSELO
4656 032142          ESCAPE  TST

```

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HARDWARE TESTS

```

4657
4658
4659
4660 032146 005037 002330      7$: CLR      GOOD
4661 032152      ERRHRD 56,EM0024,PBSELO      ;NO KMV11 ANSWER
4662 032162      ESCAPE TST
4663
4664
4665
4666 032166 017737 160324 002420 20$: MOV      @KMVP06,ADDR      ;READ ADD IN ERROR
4667 032174 017737 160312 002330      MOV      @KMVP02,GOOD      ;GOOD VALUE
4668 032202 017737 160306 002424      MOV      @KMVP04,BDDAT      ;READ WRONG VALUE
4669 032210      ERRHRD 57,EM0033,PDMARA      ;DATA ERROR IN RAM DURING TRANSFER
4670 032220      ESCAPE TST
4671
4672
4673
4674
4675 032224 005077 160260      3$: CLR      @KMVCSR
4676 032230      000240      NOP
4677 032232 012777 044000 160250      MOV      #MAINT1,@KMVCSR      ;STOP TEST 22 IN KMV
4678 032240 012701 002426      MOV      #TTABLE,R1      ;TX TABLE ADDRESS
4679 032244 012704 006426      MOV      #RTABLE,R4      ;RX
4680 032250 012702 002000      MOV      #2000,R2      ;TABLE LENGHT
4681
4682
4683
4684 032254 021114      4$: CMP      (R1),(R4)      ;CMP RX TABLE AND TX TABLE
4685 032256 001437      BEQ      5$      ;OK TEST NEXT LOCATION
4686
4687
4688 032260 011137 002422      MOV      (R1),GDDAT      ;PREPARE ERROR REPORT
4689 032264 011437 002424      MOV      (R4),BDDAT
4690 032270 010437 002420      MOV      R4,ADDR
4691 032274 005037 012426      CLR      EXADDR
4692
4693 032300 005737 002320      TST      FLAG
4694 032304 001007      BNE      2$
4695 032306      ERRHRD 58,EM0021,PRDMA      ;DATA CMP ERROR IN TABLE
4696 032316 005237 002320      INC      FLAG
4697 032322 000415      BR       5$
4698
4699
4700 032324      2$: ERRHRD 8,0,PDMAF      ;REPORT 10 FIRST ERROR
4701 032334      BREAK
4702 032336 005237 002320      INC      FLAG
4703 032342 022737 000010 002320      CMP      #10,FLAG
4704 032350 001002      BNE      5$
4705 032352      ESCAPE TST
4706
4707
4708
4709
4710 032356 005721      5$: TST      (R1)+
4711 032360 005724      TST      (R4)+
4712 032362 005302      DEC      R2      ;ALL MEMORY TESTED?
4713 032364 001333      BNE      4$      ;NO BRANCH

```

KMV11 A/B LOGIC DIAG
HARDWARE TESTS

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4714							
4715							
4716	032366	062737	002000	002414	ADD	#2000,COUNT	;USE OTHER PART OF RAM
4717	032374	023737	002414	012462	CMP	COUNT,MAXCNT	;IS ALL RAM USED?
4718	032402	100002			BPL	30\$	
4719	032404	000137	031746		JMP	TWODMA	
4720							
4721							
4722							
4723	032410	005203			30\$: INC	R3	;SELECT NEW KIND OF PATTERN
4724	032412	022703	000005		CMP	#5,R3	;ALL DONE?
4725	032416	001402			BEQ	40\$	;NO BRANCH
4726	032420	000137	031746		JMP	TWODMA	
4727	032424				40\$:		
4728	032424				ENDTST		
4729							

KMV11 A/B LOGIC DIAG
HARDWARE TESTS

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4731 032426

BADHEAD

4732

***** TEST22 *****

4733 032426

;TEST INTERRUPT CAPABILITY OF KMV11 MODULE ON QBUS

BADHEAD

***** TEST22 *****

4734

4735

4736

4737 032426

STARS 1

4738

;SET MAINT1 ; KMV11 DECODE AND CLEAR BSELO

4739

;HOST PREPARES VECTOR AREA

4740

;SEND TEST NUMBER (23 OR 24)

4741

;DCT11 INTERRUPTS THE HOST BY SETTING BITS 5 OR 6 IN ADDRESS 140000 OF

4742

;KMV11 MICRO BUS ;DCT11 CLEAR BSELO WHEN TEST COMPLETED.

