

IDENTIFICATION

PRODUCT CODE: MAINDEC-08-DHDKA-A-D
PRODUCT NAME: DK8E CLOCKS DIAGNOSTIC
DATE RELEASED: NOVEMBER 1975
MAINTAINER: DIAGNOSTIC ENGINEERING
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1. ABSTRACT

THE DK8E CLOCKS DIAGNOSTIC IS DESIGNED TO VERIFY CORRECT OPERATION OF THE DK8-EA, DK8-EC, DK8-ES, AND DK8-EP REAL TIME CLOCK OPTIONS. THE PROGRAM UTILIZES AND TESTS IOT'S ASSOCIATED WITH THE DK8-EA LINE, DK8-EC CRYSTAL, AND THE DK8-EP/DK8-ES PROGRAMMABLE REAL TIME CLOCKS.

2. REQUIREMENTS

2.1 EQUIPMENT

A FAMILY OF 8 COMPUTER WITH THE DK8-EA, DK8-EC, DK8-ES, OR THE DK8-EP OPTION INSTALLED AND AN ASR-33 TELETYPE OR EQUIVALENT.

A SPECIAL TEST CABLE IS NECESSARY TO CONNECT THE CLOCK FRONT PANEL TO THE COMPUTER POWER SUPPLY FOR THE DK8-ES CLOCK OPTION. (NOTE: THIS OUTPUT IS NOT AVAILABLE ON A PDP-8/A).

A SPECIAL CABLE IS NECESSARY TO CONNECT THE DK8-EA CLOCK MODULE TO THE COMPUTER POWER SUPPLY FOR THE DK8-EA CLOCK OPTION. (NOTE: THE DK8-EA CLOCK IS NOT OPERATIONAL ON A PDP-8/A).

2.2 STORAGE

THE PROGRAM OCCUPIES LOCATIONS 0000-6600.

2.3 PRELIMINARY PROGRAMS

ALL PROGRAMS FOR THE BASIC COMPUTER MUST HAVE BEEN RUN SUCCESSFULLY.

3. LOADING PROCEDURE

3.1 METHOD

THE PROGRAM IS LOADED INTO BANK 0, USING THE STANDARD BINARY LOADER TECHNIQUE.

4. STARTING PROCEDURE

4.1 CONTROL SWITCH SETTINGS

SWR0=1 FOR DK8-EP/DK8-ES REGISTER TEST
SWR1=1 FOR DK8-ES SCHMITT TRIGGER LOGIC TEST
SWR2=1 FOR INHIBIT ERROR PRINT OUT
SWR3=1 FOR INHIBIT ERROR BELL
SWR4=1 FOR INHIBIT ERROR HALT
SWR5=1 FOR ENTER SCOPE LOOP ON ERROR
SWR6=1 FOR LOOP ON NON-FAILING TEST
SWR7=1 FOR DK8-EP/DK8-ES EXTERNAL PULSE SCOPE LOOP TEST
SWR8=1 FOR DK8-ES EXTERNAL CLOCK SCOPE LOOP TEST

4.1.1 FREQUENCY SWITCH SETTINGS FOR DK8-EA/DK8-EC TEST

SWR9-11=0 TEST 1 CPS CRYSTAL CLOCK
SWR9-11=1 TEST 50 CPS CRYSTAL CLOCK
SWR9-11=2 TEST 50 CPS LINE CLOCK
SWR9-11=3 TEST 60 CPS LINE CLOCK
SWR9-11=4 TEST 500 CPS CRYSTAL CLOCK
SWR9-11=5 TEST 5000 CPS CRYSTAL CLOCK

4.2 STARTING ADDRESS

THE STARTING ADDRESS FOR A PDP-8/E, PDP-8/M, OR PDP-8/F WITH CORE MEMORY (1.2 MICRO-SECOND CYCLE TIME) IS LOCATION 0200.

FOR ALL OTHER CONFIGURATIONS (OTHER THAN 1.2 MICRO-SECOND CYCLE TIME) THE STARTING ADDRESS IS LOCATION 0201.

4.3 OPERATOR ACTION

4.3.1 DK8-EA/DK8-EC TEST

WITH THE PROGRAM IN BANK 0, SET SWITCH REGISTER TO THE STARTING ADDRESS.

PRESS ADDRESS LOAD.

SET THE SWITCH REGISTER TO 0000.

SET SWITCH REGISTER TO INDICATE FREQUENCY OF DK8-EA OR DK8-EC CLOCK UNDER TEST.

PRESS CLEAR AND THEN PRESS CONTINUE.

THE PROGRAM SHOULD RUN UNTIL AN ERROR OCCURES OR UNTIL STOPPED BY THE OPERATOR.

THE TTY WILL SIGNAL "DK8E PASS COMPLETE" AT THE COMPLETION OF EVERY PASS.

4.3.2 DK8-EP/DK8-ES REGISTER TEST

WITH THE PROGRAM IN BANK 0, SET SWITCH REGISTER TO THE STARTING ADDRESS.

PRESS ADDRESS LOAD.

SET SWITCH REGISTER TO 0000.

SET SWITCH REGISTER TO INDICATE DK8-EP/DK8-ES REGISTER TEST.

PRESS CLEAR AND THEN PRESS CONTINUE.

THE PROGRAM SHOULD RUN UNTIL AN ERROR OCCURES OR UNTIL STOPPED BY THE OPERATOR.

THE TTY WILL SIGNAL "DK8E PASS COMPLETE" AT THE COMPLETION OF EVERY PASS.

4.3.3 DK8-ES SCHMITT TRIGGER INPUT LOGIC TEST

(NOTE: THIS TEST IS NOT OPERATIONAL ON A PDP-8/A).

WITH THE PROGRAM IN BANK 0, SET THE SWITCH REGISTER TO THE STARTING ADDRESS.

PRESS ADDRESS LOAD.

SET SWITCH REGISTER TO 0000.

SET THE SWITCH REGISTER TO INDICATE DK8-ES SCHMITT TRIGGER INPUT LOGIC TEST.

PRESS CLEAR AND THEN CONTINUE.

THE PROGRAM SHOULD RUN UNTIL AN ERROR OCCURES OR UNTIL STOPPED BY THE OPERATOR.

THE TTY WILL SIGNAL "DK8E PASS COMPLETE" AT THE COMPLETION OF EVERY PASS.

4.3.4 DK8-EP/DK8-ES EXTERNAL PULSE SCOPE LOOP TEST

WITH THE PROGRAM IN MEMORY, SET THE SWITCH REGISTER TO THE STARTING ADDRESS.

PRESS ADDRESS LOAD.

SET SWITCH REGISTER TO 0000.

SET SWITCH REGISTER TO INDICATE EXTERNAL PULSE SCOPE LOOP TEST.

PRESS CLEAR AND THEN PRESS CONTINUE.

USE OSCILLOSCOPE TO VERIFY 40 MICRO SECOND PULSE RATE AT FJ2, FJ1, HM1, AND HM2 ON THE DK8-EP/DK8-ES MODULES.

USE OSCILLOSCOPE TO VERIFY 40 MICRO SECOND PULSE RATE AT OVERFLOW ON DK8-ES CLOCK FRONT PANEL. (DK8-ES ONLY)

4.3.5 DK8-ES EXTERNAL CLOCK SCOPE LOOP TEST

WITH THE PROGRAM IN MEMORY, SET THE SWITCH REGISTER TO THE STARTING ADDRESS.

PRESS ADDRESS LOAD.

SET SWITCH REGISTER TO 0000.

SET SWITCH REGISTER TO INDICATE EXTERNAL CLOCK SCOPE LOOP TEST.

PRESS CLEAR AND THEN PRESS CONTINUE.

GROUND CLOCK IN ON DK8-ES CLOCK FRONT PANEL.

THE TTY BELL WILL SIGNAL, IF AN EXTERNAL CLOCK IN WAS RECEIVED.

5. OPERATING PROCEDURE

5.1 OPERATIONAL SWITCH SETTINGS

NONE

5.2 SUBROUTINE ABSTRACTS

NONE

5.3 OPERATOR TEST SELECTION

5.3.1 DK8-EA OR DK8-EC CLOCK OPTION

INSTALL DK8-EA OR DK8-EC CLOCK OPTION

RUN DK8-EA/DK8-EC TEST 4.3.1.

5.3.2 DK8-EP CLOCK OPTION

INSTALL DK8-EP CLOCK OPTION.

RUN DK8-EP/DK8-ES REGISTER TEST 4.3.2.

RUN DK8-EP/DK8-ES EXTERNAL PULSE SCOPE LOOP TEST 4.3.4.

5.3.3. DK8-ES CLOCK OPTION

(NOTE: THIS TEST IS NOT OPERATIONAL ON A PDP-8/A).

INSTALL DK8-ES CLOCK OPTION.

RUN DK8-EP/DK8-ES REGISTER TEST 4.3.2.

CONNECT EXTERNAL SOURCE FREQUENCY LOCATED AT J5 ON THE PDP8/E POWER SUPPLY TO THE EXTERNAL SCHMITT TRIGGER INPUT LOGIC VIA THE DK8-ES CLOCK FRONT PANEL WITH THE SPECIAL TEST CABLE.

SET THE THREE SLOPE SELECTION SWITCHES ON DK8-ES CLOCK FRONT PANEL TO THE POSITIVE POSITION.

ADJUST THE THREE INPUT THRESHOLD POTENTIOMETERS ON DK8-ES CLOCK FRONT PANEL TO THE CENTER POSITION.

RUN THE DK8-ES SCHMITT TRIGGER INPUT LOGIC TEST 4.3.3.

RUN THE DK8-EP/DK8-ES EXTERNAL PULSE SCOPE LOOP TEST 4.3.4.

RUN THE DK8-ES EXTERNAL CLOCK SCOPE LOOP TEST 4.3.5.

6. ERRORS

ALL RECOVERABLE ERRORS ENCOUNTERED IN THE PROGRAM WILL RESULT IN AN ERROR HALT OR AN ERROR TYPEOUT AND THEN AN ERROR HALT.

6.1 ERRORS AND DISCRIPTION

6.1.1 ERROR HALTS

ERROR HALTS IN PROGRAM ARE AS FOLLOWS:

EHLT1: MONITOR ERROR HALT, READ ERROR TYPE OUT.

EHLT2: SKIP TRAP, CLZE

EHLT3: SKIP TRAP, CLOE
EHLT4: SKIP TRAP, CLOE
EHLT5: SKIP TRAP, CLAB
EHLT6: SKIP TRAP, CLEN
EHLT7: SKIP TRAP, CLSA
EHLT10: SKIP TRAP, CLBA
EHLT11: SKIP TRAP, CLCA

6.1.2 ERROR TYPEOUTS

ERROR TYPEOUTS IN PROGRAM ARE AS FOLLOWS:

TEST XXXX FAILED, STARTING ADDRESS XXXX
THE GOOD AC = XXXX AND BAD AC = XXXX
CLOCK BUFFER REGISTER AND AC TRANSFER FAILED
CLOCK COUNTER REGISTER AND AC TRANSFER FAILED
CLOCK ENABLE REGISTER AND AC TRANSFER FAILED
THE AC WAS CHANGED BY A CLOCK IOT
PROGRAM INTERRUPT FAILED, NO INTERRUPT EXPECTED
PROGRAM INTERRUPT FAILED, INTERRUPT EXPECTED
CLOCK SKIP FAILED, NO SKIP EXPECTED
CLOCK SKIP FAILED, SKIP EXPECTED
CLOCK OUTPUT FAILED, CLOCK FREQUENCY FAST
CLOCK OUTPUT FAILED, CLOCK FREQUENCY SLOW

6.2 ERROR RECOVERY

ALL ERRORS ENCOUNTERED MUST BE CORRECTED BEFORE PROCEEDING
ON IN THE PROGRAM, IN ALL CASES ACCESS THE LISTING FOR
FURTHER INFORMATION.

6.2.1 SCOPE LOOPS

A SCOPE LOOP IS AVAILABLE FOR ALL MONITOR ERROR HALTS. THE OPERATOR MAY ENTER A SCOPE LOOP AFTER A MONITOR ERROR HALT BY DOING THE FOLLOWING.

SET SWR4=1 TO INDICATE INHIBIT ERROR HALT.

SET SWR5=1 TO INDICATE ENTER SCOPE LOOP.

SET SWR6=1 TO INDICATE LOOP ON THIS TEST.

PRESS CLEAR AND THEN PRESS CONTINUE.

SET SWR2=1 TO INHIBIT ERROR TYPEOUT.

SET SWR3=1 TO INHIBIT ERROR BELL.

7. RESTRICTIONS

7.1 STARTING RESTRICTIONS

NONE

7.2 OPERATING RESTRICTIONS

THE PROGRAM MUST RESIDE IN BANK 0 .

THE EXT. CPS SOURCE USED IN THE DK8-ES EXTERNAL SCHMITT TRIGGER INPUT LOGIC TEST MUST BE DISCONNECTED WHEN RUNNING THE DK8-EP/DK8-ES REGISTER TEST.

IF TESTING A PDP-8/E, PDP-8/M, OR PDP-8/F, IT MUST BE RUNNING FAST CYCLE "1.2" MICRO. SECONDS.

ALL CLOCK OUTPUTS SHOULD BE VERIFIED WITH AN OSCILLOSCOPE TO INSURE CORRECT OPERATION.

8. MISCELLANEOUS

8.1 SPECIFICATIONS

THE DK8-EA CLOCK COUNTS AT INTERVALS OF TIME AT 100 OR 120 TIMES A SECOND. THE FREQUENCY IS DETERMINED BY THE FULL WAVE RECTIFIER NETWORK WHICH OPERATES OFF THE 50 OR 60 CPS LINE WHICH EVER IT MAY BE. THIS MAKES THE CLOCK CAPABLE OF SUPPLYING PROGRAM INTERRUPT REQUESTS AT A RATE OF 100 OR 120 TIMES A SECOND.

8.2 EXECUTION TIME

DK8-EA/DK8-EC TEST, APPROXIMATIVELY 2.5 MINUTES PER PASS.

DK8-EP/DK8-ES REGISTER TEST, APPROXIMATIVELY 3.5 MINUTES PER PASS.

DK8-ES SCHMITT TRIGGER INPUT LOGIC TEST, APPROXIMATIVELY 2 MINUTES PER PASS.

9. PROGRAM DISCRIPTION

9.1 DK8-EA OR DK8-EC CLOCK

THE PROGRAM EXERCISES AND TESTS THE FOLLOWING IOT'S FOR CORRECT OPERATION AND FUNCTION.

SKIP ON A CLOCK FLAG AND CLEAR THE FLAG (CLSK)

OCTAL CODE: 6133

OPERATION: SENSES THE CLOCK FLAG, WHICH IS SET WITH EACH CLOCK PULSE; IF IT IS SET, THE NEXT SEQUENTIAL INSTRUCTION IS SKIPPED AND THE FLAG IS THEN CLEARED.

ENABLE CLOCK INTERRUPT (CLEI)

OCTAL CODE: 6131

OPERATION: ENABLES THE CLOCK FLAG, WHICH IS SET WITH EACH CLOCK PULSE, TO CAUSE A PROGRAM INTERRUPT REQUEST. THE FLAG WILL REMAIN SET UNTIL CLEARED WITH CLSK.

DISABLE CLOCK INTERRUPT (CLED)

OCTAL CODE: 6132

OPERATION: DISABLES THE CLOCK FLAG FROM CAUSING AN INTERRUPT REQUEST. THE FLAG IS NOT AFFECTED.

DK8-EP/DK8-ES CLOCK

THE PROGRAM EXERCISES AND TESTS THE FOLLOWING IOT'S FOR CORRECT OPERATION AND FUNCTION.

CLEAR THE CLOCK ENABLE REGISTER PER AC (CLZE)

OCTAL CODE: 6130

OPERATION: CLEARS THE BITS IN THE CLOCK ENABLE REGISTER CORRESPONDING TO THOSE BITS SET IN THE AC. THE AC IS NOT AFFECTED.

SKIP ON A CLOCK INTERRUPT (CLSK)

OCTAL CODE: 6131

OPERATION: SENSES FOR INTERRUPT CONDITIONS, IF THE CONDITIONS ARE PRESENT THE NEXT SEQUENTIAL INSTRUCTION IS SKIPPED. THE CONDITIONS ARE AS FOLLOWS:

- A. ENABLE EVENT INTERRUPT 1 AND INPUT 4
- B. ENABLE EVENT INTERRUPT 2 AND INPUT 2
- C. ENABLE EVENT INTERRUPT 3 AND INPUT 1
- D. ENABLE OVERFLOW INTERRUPT AND OVERFLOW

AC TO CLOCK ENABLE REGISTER (CLOE)

OCTAL CODE: 6132

OPERATION: CAUSES THE CONTENTS OF THE AC TO BE LOADED INTO THE CLOCK ENABLE REGISTER CORRESPONDING TO THOSE BITS SET IN THE AC. THE AC IS NOT AFFECTED. CLOCK ENABLE REGISTER FUNCTIONS ARE AS FOLLOWS.

AC BIT

FUNCTION

0

ENABLE CLOCK OVERFLOW

1 & 2

MODE CONTROL

00 COUNTER RUNS AT SELECTED RATE. OVERFLOW OCCURS EVERY 4096 COUNTS. OVERFLOW REMAINS SET UNTIL CLEARED BY (CLSA) IOT 6135.

01 COUNTER RUNS AT SELECTED RATE. OVERFLOW CAUSES THE CLOCK BUFFER REGISTER TO BE TRANSFERRED TO THE CLOCK COUNTER REGISTER WHICH WILL CONTINUE TO RUN AFTER TRANSFER. OVERFLOW WILL REMAIN SET UNTIL CLEARED BY (CLSA) IOT 6135.

10 COUNTER RUNS AT SELECTED RATE.
AN EXTERNAL SCHMITT TRIGGER SIGNAL,
IF ENABLED, CAUSES THE CLOCK COUNTER
REGISTER TO BE TRANSFERED TO THE CLOCK
BUFFER REGISTER AND THE CLOCK COUNTER
CONTINUES TO RUN.

11 COUNTER RUNS AT SELECTED RATE.
AN EXTERNAL SCHMITT TRIGGER SIGNAL,
IF ENABLED, CAUSES THE CLOCK COUNTER
REGISTER TO BE TRANSFERED TO THE
CLOCK BUFFER REGISTER AND THE CLOCK
COUNTER WILL CONTINUE TO RUN FROM 0.

3,4 & 5

COUNT RATE

000 STOP
001 EXTERNAL CLOCK SOURCE
010 100 CPS
011 1000 CPS
100 10000 CPS
101 100000 CPS
110 1000000 CPS
111 STOP

6

WHEN SET TO A 1, OVERFLOW CAUSES
AN EXTERNAL PULSE.

7

WHEN SET TO A 1, THE CLOCK COUNTER
IS INHIBITED FROM COUNTING.

8

WHEN SET TO A 1, ENABLES EXTERNAL
SCHMITT TRIGGER SIGNALS AND THE OVERFLOW
FLOP TO CAUSE AN INTERRUPT REQUEST IF
THEY ARE ENABLED.

9,10 & 11

ENABLE SCHMITT TRIGGER EVENTS

100 INPUT 4
010 INPUT 2
001 INPUT 1

AC TO CLOCK BUFFER REGISTER (CLAB)

OCTAL CODE:

6133

OPERATION:

CAUSES THE CONTENTS OF THE AC TO BE
TRANSFERED INTO THE CLOCK BUFFER REGISTER;
THE CONTENTS OF BUFFER REGISTER IS THEN
TRANSFERED TO THE CLOCK COUNTER
REGISTER. THE AC IS NOT AFFECTED.

CLOCK ENABLE REGISTER TO AC (CLEN)
OCTAL CODE: 6134
OPERATION: CAUSES THE CONTENTS OF THE CLOCK ENABLE REGISTER TO BE TRANSFERRED TO THE AC. THE ENABLE REGISTER IS NOT AFFECTED.

CLOCK STATUS TO AC (CLSA)
OCTAL CODE: 6135
OPERATION: CAUSES THE CONTENTS OF THE CLOCK STATUS REGISTER TO BE TRANSFERRED INTO THE AC. THE STATUS BITS ARE THEN CLEARED CORRESPONDING TO THOSE BITS THAT WERE SET IN THE AC. THE STATUS REGISTER FUNCTIONS ARE AS FOLLOWS.

AC BIT	STATUS CONDITION
-----	-----
0	OVERFLOW
1-8	NOT USED
9	INPUT 4
10	INPUT 2
11	INPUT 1

CLOCK BUFFER REGISTER TO AC (CLBA)
OCTAL CODE: 6136
OPERATION: CAUSES THE CONTENTS OF THE CLOCK BUFFER REGISTER TO BE TRANSFERRED INTO THE AC. THE BUFFER REGISTER IS NOT AFFECTED.

CLOCK COUNTER REGISTER TO AC (CLCA)
OCTAL CODE: 6137
OPERATION: CAUSES THE CONTENTS OF THE CLOCK COUNTER TO BE TRANSFERRED INTO THE CLOCK BUFFER REGISTER. THE BUFFER REGISTER IS THEN TRANSFERRED INTO THE AC. THE COUNTER REGISTER IS NOT AFFECTED.

10. LISTING

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/
 /DK8E CLOCKS DIAGNOSTIC
 /MAINDEC-08-DHDKA-A-L
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 /
 /DATE REVISED 9-23-75
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0000      0000      0000
0001      5001      5001
0002      0002      0002
0003      0003      0003
0004      0000      0000
0005      0000      0000
0006      0207      K0207, 0207
0007      0007      K0007, 0007
0010      0000      AUTO10, 0000
0011      0000      SAVAC, 0000
0012      7700      K7700, 7700
0013      0100      K0100, 0100
0014      4000      K4000, 4000
0015      0200      K0200, 0200
0016      2525      K2525, 2525
0017      5252      K5252, 5252
0020      5102      XIOTA, IOTA
0021      5107      XIOTB, IOTB
0022      5114      XIOTC, IOTC
0023      5121      XIOTD, IOTD
0024      5127      XIOTE, IOTE
0025      5134      XIOTF, IOTF
0026      5142      XIOTF1, IOTF1
0027      5146      XIOTG, IOTG
0030      5154      XIOTH, IOTH
0031      5163      XIOTI, IOTI
0032      5200      XIOTJ, IOTJ
0033      5207      XIOTK, IOTK
0034      5350      XIOTS, IOTS
0035      5360      XIOTS1, IOTS1
0036      5370      XIOTS2, IOTS2
0037      5400      XIOTS3, IOTS3
0040      0000      REGA, 0000
0041      0000      REGB, 0000
0042      0000      REGC, 0000
0043      0000      REGD, 0000
0044      0000      REGE, 0000
0045      0000      REGF, 0000
0046      5642      SKPNAT, XWAIT
0047      5255      XPIG01, PIG01
0050      5270      XPIG02, PIG02
0051      5323      XPIG03, PIG03
0052      5336      XPIG04, PIG04
0053      5234      XPIG05, PIG05
    
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0054      5310      XISZ, ISZLOP
0055      5224      RANDY, RANDOM
0056      5216      XSNDRV, SNDRV
0057      5302      XSYNC, SYNC
0060      5065      XCLREG, CLRREG
0061      0217      OVER2, BGNEAC
0062      0221      OVER2A, BGNEAC +2
0063      0577      XDK8EP, TST30
0064      3605      XMITT, TST202
0065      3602      XMITT1, TST202 -3
0066      5660      XLAS, SWLAS
0067      5746      XGTAD, GTAD
0070      0000      SEND, 0000
0071      0000      RECEV, 0000
0072      5000      NERROR, NERRO
0073      5020      ERROR, ERRO
0074      5413      XCLOCK, CLOCK
0075      0000      CLOCK0, 0000
0076      0000      KREGC, 0000
0077      0000      LOOP, 0000
0100      5402      JMP12, JMP I 2
0101      5441      XCRLF, CRLF
0102      5563      XREG, PREG
0103      5471      XSORT, SORT
0104      5420      XOCTEL, OCTEL
0105      5542      XMESS, MESS
0106      5604      XPRINT, PRINT
0107      5056      XTYPE, TYPE
0110      5046      XBELL, BELL
0111      7730      KPRMT1, 7730
0112      7400      K7400, 7400
0113      0000      KTICPS, 0000
0114      6007      K6007, 6007
0115      0006      K0006, 0006
0116      0400      K0400, 0400
0117      6000      K6000, 6000
0120      3000      K3000, 3000
0121      5000      K5000, 5000
0122      7770      K7770, 7770
0123      0260      K0260, 0260
0124      4100      K4100, 4100
0125      3740      K3740, 3740
0126      0240      K0240, 0240
0127      0017      K0017, 0017
0130      7774      K7774, 7774
0131      7773      K7773, 7773
0132      7772      K7772, 7772
0133      0077      K0077, 0077
0134      0215      K0215, 0215
0135      0212      K0212, 0212
0136      0377      K0377, 0377
0137      0040      K0040, 0040
0140      0020      K0020, 0020
0141      7000      K7000, 7000
0142      0010      K0010, 0010
    
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0143 2000 K2000, 2000
0144 1000 K1000, 1000
0145 0300 K0300, 0300
0146 0500 K0500, 0500
0147 0600 K0600, 0600
0150 0700 K0700, 0700
0151 2725 KTA, 2725
0152 2650 KTA1, 2650
0153 7425 KTB, 7425
0154 7350 KTB1, 7350
0155 7753 KTC, 7753
0156 0225 KTC1, 0225
0157 0150 KTC2, 0150
0160 1450 KTD, 1450
0161 1425 KTD1, 1425
0162 6575 KTE, 6575
0163 6525 KTE1, 6525
0164 5600 XSET0, SET0
0165 5450 XOPR, POPR
0166 0070 PATCH, 0070
0167 5771 XGETM, TIMCLK
0170 5740 XPASS, PASS
0171 2014 XCRS1, T122B
0172 2217 XCRS2, T127A
0173 2622 XCRS3, T150A
0174 2604 XCRS4, T150B
0175 4027 XCRS5, T215A
0176 0000 TIMFLG, 0
/
0200 /
0200 7610 BEGIN, SKP CLA /CLEAR THE AC AND LINK
0201 7240 MOSSTR, CLA CMA /SET FLAG FOR OTHER CYCLE TIME!
0202 3176 DCA TIMFLG /SAVE IT.
0203 6007 /CAF OR CLEAR THE WORLD
0204 4501 JMS I XCRLF /CRLF
0205 4506 JMS I XPRINT /PRINT DK8E CLOCKS DIAGNOSTIC
0206 6000 DKMES /MESSAGE POINTER
0207 4501 JMS I XCRLF /CRLF
0210 4460 JMS I XCLREG /CLEAR ALL MY REGISTERS
0211 4564 JMS I XSET0 /SET UP FOR PI RETURN
0212 4466 JMS I XLAS /GET HIS SWITCHES
0213 5465 JMP I XMITT1 /TEST SCHMITT
0214 5463 JMP I XDK8EP /TEST DK8EP CLOCK
0215 4474 JMS I XCLOCKS /TEST DK8EA OR DK8EC
0216 4565 JMS I XOPR /SORT AND PRINT FREQ. SELECTED
0217 4567 BONEAC, JMS I XGETM /GET TIME LENGTH
0220 3077 DCA LOOP /SET LOOP COUNTER
0221 4460 JMS I XCLREG /CLEAR ALL REGISTERS
0222 3040 DCA REGA
/
/DOES IOT CLEI CHANGE AC ?
/CHECK ALL COMBINATIONS
/
0223 1040 TST0, TAD REGA /GET AC NUMBER

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0224 3070 DCA SEND /SAVE OUTPUT FOR ERROR PRINTER
0225 1070 TAD SEND
0226 4420 JMS I XIOTB /IOT 6131, CLEI
0227 3071 DCA RECEV /SAVE INPUT FOR ERROR PRINTER
0230 1071 TAD RECEV
0231 4456 JMS I XSNDRV /CHECK SEND AND RECEV REGISTERS
0232 4472 JMS I NERROR /CHECK NON=ERROR HANDLER.
0233 4473 JMS I ERROR /ERROR! CLEI CHANGED AC.
0234 3000 /TST0 ERROR MESSAGE.
0235 0223 TST0 /SCOPE LOOP.
0236 3040 DCA REGA
/
/DOES IOT CLED CHANGE AC ?
/CHECK ALL COMBINATIONS
/
0237 1040 TST1, TAD REGA /GET AC NUMBER
0240 3070 DCA SEND /SAVE OUTPUT FOR ERROR PRINTER
0241 1070 TAD SEND
0242 4421 JMS I XIOTB /IOT 6132, CLED
0243 3071 DCA RECEV /SAVE INPUT FOR ERROR PRINTER
0244 1071 TAD RECEV
0245 4456 JMS I XSNDRV /CHECK SEND AND RECEV REGISTERS
0246 4472 JMS I NERROR /CHECK NON=ERROR HANDLER.
0247 4473 JMS I ERROR /ERROR! CLED CHANGED AC.
0250 3001 /TST1 ERROR MESSAGE.
0251 0237 TST1 /SCOPE LOOP.
0252 3040 DCA REGA
/
/DOES IOT CLSK CHANGE AC ?
/CHECK ALL COMBINATIONS
/
0253 1040 TST2, TAD REGA /GET AC NUMBER
0254 3070 DCA SEND /SAVE OUTPUT FOR ERROR PRINTER
0255 1070 TAD SEND
0256 4422 JMS I XIOTC /IOT 6133, CLSK
0257 7000 NOP /WAIT JUST IN CASE I
0260 3071 DCA RECEV /SAVE INPUT FOR ERROR PRINTER
0261 1071 TAD RECEV
0262 4456 JMS I XSNDRV /CHECK SEND AND RECEV REGISTERS
0263 4472 JMS I NERROR /CHECK NON=ERROR HANDLER.
0264 4473 JMS I ERROR /ERROR! CLSK CHANGED AC.
0265 3002 /TST2 ERROR MESSAGE.
0266 0253 TST2 /SCOPE LOOP.
/
/TEST FOR NO INTERRUPT RQST.
/
0267 6007 TST3, 6007 /CAF OR CLEAR THE WORLD
0270 4447 JMS I XPIG01 /GO TO PI, NO PI EXPECTED
0271 4472 JMS I NERROR /CHECK NON=ERROR HANDLER
0272 4473 JMS I ERROR /ERROR! PI OR INT. RQST. FAILED
0273 1003 /TST3 ERROR MESSAGE
0274 0267 TST3 /SCOPE LOOP
/
/DOES CLSK SKIP ON A CLOCK FLAG
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0275 1113 TST4, TAD KTICPS
0276 3045 DCA REGF /SET UP TIMER
0277 4422 JMS I XIOTC /IOT 6133, CLSK
0300 7000 NOP
0301 4422 JMS I XIOTC /IOT 6133, CLSK
0302 4446 JMS I SKPWAT /GO WAIT FOR FLAG
0303 4472 JMS I NERROR /CHECK NON-ERROR HANDLER
0304 4473 JMS I ERROR /ERROR: CLSK OR FLAG FAILED
0305 0404 0404 /TST4 ERROR MESSAGE
0306 0275 TST4 /SCOPE LOOP

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/DOES CLSK CLEAR THE FLAG ?

