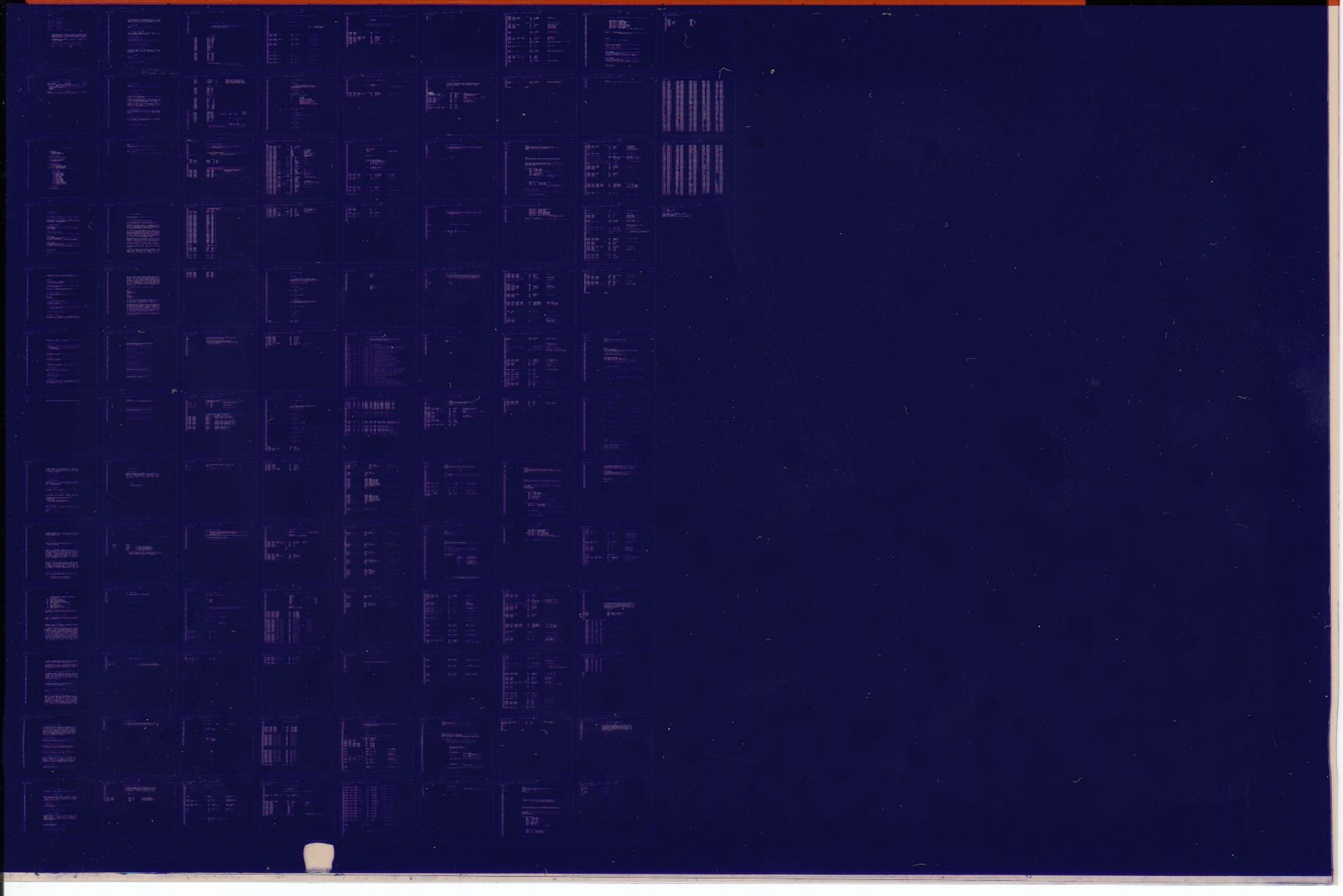
11/Z1+ KMV11A LINE CTRL DIAG
KMV11A CNKMBB0

AH-T845B-MC
FICHE 01 OF 01

OCT 1984
digital
Made In USA



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                        .NLIST TOC
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                                        IDENTIFICATION
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                        PRODUCT CODE:   AC-T844B-MC

                        PRODUCT NAME:   CNKMBBO KMV11A LINE CNT DIAG

                        PRODUCT DATE:   APRIL 1984

                        MAINTAINER:     ISS DIAGNOSTICS

                        AUTHOR:         MICHELET GUY

                        MODIFIED BY:    JAKI BERG       9-APR-1984
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                                ***** MODIFICATION HISTORY *****

REV A: ORIGINAL RELEASE                 GUY MICHELET                    14-JAN-81

CVKMBA => CNKMBA                        JAKI PERG                       9-APR-84
CHANGES WERE MADE TO CVKMBA TO PRODUCE CNDMBA FOR THE FALCON-PLUS PROJECT
(SBC-11/21+).   CHANGES, MARKED BY ";JB REV A-0", ARE:
 - SET THE  ODT BREAK  VECTOR (LOCATION 140) TO THE STARTING ADDRESS OF
   FALCON'S ODT ROM (170000-OCTAL).
 - CHANGE PRIORITY FROM LEVEL 7 TO LEVEL 6 TO ALLOW THE BREAK KEY TO
   INTERRUPT.
 - LOWERED RATE FROM 72KB TO 64KB IN TEST 06.

REV B0:                                 JAKI BERG                       9-JUL-84
LOWERED RATE FROM 72KB TO 64KB IN TEST 07.  DEVELOPING ENGINEER IN ANNECY
ADVISED THAT TEST 6 AND TEST 7 SHOULD BE RUN AT 64KB.
```

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129
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132                         VECTOR ADDRESS, AND PROCESSOR TYPE.
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138                         MODULE (M7500).
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140                         MUST BE INSTALLED.
141
142
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144                         ---------- ------------------
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146
147
148                         RS422 LOOP BACK:
149                         TO TEST COMPLETELY A KMV11 B IN RS422 MODE ,RUN THIS DIAGNOSTIC
150                         WITH LOOP BACK CONNECTOR  PLUG :
151                         -USE H3255 TO LOOP DIRECTLY AT THE OUTPUT OF THE MODULE
152                         -USE H3251 PLUG AT THE END OF BC55U MODEM CABLE CONNECTOR ASSY.
153
154
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157                         WITH LOOP BACK CONNECTOR  PLUG :
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160
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164                         SAME AS FOR RS423.
165
166                         CAUTION:
167                         USE OF H325 LOOP BACK CONNECTOR WILL CAUSE MESSAGES ERROR IN TEST 8.
168
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171
172
```

PROGRAM DOCUMENT

```
173
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175
176
177                         DIAGNOSTIC WILL TEST KMV11 CLOCKS,LINE INTERRUPTS,TX AND RX FUNCTION
178                         IN INTERNAL AND EXTERNAL LOOP BACK AND MODEM SIGNALS.
179
180
181
182                         CAUTION:
183                         *******
184                         AT THE BEGINNING OF THE DIAGNOSTIC THE OPERATOR WILL ANSWER
185                         BY "YES " OR "NO" AT THE QUESTION:
186                         IS EXTERNAL CONNECTOR PLUGGED?
187
188
189                         IF CONNECTOR NO PLUGGED THE DIAGNOSTIC WILL REPORT AN ERROR
190                         AND EXIT CORRESPONDING TEST.
191
192                         KMV11 A IS FULLY TESTED ONLY WHEN DIAGNOSTIC HAS BEEN RUN
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197
198                         THE  FOLLOWING  HARDWARE  IS REQUIRED TO RUN THE KMV11 A
199                         LINE CONTROLLER STATIC TESTS:
200
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204
205
206                         3.0 PRELIMINARY PROGRAM REQUIREMENTS
207
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209                         TO RUNNING THIS DIAGNOSTIC.
210
211                         ************************************************************************
212                         *                                                                      *
213                         *       NOTE: THE KMV11 DIAGNOSTICS NKMDA AND NKMBA SHOULD BE          *
214                         *       BEFORE RUNNING NKMCA.                                          *
215                         *                                                                      *
216                         ************************************************************************
217
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219
220
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222
223                         THIS  PROGRAM  IS  COMPATIBLE WITH THE STANDALONE DIAGNOSTIC
224                         SUPERVISOR, AND MUST BE LOADED TO BE  CO-RESIDENT  WITH  THE
225                         SUPERVISOR,  OR  BE  PREVIOUSLY COMBINED WITH THE SUPERVISOR
```

AND LOADED AS A SINGLE FILE. IN EITHER CASE, THE COMBINED
PROGRAM WILL NOT EXCEED 16K OF MEMORY.

4.2 EXECUTION TIME

THE TOTAL TIME REQUIRED TO RUN THE KMV11 LINE CNT DIAGNOSTIC
IS ABOUT :
- 160 SECONDS FROM TEST 1 TO TEST 6 (TEST IN INTERNAL LOOP).
- 260 SECONDS FROM TEST 1 TO TEST 8 (COMPLETE TEST, WITH
   EXTERNAL CONNECTOR).

4.3 XXDP+

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

4.4 ACT/SLIDE

THIS PROGRAM MAY BE LOADED UNDER ACT OR SLIDE AND MAY BE RUN
IN DUMP MODE OR CHAIN MODE.

4.5 APT

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

4.6 MEMORY MANAGEMENT

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

4.7 MEMORY PARITY OPTION

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

4.8 ERROR LOGGING

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

5.0 PROGRAM LOAD MEDIA

PROGRAM DOCUMENT

```
    284
    285                         THIS PROGRAM  CAN  BE  LOADED  FROM  PAPER  TAPE  USING  THE
    286                         ABSOLUTE  LOADER OR FROM ACT, SLIDE, OR APT SYSTEMS, OR FROM
```

ANY MEDIA SUPPORTED BY XXDP+. WHEN USING THE PAPER TAPE ABSOLUTE LOADER, THE PROGRAM SHOULD BE LOADED FIRST, FOLLOWED BY THE DIAGNOSTIC SUPERVISOR. WHEN USING XXDP+, THE DIAGNOSTIC SUPERVISOR SHOULD BE LOADED FIRST, FOLLOWED BY THE DIAGNOSTIC PROGRAM.

6.0 OPERATING INSTRUCTIONS

6.1 LOADING AND STARTING PROCEDURES

6.1.1 LOADING PROCEDURES

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

6.1.2 STARTING PROCEDURES

THE PROGRAM STARTS AT LOCATION 200. USE STANDARD DEC PROCEDURES TO START THE PROGRAM.

6.1.3 STEPS FOR QUICK AND SIMPLE EXECUTION

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

A) LOAD AND START DIAGNOSTIC USING RUN COMMAND
B) RECEIVE DIAGNOSTIC SUPERVISOR PROMPT (DR>)
C) ENTER STA<CR>
D) ANSWER HARDWARE AND SOFTWARE QUESTIONS
E) GET END OF PASS MESSAGES OR ERROR MESSAGES
F) TO END EXECUTION, ENTER CONTROL/C

6.2 INITIAL DIALOGUE

AFTER THE PROGRAM AND THE SUPERVISOR ARE LOADED AND THE PROGRAM IS STARTED , THE FOLLOWING IDENTIFICATION IS TYPED:

```
DRS LOADED
DIAG.  RUN-TIME SERVICES
NKMBAO
KMV11 A  LINE CONTROLLER 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 OCCURRENCE 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

```
                        CONTINUOUSLY WITHIN THE SMALLEST DEFINED BLOCK
                        OF CODING (SEGMENT, SUBTEST, OR TEST) CONTAIN-
                        ING THE ERROR
                  IER   INHIBIT ERROR REPORTING
                  IBE   INHIBIT BASIC ERROR REPORTS
                  IXE   INHIBIT EXTENDED ERROR REPORTS
                  PRI   DIRECT ALL MESSAGES TO A LINE PRINTER
                  PNT   PRINT NUMBER OF TEST BEING EXECUTED
                  BOE   BELL ON ERROR
                  UAM   RUN IN UNATTENDED MODE, BYPASSING MANUAL
                        INTERVENTION TESTS
                  ISR   INHIBIT STATISTICAL REPORTS
                  IDU   INHIBIT DROPPING OF UNITS BY DIAGNOSTIC
                  LOT   LOOP ON TEST

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


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

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


6.3.1.5 EFFECT OF START COMMAND

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

THE HARDWARE PARAMETER DIALOGUE COMMENCES WITH THE  QUESTION
"# UNITS?"  TO  WHICH  THE  OPERATOR REPLIES WITH A DECIMAL
NUMBER N FROM 1 TO 16. THE TERM "UNIT" REFERS TO THE  DEVICE
TO WHICH THIS SERIES OF DIAGNOSTICS IS DEDICATED.  FOLLOWING
THIS ARE THE QUESTIONS WHEREBY THE P-TABLES THEMSELVES  WILL
BE  BUILT.  EACH P-TABLE IS A CORE-RESIDENT TABLE CONTAINING
ALL THE HARDWARE INFORMATION FOR  ONE  UNIT.   THE  OPERATOR
MUST  SUPPLY  N  (NUMBER OF UNITS) VALUES FOR EACH QUESTION.
HE MAY DO THIS BY GIVING ONE ANSWER  TO  EACH  QUESTION  (IN
WHICH CASE THE SERIES OF QUESTIONS WILL BE POSED N TIMES) OR
BY GIVING N VALUES, SEPARATED BY COMMAS,  TO  EACH  QUESTION
(SERIES  WILL  BE POSED ONCE).  EACH QUESTION IS FOLLOWED BY
THE RESPONSE RADIX (D FOR  DECIMAL,  B  FOR  BINARY,  O  FOR
OCTAL,  L  FOR  YES/NO) IN PARENTHESES AND THE DEFAULT VALUE
AFTER THE PARENTHESES.
```

PROGRAM DOCUMENT

FOLLOWING THE HARDWARE QUESTIONS ARE THE SOFTWARE QUESTIONS TO BUILD THE SOFTWARE TABLES, WHICH DEFINE THE MODE (QUICK VFRIFY 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.

```
514
515
516
517
518
519                          6.3.2.3 EFFECT OF RESTART COMMAND
520
521                          THE RESTART COMMAND DIFFERS FROM THE START COMMAND  IN  THAT
522                          THE  P-TABLES  FROM  THE  PREVIOUS START COMMAND (THERE MUST
523                          HAVE BEEN ONE) ARE USED, INSTEAD OF NEW  ONES  BEING  BUILT.
524                          THE  UNITS  SWITCH  GIVES  THE ABILITY TO SELECT A SUBSET OF
525                          THESE.  THE SOFTWARE DIALOGUE MAY OPTIONALLY  BE  REEXECUTED
526                          (OPERATOR  WILL  BE  ASKED).  THE  COMMAND CAN BE USED AFTER
527                          COMMAND MODE HAS BEEN REENTERED IN ANY OF THE  THREE  NORMAL
528                          WAYS:   A)  THE REQUESTED NUMBER OF PASSES HAVE BEEN MADE B)
529                          AN ERROR WAS ENCOUNTERED WITH THE HALT ON ERROR FLAG SET  C)
530                          A CONTROL/C WAS ENTERED BY THE OPERATOR.
531
532
533                          6.3.3 CONTINUE COMMAND
534
535                          ************************************************************
536                          CON(TINUE)/PASS:<PASS-CNT/FLAGS:<FLAG-LIST>
537                          ************************************************************
538
539
540                          6.3.3.1 PASS SWITCH (/PASS:<PASS-CNT>)
541
542                          <PASS-CNT>  IS  SAME AS IN START COMMAND, BUT THE DEFAULT IS
543                          THE UNSATISFIED PASS-CNT FROM THE PREVIOUS START OR RESTART.
544                          IF NONE REMAINS, THE DEFAULT IS NON-ENDING EXECUTION.
545
546
547                          6.3.3.2 FLAG SWITCH (/FLAGS:<FLAG-LIST>)
548
549                          <FLAG-LIST>  IS  SAME  AS  IN START COMMAND, BUT UNSPECIFIED
550                          FLAGS RETAIN THEIR CURRENT VALUE.
551
552
553                          6.3.3.3 EFFECT OF CONTINUE COMMAND
554
555                          CONTINUE MUST FOLLOW A START OR RESTART,  AND  COMMAND  MODE
556                          MUST  HAVE  BEEN  ENTERED  DUE  TO  A  HALT  ON  ERROR  OR A
557                          CONTROL/C. THE EFFECT  OF  THE  COMMAND  IS  TO  GO  TO  THE
558                          BEGINNING  OF THE TEST THAT WAS BEING EXECUTED WHEN THE HALT
559                          OR CONTROL/C TOOK PLACE.  SOFTWARE DIALOGUE  MAY  OPTIONALLY
560                          BE REEXECUTED.  HARDWARE PARAMETERS MAY NOT BE CHANGED.
561
562
563                          6.3.4 PROCEED COMMAND
564
565                          ************************************************************
566                          PRO(CEED)/FLAGS:<FLAG-LIST>
567                          ************************************************************
```

```
569
570
571
572
573
574                          6.3.4.1 FLAGS SWITCH (/FLAGS:<FLAG-LIST>)
575
576                          <FLAG-LIST> IS AS IN THE START COMMAND, BUT UNSPECIFIED
577                          FLAGS RETAIN THEIR CURRENT VALUE.
578
579
580                          6.3.4.2 EFFECT OF PROCEED COMMAND
581
582                          PROCEED MUST FOLLOW A START, RESTART, OR CONTINUE.  COMMAND
583                          MODE MUST HAVE BEEN ENTERED VIA A HALT ON ERROR.  THE EFFECT
584                          OF THE COMMAND IS TO BEGIN EXECUTION AT THE LOCATION
585                          FOLLOWING THE ERROR CALL.  NEITHER HARDWARE NOR SOFTWARE
586                          PARAMETERS MAY BE ALTERED.
587
588
589                          6.3.5 ADD COMMAND
590
591                          ****************************************************************
592                          ADD/UNITS:<UNIT-LIST>
593                          ****************************************************************
594
595
596                          6.3.5.1 UNITS SWITCH (/UNITS:<UNIT-LIST>
597
598                          <UNIT-LIST> IS AS IN THE RESTART COMMAND.
599
600
601                          6.3.5.2 EFFECT OF ADD COMMAND
602
603                          THE UNITS SPECIFIED ARE ADDED TO THE TEST SEQUENCE.  EACH
604                          UNIT MUST HAVE A P-TABLE IN MEMORY DUE TO AN EARLIER
605                          HARDWARE DIALOGUE.  THIS COMMAND MUST BE FOLLOWED BY A
606                          RESTART OR CONTINUE.  THE UNITS SWITCH MUST BE SPECIFIED.
607                          THE ADD COMMAND IS MEANINGFUL ONLY FOR UNITS THAT WERE
608                          PREVIOUSLY DROPPED.
609
610
611                          6.3.6 DROP COMMAND
612
613                          ****************************************************************
614                          DRO(P)/UNITS:<UNIT-LIST>
615                          ****************************************************************
616
617
618                          6.3.6.1 UNITS SWITCH (/UNITS:<UNIT-LIST>)
619
620                          <UNIT-LIST> IS AS IN THE RESTART COMMAND.
621
622
623                          6.3.6.2 EFFECT OF DROP COMMAND
```

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.