4743

4744

;HOST TESTS IF THE INTERRUPT HAS BEEN RECEIVED WITH CORRECT VECTOR

4745

4746

4747

4748

4749

;MICRO TEST 23 =INTERUPT ON LOW VECTOR

4750

;MICRO TEST 24 =INTERUPT ON HIGH VECTOR

4751 032426

STARS 1

4752

4753

4754

4755

4756

4757

4758

4759 032426

BGNTST

4760 032426

004737 014550

JSR

PC,CLRKMV

;CLR REG

4761 032432

004737 014730

JSR

PC,MAINM1

4762 032436

BGNSUB

4763 032440

005037 012430

CLR

INTFLG

4764 032444

013702 012476

MOV

KMVLVL,R2

;READ KMV PRIORITY

4765 032450

012777 032534 160016

MOV

#INT1,@KMVV00

;SET UP VECTOR 0

4766 032456

006202

ASR

R2

4767 032460

006202

ASR

R2

4768 032462

006202

ASR

R2

4769 032464

006202

ASR

R2

4770 032466

012777 000340 160006

MOV

#340,@KMVV02

;SET KMV PRIORITY 7 FOR INTERRUPT

4771

4772

4773

4774 032474

012703 000340

MOV

#340,R3

;TRY PRIORITY 7 FOR PROCESSOR

4775

4776

4777 032500

106403

SETPR1:

MTPS

R3

;LOAD PRIORITY

4778 032502

004537 015010

JSR

R5,TSTNUB

;SEND TEST 23

4779 032506

000023

.WORD

23

4780

4781 032510

000240

NOP

4782 032512

000240

NOP

4783 032514

000240

NOP

4784 032516

000240

NOP

4785 032520

000240

NOP

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HARDWARE TESTS

```

4786 032522 000240      NOP
4787 032524 000240      NOP
4788
4789 032526      BREAK
4790 032530 000137 032544  JMP      VECTO
4791
4792
4793      ;*****INTERUPT ROUTINE *****
4794
4795 032534 052737 000001 012430 INT1:  BIS      #1,INTFLG      ;SET INT FLAG
4796 032542 000002      RTI
4797
4798
4799      ;*****
4800
4801
4802
4803 032544 004537 013722      VECTO:  JSR      R5,CBSELO      ;CHECK IF KMV11 ANSWER
4804 032550 000000      .WORD      0
4805 032552 000410      BR        2$
4806 032554      ERRHRD  59,EM0024      ;NO KMV11 ANSWER
4807 032564 004737 013010      JSR      PC,CHKMAX      ;CHECK IF TOO MANY ERROR
4808 032570      ESCAPE  SUB
4809
4810
4811 032574 005737 012430      2$:    TST      INTFLG      ;TEST IF INTERRUPT ?
4812 032600 001454      BEQ      3$
4813
4814 032602 010237 002330      MOV      R2,GOOD      ;GOOD INTERRUPT LEVEL
4815
4816
4817
4818 032606 062703 000040      ADD      #40,R3      ;WAS IT LEGAL
4819 032612 010337 012432      MOV      R3,BAD
4820 032616 023737 012432 002330      CMP      BAD,GOOD
4821 032624 001461      BEQ      4$      ;YES BRANCH
4822
4823 032626 106237 002330      ASRB      GOOD
4824 032632 106237 002330      ASRB      GOOD
4825 032636 106237 002330      ASRB      GOOD
4826 032642 106237 002330      ASRB      GOOD
4827 032646 106237 002330      ASRB      GOOD
4828 032652 042737 177770 002330      BIC      #177770,GOOD
4829
4830
4831 032660 106237 012432      ASRB      BAD
4832 032664 106237 012432      ASRB      BAD
4833 032670 106237 012432      ASRB      BAD
4834 032674 106237 012432      ASRB      BAD
4835 032700 106237 012432      ASRB      BAD
4836 032704 042737 177770 012432      BIC      #177770,BAD
4837 032712      ERRHRD  60,EM0022
4838 032722 004737 013010      JSR      PC,CHKMAX
4839 032726      ESCAPE  SUB
4840
4841
4842

```

KMV11 A/B LOGIC DIAG MACRO M1200 06-JAN-83 09:39 PAGE 75-2
HARDWARE TESTS

```

4843 032732 122703 000140      3$:  CMPB  #140,R3      ;IS PROCESSOR AT LEVEL 3
4844 032736 001404              BEQ   5$
4845 032740 162703 000040      SUB   #40,R3      ;DECREASE PRIORITY
4846 032744 000137 032500      JMP   SETPR1    ;TRY WITH NEW ONE
4847
4848
4849
4850 032750              5$:  ERRHRD 61,EM0023      ;NO INTERRUPT OCCUR
4851 032760 004737 013010      JSR   PC,CHKMAX    ;CHECK IF TOO MANY ERROR
4852 032764              ESCAPE SUB
4853
4854 032770              4$:
4855 032770      ENDSUB
4856
4857
4858 032772              BGNSUB
4859 032774 004737 014730      JSR   PC,MAINM1
4860 033000 005037 012430      CLR   INTFLG
4861 033004 013702 012476      MOV   KMVLVL,R2      ;SET PRIORITY LEVEL
4862 033010 012777 000340 157466  MOV   #340,@KMVV06
4863 033016 012777 033070 157454  MOV   #INT2,@KMVV04
4864 033024 006202              ASR   R2      ;SET UP VECTOR 4
4865 033026 006202              ASR   R2
4866 033030 006202              ASR   R2
4867 033032 006202              ASR   R2
4868 033034 012703 000340      MOV   #340,R3      ;START WITH PRIORITY 7 FOR PROCESSOR
4869
4870
4871
4872
4873 033040 106403              INTPR2: MTPS  R3      ;LOAD PRIORITY
4874 033042 004537 015010      JSR   R5,TSTNUB
4875 033046 000024              .WORD 24      ;SET TEST NB 24
4876 033050 000240              NOP
4877 033052 000240              NOP
4878 033054 000240              NOP
4879 033056 000240              NOP
4880 033060 000240              NOP
4881
4882 033062              BREAK
4883 033064 000137 033100      JMP   VECT4
4884
4885
4886      ;*****INTERUPT ROUTINE *****
4887
4888
4889 033070 052737 000001 012430 INT2:  BIS   #1,INTFLG      ;SET FLAG
4890 033076 000002              RTI
4891
4892
4893      ;*****
4894
4895
4896
4897 033100 004537 013722      VECT4: JSR   R5,CBSELO      ;IS THERE KMV11 ANSWER ?