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0307 1113 TST5, TAD KTICPS
0310 3045 DCA REGF /SET UP TIMER
0311 4422 JMS I XIOTC /IOT 6133, CLSK
0312 7000 NOP
0313 4422 JMS I XIOTC /IOT 6133, CLSK
0314 4446 JMS I SKPWAT /GO WAIT FOR FLAG
0315 7410 SKP /GOT THE FLAG
0316 5706 JMP I ,=10 /GO BACK TO TEST 4
0317 4422 JMS I XIOTC /IOT 6133, CLSK
0320 4472 JMS I NERROR /CHECK NON-ERROR HANDLER
0321 4473 JMS I ERROR /ERROR: CLSK CLEAR THE FLAG FAILED
0322 0005 0005 /TST5 ERROR MESSAGE
0323 0307 TST5 /SCOPE LOOP

```

/DOES CLEI ENABLE CLOCK INTERRUPT ?

```

0324 4420 TST6, JMS I XIOTA /IOT 6131, CLEI
0325 4450 JMS I XPIG02 /GO TO PI, PI EXPECTED
0326 4472 JMS I NERROR /CHECK NON-ERROR HANDLER.
0327 4473 JMS I ERROR /ERROR: DID CLEI ENABLE CLOCK INTERRUPT ?
0330 1406 1406 /TST6 ERROR MESSAGE
0331 0324 TST6 /SCOPE LOOP.

```

/DOES CLED DISABLE CLOCK INTERRUPT ?

```

0332 4420 TST7, JMS I XIOTA /IOT 6131, CLEI
0333 4421 JMS I XIOTB /IOT 6132, CLED
0334 4447 JMS I XPIG01 /GO TO PI, NO PI EXPECTED
0335 4472 JMS I NERROR /CHECK NON-ERROR HANDLER.
0336 4473 JMS I ERROR /ERROR: DID CLED DISABLE CLOCK INTERRUPT?
0337 1007 1007 /TST7 ERROR MESSAGE
0340 0332 TST7 /SCOPE LOOP.

```

/DOES CAF DISABLE CLOCK INTERRUPT ?

```

0341 4420 TST10, JMS I XIOTA /IOT 6131, CLEI
0342 6007 6007 /CAF OR CLEAR THE WORLD
0343 4447 JMS I XPIG01 /GO TO PI, NO PI EXPECTED
0344 4472 JMS I NERROR /CHECK NON-ERROR HANDLER.
0345 4473 JMS I ERROR /ERROR: DID CAF DISABLE CLOCK INTERRUPT ?
0346 1010 1010 /TST10 ERROR MESSAGE
0347 0341 TST10 /SCOPE LOOP.

```

/DOES CLEI ENABLE CLOCK INTERRUPT ?

```

0350 4420 TST11, JMS I XIOTA /IOT 6131, CLEI
0351 4447 JMS I XPIG01 /GO TO PI, PI EXPECTED
0352 5356 JMP T11A
0353 4420 JMS I XIOTA /IOT 6131, CLEI
0354 4450 JMS I XPIG02 /GO TO PI, PI EXPECTED
0355 4472 JMS I NERROR /CHECK NON-ERROR HANDLER.
0356 4473 JMS I ERROR /ERROR: CLEI AND CLED FAST TOGGLE
0357 1411 1411 /TST11 ERROR MESSAGE
0360 0350 TST11 /SCOPE.

```

/DOES CLED DISABLE CLOCK INTERRUPT ?

```

0361 4420 TST12, JMS I XIOTA /IOT 6131, CLEI
0362 4421 JMS I XIOTB /IOT 6132, CLED
0363 4450 JMS I XPIG02 /GO TO PI, NO PI EXPECTED
0364 5370 JMP T12A
0365 4421 JMS I XIOTB /IOT 6132, CLED
0366 4447 JMS I XPIG01 /GO TO PI, NO PI EXPECTED
0367 4472 JMS I NERROR /CHECK NON-ERROR HANDLER.
0370 4473 JMS I ERROR /ERROR: CLEI AND CLED FAST TOGGLE
0371 1012 1012 /TST12 ERROR MESSAGE
0372 0361 TST12 /SCOPE LOOP.

```

/TEST DECODER FOR 6135, NOT CLEI

```

0373 4421 TST13, JMS I XIOTB /IOT 6132, CLED
0374 4431 JMS I XIOTI /IOT 6135, NOT AN IOT 6131
0375 4447 JMS I XPIG01 /GO TO PI, NO PI EXPECTED
0376 4472 JMS I NERROR /CHECK NON-ERROR HANDLER.
0377 4473 JMS I ERROR /ERROR: DID DECODER WORK
0400 1013 1013 /TST13 ERROR MESSAGE
0401 0373 TST13 /SCOPE LOOP.

```

/TEST DECODER FOR A 6136, NOT CLED

```

0402 4420 TST14, JMS I XIOTA /IOT 6131, CLEI
0403 4432 JMS I XIOTJ /IOT 6136, NOT AN IOT 6132.
0404 4450 JMS I XPIG02 /GO TO PI, PI EXPECTED
0405 4472 JMS I NERROR /CHECK NON-ERROR HANDLER.
0406 4473 JMS I ERROR /ERROR: DID DECODER WORK
0407 1414 1414 /TST14 ERROR MESSAGE
0410 0402 TST14 /SCOPE LOOP.

```

/TEST DECODER FOR 6137, NOT CLSK

```

0411 1113 TST15, TAD KTICPS
0412 3045 DCA REGF /SET UP TIMER
0413 4422 JMS I XIOTC /IOT 6132, CLED
0414 7000 NOP
0415 4433 JMS I XIOTK /IOT 6137, NOT AN IOT 6133
0416 4446 JMS I SKPWAT /GO WAIT FOR FLAG
0417 7410 SKP /ERROR, SKIP OCCURRED

```

```

0420 4472      JMS I NERROR  /CHECK NON-ERROR HANDLER.
0421 4473      JMS I ERROR   /ERROR: DID DECODER WORK
0422 0015      0015    /TST15 ERROR MESSAGE
0423 0411      TST15     /SCOPE LOOP.

/DOES CLSK ENABLE CLOCK INTERRUPT ?
/
0424 4422      TST16, JMS I XIOTC  /IOT 6133, CLSK
0425 7000      NOP
0426 4447      JMS I XPIG01  /GO TO PI, NO PI EXPECTED
0427 4472      JMS I NERROR  /CHECK NON-ERROR HANDLER.
0430 4473      JMS I ERROR   /ERROR: DID CLSK CAUSE INTERRUPT
0431 1016      1016    /TST16 ERROR MESSAGE
0432 0424      TST16     /SCOPE LOOP.

/DOES CLSK DISABLE CLOCK INTERRUPT ?
/
0433 4420      TST17, JMS I XIOTA  /IOT 6131, CLEI
0434 4422      JMS I XIOTC  /IOT 6133, CLSK
0435 7000      NOP
0436 4450      JMS I XPIG02  /GO TO PI, PI EXPECTED
0437 4472      JMS I NERROR  /CHECK NON-ERROR HANDLER.
0440 4473      JMS I ERROR   /ERROR: CLSK DISABLED CLOCK INTERRUPT
0441 1417      1417    /TST17 ERROR MESSAGE
0442 0433      TST17     /SCOPE LOOP.

/DOES CLEI CAUSE A SKIP ON FLAG ?
/
0443 1113      TST20, TAD KTICPS
0444 3045      DCA REGF    /SET UP TIMER
0445 4420      JMS I XIOTA  /IOT 6131, CLEI
0446 4446      JMS I SKPWAT  /GO WAIT FOR FLAG
0447 7410      SKP        /ERROR, SKIP OCCURRED
0450 4472      JMS I NERROR  /CHECK NON-ERROR HANDLER.
0451 4473      JMS I ERROR   /ERROR: DID CLEI CAUSE A SKIP
0452 0020      0020    /TST20 ERROR MESSAGE
0453 0443      TST20     /SCOPE LOOP.

/DOES CLED CAUSE A SKIP ON FLAG ?
/
0454 1113      TST21, TAD KTICPS
0455 3045      DCA REGF    /SET UP TIMER
0456 4421      JMS I XIOTB  /IOT 6132, CLED
0457 4446      JMS I SKPWAT  /GO WAIT FOR FLAG
0460 7410      SKP        /ERROR, SKIP OCCURRED
0461 4472      JMS I NERROR  /CHECK NON-ERROR HANDLER.
0462 4473      JMS I ERROR   /ERROR: DID CLED CAUSE A SKIP ON FLAG
0463 0021      0021    /TST21 ERROR MESSAGE
0464 0454      TST21     /SCOPE LOOP.

/DOES INT. RQST STAY DOWN ?
/
0465 4457      TST22, JMS I XSYNC  /SYNC WITH CLOCK
0466 4420      JMS I XIOTA  /IOT 6131, CLEI
0467 4447      JMS I XPIG01  /GO TO PI, PI EXPECTED

```

```

0470 5275      JMP T22A     /ERROR, PI FAILED
0471 2041      I3Z REG0
0472 5271      JMP .-1    /WAIT 15.5 MS
0473 4452      JMS I XPIG04  /GO TO PI, PI EXPECTED
0474 4472      JMS I NERROR  /CHECK NON-ERROR HANDLER
0475 4473      T22A, JMS I ERROR   /ERROR: DID RQST, LAST ?
0476 1422      1422    /TST21 ERROR MESSAGE
0477 0465      TST22     /SCOPE LOOP

/DOES CLSK CLEAR RQST. LINE ?
/
0500 4420      TST23, JMS I XIOTA  /IOT 6131, CLEI
0501 4457      JMS I XSYNC  /SYNC WITH CLOCK FLAG
0502 4451      JMS I XPIG03  /GO TO PI, NO PI EXPECTED
0503 4472      JMS I NERROR  /CHECK NON-ERROR HANDLER
0504 4473      JMS I ERROR   /ERROR: DID CLSK CLEAR RQST. FLAG
0505 1023      1023    /TST23 ERROR MESSAGE
0506 0500      TST23     /SCOPE LOOP

/
0507 1176      TAD TIMPLG  /GET CYCLE TIME FLAG.
0510 7650      SNA CLA    /SET?
0511 5314      JMP .+3    /NO!
0512 5713      JMP I .+1  /YES, BYPASS TIME TESTS!
0513 0573      ENDIT

/
/SYNC WITH CLOCK AND
/CHECK FOR FAST OUTPUT
/
0514 4467      TST24, JMS I XGTAD  /GET TIME CONSTANTS
0515 0000      0000    /MODIFIED BY TEST
0516 1715      TAD I .-1
0517 3043      DCA REG0
0520 4420      JMS I XIOTA  /IOT 6131, CLEI
0521 4457      JMS I XSYNC  /SYNC WITH CLOCK
0522 4447      JMS I XPIG01  /GO TO PI, NO PI EXPECTED
0523 4472      JMS I NERROR  /CHECK NON-ERROR HANDLER.
0524 4473      JMS I ERROR   /ERROR: CLOCK FREQUENCY FAST.
0525 2024      2024    /TST24 ERROR MESSAGE.
0526 0514      TST24     /SCOPE LOOP.

/
/SYNC WITH CLOCK AND
/CHECK FOR SLOW OUTPUT
/
0527 1115      TST25, TAD K0006  /SETUP FOR SLOW CLOCK
0530 4467      JMS I XGTAD  /GET TIME CONSTANTS
0531 0000      0000    /MODIFIED BY TEST
0532 1731      TAD I .-1
0533 3043      DCA REG0
0534 4420      JMS I XIOTA  /IOT 6131, CLEI
0535 4457      JMS I XSYNC  /SYNC WITH CLOCK
0536 4450      JMS I XPIG02  /GO TO PI, PI EXPECTED
0537 4472      JMS I NERROR  /CHECK NON-ERROR HANDLER.
0540 4473      JMS I ERROR   /ERROR: CLOCK FREQUENCY SLOW.
0541 2425      2425    /TST25 ERROR MESSAGE.
0542 0527      TST25     /SCOPE LOOP.

```



```

/
/CHECK FOR FAST CLOCK AND
/BAD CLOCK FLAG WITH CLSK.
/
0543 4467 TST26, JMS I XGTAD /GET TIME CONSTANTS
0544 0000 0000 /MODIFIED BY TEST
0545 1744 TAD I .=1
0546 3043 DCA REGD
0547 4457 JMS I XSYNC /SYNC WITH CLOCK
0550 4454 JMS I XISZ /WAIT
0551 4422 JMS I XIOTC /IOT 6133, CLSK
0552 4472 JMS I NERROR /CHECK NON-ERROR HANDLER
0553 4473 JMS I ERROR /ERROR: CLOCK FAILED
0554 2026 2026 /TST26 ERROR MESSAGE
0555 0543 TST26 /SCOPE LOOP
/
/CHECK FOR SLOW CLOCK AND
/BAD CLOCK FLAG WITH CLSK
/
0556 1115 TST27, TAD K0006 /SET UP FOR SLOW CLOCK
0557 4467 JMS I XGTAD /GET TIME CONSTANTS
0560 0000 0000 /MODIFIED BY TEST
0561 1760 TAD I .=1
0562 3043 DCA REGD
0563 4457 JMS I XSYNC /SYNC WITH CLOCK
0564 4454 JMS I XISZ /WAIT
0565 4422 JMS I XIOTC /IOT 6133, CLSK
0566 7410 SKP /ERROR, SKIP OCCURRED
0567 4472 JMS I NERROR /CHECK NON-ERROR HANDLER
0570 4473 JMS I ERROR /ERROR: CLSK OR CLOCK FLAG FAILED
0571 2427 2427 /TST27 ERROR MESSAGE
0572 0556 TST27 /SCOPE LOOP
0573 2077 ENDIT, ISZ LOOP
0574 5462 JMP I OVER2A /LOOP ON TEST
0575 4570 JMS I XPASS /TYPE PASS COMPLETE
0576 5461 JMP I OVER2 /RESET COUNTER AND CONTINUE TESTING
/
/DOES IOT CLZE CHANGE AC?
/CHECK ALL COMBINATIONS.
/
0577 1040 TST30, TAD REGA /GET AC NUMBER
0600 4423 JMS I XIOTD /IOT 6130, CLZE
0601 3071 DCA RECEV /SAVE INPUT FOR ERROR PRINTER
0602 1071 TAD RECEV
0603 4456 JMS I XSNDRV /CHECK SEND AND RECEV REGISTERS
0604 4472 JMS I NERROR /CHECK NON-ERROR HANDLER
0605 4473 JMS I ERROR /ERROR: CLZE CHANGED AC
0606 3030 3030 /TST30 ERROR MESSAGE
0607 0577 TST30 /SCOPE LOOP
/
/DOES IOT CLSK CHANGE AC?
/CHECK ALL COMBINATIONS
/
0610 1040 TST31, TAD REGA /GET AC NUMBER

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```

0611 3070 DCA SEND /SAVE OUTPUT FOR ERROR PRINTER
0612 1070 TAD SEND
0613 4424 JMS I XIOTE /IOT 6131, CLSK
0614 7000 NOP
0615 3071 DCA RECEV /SAVE INPUT FOR ERROR PRINTER
0616 1071 TAD RECEV
0617 4456 JMS I XSNDRV /CHECK SEND AND RECEV REGISTERS
0620 4472 JMS I NERROR /CHECK NON-ERROR HANDLER
0621 4473 JMS I ERROR /ERROR: CLSK CHANGED AC.
0622 3031 3031 /TST31 ERROR MESSAGE
0623 0610 TST31 /SCOPE LOOP
/
/DOES IOT CLOE CHANGE AC?
/CHECK ALL COMBINATIONS
/
0624 1040 TST32, TAD REGA /GET AC NUMBER
0625 4425 JMS I XIOTF /IOT 6132, CLOE
0626 3071 DCA RECEV /SAVE INPUT FOR ERROR PRINTER
0627 1071 TAD RECEV
0630 4456 JMS I XSNDRV /CHECK SEND AND RECEV REGISTERS
0631 4472 JMS I NERROR /CHECK NON-ERROR HANDLER
0632 4473 JMS I ERROR /ERROR: CLOE CHANGED AC
0633 3032 3032 /TST32 ERROR MESSAGE
0634 0624 TST32 /SCOPE LOOP
/
/DOES IOT CLAB CHANGE AC?
/CHECK ALL COMBINATIONS
/
0635 1040 TST33, TAD REGA /GET AC NUMBER
0636 4427 JMS I XIOTG /IOT 6133, CLAB
0637 3071 DCA RECEV /SAVE INPUT FOR ERROR PRINTER
0640 1071 TAD RECEV
0641 4456 JMS I XSNDRV /CHECK SEND AND RECEV REGISTERS
0642 4472 JMS I NERROR /CHECK NON-ERROR HANDLER
0643 4473 JMS I ERROR /ERROR: CLAB CHANGED AC
0644 3033 3033 /TST33 ERROR MESSAGE
0645 0635 TST33 /SCOPE LOOP
/
/DOES CAF CLEAR BUFFER REGISTER?
/CHECK FOR JAM TO AC, CLBA.
/
0646 6007 TST34, 6007 /CAF OR CLEAR THE WORLD
0647 7340 CLA CLL CMA /AC TO 7777
0650 4432 JMS I XIOTJ /IOT 6136, CLBA
0651 7650 SNA CLA /WAS BUFFER ALL 0'S?
0652 4072 JMS I NERROR /CHECK NON-ERROR HANDLER
0653 4473 JMS I ERROR /ERROR: CAF OR CLBA FAILED.
0654 3434 3434 /TST34 ERROR MESSAGE
0655 0646 TST34 /SCOPE LOOP
/
/DOES CAF CLEAR ENABLE REGISTER?
/CHECK FOR JAM TO AC, CLEN.
/

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```

0656 6007 TST35, 6007 /CAF OR CLEAR THE WORLD
0657 7340 CLA CLL CMA /AC TO 7777
0660 4430 JMS I XIOTH /IOT 6134, CLEN
0661 7650 SNA CLA /WAS ENABLE REGISTER ALL 0'S?
0662 4472 JMS I NERROR /CHECK NON-ERROR HANDLER
0663 4473 JMS I ERROR /ERRORICAL OR CLEN FAILED.
0664 4435 4435 /TST35 ERROR MESSAGE
0665 0656 TST35 /SCOPE LOOP

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/
/DOES CAF CLEAR STATUS REGISTER ?
/CHECK JAM TO AC CLSA
/

```

```

0666 6007 TST36, 6007 /CAF OR THE CLEAR THE WORLD
0667 7340 CLA CLL CMA /AC TO 7777
0670 4431 JMS I XIOTI /IOT 6135, CLSA
0671 7650 SNA CLA /WAS STATUS REGISTER ALL 0'S ?
0672 4472 JMS I NERROR /CHECK NON-ERROR HANDLER
0673 4473 JMS I ERROR /CAF OR CLSA FAILED
0674 5036 5036 /TST36 ERROR MESSAGE
0675 0666 TST36 /SCOPE LOOP

```

```

/
/DOES AC LOAD BUFFER REGISTER?
/CHECK ALL 0'S TRANSFER
/CHECK JAM TO AC, CLBA
/

```

```

0676 4427 TST37, JMS I XIOTG /IOT 6133, CLAB
0677 7340 CLA CLL CMA /AC TO 7777
0700 4432 JMS I XIOTJ /IOT 6136, CLBA
0701 7650 SNA CLA /WAS BUFFER ALL 0'S?
0702 4472 JMS I NERROR /CHECK NON-ERROR HANDLER
0703 4473 JMS I ERROR /ERRORICLBA OR CLBA FAILED
0704 3437 3437 /TST37 ERROR MESSAGE
0705 0676 TST37 /SCOPE LOOP

```

```

/
/DOES AC LOAD BUFFER REGISTER ?
/CHECK ALL 1'S TRANSFER
/CHECK JAM TO AC, CLBA
/

```

```

0706 7340 TST40, CLA CLL CMA /AC TO 7777
0707 4427 JMS I XIOTG /IOT 6133, CLAB
0710 7300 CLA CLL /CLEAR THE AC AND LINK
0711 4432 JMS I XIOTJ /IOT 6136, CLBA
0712 7040 CMA /COMPLEMENT THE AC
0713 7650 SNA CLA /WAS BUFFER ALL 1'S?
0714 4472 JMS I NERROR /CHECK NON-ERROR HANDLER
0715 4473 JMS I ERROR /ERRORICLBA OR CLBA FAILED
0716 3440 3440 /TST40 ERROR MESSAGE
0717 0706 TST40 /SCOPE LOOP

```

```

/
/DOES BUFFER SURVIVE PATTERN 2525 ?
/

```

```

0720 1016 TST41, TAD K2525 /GET AC NUMBER
0721 4427 JMS I XIOTG /IOT 6133, CLAB

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```

0722 7040 CMA /COMPLEMENT AC
0723 4432 JMS I XIOTJ /IOT 6136, CLBA
0724 4456 JMS I XSNDRV /CHECK SEND AND RECEV REGISTERS
0725 4472 JMS I NERROR /CHECK NON-ERROR HANDLER
0726 4473 JMS I ERROR /ERROR: BUFFER OR AC FAILED
0727 3441 3441 /TST41 ERROR MESSAGE
0730 0720 TST41 /SCOPE LOOP

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```

/
/DOES BUFFER SURVIVE PATTERN 5252 ?
/

```

```

0731 1017 TST42, TAD K5252 /GET AC NUMBER
0732 4427 JMS I XIOTG /IOT 6133, CLAB
0733 7040 CMA /COMPLEMENT AC
0734 4432 JMS I XIOTJ /IOT 6136, CLBA
0735 4456 JMS I XSNDRV /CHECK SEND AND RECEV REGISTERS
0736 4472 JMS I NERROR /CHECK NON-ERROR HANDLER
0737 4473 JMS I ERROR /ERROR: BUFFER OR AC FAILED
0740 3442 3442 /TST42 ERROR MESSAGE
0741 0731 TST42 /SCOPE LOOP

```

```

/
/DOES CAF REALLY CLEAR BUFFER ?
/

```

```

0742 7240 TST43, CLA CLA CMA /AC TO ALL 7777
0743 4427 JMS I XIOTG /IOT 6133, CLAB
0744 6007 6007 /CAF OR CLEAR THE WORLD
0745 3070 DCA SEND /SAVE OUTPUT FOR ERROR PRINTER
0746 7340 CLA CLL CMA
0747 4432 JMS I XIOTJ /IOT 6136, CLBA
0750 7650 SNA CLA /WAS BUFFER ALL 0'S ?
0751 4472 JMS I NERROR /CHECK NON-ERROR HANDLER
0752 4473 JMS I ERROR /ERROR: CAF OR BUFFER FAILED
0753 3443 3443 /TST43 ERROR MESSAGE
0754 0742 TST43 /SCOPE LOOP

```

```

/
/DOES CAF REALLY CLEAR BUFFER ?
/DO ALL COMBINATIONS
/

```

```

0755 1040 TST44, TAD REGA /GET AC NUMBER
0756 4427 JMS I XIOTG /IOT 6133, CLAB
0757 6007 6007 /CAF OR CLEAR THE WORLD
0760 3070 DCA SEND /SAVE OUTPUT FOR ERROR PRINTER
0761 7340 CLA CLL CMA
0762 4432 JMS I XIOTJ /IOT 6136, CLBA
0763 7650 SNA CLA /WAS BUFFER ALL 0'S ?
0764 4472 JMS I NERROR /CHECK NON-ERROR HANDLER
0765 4473 JMS I ERROR /ERROR: CAF OR BUFFER FAILED
0766 3444 3444 /TST44 ERROR MESSAGE
0767 0755 TST44 /SCOPE LOOP

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0770 5771 JMP I .+1 /TO NEXT TEST
0771 1000 TST45

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1000

PAGE

/CHECK AC TO BUFFER REGISTER AND

```

/BUFFER REGISTER TO AC TRANSFERS.
/CHECK ALL COMBINATIONS.
/CHECK LOAD ON BUFFER REGISTER.
/
1000 7340 TST45, CLA CLL CMA
1001 3040 DCA REGA
1002 1041 T45B, TAD REGB /GET AC NUMBER
1003 4427 JMS I XIOTG /IOT 6133, CLAB
1004 7040 CMA /COMPLEMENT THE AC
1005 4432 JMS I XIOTJ /IOT 6136, CLBA
1006 4456 JMS I XSNDRV /CHECK SEND RECEV REGISTERS
1007 7610 SKP CLA
1010 5214 JMP T45A
1011 2041 ISZ REGB /UPDATE AC NUMBER
1012 5202 JMP T45B
1013 4472 JMS I NERROR /CHECK NON=ERROR HANDLER
1014 4473 T45A, JMS I ERROR /ERROR! AC OR BUFFER FAILED.
1015 3445 3445 /TST45 ERROR MESSAGE
1016 1000 TST45 /SCOPE LOOP

/DOES READING BUFFER CHANGE ITS CONTENTS ?
/
1017 7340 TST46, CLA CLL CMA /AC TO 7777
1020 3040 DCA REGA
1021 1016 TAD K2525 /GET AC NUMBER
1022 4427 JMS I XIOTG /IOT 6133, CLAB
1023 7040 CMA /COMPLEMENT AC
1024 4432 T46B, JMS I XIOTJ /IOT 6136, CLBA
1025 4456 JMS I XSNDRV /CHECK SEND AND RECEV REGISTERS
1026 7610 SKP CLA
1027 5233 JMP T46A
1030 2041 ISZ REGB /UPDATE COUNTER
1031 5224 JMP T46B /DO 4096 TIMES
1032 4472 JMS I NERROR /CHECK NON=ERROR HANDLER
1033 4473 T46A, JMS I ERROR /ERROR! BUFFER FAILED
1034 3446 3446 /TST46 ERROR MESSAGE
1035 1017 TST46 /SCOPE LOOP

/DOES READING BUFFER CHANGE ITS CONTENTS ?
/
1036 7340 TST47, CLA CLL CMA /AC TO 7777
1037 3040 DCA REGA
1040 1017 TAD K5252 /GET AC NUMBER
1041 4427 JMS I XIOTG /IOT 6133, CLAB
1042 7040 CMA /COMPLEMENT AC
1043 4432 T47B, JMS I XIOTJ /IOT 6136, CLBA
1044 4456 JMS I XSNDRV /CHECK SEND AND RECEV REGISTERS
1045 7610 SKP CLA
1046 5252 JMP T47A
1047 2041 ISZ REGB /UPDATE COUNTER
1050 5243 JMP T47B /DO 4096 TIMES
1051 4472 JMS I NERROR /CHECK NON=ERROR HANDLER
1052 4473 T47A, JMS I ERROR /ERROR! BUFFER FAILED
1053 3447 3447 /TST47 ERROR MESSAGE
1054 1036 TST47 /SCOPE LOOP
    
```