```
681
682
683
684
685
686                         6.3.10 ZFLAGS COMMAND
687
688                         ************************************************************
689                         ZFL(AGS)
690                         ************************************************************
691
692
693                         6.3.10.1 EFFECT OF ZFLAGS COMMAND
694
695                         ALL FLAGS ARE CLEARED.
696
697
698                         6.3.11  CONTROL CHARACTERS
699
700                         A CONTROL C (C) ENTERED DURING THE EXECUTION OF A DIAGNOSTIC
701                         CAUSES A RETURN TO COMMAND MODE.
702
703                         A CONTROL Z (Z) ENTERED DURING ONE  OF  THE  THREE  OPERATOR
704                         DIALOGUES- INITIAL DIALOGUE (SEE 6.2),HARDWARE DIALOGUE (SEE
705                         6.3.1.5), OR SOFTWARE  DIALOGUE  (SEE  6.3.1.5)  CAUSES  THE
706                         DEFAULTS TO BE TAKEN FOR THE REMAINDER OF THAT DIALOGUE.
707
708                         A CONTROL O (O) ENTERED DURING THE EXECUTION OF A DIAGNOSTIC
709                         CAUSES  ALL  TELETYPE  OUTPUT  TO  BE  SUPPRESSED  FOR  THE
710                         REMAINDER  OF  THE  DIAGNOSTIC  OR UNTIL ANOTHER O IS TYPED,
711                         WHICH RESTORES NORMAL TELETYPE OUTPUT.
712
713
714                         6.3.12 HARDWARE PARAMETERS
715
716                         THE FOLLOWING QUESTIONS WILL BE ASKED ON  A  START  COMMAND.
717                         THE  VALUE  LOCATED  TO THE LEFT OF THE QUESTION MARK IS THE
718                         DEFAULT VALUE THAT  WILL  BE  TAKEN  ON  A  CARRIAGE  RETURN
719                         RESPONSE.
720
721
722
723                         2. MICRO-CPU CSR ADDRESS:  (O) 177000?
724
725                         THIS IS THE ADDRESS AT WHICH THE CSR REGISTERS (SELO) RESIDE
726                         ON  THE  UNIBUS.   THE  ALLOWABLE  RANGE  IS  160000-177776
727                         (OCTAL), AND THE DEFAULT IS 177000.
728
729
730
731                         3. MICRO CPU VECTOR ADDRESS: (O) 300?
732
733                         THE ALLOWABLE RANGE IS 300-770,AND DEFAULT VALUE IS 300
734
735
736
737                         4. MICRO CPU PRIORITY LEVEL: (4) 7?
```

PROGRAM DOCUMENT

```
738
739                             DEFAULT VALUE IS 4
740                             NOTE:
741                             M7500 AND M7501 MODULE MOUNTED WITH DC003 CHIPS CAN ONLY
742                             INTERRUPT ON LEVEL 4
743
744
745                             5. IS LOOP BACK CONNECTOR PLUGGED? 0=NO,1=YES   (0) 1 ?
746
747                             DEFAULT VALUE IS 1 (YES)
748                             NOTE :
749                                     REFER TO CHAPTER 1.2 FOR LOOP BACK CONNECTOR DESCRIPTION.
750
751
```

6.3.13 SOFTWARE PARAMETERS

NO SOFTWARE PARAMETER QUESTIONS ARE ASKED BY PART 2 OF THE 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).

PROGRAM DOCUMENT

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).

PROGRAM DOCUMENT

```
855
856
857
858
859
860                          7.0  TEST DESCRIPTIONS
861
862
863                          ********************* TEST 1 *********************
864                          *VERIFY THAT REFERENCED UNIBUS DEVICE REGISTERS
865                          *DOES NOT CAUSE TIME OUT TRAP
866                          ************************************************
867
868
869                          ********************* TEST 2 *********************
870                          *
871                          *PROM REVISION TEST
872                          *
873                          ************************************************
874
875
876                          ********************* TEST 3 *********************
877                          *
878                          *REAL TIME CLOCK TEST
879                          *
880                          ************************************************
881
882
883                          ********************* TEST 4 *********************
884                          *
885                          *BAUD RATE GENERATOR TEST
886                          *
887                          ************************************************
888
889
890                          ********************* TEST 5 *********************
891                          *
892                          *TRANSMIT FRAMES AT LOW SPEED IN INTERNAL LOOP
893                          *ON CHANNEL A  WITHOUT ANY INTERRUPT
894                          *
895                          ************************************************
896
897
898                          ********************* TEST 6 *********************
899                          *
900                          *TRANSMIT AND RECEIVE FRAMES IN INTERNAL LOOP AT
901                          *DIFFERENT SPEED  WITH INTERRUPT
902                          *
903                          ************************************************
904
```

PROGRAM DOCUMENT

```
                        CAUTION:
                        TEST NUMBER 7 AND 8 LOOP BACK CONNECTOR MUST BE INSTALLED.
                        REFER TO CHAPTER 1.2 FOR LOOP BACK DESCRIPTION




                        ********************** TEST 7 ********************
                        *
                        *TRANSMIT AND RECEIVE FRAMES IN EXTERNAL LOOP BACK
                        *(WITH EXTERNAL LOOP BACK)
                        *
                        ************************************************



                        ********************** TEST 8 ********************
                        *
                        *TEST ALL MODEM SIGNAL IN EXTERNAL LOOP BACK
                        *
                        ************************************************
```

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.

9.0 HISTORY

- DESIGN STARTED ON MAY 82
- REVIEW ON DECEMBER 82

@

PROGRAM DOCUMENT

```
                                .TITLE KMV11 A LINE CNT DIAGNOSTIC
002000                                  .=2000
                                .MCALL  SVC
002000                          SVC                             ; INITIALIZE SUPERVISOR MACROS
                                BGNMOD  KMV11A
000000                          $LSTIN= 0
000000                          $LSTTAG= 0
177777                          SVCINS= -1      ; LIST INSTRUCTIONS, SHIFTED RIGHT
177777                           SVCTS= -1      ; LIST TEST TAGS, SHIFTED RIGHT
177777                          SVCSUB= -1      ; LIST SUBTEST TAGS, SHIFTED RIGHT
177777                          SVCGBL= -1      ; LIST GLOBAL TAGS, SHIFTED RIGHT
177777                          SVCTAG= -1      ; LIST OTHER TAGS, SHIFTED RIGHT

                                ;       CHANGE THE VALUES OF THE SVC... SYMBOLS TO BE ZERO IF YOU WISH
                                ;       TO ALIGN THE MACRO CALLS AND THEIR EXPANSIONS.  CHANGE THE
                                ;       SYMBOLS TO BE MINUS-ONE TO NOT LIST THE EXPANSIONS.  YOU MAY
                                ;       CHANGE THE SYMBOLS AT ANY POINT IN YOUR PROGRAM.
```

PROGRAM HEADER

```
                                .SBTTL  PROGRAM HEADER
                                ;++
                                ; THE PROGRAM HEADER IS THE INTERFACE BETWEEN
                                ; THE DIAGNOSTIC PROGRAM AND THE SUPERVISOR.
                                ;--

002000                                  POINTER BGNSW,BGNDU,BGNSETUP


002000                                  HEADER  NKMBA0,A,0,240..0
```

L2

PROGRAM HEADER

```
1047
1048                                    ;++
1049                                    ; THIS TABLE IS USED BY THE RUNTIME SERVICES
1050                                    ; TO PROTECT THE LOAD MEDIA.
1051                                    ;--
1052
1053 002122                                    BGNPROT
1054
1055 002122  000000                            0               ;OFFSET INTO P-TABLE FOR CSR ADDRESS
1056 002124  177777                            -1              ;OFFSET INTO P-TABLE FOR MASSBUS ADDRESS
1057 002126  177777                            -1              ;OFFSET INTO P-TABLE FOR DRIVE NUMBER
1058
1059
1073
1074
1075 002130                                    ENDPROT
1076
```

```
                                .SBTTL  DISPATCH TABLE

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

002130                                  DISPATCH 8
```

DEFAULT HARDWARE P-TABLE

```
                                .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
                                ;////////////////////////////////////////////////////////////////////////////

                                .ENABL  AMA
002152                                  BGNHW   DFPTBL


002154  177000                          .WORD   177000          ;KMV11.CSRS ADDRESS
002156  000300                          .WORD   300             ;KMV11. VECTOR ADDRESS
002160  004000                          .WORD   4000            ;INTERRUPT PRIORITY LEVEL
002162  000001                          .WORD   1               ;LOOP BACK CONNECTOR?
002164                                  ENDHW
```

DEFAULT HARDWARE P-TABLE

```
                                .SBTTL  GLOBAL EQUATES SECTION


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


002164                                  EQUALS
                                ;
                                ; BIT DIFINITIONS
                                ;
100000                          BIT15=: 100000
040000                          BIT14=: 40000
020000                          BIT13=: 20000
010000                          BIT12=: 10000
004000                          BIT11=: 4000
002000                          BIT10=: 2000
001000                          BIT09=: 1000
000400                          BIT08=: 400
000200                          BIT07=: 200
000100                          BIT06=: 100
000040                          BIT05=: 40
000020                          BIT04=: 20
000010                          BIT03=: 10
000004                          BIT02=: 4
000002                          BIT01=: 2
000001                          BIT00=: 1
                                ;
001000                          BIT9=:  BIT09
000400                          BIT8=:  BIT08
000200                          BIT7=:  BIT07
000100                          BIT6=:  BIT06
000040                          BIT5=:  BIT05
000020                          BIT4=:  BIT04
000010                          BIT3=:  BIT03
000004                          BIT2=:  BIT02
000002                          BIT1=:  BIT01
000001                          BIT0=:  BIT00
                                ;
                                ; EVENT FLAG DEFINITIONS
                                ;   EF32:EF17 RESERVED FOR SUPERVISOR TO PROGRAM COMMUNICATION
                                ;
                                ;                                       ;  BIT POSITION IN SECOND STATUS WORD
```

GLOBAL EQUATES SECTION

```
000040                  EF.START==      32.             ; (100000) START COMMAND WAS ISSUED
000037                  EF.RESTART==    31.             ; (040000) RESTART COMMAND WAS ISSUED
000036                  EF.CONTINUE==   30.             ; (020000) CONTINUE COMMAND WAS ISSUED
000035                  EF.NEW==        29.             ; (010000) A NEW PASS HAS BEEN STARTED
000034                  EF.PWR==        28.             ; (004000) A POWER-FAIL/POWER-UP OCCURRED
                        ;
                        ;
                        ; 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                  HOE==   100000
1170
1171
1172                    ;MAXPRI==340                                                    ;JB REV A-0
1173    000300          MAXPRI==300                                                     ;JB REV A 0
1174    054000          MAINT0==54000           ;MASTER CLEAR = 1,MODE = 1 ,MAINT 1 = 1 ,T11=HOLD
1175    044000          MAINT1==44000           ;MASTER CLEAR = 1,MODE = 0 ,MAINT 1 = 0 ,T11=NOT HOLD
1176    040000          MCLR==40000
1177    052525          DATA1== 052525
1178    125252          DATA2== 125252
1179    013224          KB1.2== 5780.                           ;OCTAL VALUE OF 1.2 KBAUDS
1180    000154          KB64==  108.                            ;  "      "   " 64    "
1181    000174          KB56==  124.                            ;  "      "   56    "
1182    000146          KB68==  102.                            ;  "      "   68    "
1183    000141          KB72==  97.                             ;  "      "   72    "
1184
1185                                                            ;DIVIDER CALCULATION
1186                                                            ;DECIMAL VAUE = 6912:YYY KBAUDS
1187                    ;;*****************************************************************
1188                    ;* PROGRAM EVENT FLAG DEFINITIONS
1189                    ;;*****************************************************************
1190
1191
1192
```

GLOBAL DATA SECTION

```
                                .SBTTL  GLOBAL DATA SECTION

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



                                ;;**************************************************************************
                                ;* STORAGE FOR DEVICE REGISTERS
                                ;;**************************************************************************
002164                                  DESCRIPT        <KMV11A LINE CNT DIAGNOSTIC>



002220                                  ERRTBL
002220  000000                  ERRTYP::        .WORD   0
002222  000000                  ERRNBR::        .WORD   0
002224  000000                  ERRMSG::        .WORD   0
002226  000000                  ERRBLK::        .WORD   0


                                ;**************************************************************************
                                ;* PROGRAM CONTROL PARAMETERS
                                ;**************************************************************************
002230  000000                  LOCK:   .WORD   0               ;ADDRESS FOR LOCK CURRENT DATA
002232  000005                  MAXERR: .WORD   5               ;MAX ERROR BEFORE DROPPING THE UNIT
002234  000000                  ERRCNT: .WORD   0               ;ERROR COUNT
002236  000000                  L$SW:   .WORD   0
002240  000015                  L$UIT:  .WORD   15                      ;MAX LINE UNIT
002242  000000                  LOGDEV: .WORD   0
002244  000000                  SAVPC:  .WORD   0
002246  000000                  PSTACK: .WORD   0
002250  000000                  FTIME:  .WORD   0
```

GLOBAL DATA SECTION

```
                                ;*****************************************************************************
                                ;* MISCELLANEOUS STORAGE
                                ;*****************************************************************************
002252  000000                  SAVE4:   .WORD   0
002254  000000                  SAVE6:   .WORD   0
002256  000000                  FLAG:    .WORD   0

002260  000000                  DELCT1:  .WORD   0
002262  000000                  DELCT2:  .WORD   0
002264  000000                  GOOD:    .WORD   0
002266  000000                  GOOD0:   .WORD   0
002270  000000                  GOOD1:   .WORD   0
002272  000000                  GOOD2:   .WORD   0
002274  000000                  GOOD4:   .WORD   0
002276  000000                  GOOD6:   .WORD   0
002300  000000                  GOOD10:  .WORD   0
002302  000000                  GOOD12:  .WORD   0
002304  000000                  GOOD14:  .WORD   0
002306  000000                  GOOD16:  .WORD   0
002310  000000                  SEL0:    .WORD   0
002312  000000                  SEL1:    .WORD   0
002314  000000                  SEL2:    .WORD   0
002316  000000                  SEL4:    .WORD   0
002320  000000                  SEL6:    .WORD   0
002322  000000                  SEL10:   .WORD   0
002324  000000                  SEL12:   .WORD   0
002326  000000                  SEL14:   .WORD   0
002330  000000                  SEL16:   .WORD   0
002332  000000                  BSEL1:   .WORD   0
002334  000000                  RANST:   .WORD   0
002336  000000                  RANSEL:  .WORD   0
002340  000000                  RANMTA:  .WORD   0
002342  000000                  RANDN:   .WORD   0
002344  000000                  SAVPC1:  .WORD   0
002346  000000                  SAVSTA:  .WORD   0
002350  000000                  COUNT:   .WORD   0
002352  000000                  NUMBER:  .WORD   0
002354  000000                  ADDR:    .WORD   0
002356  000000                  GDDAT:   .WORD   0
002360  000000                  BDDAT:   .WORD   0

002362                          TTABLE:  .BLKW   2000
006362                          RTABLE:  .BLKW   2000

012362  000000                  EXADDR:  .WORD   0
012364  000000                  INTFLG:  .WORD   0
012366  000000                  BAD:     .WORD   0
012370  000000                  BSEL0:   .WORD   0
012372  000000                  DATA:    .WORD   0
012374  000000                  VECT:    .WORD   0


012376  000000                  KIND:    .WORD   0                ;=0 IF KMV11A ,=1 IF KMV11B
012400  000000                  CHANEL:  .WORD   0

012402  000000                  TXDATA:  .WORD   0
012404  000000                  RXDATA:  .WORD   0
```

GLOBAL DATA SECTION

```
   1303 012406  000000                TSPEED: .WORD   0
   1304 012410  000000                LENGTH: .WORD   0
   1305 012412  000000                NUB:    .WORD   0
   1306 012414  000000                RXCNT:  .WORD   0
   1307 012416  000000                STAERR: .WORD   0
   1308 012420  000000                WRDCNT: .WORD   0
   1309 012422  000000                UNIT:   .WORD   0
```

GLOBAL DATA SECTION

```
1311
1312                            ;*****************************************************************
1313                            ;LOAD IN LOCATION "GDREV" THE PROM VERSION NUMBER THAT IS       *
1314                            ;COMPATIBLE WHITH THIS DIAGNOSTIC                              *
1315                            ;                                                              *
1316                            ;EACH PROM CONTAIN A REV LEVEL AND A ECO LEVEL:                *
1317                            ;THE REV LEVEL IS MODIFIED EACH TIME A MODIFICATION IS DONE    *
1318                            ;THE ECO LEVEL IS MODIFIED WHEN THE PROM MODIFICATION NEED     *
1319                            ;A DIAGNOSTIC MODIFICATION                                     *
1320                            ;*****************************************************************
1321
1322
1323
1324
1325
1326 012424  000001             GDREV:  .WORD   1
1327
1328
1329
1330
1331
1332
1333
```

GLOBAL DATA SECTION

```
1335                                ;*************************************************************************
1336                                ;* PROGRAM CONTROL FLAGS
1337                                ;*************************************************************************
1338 012426     000                INIFLG: .BYTE   0               ;PROGRAM INITIALIZING FLAG
1339                                        .EVEN
1340 012430     000                LOKFLG: .BYTE   0               ;LOCK ON CURRENT TEST FLAG
1341 012431     000                QV.FLG: .BYTE   0               ;QUICK VERIFY FLAG
1342                                        .EVEN
1343 012432  000000                UUT:    .WORD   0               ;CURRENT UNIT UNDER TEST
1344
1345
1346
1347
1348
1349
1350                                ;*************************************************************************
1351                                ;* POINTERS TO KMV11 VECTORS AND REGISTERS
1352                                ;*************************************************************************
1353 012434  000000                KMVV00: 0       ;POINTER TO KMV11  INTRPT VECTOR 0
1354 012436  000000                KMVLVL: 0       ;POINTER TO KMV11  INTRPT SERVICE
1355 012440  000000                KMVV04: 0       ;POINTER TO KMV11  INTRPT VECTOR 04
1356 012442  000000                KMVV02: 0       ;    "       "       "       "     02
1357 012444  000000                KMVV06: 0       ;    "       "       "       :     06
1358 012446  000000                KMTLVL: 0       ;POINTER TO KMV11 TX INTRPT SERVICE PS
1359 012450  000000                KMVCSR: 0       ;POINTER TO KMV11 CONTROL STATUS REGISTER
1360 012452  000000                KMVP02: 0       ;POINTER TO KMV11 PORT REGISTER - SEL2
1361 012454  000000                KMVP04: 0       ;POINTER TO KMV11 PORT REGISTER - SEL4
1362 012456  000000                KMVP06: 0       ;POINTER TO KMV11 PORT REGISTER - SEL6
1363
1364 012460  000000                KMVP10: 0       ;POINTER TO KMV11 PORT REG  -SEL10
1365 012462  000000                KMVP12: 0       ;POINTER TO PORT REG  -SEL 14
1366 012464  000000                KMVP14: 0       ;POINTER TO PORT REG  -SEL14
1367 012466  000000                KMVP16: 0       ;POINTER TO PORT REG 16
1368
1369 012470  000000                LOOP:   0       ;POINTER TO LOOP BACK CONNECTOR
```

GLOBAL DATA SECTION

```
   1371                                 ;****  PRIMARY REG ADRS STORAGE FOR THIS UNIT  ******
   1372                                 ;THESE LOCATIONS WILL BE LOADED FOR THE CURRENT UNIT, IN INIT CODE
   1373 012472                          REGADR:
   1374
   1375                                 ;;****  STACK USED FOR SUBROUTINE LINKAGE  *****
   1376 012472                                  .BLKW   100
   1377 012672                          SSTACK:
```

GLOBAL DATA SECTION

```
1379
1380                                    .SBTTL  GLOBAL TEXT SECTION
1381
1382                                    ;*****************************************************************************
1383                                    ;*      THE GLOBAL TEXT SECTION CONTAINS FORMAT STATEMENTS,
1384                                    ;*      MESSAGES, AND ASCII INFORMATION THAT ARE USED IN
1385                                    ;*      MORE THAN ONE TEST.
1386                                    ;*****************************************************************************
1387
1388                                    ;;*************************************************************************
1389                                    ;* NAMES OF DEVICES SUPPORTED BY PROGRAM
1390                                    ;;*************************************************************************
1391 012672                                   DEVTYP  <KMV11A>
1392
1393
1394                                    ;
1395                                    ; FORMAT STATEMENTS USED IN PRINT CALLS
1396                                    ;
1397
1404
1405
1406
1407
1408
```

GLOBAL SUBROUTINES

```
                                .SBTTL  GLOBAL SUBROUTINES

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


                                .MACRO  CLRMAR
                                        ROMCLK
                                        004000
                                .ENDM   CLRMAR