4898 033104 000000              .WORD 0
4899 033106 000410              BR    2$

```

KMV11 A/B LOGIC DIAG MACRO M1200 06-JAN-83 09:39 PAGE 75-3
HARDWARE TESTS

4900	033110				ERRHRD	62,EM0024			
4901	033120	004737	013010		JSR	PC,CHKMAX			;NO KMV11 ANSWER
4902	033124				ESCAPE	SUB			;CHECK IF TOO MANY ERROR
4903									
4904									
4905									
4906	033130	032737	000001	012430	2\$:	BIT	#1,INTFLG		;TEST IF INTERRUPT OCCUR
4907	033136	001454				BEQ	3\$		;NO INTERRUPT
4908									
4909	033140	010237	002330			MOV	R2,GOOD		;GOOD INTERRUPT LEVEL
4910									
4911									
4912	033144	062703	000040			ADD	#40,R3		;WAS IT LEGAL ?
4913	033150	010337	012432			MOV	R3,BAD		
4914									
4915	033154	023737	012432	002330		CMP	BAD,GOOD		
4916	033162	001461				BEQ	4\$		;YES BRANCH
4917	033164	106237	002330			ASRB	GOOD		
4918	033170	106237	002330			ASRB	GOOD		
4919	033174	106237	002330			ASRB	GOOD		
4920	033200	106237	002330			ASRB	GOOD		
4921	033204	106237	002330			ASRB	GOOD		
4922	033210	042737	177770	002330		BIC	#177770,GOOD		;GET ACTUAL LEVEL
4923									
4924	033216	106237	012432			ASRB	BAD		
4925	033222	106237	012432			ASRB	BAD		
4926	033226	106237	012432			ASRB	BAD		
4927	033232	106237	012432			ASRB	BAD		
4928	033236	106237	012432			ASRB	BAD		
4929	033242	042737	177770	012432		BIC	#177770,BAD		
4930	033250					ERRHRD	63,EM0022		;INT OCCUR AT BAD LEVEL
4931	033260	004737	013010			JSR	PC,CHKMAX		
4932	033264					ESCAPE	SUB		
4933									
4934									
4935									
4936									
4937	033270	122703	000040		3\$:	CMPB	#40,R3		;IS PROCESSOR AT PRIORITY 3
4938	033274	001404				BEQ	5\$		;YES,NO INTERRUPT OCCURED
4939	033276	162703	000040			SUB	#40,R3		;DECREASE PRIORITY LEVEL
4940	033302	000137	033040			JMP	INTPR2		
4941									
4942									
4943	033306				5\$:	ERRHRD	64,EM0023		
4944	033316	004737	013010			JSR	PC,CHKMAX		;CHECK IF TOO MANY ERROR
4945	033322					ESCAPE	SUB		
4946	033326				4\$:				
4947	033326				ENDSUB				
4948	033330				ENDTST				

KMV11 A/B LOGIC DIAG
HARDWARE TESTS

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4950
4951 033332

BADHEAD

***** TEST23 *****

;TEST INTERUPi ON DCT11 MICROPROCESSOR

BADHEAD

***** TEST23 *****

4952
4953 033332

4954
4955
4956
4957
4958
4959
4960 033332

STARS 1

;CHECKS THAT QBUS ACCESS ON BSELO AND BSEL10 CAUSE AN INTERRUPT ON DCT11
;CHECKS THAT ACCESSES ON ALL THE OTHER CSR'S DOES NOT CAUSE ANY INTERRUPTS.