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/DOES BUFFER SURVIVE RANDOM PATTERNS ?
/
1055 7340 TST50, CLA CLL CMA /AC TO 7777
1056 3040 DCA REGA
1057 4455 T50B, JMS I RANDY /GET RANDOM NUMBER
1060 4427 JMS I XIOTG /IOT 6133, CLAB
1061 7040 CMA /COMPLEMENT AC
1062 4432 JMS I XIOTJ /IOT 6136, CLBA
1063 4456 JMS I XSNDRV /CHECK SEND AND RECEV REGISTERS
1064 7610 SKP CLA
1065 5271 JMP T50A
1066 2041 ISZ REGB /UPDATE COUNTER
1067 5257 JMP T50B /DO 4096 TIMES
1070 4472 JMS I NERROR /CHECK NON=ERROR HANDLER
1071 4473 T50A, JMS I ERROR /ERROR! BUFFER FAILED
1072 3450 3450 /TST50 ERROR MESSAGE
1073 1055 TST50 /SCOPE LOOP

/DOES BUFFER SURVIVE FAST TOGGLE ?
/
1074 1040 TST51, TAD REGA /GET AC NUMBER
1075 3070 DCA SEND /SAVE OUTPUT FOR ERROR PRINTER
1076 1040 TAD REGA
1077 4435 JMS I XIOTS1 /IOT'S 6133 AND 6136
1100 3071 DCA RECEV /SAVE INPUT FOR ERROR PRINTER
1101 1071 TAD RECEV
1102 4456 JMS I XSNDRV /CHECK SEND RECEV REGISTERS
1103 4472 JMS I NERROR /CHECK NON=ERROR HANDLER
1104 4473 JMS I ERROR /ERROR! BUFFER FAILED
1105 3451 3451 /TST51 ERROR MESSAGE
1106 1074 TST51 /SCOPE LOOP

/DOES AC SET ENABLE REGISTER?
/CHECK ALL 1'S TRANSFER.
/CHECK JAM TO AC, CLEN
/
1107 7340 TST52, CLA CLL CMA /AC TO 7777
1110 4425 JMS I XIOTF /IOT 6132, CLOE
1111 7040 CMA /COMPLEMENT AC
1112 4430 JMS I XIOTH /IOT 6134, CLEN
1113 7040 CMA /COMPLEMENT AC
1114 7650 SNA CLA /WAS ENABLE REGISTER ALL 1'S ?
1115 4472 JMS I NERROR /CHECK NON=ERROR HANDLER
1116 4473 JMS I ERROR /ERROR! CLOE OR CLEN FAILED.
1117 4452 4452 /TST52 ERROR MESSAGE
1120 1107 TST52 /SCOPE LOOP

/DOES AC SET ENABLE REGISTER?
/CHECK ALL 0'S TRANSFER.
/CHECK FOR JAM TO AC, CLEN
/
1121 7340 TST53, CLA CLL CMA /AC TO 7777
1122 4425 JMS I XIOTF /IOT 6132, CLOE
    
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1123 7300 CLA CLL /CLEAR THE AC AND LINK
1124 4426 JMS I XIOTF1 /IOT 6132, CLOE
1125 4430 JMS I XIOTH /IOT 6134, CLEN
1126 7040 CMA /COMPLEMENT THE AC
1127 7650 SNA CLA /WAS ENABLE REGISTER ALL 1'S?
1130 4472 JMS I NERROR /CHECK NON-ERROR HANDLER
1131 4473 JMS I ERROR /ERROR: CLOE OR CLEN FAILED
1132 4453 4453 /TST53 ERROR MESSAGE
1133 1121 TST53 /SCOPE LOOP

```

/DOES CAF REALLY CLEAR ENABLE REGISTER?

```

1134 7340 TST54, CLA CLL CMA /AC TO 7777
1135 4425 JMS I XIOTF /IOT 6132, CLOE
1136 6007 6007 /CAF OR CLEAR THE WORLD
1137 3070 DCA SEND /SAVE OUTPUT FOR ERROR PRINTER
1140 7340 CLA CLL CMA /AC TO 7777
1141 4430 JMS I XIOTH /IOT 6134, CLEN
1142 7650 SNA CLA /WAS REGISTER ALL 0'S
1143 4472 JMS I NERROR /CHECK NON-ERROR HANDLER
1144 4473 JMS I ERROR /ERROR: CAF, CLOE, OR CLEN FAILED
1145 4454 4454 /TST54 ERROR MESSAGE
1146 1134 TST54 /SCOPE LOOP

```

/DOES CAF REALLY CLEAR ENABLE REGISTER ?
/DO ALL COMBINATIONS

```

1147 1040 TST55, TAD REGA /GET AC NUMBER
1150 4426 JMS I XIOTF1 /IOT 6132, CLOE
1151 6007 6007 /CAF OR CLEAR THE WORLD
1152 7340 CLA CLL CMA /AC TO 7777
1153 4430 JMS I XIOTH /IOT 6134, CLEN
1154 7650 SNA CLA /WAS ENABLE REGISTER ALL 0'S ?
1155 4472 JMS I NERROR /CHECK NON-ERROR HANDLER
1156 4473 JMS I ERROR /ERROR: ENABLE REGISTER FAILED
1157 4455 4455 /TST55 ERROR MESSAGE
1160 1147 TST55 /SCOPE LOOP

```

/DOES ENABLE REGISTER SURVIVE PATTERN 2525 ?

```

1161 1016 TST56, TAD K2525 /GET AC NUMBER
1162 4425 JMS I XIOTF /IOT 6132, CLOE
1163 7040 CMA /COMPLEMENT AC
1164 4430 JMS I XIOTH /IOT 6134, CLEN
1165 4456 JMS I XSNDRV /CHECK SEND AND RECEV REGISTERS
1166 4472 JMS I NERROR /CHECK NON-ERROR HANDLER
1167 4473 JMS I ERROR /ERROR: ENABLE REGISTER FAILED
1170 4456 4456 /TST56 ERROR MESSAGE
1171 1161 TST56 /SCOPE LOOP

```

/DOES ENABLE REGISTER SURVIVE PATTERN 5252 ?

```

1172 1017 TST57, TAD K5252 /GET AC NUMBER
1173 4425 JMS I XIOTF /IOT 6132, CLOE
1174 7040 CMA /COMPLEMENT AC

```

```

1175 4430 JMS I XIOTH /IOT 6134, CLEN
1176 4456 JMS I XSNDRV /CHECK SEND AND RECEV REGISTERS
1177 4472 JMS I NERROR /CHECK NON-ERROR HANDLER
1200 4473 JMS I ERROR /ERROR: ENABLE REGISTER FAILED
1201 4457 4457 /TST57 ERROR MESSAGE
1202 1172 TST57 /SCOPE LOOP

```

/DOES ENABLE REGISTER SURVIVE PATTERN 2525 ?

```

1203 1016 TST60, TAD K2525 /GET AC NUMBER
1204 4425 JMS I XIOTF /IOT 6132, CLOE
1205 7300 CLA CLL /CLEAR THE AC AND LINK
1206 4426 JMS I XIOTF1 /IOT 6132, CLOE
1207 7340 CLA CLL CMA /AC TO 7777
1210 4430 JMS I XIOTH /IOT 6134, CLEN
1211 4456 JMS I XSNDRV /CHECK SEND AND RECEV REGISTERS
1212 4472 JMS I NERROR /CHECK NON-ERROR HANDLER
1213 4473 JMS I ERROR /ERROR: ENABLE REGISTER FAILED
1214 4460 4460 /TST60 ERROR MESSAGE
1215 1203 TST60 /SCOPE LOOP

```

/DOES ENABLE REGISTER SURVIVE PATTERN 5252 ?

```

1216 1017 TST61, TAD K5252 /GET AC NUMBER
1217 4425 JMS I XIOTF /IOT 6132, CLOE
1220 7300 CLA CLL /CLEAR THE AC AND LINK
1221 4426 JMS I XIOTF1 /IOT 6132, CLOE
1222 7340 CLA CLL CMA /AC TO 7777
1223 4430 JMS I XIOTH /IOT 6134, CLEN
1224 4456 JMS I XSNDRV /CHECK SEND AND RECEV REGISTERS
1225 4472 JMS I NERROR /CHECK NON-ERROR HANDLER
1226 4473 JMS I ERROR /ERROR: ENABLE REGISTER FAILED
1227 4461 4461 /TST61 ERROR MESSAGE
1230 1216 TST61 /SCOPE LOOP

```

/DOES ENABLE REGISTER SURVIVE COMPLEMENT PATTERN ?

```

1231 7340 TST62, CLA CLL CMA /AC TO 7777
1232 3070 DCA SEND /SAVE OUTPUT FOR ERROR PRINTER
1233 1016 TAD K2525 /GET AC NUMBER
1234 4426 JMS I XIOTF1 /IOT 6132, CLOE
1235 7040 CMA /COMPLEMENT AC
1236 4426 JMS I XIOTF1 /IOT 6132, CLOE
1237 7300 CLA CLL /CLAER THE AC AND LINK
1240 4430 JMS I XIOTH /IOT 6134, CLEN
1241 4456 JMS I XSNDRV /CHECK SEND RECEV REGISTERS
1242 4472 JMS I NERROR /CHECK NON-ERROR HANDLER
1243 4473 JMS I ERROR /ERROR: ENABLE REGISTER FAILED
1244 4462 4462 /TST62 ERROR MESSAGE
1245 1231 TST62 /SCOPE LOOP

```

/DOES ENABLE REGISTER SURVIVE COMPLEMENT PATTERN ?

```

1246 7340 TST63, CLA CLL CMA /AC TO 7777
1247 3070 DCA SEND /SAVE OUTPUT FOR ERROR PRINTER

```

```

1250 1017 TAD K5252 /GET AC NUMBER
1251 4426 JMS I XIOTF1 /IOT 6132, CLOE
1252 7040 CMA /COMPLEMENT AC
1253 4426 JMS I XIOTF1 /IOT 6132, CLOE
1254 7300 CLA CLL
1255 4430 JMS I XIOTH /IOT 6134, CLEN
1256 4456 JMS I XSNDV /CHECK SEND AND RECEV REGISTERS
1257 4472 JMS I NERROR /CHECK NON-ERROR HANDLER
1260 4473 JMS I ERROR /ERROR! ENABLE REGISTERS
1261 4463 4463 /TST63 ERROR MESSAGE
1262 1246 TST63 /SCOPE LOOP

/DO AC TO ENABLE REGISTER AND
/ENABLE REGISTER TO AC TRANSFERS
/CHECK ALL COMBINATIONS

1263 1040 TST64, TAD REGA /GET AC NUMBER
1264 4425 JMS I XIOTF /IOT 6132, CLOE
1265 7300 CLA CLL CMA /AC TO 7777
1266 4430 JMS I XIOTH /IOT 6134, CLEN
1267 4456 JMS I XSNDV /CHECK SEND AND RECEV REGISTERS
1270 4472 JMS I NERROR /CHECK NON-ERROR HANDLER
1271 4473 JMS I ERROR /ERROR! AC OR ENABLE REGISTER FAILED.
1272 4464 4464 /TST64 ERROR MESSAGE
1273 1263 TST64 /SCOPE LOOP

/DOES ENABLE REGISTER SURVIVE COMPLEMENT PATTERN.
/DO ALL COMBINATIONS.

1274 7340 TST65, CLA CLL CMA /AC TO 7777
1275 3070 DCA SEND /SAVE OUTPUT FOR ERROR PRINTER
1276 1040 TAD REGA /GET AC NUMBER
1277 4426 JMS I XIOTF1 /IOT 6132, CLOE
1300 7040 CMA /COMPLEMENT THE AC
1301 4426 JMS I XIOTF1 /IOT 6132, CLOE
1302 4430 JMS I XIOTH /IOT 6134, CLEN
1303 4456 JMS I XSNDV /CHECK SEND AND RECEV REGISTERS
1304 4472 JMS I NERROR /CHECK NON-ERROR HANDLER
1305 4473 JMS I ERROR /ERROR! AC OR ENABLE REGISTER FAILED.
1306 4465 4465 /TST65 ERROR MESSAGE
1307 1274 TST65 /SCOPE LOOP

/DOES ENABLE REGISTER SURVIVE RANDOM PATTERN ?

1310 4455 TST66, JMS I RANDY /GET RANDOM NUMBER
1311 4425 JMS I XIOTF /IOT 6132, CLOE
1312 7300 CLA CLL /CLEAR THE AC AND LINK
1313 4430 JMS I XIOTH /IOT 6134, CLEN
1314 4456 JMS I XSNDV /CHECK SEND AND RECEV REGISTERS
1315 4472 JMS I NERROR /CHECK NON-ERROR HANDLER
1316 4473 JMS I ERROR /ERROR! ENABLE REGISTER FAILED
1317 4466 4466 /TST66 ERROR MESSAGE
1320 1310 TST66 /SCOPE LOOP

/DOES ENABLE REGISTER SURVIVE RANDOM COMPLEMENT PATTERN ?

```

```

1321 7340 TST67, CLA CLL CMA /AC TO 7777
1322 3070 DCA SEND /SAVE OUTPUT FOR ERROR PRINTER
1323 4455 JMS I RANDY /GET RANDOM NUMBER
1324 4426 JMS I XIOTF1
1325 7040 CMA /COMPLEMENT AC
1326 4426 JMS I XIOTF1 /IOT 6132, CLOE
1327 4430 JMS I XIOTH /IOT 6134, CLEN
1330 4456 JMS I XSNDV /CHECK SEND AND RECEV REGISTERS
1331 4472 JMS I NERROR /CHECK NON-ERROR HANDLER
1332 4473 JMS I ERROR /ERROR! ENABLE REGISTER FAILED
1333 4467 4467 /TST67 ERROR MESSAGE
1334 1321 TST67 /SCOPE LOOP

/DOES READING ENABLE REGISTER CHANGE ITS CONTENTS ?

1335 7340 TST70, CLA CLL CMA /AC TO 7777
1336 3040 DCA REGA
1337 1016 TAD K5252 /GET AC NUMBER
1340 4425 JMS I XIOTF /IOT 6132, CLOE
1341 7340 T70B, CLA CLL CMA /AC TO 7777
1342 4430 JMS I XIOTH /IOT 6134, CLEN
1343 4456 JMS I XSNDV /CHECK SEND AND RECEV REGISTERS
1344 7610 SKP CLA
1345 5351 JMP T70A
1346 2041 ISZ REGB /UPDATE COUNTER
1347 5341 JMP T70B /DO 4096 TIMES
1350 4472 JMS I NERROR /CHECK NON-ERROR HANDLER
1351 4473 T70A, JMS I ERROR /ERROR! ENABLE REGISTER FAILED
1352 4470 4470 /TST70 ERROR MESSAGE
1353 1335 TST70 /SCOPE LOOP

/DOES READING ENABLE REGISTER CHANGE TIS CONTENTS ?

1354 7340 TST71, CLA CLL CMA /AC TO 7777
1355 3040 DCA REGA
1356 1017 TAD K5252 /GET AC NUMBER
1357 4425 JMS I XIOTF /IOT 6132, CLOE
1360 7300 T71B, CLA CLL /CLEAR THE AC AND LINK
1361 4430 JMS I XIOTH /IOT 6134, CLEN
1362 4456 JMS I XSNDV /CHECK SEND RECEV REGISTERS
1363 7610 SKP CLA
1364 5370 JMP T71A
1365 2041 ISZ REGB /UPDATE COUNTER
1366 5360 JMP T71B /DO 4096 TIMES
1367 4472 JMS I NERROR /CHECK NON-ERROR HANDLER
1370 4473 T71A, JMS I ERROR /ERROR! ENABLE REGISTER FAILED
1371 4471 4471 /TST71 ERROR MESSAGE
1372 1354 TST71 /SCOPE LOOP

/DOES ENABLE REGISTER SURVIVE FAST TOGGLE ?

1373 1040 TST72, TAD REGA /GET AC NUMBER
1374 3070 DCA SEND /SAVE OUTPUT FOR ERROR PRINTER
1375 1040 TAD REGA

```

```

1376 4434 JMS I XIOTS /IOT'S 6132 AND 6134
1377 3071 DCA RECEV /SAVE INPUT FOR ERROR PRINTER
1400 1071 TAD RECEV
1401 4456 JMS I XSNDRV /CHECK SEND RECEV REGISTERS
1402 4472 JMS I NERROR /CHECK NON-ERROR HANDLER
1403 4473 JMS I ERROR /ERROR: ENABLE REGISTER FAILED
1404 4472 4472 /TST72 ERROR MESSAGE
1405 1373 TST72 /SCOPE LOOP

```

```

/DOES CLZE CLEAR ENABLF REGISTER?
/

```

```

1406 7340 TST73, CLA CLL CMA /AC TO 7777
1407 4426 JMS I XIOTF1 /IOT 6132, CMOE
1410 7340 CLA CLL CMA
1411 4423 JMS I XIOTD /IOT 6130, CLZE
1412 7300 CLA CLL /CLEAR THE AC AND LINK
1413 3070 DCA SEND /SAVE OUTPUT FOR ERROR PRINTER
1414 7340 CLA CLL CMA /AC TO 7777
1415 4430 JMS I XIOTH /IOT 6134, CLEN
1416 7650 SNA CLA /WAS REGISTER ALL 0'S
1417 4472 JMS I NERROR /CHECK NON-ERROR HANDLER
1420 4473 JMS I ERROR /ERROR:CLZE OR CLEN FAILED.
1421 4473 4473 /TST73 ERROR MESSAGE
1422 1406 TST73 /SCOPE LOOP

```

```

/DOES CLZE CLEAR ENABLE REGISTER?
/

```

```

1423 7340 TST74, CLA CLL CMA /AC TO 7777
1424 4425 JMS I XIOTF /IOT 6132, CLOE
1425 7300 CLA CLL
1426 4423 JMS I XIOTD /IOT 6130, CLZE
1427 7340 CLA CLL CMA /AC TO 7777
1430 3070 DCA SEND /SAVE OUTPUT ERROR PRINTER
1431 4430 JMS I XIOTH /IOT 6134, CLEN
1432 7040 CMA /COMPLEMENT AC
1433 7650 SNA CLA /WAS REGISTER ALL 0'S?
1434 4472 JMS I NERROR /CHECK NON-ERROR HANDLER
1435 4473 JMS I ERROR /ERROR:CLZE OR CLEN FAILED.
1436 4474 4474 /TST74 ERROR MESSAGE
1437 1423 TST74 /SCOPE LOOP

```

```

/DOES CLZE CLEAR ENABLE REGISTER?
/

```

```

1440 1016 TST75, TAD K2525
1441 4425 JMS I XIOTF /IOT 6132,CLOE
1442 7040 CMA /COMPLEMENT THE AC
1443 4423 JMS I XIOTD /IOT 6130, CLZE
1444 7040 CMA /COMPLEMENT AC
1445 3070 DCA SEND /SAVE OUTPUT FOR ERROR PRINTER
1446 4430 JMS I XIOTH /IOT 6134, CLEN
1447 4456 JMS I XSNDRV /CHECK SEND AND RECEV REGISTERS
1450 4472 JMS I NERROR /CHECK NON-ERROR HANDLER
1451 4473 JMS I ERROR /ERROR:CLZE,CLOE, OR CLEN FAILED
1452 4475 4475 /TST75 ERROR MESSAGE
1453 1440 TST75 /SCOPE LOOP

```

```

/DOES CLZE CLEAR ENABLE REGISTER ?
/

```

```

1454 1017 TST76, TAD K5252 /GET AC NUMBER
1455 4425 JMS I XIOTF /IOT 6132, CLOE
1456 7040 CMA /COMPLEMENT AC
1457 4423 JMS I XIOTD /IOT 6130, CLZE
1460 7040 CMA /COMPLEMENT AC
1461 3070 DCA SEND /SAVE OUTPUT FOR ERROR PRINTER
1462 4430 JMS I XIOTH /IOT 6134, CLEN
1463 4456 JMS I XSNDRV /CHECK SEND AND RECEV REGISTERS
1464 4472 JMS I NERROR /CHECK NON-ERROR HANDLER
1465 4473 JMS I ERROR /ERROR: ENABLE REGISTER FAILED
1466 4476 4476 /TST76 ERROR MESSAGE
1467 1454 TST76 /SCOPE LOOP

```

```

/DOES CLZE CLEAR ENABLE REGISTER?
/CHECK ALL COMBINATIONS
/

```

```

1470 1040 TST77, TAD REGA /GET AC NUMBER
1471 4425 JMS I XIOTF /IOT 6132, CLOE
1472 4423 JMS I XIOTD /IOT 6130, CLZE
1473 7300 CLA CLL /CLEAR THE AC AND LINK
1474 3070 DCA SEND /SAVE OUTPUT FOR ERROR PRINTER
1475 7340 CLA CLL CMA /AC TO ALL 1'S
1476 4430 JMS I XIOTH /IOT 6134, CLEN
1477 7650 SNA CLA /WAS REGISTER ALL 0'S?
1500 4472 JMS I NERROR /CHECK NON-ERROR HANDLER
1501 4473 JMS I ERROR /ERROR:CLZE,CLOE, OR CLEN FAILED
1502 4477 4477 /TST77 ERROR MESSAGE
1503 1470 TST77 /SCOPE LOOP

```

```

/DOES CLZE CLEAR ENABLE REGISTER?
/DD ALL COMBINATIONS
/

```

```

1504 1040 TST100, TAD REGA /GET AC NUMBER
1505 4425 JMS I XIOTF /IOT 6132, CLOE
1506 7040 CMA /COMPLEMENT THE AC
1507 4423 JMS I XIOTD /IOT 6130, CLZE
1510 7040 CMA /COMPLEMENT THE AC
1511 3070 DCA SEND /SAVE OUTPUT FOR ERROR PRINTER
1512 4430 JMS I XIOTH /IOT 6134, CLEN
1513 4456 JMS I XSNDRV /CHECK SEND AND RECEV REGISTERS
1514 4472 JMS I NERROR /CHECK NON-ERROR HANDLER
1515 4473 JMS I ERROR /ERROR:CLZE, CLOE, OR CLEN FAILED
1516 4500 4500 /TST100 ERROR MESSAGE
1517 1504 TST100 /SCOPE LOOP

```

```

/DOES CLZE SURVIVE RANDOM PATTERN ?
/

```

```

1520 4455 TST101, JMS I RANDY /GET RANDOM NUMBER
1521 4425 JMS I XIOTF /IOT 6132, CLOE
1522 4423 JMS I XIOTD /IOT 6130, CLZE

```

```

1523 7300      CLA CLL      /CLEAR THE AC AND LINK
1524 3070      DCA SEND    /SAVE OUTPUT FOR ERROR PRINTER
1525 4430      JMS I XIOTH /IOT 6134, CLEN
1526 4456      JMS I XSNDV /CHECK SEND AND RECEV REGISTERS
1527 4472      JMS I NERRR /CHECK NON-ERROR HANDLER
1530 4473      JMS I ERROR /ERROR! ENABLE REGISTER FAILED
1531 4501      4501       /TST101 ERROR MESSAGE
1532 1520      TST101     /SCOPE LOOP
    
```

/DOES CLZE SURVIVE RANDOM COMPLEMENT PATTERN ?

```

1533 4455      TST102, JMS I RANDY /GET RANDOM NUMBER
1534 4425      JMS I XIOTF  /IOT 6132, CLOE
1535 7040      CMA         /COMPLEMENT AC
1536 4423      JMS I XIOTD  /IOT 6130, CLZE
1537 7040      CMA         /COMPLEMENT AC
1540 3070      DCA SEND    /SAVE OUTPUT FOR ERROR PRINTER
1541 4430      JMS I XIOTH /IOT 6134, CLEN
1542 4456      JMS I XSNDV /CHECK SEND AND RECEV REGISTERS
1543 4472      JMS I NERRR /CHECK NON-ERROR HANDLER
1544 4473      JMS I ERROR /ERROR! ENABLE REGISTER FAILED
1545 4502      4502       /TST102 ERROR MESSAGE
1546 1533      TST102     /SCOPE LOOP
    
```

/DOES CLZE SURVIVE FAST TOGGLE ?

```

1547 1040      TST103, TAD REGA /GET AC NUMBER
1550 4425      JMS I XIOTF  /IOT 6132, CLOE
1551 4437      JMS I XIOTS3 /IOT'S 6130 AND 6134
1552 3071      DCA RECEV   /SAVE INPUT FOR ERROR PRINTER
1553 1071      TAD RECEV
1554 4456      JMS I XSNDV /CHECK SEND RECEV REGISTERS
1555 4472      JMS I NERRR /CHECK NON-ERROR HANDLER
1556 4473      JMS I ERROR /ERROR! ENABLE REGISTER FAILED
1557 4503      4503       /TST103 ERROR MESSAGE
1560 1547      TST103     /SCOPE LOOP
    
```

/DOES AC TRANSFER TO BUFFER THEN TO COUNTER ?

```

1561 4427      TST104, JMS I XIOTG /IOT 6133, CLAB
1562 7340      CLA CLL CMA /AC TO ALL 1'S
1563 4433      JMS I XIOTK  /IOT 6137, CLCA
1564 7650      SNA CLA     /WAS COUNTER ALL 0'S?
1565 4472      JMS I NERRR /CHECK NON-ERROR HANDLER
1566 4473      JMS I ERROR /ERROR! CLAB OR CLCA FAILED
1567 4104      4104       /TST104 ERROR MESSAGE
1570 1561      TST104     /SCOPE LOOP
    
```

/DOES AC TRANSFER TO BUFFER THEN TO COUNTER?

```

1571 7340      TST105, CLA CLL CMA
1572 4427      JMS I XIOTG  /IOT 6133, CLAB
1573 4433      JMS I XIOTK  /IOT 6137, CLCA
1574 7040      CMA         /COMPLEMENT THE AC
    
```

```

1575 7650      SNA CLA     /WAS COUNTER ALL 1'S?
1576 4472      JMS I NERRR /CHECK NON-ERROR HANDLER
1577 4473      JMS I ERROR /ERROR! CLAB OR CLCA FAILED
1600 4105      4105       /TST105 ERROR MESSAGE
1601 1571      TST105     /SCOPE LOOP
    
```

/DOES COUNTER SURVIVE PATTERN 2525 ?

```

1602 1016      TST106, TAD K2525 /GET AC NUMBER
1603 4427      JMS I XIOTG  /IOT 6133, CLAB
1604 7300      CLA CLL     /CLEAR THE AC AND LINK
1605 4433      JMS I XIOTK  /IOT 6137, CLCA
1606 4456      JMS I XSNDV /CHECK SEND AND RECEV REGISTERS
1607 4472      JMS I NERRR /CHECK NON-ERROR HANDLER
1610 4473      JMS I ERROR /ERROR! COUNTER FAILED
1611 4106      4106       /TST106 ERROR MESSAGE
1612 1602      TST106     /SCOPE LOOP
    
```

/DOES COUNTER SURVIVE PATTERN 5252 ?