                                ;////////////////////////////////////////////////////////////////////////
                                ;/      THE GLOBAL SUBROUTINES ARE CALLED BY MORE THAN ONE TEST
                                ;////////////////////////////////////////////////////////////////////////


                                 ;ROUTINE TO WAIT FOR EVENT OR TIMEOUT


                                ;CALLING SEQUENCE:      JSR   PC,WAIT1
                                ;                       JSR   PC,WAIT2


                                ;INPUTS PARAMETERS:     DELCT1,DELCT2


                                ;                       INC DELCT1 UNTIL 0
                                ;                       DEC DELCT2 UNTIL 0      DELCT2= NUMB OF WAIT1 PASSES



                                WAIT2:  INC     DELCT1
012702  005237  002260                  BNE     WAIT2

012706  001375                          BREAK

012710

                                        DEC     DELCT2
012712  005337  002262                  BNE     WAIT2

012716  001371                          RTS     PC

012720  000207
```

GLOBAL SUBROUTINES

```
   1467
   1468
   1469 012722  005237  002260          WAIT1:  INC     DELCT1
   1470 012726  001375                          BNE     WAIT1
   1471
   1472 012730  000207                          RTS     PC
```

GLOBAL SUBROUTINES

```
                        ;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
```

GLOBAL SUBROUTINES

```
1503                                    ;ROUTINE TO DROP UNIT AFTER 5 ERROR
1504
1505
1506                                    ;JSR   PC,CHKMAX
1507
1508
1509
1510
1511
1512
1513
1514
1515 012732                            CHKMAX: INLOOP                          ;LOOPING ON ERROR?
1516 012734                                    BCOMPLETE       1$              ;IF YES, EXIT
1517
1518
1519 012736                                    RFLAGS  R0                      ;GET OPERATOR FLAG
1520 012740  032700  000040                    BIT     #IDU,R0                 ;IS DROPPING INHIBITTED?
1521 012744  001026                            BNE     1$                      ;IF YES EXIT
1522
1523
1524 012746  005237  002234                    INC     ERRCNT                  ;UPDATE ERROR COUNT
1525 012752  023737  002234  002232            CMP     ERRCNT,MAXERR           ;TOO MANY ERROR?
1526 012760  003420                            BLE     1$                      ;IF NOT JUMP
1527
1528
1529 012762                                    PRINTF  #NERRS,MAXERR,UUT       ;TOO MANY ERROR!
1530 013012                                    DODU    UUT                     ;DROP UNIT
1531
1532 013020                                    DOCLN                           ;END THE SUBPASS
1533
1534 013022  000207                    1$:     RTS     PC
1535
1536
1537
1538
1539                                            .NLIST  BEX
1540 013024      045     116     045   NERRS:   .ASCIZ  /%N%AMORE THAN %D3%A  ERRORS ON UNIT %D2/
1541                                            .LIST   BEX
1542                                            .EVEN
1543
1544
1545
1546
1547
```

GLOBAL SUBROUTINES

```
                                ;ROUTINE TO CHECK REGISTER BSEL0 AND TO REPORT ERROR
                                ;CALLING SEQUENCE:      JSR     PC,TSTERR
                                ;OUTPUT PARAMETERS:     RETURN TO       PC      IF TEST IS OK
                                ;                                       PC+2    IF TIMEOUT DURING TEST
                                ;                                       PC+4    IF NO KMV11 ANSWER
                                ;                                       PC+6    IF DATA CMP ERROR
013074  004537  013644          TSTERR: JSR     R5,CBSEL0               ;LOOK IF BSEL0=0
013100  000000                          .WORD   0
013102  000411                          BR      1$                      ;TEST IS OK ,RTS PC

013104  004537  013644                  JSR     R5,CBSEL0               ;LOOK IF BSEL0=200
013110  000200                          .WORD   200
013112  000406                          BR      2$                      ;TIMEOUT DURING TEST,RTS PC+2

013114  004537  013644                  JSR     R5,CBSEL0               ;LOOK IF BSEL0=100
013120  000100                          .WORD   100
013122  000405                          BR      3$                      ;DATA CMP ERROR,RTS PC+6

013124  000407                          BR      4$                      ;NO KMV11 ANSWER ,RTS PC+4

013126  000207                  1$:     RTS     PC                      ;TEST OK

013130  062716  000002          2$:     ADD     #2,(SP)
013134  000207                          RTS     PC                      ;TIMEOUT ERROR

013136  062716  000006          3$:     ADD     #6,(SP)
013142  000207                          RTS     PC                      ;DATA CMP ERROR

013144  062716  000004          4$:     ADD     #4,(SP)
013150  000207                          RTS     PC                      ;NO KMV11 ANSWER
```

```
                        .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
                ;
```

NUMBER GENERATOR

```
                                        ;
                                        ;
013152  042703  177770        GENER:  BIC     #177770,R3
013156  004737  013452                JSR     PC,SAVREG
013162  006303                        ASL     R3
013164  000173  013170                JMP     @GENSEL(R3)
013170  013210        GENSEL: GEN0                    ;ALL ZERO WORD
013172  013214                GEN1                    ;ALL ONE WORD
013174  013222                GEN52                   ;52 PATTERN
013176  013230                GEN25                   ;25 PATTERN
013200  013236                GENR1                   ;ROTATE '1' EACH CALL
013202  013246                GENR0                   ;ROTATE '0' EACH CALL
013204  013304                GENRAN                  ;RANDOM NUMBER
013206  013424                GENINC                  ;INCREMENTING COUNT
013210  005000        GEN0:   CLR     R0              ;0>R0
013212  000507                BR      GENEX
013214  005000        GEN1:   CLR     R0              ;NOT0>R0
013216  005100                COM     R0
013220  000404                BR      GENEX
013222  012700  052525  GEN52:  MOV     #52525,R0       ;5252>R0
013226  000501                BR      GENEX
013230  012700  125252  GEN25:  MOV     #125252,R0      ;125252>R0
013234  000476                BR      GENEX
013236  000241        GENR1:  CLC
013240  004737  013260                JSR     PC,GENROT       ;SHIFT 1 > R0
013244  000472                BR      GENEX
013246  000241        GENR0:  CLC
013250  004737  013260                JSR     PC,GENROT       ;
013254  005100                COM     R0              ;SHIFT 0 > R0
013256  000465                BR      GENEX
013260  006037  013302        GENROT: ROR     GENISH          ;ROTATE  1 PATTERN
013264  001003                BNE     GENER1          ;= 0?
013266  012737  100000  013302        MOV     #100000,GENISH  ;YES, SET MSB
013274  013700  013302        GENER1: MOV     GENISH,R0       ;PUT 1 IN R0
013300  000207                RTS     PC              ;AND EXIT
013302  000001        GENISH: 1
013304  012737  000005  002336  GENRAN: MOV     #5,RANSEL       ;SET SELECT VALUE TO 5
013312  004737  013324                JSR     PC,RANGEN       ;GENERATE RANDOM NUMBER IN R0
013316  013700  002342                MOV     RANDN,R0        ;
013322  000443                BR      GENEX           ;
013324  013702  002342        RANGEN: MOV     RANDN,R2        ;
013330  001002                BNE     RAN1            ;IS RANDOM = 0
013332  013702  002334                MOV     RANST,R2        ;YES, PUT RANDOM START VALUE IN
013336  032737  000777  002336  RAN1:   BIT     #777,RANSEL     ;NO;IS RANSEL SELECT VALUE = 0
013344  001003                BNE     RAN2            ;NO
013346  012737  000001  002336        MOV     #1,RANSEL       ;YES: SET RANSEL = 1
013354  013703  002336        RAN2:   MOV     RANSEL,R3       ;
013360  013702  002342                MOV     RANDN,R2
013364  033702  002340                BIT     RANMTA,R2       ;GET R2 <0 AND 1>
013370  001405                BEQ     RANCLC          ;
013372  005102                COM     R2
013374  033702  002340                BIT     RANMTA,R2
013400  001401                BEQ     RANCLC
013402  000402                BR      RANSEC
013404  000241        RANCLC: CLC
013406  000401                BR      RAN4
013410  000261        RANSEC: SEC
```

NUMBER GENERATOR

```
1719 013412  006037  002342          RAN4:   ROR     RANDN           ;ROTATE C TO B15
1720 013416  005303                          DEC     R3              ;IS THIS NUMBER REQUIRED?
1721 013420  001357                          BNE     RAN2+4          ;NO, GET ANOTHER
1722 013422  000207                  RANEX:  RTS     PC              ;YES, EXIT
1723 013424  013700  002264          GENINC: MOV     GOOD,R0         ;INCREMENTS LOC. 'GOOD'
1724 013430  005200                          INC     R0
1725 013432  010037  002264          GENEX:  MOV     R0,GOOD
1726 013436  004737  013532                  JSR     PC,RSTREG
1727 013442  013737  002264  012372          MOV     GOOD,DATA
1728 013450  000207                          RTS     PC
1729
```

SAVE REGISTERS

```
                                        .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 6 TO AVOID MOST 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
                                ;
013452                          SAVREG: GETPRI  SAVSTA
013460                                  SETPRI  MAXPRI
013466  012637  002244                  MOV     (SP)+,SAVPC     ;SAVE PC FOR RETURN FROM THIS ROUTINE
```

SAVE REGISTERS

```
   1788 013472  012637  002344                MOV     (SP)+,SAVPC1
   1789 013476  010546                         MOV     R5,-(SP)
   1790 013500  010446                         MOV     R4,-(SP)
   1791 013502  010346                         MOV     R3,-(SP)
   1792 013504  010246                         MOV     R2,-(SP)
   1793 013506  010146                         MOV     R1,-(SP)
   1794 013510  010046                         MOV     R0,-(SP)
   1795 013512  013746  002344                MOV     SAVPC1,-(SP)
   1796 013516  013746  002244                MOV     SAVPC,-(SP)     ;PUT PC READY FOR
   1797 013522                                 SETPRI  SAVSTA
   1798 013530  000207                         RTS     PC              ;RETURN
   1799
   1800
   1801
```

```
                                        .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
                                ;
                                ;
013532                          RSTREG: GETPRI  SAVSTA
013540                                  SETPRI  MAXPRI
013546  012637  002244                  MOV     (SP)+,SAVPC
013552  012637  002344                  MOV     (SP)+,SAVPC1
013556  012600                          MOV     (SP)+,R0
013560  012601                          MOV     (SP)+,R1
```

RESTORE REGISTERS

```
   1860 013562  012602                        MOV     (SP)+,R2
   1861 013564  012603                        MOV     (SP)+,R3
   1862 013566  012604                        MOV     (SP)+,R4
   1863 013570  012605                        MOV     (SP)+,R5
   1864 013572  013746  002344                MOV     SAVPC1,-(SP)
   1865 013576  013746  002244                MOV     SAVPC,-(SP)     ;PUT PC READY FOR
   1866 013602                                SETPRI  SAVSTA
   1867 013610  000207                        RTS     PC
```

J4

RESTORE REGISTERS

```
                                        ;CHECK CONTENT OF ONE OF THE 8 REGISTERS
                                        ;
                                        ; CALLING SEQUENCE
                                        ;       JSR     R5,CKSELN               ; N = REGISTER NUMBER
                                        ;       .WORD A                 A=EXPECTED CONTENT OF REGISTER N
                                        ;
                                        ;OUTPUT PARAMETER:
                                        ;       BRANCH IN PC+2 IF ERROR DETECTED
                                        ;       BRANCH IN PC IF NO ERROR DETECTED
                                        ;
                                        ;
                                        ;
                                        ;
013612  012537  002264          CKSELO: MOV     (R5)+,GOOD      ;WRITE GOOD
013616  017737  176626  002310          MOV     @KMVCSR,SELO    ;READ SEL 0
013624  023737  002310  002264          CMP     SELO,GOOD       ;CMP ?
013632  001001                          BNE     1$
013634  000402                          BR      2$
013636  062705  000002          1$:     ADD     #2,R5
013642  000205                  2$:     RTS     R5
                                        ;
                                        ;
                                        ;
                                        ;
                                        ;
                                        ;
013644  005037  002264          CBSELO: CLR     GOOD
013650  012537  002264                  MOV     (R5)+,GOOD
013654  117737  176570  012370          MOVB    @KMVCSR,BSELO
013662  123737  012370  002264          CMPB    BSELO,GOOD
013670  001001                          BNE     1$
013672  000402                          BR      2$
013674  062705  000002          1$:     ADD     #2,R5
013700  000205                  2$:     RTS     R5
```

RESTORE REGISTERS

```
                                        ;ROUTINE TO CHECK ALL REGISTER FROM SEL0 TO SEL16


                                        ;CALLING SEQUENCE:
                                        ;       JSR R5,CKALL
                                        ;       .WORD A                 A = EXPECTED VALUE FOR SEL0
                                        ;       .WORD B                 B       "       "       SEL2
                                        ;       .WORD C                 C       "       "       SEL4
                                        ;       .WORD D                 D       "       "       SEL6
                                        ;       .WORD E                 E       "       "       SEL10
                                        ;       .WORD F                 F       "       "       SEL12
                                        ;       .WORD G                 G       "       "       SEL14
                                        ;       .WORD H                 H       "       "       SEL16


                                        ;OUTPUT PARAMETER:
                                        ;       BRANCH IN PC+2 IF ERROR
                                        ;       BRANCH IN PC IF NO ERROR


013702  012537  002266          CKALL:  MOV     (R5)+,GOOD0
013706  012537  002272                  MOV     (R5)+,GOOD2
013712  012537  002274                  MOV     (R5)+,GOOD4
013716  012537  002276                  MOV     (R5)+,GOOD6
013722  012537  002300                  MOV     (R5)+,GOOD10
013726  012537  002302                  MOV     (R5)+,GOOD12
013732  012537  002304                  MOV     (R5)+,GOOD14
013736  012537  002306                  MOV     (R5)+,GOOD16

013742  017737  176502  002310          MOV     @KMVCSR,SEL0            ;READ SEL0
013750  000240                          NOP
013752  017737  176474  002314          MOV     @KMVP02,SEL2            ;READ SEL2
013760  000240                          NOP
013762  017737  176466  002316          MOV     @KMVP04,SEL4            ;READ SEL4
013770  000240                          NOP
013772  017737  176460  002320          MOV     @KMVP06,SEL6            ;READ SEL6
014000  000240                          NOP
014002  017737  176452  002322          MOV     @KMVP10,SEL10           ;READ SEL10
014010  000240                          NOP
014012  017737  176444  002324          MOV     @KMVP12,SEL12           ;READ SEL12
014020  000240                          NOP
014022  017737  176436  002326          MOV     @KMVP14,SEL14           ;READ SEL14
014030  000240                          NOP
014032  017737  176430  002330          MOV     @KMVP16,SEL16           ;READ SEL16

014040  023737  002310  002266          CMP     SEL0,GOOD0
014046  001035                          BNE     1$
014050  023737  002314  002272          CMP     SEL2,GOOD2
014056  001031                          BNE     1$
014060  023737  002316  002274          CMP     SEL4,GOOD4
014066  001025                          BNE     1$
014070  023737  002320  002276          CMP     SEL6,GOOD6
014076  001021                          BNE     1$
014100  023737  002322  002300          CMP     SEL10,GOOD10
014106  001015                          BNE     1$
014110  023737  002324  002302          CMP     SEL12,GOOD12
```

L4

RESTORE REGISTERS

```
   1963 014116  001011                          BNE     1$
   1964 014120  023737  002326  002304          CMP     SEL14,GOOD14
   1965 014126  001005                          BNE     1$
   1966 014130  023737  002330  002306          CMP     SEL16,GOOD16
   1967 014136  001001                          BNE     1$
   1968
   1969 014140  000402                          BR      2$
   1970 014142  062705  000002          1$:     ADD     #2,R5
   1971 014146  000205                  2$:     RTS     R5
```

RESTORE REGISTERS

```
                                        ;ROUTINE TO CHECK SEL2 TO SEL16



014150  012537  002272          CKREG:  MOV     (R5)+,GOOD2
014154  012537  002274                  MOV     (R5)+,GOOD4
014160  012537  002276                  MOV     (R5)+,GOOD6
014164  012537  002300                  MOV     (R5)+,GOOD10
014170  012537  002302                  MOV     (R5)+,GOOD12
014174  012537  002304                  MOV     (R5)+,GOOD14
014200  012537  002306                  MOV     (R5)+,GOOD16

014204  017737  176242  002314          MOV     @KMVP02,SEL2
014212  000240                          NOP
014214  017737  176234  002316          MOV     @KMVP04,SEL4
014222  000240                          NOP
014224  017737  176226  002320          MOV     @KMVP06,SEL6
014232  000240                          NOP
014234  017737  176220  002322          MOV     @KMVP10,SEL10
014242  000240                          NOP
014244  017737  176212  002324          MOV     @KMVP12,SEL12
014252  000240                          NOP
014254  017737  176204  002326          MOV     @KMVP14,SEL14
014262  000240                          NOP
014264  017737  176176  002330          MOV     @KMVP16,SEL16


014272  023737  002314  002272          CMP     SEL2,GOOD2
014300  001031                          BNE     1$
014302  023737  002316  002274          CMP     SEL4,GOOD4
014310  001025                          BNE     1$
014312  023737  002320  002276          CMP     SEL6,GOOD6
014320  001021                          BNE     1$
014322  023737  002322  002300          CMP     SEL10,GOOD10
014330  001015                          BNE     1$
014332  023737  002324  002302          CMP     SEL12,GOOD12
014340  001011                          BNE     1$
014342  023737  002326  002304          CMP     SEL14,GOOD14
014350  001005                          BNE     1$
014352  023737  002330  002306          CMP     SEL16,GOOD16
014360  001001                          BNE     1$
014362  000402                          BR      2$

014364  062705  000002          1$:     ADD     #2,R5
014370  000205                  2$:     RTS     R5
```

RESTORE REGISTERS

```
                                        ;ROUTINE TO CLEAR KMV11 MODULE


                                        ;CALLING SEQUENCE:
                                        ;       JSR PC,CLRKMV

                                        ;ROUTINE DESCRIPTION: CLEAR ALL CSR'S REGISTERS AND CHECK IF = 0


014372  005077  176052        CLRKMV: CLR     @KMVCSR
014376  012777  054000  176044        MOV     #MAINTO,@KMVCSR
014404                                WAITA   0


014416  012702  000010                MOV     #10,R2
014422  013701  012450                MOV     KMVCSR,R1               ;LOAD ADDRESS
014426  005021                1$:     CLR     (R1)+                   ;CLEAR
014430  005302                        DEC     R2                      ;ALL DONE
014432  001375                        BNE     1$                      ;NO
014434  004537  013702                JSR     R5,CKALL                ;CHECK ALL REG = 0
014440  000000                        .WORD   0
014442  000000                        .WORD   0
014444  000000                        .WORD   0
014446  000000                        .WORD   0
014450  000000                        .WORD   0
014452  000000                        .WORD   0
014454  000000                        .WORD   0
014456  000000                        .WORD   0
014460  000404                        BR      2$                      ;OK BRANCH AT END
014462                                ERRHRD 1,EM0002,PRALL           ;CSR'S REGISTERS CAN'T BE CLEARED
014472  000207                2$:     RTS     PC
```

RESTORE REGISTERS

```
                                        ;ROUTINE TO SET MAINT MODE 1 AND CHECK DCT11 CLEAR SEL0 AFTER HAVING DECODED



                                        ;CALLING SEQUENCE:
                                        ;       JSR PC,MAINM1



                                        ;GIVE AN ERROR IF MASTER CLEAR IS NOT CLEAR BY DCT11
                                        ;
                                        ;MAINT1= MASTER CLEAR=1 . MAINT 1 =0 . MODE = 1 : T11=HOLD



014474  005077  175750        MAINM1: CLR     @KMVCSR
014500  000240                        NOP
014502  000240                        NOP
014504  000240                        NOP