4961
4962
4963
4964
4965
4966
4967
4968
4969
4970
4971
4972
4973
4974
4975
4976
4977
4978
4979
4980
4981
4982
4983
4984
4985
4986
4987
4988
4989
4990
4991
4992
4993
4994
4995 033332

;TEST DESCRIPTION:

;TEST NUMB 25: DCT11 INITIALIZE VECTOR 60 ON DCT11 BUS CORRESPONDING TO
BSELO INTERRUPT

QBUS ACCESS ALL REGISTERS BUT BSELO AND CHECK THAT NO
INTERRUPT OCCUR ON DCT11

CHECK THAT QBUS ACCESS ON BSELO GIVE AN INTERRUPT ON VECTOR 60

;TEST NUMB 26: DCT11 INITIALIZE VECTOR 70 CORRESPONDING TO BSEL2
INTERRUPT

QBUS ACCESS ALL REGISTERS BUT BSEL2 AND CHECK NO INTERRUPT
OCCUR ON DCT11

CHECK THAT QBUS ACCES ON BSEL2 INTERRUPT ON VECTOR 70

;ERROR REPORTING:

BSELO=0
BSELO=100
BSELO=TST NB
SEL2 =

IF INTERRUPT OCCUR
IF ILLEGAL VECTOR
IF NO INTERRUPT
EXPECTED VECTOR

STARS 1

KMV11 A/B LOGIC DIAG MACRO M1200 06-JAN-83 09:39 PAGE 77
HARDWARE TESTS

```

4997
4998
4999
5000
5001
5002
5003
5004
5005 033332          BGNTST
5006
5007
5008 033332          BGNSUB
5009 033334 004737 014550      JSR    PC,CLRKMV      ;CLEAR REG
5010 033340 004737 014730      JSR    PC,MAINM1     ;SET MAINT MODE
5011 033344 004537 015010      JSR    R5,TSTNUB    ;SET TEST NB 25
5012 033350 000025
5013
5014
5015 033352          WAITB    0,1
5016
5017
5018
5019 033372 013701 012512      MOV    KMVP02,R1      ;LOAD CSR ADDR
5020 033376 012702 000012      MOV    #12,R2        ;ACCES BSEL2 TO BSEL16
5021
5022 033402 152721 000207      1$:  BISB    #207,(R1)+    ;WRITE ALL REG BUT BSELO
5023
5024 033406          WAITB    0,1      ;WAIT FOR TEST EXECUTION
5025
5026 033426 004537 013722      JSR    R5,CBSELO    ;LOOK IF INTERRUPT OCCUR
5027 033432 000000
5028
5029 033434 000404          BR      3$              ;YES SEE WHICH ERROR
5030 033436 005302          DEC     R2              ;ALL REG DONE ?
5031 033440 001360          BNE     1$              ;NO BR
5032
5033
5034
5035
5036 033442 000137 033474          JMP     GOON1          ;OK NO ACCESS INTERRUPT THE DCT11 ;GO ON
5037
5038
5039
5040 033446 010137 002420          3$:  MOV     R1,ADDR      ;SEE WHICH ADDRESS CAUSE INTERRUPT
5041 033452 162737 000001 002420  SUB     #1,ADDR
5042 033460          ERRHRD    65,EM0026,PINTR ;WRONG INTERRUPT OCCURED ON DCT11
5043
5044 033470          ESCAPE    SUB      ;WHILE ADDRESSING KMV11 REGISTERS
5045
5046
5047
5048 033474 052777 004025 157006  GOON1:  BIS     #4025,@KMVCSR  ;ACCESS BSELO
5049
5050 033502          WAITB    0,1
5051
5052 033522 004537 013722      JSR    R5,CBSELO
5053 033526 000000

```

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HARDWARE TESTS

5054	033530	000424		BR	5\$		;TEST OK ,INTRUPT OCCURED AT GOOD VECTOR
5055							
5056	033532	004537	013722	JSR	R5,CBSELO		
5057	033536	000100		.WORD	100		
5058	033540	000410		BR	6\$		;INT ON ILLEGAL VECTOR
5059	033542			ERRHRD	66,EM0027		;NO KMV11 ANSWER, DCT11 DOES NOT RECEIVE ANY
5060	033552	004737	013010	JSR	PC,CHKMAX		;CHECK IF TOO MANY ERROR
5061	033556			ESCAPE	SUB		;INTERUPT WHEN QBUS ADDRESS CSR'S
5062							
5063							
5064							
5065							
5066	033562			6\$:	ERRHRD	67,EM0032	;INT ON ILLEGAL VECTOR WHEN ACCESSING BSELO
5067	033572	004737	013010	JSR	PC,CHKMAX		;CHECK IF TOO MANY ERROR
5068	033576			ESCAPE	SUB		
5069							
5070	033602	000240		5\$:	NOP		
5071	033604			ENDSUB			
5072							
5073							
5074							
5075							
5076							
5077	033606			BGNSUB			
5078	033610	004737	014730	JSR	PC,MAINM1		;SET MAINT MODE
5079	033614	004537	015010	JSR	R5,TSTNUB		;SET TEST NB 26
5080	033620	000026		.WORD	26		
5081							
5082							
5083	033622			WAITB	0,1		
5084							
5085	033642	052777	000026 156640	BIS	#26,@KMVCSR		;WRITE SELO
5086							
5087	033650	013701	012514	MOV	KMVP04,R1		;LOAD CSR ADDR
5088	033654	012702	000010	MOV	#10,R2		;ACCES BSEL3 TO BSEL11
5089							
5090	033660	152721	000207	1\$:	BISB	#207,(R1)+	;WRITE ALL REG BUT BSEL2
5091							
5092	033664			WAITB	0,1		;WAIT FOR TEST EXECUTION
5093							
5094	033704	004537	013722	JSR	R5,CBSELO		;LOOK IF INTERUPT OCCUR
5095	033710	000000		.WORD	0		
5096							
5097	033712	000404		BR	3\$		;YES SEE WHICH ERROR
5098	033714	005302		DEC	R2		;ALL REG DONE ?