```

1613 1017      TST107, TAD K5252 /GET AC NUMBER
1614 4427      JMS I XIOTG  /IOT 6133, CLAB
1615 7340      CLA CLL CMA /AC TO ALL 7777
1616 4433      JMS I XIOTK  /IOT 6137, CLCA
1617 4456      JMS I XSNDV /CHECK SEND AND RECEV REGISTERS
1620 4472      JMS I NERRR /CHECK NON-ERROR HANDLER
1621 4473      JMS I ERROR /ERROR! COUNTER FAILED
1622 4107      4107       /TST107 ERROR MESSAGE
1623 1613      TST107     /SCOPE LOOP
    
```

/DOES AC TRANSFER TO BUFFER THEN TO COUNTER?
/CHECK ALL COMBINATIONS

```

1624 1040      TST110, TAD REGA /GET AC NUMBER
1625 4427      JMS I XIOTG  /IOT 6133, CLAB
1626 7040      CMA         /COMPLEMENT THE AC
1627 4433      JMS I XIOTK  /IOT 6137, CLCA
1630 4456      JMS I XSNDV /CHECK SEND AND RECEV REGISTERS
1631 4472      JMS I NERRR /CHECK NON-ERROR HANDLER
1632 4473      JMS I ERROR /ERROR! CLAB OR CLCA FAILED
1633 4110      4110       /TST110 ERROR MESSAGE
1634 1624      TST110     /SCOPE LOOP
    
```

/DOES COUNTER SURVIVE FAST TOGGLE?

```

1635 1040      TST111, TAD REGA /GET AC NUMBER
1636 3070      DCA SEND    /SAVE OUTPUT FOR ERROR PRINTER
1637 1070      TAD SEND
1640 4436      JMS I XIOTS2 /IOT 6133 AND 6137
1641 3071      DCA RECEV   /SAVE INPUT FOR ERROR PRINTER
1642 1071      TAD RECEV
1643 4456      JMS I XSNDV /CHECK SEND AND RECEV REGISTERS
1644 4472      JMS I NERRR /CHECK NON-ERROR HANDLER
    
```

```

1645 4473      JMS I ERROR      /ERROR:CLAB OR CLCA FAILED
1646 4111      4111             /TST111 ERROR MESSAGE
1647 1635      TST111           /SCOPE LOOP

/DOES CAF AFFECT COUNTER ?
/
1650 1040      TST112, TAD REGA /GET AC NUMBER
1651 4427      JMS I XIOTG      /IOT 6133, CLAB
1652 6007      6007            /CAF OR CLEAR THE WORLD
1653 4433      JMS I XIOTK      /IOT 6137, CLCA
1654 4456      JMS I XSNDRV     /CHECK SEND AND RECEV REGISTERS
1655 4472      JMS I NERROR     /CHECK NON-ERROR HANDLER
1656 4473      JMS I ERROR      /ERROR: CLAB OR CLCA FAILED.
1657 4112      4112            /TST112 ERROR MESSAGE
1660 1650      TST112           /SCOPE LOOP
    
```

/DOES READING COUNTER CHANGE ITS CONTENTS?
/PATTERN 2525.

```

1661 7340      TST113, CLA CLL CMA /AC TO 7777
1662 3040      DCA REGA
1663 1016      TAD K2525
1664 4427      JMS I XIOTG      /IOT 6133, CLAB
1665 4433      T113B, JMS I XIOTK /IOT 6137, CLCA
1666 4456      JMS I XSNDRV     /CHECK SEND AND RECEV REGISTERS
1667 7410      SKP
1670 5274      JMP T113A
1671 2041      ISZ REGB
1672 5265      JMP T113B
1673 4472      JMS I NERROR     /CHECK NON-ERROR
1674 4473      T113A, JMS I ERROR /ERROR: CLAB OR CLCA FAILED
1675 4113      4113            /TST113 ERROR MESSAGE
1676 1661      TST113           /SCOPE LOOP
    
```

/DOES READING COUNTER CHANGE ITS CONTENTS?
/PATTERN 5252

```

1677 7340      TST114, CLA CLL CMA /AC TO 7777
1680 3040      DCA REGA
1681 1017      TAD K5252
1682 4427      JMS I XIOTG      /IOT 6133, CLAB
1683 4433      T114B, JMS I XIOTK /IOT 6137, CLCA
1684 4456      JMS I XSNDRV     /CHECK SEND AND RECEV REGISTERS
1685 7410      SKP
1686 5312      JMP T114A
1687 2041      ISZ REGB
1688 5303      JMP T114B
1689 4472      JMS I NERROR     /CHECK NON-ERROR HANDLER
1690 4473      T114A, JMS I ERROR /ERROR: COUNTER FAILED
1691 4114      4114            /TST114 ERROR MESSAGE
1692 1677      TST114           /SCOPE LOOP
    
```

/DOES COUNTER SURVIVE RANDOM PATTERN ?

```

1715 4455      TST115, JMS I RANDY /GET RANDOM NUMBER
1716 4427      JMS I XIOTG      /IOT 6133, CLAB
1717 7340      CLA CLL CMA
1720 4433      JMS I XIOTK      /IOT 6137, CLCA
1721 4456      JMS I XSNDRV     /CHECK SEND AND RECEV REGISTERS
1722 4472      JMS I NERROR     /CHECK NON-ERROR HANDLER
1723 4473      JMS I ERROR      /ERROR: COUNTER FAILED
1724 4115      4115            /TST115 ERROR MESSAGE
1725 1715      TST115           /SCOPE LOOP
    
```

/TEST FOR NO INT. RGST.

```

1726 7340      TST116, CLA CLL CMA /AC TO 7777
1727 4427      JMS I XIOTG      /IOT 6133, CLAB
1730 3040      DCA REGA
1731 1142      TAD K0010
1732 1147      TAD K0000 /GET ENABLES
1733 4425      JMS I XIOTF      /IOT 6132, CLOE
1734 4447      JMS I XPI001 /GO TO PI, NO PI EXPECTED
1735 4472      JMS I NERROR     /CHECK NON-ERROR HANDLER
1736 4473      JMS I ERROR      /ERROR: INT. RGST. FAILED
1737 1116      1116            /TST116. ERROR MESSAGE
1740 1726      TST116           /SCOPE LOOP
    
```

/DOES CLSK SKIP ON CLOCK OVERFLOW?
/SKIP EXPECTED, MODE 0, RATE 6

```

1741 7340      TST117, CLA CLL CMA /AC TO 7777
1742 4427      JMS I XIOTG      /IOT 6133, CLAB
1743 7300      CLA CLL /CLEAR THE AC AND LINK
1744 1147      TAD K0000 /GET RATE 6
1745 4425      JMS I XIOTF      /IOT 6132, CLOE
1746 4424      JMS I XIOTE      /IOT 6131, CLSK
1747 7410      SKP
1750 4472      JMS I NERROR     /CHECK NON-ERROR HANDLER
1751 4473      JMS I ERROR      /ERROR: CLSK OR OVERFLOW FAILED
1752 0517      0517            /TST117 ERROR MESSAGE
1753 1741      TST117           /SCOPE LOOP
    
```

/DOES OVERFLOW REMAIN SET ?

```

1754 7340      TST120, CLA CLL CMA /AC TO 7777
1755 4427      JMS I XIOTG      /IOT 6133, CLAB
1756 3040      DCA REGA
1757 1147      TAD K0000 /GET ENABLES
1760 4425      JMS I XIOTF      /IOT 6132, CLOE
1761 4424      JMS I XIOTE      /IOT 6131, CLSK
1762 5370      JNP T120A
1763 2041      ISZ REGB
1764 5363      JMP .-1 /WAIT ABOUT 15 MS
1765 4424      JMS I XIOTE      /IOT 6131, CLSK
1766 7410      SKP
1767 4472      JMS I NERROR     /CHECK NON-ERROR HANDLER
1770 4473      T120A, JMS I ERROR /ERROR: CLSK OR OVERFLOW FAILED
    
```



```

1771 0520          0520          /TST120 ERROR MESSAGE
1772 1754          TST120          /SCOPE LOOP
/
/DOES CAF CLEAR THAT FLAG ?
/
1773 7340 TST121, CLA CLL CMA
1774 4427      JMS I XIOTG          /IOT 6133, CLAB
1775 3040      DCA REGA
1776 1147      TAD K0600          /GET ENABLES
1777 4425      JMS I XIOTF          /IOT 6132, CLOE
2000 4424      JMS I XIOTE          /IOT 6131, CLSK
2001 5200      JMP ,=1
2002 6007      6007          /CAF OR CLEAR THE WORLD
2003 4424      JMS I XIOTE          /IOT 6131, CLSK
2004 4472      JMS I NERROR        /CHECK NON-ERROR HANDLER
2005 4473 T121A, JMS I ERROR        /ERROR! CAF OR OVERFLOW FAILED
2006 0121      0121          /TST121 ERROR MESSAGE
2007 1773      TST121          /SCOPE LOOP
/
/DOES CLSK SKIP ON OVERFLOW ?
/SKIP EXPECTED, RATE 2-6, MODE 0
/
2010 1131 TST122, TAD K7773
2011 3041      DCA REGB
2012 1015      TAD K0200
2013 3044      DCA REGE
2014 7340 T122B, CLA CLL CMA          /AC TO 7777
2015 4427      JMS I XIOTG          /IOT 6133, CLAB
2016 3040      DCA REGA
2017 1044      TAD REGE          /GET ENABLES
2020 4425      JMS I XIOTF          /IOT 6132, CLOE
2021 2043      ISZ REGD
2022 5221      JMP ,=1          /WAIT
2023 4424      JMS I XIOTE          /IOT 6131, CLSK
2024 5233      JMP T122A          /NO OVERFLOW FOUND
2025 1013      TAD K0100
2026 3044      DCA REGE          /UPDATE CLOCK RATE
2027 6007      6007          /CAF OR CLEAR THE WORLD
2030 2041      ISZ REGB
2031 5571      JMP I XCRS1
2032 4472      JMS I NERROR        /CHECK NON-ERROR HANDLER
2033 4473 T122A, JMS I ERROR        /ERROR! CLSK OR OVERFLOW FAILED
2034 0522      0522          /TST122 ERROR MESSAGE
2035 2010      TST122          /SCOPE LOOP
/
/DOES CLSK SKIP ON OVERFLOW ?
/SKIP EXPECTED, RATE 2-6, MODE 1
/
2036 1131 TST123, TAD K7773
2037 3041      DCA REGB
2040 1144      TAD K1000
2041 1015      TAD K0200
2042 3044      DCA REGE
2043 7340 T123B, CLA CLL CMA          /AC TO 7777
2044 4427      JMS I XIOTG          /IOT 6133, CLAB

```

```

2045 3040      DCA REGA
2046 1044      TAD REGE          /GET ENABLES
2047 4425      JMS I XIOTF          /IOT 6132, CLOE
2050 2043      ISZ REGD
2051 5250      JMP ,=1          /WAIT
2052 4424      JMS I XIOTE          /IOT 6131, CLSK
2053 5262      JMP T123A          /NO OVERFLOW FOUND
2054 1013      TAD K0100
2055 3044      DCA REGE          /UPDATE CLCOK RATE
2056 6007      6007          /CAF OR CLEAR THE WORLD
2057 2041      ISZ REGB
2060 5243      JMP T123B          /DO RATES 2=6
2061 4472      JMS I NERROR        /CHECK NON-ERROR HANDLER
2062 4473 T123A, JMS I ERROR        /ERROR! CLSK OR OVERFLOW FAILED
2063 0523      0523          /TST123 ERROR MESSAGE
2064 2036      TST123          /SCOPE LOOP
/
/DOES CLSK SKIP ON OVERFLOW ?
/SKIP EXPECTED, MODE 2, RATE 2-6
/
2065 1131 TST124, TAD K7773
2066 3041      DCA REGB
2067 1143      TAD K2000
2070 1015      TAD K0200          /MAKE ENABLES
2071 3044      DCA REGE
2072 7340 T124B, CLA CLL CMA
2073 4427      JMS I XIOTG          /IOT 6133, CLAB
2074 3040      DCA REGA
2075 1044      TAD REGE          /GET ENABLES
2076 4425      JMS I XIOTF          /IOT 6132, CLOE
2077 2043      ISZ REGD
2100 5277      JMP ,=1          /WAIT ABOUT 15 MS
2101 4424      JMS I XIOTE          /IOT 6131, CLSK
2102 5311      JMP T124A
2103 1013      TAD K0100          /UPDATE RATE
2104 3044      DCA REGE
2105 6007      6007          /CAF OR CLEAR THE WORLD
2106 2041      ISZ REGB
2107 5272      JMP T124B          /DO RATES 2=6
2110 4472      JMS I NERROR        /CHECK NON-ERROR HANDLER
2111 4473 T124A, JMS I ERRDR        /ERROR! CLSK OR OVERFLOW FAILED
2112 0524      0524          /TST124 ERROR MESSAGE
2113 2065      TST124          /SCOPE LOOP
/
/DOES CLSK SKIP ON OVERFLOW ?
/SKIP EXPECTED, RATE 2-6, MODE 3
/
2114 1131 TST125, TAD K7773
2115 3041      DCA REGB
2116 1120      TAD K3000
2117 1015      TAD K0200          /MAKE ENABLES
2120 3044      DCA REGE          /SAVE ENABLES
2121 7340 T125B, CLA CLL CMA
2122 4427      JMS I XIOTG          /IOT 6133, CLAB
2123 3040      DCA REGA

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2124 1044      TAD REGE      /GET ENABLES
2125 4425      JMS I XIOTF  /IOT 6132, CLOE
2126 2043      ISZ REGD
2127 5326      JMP .-1      /WAIT ABOUT 15 MS
2130 4424      JMS I XIOTE  /IOT 6131, CLSK
2131 5337      JMP T125A
2132 1013      TAD K0100    /UPDATE RATE
2133 3044      DCA REGE
2134 2041      ISZ REGD
2135 5321      JMP T125B    /DO RATES 2=6
2136 4472      JMS I NERROR /CHECK NON-ERROR HANDLER
2137 4473      T125A, JMS I ERROR /ERROR: CLSK OR OVERFLOW FAILED
2140 0525      0525      /TST125 ERROR MESSAGE
2141 2114      TST125      /SCOPE LOOP

```

```

/DOES CLSK SKIP ON OVERFLOW ?
/NO SKIP EXPECTED, RATE 0=7, MODE 0, DISABLE BIT 7
/

```

```

2142 1122      TST126, TAD K7770
2143 3043      DCA REGD
2144 7340      T126B, CLA CLL CMA /AC TO 7777
2145 4427      JMS I XIOTG  /IOT 6133, CLAB
2146 3040      DCA REGA
2147 1140      TAD K0020
2150 1041      TAD REGB    /GET ENABLES
2151 4425      JMS I XIOTF  /IOT 6132, CLOE
2152 2042      ISZ REGC
2153 5352      JMP .-1      /WAIT
2154 4424      JMS I XIOTE  /IOT 6131, CLSK
2155 7410      SKP
2156 5366      JMP T126A    /OVERFLOW FOUND
2157 0150      AND K0700    /MASK BITS 3=5
2160 1013      TAD K0100
2161 3041      DCA REGB    /UPDATE RATE
2162 6007      6007      /CAF OR CLEAR THE WORLD
2163 2043      ISZ REGD
2164 5344      JMP T126B    /DO RATES 0=7
2165 4472      JMS I NERROR /CHECK NON-ERROR HANDLER
2166 4473      T126A, JMS I ERROR /ERROR: CLSK OR OVERFLOW FAILED
2167 0126      0126      /TST126 ERROR MESSAGE
2170 2142      TST126      /SCOPE LOOP

```

```

/DOES CLSK SKIP ON OVERFLOW ?
/NO SKIP EXPECTED, RATE 0,1,7 MODE 0
/

```

```

2171 7340      TST127, CLA CLL CMA
2172 4427      JMS I XIOTG  /IOT 6133, CLAB
2173 3040      DCA REGA
2174 4425      JMS I XIOTF  /IOT 6132, CLOE
2175 2041      ISZ REGB
2176 5375      JMP .-1      /WAIT ABOUT 15 MS
2177 4424      JMS I XIOTE  /IOT 6131, CLSK
2200 7410      SKP
2201 5572      JMP I XCRS2
2202 1013      TAD K0100    /UPDATE ENABLE

```

```

2203 4426      JMS I XIOTF1 /IOT 6132, CLOE
2204 2042      ISZ REGC
2205 5204      JMP .-1      /WAIT ABOUT 15 MS
2206 4424      JMS I XIOTE  /IOT 6131, CLSK
2207 7410      SKP
2210 5572      JMP I XCRS2
2211 1147      TAD K0600    /UPDATE ENABLE
2212 4426      JMS I XIOTF1 /IOT 6132, CLOE
2213 2043      ISZ REGD
2214 5213      JMP .-1      /WAIT ABOUT 15 MS
2215 4424      JMS I XIOTE  /IOT 6131, CLSK
2216 4472      JMS I NERROR /CHECK NON-ERROR HANDLER
2217 4473      T127A, JMS I ERROR /ERROR: CLSK OR OVERFLOW FAILED
2220 0127      0127      /TST127 ERROR MESSAGE
2221 2171      TST127      /SCOPE LOOP

```

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/DOES CLSA READ OVERFLOW BIT ?
/

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```

2222 7340      TST130, CLA CLL CMA
2223 4427      JMS I XIOTG  /IOT 6132, CLOE
2224 7330      CLA CLL CML RAR /AC TO 4000
2225 3070      DCA SEND     /SAVE OUTPUT FOR ERROR PRINTER
2226 7313      CLA CLL IAC RTR /AC TO 4000
2227 1147      TAD K0600    /GET ENABLE
2230 4426      JMS I XIOTF1 /IOT 6131, CLSK
2231 4424      JMS I XIOTE  /IOT 6131, CLSK
2232 5231      JMP .-1
2233 7350      CLA CLL CMA RAR /AC TO 3777
2234 4431      JMS I XIOTI  /IOT 6135, CLSA
2235 4056      JMS I XSDRV  /CHECK SEND AND RECEV REGISTERS
2236 4472      JMS I NERROR /CHECK NON-ERROR HANDLER
2237 4473      T130A, JMS I ERROR /ERROR: CLSI OR OVERFLOW FAILED
2240 5130      5130      /TST130 ERROR MESSAGE
2241 2222      TST130      /SCOPE LOOP

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```

/DOES CLSA CLEAR OVERFLOW FLOP ?
/