014506  012777  044000  175734        MOV     #MAINT1,@KMVCSR         ;LOAD ADDRESS
014514  012737  000000  002260        MOV     #0,DELCT1
014522  012737  000001  002262        MOV     #1,DELCT2
014530  004737  012702                JSR     PC,WAIT2
014534  004537  013612                JSR     R5,CKSEL0               ;CHECK SEL0=0 BUT MODE BIT =1
014540  004000                        .WORD   4000
014542  000404                        BR      1$                      ;OK BRANCH
014544                                ERRHRD  2,EM0001,PRSEL0
014554  000207                1$:     RTS     PC
```

RESTORE REGISTERS

```
                                        ;ROUTINE TO SET TEST NUMBER ON BSELO
                                        ;
                                        ;
                                        ;
                                        ;CALLING SEQUENCE:
                                        ;       JSR R5,TSTNUB
                                        ;       .WORD   A                       A=TEST MICRO PROGRAM NUMBER
                                        ;
                                        ;
                                        ;
                                        ;
                                        ;
 2112 014556  012537  012412            TSTNUB: MOV     (R5)+,NUB
 2113 014562  053777  012412  175660            BIS     NUB,@KMVCSR             ;LOAD TEST NUMBER
 2114 014570  012737  000000  002260            MOV     #0000,DELCT1
 2115 014576  004737  012722                    JSR     PC,WAIT1                ;WAIT
 2116 014602  000205                            RTS     R5
```

RESTORE REGISTERS

```
                                ;ROUTINE TO WRITE OR READ ONE OF THE KMV11 REGISTERS
                                ;
                                ;
                                ;CALLING SEQUENCE:
                                ;JSR     R5,WRITE
                                ;.WORD   A                              A=ADDRESS TO WRITE
                                ;.WORD   B                              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 BSEL0 WHEN DONE
                                ;
                                ;READ:  PUT ADDRESS TO READ IN SEL2
                                ;       CLEAR BIT 0 IN SEL6
                                ;       SET TEST 47
                                ;       KMV11 READ ADDRESS IN SEL2 AND CLEAR BSEL0 WHEN DONE

014604  012577  175642          WRITE:  MOV     (R5)+,@#KMVP02          ;WRITE ADDRESS
014610  012577  175640                  MOV     (R5)+,@#KMVP04          ;  "   DATA
014614  012777  000001  175634          MOV     #1,@#KMVP06             ;BIT WRITE

014622  004537  014556                  JSR     R5,TSTNUB               ;SEND TEST NB 44
014626  000047                          .WORD   47

014630  000205                          RTS     R5                      ;RETURN


014632  012577  175614          READ:   MOV     (R5)+,@#KMVP02          ;SET ADDRESS TO READ
014636  005077  175612                  CLR     @#KMVP04
014642  005077  175610                  CLR     @#KMVP06

014646  004537  014556                  JSR     R5,TSTNUB               ;SEND TEST NB 44
014652  000047                          .WORD   47

014654  004737  013074                  JSR     PC,TSTERR               ;CHECK BSEL 0
014660  000412                          BR      1$                      ;OK
```

RESTORE REGISTERS

```
   2175 014662  000402                          BR      2$
   2176 014664  000401                          BR      2$
   2177 014666  000400                          BR      2$
   2178
   2179 014670                          2$:     ERRHRD  4,EM0004              ;NO KMV ANSWER
   2180 014700  004737  012732                  JSR     PC,CHKMAX
   2181 014704  000205                          RTS     R5
   2182
   2183 014706  017737  175542  012366  1$:     MOV     @KMVP04,BAD             ;READ DATA IN BAD
   2184 014714  000205                          RTS     R5
   2185
   2186
   2187
   2188
   2189
```

RESTORE REGISTERS

```
                        .MACRO  ED$CALL XY
                                .LIST
                        ;********************** TEST'XY' **************************
                                .NLIST
                                .ENDM
                        .MACRO  BADHEAD
                                .RADIX  10
                                ED$CALL \T$TESTNUM+1
                                .RADIX  8
                                .ENDM
```

GLOBAL ERROR REPORT SECTION

```
                                .SBTTL  GLOBAL ERROR REPORT SECTION

                                ;////////////////////////////////////////////////////////////////
                                ;/      THE GLOBAL ERROR REPORT SECTION CONTAINS ERROR MESSAGES
                                ;/      THAT ARE USED IN MORE THAN ONE TEST.
                                ;////////////////////////////////////////////////////////////////

                                .NLIST BEX

014716  040  102  125  TIM:     .ASCIZ  / BUS TIMEOUT/

014733  045  116  045  TFM36:   .ASCIZ  /%N%AREGISTER ADDRESS ERROR,ADDRESS = %06%A,UNIT = %02/

015021  115  101  123  EM0001: .ASCIZ  /MASTER CLEAR FAIL TO RESET: DCT11 CAN'T CLEAR MASTER CLEAR /

015115  040  113  115  EM0002: .ASCIZ  / KMV11 REGISTERS CAN'T BE CLEARED /

015160  040  104  101  EM0003: .ASCIZ  / DATA COMPARE ERROR ON KMV11 REGISTER (SEL2 TO SEL16)/

015246  040  116  117  EM0004: .ASCIZ  / NO ANSWER FROM KMV11 /

015275  124  111  115  EM0006: .ASCIZ  /TIMEOUT DURING KMV11 MICRO TEST /

015336  111  116  124  EM0007: .ASCIZ  /INTERUPT OCCURED ON KMV11  AT INCORRECT VECTOR /

015416  113  115  126  EM0011: .ASCIZ  /KMV11 REAL TIME CLOCK FAILED TO INTERUPT /

015470  107  105  116  EM0012: .ASCIZ  /GENERATOR COUNT CAN'T BE READ OR WRITE CORRECTLY /

015552  107  105  116  EM0013: .ASCIZ  /GENERATOR OUTPUT ISN'T IN A GOOD STATE(NO ACTION ON OUTPUT)/

015646  116  117  040  EM0033: .ASCIZ  /NO CHANGE IN BAUD RATE GENERATOR COUNT /

015716  116  117  040  EM0014: .ASCIZ  /NO ACTION ON BAUD RATE GENERATOR OUTPUT /

015767  105  122  122  EM0015: .ASCIZ  /ERROR WHEN TRANSMITTING IN INTERNAL LOOP WITHOUT INTERUPTS /

016063  105  122  122  EM0016: .ASCIZ  /ERROR WHEN TRANSMITTING  FRAMES IN INTERNAL LOOPBACK MODE /

016156  105  122  122  EM0017: .ASCIZ  /ERROR WHEN TRANSMITTING FRAMES IN EXTERNAL LOOPBACK /

016243  105  122  122  EM0022: .ASCIZ  /ERROR DURING TRANSMISSION AND RECEPTION OF FRAMES /

016326  122  105  101  EM0023: .ASCIZ  /REAL TIME CLOCK INTERUPT OCCURED TOO EARLY /

016402  111  116  103  EM0024: .ASCIZ  /INCORRECT KMV11 REPLY /

016431  116  117  040  EM0027: .ASCIZ  /NO LOOP BACK CONNECTOR,TEST NOT EXECUTED /

016503  105  122  122  EM0031: .ASCIZ  /ERROR WHEN TRANSMITTING IN INTERNAL LOOP WITHOUT INTERUPTS /

016577  115  117  104  EM0032: .ASCIZ  /MODEM SIGNAL ERROR ON CHANNEL IN EXTERNAL LOOPBACK /

016663  040  120  122  EM0035: .ASCIZ  / PROM REVISION IS NOT COMPATIBLE WITH DIAGNOSTIC REVISION/

016755  040  111  116  EM0036: .ASCIZ  / INTERUPT OCCURED ON DCT11 WHEN REAL TIME CLOCK IS DISABLE/
```

GLOBAL ERROR REPORT SECTION

```
2272 017050  045  116  045  MSEL0:  .ASCIZ  /%N%A SEL0 = %06%A   SHOULD BE  = %06%N/
2273
2274 017116  045  116  045  MREG0:  .ASCIZ  /%N%A SEL0 = %06%A   SHOULD BE  = %06/
2275 017162  045  116  045  MREG2:  .ASCIZ  /%N%A SEL2 = %06%A   SHOULD BE  = %06/
2276 017226  045  116  045  MREG4:  .ASCIZ  /%N%A SEL4 = %06%A   SHOULD BE  = %06/
2277 017272  045  116  045  MREG6:  .ASCIZ  /%N%A SEL6 = %06%A   SHOULD BE  = %06/
2278 017336  045  116  045  MREG10: .ASCIZ  /%N%A SEL10= %06%A   SHOULD BE  = %06/
2279 017402  045  116  045  MREG12: .ASCIZ  /%N%A SEL12= %06%A   SHOULD BE  = %06/
2280 017446  045  116  045  MREG14: .ASCIZ  /%N%A SEL14= %06%A   SHOULD BE  = %06/
2281 017512  045  116  045  MREG16: .ASCIZ  /%N%A SEL16= %06%A   SHOULD BE  = %06/
2282
2283
2284 017556  045  116  045  MINT:   .ASCIZ  /%N%A GOOD = %06%A  BAD =%06/
2285
2286 017612  045  116  045  MBSEL0: .ASCIZ  /%N%A BSEL0 =%06%A  SHOULD BE =%06/
2287
2288
2289 017654  045  116  045  MVECT:  .ASCIZ  /%N%A RECEIVE BAD VECT =%06%A SHOULD BE =%06/
2290
2291
2292
2293
2294
2295 017730  045  116  045  MT11V:  .ASCIZ  /%N%A   RECEIVE VECTOR  =%06%A SHOULD BE = %06/
2296 020006  045  116  045  MFRAM1: .ASCIZ  /%N%A   RECEIVE FRAME IS =%06%A SHOULD BE  %06/
2297 020064  045  116  045  MFRAM2: .ASCIZ  /%N%A   TRANSMIT SPEED IS =%06%A FRAME LENGTH =%06/
2298
2299
2300 020146  045  116  045  MSTER1: .ASCIZ  /%N%A   ERROR STATUS  =%06/
2301 020200  045  116  045  MSTER2: .ASCIZ  /%N%A   WORD COUNT DISCREPANCY =%06/
2302
2303 020243  045  116  045  MODEM1: .ASCIZ  /%N%A   TESTED MODEM SIGNAL IS  =%06/
2304 020307  045  116  045  MODEM2: .ASCIZ  /%N%A   RESULT OF TEST IS  =%06/
2305 020346  045  116  045  MODEM3: .ASCIZ  /%N%A   MODEM SIGNAL STATE IS  =%06/
2306 020411  045  116  045  MODEM4: .ASCIZ  /%N%A   SEE TEST HEADER FOR SIGNAL DESCRIPTION /
2307
2308 020466  045  116  045  MRAMEF: .ASCIZ  /%N%A   TXDATA = %06%A  .    RXDATA = %06/
2309
2310 020537  045  116  045  MLOOP:  .ASCIZ  /%N%A   NO LOOP BACK CONNECTOR,TEST NOT EXECUTED/
2311                          .EVEN
```

GLOBAL ERROR REPORT SECTION

```
2313 020616                                BGNMSG  PRSELO                  ;REPORT SELO
2314 020616                                PRINTB  @MSELO,SEL0,GOOD
2315 020646  004737  012732                JSR     PC,CHKMAX               ;CHECK IF TOO MANY ERROR
2316 020652                                BREAK
2317 020654                                ENDMSG
2318
2319
2320
2321 020656                        BGNMSG  PRINT
2322 020656                        PRINTB  @MINT,GOOD,BAD
2323 020706  004737  012732        JSR     PC,CHKMAX                       ;CHECK IF TOO MANY ERROR
2324 020712                        BREAK
2325 020714                        ENDMSG
2326
2327
2328 020716                        BGNMSG  PRALL                           ;REPORT CONTENT OF ALL CSR'S
2329 020716                        PRINTB  @MREG0,SEL0,GOOD0
2330 020746                        PRINTB  @MREG2,SEL2,GOOD2
2331 020776                        PRINTB  @MREG4,SEL4,GOOD4
2332 021026                        PRINTB  @MREG6,SEL6,GOOD6
2333 021056                        PRINTB  @MREG10,SEL10,GOOD10
2334 021106                        PRINTB  @MREG12,SEL12,GOOD12
2335 021136                        PRINTB  @MREG14,SEL14,GOOD14
2336 021166                        PRINTB  @MREG16,SEL16,GOOD16
2337 021216  004737  012732        JSR     PC,CHKMAX                       ;CHECK IF TOO MANY ERROR
2338 021222                        BREAK
2339 021224                        ENDMSG
2340
2341
2342
2343
2344
2345
2346 021226                        BGNMSG  PRREG                           ;REPORT ALL CSR'S BUT SELO
2347 021226                        PRINTB  @MREG2,SEL2,GOOD2
2348 021256                        PRINTB  @MREG4,SEL4,GOOD4
2349 021306                        PRINTB  @MREG6,SEL6,GOOD6
2350 021336                        PRINTB  @MREG10,SEL10,GOOD10
2351 021366                        PRINTB  @MREG12,SEL12,GOOD12
2352 021416                        PRINTB  @MREG14,SEL14,GOOD14
2353 021446                        PRINTB  @MREG16,SEL16,GOOD16
2354 021476  004737  012732        JSR     PC,CHKMAX                       ;CHECK IF TOO MANY ERROR
2355 021502                        BREAK
2356 021504                        ENDMSG
2357
2358
2359
2360
2361 021506                        BGNMSG  PADFLT                          ;ADDRESS TEST
2362 021506                        PRINTB  @TFM36,ADDR,UNIT
2363 021536  004737  012732                JSR     PC,CHKMAX
2364 021542                        ENDMSG
2365
2366
2367
2368
2369
```

GLOBAL ERROR REPORT SECTION

```
                                        BGNMSG  PBSEL0                          ;REPORT BSEL0
                                        PRINTB  @MBSEL0,BSEL0,GOOD
021574  004737  012732                  JSR     PC,CHKMAX                       ;CHECK IF TOO MANY ERROR
                                        BREAK
                                        ENDMSG


                                        BGNMSG  PVECT                           ;REPORT VECTOR
                                        PRINTB  @MVECT,VECT,GOOD
021634  004737  012732                  JSR     PC,CHKMAX                       ;CHECK IF TOO MANY ERROR
                                        BREAK
                                        ENDMSG


                                        BGNMSG  PRT11V
                                        PRINTB  @MT11V,VECT,GOOD
021674  004737  012732                  JSR     PC,CHKMAX                       ;CHECK IF TOO MANY ERROR
                                        BREAK
                                        ENDMSG


                                        BGNMSG  PFRAME                          ;REPORT FRAME ERROR
                                        PRINTB  @MFRAM1,RXDATA,TXDATA
                                        PRINTB  @MFRAM2,TSPEED,LENGTH
021764  004737  012732                  JSR     PC,CHKMAX                       ;CHECK IF TOO MANY ERROR
                                        BREAK
                                        ENDMSG


                                        BGNMSG  PMODEM                          ;REPORT MODEM SIGNAL  ERROR
                                        PRINTB  @MODEM1,GOOD
                                        PRINTB  @MODEM2,BAD
                                        PRINTB  @MODEM3,DATA
                                        PRINTB  @MODEM4
022110  004737  012732                  JSR     PC,CHKMAX                       ;CHECK IF TOO MANY ERROR
                                        BREAK
                                        ENDMSG
```

GLOBAL ERROR REPORT SECTION

```
2427
2428
2429
2430 022120                          BGNMSG  PRAMEF
2431 022120                          PRINTB  @MRAMEF,TXDATA,RXDATA          ;SHORT REPORT FOR FRAME ERROR
2432 022150                          BREAK
2433 022152                          ENDMSG
2434
2435
2436
2437
2438 022154                          BGNMSG  PRSTER                                 ;REPORT ERROR STATUS ,WORD CNT
2439 022154                          PRINTB  @MSTER1,STAERR
2440 022200                          PRINTB  @MSTER2,WRDCNT
2441 022224  004737  012732          JSR     PC,CHKMAX                      ;CHECK IF TOO MANY ERROR
2442 022230                          BREAK
2443 022232                          ENDMSG
2444
2445
2446
2447
2448
2449
2450
```

GLOBAL ERROR REPORT SECTION

```
                                .SBTTL  REPORT CODING SECTION


                                ;++
                                ; THE REPORT CODING SECTION CONTAINS THE
                                ; "PRINTS" CALLS THAT GENERATE STATISTICAL REPORTS.
                                ;--

022234                                  BGNRPT

022234                                  EXIT    RPT

022240                                  ENDRPT
```

INITIALIZE SECTION

```
                                        .SBTTL  INITIALIZE SECTION

                                        ;////////////////////////////////////////////////////////////////////////
                                        ;/ THE INITIALIZE SECTION CONTAINS THE CODING THAT IS PERFORMED
                                        ;/ AT THE BEGINNING OF EACH PASS.
                                        ;////////////////////////////////////////////////////////////////////////

022242                                          BGNINIT



                                                .EVEN


                                                .EVEN

022242                                          SETVEC  #140,#170000,#340       ;ODT ROM ADDRESS                ;JB REV A-0

                                        ;INITIALIZE SUBROUTINE STACK
022270  012705  012672                          MOV     #SSTACK,R5
                                        ;STORE BASE LEVEL PROGRAM STACK POINTER
022274  010637  002246                          MOV     SP,PSTACK
022300  005737  002250                          TST     FTIME
022304  001011                                  BNE     1$
022306  013737  000004  002252                  MOV     @#4,SAVE4
022314  013737  000006  002254                  MOV     @#6,SAVE6
022322  012737  000001  002250                  MOV     #1,FTIME
022330  013737  002252  000004  1$:             MOV     SAVE4,@#4
022336  013737  002254  000006                  MOV     SAVE6,@#6

022344                                          READEF  #EF.START                       ;START COMMAND?
022352                                          BCOMPLETE       SETUP                   ;IF YES BRANCH

022354                                          READEF  #EF.CONTINUE                    ;CONTINUE COMMAND?
022362                                          BCOMPLETE       END

022364                                          READEF  #EF.NEW                         ;NEW PASS?
022372                                          BNCOMPLETE      NEXT                    ;IF NOT EXIT SETUP

022374  012737  177777  012432  SETUP:  MOV     #-1,UUT                                 ;INITIALISE UNIT NUMBER

022402  005237  012432          NEXT:   INC     UUT                                     ;POINT NEXT UNIT
022406  023737  012432  002240          CMP     UUT,L$UIT                               ;ALL DONE?
022414  001521                          BEQ     ABORT                                   ;IF YES END OF PASS

022416  013701  012432                  MOV     UUT,R1
022422                                  PRINTF  #RUNNING,R1                             ;PRINT RUNNING MESSAGE
                                        .EVEN


022444                                  GPHARD  UUT,R1                                  ;GET P TABLE
022454                                  BNCOMPLETE      NEXT                            ;IF NOT AVAILABLE GET NEXT

25 0 022456                     GETPRM:
                                                                ;GET ADDRESS OF KMV11
022456  011137  012450                  MOV     (R1),KMVCSR
```

INITIALIZE SECTION