5099	033716	001360		BNE	1\$		;NO BR
5100							
5101							
5102							
5103							
5104							
5105	033720	000137	033756	JMP	GOON2		;OK NO ACCESS INTERUPT THE DCT11 ;GO ON
5106							
5107							
5108	033724	017737	156564 012440	3\$:	MOV	@KMVP04,VECT	;READ RECEIVE VECTOR
5109	033732	010137	002420	MOV	R1,ADDR		;SEE WHICH ADDRESS MAKE INTERUPT
5110	033736	005337	002420	DEC	ADDR		

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HARDWARE TESTS

```

5111 033742          ERRHRD 68,EM0026,PINTR ;WRONG INTERRUPT OCCUR WHILE ACCESSING REGISTERS
5112 033752          ESCAPE SUB
5113
5114
5115 033756 000240          GOON2: NOP
5116
5117 033760 052777 017777 156524      BIS      #17777,@KMVP02 ;ACCESS BSEL2
5118
5119 033766          WAITB 0,1
5120
5121 034006 004537 013722      JSR      R5,CBSELO
5122 034012 000000          .WORD 0
5123 034014 000424          BR      5$ ;TEST OK ,INTERRUPT OCCUR AT GOOD VECTOR
5124
5125 034016 004537 013722      JSR      R5,CBSELO
5126 034022 000100          .WORD 100
5127 034024 000410          BR      6$ ;INT ON ILLEGAL VECTOR
5128 034026          ERRHRD 69,EM0027 ;NO KMV11 ANSWER
5129 034036 004737 013010      JSR      PC,CHKMAX ;CHECK IF TOO MANY ERROR
5130 034042          ESCAPE SUB
5131
5132
5133
5134
5135
5136 034046          6$:      ERRHRD 70,EM0026 ;INT ON ILLEGAL VECTOR
5137 034056 004737 013010      JSR      PC,CHKMAX ;CHECK IF TOO MANY ERROR
5138 034062          ESCAPE SUB
5139
5140 034066 000240          5$:      NOP
5141 034070          ENDSUB
5142
5143
5144
5145 034072          ENDTST
5146

```

KMV11 A/B LOGIC DIAG
HARDWARE TESTS

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5183
5184

.SBTTL HARDWARE PARAMETER CODING SECTION

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

BGNHRD

GPRMA ADDRES,0,0,60000,177776,YES
GPRMA VECTOR,2,0,0,674,YES
GPRMD PRIRTY,4,0,7000,4,7,YES
ENDHRD

ADDRES: .ASCIZ /MICRO-CPU CSR ADDRESS : /

VECTOR: .ASCIZ /MICRO-CPU VECTOR ADDRESS : /

PRIRTY: .ASCIZ /MICRO-CPU PRIORITY LEVEL : /

.EVEN

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HAFDWARE PARAMETER CODING SECTION

5185
5186
5187

5189
5190
5191
5192
5193
5194
5195
5196
5197
5198
5199
5200
5201 034252
5202
5211
5212
5213 034254
5214
5215
5222
5223

```

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

```

ENDSF T

KMV11 A/B LOGIC DIAG MACRO M1200 06-JAN-83 09:39 PAGE 80
SOFTWARE PARAMETER CODING SECTION

5225
5226 034254
5227 034254
5228
5235
5236 034374
034400
5237 034400
5238
5239

SPATCH::
.BLKW 50

LASTAD
LSLAST::
ENDMOD

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SOFTWARE PARAMETER CODING SECTION

5241			
5242			
5255			
5256	034400		BGNSETUP 1
5257	034400		BGNPTAB
5258	034404	177000	.WORD 177000
5259	034406	000300	.WORD 300
5260	034410	004000	.WORD 4000
5261	034412	000001	.WORD 1
5262	034414		ENDPTAB
5263	034414		ENDSETUP
5264			
5265			
5266			
5267			
5268			
5269	000001		.END

KMV11 A/B LOGIC DIAG
SYMBOL TABLE

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ABORT	024010	C\$DCLN=	000044	EF.RES=	000037 G	F\$RPT =	000012	G\$RADL=	000120
ADDR	002420	C\$DODU=	000051	EF.STA=	000040 G	F\$SEG =	000003	G\$RADO=	000020
ADDRES	034130	C\$DRPT=	000024	EM0001	015265	F\$SOFT=	000005	G\$XFER=	000004
ADR =	000020 G	C\$DU =	000053	EM0002	015361	F\$SRV =	000010	G\$YES =	000010