```

```

2242 7340      TST131, CLA CLL CMA /AC TO 7777
2243 4427      JMS I XIOTG  /IOT 6133, CLAB
2244 7313      CLA CLL IAC RTR /AC TO 4000
2245 1147      TAD K0600    /GET ENABLE
2246 4426      JMS I XIOTF1 /IOT 6132, CLOE
2247 4424      JMS I XIOTE  /IOT 6131, CLSK
2250 5247      JMP .-1
2251 7350      CLA CLL CMA RAR /AC TO 3777
2252 4431      JMS I XIOTI  /IOT 6135, CLSA
2253 7300      CLA CLL     /CLEAR AC AND LINK
2254 3070      DCA SEND     /SAVE OUTPUT FOR ERROR PRINTER
2255 7340      CLA CLL CMA /AC TO 7777
2256 4431      JMS I XIOTI  /IOT 6135, CLSA
2257 7650      SNA CLA     /HAS STATUS REGISTER ALL 0'S ?
2260 4472      JMS I NERROR /CHECK NON-ERROR HANDLER
2261 4473      JMS I ERROR /ERROR: CLSA OR OVERFLOW FAILED
2262 5131      5131      /TST131 ERROR MESSAGE
2263 2242      TST131      /SCOPE LOOP

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```

/DOES CLSA READ OVERFLOW BIT ?
/
2264 7340 TST132, CLA CLL CMA
2265 4427 JMS I XIOTG /IOT 6133, CLAB
2266 7300 CLA CLL
2267 3070 DCA SEND /SAVE OUTPUT FOR ERROR PRINTER
2270 1147 TAD K0600 /GET ENABLES
2271 4426 JMS I XIOTF1 /IOT 6132, CLOE
2272 4424 JMS I XIOTE /IOT 6131, CLSK
2273 5272 JMP .-1
2274 7344 CLA CLL CMA RAL /AC TO 3777
2275 4431 JMS I XIOTI /IOT 6135, OCSA
2276 7650 SNA CLA /WAS STATUS 0 ?
2277 4472 JMS I NERROR /CHECK NON-ERROR HANDLER
2300 4473 JMS I ERROR /ERROR! CLSA OR STATUS FAILED
2301 5132 5132 /TST132 ERROR MESSAGE
2302 2264 TST132 /SCOPE LOOP

/DOES BUFFER TO COUNTER ON OVERFLOW ?
/MODE 1, RATE 2
/
2303 7340 TST133, CLA CLL CMA
2304 4427 JMS I XIOTG /IOT 6133, CLAB
2305 3040 DCA REGA
2306 7313 CLA CLL IAC RTR /AC TO 4000
2307 1116 TAD K0400
2310 1144 TAD K1000 /GET ENABLES
2311 4426 JMS I XIOTF1 /IOT 6132, CLOE
2312 4424 T133B, JMS I XIOTE /IOT 6131, CLSK
2313 5312 JMP .-1 /WAIT FOR FLAG
2314 7300 CLA CLL /CLEAR THE AC AND LINK
2315 4433 JMS I XIOTK /IOT 6137, CLCA
2316 7040 CMA /FOR TESTING
2317 7440 SZA /WAS COUNTER ALL 1'S ?
2320 5325 JMP T133A
2321 4431 JMS I XIOTI /IOT 6135, CLSA
2322 2041 ISZ REG8
2323 5312 JMP T133B /DO TEST 4096 TIMES
2324 4472 JMS I NERROR /CHECK NON-ERROR HANDLER
2325 4473 T133A, JMS I ERROR /ERROR! COUNTER FAILED
2326 4133 4133 /TST133 ERROR MESSAGE
2327 2303 TST133 /SCOPE LOOP

/DOES BUFFER TO COUNTER ON OVERFLOW ?
/MODE 1, RATE 4
/
2330 1017 TST134, TAD K5252 /GET AC NUMBER
2331 4427 JMS I XIOTG /IOT 6133, CLAB
2332 7340 CLA CLL CMA /AC TO 7777
2333 3040 DCA REGA
2334 1144 TAD K1000
2335 1116 TAD K0400 /GET ENABLES
2336 4426 JMS I XIOTF1 /IOT 6132, CLOE
2337 4424 JMS I XIOTE /IOT 6131, CLSK

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2340 5337 JMP .-1 /WAIT FOR FLAG
2341 7340 CLA CLL CMA /AC TO 7777
2342 4433 JMS I XIOTK /IOT 6137, CLCA
2343 4456 JMS I XSNDRV /CHECK SEND AND RECEV REGISTERS
2344 4472 JMS I NERROR /CHECK NON-ERROR HANDLER
2345 4473 JMS I ERROR /ERROR! COUNTER FAILED
2346 4134 4134 /TST134 ERROR MESSAGE
2347 2330 TST134 /SCOPE LOOP

/DOES BUFFER TO COUNTER ON OVERFLOW ?
/MODE 1, RATE 4
/
2350 1016 TST135, TAD K2525 /GET AC NUMBER
2351 4427 JMS I XIOTG /IOT 6133, CLAB
2352 7340 CLA CLL CMA /AC TO 7777
2353 3040 DCA REGA
2354 1144 TAD K1000
2355 1116 TAD K0400 /GET ENABLES
2356 4426 JMS I XIOTF1 /IOT 6132, CLOE
2357 4424 JMS I XIOTE /IOT 6131, CLSK
2360 5357 JMP .-1 /WAIT FOR OVERFLOW
2361 4433 JMS I XIOTK /IOT 6137, CLCA
2362 4456 JMS I XSNDRV /CHECK SEND AND RECEV REGISTERS
2363 4472 JMS I NERROR /CHECK NON-ERROR HANDLER
2364 4473 JMS I ERROR /ERROR! COUNTER FAILED
2365 4135 4135 /TST135 ERROR MESSAGE
2366 2350 TST135 /SCOPE LOOP

/DOES BUFFER TO COUNTER ON OVERFLOW ?
/RATE 4, MODE 2
/
2367 7340 TST136, CLA CLL CMA /AC TO 7777
2370 4427 JMS I XIOTG /IOT 6133, CLAB
2371 3040 DCA REGA
2372 3070 DCA SEND /SAVE OUTPUT FOR ERROR PRINTER
2373 1116 TAD K0400
2374 1143 TAD K2000 /GET ENABLES
2375 4426 JMS I XIOTF1 /IOT 6132, CLOE
2376 4424 JMS I XIOTE /IOT 6131, CLSK
2377 5376 JMP .-1 /WAIT FOR FLAG
2400 4433 JMS I XIOTK /IOT 6137, CLCA
2401 7650 SNA CLA /WAS COUNTER ALL 0'S ?
2402 4472 JMS I NERROR /CHECK NON-ERROR HANDLER
2403 4473 JMS I ERROR /ERROR! COUNTER FAILED
2404 4136 4136 /TST136 ERROR MESSAGE
2405 2367 TST136 /SCOPE LOOP

/DOES BUFFER TO COUNTER ON OVERFLOW ?
/MODE 3, RATE 4
/
2406 7340 TST137, CLA CLL CMA
2407 4427 JMS I XIOTG /IOT 6133, CLAB
2410 3040 DCA REGA
2411 3070 DCA SEND /SAVE OUTPUT FOR ERROR PRINTER
2412 1116 TAD K0400

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2413 1120      TAD K3000      /GET ENABLES
2414 4424      JMS I XIOTF1   /IOT 6132, CLOE
2415 4424      JMS I XIOTE   /IOT 6131, CLSK
2416 5215      JNP -1        /WAIT FOR OVERFLOW
2417 7340      CLA CLL CMA
2420 4433      JMS I XIOTK   /IOT 6137, CLCA
2421 7650      SNA CLA      /HAS COUNTER ALL 0'S ?
2422 4472      JMS I NERROR  /CHECK NON-ERROR HANDLER
2423 4473      JMS I ERROR   /ERROR: COUNTER FAILED
2424 4137      4137      /TST137 ERROR MESSAGE
2425 2406      TST137      /SCOPE LOOP

/DOES INT. WITHOUT BIT 8 ?
/
2426 7340      TST140, CLA CLL CMA      /AC TO 7777
2427 4427      JMS I XIOTG   /IOT 6133, CLAB
2430 3040      DCA REGA
2431 7313      CLA CLL IAC RTR /AC TO 4000
2432 1007      TAD K0007
2433 1147      TAD K0000      /GET ENABLES
2434 4425      JMS I XIOTF   /IOT 6132, CLOE
2435 4447      JMS I XPIG01  /GO TO PI, NO PI EXPECTED
2436 4472      JMS I NERROR  /CHECK NON-ERROR HANDLER
2437 4473      JMS I ERROR   /ERROR: INT. RGST. OR ENA 0 FAILED
2440 1140      1140      /TST140 ERROR MESSAGE
2441 2426      TST140      /SCOPE LOOP

/DOES OVERFLOW CAUSE INT. RGST. ?
/RATE 6, MODE 0
/
2442 7340      TST141, CLA CLL CMA      /AC TO 7777
2443 4427      JMS I XIOTG   /IOT 6133, CLAB
2444 7300      CLA CLL      /CLEAR THE AC AND LINK
2445 1014      TAD K0000
2446 1142      TAD K0010
2447 1147      TAD K0000      /GET RATE + MODE
2450 4425      JMS I XIOTF   /IOT 6132, CLOE
2451 4452      JMS I XPIG04  /GO TO PI, PI EXPECTED
2452 4472      JMS I NERROR  /CHECK NON-ERROR HANDLER
2453 4473      JMS I ERROR   /ERROR: OVERFLOW OR ENA 0 FAILED
2454 1541      1541      /TST141 ERROR MESSAGE
2455 2442      TST141      /SCOPE LOOP

/DOES INT. RGST. WITHOUT ENA 0 ?
/RATE 6, MODE 0
/
2456 7340      TST142, CLA CLL CMA      /AC TO 7777
2457 4427      JMS I XIOTG   /IOT 6133, CLAB
2460 7300      CLA CLL      /CLEAR THE AC AND LINK
2461 1142      TAD K0010
2462 1147      TAD K0000      /GET RATE + MODE
2463 4425      JMS I XIOTF   /IOT 6132, CLOE
2464 4451      JMS I XPIG03  /GO TO PI, NO PI EXPECTED
2465 4472      JMS I NERROR  /CHECK NON-ERROR HANDLER
2466 4473      JMS I ERROR   /ERROR: ENA 0 FAILED

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2467 1142      1142      /TST142 ERROR MESSAGE
2470 2456      TST142      /SCOPE LOOP

/DOES COUNTER COUNT ?
/RATE 6, MODE 0
/
2471 7340      TST143, CLA CLL CMA      /AC TO 7777
2472 3040      DCA REGA
2473 4427      JMS I XIOTG   /IOT 6133, CLAB
2474 1014      TAD K0000
2475 1142      TAD K0010
2476 1147      TAD K0000      /GET RATE + MODE
2477 4425      JMS I XIOTF   /IOT 6132, CLOE
2500 4450      JMS I XPIG02  /GO TO PI
2501 4472      JMS I NERROR  /CHECK NON-ERROR HANDLER
2502 4473      JMS I ERROR   /ERROR: OVERFLOW OR COUNTER FAILED
2503 1543      1543      /TST143 ERROR MESSAGE
2504 2471      TST143      /SCOPE LOOP

/DOES COUNTER COUNT ?
/RATE 6, MODE 1
/
2505 7340      TST144, CLA CMA CLL
2506 3040      DCA REGA
2507 4427      JMS I XIOTG   /IOT 6133, CLAB
2510 1121      TAD K5000
2511 1142      TAD K0010
2512 1147      TAD K0000      /GET RATE + MODE
2513 4425      JMS I XIOTF   /IOT 6132, CLOE
2514 4450      JMS I XPIG02  /GO TO PI
2515 4472      JMS I NERROR  /CHECK NON-ERROR HANDLER
2516 4473      JMS I ERROR   /ERROR: OVERFLOW OR COUNTER FAILED
2517 1544      1544      /TST144 ERROR MESSAGE
2520 2505      TST144      /SCOPE LOOP

/DOES COUNTER COUNT ?
/RATE 6, MODE 2
/
2521 7340      TST145, CLA CLL CMA      /AC TO 7777
2522 3040      DCA REGA
2523 4427      JMS I XIOTG   /IOT 6133, CLAB
2524 1117      TAD K6000
2525 1142      TAD K0010
2526 1147      TAD K0000      /GET ENABLES
2527 4425      JMS I XIOTF   /IOT 6132, CLOE
2530 4450      JMS I XPIG02  /GO TO PI, PI EXPECTED
2531 4472      JMS I NERROR  /CHECK NON-ERROR HANDLER
2532 4473      JMS I ERROR   /ERROR: OVERFLOW OR COUNTER FAILED
2533 1545      1545      /TST145 ERROR MESSAGE
2534 2521      TST145      /SCOPE LOOP

/DOES COUNTER COUNT ?
/RATE 6, MODE 3
/
2535 7340      TST146, CLA CLL CMA      /AC TO 7777

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2536 3040          DCA REGA
2537 4427          JMS I XIOTG  /IOT 6133, CLAB
2540 1141          TAD K7000
2541 1142          TAD K0010
2542 1147          TAD K0000          /GET ENABLES
2543 4425          JMS I XIOTF  /IOT 6132, CLOE
2544 4450          JMS I XPIG02 /GO TO PI, PI EXPECTED
2545 4472          JMS I NERROR /CHECK NON-ERROR HANDLER
2546 4473          JMS I ERROR  /ERROR: COUNTER OR MODE 3 FAILED
2547 1546          1546          /TST146 ERROR MESSAGE
2550 2535          TST146          /SCOPE LOOP
    
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/DOES OVERFLOW CAUSE RQST. ?
/RATE 2=6, MODE 0
/
    
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2551 1131          TST147, TAD K7773
2552 3041          DCA REGB
2553 1014          TAD K4000
2554 1142          TAD K0010
2555 1015          TAD K0200
2556 3044          T147B, DCA REGE          /SET UP ENABLES
2557 7340          CLA CLL CMA          /AC TO 7777
2560 4427          JMS I XIOTG  /IOT 6133, CLAB
2561 3040          DCA REGA
2562 1044          TAD REGE          /GET ENABLES
2563 4425          JMS I XIOTF  /IOT 6132, CLOE
2564 4447          JMS I XPIG01 /GO TO PI, PI EXPECTED
2565 5374          JMP T147A
2566 6007          6007          /CAF OR CLEAR THE WORLD
2567 1013          TAD K0100
2570 1044          TAD REGE
2571 2041          ISZ REGB
2572 5356          JMP T147B          /DO RATES 2=6
2573 4472          JMS I NERROR /CHECK NON-ERROR HANDLER
2574 4473          T147A, JMS I ERROR /ERROR: OVERFLOW OR MODE FAILED
2575 1547          1547          /TST147 ERROR MESSAGE
2576 2551          TST147          /SCOPE LOOP
    
```

```

/DOES OVERFLOW CAUSE RQST. ?
/RATE 2=6, MODE 1
/
    
```

```

2577 1131          TST150, TAD K7773
2600 3041          DCA REGB
2601 1121          TAD K5000
2602 1142          TAD K0010
2603 1015          TAD K0200          /MAKE ENABLES
2604 3044          T150B, DCA REGE
2605 7340          CLA CLL CMA          /AC TO 7777
2606 4427          JMS I XIOTG  /IOT 6133, CLAB
2607 3040          DCA REGA
2610 1044          TAD REGE          /GET ENABLES
2611 4425          JMS I XIOTF  /IOT 6132, CLOE
2612 4447          JMS I XPIG01 /GO TO PI, PI EXPECTED
2613 5573          JMP I XCRS3
2614 6007          6007          /CAF OR CLEAR THE WORLD
    
```

```

2615 1013          TAD K0100
2616 1044          TAD REGE
2617 2041          ISZ REGB
2620 5574          JMP I XCRS4
2621 4472          JMS I NERROR /CHECK NON-ERROR HANDLER
2622 4473          T150A, JMS I ERROR /ERROR: OVERFLOW OR MODE FAILED
2623 1550          1550          /TST150 ERROR MESSAGE
2624 2577          TST150          /SCOPE LOOP
    
```

```

/DOES OVERFLOW CAUSE RQST. ?
/RATE 2=6, MODE 2
/
    
```

```

2625 1131          TST151, TAD K7773
2626 3041          DCA REGB
2627 1117          TAD K6000
2630 1142          TAD K0010
2631 1015          TAD K0200
2632 3044          T151B, DCA REGE          /MAKE ENABLES
2633 7340          CLA CLL CMA          /AC TO 7777
2634 4427          JMS I XIOTG  /IOT 6133, CLAB
2635 3040          DCA REGA
2636 1044          TAD REGE          /GET ENABLES
2637 4425          JMS I XIOTF  /IOT 6132, CLOE
2640 4447          JMS I XPIG01 /GO TO PI, PI EXPECTED
2641 5250          JMP T151A
2642 6007          6007          /CAF OR CLEAR THE WORLD
2643 1013          TAD K0100
2644 1044          TAD REGE
2645 2041          ISZ REGB
2646 5232          JMP T151B
2647 4472          JMS I NERROR /CHECK NON-ERROR HANDLER
2650 4473          T151A, JMS I ERROR /ERROR: OVERFLOW OR MODE FAILED
2651 1551          1551          /TST151 ERROR MESSAGE
2652 2625          TST151          /SCOPE LOOP
    
```

```

/DOES OVERFLOW CAUSE RQST. ?
/RATE 2=6, MODE 3
/
    
```

```

2653 1131          TST152, TAD K7773
2654 3041          DCA REGB
2655 1141          TAD K7000
2656 1142          TAD K0010
2657 1015          TAD K0200          /MAKE ENABLES
2660 3044          T152B, DCA REGE
2661 7340          CLA CLL CMA          /AC TO 7777
2662 4427          JMS I XIOTG  /IOT 6133, CLAB
2663 3040          DCA REGA
2664 1044          TAD REGE          /GET ENABLES
2665 4425          JMS I XIOTF  /IOT 6132, CLOE
2666 4447          JMS I XPIG01 /GO TO PI, PI EXPECTED
2667 5276          JMP T152A
2670 6007          6007          /CAF OR CLEAR THE WORLD
2671 1013          TAD K0100
2672 1044          TAD REGE
2673 2041          ISZ REGB
    
```

```

2674 5260      JMP T152B      /DO RATES 2-6
2675 4472      JMS I NERROR  /CHECK NON-ERROR HANDLER
2676 4473      T152A, JMS I ERROR /ERROR: OVERFLOW OR MODE FAILED
2677 1552      1552         /TST152 ERROR MESSAGE
2700 2653      TST152       /SCOPE LOOP

/DOES OVERFLOW CAUSE RQST. ?
/RATE 0-7, MODE 1, DISABLE BIT 7
/
2701 1122      TST153, TAD K7770
2702 3041      DCA REG8
2703 1121      TAD K5000
2704 1142      TAD K0010
2705 1140      TAD K0020
2706 3044      T153B, DCA REGE      /MAKE ENABLES
2707 7340      CLA CLL CMA   /AC TO 7777
2710 4427      JMS I XIOTG  /IOT 6133, CLAB
2711 3040      DCA REGA
2712 1044      TAD REGE     /GET ENABLES
2713 4425      JMS I XIOTF  /IOT 6132, CLOE
2714 4450      JMS I XPIG02 /GO TO PI, NO PI EXPECTED
2715 5324      JMP T153A
2716 6007      6007       /CAF OR CLEAR THE WORLD
2717 1013      TAD K0100
2720 1044      TAD REGE
2721 2041      ISZ REG8
2722 5306      JMP T153B    /DO RATE 0-7
2723 4472      JMS I NERROR /CHECK NON-ERROR HANDLER
2724 4473      T153A, JMS I ERROR /ERROR: OVERFLOW OR CLK ENA FAILED
2725 1153      1153       /TST153 ERROR MESSAGE
2726 2701      TST153     /SCOPE LOOP

/DOES OVERFLOW CAUSE RQST. ?
/RATE 0-7, MODE 2, DISABLE INT. RQST. BIT
/
2727 1122      TST154, TAD K7770
2730 3041      DCA REG8
2731 1117      TAD K6000
2732 1142      TAD K0010
2733 1140      TAD K0020
2734 3044      T154B, DCA REGE      /MAKE ENABLES
2735 7340      CLA CLL CMA   /AC TO 7777
2736 4427      JMS I XIOTG  /IOT 6133, CLAB
2737 3040      DCA REGA
2738 1044      TAD REGE     /GET ENABLES
2741 4425      JMS I XIOTF  /IOT 6132, CLOE
2742 4450      JMS I XPIG02 /GO TO PI, NO PI EXPECTED
2743 5352      JMP T154A
2744 6007      6007       /CAF OR CLEAR THE WORLD
2745 1013      TAD K0100
2746 1044      TAD REGE
2747 2041      ISZ REG8
2750 5334      JMP T154B    /DO RATE 0-7
2751 4472      JMS I NERROR /CHECK NON-ERROR HANDLER
2752 4473      T154A, JMS I ERROR /ERROR: OVERFLOW OR CLK ENA FAILED
    
```

```

2753 1154      1154         /TST154 ERROR MESSAGE
2754 2727      TST154     /SCOPE LOOP

/DOES OVERFLOW CAUSE INT. RQST. ?
/MODE 0, RATE 6
/
2755 7340      TST155, CLA CLL CMA   /AC TO 7777
2756 4427      JMS I XIOTG  /IOT 6133, CLAB
2757 7330      CLA CLL CML RAR /AC TO 4000
2760 1147      TAD K0600
2761 1142      TAD K0010    /GET ENABLES
2762 4425      JMS I XIOTF  /IOT 6132, CLOE
2763 4452      JMS I XPIG04 /GO TO PI, PI EXPECTED
2764 4472      JMS I NERROR /CHECK NON-ERROR HANDLER
2765 4473      JMS I ERROR  /ERROR: OVERFLOW OR COUNTER FAILED
2766 1555      1555       /TST155 ERROR MESSAGE
2767 2755      TST155     /SCOPE LOOP

/DOES CLSK SKIP THEN INTERRUPT ?
/RATE 6, MODE 0
/
2770 7340      TST156, CLA CLL CMA   /AC TO 7777
2771 4427      JMS I XIOTG  /IOT 6133, CLAB
2772 7330      CLA CLL CML RAR
2773 1142      TAD K0010
2774 1147      TAD K0600    /MAKE ENABLES
2775 4425      JMS I XIOTF  /IOT 6132, CLOE
2776 4424      JMS I XIOTE  /IOT 6131, CLSK
2777 5376      JMP ,=1      /WAIT FOR OVERFLOW
3000 4452      JMS I XPIG04 /GO TO PI, PI EXPECTED
3001 4472      JMS I NERROR /CHECK NON-ERROR HANDLER
3002 4473      JMS I ERROR  /ERROR: CLSK OR PI FAILED
3003 1556      1556       /TST156 ERROR MESSAGE
3004 2770      TST156     /SCOPE LOOP

/CHECK FOR NO INT. RQST.
/MODE 0, RATE 6, DISABLE WITH CLSA
/
3005 7340      TST157, CLA CLL CMA   /AC TO 7777
3006 4427      JMS I XIOTG  /IOT 6133, CLAB
3007 7330      CLA CLL CML RAR /AC TO 4000
3010 1147      TAD K0600
3011 1142      TAD K0010
3012 4425      JMS I XIOTF  /IOT 6132, CLOE
3013 4424      JMS I XIOTE  /IOT 6131, CLSK
3014 5213      JMP ,=1      /WAIT FOR OVERFLOW
3015 4431      JMS I XIOTI  /IOT 6135, CLSA
3016 4451      JMS I XPIG03 /GO TO PI, NO PI EXPECTED
3017 4472      JMS I NERROR /CHECK NON-ERROR HANDLER
3020 4473      JMS I ERROR  /ERROR: INT. RQST. FAILED
3021 1157      1157       /TST157 ERROR MESSAGE
3022 3005      TST157     /SCOPE LOOP

/
3023 1176      TAD TIMPLG  /GET CYCLE TIME FLAG1
3024 7650      SNA CLA    /SET?
    
```

```

3025 5230      JMP      .+3      /NOI
3026 5627      JMP I    .+1      /YES, BYPASS TIME TESTS!
3027 3257      TST172

/DOES CLOCK FREQUENCY TIME OUT ?
/RATE 2, MODE 0
/
3030 7340      TST160, CLA CLL CMA /AC TO 7777
3031 3040      DCA REGA
3032 1151      TAD KTA
3033 3076      DCA KREGC
3034 4427      JMS I XIOTG /IOT 6133, CLAB
3035 1014      TAD K4000
3036 1142      TAD K0010
3037 1015      TAD K0200 /MAKE ENABLES
3040 4425      JMS I XIOTF /IOT 6132, CLOE
3041 4453      JMS I XPIGOS
3042 7610      SKP CLA
3043 4472      JMS I NERROR /CHECK NON-ERROR HANDLER
3044 4473      JMS I ERROR  /ERROR! CLOCK FREQUENCY FAST
3045 2160      2160 /TST160 ERROR MESSAGE
3046 3030      TST160 /SCOPE LOOP

/DOES CLOCK FREQUENCY TIME OUT ?
/RATE 2, MODE 0
/
3047 7340      TST161, CLA CLL CMA /AC TO 7777
3050 3040      DCA REGA
3051 1152      TAD KTA1
3052 3076      DCA KREGC
3053 4427      JMS I XIOTG /IOT 6133, CLAB
3054 1014      TAD K4000
3055 1142      TAD K0010
3056 1015      TAD K0200 /MAKE ENABLES
3057 4425      JMS I XIOTF /IOT 6132, CLOE
3060 4453      JMS I XPIGOS
3061 4472      JMS I NERROR /CHECK NON-ERROR HANDLER
3062 4473      JMS I ERROR  /ERROR! CLOCK FREQUENCY SLOW
3063 2561      2561 /TST161 ERROR MESSAGE
3064 3047      TST161 /SCOPE LOOP

/DOES CLOCK FREQUENCY TIME OUT ?
/RATE 3, MODE 0
/
3065 7340      TST162, CLA CLL CMA /AC TO 7777
3066 3040      DCA REGA
3067 1153      TAD KTB
3070 3076      DCA KREGC
3071 4427      JMS I XIOTG /IOT 6133, CLAB
3072 1014      TAD K4000
3073 1142      TAD K0010
3074 1145      TAD K0300 /MAKE ENABLES
3075 4425      JMS I XIOTF /IOT 6132, CLOE
3076 4453      JMS I XPIGOS
3077 7610      SKP CLA
    
```

```

3100 4472      JMS I NERROR /CHECK NON-ERROR HANDLER
3101 4473      JMS I ERROR  /ERROR! CLOCK FREQUENCY FAST
3102 2162      2162 /TST162 ERROR MESSAGE
3103 3065      TST162 /SCOPE LOOP

/DOES CLOCK FREQUENCY TIME OUT ?
/RATE 3, MODE 0
/
3104 7340      TST163, CLA CLL CMA /AC TO 7777
3105 3040      DCA REGA
3106 1154      TAD KTB1
3107 3076      DCA KREGC
3110 4427      JMS I XIOTG /IOT 6133, CLAB
3111 1014      TAD K4000
3112 1142      TAD K0010
3113 1145      TAD K0300 /MAKE ENABLES
3114 4425      JMS I XIOTF /IOT 6132, CLOE
3115 4453      JMS I XPIGOS
3116 4472      JMS I NERROR /CHECK NON-ERROR HANDLER
3117 4473      JMS I ERROR  /ERROR! CLOCK FREQUENCY SLOW
3120 2563      2563 /TST163 ERROR MESSAGE
3121 3104      TST163 /SCOPE LOOP

/DOES CLOCK FREQUENCY TIME OUT ?
/RATE 4, MODE 0
/
3122 7340      TST164, CLA CLL CMA /AC TO 7777
3123 3040      DCA REGA
3124 1155      TAD KTC
3125 3076      DCA KREGC
3126 1156      TAD KTC1
3127 3043      DCA REGD /SET TIMER FOR 10000 CPS CLOCK
3130 4427      JMS I XIOTG /IOT 6133, CLAB
3131 1014      TAD K4000
3132 1142      TAD K0010
3133 1116      TAD K0400 /MAKE ENABLES
3134 4425      JMS I XIOTF /IOT 6132, CLOE
3135 4453      JMS I XPIGOS
3136 7610      SKP CLA
3137 4472      JMS I NERROR /CHECK NON-ERROR HANDLER
3140 4473      JMS I ERROR  /ERROR! CLOCK FREQUENCY FAST
3141 2164      2164 /TST164 ERROR MESSAGE
3142 3122      TST164 /SCOPE LOOP

/DOES CLOCK FREQUENCY TIME OUT ?
/RATE 4, MODE 0
/
3143 7340      TST165, CLA CLL CMA /AC TO 7777
3144 3040      DCA REGA
3145 1155      TAD KTC
3146 3076      DCA KREGC
3147 1157      TAD KTC2
3150 3043      DCA REGD /SET TIMER FOR 10000 CLOCK
3151 4427      JMS I XIOTG /IOT 6133, CLAB
3152 1014      TAD K4000
    
```

```

3153 1142 TAD K0010
3154 1116 TAD K0400 /MAKE ENABLES
3155 4425 JMS I XIOTF /IOT 6132, CLOE
3156 4453 JMS I XPIG05
3157 4472 JMS I NERROR /CHECK NON-ERROR HANDLER
3160 4473 JMS I ERROR /ERROR: CLOCK FREQUENCY SLOW
3161 2565 2565 /TST165 ERROR MESSAGE
3162 3143 TST165 /SCOPE LOOP
    
```

```

/DOES CLOCK FREQUENCY TIME OUT ?
/RATE 5, MODE 0
    
```

```

3163 7340 TST166, CLA CLL CMA /AC TO 7777
3164 3040 DCA REGA
3165 7350 CLA CLL CMA RAR
3166 4427 JMS I XIOTG /IOT 6133, CLAB
3167 7300 CLA CLL /CLEAR THE AC AND LINK
3170 1160 TAD KTD
3171 3043 DCA REGO /SET TIMER FOR 100000 CPS CLOCK
3172 1014 TAD K4000
3173 1142 TAD K0010
3174 1146 TAD K0500 /MAKE ENABLES
3175 4425 JMS I XIOTF /IOT 6132, CLOE
3176 4447 JMS I XPIG01
3177 4472 JMS I NERROR /CHECK NON-ERROR HANDLER
3200 4473 JMS I ERROR /ERROR: CLOCK FREQUENCY FAST
3201 2166 2166 /TST166 ERROR MESSAGE
3202 3163 TST166 /SCOPE LOOP
    
```

```

/DOES CLOCK FREQUENCY TIME OUT ?
/RATE 5, MODE 0
    
```

```

3203 7340 TST167, CLA CLL CMA /AC TO 7777
3204 3040 DCA REGA
3205 7350 CLA CLL CMA RAR
3206 4427 JMS I XIOTG /IOT 6133, CLAB
3207 7300 CLA CLL /CLEAR THE AC AND LINK
3210 1161 TAD KTD1
3211 3043 DCA REGO /SET TIMER FOR 100000 CPS CLOCK
3212 1014 TAD K4000
3213 1142 TAD K0010
3214 1146 TAD K0500 /MAKE ENABLES
3215 4425 JMS I XIOTF /IOT 6132, CLOE
3216 4450 JMS I XPIG02
3217 4472 JMS I NERROR /CHECK NON-ERROR HANDLER
3220 4473 JMS I ERROR /ERROR: CLOCK FREQUENCY SLOW
3221 2567 2567 /TST167 ERROR MESSAGE
3222 3203 TST167 /SCOPE LOOP
    
```

```

/DOES CLOCK FREQUENCY TIME OUT ?
/RATE 6, MODE 0
    
```

```

3223 7340 TST170, CLA CLL CMA /AC TO 7777
3224 3040 DCA REGA
3225 1162 TAD KTE
    
```

```

3226 3043 DCA REGO /SET TIMER FOR 100000 CPS CLOCK
3227 4427 JMS I XIOTG /IOT 6133, CLAB
3230 1014 TAD K4000
3231 1142 TAD K0010
3232 1147 TAD K0600 /MAKE ENABLES
3233 4425 JMS I XIOTF /IOT 6132, CLOE
3234 4447 JMS I XPIG01
3235 4472 JMS I NERROR /CHECK NON-ERROR HANDLER
3236 4473 JMS I ERROR /ERROR: CLOCK FREQUENCY FAST
3237 2170 2170 /TST170 ERROR MESSAGE
3240 3223 TST170 /SCOPE LOOP
    
```

```

/DOES CLOCK FREQUENCY TIME OUT ?
/RATE 6, MODE 0
    
```

```

3241 7340 TST171, CLA CLL CMA /AC TO 7777
3242 3040 DCA REGA
3243 1163 TAD KTE1
3244 3043 DCA REGO /SET TIMER FOR 100000 CPS CLOCK
3245 4427 JMS I XIOTG /IOT 6133, CLAB
3246 1014 TAD K4000
3247 1142 TAD K0010
3250 1147 TAD K0600 /MAKE ENABLES
3251 4425 JMS I XIOTF /IOT 6132, CLOE
3252 4450 JMS I XPIG02
3253 4472 JMS I NERROR /CHECK NON-ERROR HANDLER
3254 4473 JMS I ERROR /ERROR: CLOCK FREQUENCY SLOW
3255 2571 2571 /TST171 ERROR MESSAGE
3256 3241 TST171 /SCOPE LOOP
    
```

```

/DOES COUNTER REALLY COUNT ?
/RATE 2, MODE 0
    
```

```

3257 7340 TST172, CLA CLL CMA /AC TO 7777
3260 4427 JMS I XIOTG /IOT 6133, CLAB
3261 3040 DCA REGA
3262 1015 TAD K0200 /GET RATE + MODE
3263 4426 JMS I XIOTF1 /IOT 6132, CLOE
3264 7300 T172B1, CLA CLL /CLEAR THE AC AND LINK
3265 3042 DCA REGC
3266 1041 TAD REGB
3267 3070 DCA SEND /SAVE OUTPUT FOR ERROR PRINTER
3270 4433 T172B, JMS I XIOTK /IOT 6137, CLCA
3271 7041 CIA
3272 1041 TAD REGB /COMPARE TO THIS REGISTER
3273 7650 SNA CLA /ARE THEY THE SAME YET ?
3274 5300 JMP T172A /YES, TEST NEXT NUMBER
3275 2042 ISZ REGC
3276 5270 JMP T172B /WAIT ABOUT 15 MS FOR REGISTER
3277 5303 JMP T172A1 /NUMBER NOT FOUND
3300 2041 T172A, ISZ REGB /UPDATE COMPARE REGISTER
3301 5264 JMP T172B1 /TEST FOR NEXT COUNTER PULSE
3302 4472 JMS I NERROR /CHECK NON-ERROR HANDLER
3303 4473 JMS I ERROR /ERROR: COUNTER FAILED
3304 4172 T172A1, 4172 /TST172 ERROR MESSAGE
    
```



```

3305 3257          TST172          /SCOPE LOOP
/
/DOES COUNTER REALLY COUNT ?
/RATE 3, MODE 0
/
3306 7340      TST173,  CLA CLL CMA          /AC TO 7777
3307 4427          JMS I XIOTG          /IOT 6133, CLAB
3310 3040          DCA REGA
3311 1145          TAD K0300          /GET RATE + MODE
3312 4426          JMS I XIOTF1         /IOT 6132, CLOE
3313 7300      T173B1,  CLA CLL          /CLEAR THE AC AND LINK
3314 3042          DCA REGC
3315 1041          TAD REGB
3316 3070          DCA SEND          /SAVE OUTPUT FOR ERROR PRINTER
3317 4433      T173B,   JMS I XIOTK         /IOT 6137, CLCA
3320 7041          CIA
3321 1041          TAD REGB          /COMPARE TO THIS REGISTER
3322 7650          SNA CLA          /ARE THEY THE SAME YET ?
3323 5327          JMP T173A          /YES, TEST NEXT NUMBER
3324 2042          ISZ REGC
3325 5317          JMP T173B          /WAIT ABOUT 15 MS FOR REGISTER
3326 5332          JMP T173A1         /NUMBER NOT FOUND
3327 2041      T173A,   ISZ REGB          /UPDATE COMPARE REGISTER
3330 5313          JMP T173B1         /TEST FOR NEXT COUNTER PULSE
3331 4472          JMS I NERROR        /CHECK NON-ERROR HANDLER
3332 4473      T173A1,  JMS I ERROR        /ERROR! COUNTER FAILED
3333 4173          4173                /TST173 ERROR MESSAGE
3334 3306          TST173                /SCOPE LOOP
/
/DOES COUNTER REALLY COUNT ?
/RATE 2, MODE 1
/
3335 7340      TST174,  CLA CLL CMA          /AC TO 7777
3336 4427          JMS I XIOTG          /IOT 6133, CLAB
3337 3040          DCA REGA
3340 1015          TAD K0200          /GET RATE + MODE
3341 1144          TAD K1000          /IOT 6132, CLOE
3342 4426          JMS I XIOTF1         /IOT 6131, CLSK
3343 4424          JMS I XIOTE
3344 5343          JMP .-1
3345 7300          CLA CLL          /CLEAR THE AC AND LINK
3346 4427          JMS I XIOTG         /IOT 6133, CLAB
3347 3042      T174B1,  DCA REGC
3350 1041          TAD REGB
3351 3070          DCA SEND          /SAVE OUTPUT FOR ERROR PRINTER
3352 4433      T174B,   JMS I XIOTK         /IOT 6137, CLCA
3353 7041          CIA
3354 1041          TAD REGB          /COMPARE TO THIS REGISTER
3355 7650          SNA CLA          /ARE THEY THE SAME YET ?
3356 5362          JMP T174A          /YES, TEST NEXT NUMBER
3357 2042          ISZ REGC
3360 5352          JMP T174B          /WAIT ABOUT 15 MS FOR REGISTER
3361 5365          JMP T174A1         /NUMBER NOT FOUND
3362 2041      T174A,   ISZ REGB          /UPDATE COMPARE REGISTER
3363 5347          JMP T174B1         /TEST FOR NEXT COUNTER PULSE