```
2573
2574 022462  011137  012452                MOV     (R1),KMVP02          ;GET POINTER TO KMV11 SEL02 REG
2575 022466  062737  000002  012452          ADD     #2,KMVP02
2576
2577 022474  011137  012454                MOV     (R1),KMVP04          ;GET POINTER TO KMV11 PORT REG - SEL 4
2578 022500  062737  000004  012454          ADD     #4,KMVP04
2579
2580 022506  011137  012456                MOV     (R1),KMVP06          ;GFT POINTER TO KMV11 PORT REG - SEL 6
2581 022512  062737  000006  012456          ADD     #6,KMVP06
2582
2583 022520  011137  012460                MOV     (R1),KMVP10          ;GET POINTER TO KMV11 REG 10
2584 022524  062737  000010  012460          ADD     #10,KMVP10
2585
2586 022532  011137  012462                MOV     (R1),KMVP12          ;GET POINTER TO KMV11 REG 12
2587 022536  062737  000012  012462          ADD     #12,KMVP12
2588
2589 022544  011137  012464                MOV     (R1),KMVP14          ;GET POINTER TO KMV11 REG 14
2590 022550  062737  000014  012464          ADD     #14,KMVP14
2591
2592 022556  012137  012466                MOV     (R1)+,KMVP16         ;GET POINTER TO KMV11 REG 16
2593 022562  062737  000016  012466          ADD     #16,KMVP16
2594
2595 022570  011137  012434                MOV     (R1),KMVV00          ;GET POINTER TO  VECTOR 0
2596
2597 022574  011137  012442                MOV     (R1),KMVV02          . _T POINTER TO  VECTOR 2
2598 022600  062737  000002  012442          ADD     #2,KMVV02
2599
2600 022606  011137  012440                MOV     (R1),KMVV04          ;GET POINTER TO VECTOR 4
2601 022612  062737  000004  012440          ADD     #4,KMVV04
2602
2603 022620  012137  012444                MOV     (R1)+,KMVV06         ;GET POINTER TO VECTOR 6
2604 022624  062737  000006  012444          ADD     #6,KMVV06
2605
2606 022632  012137  012436                MOV     (R1)+,KMVLVL         ;GET POINTER TO TX PRIORITY LEVEL
2607 022636  062737  000006  012446          ADD     #6,KMTLVL
2608
2609 022644  011137  012470                MOV     (R1),LOOP            ;GET LOOPBACK PARAMETERS:
2610
2611 022650  005037  002234                CLR     ERRCNT               ;CLEAR ERROR COUNT
2612 022654                                EXIT    INIT
2613
2614
2615
2616 022660                          ABORT:  DOCLN                        ;CLEAN UP AND ABORT PASS
2617 022662                                  EXIT JNIT                    ;EXIT
2618
2619
2620
2621
2622                                        .NLIST BEX
2623 022666     045     116     045  RUNNING:        .ASCIZ  /%N%A RUNNING ON UNIT %D2%A   /
2624                                        .LIST BEX
2625                                        .EVEN
2626
2627
2628
2629
```

INITIALIZE SECTION

```
   2630 022724                          END:    ENDINIT
   2631
   2632
   2633
   2634
```

AUTODROP SECTION

```
                                .SBTTL  AUTODROP SECTION

                                ;++
                                ; THIS CODE IS EXECUTED IMMEDIATELY AFTER THE INITIALIZE CODE IF
                                ; THE "ADR" FLAG WAS SET.  THE UNIT(S) UNDER TEST ARE CHECKED TO
                                ; SEE IF THEY WILL RESPOND.  THOSE THAT DON'T ARE IMMEDIATELY
                                ; DROPPED FROM TESTING.
                                ;--
                                .EVEN
022726                                  BGNAUTO


                                        ;DEVICE DOES NOT HAVE A "READY"
022726  013701  012450                  MOV     KMVCSR,R1       ;R1 CONTAINS BASE KMV11 ADDRESS
022732  012705  000007                  MOV     #7,R5           ;7 REGISTERS TO BE TESTED
022736  012737  022770  000004          MOV     #2$,4           ;SET OUT TIMEOUT TRAP
                                ;       MOV     #340,6          ;LEVEL 7                        ;JB REV A-0
022744  012737  000300  000006          MOV     #300,6          ;LEVEL 6                        ;JB REV A-0
022752  005711                  1$:     TST     (R1)            ;REFERENCE DEVICE REGISTERS
022754  000240                          NOP
022756  062701  000002                  ADD     #2,R1           ;NEXT REGISTER
022762  005305                          DEC     R5              ;DEC REGISTER COUNT
022764  001372                          BNE     1$              ;BR IF NOT LAST REGISTER
022766  000405                          BR      3$

022770  062706  000004          2$:     ADD     #4,SP
022774                                  DODU    LOGDEV

023002  013737  002252  000004  3$:     MOV     SAVE4,4
023010  013737  002254  000006          MOV     SAVE6,6
023016                                  ENDAUTO
```

CLEANUP CODING SECTION

```
                                .SBTTL  CLEANUP CODING SECTION
                                ;///////////////////////////////////////////////////////////
                                ;/ THE CLEANUP CODING SECTION CONTAINS THE CODING THAT IS PERFORMED
                                ;/ AT THE END OF EACH PASS.
                                ;///////////////////////////////////////////////////////////

023020                                  BGNCLN



023020                                  BRESET

023022                                  ENDCLN
```

CLEANUP CODING SECTION

```
                                .SBTTL  DROP UNIT SECTION

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

023024                                  BGNDU



                                        .EVEN

023024                                  PRINTF  @DROPD,R0       ;UNIT DROPPED

023046                                  EXIT    DU



                                        .NLIST  BEX
023052  045  116  045  DROPD:  .ASCIZ  /%N%A UNIT %D2%A DROPPED/
                                        .LIST   BEX
                                        .EVEN

023102                                  ENDDU
```

ADD UNIT SECTION

```
                                .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.
                                ;////////////////////////////////////////////////////////////////////


023104                                  BGNAU
023104                                  ENDAU
```

HARDWARE TESTS

```
                                .SBTTL  HARDWARE TESTS


                                ;START OF CODE BLOCK WHICH IS USED AS DATA
023106                          ROMMAP::++
                                ; TEST TO ...
                                ;--



                                ;       BGNTST


                                ;       EXIT    TST


                                        .EVEN
                                ;       ENDTST
```

HARDWARE TESTS

```
                                        BADHEAD
                                ;********************* TEST1 ************************
                                        ;*VERIFY THAT REFERENCING UNIBUS DEVICE REGISTERS
                                        ;*DOES NOT CAUSE A TIME OUT TRAP
                                        BADHEAD
                                ;********************* TEST1 ************************

                                BGNTST
023106                                  MOV     KMVCSR,R1       ;R1 CONTAINS KMV11 ADDRESSES
023106  013701  012450                  MOV     #7,R5           ;7 REGISTERS TO BE TESTED
023112  012705  000007                  MOV     #2$,4           ;SET OUT TIMEOUT TRAP
023116  012737  023154  000004          MOV     #340,6          ;LEVEL 7                        ;JB REV A-0
                                ;       MOV     #300,6          ;LEVEL 6                        ;JB REV A-0
023124  012737  000300  000006          TST     (R1)            ;REFERENCE DEVICE REGISTERS
023132  005711                  1$:     NOP
023134  000240                          ESCAPE  TST
023136                                  ADD     #2,R1           ;NEXT REGISTER
023142  062701  000002                  DEC     R5              ;DEC REGISTER COUNT
023146  005305                          BNE     1$              ;BR IF NOT LAST REGISTER
023150  001370                          BR      3$
023152  000413
                                2$:     ADD     #4,SP
023154  062706  000004                  MOV     R1,ADDR
023160  010137  002354                  MOV     UUT,UNIT
023164  013737  012432  012422          ERRHRD  0,TIM,PADFLT    ;TIME OUT ERROR
023172
023202  013737  002252  000004  3$:     MOV     SAVE4,4
023210  013737  002254  000006          MOV     SAVE6,6
023216                                  ESCAPE  TST

023222                          ENDTST
                                .EVEN
```

HARDWARE TESTS

```
                                BADHEAD
                                ;********************* TEST2 *************************
                                ;CHECK PROM REVISION TO SEE IF COMPATIBLE WHITH DIAGNOSTIC
                                BADHEAD
                                ;********************* TEST2 *************************



                                STARS 1
                                ;READ LOCATION 2 OF THE PROM (ADDRESS 160002) WHICH CONTAINS PROM VERSION
                                ;       NUMBER
                                ;CHECK IF DIAGNOSTIC AND PROM ARE COMPATIBLE AND GIVE AN ERROR IF NOT
                                STARS 1



                                BGNTST
023224  004737  014372                 JSR     PC,CLRKMV               ;CLEAR ALL REGISTERS
023230  004737  014474                 JSR     PC,MAINM1               ;SET MAINT MODE

023234  004537  014632         RFVPRO: JSR     R5,READ                 ;READ LOCATION 160002
023240  160002                         .WORD   160002

023242  023737  012424  012366         CMP     GDREV,BAD               ;LOOK IF COMPATIBLE
023250  001410                         BEQ     1$                      ;YES

023252                                 ERRHRD  7,EM0035                ;REPORT THE ERROR
023262  004737  012732                 JSR     PC,CHKMAX               ;CHECK IF TOO MANY ERROR
023266                                 ESCAPE TST
023272                          1$:
023272                          ENDTST
```

J6

HARDWARE TESTS

```
2920
2921
2922 023274                    BADHEAD
                               ;********************** TEST3 ************************
2923                           ;REAL TIME CLOCK TEST
2924 023274                    BADHEAD
                               ;********************** TEST3 ************************
2925
2926
2927
2928
2929
2930
2931 023274                    STARS 1
2932                           ;THIS TEST CHECK KMV11 REAL TIME CLOCK.
2933                           ;THE DCT11 FULLY EXECUTE THIS MICRO TEST AND GIVE A RESULT VIA CSR'S
2934                           ;TO THE HOST.  (TIMING IN CHECKED BY DCT11)
2935                           ;
2936                           ;
2937                           ;TEST DESCRIPTION:
2938                           ;
2939                           ;DCT11 ENABLE KMV11 CLOCK,AND THEN SET UP A 80 MS PERIODE CLOCK.
2940                           ;
2941                           ;DCT11 WAIT FOR AT LEAST 80 MS AND CHECK IF AN INTERUPT OCCUR
2942                           ;ON DCT11 CHIP AT VECTOR 130
2943                           ;
2944                           ;
2945                           ;DCT11 TURN OF CLOCK, WAIT AGAIN FOR MORE THAN 80 MS AND CHECK THAT
2946                           ;NO INTERUPT OCCUR
2947                           ;
2948                           ;ERROR REPORTING:       BSEL0=200        IF TIMEOUT DURING TEST
2949                           ;                       BSEL0=100        IF ERROR DURING TEST
2950                           ;                       BSEL0=TEST NUB   IF NO KMV11 ANSWER
2951                           ;                       BSEL0=0          IF TEST IS OK
2952                           ;
2953                           ;IF ERROR               SEL6=1           IF NO INTERUPT OCCUR
2954                           ;                       SEL6=2           IF BAD VECTOR
2955                           ;                       SEL6=4           IF INTERUPT OCCUR WHEN CLOCK
2956                           ;                                        IS NOT ENABLE
2957                           ;                       SEL6=10          INTERUPT OCCUR TOO EARLY
2958                           ;
2959                           ;
2960                           ;
2961                           ;                       SEL2=EXPECTED VECTOR
2962                           ;
2963                           ;
2964                           ;
2965                           ; MICRO TEST NB= 27
2966                           ;
2967                           ;
2968                           ;
2969                           ;
2970                           ;
2971                           ;CAUTION:        KMV11 CRISTAL FREQUENCY CAN'T BE CHECKED WITH THIS TEST;
2972                           ;                FOR THAT THE OPERATOR MUST SCOPE THE CRISTAL SIGNAL
2973                           ;                DIRECTLY ON THE MODULE ON IC Y2 (13824 KHZ)
2974 023274                   STARS   1
```

HARDWARE TESTS

```
2976
2977 023274                                BGNTST
2978 023274  004737  014372                       JSR     PC,CLRKMV               ;CLR REG
2979 023300  004737  014474                       JSR     PC,MAINM1               ;SET MAINT MODE
2980 023304  004537  014556                RTCLK: JSR     R5,TSTNUB
2981 023310  000027                              .WORD   27
2982
2983 023312                                      WAITB   0,2                     ;WAIT FOR TEST EXECUTION
2984
2985
2986 023332  004737  013074                       JSR     PC,TSTERR               ;CHECK BSELO
2987 023336  000522                              BR      1$                      ;TEST OK
2988 023340  000423                              BR      2$                      ;TIMEOUT ERROR
2989 023342  000432                              BR      3$                      ;NO KMV ANSWER
2990
2991
2992 023344  022777  000001  167104              CMP     @#1,@KMVP06             ;ERROR DURING TEST ,SEE WHICH ONE
2993 023352  001436                              BEQ     4$                      ;NO INTERUPT OCCUR
2994
2995 023354  022777  000002  167074              CMP     @#2,@KMVP06
2996 023362  001442                              BEQ     5$                      ;INT ON BAD VECTOR
2997
2998 023364  022737  000004  012456              CMP     #4,KMVP06
2999 023372  001454                              BEQ     6$                      ;INT OCCUR WHEN CLOCK IS DESABLE
3000
3001
3002
3003 023374  022737  000010  012456              CMP     #10,KMVP06              ;INTERUPT OCCUR TOO EARLY
3004 023402  001460                              BEQ     7$
3005
3006 023404  000137  023564                       JMP     10$                     ;WRONG KMV11 ANSWER
3007
3008
3009
3010
3011 023410                                2$:    ERRHRD  8,EM0006                ;TIMEOUT ERROR
3012 023420  004737  012732                       JSR     PC,CHKMAX               ;CHECK IF TOO MANY ERROR
3013 023424                                      ESCAPE  TST
3014
3015
3016
3017 023430                                3$:    ERRHRD  9,EM0004                ;NO KMV11 ANSWER
3018 023440  004737  012732                       JSR     PC,CHKMAX               ;CHECK IF TOO MANY ERROR
3019 023444                                      ESCAPE  TST
3020
3021
3022 023450                                4$:    ERRHRD  10,EM0011               ;NO INTERUPT OCCUR
3023 023460  004737  012732                       JSR     PC,CHKMAX               ;CHECK IF TOO MANY ERROR
3024 023464                                      ESCAPE  TST
3025
3026
3027
3028 023470  017737  166760  012374        5$:    MOV     @KMVP04,VECT            ;READ BAD VECT
3029 023476  012737  000130  002264              MOV     #130,GOOD
3030 023504                                      ERRHRD  11,EM0007               ;INTERUPT OCCUR AT A BAD VECTOR
3031 023514  004737  012732                       JSR     PC,CHKMAX               ;CHECK IF TOO MANY ERROR
3032 023520                                      ESCAPE  TST
```

L6

HARDWARE TESTS

```
3033
3034
3035 023524                          6$:    ERRHRD  12,EM0036          ;INT OCCUR WHEN CHIP IS DESABLE
3036 023534  004737  012732                 JSR     PC,CHKMAX           ;CHECK IF TOO MANY ERROR
3037 023540                                 ESCAPE  TST
3038
3039
3040
3041
3042 023544                          7$:    ERRHRD  13,EM0023          ;INTERUPT OCCUR TOO EARLY ON KMV11
3043 023554  004737  012732                 JSR     PC,CHKMAX           ;CHECK IF TOO MANY ERROR
3044 023560                                 ESCAPE  TST
3045
3046
3047
3048
3049
3050
3051 023564                          10$:   ERRHRD  14,EM0024          ;INCORRECT KMV11 RESULT
3052 023574  004737  012732                 JSR     PC,CHKMAX           ;CHECK IF TOO MANY ERROR
3053 023600                                 ESCAPE  TST
3054
3055
3056
3057
3058 023604  000240                   1$:    NOP
3059 023606                          ENDTST
3060
3061
3062
```

```
HARDWARE TESTS

 3064 023610                    BADHEAD
                                ;********************* TEST4 ************************
 3065                           ;BAUD RATE GENERATOR TEST
 3066 023610                    BADHEAD
                                ;********************* TEST4 ************************
 3067
 3068
 3069
 3070
 3071
 3072
 3073
 3074
 3075 023610                    STARS 1
 3076                           ;THIS TEST READ THE STATUS AND THE OUTPUT OF THE BAUD RATE GENERATOR
 3077                           ;DURING EACH PHASE OF THE CLOCK PULSE.
 3078                           ;NOTE:THIS TEST AND ALL THE VERIFICATIONS ARE MADE BY THE DCT11 WHICH
 3079                           ;ONLY GIVE TEST RESULT VIA CSR'S TO THE HOST(TIMING IS CHECKED BY DCT11)
 3080                           ;
 3081                           ;
 3082                           ;TEST DESCRIPTION:
 3083                           ;       -DCT11 LOAD GENERATOR COUNT WITH MAX COUNT (=+4.74 MSEC)
 3084                           ;
 3085                           ;       -READ BACK GENERATOR COUNT ,STATUS AND VALIDATE REPONSE.
 3086                           ;
 3087                           ;
 3088                           ;
 3089                           ;
 3090                           ;       STEP 1:READ COUNT AFTER STARTING CLOCK
 3091                           ;              CLOCK COUNT MUST BE NEGATIVE
 3092                           ;              OUTPUT MUST BE = 1
 3093                           ;
 3094                           ;
 3095                           ;
 3096                           ;               ERROR REPORTING:
 3097                           ;               IF COUNT=POSITIVE       BSEL0=100=ERROR
 3098                           ;                                       SEL6 =1   =GENE COUNT CAN'T BE READ OR
 3099                           ;                                                  WRITEN CORRECTLY
 3100                           ;               IF OUTPUT=0             BSEL0=100=ERROR
 3101                           ;                                       SEL6 =2   =GENE OUTPUT IS NOT CORRECT
 3102                           ;
 3103                           ;       STEP 2:  WAIT 2.5MSEC AND READ BACK AGAIN GENERATOR COUNT AND STATUS
 3104                           ;                OUTPUT MUST BE = 0
 3105                           ;
 3106                           ;
 3107                           ;
 3108                           ;
 3109                           ;               ERROR REPORTING:
 3110                           ;               IF OUTPUT =1            BSEL0=100= ERROR
 3111                           ;                                       SEL6=10   =OUTPUT ISN'T IN A GOOD STATE
 3112                           ;
 3113                           ;       STEP3:WAIT 2.5 MSEC MORE AND READ BACK AGAIN GENERATOR COUNT AND STATUS
 3114                           ;             OUTPUT MUST BE = 1
 3115                           ;
 3116                           ;
 3117                           ;
 3118                           ;
```

HARDWARE TESTS

```
                                ;       ERROR REPORTING:
                                ;
                                ;               IF OUTPUT=0             BSEL0=100=ERROR
                                ;                                       SEL6=40  =NO ACTION ON GENERATOR OUTPUT
                                ;       -ELSE EXIT
                                ;
                                ;
                                ;
                                ;
                                ;TEST 30=       TEST GENERATOR A
023610                          STARS 1
```

HARDWARE TESTS

```
3131 023610                                BGNTST
3132 023610  004737  014372                       JSR     PC,CLRKMV          ;CLR REG
3133 023614  004737  014474                       JSR     PC,MAINM1          ;SET MAINT MODE
3134 023620  004537  014556                       JSR     R5,TSTNUB
3135 023624  000030                               .WORD   30
3136
3137
3138 023626                                BDRGEN: WAITB   0,1                ;WAIT FOR TEST EXECUTION
3139
3140 023646  004737  013074                       JSR     PC,TSTERR          ;CHECK BSEL0 TO SEE IF ERROR
3141 023652  000137  024052                       JMP     BDROK0             ;TEST OK BR AT END
3142 023656  000402                               BR      2$                 ;TIME OUT ERROR
3143 023660  000401                               BR      2$                 ;NO KMV11 ANSWER
3144 023662  000410                               BR      3$                 ;ERROR DURING TEST
3145
3146
3147
3148 023664                                2$:     ERRHRD  15,EM0004          ;NO KMV11 ANSWER
3149 023674  004737  012732                       JSR     PC,CHKMAX          ;CHECK IF TOO MANY ERROR
3150 023700                                       ESCAPE  TST
3151
3152
3153
3154 023704                                3$:                                ;LOOK WHICH ERROR
3155 023704  017737  166546  002320               MOV     @KMVP06,SEL6       ;READ SEL6
3156 023712  022737  000001  002320               CMP     #1,SEL6            ;LOOK IF ERROR 1
3157 023720  001010                               BNE     4$                 ;NO
3158
3159 023722                                       ERRHRD  16,EM0012          ;GENE COUNT CAN'T BE READ OR WRITTE CORRECTLY
3160 023732  004737  012732                       JSR     PC,CHKMAX          ;CHECK IF TOO MANY ERROR
3161 023736                                       ESCAPE  TST
3162
3163
3164 023742  022737  000002  002320  4$:         CMP     #2,SEL6            ;LOOK IF ERROR 2
3165 023750  001010                               BNE     5$                 ;NO
3166
3167
3168
3169 023752                                       ERRHRD  17,EM0013          ;GENE OUTPUT ISN'T IN A GOOD STATE
3170 023762  004737  012732                       JSR     PC,CHKMAX          ;CHECK IF TOO MANY ERROR
3171 023766                                       ESCAPE  TST
3172
3173
3174
3175 023772  022737  000010  002320  5$:         CMP     #10,SEL6           ;EROR10?
3176 024000  001414                               BEQ     GENOUT
3177 024002  022737  000040  002320               CMP     #40,SEL6
3178 024010  001410                               BEQ     GENOUT
3179
3180 024012                                       ERRHRD  18,EM0024          ;WRONG KMV11 ANSWER
3181 024022  004737  012732                       JSR     PC,CHKMAX          ;CHECK IF TOO MANY ERROR
3182 024026                                       ESCAPE  TST
3183
3184
3185
3186
3187
```