ASSEMB=	000010	C\$EDIT=	000003	EM0003	015424	F\$SUB =	000002	HELP =	000000
BAD	012432	C\$ERDF=	000055	EM0004	015512	F\$SW =	000014	HOE =	100000 G
BDDAT	002424	C\$ERHR=	000056	EM0005	015575	F\$TEST=	000001	IBE =	010000 G
BIT0 =	000001 G	C\$ERRO=	000060	EM0006	015671	GDDAT	002422	IDU =	000040 G
BIT00 =	0J0001 G	C\$ERSF=	000054	EM0007	015764	GDREV	012464	IER =	020000 G
BIT01 =	000002 G	C\$ERSO=	000057	EM0010	016056	GENER	013230	INIFLG	012466
BIT02 =	000004 G	C\$ESCA=	000010	EM0011	016152	CENER1	013352	INTFLG	012430
BIT03 =	000010 G	C\$ESEG=	000005	EM0012	016246	GENEX	013510	INTPR2	033040
BIT04 =	000020 G	C\$ESUB=	000003	EM0013	016342	GENE1	025502	INT1	032534
BIT05 =	000040 G	C\$ETST=	000001	EM0015	016436	GENE2	025700	INT2	033070
BIT06 =	000100 G	C\$EXIT=	000032	EM0016	016506	GENE3	026076	ISR =	000100 G
BIT07 =	000200 G	C\$GETB=	000026	EM0020	016544	GENE4	026306	IXE =	004000 G
BIT08 =	000400 G	C\$GETW=	000027	EM0021	016630	GENE5	026510	ISAU =	000041
BIT09 =	001000 G	C\$GMAN=	000043	EM0022	016722	GENE6	026712	ISAUTO=	000041
BIT1 =	000002 G	C\$GPHR=	000042	EM0023	016762	GENINC	013502	ISCLN =	000041
BIT10 =	002000 G	C\$GPLO=	000030	EM0024	017005	GENISH	013360	ISDU =	000041
BIT11 =	004000 G	C\$GPRI=	000040	EM0025	017075	GENRAN	013362	ISHRD =	000041
BIT12 =	010000 G	C\$INIT=	000011	EM0026	017136	GENROT	013336	ISINIT=	000041
BIT13 =	020000 G	C\$INLP=	000020	EM0027	017232	GENRO	013324	ISMOD =	000041
BIT14 =	040000 G	C\$MANI=	000050	EM0028	017307	GENR1	013314	ISMSG =	000041
BIT15 =	100000 G	C\$MEM =	000031	EM0030	017341	GENSEL	013246	ISPROT=	000040
BIT2 =	000004 G	C\$MSG =	000023	EM0031	017423	GEN0	013266	ISPTAB=	000041
BIT3 =	000010 G	C\$OPEN=	000034	EM0032	017477	GEN1	013272	ISPRW =	000041
BIT4 =	000020 G	C\$PNTB=	000014	EM0033	017573	GEN25	013306	ISRPT =	000041
BIT5 =	000040 G	C\$PNTF=	000017	EM0034	017654	GEN52	013300	ISSEG =	000041
BIT6 =	000100 G	C\$PNTS=	000016	EM0035	020013	GETPRM	023606	ISSETU=	000041
BIT7 =	000200 G	C\$PNTX=	000015	EM0134	017746	GOOD	002330	ISSFT =	000041
BIT8 =	000400 G	C\$QIO =	000377	END	024100	GOOD0	002332	ISSRV =	000041
BIT9 =	001000 G	C\$RDBU=	000007	ERRBLK	002264 G	GOOD1	002334	ISSUB =	000041
BOE =	000400 G	C\$REFG=	000047	ERRCNT	002300	GOOD10	002344	ISTST =	000041
BSELO	012434	C\$RESE=	000033	ERRMSG	002262 G	GOOD12	002346	JSJMP =	000167
BSEL1	002376	C\$REVI=	000003	ERRNBR	002260 G	GOOD14	002350	KIND	012442
CBSELO	013722	C\$RFLA=	000021	ERRTYP	002256 G	GOOD16	002352	KMTLVL	012506
CHANEL	012444	C\$RPT =	000025	EVL =	000004 G	GOOD2	002336	KMVC SR	012510
CHECK	024650	C\$SEFG=	000046	EXADDR	012426	GOOD4	002340	KMVLVL	012476
CHECK1	025014	C\$SPRI=	000041	E\$END =	002100	GOOD6	002342	KMVP02	012512
CHKMAX	013010	C\$SVEC=	000037	E\$LOAD=	000035	GOON1	033474	KMVP04	012514
CKALL	013760	C\$TPRI=	000013	FLAG	002320	GOON2	033756	KMVP06	012516
CKREG	014262	DATA	012436	FTIME	002316	G\$CNT0=	000200	KMVP10	012520
CKSELO	013670	DATA1 =	052525 G	F\$AU =	000015	G\$DELM=	000372	KMVP12	012522
CLRKMV	014550	DATA2 =	125252 G	F\$AUTO=	000020	G\$DISP=	000003	KMVP14	012524
COUNT	002414	DELCT1	002324	F\$BGN =	000040	G\$EXCP=	000400	KMVP16	012526
C\$AU =	000052	DELCT2	002326	F\$CLEA=	000007	G\$HILI=	000002	KMVV00	012474
C\$AUTO=	000061	DFPIBL	002212 G	F\$DU =	000016	G\$LOLI=	000001	KMVV02	012502