```

```

3364 4472          JMS I NERROR        /CHECK NON-ERROR HANDLER
3365 4473      T174A1,  JMS I ERROR        /ERROR! COUNTER FAILED
3366 4174          4174                /TST174 ERROR MESSAGE
3367 3335          TST174                /SCOPE LOOP
/
/DOES COUNTER REALLY COUNT ?
/RATE 4, MODE 1
/
3370 7340      TST175,  CLA CLL CMA          /AC TO 7777
3371 4427          JMS I XIOTG          /IOT 6133, CLAB
3372 3040          DCA REGA
3373 1116          TAD K0400          /GET RATE + MODE
3374 1144          TAD K1000          /IOT 6132, CLOE
3375 4426          JMS I XIOTF1         /IOT 6131, CLSK
3376 4424          JMS I XIOTE
3377 5376          JMP .-1
3400 7300          CLA CLL          /CLEAR THE AC AND LINK
3401 4427          JMS I XIOTG         /IOT 6133, CLAB
3402 3042      T175B1,  DCA REGC
3403 1041          TAD REGB
3404 3070          DCA SEND          /SAVE OUTPUT FOR ERROR PRINTER
3405 4433      T175B,   JMS I XIOTK         /IOT 6137, CLCA
3406 7041          CIA
3407 1041          TAD REGB          /COMPARE TO THIS REGISTER
3410 7650          SNA CLA          /ARE THEY THE SAME YET ?
3411 5215          JMP T175A          /YES, TEST NEXT NUMBER
3412 2042          ISZ REGC
3413 5205          JMP T175B          /WAIT ABOUT 15 MS FOR REGISTER
3414 5220          JMP T175A1         /NUMBER NOT FOUND
3415 2041      T175A,   ISZ REGB          /UPDATE COMPARE REGISTER
3416 5202          JMP T175B1         /TEST FOR NEXT COUNTER PULSE
3417 4472          JMS I NERROR        /CHECK NON-ERROR HANDLER
3420 4473      T175A1,  JMS I ERROR        /ERROR! COUNTER FAILED
3421 4175          4175                /TST175 ERROR MESSAGE
3422 3370          TST175                /SCOPE LOOP
/
/DOES COUNTER REALLY COUNT ?
/RATE 2, MODE 2
/
3423 7340      TST176,  CLA CLL CMA          /AC TO 7777
3424 4427          JMS I XIOTG          /IOT 6133, CLAB
3425 3040          DCA REGA
3426 1015          TAD K0200          /GET RATE + MODE
3427 1145          TAD K2000          /IOT 6132, CLOE
3430 4426          JMS I XIOTF1         /IOT 6131, CLSK
3431 7300      T176B1,  CLA CLL          /CLEAR THE AC AND LINK
3432 3042          DCA REGC
3433 1041          TAD REGB
3434 3070          DCA SEND          /SAVE OUTPUT FOR ERROR PRINTER
3435 4433      T176B,   JMS I XIOTK         /IOT 6137, CLCA
3436 7041          CIA
3437 1041          TAD REGB          /COMPARE TO THIS REGISTER
3440 7650          SNA CLA          /ARE THEY THE SAME YET ?
3441 5245          JMP T176A          /YES, TEST NEXT NUMBER
3442 2042          ISZ REGC

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```

3443 5235      JMP T176B      /WAIT ABOUT 15 MS FOR REGISTER
3444 5250      JMP T176A1     /NUMBER NOT FOUND
3445 2041      T176A, ISZ REG8 /UPDATE COMPARE REGISTER
3446 5231      JMP T176B1     /TEST FOR NEXT COUNTER PULSE
3447 4472      T176A1, JMS I NERROR /CHECK NON-ERROR HANDLER
3450 4473      JMS I ERROR  /ERROR! COUNTER FAILED
3451 4176      4176        /TST176 ERROR MESSAGE
3452 3423      TST176        /SCOPE LOOP

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```

/DOES COUNTER REALLY COUNT ?
/RATE 4, MODE 2
/

```

```

3453 7340      TST177, CLA CLL CMA /AC TO 7777
3454 4427      JMS I XIOTG    /IOT 6133, CLAB
3455 3040      DCA REGA
3456 1116      TAD K0400
3457 1143      TAD K2000      /GET RATE + MODE
3460 4426      JMS I XIOTF1   /IOT 6132, CLOE
3461 7300      T177B1, CLA CLL /CLEAR THE AC AND LINK
3462 3042      DCA REGC
3463 1041      TAD REGB
3464 3070      DCA SEND      /SAVE OUTPUT FOR ERROR PRINTER
3465 4433      T177B, JMS I XIOTK /IOT 6137, CLCA
3466 7041      CIA
3467 1041      TAD REGB      /COMPARE TO THIS REGISTER
3470 7650      SNA CLA      /ARE THEY THE SAME YET ?
3471 5275      JMP T177A      /YES, TEST NEXT NUMBER
3472 2042      ISZ REGC
3473 5265      JMP T177B     /WAIT ABOUT 15 MS FOR REGISTER
3474 5300      JMP T177A1     /NUMBER NOT FOUND
3475 2041      T177A, ISZ REG8 /UPDATE COMPARE REGISTER
3476 5261      JMP T177B1     /TEST FOR NEXT COUNTER PULSE
3477 4472      JMS I NERROR /CHECK NON-ERROR HANDLER
3500 4473      T177A1, JMS I ERROR /ERROR! COUNTER FAILED
3501 4177      4177        /TST177 ERROR MESSAGE
3502 3453      TST177        /SCOPE LOOP

```

```

/DOES COUNTER REALLY COUNT ?
/RATE 4, MODE 3
/

```

```

3503 7340      TST200, CLA CLL CMA /AC TO 7777
3504 4427      JMS I XIOTG    /IOT 6133, CLAB
3505 3040      DCA REGA
3506 1116      TAD K0400
3507 1120      TAD K3000      /GET RATE + MODE
3510 4426      JMS I XIOTF1   /IOT 6132, CLOE
3511 7300      T200B1, CLA CLL /CLEAR THE AC AND LINK
3512 3042      DCA REGC
3513 1041      TAD REGB
3514 3070      DCA SEND      /SAVE OUTPUT FOR ERROR PRINTER
3515 4433      T200B, JMS I XIOTK /IOT 6137, CLCA
3516 7041      CIA
3517 1041      TAD REGB      /COMPARE TO THIS REGISTER
3520 7650      SNA CLA      /ARE THEY THE SAME YET ?
3521 5325      JMP T200A      /YES, TEST NEXT NUMBER

```

```

3522 2042      ISZ REGC
3523 5315      JMP T200B     /WAIT ABOUT 15 MS FOR REGISTER
3524 5330      JMP T200A1   /NUMBER NOT FOUND
3525 2041      T200A, ISZ REG8 /UPDATE COMPARE REGISTER
3526 5311      JMP T200B1   /TEST FOR NEXT COUNTER PULSE
3527 4472      JMS I NERROR /CHECK NON-ERROR HANDLER
3530 4473      T200A1, JMS I ERROR /ERROR! MODE 3, COUNTER FAILED
3531 4200      4200        /TST200 ERROR MESSAGE
3532 3503      TST200      /SCOPE LOOP

```

```

/DO IOT'S AFFECT AC ?
/

```

```

3533 7340      TST201, CLA CLL CMA /AC TO 7777
3534 4427      JMS I XIOTG    /IOT 6133, CLAB
3535 3040      DCA REGA      /PASS COUNT 1
3536 6007      6007        /CAF OR CLEAR THE WORLD
3537 1144      TAD K1000
3540 1015      TAD K0200      /GET ENABLES
3541 4426      JMS I XIOTF1   /IOT 6132, CLOE
3542 4424      JMS I XIOTE    /IOT 6131, CLSK
3543 5342      JMP .=1        /WAIT FOR COUNTER TO GET CLEARED
3544 7340      CLA CLL CMA
3545 4423      JMS I XIOTD    /IOT 6130, CLZE
3546 7300      T201B, CLA CLL /CLEAR AC AND LINK
3547 3070      DCA SEND      /SAVE OUTPUT FOR ERROR PRINTER
3550 1041      TAD REGB      /GET AC NUMBER
3551 4432      JMS I XIOTJ    /IOT 6136, CLBA
3552 7640      SZA CLA      /WAS AC ALL 0'S ?
3553 5375      JMP T201A
3554 1041      TAD REGB      /GET AC NUMBER
3555 4433      JMS I XIOTK    /IOT 6137, CLCA
3556 7640      SZA CLA      /WAS AC ALL 0'S ?
3557 5375      JMP T201A
3560 1041      TAD REGB      /GET AC NUMBER
3561 4430      JMS I XIOTH    /IOT 6134, CLEN
3562 7640      SZA CLA      /WAS AC ALL 0'S ?
3563 5375      JMP T201A
3564 1041      TAD REGB      /GET AC NUMBER
3565 4431      JMS I XIOTI    /IOT 6135, CLSA
3566 7640      SZA CLA      /WAS AC ALL 0'S ?
3567 5375      JMP T201A
3570 4424      JMS I XIOTE    /IOT 6131, CLSK
3571 5370      JMP .=1        /WAS FLAG STILL SET ?
3572 2041      ISZ REG8      /UPDATE PASS COUNTER
3573 5346      JMP T201B     /TEST IOT'S AGAIN
3574 4472      JMS I NERROR /CHECK NON-ERROR HANDLER
3575 4473      T201A, JMS I ERROR /ERROR! IOT FAILED
3576 3201      3201        /TST201 ERROR MESSAGE
3577 3533      TST201      /SCOPE LOOP

3600 4570      JMS I XPASS    /TYPE PASS COMPLETE
3601 5463      JMP I XDK8EP  /CONTINUE TESTING

```

```

/DOES INPUT 4 CAUSE INT. ROST.
/

```

```

3602 7300      CLA CLL
3603 1112      TAD K7400
3604 3077      DCA LOOP      /LOAD LOOP COUNTER
3605 7340      TST202, CLA CLL CMA /AC TO 7777
3606 3040      DCA REGA
3607 7307      CLA CLL IAC RTL /AC TO 0004
3610 1142      TAD K0010      /GET ENABLES
3611 4425      JMS I XIOTF      /IOT 6132, CLOE
3612 4450      JMS I XPIG02     /GO TO PI, PI EXPECTED
3613 4472      JMS I NERROR     /CHECK NON-ERROR HANDLER
3614 4473      JMS I ERROR      /ERROR: INPUT 4 FAILED
3615 1602      1602      /TST202 ERROR MESSAGE
3616 3605      TST202      /SCOPE LOOP

```

/DOES INPUT 2 CAUSE INT. RQST.

```

3617 7340      TST203, CLA CLL CMA /AC TO 7777
3620 3040      DCA REGA
3621 7326      CLA CLL CML RTL /AC TO 0002
3622 1142      TAD K0010      /GET ENABLES
3623 4425      JMS I XIOTF      /IOT 6132, CLOE
3624 4450      JMS I XPIG02     /GO TO PI, PI EXPECTED
3625 4472      JMS I NERROR     /CHECK NON-ERROR HANDLER
3626 4473      JMS I ERROR      /ERROR: INPUT 2 FAILED
3627 1603      1603      /TST203 ERROR MESSAGE
3630 3617      TST203      /SCOPE LOOP

```

/DOES INPUT 1 CAUSE INT. RQST.

```

3631 7340      TST204, CLA CLL CMA /AC TO 7777
3632 3040      DCA REGA
3633 7324      CLA CLL CML RAL /AC TO 0001
3634 1142      TAD K0010      /GET ENABLES
3635 4425      JMS I XIOTF      /IOT 6132, CLOE
3636 4450      JMS I XPIG02     /GO TO PI, PI EXPECTED
3637 4472      JMS I NERROR     /CHECK NON-ERROR HANDLER
3640 4473      JMS I ERROR      /ERROR: INPUT 1 FAILED
3641 1604      1604      /TST204 ERROR MESSAGE
3642 3631      TST204      /SCOPE LOOP

```

/DOES INPUT 4 RQST. LAST ?

```

3643 7340      TST205, CLA CLL CMA /AC TO 7777
3644 3040      DCA REGA
3645 7307      CLA CLL IAC RTL /AC TO 0004
3646 1142      TAD K0010      /GET ENABLES
3647 4425      JMS I XIOTF      /IOT 6132, CLOE
3650 4447      JMS I XPIG01     /GO TO PI, PI EXPECTED
3651 5256      JMP T205A      /NO RQST. FOUND
3652 2041      ISZ REGB      /UPDATE COUNTER
3653 5252      JMP ,=1      /WAIT 15 MS
3654 4450      JMS I XPIG02     /GO TO PI, PI EXPECTED
3655 4472      JMS I NERROR     /CHECK NON-ERROR HANDLER
3656 4473      T205A, JMS I ERROR /ERROR: INPUT 4 FAILED
3657 1605      1605      /TST205 ERROR MESSAGE

```

```

3660 3643      TST205      /SCOPE LOOP

```

/DOES INPUT 2 RQST. LAST ?

```

3661 7340      TST206, CLA CLL CMA /AC TO 7777
3662 3040      DCA REGA
3663 7305      CLA CLL IAC RAL /AC TO 0002
3664 1142      TAD K0010      /GET ENABLES
3665 4425      JMS I XIOTF      /IOT 6132, CLOE
3666 4447      JMS I XPIG01     /GO TO PI, PI EXPECTED
3667 5274      JMP T206A      /NO RQST. FOUND
3670 2041      ISZ REGB      /UPDATE COUNTER
3671 5270      JMP ,=1      /WAIT 15 MS
3672 4450      JMS I XPIG02     /GO TO PI, PI EXPECTED
3673 4472      JMS I NERROR     /CHECK NON-ERROR HANDLER
3674 4473      T206A, JMS I ERROR /ERROR: INPUT 2 FAILED
3675 1606      1606      /TST206 ERROR MESSAGE
3676 3661      TST206      /SCOPE LOOP

```

/DOES INPUT 1 RQST. LAST ?

```

3677 7340      TST207, CLA CLL CMA /AC TO 7777
3700 3040      DCA REGA
3701 7324      CLA CLL CML RAL /AC TO 0001
3702 1142      TAD K0010      /GET ENABLES
3703 4425      JMS I XIOTF      /IOT 6132, CLOE
3704 4447      JMS I XPIG01     /GO TO PI, PI EXPECTED
3705 5312      JMP T207A      /NO RQST. FOUND
3706 2041      ISZ REGB      /UPDATE COUNTER
3707 5306      JMP ,=1      /WAIT 15 MS
3710 4450      JMS I XPIG02     /GO TO PI, PI EXPECTED
3711 4472      JMS I NERROR     /CHECK NON-ERROR HANDLER
3712 4473      T207A, JMS I ERROR /ERROR: INPUT 1 FAILED
3713 1607      1607      /TST207 ERROR MESSAGE
3714 3677      TST207      /SCOPE LOOP

```

/DOES INPUTS 4,2,1 WITHOUT BIT 8 ?

```

3715 7340      TST210, CLA CLL CMA /AC TO 7777
3716 3040      DCA REGA
3717 7313      CLA CLL IAC RTR /AC TO 4000
3720 1007      TAD K0007
3721 1147      TAD K0000
3722 4425      JMS I XIOTF      /IOT 6132, CLOE
3723 4447      JMS I XPIG01     /GO TO PI, NO PI EXPECTED
3724 4472      JMS I NERROR     /CHECK NON-ERROR HANDLER
3725 4473      JMS I ERROR      /ERROR: ENABLE BIT 8 FAILED
3726 1210      1210      /TST210 ERROR MESSAGE
3727 3715      TST210      /SCOPE LOOP

```

/DOES INPUT 4 CAUSE SKIP ?

```

3730 7340      TST211, CLA CLL CMA /AC TO 7777
3731 3040      DCA REGA
3732 1113      TAD K11CPS

```

```

3733 3045      DCA REGF
3734 7307      CLA CLL IAC RTL /AC TO 0004
3735 4425      JMS I XIOTF /IOT 6132, CLOE
3736 4424      JMS I XIOTE /IOT 6131, CLSK
3737 4446      JMS I SKPWAT /LET'S WAIT FOR A FLAG
3740 4472      JMS I NERROR /CHECK NON-ERROR HANDLER
3741 4473      JMS I ERROR  /ERROR: INPUT 4 OR SKIP FAILED
3742 0611      0611 /TST211 ERROR MESSAGE
3743 3730      TST211 /SCOPE LOOP
    
```

/DOES INPUT 2 CAUSE SKIP ?

```

3744 7340      TST212, CLA CLL CMA /AC TO 7777
3745 3040      DCA REGA
3746 1113      TAD K7ICPS
3747 3045      DCA REGF
3750 7326      CLA CLL CML RTL /AC TO 0002
3751 4425      JMS I XIOTF /IOT 6132, CLOE
3752 4424      JMS I XIOTE /IOT 6131, CLSK
3753 4446      JMS I SKPWAT /LET'S WAIT FOR A FLAG
3754 4472      JMS I NERROR /CHECK NON-ERROR HANDLER
3755 4473      JMS I ERROR  /ERROR: INPUT 2 OR SKIP FAILED
3756 0612      0612 /TST212 ERROR MESSAGE
3757 3744      TST212 /SCOPE LOOP
    
```

/DOES INPUT 1 CAUSE SKIP ?

```

3760 7340      TST213, CLA CLL CMA /AC TO 7777
3761 3040      DCA REGA
3762 1113      TAD K7ICPS
3763 3045      DCA REGF
3764 7301      CLA CLL IAC /AC TO 0001
3765 4425      JMS I XIOTF /IOT 6132, CLOE
3766 4424      JMS I XIOTE /IOT 6131, CLSK
3767 4446      JMS I SKPWAT /LET'S WAIT FOR FLAG
3770 4472      JMS I NERROR /CHECK NON-ERROR HANDLER
3771 4473      JMS I ERROR  /ERROR: INPUT 1 OR SKIP FAILED
3772 0613      0613 /TST213 ERROR MESSAGE
3773 3760      TST213 /SCOPE LOOP
    
```

/DOES INPUT 4 RGST. THEN SKIP AND VICE=VERSA ?

```

3774 7340      TST214, CLA CLL CMA /AC TO 7777
3775 3040      DCA REGA
3776 7307      CLA CLL IAC RTL /AC TO 0004
3777 1142      TAD K0010 /GET ENABLES
4000 4425      JMS I XIOTF /IOT 6132, CLOE
4001 4424      JMS I XIOTE /IOT 6131, CLSK
4002 5201      JMP .-1
4003 4447      JMS I XPIG01 /GO TO PI, PI EXPECTED
4004 5210      JMP T214A /NO RGST. FOUND
4005 4424      JMS I XIOTE /IOT 6131, CLSK
4006 5205      JMP .-1
4007 4472      JMS I NERROR /CHECK NON-ERROR HANDLER
4010 4473      T214A, JMS I ERROR /ERROR: INPUT 4 SKIP OR INT. RGST. FAILED
    
```

```

4011 1614      1614 /TST214 ERROR FAILED
4012 3774      TST214 /SCOPE LOOP
    
```

/DOES INPUT 2 SKIP THEN INT. RGST. AND VICE=VERSA ?

```

4013 7340      TST215, CLA CLL CMA /AC TO 7777
4014 3040      DCA REGA
4015 7305      CLA CLL IAC RAL /AC TO 0002
4016 1142      TAD K0010 /GET ENABLES
4017 4425      JMS I XIOTF /IOT 6132, CLOE
4020 4424      JMS I XIOTE /IOT 6131, CLSK
4021 5220      JMP .-1
4022 4447      JMS I XPIG01 /GO TO PI, PI EXPECTED
4023 5575      JMP I XCRS5 /IOT 6131, CLSK
4024 4424      JMS I XIOTE /IOT 6131, CLSK
4025 5224      JMP .-1
4026 4472      JMS I NERROR /CHECK NON-ERROR HANDLER
4027 4473      T215A, JMS I ERROR /ERROR: INPUT 2 SKIP OR RGST. FAILED
4030 1615      1615 /TST215 ERROR MESSAGE
4031 4013      TST215 /SCOPE LOOP
    
```

/DOES INPUT 1 SKIP THEN INT. RGST. AND VICE=VERSA ?

```

4032 7340      TST216, CLA CLL CMA /AC TO 7777
4033 3040      DCA REGA
4034 7301      CLA CLL IAC /AC TO 0001
4035 1142      TAD K0010 /GET ENABLES
4036 4425      JMS I XIOTF /IOT 6132, CLOE
4037 4424      JMS I XIOTE /IOT 6131, CLSK
4040 5237      JMP .-1
4041 4447      JMS I XPIG01 /GO TO PI, PI EXPECTED
4042 5246      JMP T216A /IOT 6131, CLSK
4043 4424      JMS I XIOTE /IOT 6131, CLSK
4044 5243      JMP .-1
4045 4472      JMS I NERROR /CHECK NON-ERROR HANDLER
4046 4473      T216A, JMS I ERROR /ERROR: INPUT 1 SKIP OR INT. RGST. FAILED
4047 1616      1616 /TST216 ERROR MESSAGE
4050 4032      TST216 /SCOPE LOOP
    
```

/DOES CAF CLEAR INPUT 4 INT. RGST. ?

```

4051 7340      TST217, CLA CLL CMA /AC TO 7777
4052 3040      DCA REGA
4053 7307      CLA CLL IAC RTL /AC TO 0004
4054 4425      JMS I XIOTF /IOT 6132, CLOE
4055 4424      JMS I XIOTE /IOT 6131, CLSK
4056 5255      JMP .-1 /WAIT FOR FIRST FLAG
4057 6007      6007 /CAF OR CLEAR THE WORLD
4060 7307      CLA CLL IAC RTL /AC TO 0004
4061 4425      JMS I XIOTF /IOT 6132, CLOE
4062 4424      JMS I XIOTE /IOT 6131, CLSK
4063 5262      JMP .-1 /WAIT FOR SECOND FLAG
4064 6007      6007 /CAF OR CLEAR THE WORLD
4065 7307      CLA CLL IAC RTL
4066 4425      JMS I XIOTF /IOT 6132, CLOE
    
```

```

4067 4424 JMS I XIOTE /IOT 6131, CLSK
4070 4472 JMS I NERROR /CHECK NON-ERROR HANDLER
4071 4473 JMS I ERROR /ERROR: INPUT 4 SKIP OR RQST, FAILED
4072 0217 0217 /TST217 ERROR MESSAGE
4073 4051 TST217 /SCOPE LOOP
    
```

/DOES CAP CLEAR INPUT 2 RQST. ?

```

4074 7340 TST220, CLA CLL CMA /AC TO 7777
4075 3040 DCA REGA
4076 7305 CLA CLL IAC RAL /AC TO 0002
4077 4425 JMS I XIOTF /IOT 6132, CLOE
4100 4424 JMS I XIOTE /IOT 6131, CLSK
4101 5300 JMP .-1 /WAIT FOR FIRST FLAG
4102 6007 6007 /CAF OR CLEAR THE WORLD
4103 7305 CLA CLL IAC RAL /AC TO 0002
4104 4425 JMS I XIOTF /IOT 6132, CLOE
4105 4424 JMS I XIOTE /IOT 6131, CLSK
4106 5305 JMP .-1 /WAIT FOR SECOND FLAG
4107 6007 6007 /CAF OR CLEAR THE WORLD
4110 7305 CLA CLL IAC RAL /AC TO 0002
4111 4425 JMS I XIOTF /IOT 6132, CLOE
4112 4424 JMS I XIOTE /IOT 6131, CLSK
4113 4472 JMS I NERROR /CHECK NON-ERROR HANDLER
4114 4473 JMS I ERROR /ERROR: INPUT 2 SKIP OR RQST, FAILED
4115 0220 0220 /TST220 ERROR MESSAGE
4116 4074 TST220 /SCOPE LOOP
    
```

/DOES CAP CLEAR INPUT 3 RQST. ?

```

4117 7340 TST221, CLA CLL CMA /AC TO 7777
4120 3040 DCA REGA
4121 7301 CLA CLL IAC /AC TO 0001
4122 4425 JMS I XIOTF /IOT 6132, CLOE
4123 4424 JMS I XIOTE /IOT 6131, CLSK
4124 5323 JMP .-1 /WAIT FOR FIRST FLAG
4125 6007 6007 /CAF OR CLEAR THE WORLD
4126 7301 CLA CLL IAC /AC TO 0001
4127 4425 JMS I XIOTF /IOT 6132, CLOE
4130 4424 JMS I XIOTE /IOT 6131, CLSK
4131 5330 JMP .-1 /WAIT FOR SECONED FLAG
4132 6007 6007 /CAF OR CLEAR THE WORLD
4133 7301 CLA CLL IAC
4134 4425 JMS I XIOTF /IOT 6132, CLOE
4135 4424 JMS I XIOTE /IOT 6131, CLSK
4136 4472 JMS I NERROR /CHECK NON-ERROR HANDLER
4137 4473 JMS I ERROR /ERROR: INPUT 1 SKIP OR RQST, FAILED
4140 0221 0221 /TST221 ERROR MESSAGE
4141 4117 TST221 /SCOPE LOOP
    
```

/DOES CLSA READ RQST. INPUT 4 ?

```

4142 7340 TST222, CLA CLL CMA /AC TO 7777
4143 3040 DCA REGA
4144 7307 CLA CLL IAC RTL /AC TO 0004
    
```

```

4145 4425 JMS I XIOTF /IOT 6132, CLOE
4146 4424 JMS I XIOTE /IOT 6131, CLSK
4147 5346 JMP .-1 /WAIT FOR FLAG
4150 7040 CMA /AC TO 7773
4151 4431 JMS I XIOTI /IOT 6135, CLSA
4152 4456 JMS I XSNDRV /CHECK SEND AND RECEV REGISTERS
4153 4472 JMS I NERROR /CHECK NON-ERROR HANDLER
4154 4473 JMS I ERROR /ERROR: CLSA OR INPUT 4 FAILED
4155 5222 5222 /TST222 ERROR MESSAGE
4156 4142 TST222 /SCOPE LOOP
    
```

/DOES CLSA READ RQST. INPUT 2 ?

```

4157 7340 TST223, CLA CLL CMA /AC TO 7777
4160 3040 DCA REGA
4161 7305 CLA CLL IAC RAL /AC TO 0002
4162 4425 JMS I XIOTF /IOT 6132, CLOE
4163 4424 JMS I XIOTE /IOT 6131, CLSK
4164 5363 JMP .-1 /WAIT FOR FLAG
4165 7040 CMA /AC TO 7775
4166 4431 JMS I XIOTI /IOT 6135, CLSA
4167 4456 JMS I XSNDRV /CHECK SEND AND RECEV REGISTERS
4170 4472 JMS I NERROR /CHECK NON-ERROR HANDLER
4171 4473 JMS I ERROR /ERROR: CLSA OR INPUT 2 FAILED
4172 5223 5223 /TST223 ERROR MESSAGE
4173 4157 TST223 /SCOPE LOOP
    
```

/DOES CLSA READ RQST. INPUT 1 ?

```

4174 7340 TST224, CLA CLL CMA /AC TO 7777
4175 3040 DCA REGA
4176 7301 CLA CLL IAC /AC TO 0001
4177 4425 JMS I XIOTF /IOT 6132, CLOE
4200 4424 JMS I XIOTE /IOT 6131, CLSK
4201 5200 JMP .-1 /WAIT FOR FLAG
4202 7040 CMA /AC TO 7776
4203 4431 JMS I XIOTI /IOT 6135, CLSA
4204 4456 JMS I XSNDRV /CHECK SEND AND RECEV REGISTERS
4205 4472 JMS I NERROR /CHECK NON-ERROR HANDLER
4206 4473 JMS I ERROR /ERROR: CLSA OR INPUT 1 FAILED
4207 5224 5224 /TST224 ERROR MESSAGE
4210 4174 TST224 /SCOPE LOOP
    
```

/DOES CLSA CLEAR INPUT 4 RQST. ?

```

4211 7340 TST225, CLA CLL CMA /AC TO 7777
4212 3040 DCA REGA
4213 7307 CLA CLL IAC RTL /AC TO 0004
4214 4426 JMS I XIOTF1 /IOT 6132, CLOE
4215 4424 JMS I XIOTE /IOT 6131, CLSK
4216 5215 JMP .-1 /WAIT FOR FIRST FLAG
4217 4431 JMS I XIOTI /IOT 6135, CLSA
4220 4424 JMS I XIOTE /IOT 6131, CLSK
4221 5220 JMP .-1 /WAIT FOR SECOND FLAG
4222 4431 JMS I XIOTI /IOT 6135, CLSA
    
```

```

4223 4424 JMS I XIOTE /IOT 6131, CLSK
4224 4472 JMS I NERROR /CHECK NON-ERROR HANDLER
4225 4473 JMS I ERROR /ERROR: CLSA OR INPUT 1 FAILED
4226 0225 0225 /TST225 ERROR MESSAGE
4227 4211 TST225 /SCOPE LOOP