```
HARDWARE TESTS

   3188
   3189 024032                          GENOUT: ERRHRD  19,EM0014               ;NO ACTION ON GENERATOR OUTPUT
   3190 024042  004737  012732                  JSR     PC,CHKMAX               ;CHECK IF TOO MANY ERROR
   3191 024046                                  ESCAPE TST
   3192
   3193
   3194
   3195 024052                          BDROK0:
   3196 024052                          ENDTST
```

HARDWARE TESTS

```
                        BADHEAD
                        ;********************* TESTS ************************
                        ;TRANSMIT DIFFERENT FRAMES (OF 500 WORDS) AT 1,2 KBAUDS SPEED IN
                        ;INTERNAL MODE WITHOUT ANY INTERUPT ON CHANNEL A .
                        BADHEAD
                        ;********************* TESTS ************************




                        STARS 1
                        ;QBUS WRITE DIFFERENT TX TABLE OF 500 WORDS, LOAD IN KMV11 CSR'S
                        ;THE TX AND RX TABLE ADDRESS ,THE TABLE LENGTH AND TRANSFER SPEED
                        ;
                        ;
                        ;DCT11 EXECUTE THE TRANSFER IN INTERNAL MODE ON CHA  AND WRITE BACK
                        ;IN RX TABLE (TRANSFER FROM QBUS TO KMV11 =DMA)
                        ;QBUS CHECK BSEL0 TO SEE THE STATUS OF THE TEST AND IF TEST DONE CHECK IF
                        ;RX TABLE =TX TABLE
                        ;
                        ;
                        ;PARAMETERS SELECTION:
                        ;       SEL2=   TX TABLE ADDRESS
                        ;       SEL4=   TX TABLE LENGTH
                        ;       BSEL6=  EXTENDED ADDRESS OF TX TABLE
                        ;       BSEL7=     "         "       RX    "
                        ;       SEL12=  RX TABLE ADDRESS
                        ;       SEL14=  SPEED SELECTION
                        ;       BSEL16= ERROR STATUS
                        ;       SEL10=  RECEIVED BYTE COUNT     DIFFERENCE BETWEEN RX AND TX TABLE
                        ;                                       >0  IF TX>RX
                        ;                                       <0  IF TX<RX
                        ;       BSEL0=  TEST STATUS
                        ;
                        ;
                        ;TEST STATUS DESCRIPTION:
                        ;       BSEL0=  0       =TEST DONE CHECK RX TABLE
                        ;       BSEL0=  200     =TIMEOUT ERROR
                        ;       BSEL0=  TSTNB   =NO KMV11 ANSWER
                        ;       BSEL0=  100     =ERROR DURING TEST ,IN THAT CASE SEE WHICH KIND OF
                        ;                                ERROR BY TESTING BSEL16.
                        ;
                        ;
                        ;ERROR STATUS DESCRIPTION:
                        ;
                        ;       WHEN BSEL0=100,GIVE STATUS AND WORD COUNT DISCREPANCY
                        ;
                        ;
                        ;       BSEL16= BIT14=1 =FCS ERROR
                        ;       BSEL16= BIT13=1 =OVERRUN ERROR
```

HARDWARE TESTS

```
                                ;       BSEL16= BIT8 =1 =ILLEGAL INTERUPT ERROR
                                ;       BSEL16= BIT7 =1 =RX ABORT ERROR
                                ;       BSEL16= BIT6 =1 =UNDERRUN ERROR
                                ;       BSEL16= BIT5 =1 =WORD COUNT DISCREPANCY
                                ;       BSEL16= BIT4 =1 =DMA IN TIMEOUT ERROR
                                ;       BSEL16= BIT3 =1 =DMA OUT TIMEOUT ERROR
                                ;       BSEL16= BIT2 =1 =CLOCK PROBLEM (NO BUFFER EMPTY)
                                ;       BSEL16= BIT1 =1 =DATA COMPARE ERROR BETWEEN TX AND RX TABLE (USED
                                ;                                                   ONLY DURING SELF TEST)
                                ;
                                ;MICRO DIAG TEST DESCRIPTION:
                                ;TEST 36        =TRANSMIT  FRAMES AT 1,2KB SPEED ON CHANNEL A WITHOUT INTERUPT
                                ;
                                ;
024054                          STARS 1
```

HARDWARE TESTS

```
3269 024054                                BGNTST
3270 024054  004737  014372                       JSR     PC,CLRKMV               ;CLR REG
3271 024060  005037  012400                       CLR     CHANEL
3272 024064  005037  002256                       CLR     FLAG
3273 024070  004737  014474                       JSR     PC,MAINM1               ;SET MAINT MODE
3274 024074  012737  000500  012410               MOV     #500,LENGTH             ;SELECT LENGTH
3275
3276 024102  012737  013224  012406               MOV     #KB1.2,TSPEED           ;SELECT SPEED
3277
3278 024110  012703  000001         INTTX:  MOV     #1,R3                   ;SELECT A PATTERN
3279
3280
3281 024114  005203                TXSTAR: INC     R3                      ;NEW ONE
3282 024116                                BREAK
3283 024120  013704  012410                MOV     LENGTH,R4               ;LOAD LENGTH
3284 024124  012702  002362                MOV     #TTABLE,R2              ;TX TABLE ADDRESS
3285 024130  004737  013152         10$:    JSR     PC,GENER                ;WRITE TX TABLE
3286 024134  013722  012372                MOV     DATA,(R2)+
3287 024140  005304                        DEC     R4                      ;ALL DONE?
3288 024142  001372                        BNE     10$
3289
3290
3291
3292 024144  013704  012410                MOV     LENGTH,R4
3293 024150  012702  006362                MOV     #RTABLE,R2              ;CLEAR RX TABLE
3294 024154  005022         11$:    CLR     (R2)+
3295 024156  005304                        DEC     R4
3296 024160  001375                        BNE     11$
3297
3298
3299
3300
3301 024162  013777  012406  166274        MOV     TSPEED,@KMVP14          ;SEND TX SPEED
3302 024170  012777  002362  166254        MOV     #TTABLE,@KMVP02         ;SEND TX TABLE ADDRESS
3303 024176  013777  012410  166250        MOV     LENGTH,@KMVP04          ;LOAD TX TABLE ADDRESS
3304 024204  012777  006362  166250        MOV     #RTABLE,@KMVP12         ;LOAD RX TABLE ADDRESS
3305 024212  005077  166240                CLR     @KMVP06
3306
3307
3308
3309
3310
3311 024216  004537  014556                JSR     R5,TSTNUB
3312 024222  000036                        .WORD   36                      ;DO TEST 36= CHA TEST
3313
3314
3315
3316 024224                                WAITB   0,20                    ;WAIT FOR TEST EXECUTION
3317
3318
3319 024244  004737  013074                JSR     PC,TSTERR               ;CHECK BSELO
3320
3321 024250  000427                        BR      6$                      ;TEST OK CHECK RX TABLE
3322 024252  000402                        BR      3$                      ;TIMEOUT ERROR
3323 024254  000401                        BR      3$                      ;NO KMV11 ANSWER
3324 024256  000410                        BR      4$                      ;CHECK SEL16 TO SEE WHICH ONE
3325
```

HARDWARE TESTS

```
3326
3327 024260                          3$:    ERRHRD  25,EM0004              ;NO KMV11 ANSWER
3328 024270  004737  012732                 JSR     PC,CHKMAX              ;CHECK IF TOO MANY ERROR
3329 024274                                 ESCAPE  TST
3330
3331
3332
3333 024300                          4$:                                    ;ERROR DURING TEST READ ERROR STATUS
3334                                                                        ;TO CHECK WHICH ONE
3335
3336 024300  017737  166162  012416        MOV     @KMVP16,STAERR         ;READ ERROR STATUS
3337
3338 024306  017737  166146  012420        MOV     @KMVP10,WRDCNT         ;READ WORD COUNT DISCREPANCY
3339
3340 024314                                 ERRHRD  26,EM0031,PRSTER       ;ERROR WHILE TX,RX FRAMES,GIVE ERROR
3341                                                                        ;GIVE ERROR STATUS,WORD CNT DISCREPANCY
3342 024324                                 ESCAPE  TST
3343
3344
3345
3346
3347
3348
3349
3350
3351 024330  012702  002362          6$:    MOV     #TTABLE,R2             ;LOAD TXTABLE ADDRESS
3352 024334  012705  006362                 MOV     #RTABLE,R5             ;  "  RXTABLE ADDRESS
3353 024340  013704  012410                 MOV     LENGTH,R4              ;TABLE LENGTH
3354
3355 024344  022225                  RXCK:  CMP     (R2)+,(R5)+            ;CHECK RX AND TX TABLE
3356 024346  001007                         BNE     RXERR
3357 024350  005304                         DEC     R4                     ;ALL CHECK?
3358 024352  001374                         BNE     RXCK                   ;NO BRANCH
3359
3360
3361
3362 024354  022703  000005                 CMP     #5,R3                  ;ALL KIND OF PATTERN DONE?
3363 024360  001255                         BNE     TXSTAR                 ;NO TRY WHI H NEW ONE
3364
3365 024362  000137  024504                 JMP     RXEND
3366
3367 024366  162705  000002          RXERR: SUB     #2,R5
3368 024372  162702  000002                 SUB     #2,R2
3369
3370 024376  011237  012402                 MOV     (R2),TXDATA
3371 024402  011537  012404                 MOV     (R5),RXDATA
3372
3373 024406  005737  002256                 TST     FLAG                   ;LOOK IF 1ST ERROR
3374 024412  001014                         BNE     7$
3375
3376 024414                                 ERRHRD  27,EM0015,PFRAME       ;DATA CMP ERROR
3377 024424  005237  002256                 INC     FLAG
3378 024430  062702  000002                 ADD     #2,R2                  ;POINT NEXT ADDRESS
3379 024434  062705  000002                 ADD     #2,R5
3380 024440  000137  024344                 JMP     RYCK
3381
3382 024444                          7$:    ERRHRD  27,0,PRAMEF            ;SHORT REPORT
```

```
HARDWARE TESTS

   3383 024454  005237  002256                  INC     FLAG
   3384 024460  062702  000002                  ADD     #2,R2
   3385 024464  062705  000002                  ADD     #2,R5           ;POINT NEXT ADDRESS
   3386 024470  022737  000010  002256          CMP     #10,FLAG        ;LOOK IF 10 REPORT
   3387 024476  001322                          BNE     RXCK
   3388
   3389 024500                                  ESCAPE  TST
   3390
   3391
   3392 024504                          RXEND:
   3393
   3394
   3395
   3396 024504                          ENDTST
```

HARDWARE TESTS

```
3398
3399
3400
3401 024506                     BADHEAD
                                ;********************** TEST6 *************************
3402                            ;TRANSMIT DIFFERENT  FRAME OF VARIOUS LENGTH (FROM 2BYTES TO 2K BYTES)
3403                            ;AT 64 KBAUDS IN INTERNAL  MODE ON CHANNEL A  (TRANSMISSION WITH INTERUPT)
3404 024506                     BADHEAD
                                ;********************** TEST6 *************************
3405
3406
3407
3408
3409
3410
3411
3412 024506                     STARS 1
3413                            ;QBUS WRITE DIFFERENT TX TABLE OF VARIOUS LENGTH, LOAD IN KMV11 CSR'S
3414                            ;THE TX AND RX TABLE ADDRESS ,THE TABLE LENGTH AND TRANSFER SPEED
3415                            ;
3416                            ;
3417                            ;
3418                            ;DCT11 EXECUTE THE TRANSFER IN INTERNAL MODE ON CHA  AND WRITTE BACK
3419                            ;IN RX TABLE
3420                            ;QBUS CHECK BSEL0 TO SEE THE STATUS OF THE TEST AND IF TEST DONE CHECK IF
3421                            ;RX TABLE =TX TABLE
3422                            ;SPEED=64 KBAUDS
3423                            ;
3424                            ;
3425                            ;PARAMETERS SELECTION:
3426                            ;       SEL2=   TX TABLE ADDRESS
3427                            ;       SEL4=   TX TABLE LENGTH
3428                            ;       BSEL6=  EXTENDED ADDRESS OF TX TABLE
3429                            ;       BSEL7=     "          "       RX    "
3430                            ;       SEL12=  RX TABLE ADDRESS
3431                            ;       SEL14=  SPEED SELECTION         (= 154      IF 64KBAUDS)
3432                            ;       BSEL16= ERROR STATUS
3433                            ;       BSEL0=  TEST STATUS
3434                            ;       SEL10=  BYTE COUNT DESCREPANCY      >0   IF TX>RX
3435                            ;                                           <0   IF TX<RX
3436                            ;
3437                            ;
3438                            ;TEST STATUS DESCRIPTION:
3439                            ;       BSEL0=  0       =TEST DONE CHECK RX TABLE
3440                            ;       BSEL0=  200     =TIMEOUT ERROR
3441                            ;       BSEL0=  TSTNB   =NO KMV11 ANSWER
3442                            ;       BSEL0=  100     =ERROR DURING TEST ,LOOK WHICH ONE BY TESTING BSEL16
3443                            ;
3444                            ;
3445                            ;
3446                            ;ERROR STATUS DESCRIPTION:
3447                            ;
3448                            ;       WHEN BSEL0=100,GIVE CONTAINT OF ERROR STATUS AND WORD COUNT DISCREPANCY
3449                            ;
3450                            ;
3451                            ;       BSEL16= BIT14=1 =FCS ERROR
3452                            ;       BSEL16= BIT13=1 =OVERRUN ERROR
```

HARDWARE TESTS

```
                                ;       BSEL16= BIT8 =1 =ILLEGAL INTERUPT ERROR
                                ;       BSEL16= BIT7 =1 =RX ABORT ERROR
                                ;       BSEL16= BIT6 =1 =UNDERRUN ERROR
                                ;       BSEL16= BIT5 =1 =BYTE COUNT DISCREPANCY
                                ;       BSEL16= BIT4 =1 =DMA IN TIMEOUT ERROR
                                ;       BSEL16= BIT3 =1 =DMA OUT TIMEOUT ERROR
                                ;       BSEL16= BIT2 =1 =CLOCK PROBLEM (NO BUFFER EMPTY)
                                ;       BSEL16= BIT1 =1 =DATA COMPARE ERROR BETWEEN TX AND RX TABLE (USE
                                ;                                               ONLY DURING SELF TEST)
                                ;
                                ;
                                ;MICRO DIAG TEST DESCRIPTION:
                                ;TEST 40        =TRANSMIT VARIOUS LENGTH FRAME  AT 64 KBAUDS ON CHANNEL A
                                ;
                                ;
024506                          STARS 1
```

HARDWARE TESTS

```
3470 024506                                BGNTST
3471 024506  004737  014372                JSR     PC,CLRKMV               ;CLR REG
3472 024512  005037  012400                CLR     CHANEL
3473 024516  004737  014474                JSR     PC,MAINM1               ;SET MAINT MODE
3474 024522  005037  002256                CLR     FLAG
3475
3476
3477 024526  012703  000005                MOV     #5,R3                   ;SELECT RANDOM PATTERN
3478                                       ; THE FOLLOWING RATE WAS CHANGED FROM 72KB TO 64KB.
3479                                       ;       MOV     #KB72,TSPEED    ;SELECT SPEED   ;JB REV A-0
3480 024532  012737  000154  012406        MOV     #KB64,TSPEED            ;SELECT SPEED   ;JB REV A-0
3481
3482 024540  012737  000001  012410  TXLTAR: MOV     #1,LENGTH               ;START WITH 2 CHARACTERS
3483
3484 024546  013704  012410        TXLBGN: MOV     LENGTH,R4
3485 024552  012702  002362                MOV     #TTABLE,R2
3486 024556  004737  013152        10$:    JSR     PC,GENER                ;WRITE TX TABLE
3487 024562  013722  012372                MOV     DATA,(R2)+
3488 024566  005304                        DEC     R4
3489 024570  001372                        BNE     10$
3490
3491 024572                                BREAK
3492
3493 024574  013704  012410                MOV     LENGTH,R4               ;CLEAR RX TABLE
3494 024600  012702  006362                MOV     #RTABLE,R2
3495 024604  005022                20$:    CLR     (R2)+
3496 024606  005304                        DEC     R4
3497 024610  001375                        BNE     20$
3498
3499
3500
3501
3502
3503
3504 024612  013777  012406  165644        MOV     TSPEED,@KMVP14          ;SEND TX SPEED
3505 024620  012777  002362  165624        MOV     #TTABLE,@KMVP02         ;   "  TX TABLE ADDRESS
3506 024626  013777  012410  165620        MOV     LENGTH,@KMVP04          ;   "  "    "   LENGTH
3507 024634  012777  006362  165620        MOV     #RTABLE,@KMVP12         ;SEND RX TABLE ADDRESS
3508 024642  005077  165610                CLR     @KMVP06                 ;CLR EXTENDED ADDRESS
3509
3510
3511
3512 024646  004537  014556                JSR     R5,TSTNUB
3513 024652  000040                        .WORD   40                      ;DO TEST 40= CHA TEST
3514
3515 024654                                WAITB   0,2                     ;WAIT FOR TEST EXECUTION
3516
3517
3518 024674  004737  013074                JSR     PC,TSTERR               ;CHECK BSEL0
3519
3520 024700  000427                        BR      6$                      ;TEST OK CHECK RX TABLE
3521 024702  000402                        BR      3$                      ;TIMEOUT ERROR
3522 024704  000401                        BR      3$                      ;NO KMV11 ANSWER
3523 024706  000410                        BR      4$                      ;CHECK SEL16 TO SEE WHICH ONE
3524
3525
3526 024710                          3$:   ERRHRD  28,EM0004               ;NO KMV11 ANSWER
```

HARDWARE TESTS