C\$BRK =	000022	DH1	002322	F\$END =	000041	G\$NO =	000000	KMVV04	012500
C\$BSEG=	000004	DIAGMC=	000000	F\$HARD=	000004	G\$OFFS=	000400	KMVV06	012504
C\$BSUB=	000002	DMAIN	030442	F\$HW =	000013	G\$OF SI=	000376	KMV11A	002000 G
C\$CEFG=	000045	DMAOUT	031102	F\$INIT=	000006	G\$PRMA=	000001	LENGTH	012454
C\$CLCK=	000062	DMA TWO	031734	F\$JMP =	000050	G\$PRMD=	000002	LOCK	002274
C\$CLEA=	000012	DROPD	024226	F\$MOD =	000000	G\$PRML=	000000	LOE =	040000 G
C\$CLOS=	000035	EF.CON=	000036 G	F\$MSG =	000011	G\$RADA=	000140	LOGDEV	002302
C\$CLP1=	000006	EF.NEW=	000035 G	F\$PROT=	000021	G\$RADB=	000000	LOKFLG	012470
C\$CVEC=	000036	EF.PWR=	000034 G	F\$PWR =	000017	G\$RADD=	000040	LOOP	012530

KMV11 A/B LOGIC DIAG
SYMBOL TABLE

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LOT = 000010 G	L10002 022056	L10073 031712	OSSETU= 000001	SAVSP 002306
LSACP 002110 G	L10003 022144	L10074 032424	PADFLT 022346 G	SAVSTA 002412
LSAPT 002036 G	L10004 022206	L10075 033330	PBSELO 023174 G	SELO 002354
LSAU 024260 G	L10005 022312	L10076 032770	PCHECK 022314 G	SEL1 002356
LSAUT 002070 G	L10006 022344	L10077 033326	PDMAF 023354 G	SEL10 002366
LSAUTO 024102 G	L10007 022402	L10100 034072	PDMARA 022210 G	SEL12 002370
LSCCP 002106 G	L10010 022712	L10101 033604	PINTR 023232 G	SEL14 002372
LSCLEA 024174 G	L10011 023172	L10102 034070	PNT = 001000 G	SEL16 002374
LSCO 002032 G	L10012 023230	L10103 034130	PRALL 022404 G	SEL2 002360
LSDEPO 002011 G	L10013 023262	L10104 034254	PRBYTE 022146 G	SEL4 002362
LSDESC 002222 G	L10014 023352	L10105 034404	PRDMA 023264 G	SEL6 002364
LSDESP 002076 G	L10015 023410	L10107 034414	PRI = 002000 G	SETPR1 032500
LSDEVP 002060 G	L10016 023416	MAINM0 014660	PRIRTY 034216	SETUP 023524
LSDISP 002132 G	L10017 024100	MAINM1 014730	PRIO0 = 000000 G	SSTACK 012732
LSDLY 002116 G	L10020 024172	MAINT0= 054000 G	PRIO1 = 000040 G	SVCGBL= 000000
LSDTP 002040 G	L10021 024176	MAINT1= 044000 G	PRIO2 = 000100 G	SVCINS= 177777
LSDTYP 002034 G	L10022 024256	MAXCNT 012462	PRIO3 = 000140 G	SVCSUB= 177777
LSDU 024200 G	L10023 024260	MAXERR 002276	PRIO4 = 000200 G	SVCTAG= 177777
LSDUT 002072 G	L10024 024376	MAXPRI= 000340 G	PRIO5 = 000240 G	SVCTST= 177777
LSDVTY 012732 G	L10025 024572	MBSELO 021103	PRIO6 = 000300 G	SLSYM= 010000
LSEF 002052 G	L10026 024514	MBYTE 021371	PRIO7 = 000340 G	TBYTE 025102
LENVI 002044 G	L10027 024570	MCHECK 021666	PROMCK 030324	TCSR 024766
LSERRT 002256 G	L10030 024732	MCLR = 040000 G	PRRAM 022060 G	TCSRNB 024756
LSETP 002102 G	L10031 025074	MDMAF 021737	PRREG 022714 G	TFM36 015164
LSEXP1 002046 G	L10032 025226	MDMAR1 021453	PRSELO 022022 G	TGENE1 025472
LSEXP4 002064 G	L10033 025454	MDMAR2 021542	PSTACK 002304	TGENE2 025670
LSEXP5 002066 G	L10034 025342	MDMAR3 021610	QV.FLG 012471	TGENE3 026066
LSHARD 034076 G	L10035 025452	MDMA1 021240	RAMADD 027724	TGENE4 026276
LSHIME 002120 G	L10036 025650	MDMA2 021323	RAMCAD 030076	TGENE5 026500
LSHPCP 002016 G	L10037 025544	MINT 021051	RAMPAT 027504	TGENE6 026702
LSHPTP 002022 G	L10040 025646	MINTR 021145	RANCLC 013462	TIM 015247
LSHW 002212 G	L10041 026046	MRAM1 020707	RANDN 002406	TSELA 024626
LSICP 002104 G	L10042 025742	MRAM2 020771	RANEX 013500	TSELB 024632
LSINIT 023420 G	L10043 026044	MREG0 020107	RANGEN 013402	TSEL10 026176