```

```

/DOES CLSA CLEAR INPUT 2 ROST. ?
/

```

```

4230 7340 TST226, CLA CLL CMA /AC TO 7777
4231 3040 DCA REGA
4232 7305 CLA CLL IAC RAL /AC TO 0002
4233 4425 JMS I XIOTF /IOT 6132, CLOE
4234 4424 JMS I XIOTE /IOT 6131, CLSK
4235 5234 JMP ,-1 /WAIT FOR FIRST FLAG
4236 4431 JMS I XIOTI /IOT 6135, CLSA
4237 4424 JMS I XIOTE /IOT 6131, CLSK
4240 5237 JMP ,-1 /WAIT FOR SECOND FLAG
4241 4431 JMS I XIOTI /IOT 6135, CLSA
4242 4424 JMS I XIOTE /IOT 6131, CLSK
4243 4472 JMS I NERROR /CHECK NON-ERROR HANDLER
4244 4473 JMS I ERROR /ERROR: CLSA OR INPUT 2 FAILED
4245 0226 0226 /TST226 ERROR MESSAGE
4246 4230 TST226 /SCOPE LOOP

```

```

/DOES CLSA CLEAR INPUT 4 ROST. ?
/

```

```

4247 7340 TST227, CLA CLL CMA /AC TO 7777
4250 3040 DCA REGA
4251 7301 CLA CLL IAC /AC TO 0001
4252 4425 JMS I XIOTF /IOT 6132, CLOE
4253 4424 JMS I XIOTE /IOT 6131, CLSK
4254 5253 JMP ,-1 /WAIT FOR FIRST FLAG
4255 4431 JMS I XIOTI /IOT 6135, CLSA
4256 4424 JMS I XIOTE /IOT 6131, CLSK
4257 5256 JMP ,-1 /WAIT FOR SECOND FLAG
4260 4431 JMS I XIOTI /IOT 6135, CLSA
4261 4424 JMS I XIOTE /IOT 6131, CLSK
4262 4472 JMS I NERROR /CHECK NON-ERROR HANDLER
4263 4473 JMS I ERROR /ERROR: CLSA OR INPUT 1 FAILED
4264 0227 0227 /TST227 ERROR MESSAGE
4265 4247 TST227 /SCOPE LOOP

```

```

/DOES CLSA READ INPUT 4,2,1 ?
/

```

```

4266 7340 TST230, CLA CLL CMA /AC TO 7777
4267 3040 DCA REGA
4270 1007 TAD K0007 /GET ENABLES
4271 4425 JMS I XIOTF /IOT 6132, CLOE
4272 7000 NOP
4273 2041 ISZ REGB
4274 5272 JMP ,-2 /WAIT FOR ALL
4275 4424 JMS I XIOTE /IOT 6131, CLOE
4276 5275 JMP ,-1 /WAIT FOR FLAGS
4277 7340 CLA CLL CMA /AC TO 7777
4300 4431 JMS I XIOTI /IOT 6135, CLSA

```

```

4301 4456 JMS I XSNDRV /CHECK SEND AND RECEV REGISTERS
4302 7610 SKP CLA
4303 5311 JMP T230A /ERROR, STATUS REGISTER
4304 3070 DCA SEND /SAVE OUTPUT FOR ERROR PRINTER
4305 7340 CLA CLL CMA /AC TO 7777
4306 4431 JMS I XIOTI /IOT 6135, CLSA
4307 7650 JMS A /HAS STATUS ALL 0'S ?
4310 4472 JMS I NERROR /CHECK NON-ERROR HANDLER
4311 4473 T230A, JMS I ERROR /ERROR: CLSA OR INPUTS 1,2,3 FAILED
4312 5230 5230 /TST230 ERROR MESSAGE
4313 4266 TST230 /SCOPE LOOP

```

```

/DOES INPUT 4 CLEAR BIT 7 ?
/

```

```

4314 7340 TST231, CLA CLL CMA
4315 3040 DCA REGA
4316 7307 CLA CLL IAC RTL /AC TO 0004
4317 3070 DCA SEND /SAVE OUTPUT FOR ERROR PRINTER
4320 1070 TAD SEND
4321 1140 TAD K0020 /GET ENABLES
4322 4426 JMS I XIOTF1 /IOT 6132, CLOE
4323 4424 JMS I XIOTE /IOT 6131, CLSK
4324 5323 JMP ,-1 /WAIT FOR FLAG
4325 7340 CLA CLL CMA /AC TO 7777
4326 4430 JMS I XIOTH /IOT 6134, CLEN
4327 4456 JMS I XSNDRV /CHECK SEND AND RECEV REGISTERS
4330 4472 JMS I NERROR /CHECK NON-ERROR HANDLER
4331 4473 JMS I ERROR /ERROR: BIT 7 OR INPUT 4 FAILED
4332 4631 4631 /TST231 ERROR MESSAGE
4333 4314 TST231 /SCOPE LOOP

```

```

/DOES INPUT 2 CLEAR BIT 7 ?
/

```

```

4334 7340 TST232, CLA CLL CMA
4335 3040 DCA REGA
4336 7305 CLA CLL IAC RAL /AC TO 0002
4337 3070 DCA SEND /SAVE OUTPUT FOR ERROR PRINTER
4340 1070 TAD SEND
4341 1140 TAD K0020
4342 4426 JMS I XIOTF1 /IOT 6132, CLOE
4343 4424 JMS I XIOTE /IOT 6131, CLSK
4344 5343 JMP ,-1 /WAIT FOR FLAG
4345 7340 CLA CLL CMA /AC TO 7777
4346 4430 JMS I XIOTH /IOT 6134, CLEN
4347 4456 JMS I XSNDRV /CHECK SEND AND RECEV REGISTERS
4350 4472 JMS I NERROR /CHECK NON-ERROR HANDLER
4351 4473 JMS I ERROR /ERROR: BIT 7 OR INPUT 2 FAILED
4352 4632 4632 /TST232 ERROR MESSAGE
4353 4334 TST232 /SCOPE LOOP

```

```

/DOES INPUT 1 CLEAR BIT 7 ?
/

```

```

4354 7340 TST233, CLA CLL CMA /AC TO 7777
4355 3040 DCA REGA
4356 7301 CLA CLL IAC /AC TO 0001

```

```

4357 3070      DCA SEND      /SAVE OUTPUT FOR ERROR PRINTER
4360 1070      TAD SEND
4361 1140      TAD K0020
4362 4426      JMS I XIOTF1 /IOT 6132, CLOE
4363 4424      JMS I XIOTE  /IOT 6131, CLSK
4364 5363      JMP ,=1      /WAIT FOR FLAG
4365 7340      CLA CLL CMA  /AC TO 7777
4366 4430      JMS I XIOTH  /IOT 6134, CLEN
4367 4456      JMS I XSNDRV /CHECK SEND AND RECEV REGISTERS
4370 4472      JMS I NERROR /CHECK NON-ERROR HANDLER
4371 4473      JMS I ERROR  /ERROR: BIT 7 OR INPUT 1 FAILED
4372 4633      4633       /TST233 ERROR MESSAGE
4373 4354      TST233      /SCOPE LOOP
    
```

/DOES INPUT 4,2,1 GENERATE CLR CNT ?
/MODE 3, RATE 0

```

4374 7340      TST234, CLA CLL CMA  /AC TO 7777
4375 3040      DCA REGA
4376 1016      TAD K2525   /GET AC NUMBER
4377 4427      JMS I XIOTG /IOT 6133, CLAB
4400 7307      CLA CLL IAC RTL /AC TO 0004
4401 1120      TAD K3000   /GET ENABLES
4402 4426      JMS I XIOTF1 /IOT 6132, CLOE
4403 4424      JMS I XIOTE  /IOT 6131, CLSK
4404 5203      JMP ,=1      /WAIT FOR FLAG
4405 7300      CLA CLL
4406 3070      DCA SEND    /SAVE OUTPUT FOR ERROR PRINTER
4407 7340      CLA CLL CMA  /AC TO 7777
4410 4433      JMS I XIOTK  /IOT 6137, CLCA
4411 7650      SNA CLA     /WAS COUNTER ALL 0'S ?
4412 4472      JMS I NERROR /CHECK NON-ERROR HANDLER
4413 4473      JMS I ERROR  /ERROR: CLR CNT FAILED
4414 4234      4234     /TST234 ERROR MESSAGE
4415 4374      TST234    /SCOPE LOOP
    
```

/DOES INPUT 4,2,1 CAUSE CLR CNT ?
/MODE 3, RATE 0

```

4416 7340      TST235, CLA CLL CMA  /AC TO 7777
4417 3040      DCA REGA
4420 1017      TAD K5252   /GET AC NUMBER
4421 4427      JMS I XIOTG /IOT 6133, CLAB
4422 7305      CLA CLL IAC RAL /AC TO 0002
4423 1120      TAD K3000   /GET ENABLES
4424 4426      JMS I XIOTF1 /IOT 6132, CLOE
4425 4424      JMS I XIOTE  /IOT 6131, CLSK
4426 5225      JMP ,=1      /WAIT FOR FLAG
4427 7300      CLA CLL
4430 3070      DCA SEND    /SAVE OUTPUT FOR ERROR PRINTER
4431 7340      CLA CLL CMA  /AC TO 7777
4432 4433      JMS I XIOTK  /IOT 6137, CLCA
4433 7650      SNA CLA     /WAS COUNTER ALL 0'S ?
4434 4472      JMS I NERROR /CHECK NON-ERROR HANDLER
4435 4473      JMS I ERROR  /ERROR: CLR CNT FAILED ?
    
```

```

4436 4235      4235     /TST235 ERROR MESSAGE
4437 4416      TST235    /SCOPE LOOP
    
```

/DOES INPUT 4,2,1 TRANSFER COUNTER TO BUFFER ?

```

4440 7340      TST236, CLA CLL CMA  /AC TO 7777
4441 3040      DCA REGA
4442 1016      TAD K2525   /GET AC NUMBER
4443 4427      JMS I XIOTG /IOT 6133, CLAB
4444 6007      6007     /CAF OR CLEAR THE WORLD
4445 7301      CLA CLL IAC  /AC TO 0001
4446 1120      TAD K3000   /GET ENABLES
4447 4426      JMS I XIOTF1 /IOT 6132, CLOE
4450 4424      JMS I XIOTE  /IOT 6131, CLSK
4451 5250      JMP ,=1      /WAIT FOR FLAG
4452 7340      CLA CLL CMA  /AC TO 7777
4453 4432      JMS I XIOTJ  /IOT 6136, CLBA
4454 4456      JMS I XSNDRV /CHECK SEND AND RECEV REGISTERS
4455 4472      JMS I NERROR /CHECK NON-ERROR HANDLER
4456 4473      JMS I ERROR  /ERROR: COUNTER TO BUFFER FAILED
4457 3636      3636     /TST236 ERROR MESSAGE
4460 4440      TST236    /SCOPE LOOP
    
```

/DOES INPUT 4,2,1 TRANSFER COUNTER TO BUFFER ?

```

4461 7340      TST237, CLA CLL CMA  /AC TO 7777
4462 3040      DCA REGA
4463 1017      TAD K5252   /GET AC NUMBER
4464 4427      JMS I XIOTG /IOT 6133, CLAB
4465 6007      6007     /CAF OR CLEAR THE WORLD
4466 7301      CLA CLL IAC  /AC TO 0001
4467 1120      TAD K3000   /GET ENABLES
4470 4426      JMS I XIOTF1 /IOT 6132, CLOE
4471 4424      JMS I XIOTE  /IOT 6131, CLSK
4472 5271      JMP ,=1      /WAIT FOR FLAG
4473 7340      CLA CLL CMA  /AC TO 7777
4474 4432      JMS I XIOTJ  /IOT 6136, CLBA
4475 4456      JMS I XSNDRV /CHECK SEND AND RECEV REGISTERS
4476 4472      JMS I NERROR /CHECK NON-ERROR HANDLER
4477 4473      JMS I ERROR  /ERROR: COUNTER TO BUFFER FAILED
4500 3637      3637     /TST237 ERROR MESSAGE
4501 4461      TST237    /SCOPE LOOP
    
```

/DOES INPUT 4,2,1 GENERATE CLR CNT ?
/MODE 2, RATE 0

```

4502 7340      TST240, CLA CLL CMA  /AC TO 7777
4503 3040      DCA REGA
4504 1016      TAD K2525   /GET AC NUMBER
4505 4427      JMS I XIOTG /IOT 6133, CLAB
4506 6007      6007     /CAF OR CLEAR THE WORLD
4507 7307      CLA CLL IAC RTI /AC TO 0004
4510 1143      TAD K2000   /GET ENABLES
4511 4426      JMS I XIOTF1 /IOT 6132, CLOE
    
```

```

4512 4424 JMS I XIOTE /IOT 6131, CLSK
4513 5312 JMP .-1 /WAIT FOR FLAG
4514 7340 CLA CLL CMA /AC TO 7777
4519 4433 JMS I XIOTK /IOT 6137, CLCA
4516 4456 JMS I XSNDRV /CHECK SEND AND RECEV REGISTERS
4517 4472 JMS I NERROR /CHECK NON-ERROR MESSAGE
4520 4473 JMS I ERROR /ERROR: CLR CNT FAILED, MODE 2
4521 4240 4240 /TST240 ERROR MESSAGE
4522 4502 TST240 /SCOPE LOOP

```

```

/DOES INPUT 4,2,1 CAUSE CLR CNT ?
/MODE 2, RATE 0
/

```

```

4523 7340 TST241, CLA CLL CMA /AC TO 7777
4524 3040 DCA REGA
4525 1017 TAD K252 /GET AC NUMBER
4526 4427 JMS I XIOTG /IOT 6133, CLAB
4527 6007 6007 /CAF OR CLEAR THE WORLD
4530 7305 CLA CLL IAC RAJ /AC TO 0002
4531 1143 TAD K2000 /GET ENABLES
4532 4426 JMS I XIOTF1 /IOT 6132, CLOE
4533 4424 JMS I XIOTE /IOT 6131, CLSK
4534 5333 JMP .-1 /WAIT FOR FLAG
4535 7340 CLA CLL CMA /AC TO 7777
4536 4433 JMS I XIOTK /IOT 6137, CLCA
4537 4456 JMS I XSNDRV /CHECK SEND AND RECEV REGISTERS
4540 4472 JMS I NERROR /CHECK NON-ERROR HANDLER
4541 4473 JMS I ERROR /ERROR: CLR CNT FAILED, MODE 2
4542 4241 4241 /TST241 ERROR MESSAGE
4543 4523 TST241 /SCOPE LOOP

```

```

/DOES COUNTER TRANSFER TO BUFFER ?
/MODE 2, RATE 0
/

```

```

4544 7340 TST242, CLA CLL CMA /AC TO 7777
4545 3040 DCA REGA
4546 1016 TAD K2525 /GET AC NUMBER
4547 4427 JMS I XIOTG /IOT 6133, CLAB
4550 6007 6007 /CAF OR CLEAR THE WORLD
4551 7307 CLA CLL IAC RTL /AC TO 0002
4552 1143 TAD K2000 /GET ENABLES
4553 4426 JMS I XIOTF1 /IOT 6132, CLOE
4554 4424 JMS I XIOTE /IOT 6131, CLSK
4555 5354 JMP .-1 /WAIT FOR FLAG
4556 7340 CLA CLL CMA /AC TO 7777
4557 4432 JMS I XIOTJ /IOT 6136, CLBA
4560 4456 JMS I XSNDRV /CHECK SEND AND RECEV REGISTERS
4561 4472 JMS I NERROR /CHECK NON-ERROR HANDLER
4562 4473 JMS I ERROR /ERROR: COUNTER TO BUFFER FAILED
4563 3642 3642 /TST242 ERROR MESSAGE
4564 4544 TST242 /SCOPE LOOP

```

```

/DOES COUNTER TRANSFER TO BUFFER ?
/MODE 2, RATE 0
/

```

```

4565 7340 TST243, CLA CLL CMA /AC TO 7777
4566 3040 DCA REGA
4567 1017 TAD K2525 /GET AC NUMBER
4570 4427 JMS I XIOTG /IOT 6133, CLAB
4571 6007 6007 /CAF OR CLEAR THE WORLD
4572 7305 CLA CLL IAC RAL /AC TO 0002
4573 1143 TAD K2000 /GET ENABLES
4574 4426 JMS I XIOTF1 /IOT 6132, CLOE
4575 4424 JMS I XIOTE /IOT 6131, CLSK
4576 5375 JMP .-1 /WAIT FOR FLAG
4577 7340 CLA CLL CMA /AC TO 7777
4600 4432 JMS I XIOTJ /IOT 6136, CLBA
4601 4456 JMS I XSNDRV /CHECK SEND AND RECEV REGISTERS
4602 4472 JMS I NERROR /CHECK NON-ERROR HANDLER
4603 4473 JMS I ERROR /ERROR: COUNTER TO BUFFER FAILED
4604 3643 3643 /TST243 ERROR MESSAGE
4605 4565 TST243 /SCOPE LOOP

```

```

/DOES INPUT 4,2,1 AFFECT MODE 0 ?
/

```

```

4606 7340 TST244, CLA CLL CMA /AC TO 7777
4607 3040 DCA REGA
4610 1016 TAD K2523 /GET AC NUMBER
4611 4427 JMS I XIOTG /IOT 6133, CLAB
4612 6007 6007 /CAF OR CLEAR THE WORLD
4613 7307 CLA CLL IAC RTL /AC TO 0004
4614 4426 JMS I XIOTF1 /IOT 6132, CLOE
4615 4424 JMS I XIOTE /IOT 6131, CLSK
4616 5215 JMP .-1 /WAIT FOR FLAG
4617 7340 CLA CLL CMA /AC TO 7777
4620 4433 JMS I XIOTK /IOT 6137, CLCA
4621 4456 JMS I XSNDRV /CHECK SEND AND RECEV REGISTERS
4622 4472 JMS I NERROR /CHECK NON-ERROR HANDLER
4623 4473 JMS I ERROR /ERROR: MODE 0 FAILED
4624 4244 4244 /TST 244 ERROR MESSAGE
4625 4606 TST244 /SCOPE LOOP

```

```

/DOES INPUT 4,2,1 AFFECT MODE 0 ?
/

```

```

4626 7340 TST245, CLA CLL CMA /AC TO 7777
4627 3040 DCA REGA
4630 1017 TAD K2522 /GET AC NUMBER
4631 4427 JMS I XIOTG /IOT 6133, CLAB
4632 7301 CLA CLL IAC /AC TO 0001
4633 4426 JMS I XIOTF1 /IOT 6132, CLOE
4634 4424 JMS I XIOTE /IOT 6131, CLSK
4635 5234 JMP .-1 /WAIT FOR FLAG
4636 7340 CLA CLL CMA /AC TO 7777
4637 4432 JMS I XIOTJ /IOT 6136, CLBA
4640 4456 JMS I XSNDRV /CHECK SEND RECEV REGISTERS
4641 4472 JMS I NERROR /CHECK NON-ERROR HANDLER
4642 4473 JMS I ERROR /ERROR: MODE 0 FAILED
4643 3645 3645 /TST245 ERROR MESSAGE
4644 4626 TST245 /SCOPE LOOP

```



```

/DOES INPUT 4,2,1 AFFECT MODE 1 ?
/
4645 7340 TST246, CLA CLL CMA /AC TO 7777
4646 3040 DCA REGA
4647 1016 TAD K2525 /GET AC NUMBER
4650 4427 JMS I XIOTG /IOT 6133, CLAB
4651 6007 6007 /CAF OR CLEAR THE WORLD
4652 3070 DCA SEND /SAVE OUTPUT FOR ERROR PRINTER
4653 7301 CLA CLL IAC /AC TO 0001
4654 1144 TAD K1000 /GET ENABLES
4655 4426 JMS I XIOTF1 /IOT 6132, CLOE
4656 4424 JMS I XIOTE /IOT 6131, CLOE
4657 5256 JMP ,-1 /WAIT FOR FLAG
4660 7340 CLA CLL CMA /AC TO 7777
4661 4432 JMS I XIOTJ /IOT 6136, CLBA
4662 7650 SNA CLA /WAS BUFFER STILL ALL 0'S ?
4663 4472 JMS I NERROR /CHECK NON-ERROR HANDLER
4664 4473 JMS I ERROR /ERROR: MODE 1 FAILED
4665 4246 4246 /TST246 ERROR MESSAGE
4666 4645 TST246 /SCOPE LOOP
    
```

```

/DOES INPUT 4,2,1 AFFECT MODE 1 ?
/
4667 7340 TST247, CLA CLL CMA /AC TO 7777
4670 3040 DCA REGA
4671 1017 TAD K5252 /GET AC NUMBER
4672 4427 JMS I XIOTG /IOT 6133, CLAB
4673 7307 CLA CLL IAC RTL /AC TO 0004
4674 1144 TAD K1000
4675 4426 JMS I XIOTF1 /IOT 6132, CLOE
4676 4424 JMS I XIOTE /IOT 6131, CLSK
4677 5276 JMP ,-1 /WAIT FOR FLAG
4700 7340 CLA CLL CMA /AC TO 7777
4701 4432 JMS I XIOTJ /IOT 6136, CLBA
4702 4456 JMS I XSNDRV /CHECK SEND AND RECEV REGISTERS
4703 4472 JMS I NERROR /CHECK NON-ERROR HANDLER
4704 4473 JMS I ERROR /ERROR: MODE 1 FAILED
4705 3647 3647 /TST247 ERROR MESSAGE
4706 4667 TST247 /SCOPE LOOP
    
```

```

/DOES CLSA READ INPUTS 4,2,1 ?
/
4707 7340 TST250, CLA CLL CMA /AC TO 7777
4710 3040 DCA REGA
4711 1007 TAD K0007 /GET ENABLES
4712 4426 JMS I XIOTF1 /IOT 6132, CLOE
4713 7000 NOP
4714 2041 ISZ REG8
4715 5313 JMP ,-2 /WAIT FOR ALL
4716 4424 JMS I XIOTE /IOT 6131, CLSK
4717 5316 JMP ,-1
4720 4423 JMS I XIOTD /IOT 6130, CLZE
4721 7300 CLA CLL /CLEAR THE AC AND LINK
4722 3070 DCA SEND /SAVE OUTPUT FOR ERROR PRINTER
4723 7340 CLA CLL CMA /AC TO 7777
    
```

```

4724 4431 JMS I XIOTI /IOT 6135, CLSA
4725 7650 SNA CLA /WAS STATUS ALL 0'S ?
4726 4472 JMS I NERROR /CHECK NON-ERROR HANDLER
4727 4473 JMS I ERROR /ERROR: INPUT 4,2,1 OR STATUS FAILED
4730 5250 5250 /TEST250 ERROR MESSAGE
4731 4707 TST250 /SCOPE LOOP
    
```

```

/DOES CLSA READ STATUS REGISTER ?
/
4732 7340 TST251, CLA CLL CMA /AC TO 7777
4733 3040 DCA REGA
4734 1007 TAD K0007 /GET ENABLES
4735 4425 JMS I XIOTF /IOT 6132, CLOE
4736 7000 NOP
4737 2041 ISZ REG8
4740 5336 JMP ,-2 /WAIT FOR FLAG
4741 4424 JMS I XIOTE /IOT 6131, CLSK
4742 5341 JMP ,-1
4743 7340 CLA CLL CMA /AC TO 7777
4744 4431 JMS I XIOTI /IOT 6135, CLSA
4745 4456 JMS I XSNDRV /CHECK SEND AND RECEV REGISTERS
4746 4472 JMS I NERROR /CHECK NON-ERROR HANDLER
4747 4473 JMS I ERROR /ERROR: CLSA OR STATUS REGISTER
4750 5251 5251 /TST251 ERROR MESSAGE
4751 4732 TST251 /SCOPE LOOP
    
```

```

4752 7300 CLA CLL
4753 2077 ISZ LOOP
4754 5464 JMP I XMITT /DO TEST 4096 TIMES
4755 4570 JMS I XPASS /TYPE PASS COMPLETE
4756 5465 JMP I XMITT1 /CONTINUE TESTING
    
```

```

/NON-ERROR HANDLER FOR PROGRAM
/
5000 *5000
/
5000 0000 NERRO, 0000
5001 6007 6007 /CAF OR CLEAR THE WORLD
5002 2200 ISZ NERRO
5003 2200 ISZ NERRO
5004 2040 ISZ REGA
5005 5215 JMP OUT
5006 4460 JMS I XCLREG /CLEAR ALL REGISTERS
5007 7604 LAS
5010 0137 AND K0040 /IS IT LOOP ON NON-
5011 7640 SZA CLA /FAILING TEST.
5012 5215 JMP OUT
5013 2200 ISZ NERRO
5014 5600 JMP I NERRO /TO NEXT TEST
    
```

```

5015 1600 OUT, TAD I NERRO
5016 3220 DCA ERRO
5017 5620 JMP I ERRO
    
```

/ERROR HANDLER FOR PROGRAM

```

5020 0000 / ERRO, 0000
5021 6007 6007 /CAF OR CLEAR THE WORLD
5022 7604 LAS
5023 7006 RTL
5024 7700 SMA CLA /CHECK SWR2 FOR INH, PRINT
5025 4503 JMS I XSORT /GET ERROR MESSAGE
5026 4510 JMS I XBELL /RING BELL
5027 4460 JMS I XCLREG
5030 2220 ISZ ERRO
5031 7604 LAS
5032 0015 AND K0200
5033 7650 SNA CLA /CHECK SWR4 FOR INH, HLT
5034 7402 EHLT1, HLT /MONITOR ERROR MALT, READ TYPEDOUT
/AND REFERENCE LISTING.

5035 7604 LAS
5036 0013 AND K0100
5037 7640 SZA CLA /CHECK SWR5 FOR SCOPE LOOP
5040 5243 JMP IN
5041 2220 ISZ ERRO
5042 5620 JMP I ERRO /ENTER SCOPE LOOP

/
5043 1620 IN, TAD I ERRO
5044 3200 DCA NERRO
5045 5600 JMP I NERRO

/
5046 0000 BELL, 0000
5047 7604 LAS
5050 0116 AND K0400
5051 7640 SZA CLA
5052 5646 JMP I BELL
5053 1006 TAD K0207
5054 4507 JMS I XTYPE
5055 5646 JMP I BELL

/
5056 0000 TYPE, 0000
5057 6046 TLS
5060 6041 TSF
5061 5260 JMP .=-1
5062 7200 CLA
5063 6042 TCF
5064 5656 JMP I TYPE

/
5065 0000 CLRREG, 0000
5066 7300 CLA CLL /CLEAR THE AC AND LINK
5067 3041 DCA REGB
5070 3042 DCA REGC
5071 3043 DCA REGD
5072 3070 DCA SEND
5073 3071 DCA RECEV
5074 7604 LAS
5075 0117 AND K6000
5076 7650 SNA CLA
5077 7340 CLA CLL CMA
5100 3040 DCA REGA
    
```

```

5101 5665 JMP I CLRREG

/
5102 0000 IOTA, 0000
5103 6131 6131 /FIELD SERVICE CHANGE
5104 5702 JMP I IOTA
5105 2302 ISZ IOTA
5106 5702 JMP I IOTA

/
5107 0000 IOTB, 0000
5110 6132 6132 /FIELD SERVICE CHANGE
5111 5707 JMP I IOTB
5112 2307 ISZ IOTB
5113 5707 JMP I IOTB

/
5114 0000 IOTC, 0000
5115 6133 6133 /FIELD SERVICE CHANGE
5116 5714 JMP I IOTC
5117 2314 ISZ IOTC
5120 5714 JMP I IOTC

/
5121 0000 IOTD, 0000
5122 3070 DCA SEND /SAVE OUTPUT FOR ERROR PRINTER
5123 1070 TAD SEND
5124 6130 6130 /FIELD SERVICE CHANGE
5125 5721 JMP I IOTD
5126 7402 EHLT2, HLT /SKIP TRAP, CLZE

/
5127 0000 IOTE, 0000
5130 6131 6131 /FIELD SERVICE CHANGE
5131 5727 JMP I IOTE
5132 2327 ISZ IOTE
5133 5727 JMP I IOTE

/
5134 0000 IOTF, 0000
5135 3070 DCA SEND /SAVE OUTPUT FOR ERROR PRINTER
5136 1070 TAD SEND
5137 6132 6132 /FIELD SERVICE CHANGE
5140 5734 JMP I IOTF
5141 7402 EHLT3, HLT /SKIP TRAP, CLOE

/
5142 0000 IOTF1, 0000
5143 6132 6132 /FIELD SERVICE CHANGE
5144 5742 JMP I IOTF1
5145 7402 EHLT4, HLT /SKIP TRAP, CLOE

/
5146 0000 IOTG, 0000
5147 3070 DCA SEND /SAVE OUTPUT FOR ERROR PRINTER
5150 1070 TAD SEND
5151 6133 6133 /FIELD SERVICE CHANGE
5152 5746 JMP I IOTG
5153 7402 EHLT5, HLT /SKIP TRAP, CLAB

/
5154 0000 IOTH, 0000
5155 6134 6134 /FIELD SERVICE CHANGE
5156 7410 SKP
    
```

```

5157 7402 EHLT6, MLT /SKIP TRAP, CLEN
5160 3071 DCA RECEV /SAVE OUTPUT FOR ERROR PRINTER
5161 1071 TAD RECEV
5162 5754 JMP I IOTH
/
5163 0000 IOTI, 0000 /FIELD SERVICE CHANGE
5164 6135 6135
5165 7410 SKP
5166 7402 EHLT7, MLT /SKIP TRAP, CLSA
5167 3071 DCA RECEV /SAVE OUTPUT FOR ERROR PRINTER
5170 1071 TAD RECEV
5171 5763 JMP I IOTI
/
5200 *5200
5200 0000 IOTJ, 0000 /FIELD SERVICE CHANGE
5201 6136 6136
5202 7410 SKP
5203 7402 EHLT10, MLT /SKIP TRAP, CLBA
5204 3071 DCA RECEV /SAVE OUTPUT FOR ERROR PRINTER
5205 1071 TAD RECEV
5206 5600 JMP I IOTJ
/
5207 0000 IOTK, 0000 /FIELD SERVICE CHANGE
5210 6137 6137
5211 7410 SKP
5212 7402 EHLT11, MLT /SKIP TRAP, CLCA
5213 3071 DCA RECEV /SAVE OUTPUT FOR ERROR PRINTER
5214 1071 TAD RECEV
5215 5607 JMP I IOTK
/
5216 0000 SNDRV, 0000
5217 7041 CIA
5220 1070 TAD SEND
5221 7640 SZA CLA /WAS SEND AND RECEV THE SAME ?
5222 2216 ISZ SNDRV
5223 5616 JMP I SNDRV
/
5224 0000 RANDOM, 0000
5225 1044 TAD REGE
5226 7004 RAL
5227 7430 SZL
5230 1410 TAD I 10
5231 3044 DCA REGE
5232 1044 TAD REGE
5233 5624 JMP I RANDOM
5234 0000 PIG05, 0000
5235 7300 CLA CLL /CLEAR THE AC AND LINK
5236 1254 TAD PRET5
5237 3002 DCA 2 /SET FOR PI RETURN
5240 6001 ION
5241 7300 CLA CLL /CLEAR THE AC AND LINK
5242 1076 TAD KREGC
5243 3042 DCA REGC
5244 4433 JMS I XIOTK /READ THE COUNTER