```
3527 024720  004737  012732          JSR     PC,CHKMAX               ;CHECK IF TOO MANY ERROR
3528 024724                          ESCAPE  TST
3529
3530 024730                  4$:                                     ;ERROR DURING TEST; READ ERROR STATUS
3531                                                                 ;TO SEE WHICH ONE
3532
3533 024730  017737  165532  012416      MOV     @KMVP16,STAERR      ;READ ERROR STATUS
3534
3535 024736  017737  165516  012420      MOV     @KMVP10,WRDCNT      ;READ WORD COUNT DISCREPANCY
3536
3537 024744                          ERRHRD  29,EM0022,PRSTER                ;ERROR WHILE TX,RX FRAMES,GIVE ERROR
3538                                                                 ;GIVE ERROR STATUS,WORD CNT DISCREPANCY
3539 024754                          ESCAPE  TST
3540
3541
3542
3543
3544 024760  012702  002362          6$:     MOV     #TTABLE,R2      ;LOAD TX TABLE ADDRESS
3545 024764  012705  006362              MOV     #RTABLE,R5      ; "   RX    "       "
3546 024770  013704  012410              MOV     LENGTH,R4       ; "   TX TABLE LENGTH
3547
3548
3549 024774  022522                  RXLCK:  CMP     (R5)+,(R2)+     ;CMP TX AND RX TABLE
3550 024776  001015                          BNE     RXLERR          ;BR IF ERROR
3551 025000  005304                          DEC     R4              ;ALL DONE
3552 025002  001374                          BNE     RXLCK           ;NO
3553
3554 025004  062737  000400  012410      ADD     #400,LENGTH         ;CHANGE LENGTH
3555 025012  022737  002000  012410      CMP     #2000,LENGTH        ;IS IT MAX?
3556 025020  100252                      BPL     TXLBGN              ;NO DO TEST AGAIN WHITH NEW TABLE
3557                                                                 ;                           LENGTH
3558
3559 025022  005303                      DEC     R3                  ;SELECT OTHER PATERNS
3560 025024  001245                      BNE     TXLTAR
3561
3562 025026  000137  025150              JMP     RXLEND
3563
3564
3565
3566 025032  162705  000002          RXLERR: SUB     #2,R5
3567 025036  162702  000002              SUB     #2,R2
3568
3569 025042  011237  012402              MOV     (R2),TXDATA
3570 025046  011537  012404              MOV     (R5),RXDATA
3571
3572 025052  005737  002256              TST     FLAG                ;LOOK IF 1ST ERROR
3573 025056  001014                      BNE     30$
3574
3575 025060                          ERRHRD  30,EM0016,PFRAME        ;DATA CMP ERROR
3576 025070  005237  002256              INC     FLAG
3577 025074  062702  000002              ADD     #2,R2               ;POINT NEXT ADDRESS
3578 025100  062705  000002              ADD     #2,R5
3579 025104  000137  024744              JMP     RXCK
3580
3581 025110                  30$:    ERRHRD  30,0,PRAMEF             ;SHORT REPORT
3582 025120  005237  002256              INC     FLAG
3583 025124  062702  000002              ADD     #2,R2
```

HARDWARE TESTS

```
   3584 025130  062705  000002                ADD     #2,R5                   ;POINT NEXT ADDRESS
   3585 025134  022737  000010  002256        CMP     #10,FLAG                ;LOOK IF 10 REPORT
   3586 025142  001314                        BNE     RXLCK
   3587
   3588 025144                                ESCAPE  TST
   3589
   3590
   3591
   3592
   3593 025150                        RXLEND:
   3594 025150                        ENDTST
```

HARDWARE TESTS

```
3596
3597 025152                     BADHEAD
                                ;********************* TEST7 ************************
3598                            ;TRANSMIT DIFFERENT FRAMES OF VARIOUS LENGTH IN EXTERNAL LOOP BACK
3599                            ;MODE ON CHANNEL A   AT 64KB
3600 025152                     BADHEAD
                                ;********************* TEST7 ************************
3601
3602
3603
3604
3605
3606
3607 025152                     STARS 1
3608                            ;
3609                            ;AT BEGINNING OF TEST ,CHECK IF LOOP BACK CONNECTORS ARE INSTALLED
3610                            ;OR NOT:IF NOT INSTALLED = EXIT TEST AND GIVE ERROR MESSAGE
3611                            ;                         **********************************
3612                            ;
3613                            ;
3614                            ;
3615                            ;
3616                            ;
3617                            ;QBUS WRITE DIFFERENT TX TABLE OF VARIOUS LENGTH, LOAD IN KMV11 CSR'S
3618                            ;THE TX AND RX TABLE ADDRESS ,THE TABLE LENGTH AND TRANSFER SPEED (64KB)
3619                            ;
3620                            ;
3621                            ;
3622                            ;DCT11 EXECUTE THE TRANSFER IN EXTERNAL MODE ON CHA  AND WRITE BACK
3623                            ;IN RX TABLE
3624                            ;QBUS CHECK BSEL0 TO SEE THE STATUS OF THE TEST AND IF TEST DONE CHECK IF
3625                            ;RX TABLE =TX TABLE
3626                            ;
3627                            ;
3628                            ;PARAMETERS SELECTION:
3629                            ;       SEL2=   TX TABLE ADDRESS
3630                            ;       SEL4=   TX TABLE LENGTH
3631                            ;       BSEL6=  EXTENDED ADDRESS OF TX TABLE
3632                            ;       BSEL7=     "         "       RX   "
3633                            ;       SEL12=  RX TABLE ADDRESS
3634                            ;       SEL14=  SPEED SELECTION          (=154 IF 64KB)
3635                            ;       BSEL16= ERROR STATUS
3636                            ;       BSEL0=  TEST STATUS
3637                            ;       SEL10=  RECEIVE BYTE COUNT       >0 IF TX>RX
3638                            ;                                        <0 IF TX<RX
3639                            ;
3640                            ;
3641                            ;
3642                            ;TEST STATUS DESCRIPTION:
3643                            ;       BSEL0=  0       =TEST DONE CHECK RX TABLE
3644                            ;       BSEL0=  200     =TIMEOUT ERROR
3645                            ;       BSEL0=  TSTNB   =NO KMV11 ANSWER
3646                            ;       BSEL0=  100     =ERROR DURING TEST ,LOOK WHICH ONE BY TESTING BSEL16
3647                            ;
3648                            ;
3649                            ;
3650                            ;ERROR STATUS DESCRIPTION:
```

HARDWARE TESTS

```
3651                    ;
3652                    ;       WHEN BSEL0=100,GIVE CONTAINT OF ERROR STATUS AND WORD COUNT DISCREPANCY
3653                    ;
3654                    ;
3655                    ;       BSEL16= BIT14=1 =FCS ERROR
3656                    ;       BSEL16= BIT13=1 =OVERRUN ERROR
3657                    ;       BSEL16= BIT8 =1 =ILLEGAL INTERUPT ERROR
3658                    ;       BSEL16= BIT7 =1 =RX ABORT ERROR
3659                    ;       BSEL16= BIT6 =1 =UNDERRUN ERROR
3660                    ;       BSEL16= BIT5 =1 =BYTE COUNT DISCREPANCY
3661                    ;       BSEL16= BIT4 =1 =DMA IN TIMEOUT ERROR
3662                    ;       BSEL16= BIT3 =1 =DMA OUT TIMEOUT ERROR
3663                    ;       BSEL16= BIT2 =1 =CLOCK PROBLEM
3664                    ;       BSEL16= BIT1 =1 =DATA COMPARE ERROR BETWEEN TX AND RX TABLE (USE
3665                    ;                                               ONLY DURING SELF TEST)
3666                    ;
3667                    ;
3668                    ;MICRO DIAG TEST DESCRIPTION:
3669                    ;TEST 42        =TRANSMIT VARIOUS LENGTH FRAME AT 64 KBAUDS SPEED ON CHANNEL A
3670                    ;                       IN EXTERNAL LOOP BACK MODE
3671                    ;
3672                    ;
3673                    ;
3674                    ;
3675                    ;CAUTION:
3676                    ;--------
3677                    ;RUN ONLY WITH EXTERNAL LOOP BACK CONNECTOR:
3678                    ;
3679                    ;
3680                    ;NOTE:
3681                    ;
3682                    ;TO FULLY TEST KMV11 DIAGNOSTIC MUST BE RUN WITH RS422 AND RS423
3683                    ;EXTERNAL LOOP BACK CONECTOR
3684                    ;
3685                    ;EXTERNAL LOOP BACK CONNECTOR:
3686                    ;-----------------------------
3687                    ;KMV11 A CAN OPERATE EITHER IN RS422 OR RS 423 LEVEL CONVERTERS
3688                    ;
3689                    ;
3690                    ;RS422 LOOP BACK:
3691                    ;TO TEST COMPLETELY A KMV11 B IN RS422 MODE ,RUN THIS DIAGNOSTIC
3692                    ;WHITH LOOP BACK CONNECTOR  PLUG :
3693                    ;-USE H3255 TO LOOP DIRECTLY AT THE OUTPUT OF THE MODULE
3694                    ;-USE H3251 PLUG AT THE END OF BC55U MODEM CABLE CONNECTOR ASSY.
3695                    ;
3696                    ;
3697                    ;RS423 LOOP BACK:
3698                    ;TO TEST COMPLETELY A KMV11-A IN RS423 MODE ,RUN THIS DIAGNOSTIC
3699                    ;WHITH LOOP BACK CONNECTOR  PLUG :
3700                    ;-USE H3255 TO LOOP AT THE OUTPUT OF THE MODULE
3701                    ;-USE H3251 PLUG AT THE END OF BC55H MODEM CABLE CONNECTOR ASSY.
3702                    ;
3703                    ;
3704                    ;
3705                    ;RS232 LOOP BACK:
3706                    ;SAME AS FOR RS423.
3707                    ;
```

```
HARDWARE TESTS

   3708                                 ;CAUTION:
   3709                                 ;USE OF H325 LOOP BACK CONNECTOR WILL CAUSE MESSAGES ERROR IN TEST 8.
   3710                                 ;
   3711                                 ;
   3712                                 ;
   3713                                 ;
   3714                                 ;
   3715                                 ;
   3716 025152                          STARS 1
```

HARDWARE TESTS

```
3718 025152                                BGNTST
3719 025152  004737  014372                       JSR     PC,CLRKMV               ;CLEAR REGISTERS
3720 025156  005737  012470                       TST     LOOP                    ;IS LOOP BIT=1?
3721 025162  001012                               BNE     BGNTXA                  ;YES GO ON TEST
3722 025164                                       PRINTF  #MLOOP                  ;NO LOOP BACK CONNFCTOR
3723                                              ;TEST NOT EXECUTED
3724 025204                                       EXIT    TST
3725
3726
3727 025210  004737  014474          BGNTXA:      JSR     PC,MAINM1               ;SET MAINT MODE
3728 025214  005037  002256                       CLR     FLAG
3729
3730 025220  012703  000005                       MOV     #5,R3                   ;SELECT RANDOM PATTERN
3731                                      ; THE FOLLOWING RATE WAS CHANGED FROM 72KB TO 64KB.
3732                                      ;        MOV     #KB72,TSPEED            ;SELECT SPEED   ;JB REV A-0
3733 025224  012737  000154  012406               MOV     #KB64,TSPEED            ;SELECT SPEED   ;JB REV A-0
3734
3735
3736 025232  012737  000001  012410  TXATAR:      MOV     #1,LENGTH               ;1ST TABLE LENGTH(1 WORD)
3737
3738 025240  013704  012410          TXABGN:      MOV     LENGTH,R4
3739 025244                                       BREAK
3740
3741 025246  012702  002362                       MOV     #TTABLE,R2
3742 025252  004737  013152          10$:         JSR     PC,GENER                ;WRITE TABLE
3743 025256  013722  012372                       MOV     DATA,(R2)+
3744 025262  005304                               DEC     R4
3745 025264  001372                               BNE     10$
3746
3747
3748
3749 025266  013704  012410                       MOV     LENGTH,R4               ;CLEAR RX TABLE
3750 025272  012702  006362                       MOV     #RTABLE,R2
3751 025276  005022                  20$:         CLR     (R2)+
3752 025300  005304                               DEC     R4
3753 025302  001375                               BNE     20$
3754
3755
3756
3757
3758
3759
3760
3761 025304  013777  012406  165152               MOV     TSPEED,@#KMVP14         ;SEND TX SPEED
3762 025312  012777  002362  165132               MOV     #TTABLE,@#KMVP02        ;  "  TX TABLE ADDRESS
3763 025320  013777  012410  165126               MOV     LENGTH,@#KMVP04         ;  "  "     "   LENGTH
3764 025326  012777  006362  165126               MOV     #RTABLE,@#KMVP12        ;SEND RX TABLE ADDRESS
3765 025334  005077  165116                       CLR     @#KMVP06                ;CLR EXTENDED ADDRESS
3766
3767
3768
3769
3770
3771 025340  004537  014556          1$:          JSR     R5,TSTNUB
3772 025344  000042                               .WORD   42                      ;DO TEST 42= CHB TEST
3773
3774
```

HARDWARE TESTS

```
3775
3776 025346                          2$:    WAITB   0,3                 ;WAIT FOR TEST EXECUTION
3777
3778
3779 025366  004737  013074                 JSR     PC,TSTERR           ;CHECK BSELO
3780
3781 025372  000427                         BR      6$                  ;TEST OK CHECK RX TABLE
3782 025374  000402                         BR      3$                  ;TIMEOUT ERROR
3783 025376  000401                         BR      3$                  ;NO KMV11 ANSWER
3784 025400  000410                         BR      4$                  ;CHECK SEL16 TO SEE WHICH ONE
3785
3786
3787 025402                          3$:    ERRHRD  32,EM0004           ;NO KMV11 ANSWER
3788 025412  004737  012732                 JSR     PC,CHKMAX           ;CHECK IF TOO MANY ERROR
3789 025416                                 ESCAPE  TST
3790
3791
3792 025422                          4$:                                ;ERROR DURING TEST READ ERROR STATUS
3793                                                                     ;TO CHECK WHICH ONE
3794
3795 025422  017737  165040  012416         MOV     @KMVP16,STAERR      ;READ ERROR STATUS
3796
3797 025430  017737  165024  012420         MOV     @KMVP10,WRDCNT      ;READ WORD COUNT DISCREPANCY
3798
3799 025436                                 ERRHRD  33,FM0022,PRSTER            ;ERROR WHILE TX,RX FRAMES,GIVE ERROR
3800                                                                     ,GIVE ERROR STATUS,WORD CNT DISCREPANCY
3801 025446                                 ESCAPE  TST
3802
3803
3804
3805
3806
3807 025452  012702  002362          6$:    MOV     @TTABLE,R2          ;LOAD TABLE PARAMETERS
3808 025456  012705  006362                 MOV     @RTABLE,R5
3809 025462  013704  012410                 MOV     LENGTH,R4
3810
3811 025466  022225                  RXACK: CMP     (R2)+,(R5)+         ;CHECK TX AND RX TABLE
3812 025470  001015                         BNE     RXAERR
3813 025472  005304                         DEC     R4
3814 025474  001374                         BNE     RXACK
3815
3816 025476  062737  000400  012410         ADD     @400,LENGTH         ;CHANGE LENGTH
3817 025504  022737  002000  012410         CMP     @2000,LENGTH
3818 025512  100252                         BPL     TXABGN
3819 025514  005303                         DEC     R3                  ;SELECT NEW PATERN
3820 025516  001245                         BNE     TXATAR              ;ALL DONE
3821 025520  000137  025642                 JMP     RXAEND
3822
3823
3824
3825 025524  162705  000002          RXAERR: SUB    @2,R5
3826 025530  162702  000002                 SUB     @2,R2
3827
3828 025534  011237  012402                 MOV     (R2),TXDATA
3829 025540  011537  012404                 MOV     (R5),RXDATA
3830
3831 025544  005737  002256                 TST     FLAG                ;LOOK IF 1ST ERROR
```

HARDWARE TESTS

```
3832 025550  001014                          BNE     30$
3833
3834 025552                                  ERRHRD  34,EM0015,PFRAME        ;DATA CMP ERROR
3835 025562  005237  002256                  INC     FLAG
3836 025566  062702  000002                  ADD     #2,R2                   ;POINT NEXT ADDRESS
3837 025572  062705  000002                  ADD     #2,R5
3838 025576  000137  024774                  JMP     RXLCK
3839
3840 025602                          30$:    ERRHRD  34,0,PRAMEF             ;SHORT REPORT
3841 025612  005237  002256                  INC     FLAG
3842 025616  062702  000002                  ADD     #2,R2
3843 025622  062705  000002                  ADD     #2,R5                   ;POINT NEXT ADDRESS
3844 025626  022737  000010  002256          CMP     #10,FLAG                ;LOOK IF 10 REPORT
3845 025634  001314                          BNE     RXACK
3846
3847 025636                                  ESCAPE  TST
3848
3849
3850
3851
3852
3853 025642                          RXAEND:
3854 025642                          ENDTST
```

```
HARDWARE TESTS

   3856
   3857 025644                          BADHEAD
                                        ;********************** TEST8 ************************
   3858                                 ;TEST MODEM SIGNALS IN EXTERNAL LOOP BACK
   3859 025644                          BADHEAD
                                        ;********************** TEST8 ************************
   3860
   3861
   3862
   3863
   3864
   3865
   3866 025644                          STARS 1
   3867                                 ;HOST SET TEST NUMBER 45
   3868                                 ;DCT11 TEST MODEM SIGNAL 105,106,109,111,112,107,108,125,140,141
   3869                                 ;BY SETTING AND CLEARING BIT 105,108,111,141,TIS AND TESTING
   3870                                 ;BIT 106,109,125,107,112,142.
   3871                                 ;
   3872                                 ;IF TEST =OK,DCT11 CLEAR BSEL0
   3873                                 ;IF ERROR SET 100 IN BSEL0 AND REPORT ERROR
   3874                                 ;
   3875                                 ;
   3876                                 ;ERROR REPORT DESCRIPTION:
   3877                                 ;SEL2 INDICATE WHICH MODEM SIGNAL IS TESTED
   3878                                 ;SEL4 INDICATE THE RESULT OF THE TEST
   3879                                 ;SEL10 INDICATE IF IT WAS DURING A CLEAR OR A SET OPERATION
   3880                                 ;
   3881                                 ;SEL 10 BIT 1=0 INDICATE A CLEAR OPERATION ON TESTED MODEM SIGNAL
   3882                                 ;            =1     "      SET      "        "    "      "      "
   3883                                 ;
   3884                                 ;
   3885                                 ;
   3886                                 ;SEL2  FORMAT (TESTED SIGNAL):
   3887                                 ;       ---------------------------------------------------------------
   3888                                 ;       /       /       /       / 141   / TIS   /  111  / 108   / 105   /
   3889                                 ;       ---------------------------------------------------------------
   3890                                 ;        BIT 7   BIT 6   BIT5    BIT4    BIT3    BIT2    BIT1    BIT0
   3891                                 ;
   3892                                 ;
   3893                                 ;
   3894                                 ;RESULT OF TEST (SEL4):
   3895                                 ;
   3896                                 ;
   3897                                 ;       ---------------------------------------------------------------
   3898                                 ;       /       /       / 106   / 125   / 109   /  142  / 112   / 107   /
   3899                                 ;       --------------- -----------------------------------------------
   3900                                 ;        BIT 7   BIT 6   BIT5    BIT4    BIT3    BIT2    BIT1    BIT0
   3901                                 ;
   3902                                 ;
   3903                                 ;
```

HARDWARE TESTS

```
3905
3906                            ;MODEM SIGNAL LINK:
3907                            ;
3908                            ;          SEND                                    RECEIVE
3909                            ;
3910                            ;
3911                            ;
3912                            ;       CCITT 105 (RTS)                         CCITT 106 (CTS)
3913                            ;       ---------------------------------------------------------
3914                            ;                                              /
3915                            ;                                              /
3916                            ;                                              /       CCITT 109 (CD)
3917                            ;                                               ----------------------
3918                            ;
3919                            ;
3920                            ;
3921                            ;       CCITT 108 (DTR)                         CCITT 107 (DSR)
3922                            ;       ---------------------------------------------------------
3923                            ;
3924                            ;
3925                            ;
3926                            ;
3927                            ;       CCITT 111 (DTE)                         CCITT 112 (DCE)
3928                            ;        --------------------------------------------------------
3929                            ;
3930                            ;
3931                            ;
3932                            ;
3933                            ;       CCITT 141 (LL)                          CCITT 142 (TM)
3934                            ;       ---------------------------------------------------------
3935                            ;
3936                            ;
3937                            ;
3938                            ;
3939                            ;       TIS                                             CCITT 125 (RING)
3940                            ;       ---------------------------------------------------------
3941                            ;
3942                            ;
3943                            ;
3944                            ;
3945                            ;
3946                            ;
3947                            ;CAUTION:
3948                            ;--------
3949                            ;RUN ONLY WITH EXTERNAL LOOP BACK CONNECTOR:
3950                            ;
3951                            ;
3952                            ;
3953                            ;TO BE FULLY TESTED ,KMV11 DIAGNOSTIC MUST BE RUN WITH RS422 AND RS423
3954                            ;EXTERNAL LOOP BACK CONECTOR
3955                            ;
3956                            ;EXTERNAL LOOP BACK CONNECTOR:
3957                            ;-----------------------------
3958                            ;KMV11 A CAN OPERATE EITHER IN RS422 OR RS 423 LEVEL CONVERTERS
3959                            ;
3960                            ;
3961                            ;RS422 LOOP BACK:
```

HARDWARE TESTS