LSLADP 002026 G	L10044 026256	MREG10 020323	RANMTA 002404	TSEL12 026400
LSLAST 034400 G	L10045 026152	MREG12 020366	RANSEC 013466	TSEL14 026602
LSLOAD 002100 G	L10046 026254	MREG14 020431	RANSEL 002402	TSEL16 027004
LSLUN 002074 G	L10047 026460	MREG16 020474	RANST 002400	TSEL4 025570
LSMREV 002050 G	L10050 026354	MREG2 020152	RAN1 013414	TSEL6 025766
LSNAME 002000 G	L10051 026456	MREG4 020215	RAN2 013432	TSPEED 012452
LSPRIO 002042 G	L10052 026662	MREG6 020260	RAN4 013470	TSTERR 013152
LSPROT 002122 G	L10053 026556	MSELO 020042	READ 015072	TSTNUB 015010
LSPRT 002112 G	L10054 026660	MSEL10 020645	REGADR 012532	TSTREG 024574
LSREPP 002062 G	L10055 027064	MSFL2 020537	RESTST 024402	TTABLE 002426
LSREV 002010 G	L10056 026760	MSEL4 020602	REVPRO 030260	TWODMA 031746
LSRPT 023412 G	L10057 027062	NERRS 013102	RGALL 027110	TXDATA 012446
LSOFT 034254 G	L10060 027502	NEXT 023532	ROMMAP 024262	TSARGC= 000002
LSGPC 002056 G	L10061 027722	NUB 012456	RSTREG 013610	TSR-14 026602
LSGPCP 002020 G	L10062 030074	NUMBER 002416	RTABLE 006426	TSEL16 027004
LSPTP 002024 G	L10063 030246	OSAPTS= 000000	RXCNT 012460	TSEL4 025570
LSSTA 002030 G	L10064 030312	OSAU = 000000	RXDATA 012450	TSEL6 025766
LSW 002266	L10065 030440	OSBGNR= 000000	SAVE4 002312	TSPEED 012452
LSTEST 002114 G	L10066 031076	OSBGNS= 000000	SAVE6 002314	TSTERR 013152
LSIML 002014 G	L10067 030662	OSDU = 000001	SAVPC 002310	TSTNUB 015010
LSUIT 002270	L10070 031074	OSERRT= 000000	SAVPC1 002410	TSTREG 024574
LSUNIT 002012 G	L10071 031714	OSGNSW= 000001	SAVREG 013530	TTABLE 002426
L10001 002222	L10072 031402	OSPOIN= 000001		TWODMA 031746

KMV11 A/B LOGIC DIAG MACRO M1200 06-JAN-83 09:39 PAGE 81-3
SYMBOL TABLE

T\$LTNO= 000027	T\$\$AUT= 010020	T11.1 026462	T21 031716 G	T9.1 026050
T\$NEST= 177777	T\$\$CLE= 010021	T11.2 026560	T22 032426 G	T9.2 026154
T\$NSO = 000000	T\$\$DAT= 010107	T12 026664 G	T22.1 032436	UAM = 000200 G
T\$NS1 = 000005	T\$\$DU = 010022	T12.1 026664	T22.2 032772	UNIT 002272
T\$NS2 = 000002	T\$\$HAR= 010103	T12.2 026762	T23 033332 G	UUT 012472
T\$PCNT= 000000	T\$\$HW = 010001	T13 027066 G	T23.1 033332	VECT 012440
T\$PTAB= 010106	T\$\$INI= 010017	T14 027504 G	T23.2 033606	VECTOR 034162
T\$PTHV= 000001	T\$\$MSG= 010015	T15 027724 G	T3 024574 G	VECTO 032544
T\$PTNU= 000001	T\$\$PC = 000001	T16 030076 G	T4 024734 G	VECT4 033100
T\$SAVL= 177777	T\$\$PRO= 010000	T17 030250 G	T5 025076 G	WAIT1 013000
T\$SEGL= 177777	T\$\$PTA= 010106	T18 030314 G	T6 025230 G	WAIT2 012760
T\$SIZE= 000006	T\$\$RPT= 010016	T19 030442 G	T6.1 025240	WRITE 015044
T\$SUBN= 000002	T\$\$SOF= 010104	T19.1 030452	T6.2 025344	X\$ALWA= 000000
T\$TAGL= 177777	T\$\$SUB= 010102	T19.2 030664	T7 025456 G	X\$FALS= 000040
T\$TAGN= 010110	T\$\$TES= 010100	T2 024400 G	T7.1 025456	X\$OFFS= 000400
T\$TEMP= 000000	T1 024262 G	T2.1 024400	T7.2 025546	X\$TRUE= 000020
T\$TEST= 000027	T10 026260 G	T2.2 024516	T8 025652 G	\$LSTIN= 000000
T\$TSTM= 177777	T10.1 026260	T20 031100 G	T8.1 025652	\$LSTTA= 000000
T\$TSTS= 000001	T10.2 026356	T20.1 031100	T8.2 025744	\$PATCH 034254 G
T\$\$AU = 010023	T11 026462 G	T20.2 031404	T9 026050 G	

. ABS. 034414 000

000000 001

ERRORS DETECTED: 0

VIRTUAL MEMORY USED: 29088 WORDS (114 PAGES)

DYNAMIC MEMORY: 21924 WORDS (84 PAGES)

ELAPSED TIME: 00:29:54

VKMAAO.BIN,VKMAAO=[64,3]LIBA.MLB/ML,[64,5]VKMAAO