```
                                ;TO TEST COMPLETELY A KMV11 B IN RS422 MODE ,RUN THIS DIAGNOSTIC
                                ;WHITH LOOP BACK CONNECTOR  PLUG :
                                ;-USE H3255 TO LOOP DIRECTLY AT THE OUTPUT OF THE MODULE
                                ;-USE H3251 PLUG AT THE END OF BC55U MODEM CABLE CONNECTOR ASSY.
                                ;
                                ;
                                ;RS423 LOOP BACK:
                                ;TO TEST COMPLETELY A KM1V11-A IN RS423 MODE ,RUN THIS DIAGNOSTIC
                                ;WHITH LOOP BACK CONNECTOR  PLUG :
                                ;-USE H3255 TO LOOP AT THE OUTPUT OF THE MODULE
                                ;-USE H3251 PLUG AT THE END OF BC55H MODEM CABLE CONNECTOR ASSY.
                                ;
                                ;
                                ;
                                ;RS232 LOOP BACK:
                                ;SAME AS FOR RS423.
                                ;
                                ;CAUTION:
                                ;USE OF H325 LOOP BACK CONNECTOR WILL CAUSE MESSAGES ERROR IN TEST 8.
                                ;
                                ;
                                ;
                                ;
025644                          STARS 1
```

HARDWARE TESTS

```
                                        BGNTST
                                                JSR     PC,CLRKMV               ;CLEAR ALL REGISTERS
                                                TST     LOOP
                                                BNE     MODSIG                  ;LOOP BACK PRESENT GO ON
                                                PRINTF  @MLOOP                  ;NO LOOP BACK CONNECTOR
                                                                                ;TEST NOT EXECUTED
                                                EXIT    TST                     ;GO TO FOLLOWING TEST
                                        MODSIG: JSR     PC,MAINM1               ;SET MAINTENANCE MODE
                                                JSR     R5,TSTNUB
                                                .WORD   45                      ;SEND TEST 45
                                                WAITB   0,4
                                                JSR     PC,TSTERR               ;CHECK TEST RESULT
                                                BR      3$                      ;TEST OK GO ON
                                                BR      4$                      ;TIMEOUT
                                                BR      4$                      ;NO TEST ANSWER
                                                BR      5$                      ;ERROR DURING TEST ,LOOK WHICH ONE
                                        4$:     ERRHRD  36,EM0004               ;NO ANSWER
                                                ESCAPE TST
                                        5$:     MOV     @KMVP02,GOOD            ;READ WHICH SIGNAL WAS TESTED
                                                MOV     @KMVP04,BAD             ;  "     "   IS THE RESULT OF TEST
                                                MOV     @KMVP10,DATA            ;READ SIGAL VALUE
                                                ERRHRD  37,EM0032,PMODEM        ;REPORT ERROR
                                                ESCAPE  TST
                                        3$:
                                        MODEND:
                                        ENDTST
```

HARDWARE TESTS

```
                                .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.
                                ;////////////////////////////////////////////////////////////////////////////

026024                                  BGNHRD

026026                                  GPRMA   ADDRES,0,0,160000,177776,YES
026036                                  GPRMA   VECTOR,2,0,0,674,YES
026046                                  GPRMD   PRIRTY,4,0,7000,4,7,YES
026060                                  GPRMD   LOOPBK,6,0,1,0,1,YES
026072                                  ENDHRD

026072  115  111  103  ADDRES: .ASCIZ  /MICRO-CPU  CSR ADDRESS : /
026075  122  117  055
026100  103  120  125
026103  040  040  103
026106  123  122  040
026111  101  104  104
026114  122  105  123
026117  123  040  072
026122  040  000
026124  115  111  103  VECTOR: .ASCIZ  /MICRO-CPU VECTOR ADDRESS : /
026127  122  117  055
026132  103  120  125
026135  040  126  105
026140  103  124  117
026143  122  040  101
026146  104  104  122
026151  105  123  123
026154  040  072  040
026157  000
026160  115  111  103  PRIRTY: .ASCIZ  /MICRO-CPU PRIORITY LEVEL : /
026163  122  117  055
026166  103  120  125
026171  040  120  122
026174  111  117  122
026177  111  124  131
026202  040  114  105
026205  126  105  114
026210  040  072  040
```

HARDWARE PARAMETER CODING SECTION

```
                026213  000
                026214  111     123     040     LOOPBK: .ASCIZ  /IS LOOP BACK CONNECTOR PLUGGED? 0=NO,1=YES: /
                026217  114     117     117
                026222  120     040     102
                026225  101     103     113
                026230  040     103     117
                026233  116     116     105
                026236  103     124     117
                026241  122     040     120
                026244  114     125     107
                026247  107     105     104
                026252  077     040     060
                026255  075     116     117
                026260  054     061     075
                026263  131     105     123
                026266  072     040     000
                                                .EVEN
```

SOFTWARE PARAMETER CODING SECTION

```
                                .SBTTL  SOFTWARE PARAMETER CODING SECTION


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

                                        BGNSFT



                                        ENDSFT
```

SOFTWARE PARAMETER CODING SECTION

```
   4115
   4116 026274                          $PATCH::
   4117 026274                                  .BLKW   50
   4118
   4125
   4126 026414                                  LASTAD
        026420                          L$LAST::
   4127 026420                                  ENDMOD
   4128
   4129
```

SOFTWARE PARAMETER CODING SECTION

```
4131
4132
4145
4146 026420                                  BGNSETUP        1
4147 026420                                  BGNPTAB
4148 026424  177000                          .WORD   177000
4149 026426  000300                          .WORD   300
4150 026430  004000                          .WORD   4000
4151 026432  000001                          .WORD   1
4152 026434                                  ENDPTAB
4153 026434                                  ENDSETUP
4154
4155
4156
4157
4158
4159         000001                  .END
```

SYMBOL TABLE

```
ABORT   022660          C$CVEC= 000036          EM0002  015115          GENER1  013274          I$DU  = 000041
ADDR    002354          C$DCLN= 000044          EM0003  015160          GENEX   013432          I$HRD = 000041
ADDRES  026072          C$DODU= 000051          EM0004  015246          GENINC  013424          I$INIT= 000041
ADR   = 000020 G        C$DRPT= 000024          EM0006  015275          GENISH  013302          I$MOD = 000041
ASSEMB= 000010          C$DU  = 000053          EM0007  015336          GENOUT  024032          I$MSG = 000041
BAD     012366          C$EDIT= 000003          EM0011  015416          GENRAN  013304          I$PROT= 000040
BDDAT   002360          C$ERDF= 000055          EM0012  015470          GENROT  013260          I$PTAB= 000041
BDRGEN  023626          C$ERHR= 000056          EM0013  015552          GENR0   013246          I$PWR = 000041
BDROKC  024052          C$ERRO= 000060          EM0014  015716          GENR1   013236          I$RPT = 000041
BGNTXA  025210          C$ERSF= 000054          EM0015  015767          GENSEL  013170          I$SEG = 000041
BIT0  = 000001 G        C$ERSO= 000057          EM0016  016063          GEN0    013210          I$SETU= 000041
BIT00 = 000001 G        C$ESCA= 000010          EM0017  016156          GEN1    013214          I$SFT = 000041
BIT01 = 000002 G        C$ESEG= 000005          EM0022  016243          GEN25   013230          I$SRV = 000041
BIT02 = 000004 G        C$ESUB= 000003          EM0023  016326          GEN52   013222          I$SUB = 000041
BIT03 = 000010 G        C$ETST= 000001          EM0024  016402          GETPRM  022456          I$TST = 000041
BIT04 = 000020 G        C$EXIT= 000032          EM0027  016431          GOOD    002264          J$JMP = 000167
BIT05 = 000040 G        C$GETB= 000026          EM0031  016503          GOOD0   002266          KB1.2 = 013224 G
BIT06 = 000100 G        C$GETW= 000027          EM^032  016577          GOOD1   002270          KB56  = 000174 G
BIT07 = 000200 G        C$GMAN= 000043          EM0033  015646          GOOD10  002300          KB64  = 000154 G
BIT08 = 000400 G        C$GPHR= 000042          EM0035  016663          GOOD12  002302          KB68  = 000146 G
BIT09 = 001000 G        C$GPLO= 000030          EM0036  016755          GOOD14  002304          KB72  = 000141 G
BIT1  = 000002 G        C$GPRI= 000040          END     022724          GOOD16  002306          KIND    012376
BIT10 = 002000 G        C$INIT= 000011          ERRBLK  002226 G        GOOD2   002272          KMTLVL  012446
BIT11 = 004000 G        C$INLP= 000020          ERRCNT  002234          GOOD4   002274          KMVCSR  012450
BIT12 = 010000 G        C$MANI= 000050          ERRMSG  002224 G        GOOD6   002276          KMVLVL  012436
BIT13 = 020000 G        C$MEM = 000031          ERRNBR  002222 G        G$CNTO= 000200          KMVP02  012452
BIT14 = 040000 G        C$MSG = 000023          ERRTYP  002220 G        G$DELM= 000372          KMVP04  012454
BIT15 = 100000 G        C$OPEN= 000034          EVL   = 000004 G        G$DISP= 000003          KMVP06  012456
BIT2  = 000004 G        C$PNTB= 000014          EXADDR  012362          G$EXCP= 000400          KMVP10  012460
BIT3  = 000010 G        C$PNTF= 000017          E$END = 002100          G$HILI= 000002          KMVP12  012462
BIT4  = 000020 G        C$PNTS= 000016          E$LOAD= 000035          G$LOLI= 000001          KMVP14  012464
BIT5  = 000040 G        C$PNTX= 000015          FLAG    002256          G$NO  = 000000          KMVP16  012466
BIT6  = 000100 G        C$QIO = 000377          FTIME   002250          G$OFFS= 000400          KMVV00  012434
BIT7  = 000200 G        C$RDBU= 000007          F$AU  = 000015          G$OFSI= 000376          KMVV02  012442
BIT8  = 000400 G        C$REFG= 000047          F$AUTO= 000020          G$PRMA= 000001          KMVV04  012440
BIT9  = 001000 G        C$RESE= 000033          F$BGN = 000040          G$PRMD= 000002          KMVV06  012444
BOE   = 000400 G        C$REVI= 000003          F$CLEA= 000007          G$PRML= 000000          KMV11A  002000 G
BSEL0   012370          C$RFLA= 000021          F$DU  = 000016          G$RADA= 000140          LENGTH  012410
BSEL1   002332          C$RPT = 000025          F$END = 000041          G$RADB= 000000          LOCK    002230
CBSEL0  013644          C$SEFG= 000046          F$HARD= 000004          G$RADD= 000040          LOE   = 040000 G
CHANEL  012400          C$SPRI= 000041          F$HW  = 000013          G$RADL= 000120          LOGDEV  002242
CHKMAX  012732          C$SVEC= 000037          F$INIT= 000006          G$RADO= 000020          LOKFLG  012430
CKALL   013702          C$TPRI= 000013          F$JMP = 000050          G$XFER= 000004          LOOP    012470
CKREG   014150          DATA    012372          F$MOD = 000000          G$YES = 000010          LOOPBK  026214
CKSEL0  013612          DATA1 = 052525 G        F$MSG = 000011          HELP  = 000000          LOT   = 000010 G
CLRKMV  014372          DATA2 = 125252 G        F$PROT= 000021          HOE   = 100000 G        L$ACP   002110 G
COUNT   002350          DELCT1  002260          F$PWR = 000017          IBE   = 010000 G        L$APT   002036 G
C$AU  = 000052          DELCT2  002262          F$RPT = 000012          IDU   = 000040 G        L$AU    023104 G
C$AUTO= 000061          DFPTBL  002154 G        F$SEG = 000003          IER   = 020000 G        L$AUT   002070 G
C$BRK = 000022          DIAGMC= 000000          F$SOFT= 000005          INIFLG  012426          L$AUTO  022726 G
C$BSEG= 000004          DROPD   023052          F$SRV = 000010          INTFLG  012364          L$CCP   002106 G
C$BSUB= 000002          EF.CON= 000036 G        F$SUB = 000002          INTTX   024110          L$CLEA  023020 G
C$CEFG= 000045          EF.NEW= 000035 G        F$SW  = 000014          ISR   = 000100 G        L$CO    002032 G
C$CLCK= 000062          EF.PWR= 000034 G        F$TEST= 000001          IXE   = 004000 G        L$DEPO  002011 G
C$CLEA= 000012          EF.RES= 000037 G        GDDAT   002356          I$AU  = 000041          L$DESC  002164 G
C$CLOS= 000035          EF.STA= 000040 G        GDREV   012424          I$AUTO= 000041          L$DESP  002076 G
C$CLP1= 000006          EM0001  015021          GENER   013152          I$CLN = 000041          L$DEVP  002060 G
```

SYMBOL TABLE

```
L$DISP  002132 G    L10016  022240      O$BGNS= 000000      RXEND   024504      T$NSO = 000000
L$DLY   002116 G    L10017  022724      O$DU  = 000001      RXERR   024366      T$NS1 = 000005
L$DTP   002040 G    L10020  023016      O$ERRT= 000000      RXLCK   024774      T$PCNT= 000000
L$DTYP  002034 G    L10021  023022      O$GNSW= 000001      RXLEND  025150      T$PTAB= 010037
L$DU    023024 G    L10022  023102      O$POIN= 000001      RXLERR  025032      T$PTHV= 000001
L$DUT   002072 G    L10023  023104      O$SETU= 000001      SAVE4   002252      T$PTNU= 000001
L$DVTY  012672 G    L10024  023222      PADFLT  021506 G    SAVE6   002254      T$SAVL= 177777
L$EF    002052 G    L10025  023272      PBSELO  021544 G    SAVPC   002244      T$SEGL= 177777
L$ENVI  002044 G    L10026  023606      PFRAME  021704 G    SAVPC1  002344      T$SIZE= 000006
L$ERRT  002220 G    L10027  024052      PMODEM  021774 G    SAVREG  013452      T$SUBN= 000000
L$ETP   002102 G    L10030  024504      PNT   = 001000 G    SAVSTA  002346      T$TAGL= 177777
L$EXP1  002046 G    L10031  025150      PRALL   020716 G    SEL0    002310      T$TAGN= 010041
L$EXP4  002064 G    L10032  025642      PRAMEF  022120 G    SEL1    002312      T$TEMP= 000000
L$EXP5  002066 G    L10033  026022      PRI   = 002000 G    SEL10   002322      T$TEST= 000010
L$HARD  026026 G    L10034  026072      PRINT   020656 G    SEL12   002324      T$TSTM= 177777
L$HIME  002120 G    L10035  026274      PRIRTY  026160      SEL14   002326      T$TSTS= 000001
L$HPCP  002016 G    L10036  026424      PRI00 = 000000 G    SEL16   002330      T$$AU = 010023
L$HPTP  002022 G    L10040  026434      PRI01 = 000040 G    SEL2    002314      T$$AUT= 010020
L$HW    002154 G    MAINM1  014474      PRI02 = 000100 G    SEL4    002316      T$$CLE= 010021
L$ICP   002104 G    MAINT0= 054000 G    PRI03 = 000140 G    SEL6    002320      T$$DAT= 010040
L$INIT  022242 G    MAINT1= 044000 G    PRI04 = 000200 G    SETUP   022374      T$$DU = 010022
L$LADP  002026 G    MAXERR  002232      PRI05 = 000240 G    SSTACK  012672      T$$HAR= 010034
L$LAST  026420 G    MAXPRI= 000300 G    PRI06 = 000300 G    STAERR  012416      T$$HW = 010001
L$LOAD  002100 G    MBSELO  017612      PRI07 = 000340 G    SVCGBL= 000000      T$$INI= 010017
L$LUN   002074 G    MCLR  = 040000 G    PRREG   021226 G    SVCINS= 177777      T$$MSG= 010015
L$MREV  002050 G    MFRAM1  020006      PRSELO  020616 G    SVCSUB= 177777      T$$PC = 000001
L$NAME  002000 G    MFRAM2  020064      PRSTER  022154 G    SVCTAG= 177777      T$$PRO= 010000
L$PRIO  002042 G    MINT    017556      PRT11V  021644 G    SVCTS = 177777      T$$PTA= 010037
L$PROT  002122 G    MLOOP   020537      PSTACK  002246      SVCTST= 177777      T$$RPT= 010016
L$PRT   002112 G    MODEM1  020243      PVECT   021604 G    S$LSYM= 010000      T$$SOF= 010035
L$REPP  002062 G    MODEM2  020307      QV.FLG  012431      TFM36   014733      T$$TES= 010033
L$REV   002010 G    MODEM3  020346      RANCLC  013404      TIM     014716      T1      023106 G
L$RPT   022234 G    MODEM4  020411      RANDN   002342      TSPEED  012406      T2      023224 G
L$SOFT  026274 G    MODEND  026022      RANEX   013422      TSTERR  013074      T3      023274 G
L$SPC   002056 G    MODSIG  025702      RANGEN  013324      TSTNUB  014556      T4      023610 G
L$SPCP  002020 G    MRAMEF  020466      RANMTA  002340      TTABLE  002362      T5      024054 G
L$SPTP  002024 G    MREG0   017116      RANSEC  013410      TXABGN  025240      T6      024506 G
L$STA   002030 G    MREG10  017336      RANSEL  002336      TXATAR  025232      T7      025152 G
L$SW    002236      MREG12  017402      RANST   002334      TXDATA  012402      T8      025644 G
L$TEST  002114 G    MREG14  017446      RAN1    013336      TXLBGN  024546      UAM   = 000200 G
L$TIML  002014 G    MREG16  017512      RAN2    013354      TXLTAR  024540      UNIT    012422
L$UIT   002240      MREG2   017162      RAN4    013412      TXSTAR  024114      UUT     012432
L$UNIT  002012 G    MREG4   017226      READ    014632      T$ARGC= 000000      VECT    012374
L10001  002164      MREG6   017272      REGADR  012472      T$CODE= 003032      VECTOR  026124
L10002  020654      MSELO   017050      REVPRO  023234      T$ERRN= 000045      WAIT1   012722
L10003  020714      MSTER1  020146      ROMMAP  023106      T$EXCP= 000000      WAIT2   012702
L10004  021224      MSTER2  020200      RSTREG  013532      T$FLAG= 000040      WRDCNT  012420
L10005  021504      MT11V   017730      RTABLE  006362      T$FREE= 026434      WRITE   014604
L10006  021542      MVECT   017654      RTCLK   023304      T$GMAN= 000000      X$ALWA= 000000
L10007  021602      NERRS   013024      RUNNIN  022666      T$HILI= 000001      X$FALS= 000040
L10010  021642      NEXT    022402      RXACK   025466      T$LAST= 000001      X$OFFS= 000400
L10011  021702      NUB     012412      RXAEND  025642      T$LOLI= 000000      X$TRUE= 000020
L10012  021772      NUMBER  002352      RXAERR  025524      T$LSYM= 010000      $LSTIN= 000000
L10013  022116      O$APTS= 000000      RXCK    024344      T$LTNO= 000010      $LSTTA= 000000
L10014  022152      O$AU  = 000000      RXCNT   012414      T$NEST= 177777      $PATCH  026274 G
L10015  022232      O$BGNR= 000000      RXDATA  012404
```

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SYMBOL TABLE

. ABS. 026434 000
        000000 001
ERRORS DETECTED: 0

VIRTUAL MEMORY USED: 28944 WORDS (114 PAGES)
DYNAMIC MEMORY: 20060 WORDS (77 PAGES)
ELAPSED TIME: 00:04:12
CNKMB80.BIC,CNKMB80.SEQ/-SP=SVC34.MLB/ML,CNKMB80.MAC