```

```

5245 2042 ISZ REGC
5246 5245 JMP ,-1
5247 2043 ISZ REGD
5250 5241 JMP ,-7
5251 2234 ISZ PIG05
5252 6002 PIRET5, IOF /DISABLE PROGRAM INTERRUPT
5253 5634 JMP I PIG05
/
5254 5252 PRET5, PIRET5
/
5255 0000 PIG01, 0000
5256 7300 CLA CLL /CLEAR THE AC AND LINK
5257 1267 TAD PRET1
5260 3002 DCA 2 /SET FOR PI RETURN
5261 6001 ION /ENABLE PROGRAM INTERRUPT
5262 4454 JMS I XISZ
5263 7410 SKP
5264 2255 PIRET1, ISZ PIG01
5265 6002 IOF /DISABLE PROGRAM INTERRUPT
5266 5655 JMP I PIG01
/
5267 5264 PRET1, PIRET1
/
5270 0000 PIG02, 0000
5271 7300 CLA CLL /CLEAR THE AC AND LINK
5272 1301 TAD PRET2
5273 3002 DCA 2 /SET FOR PI RETURN
5274 6001 ION
5275 4454 JMS I XISZ /WAIT
5276 2270 ISZ PIG02
5277 6002 PIRET2, IOF
5300 5670 JMP I PIG02
/
5301 5277 PRET2, PIRET2
/
5302 0000 SYNC, 0000
5303 4422 JMS I XIOTC
5304 5303 JMP ,-1
5305 4422 JMS I XIOTC
5306 5305 JMP ,-1
5307 5702 JMP I SYNC
/
5310 0000 ISZLOP, 0000
5311 7300 CLA CLL
5312 1113 TAD KTICPS
5313 3045 DCA REGF
5314 7001 IAC
5315 7000 NOP
5316 2043 ISZ REGD
5317 5314 JMP ,-3
5320 2045 ISZ REGF
5321 5314 JMP ,-5
5322 5710 JMP I ISZLOP
/
5323 0000 PIG03, 0000

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5324 7300      CLA CLL      /CLEAR THE AC AND LINK
5325 1335      TAD PRETC
5326 3002      DCA 2
5327 6001      ION
5330 7000      NOP
5331 7410      SKP
5332 2323      RETC,  ISZ PIG03
5333 6002      IOF
5334 5723      JMP I PIG03

/
5335 5332      PRETC, RETC

/
5336 0000      PIG04, 0000
5337 7300      CLA CLL      /CLEAR THE AC AND LINK
5340 1347      TAD PRETD
5341 3002      DCA 2
5342 6001      ION
5343 7000      NOP
5344 2336      RETD,  ISZ PIG04
5345 6002      IOF
5346 5736      JMP I PIG04

/
5347 5345      PRETD, RETD

/
5350 0000      IOTS,  0000
5351 6132      6132
5352 6134      6134
5353 6132      6132
5354 6134      6134
5355 6132      6132
5356 6134      6134
5357 5750      JMP I IOTS

/
5360 0000      IOTS1, 0000
5361 6133      6133
5362 6136      6136
5363 6133      6133
5364 6136      6136
5365 6133      6133
5366 6136      6136
5367 5760      JMP I IOTS1

/
5370 0000      IOTS2, 0000
5371 6133      6133
5372 6137      6137
5373 6133      6133
5374 6137      6137
5375 6133      6133
5376 6137      6137
5377 5770      JMP I IOTS2

/
5400 5400      +5400

/
5400 0000      IOTS3, 0000
5401 6134      6134
    
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5402 7040      CMA          /COMPLEMENT THE AC
5403 6130      6130
5404 7040      CMA          /COMPLEMENT THE AC
5405 6134      6134
5406 7040      CMA          /COMPLEMENT THE AC
5407 6130      6130
5410 7040      CMA          /COMPLEMENT THE AC
5411 6134      6134
5412 5600      JMP I IOTS3

/
5413 0000      CLOCK, 0000
5414 7604      LAS
5415 0007      AND K0007
5416 3075      DCA CLOCKS
5417 5613      JMP I CLOCK

/ROUTINE TO TYPE OCTAL NUMBERS
/ENTER WITH NUMBER IN AC AND LINK 0

/
5420 0000      OCTEL, 0000
5421 7006      RTL
5422 7006      RTL
5423 3041      DCA REGB      /SAVE NUMBER
5424 1130      TAD K7774
5425 3042      DCA REGC      /SET UP COUNTER
5426 1041      TAD REGB      /GET NUMBER
5427 0007      AND K0007
5430 1123      TAD K0260
5431 4507      JMS I XTYPE
5432 1041      TAD REGB      /GET NUMBER
5433 7006      RTL
5434 7004      RAL
5435 3041      DCA REGB      /SAVE THE REST
5436 2042      ISZ REGC
5437 5226      JMP ,-11
5440 5620      JMP I OCTEL

/ROUTINE FOR CRLF

/
5441 0000      CRLF, 0000
5442 7300      CLA CLL      /CLEAR THE AC AND LINK
5443 1134      TAD K0215
5444 4507      JMS I XTYPE
5445 1135      TAD K0212
5446 4507      JMS I XTYPE
5447 5641      JMP I CRLF

/ROUTINE TO TYPE CLOCK

/
5450 0000      POPR, 0000
5451 7300      CLA CLL      /CLEAR THE AC AND LINK
5452 1262      TAD KYADCK /GET CLOCK TAD
5453 1075      TAD CLOCKS /MAKE IT
5454 3255      DCA ,+1
5455 1262      TAD KYADCK /MODIFIED BY TEST
5456 4504      JMS I XOCTEL /PRINT NUMBER
    
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5457 4506      JMS I XPRINT  /PRINT CLOCKS
5460 6026      FMES
5461 5650      JMP I POPR
/
5462 1263      KTADCK, TAD CLKNO
/
5463 0001      CLKNO, 0001
5464 0050      0050
5465 0100      0100
5466 0120      0120
5467 0500      0500
5470 5000      5000
/
/ROUTINE TO SORT ERROR MESSAGES
/
5471 0000      SORT, 0000
5472 7300      CLA CLL      /CLEAR THE AC AND LINK
5473 4501      JMS I XCRLF  /CRLF
5474 1473      TAD I ERROR  /GET MESSAGE POINT
5475 3044      DCA REGE
5476 4505      JMS I XMESS  /GO PRINT TEST + ADDRESS
5477 1444      TAD I REGE
5500 7012      RTR
5501 7012      RTR
5502 7012      RTR
5503 7012      RTR      /MOVE IT TO BITS 8-11
5504 0127      AND K0017   /MASK 8-11
5505 3044      DCA REGE   /SAVE POINTER
5506 7300      CLA CLL      /CLEAR THE AC AND LINK
5507 1044      TAD REGE   /GET POINTER
5510 1326      TAD KTAOM
5511 3312      DCA ,+1
5512 1326      TAD KTAOM  /MODIFIED BY TEST
5513 3316      DCA ,+3   /STORE MESSAGE POINTER
5514 4501      JMS I XCRLF  /CRLF
5515 4506      JMS I XPRINT /PRINT MESSAGE
5516 0000      0000     /MODIFIED MESSAGE POINTER
5517 7300      CLA CLL
5520 1044      TAD REGE   /GET MESSAGE POINTER
5521 1132      TAD K7772  /IS IT GREATER THAN
5522 7620      SNL CLA
5523 5671      JMP I SORT
5524 4502      JMS I XREG
5525 5671      JMP I SORT
/
5526 1327      KTADM, TAD KTMX
/
5527 6107      KTMX, MES1
5530 6131      MES2
5531 6152      MES3
5532 6202      MES4
5533 6231      MES5
5534 6256      MES6
5535 6303      MES7
5536 6324      MES8

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5537 6353      MES9
5540 6402      MES10
5541 6431      MES11
/
/ROUTINE TO PRINT TEST + ADDRESS
/
5542 0000      MESS, 0000
5543 7300      CLA CLL      /CLEAR THE AC AND LINK
5544 4501      JMS I XCRLF  /CRLF
5545 4506      JMS I XPRINT /GO PRINT TEST
5546 6046      TMES
5547 1473      TAD I ERROR  /GET ERROR MESSAGE
5550 3043      DCA REGD   /STORE MESSAGE POINTER
5551 1443      TAD I REGD
5552 0136      AND K0377   /MASK 4-11
5553 4504      JMS I XOCTEL /GO PRINT NUMBER
5554 2043      ISZ REGD   /UPDATE POINTER
5555 4506      JMS I XPRINT /GO PRINT STARTING ADDRESS
5556 6051      AMES
5557 1443      TAD I REGD
5560 4504      JMS I XOCTEL /GO PRINT NUMBER
5561 7300      CLA CLL      /CLEAR THE AC AND LINK
5562 5742      JMP I MESS
/
/ROUTINE TO PRINT AC
/
5563 0000      PREG, 0000
5564 4501      JMS I XCRLF  /CRLF
5565 4506      JMS I XPRINT /GO PRINT MESSAGE
5566 6067      GMES
5567 1070      TAD SEND   /GET GOOD AC
5570 4504      JMS I XOCTEL /PRINT IT
5571 4506      JMS I XPRINT /PRINT BAD AC
5572 6077      BMES
5573 1071      TAD RECEV  /GET BAD AC
5574 4504      JMS I XOCTEL /PRINT IT
5575 7300      CLA CLL      /CLEAR THE AC AND LINK
5576 5763      JMP I PREG
/
5600          *5600
/
5600 0000      SETO, 0000
5601 1100      TAD JMP12  /GET JMP I 2
5602 3001      DCA 1     /SET FOR PI RETURN
5603 5600      JMP I SETO
/
/ROUTINE TO TYPE LISTING
/ENTER WITH JMS +1 EQUAL TO START OF LIST
/
5604 0000      PRINT, 0000
5605 7300      CLA CLL      /CLEAR THE AC AND LINK
5606 1604      TAD I PRINT
5607 2204      ISZ PRINT  /SET FOR RETURN +1
5610 3041      OCA REGB  /SAVE THE POINTER
5611 1441      TAD I REGB  /GET THE CHARACTER

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5612 0012      AND K7700      /MASK BITS 0-5
5613 7450      SNA          /END OF MESSAGE
5614 5240      JMP EXIT        /YES, EXIT
5615 7500      SMA          /IS AC MINUS
5616 7020      CML          /NO, SET THE LINK
5617 7001      IAC
5620 7012      RTR
5621 7012      RTR
5622 7012      RTR
5623 4507      JMS I XTYPE   /PRINT THE CHARACTER
5624 1441      TAD I REG8    /GET THE WORD
5625 0133      AND K0077      /MASK BITS 6-11
5626 7450      SNA          /END OF MESSAGE
5627 5240      JMP EXIT        /YES EXIT
5630 1125      TAD K3740    /NO, ADD A CONSTANT
5631 7500      SMA
5632 1124      TAD K4100    /
5633 1126      TAD K0240    /
5634 4507      JMS I XTYPE   /TYPE THE CHARACTER
5635 2041      ISZ REG8    /UPDATE WORD LIST
5636 7300      CLA CLL      /CLEAR THE AC AND LINK
5637 5211      JMP PRINT+5
/
5640 7300      EXIT, CLA CLL   /CLEAR THE AC AND LINK
5641 5604      JMP I PRINT   /YES EXIT
/
/ROUTINE TO WAIT FOR OVERFLOWS
/
5642 0000      XWAIT, 0000
5643 3011      DCA SAVAC    /SAVE THE AC
5644 7344      CLA CLL CMA RAL
5645 1242      TAD XWAIT
5646 3242      DCA XWAIT    /SET FOR RETURN ADDRESS
5647 2041      ISZ REG8
5650 5256      JMP RETURN
5651 2045      ISZ REGF
5652 5256      JMP RETURN
5653 7325      CLA CLL CML IAC RAL
5654 1242      TAD XWAIT
5655 3242      DCA XWAIT    /UPDATE FOR ERROR RETURN
5656 1011      RETURN, TAD SAVAC
5657 5642      JMP I XWAIT
/
5660 0000      SWLAS, 0000
5661 7604      LAS
5662 0142      AND K0010
5663 7640      SZA CLA      /CHECK FOR EXTERNAL CLOCK SCOPE LOOP
5664 5325      JMP CLKIN    /ENTER SCOPE LOOP
5665 7604      LAS
5666 0140      AND K0020
5667 7640      SZA CLA      /CHECK FOR EXTERNAL PULSE SCOPE LOOP
5670 5313      JMP EXTER    /ENTER SCOPE LOOP
5671 7340      CLA CLL CMA   /AC TO 7777
5672 3113      DCA K TICPS
5673 7604      LAS

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5674 0114      AND K6007
5675 7640      SZA CLA
5676 5301      JMP ,+3
5677 1111      TAD KPRMTI
5700 3113      DCA K TICPS
5701 7604      LAS
5702 7004      RAL
5703 7710      SPA CLA
5704 5660      JMP I SWLAS   /TEST SCHMITT
5705 2260      ISZ SWLAS
5706 7604      LAS
5707 7710      SPA CLA
5710 5660      JMP I SWLAS   /TEST DK8=EP
5711 2260      ISZ SWLAS
5712 5660      JMP I SWLAS   /TEST DK8=EA OR DK8=EC
/
5713 7340      EXTER, CLA CLL CMA
5714 4427      JMS I XIOT6   /IOT 6133, CLAB
5715 7300      CLA CLL
5716 1137      TAD K0040
5717 1147      TAD K0000
5720 4425      JMS I XIOTF   /GET ENABLES
5721 4424      JMS I XIOTE   /IOT 6132, CLOE
5722 5321      JMP , -1     /IOT 6131, CLSK
5723 6007      6007        /WAIT FOR OVERFLOW
5724 5313      JMP EXTER    /CAP OR CLEAR THE WORLD
/
5725 7340      CLKIN, CLA CLL CMA
5726 4427      JMS I XIOT6   /AC TO 7777
5727 7300      CLA CLL
5730 1013      TAD K0100
5731 4426      JMS I XIOTF1   /IOT 6133, CLAB
5732 4424      JMS I XIOTE   /GET ENABLES
5733 5332      JMP , -1     /IOT 6132, CLOE
5734 6007      6007        /IOT 6131, CLSK
5735 1006      TAD K0207
5736 4507      JMS I XTYPE   /WAIT FOR OPERATOR
5737 5325      JMP CLKIN    /CAP OR CLEAR THE WORLD
/
5740 0000      PASS, 0000
5741 4501      JMS I XCRLF   /TTY SIGNAL
5742 4506      JMS I XPRINT  /LOOP
5743 6014      PHES
5744 6007      6007
5745 5740      JMP I PASS
/
5746 0000      GTAD, 0000
5747 1075      TAD CLOCKS   /GET SELECTED CLOCK
5750 1354      TAD CLTAD
5751 3746      DCA I GTAD
5752 2346      ISZ GTAD
5753 5746      JMP I GTAD
/
5754 5755      CLTAD, CLTAD +1
5755 6000      6000

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5756	1612	1612	
5757	4776	4776	
5760	5367	5367	
5761	7306	7306	
5762	7747	7747	
5763	4000	4000	
5764	1527	1527	
5765	4552	4552	
5766	5217	5217	
5767	7276	7276	
5770	7741	7741	
/			
5771	0000	TIMCLK,	0000
5772	7604	LAS	
5773	0114	AND	K6007
5774	7650	SNA	CLA
5775	1166	TAD	PATCH
5776	1012	TAD	K7700
5777	5771	JMP	I TIMCLK
/			
6000	0413	DKMES,	TEXT ?DK8E CLOCKS DIAGNOSTIC?
6001	7005		
6002	4003		
6003	1417		
6004	0313		
6005	2340		
6006	0411		
6007	0107		
6010	1617		
6011	2324		
6012	1103		
6013	0000		
6014	0413	PMES,	TEXT ?DK8E PASS COMPLETE?
6015	7005		
6016	4020		
6017	0123		
6020	2340		
6021	0317		
6022	1520		
6023	1405		
6024	2405		
6025	0000		
6026	4003	FMES,	TEXT ? CPS CLOCK SELECTED BY OPERATOR?
6027	2023		
6030	4003		
6031	1417		
6032	0313		
6033	4023		
6034	0514		
6035	0503		
6036	2405		
6037	0440		
6040	0231		
6041	4017		
6042	2005		

6043	2201		
6044	2417		
6045	2200		
6046	2405	TMES,	TEXT ?TEST ?
6047	2324		
6050	4000		
6051	4006	AMES,	TEXT ? FAILED, STARTING ADDRESS ?
6052	0111		
6053	1405		
6054	0454		
6055	4023		
6056	2401		
6057	2224		
6060	1116		
6061	0740		
6062	0104		
6063	0422		
6064	0523		
6065	2340		
6066	0000		
6067	2410	GMES,	TEXT ?THE GOOD AC = ?
6070	0540		
6071	0717		
6072	1704		
6073	4001		
6074	0340		
6075	7540		
6076	0000		
6077	4001	BMES,	TEXT ? AND BAD AC = ?
6100	1604		
6101	4002		
6102	0104		
6103	4001		
6104	0340		
6105	7540		
6106	0000		
6107	0314	MES1,	TEXT ?CLOCK SKIP FAILED, NO SKIP EXPECTED?
6110	1703		
6111	1340		
6112	2313		
6113	1120		
6114	4006		
6115	0111		
6116	1405		
6117	0454		
6120	4016		
6121	1740		
6122	2313		
6123	1120		
6124	4005		
6125	3020		
6126	0503		
6127	2405		
6130	0400		
6131	0314	MES2,	TEXT ?CLOCK SKIP FAILED, SKIP EXPECTED?

6132 1703
6133 1340
6134 2313
6135 1120
6136 4006
6137 0111
6140 1405
6141 0454
6142 4023
6143 1311
6144 2040
6145 0530
6146 2005
6147 0324
6150 0504
6151 0000
6152 2022 MESS, TEXT ?PROGRAM INTERRUPT FAILED, NO INTERRUPT EXPECTED?
6153 1707
6154 2201
6155 1540
6156 1116
6157 2405
6160 2222
6161 2520
6162 2440
6163 0601
6164 1114
6165 0504
6166 5440
6167 1617
6170 4011
6171 1624
6172 0522
6173 2225
6174 2024
6175 4005
6176 3020
6177 0503
6200 2405
6201 0400
6202 2022 MESS, TEXT ?PROGRAM INTERRUPT FAILED, INTERRUPT EXPECTED?
6203 1707
6204 2201
6205 1540
6206 1116
6207 2405
6210 2222
6211 2520
6212 2440
6213 0601
6214 1114
6215 0504
6216 5440
6217 1116
6220 2405

6221 2222
6222 2520
6223 2440
6224 0530
6225 2005
6226 0324
6227 0504
6230 0000
6231 0314 MESS, TEXT ?CLOCK OUTPUT FAILED, CLOCK FREQUENCY FAST?
6232 1703
6233 1340
6234 1725
6235 2420
6236 2524
6237 4006
6240 0111
6241 1405
6242 0454
6243 4003
6244 1417
6245 0313
6246 4006
6247 2205
6250 2125
6251 0516
6252 0331
6253 4006
6254 0123
6255 2400
6256 0314 MESS, TEXT ?CLOCK OUTPUT FAILED, CLOCK FREQUENCY SLOW?
6257 1703
6260 1340
6261 1725
6262 2420
6263 2524
6264 4006
6265 0111
6266 1405
6267 0454
6270 4003
6271 1417
6272 0313
6273 4006
6274 2205
6275 2125
6276 0516
6277 0331
6300 4023
6301 1417
6302 2700
6303 2410 MESS, TEXT ?THE AC WAS CHANGED BY A CLOCK IO??
6304 0540
6305 0103
6306 4027
6307 0123

6310 4003
6311 1001
6312 1607
6313 0504
6314 4002
6315 3140
6316 0140
6317 0314
6320 1703
6321 1340
6322 1117
6323 2400
6324 0314
6325 1703
6326 1340
6327 0225
6330 0606
6331 0522
6332 4022
6333 0507
6334 1123
6335 2405
6336 2240
6337 0116
6340 0440
6341 0103
6342 4024
6343 2201
6344 1623
6345 0605
6346 2240
6347 0601
6350 1114
6351 0504
6352 0000
6353 0314
6354 1703
6355 1340
6356 0317
6357 2516
6360 2405
6361 2240
6362 2205
6363 0711
6364 2324
6365 0522
6366 4001
6367 1604
6370 4001
6371 0340
6372 2422
6373 0116
6374 2306
6375 0522
6376 4006

MES8, TEXT ?CLOCK BUFFER REGISTER AND AC TRANSFER FAILED?

MES9, TEXT ?CLOCK COUNTER REGISTER AND AC TRANSFER FAILED?

6377 0111
6400 1405
6401 0400
6402 0314
6403 1703
6404 1340
6405 0516
6406 0102
6407 1405
6410 4022
6411 0507
6412 1123
6413 2405
6414 2240
6415 0116
6416 0440
6417 0103
6420 4024
6421 2201
6422 1623
6423 0605
6424 2240
6425 0601
6426 1114
6427 0504
6430 0000
6431 0314
6432 1703
6433 1340
6434 2324
6435 0124
6436 2523
6437 4022
6440 0507
6441 1123
6442 2405
6443 2240
6444 0116
6445 0440
6446 0103
6447 4024
6450 2201
6451 1623
6452 0605
6453 2240
6454 0601
6455 1114
6456 0504
6457 0000

MES10, TEXT ?CLOCK ENABLE REGISTER AND AC TRANSFER FAILED?

MES11, TEXT ?CLOCK STATUS REGISTER AND AC TRANSFER FAILED?

AMES	6051	K0010	0142	KTMX	5527	SAVAC	0011
AUTO10	0010	K0017	0127	LOOP	0077	SEND	0070
BEGIN	0200	K0020	0140	MES1	6107	SETO	5600
BELL	5046	K0040	0137	MES10	6402	SKPWAT	0046
BGNEAC	0217	K0077	0133	MES11	6431	SNDRV	5216
BMES	6077	K0100	0013	MES2	6131	SORT	5471
CLKIN	5725	K0200	0015	MES3	6152	SWLAS	5660
CLKNO	5463	K0207	0006	MES4	6202	SYNC	5302
CLOCK	5413	K0212	0135	MES5	6231	T113A	1674
CLOCKS	0075	K0215	0134	MES6	6256	T113B	1665
CLRRREG	5065	K0240	0126	MES7	6303	T114A	1712
CLTAD	5754	K0260	0123	MES8	6324	T114B	1703
CRFP	5441	K0300	0145	MES9	6353	T11A	0356
DKMES	6000	K0377	0136	MES5	5542	T120A	1770
EHLT1	5034	K0400	0116	MOSTR	0201	T121A	2005
EHLT10	5203	K0500	0146	NERR0	5000	T122A	2033
EHLT11	5212	K0600	0147	NERROR	0072	T122B	2014
EHLT2	5126	K0700	0150	OCTEL	5420	T123A	2062
EHLT3	5141	K1000	0144	OUT	5015	T123B	2043
EHLT4	5145	K2000	0143	OVER2	0061	T124A	2111
EHLT5	5153	K2525	0016	OVER2A	0062	T124B	2072
EHLT6	5157	K3000	0120	PASS	5740	T125A	2137
EHLT7	5166	K3740	0125	PATCH	0166	T125B	2121
ENDIT	0573	K4000	0014	PIG01	5255	T126A	2166
ERROR	0073	K4100	0124	PIG02	5270	T126B	2144
ERROR	0073	K5000	0121	PIG03	5323	T127A	2217
EXIT	5640	K5252	0017	PIG04	5336	T12A	0370
EXTER	5713	K6000	0117	PIG05	5234	T130A	2237
FMES	6026	K6007	0114	PIRET1	5264	T133A	2325
GMES	6067	K7000	0141	PIRET2	5277	T133B	2312
GTAD	5746	K7400	0112	PIRET5	5252	T147A	2574
IN	5043	K7700	0012	PMES	6014	T147B	2556
IO7A	5102	K7770	0122	POPR	5450	T150A	2622
IO7B	5107	K7772	0132	PREG	5563	T150B	2604
IO7C	5114	K7773	0131	PRET1	5267	T151A	2650
IO7D	5121	K7774	0130	PRET2	5301	T151B	2632
IO7E	5127	KPRMT1	0111	PRET5	5254	T152A	2676
IO7F	5134	KREGC	0076	PRETC	5335	T152B	2660
IO7F1	5142	KTICPS	0113	PRETD	5347	T153A	2724
IO7G	5146	KTA	0151	PRINT	5604	T153B	2706
IO7H	5154	KTA1	0152	RANDOM	5224	T154A	2752
IO7I	5163	KTADCK	5462	RANDY	0055	T154B	2734
IO7J	5200	KTADM	3526	RECEV	0071	T172A	3300
IO7K	5207	KT9	0153	REGA	0040	T172A1	3303
IO7S	5350	KT01	0154	REGB	0041	T172B	3270
IO7S1	5360	KTC	0155	REGC	0042	T172B1	3264
IO7S2	5370	KTC1	0156	REGD	0043	T173A	3327
IO7S3	5400	KTC2	0157	REGE	0044	T173A1	3332
ISZLOP	5310	KTD	0160	REGF	0045	T173B	3317
JMP12	0100	KTD1	0161	RETC	5332	T173B1	3313
K0006	0115	KTE	0162	RETD	5345	T174A	3362
K0007	0007	KTE1	0163	RETURN	5656	T174A1	3365

T174B	3352	TST106	1602	TST164	3122	TST241	4523
T174B1	3347	TST107	1613	TST165	3143	TST242	4544
T175A	3415	TST111	0350	TST166	3163	TST243	4565
T175A1	3420	TST110	1624	TST167	3203	TST244	4606
T175B	3405	TST111	1635	TST17	0433	TST245	4626
T175B1	3402	TST112	1650	TST170	3223	TST246	4645
T176A	3445	TST113	1661	TST171	3241	TST247	4667
T176A1	3450	TST114	1677	TST172	3257	TST25	0527
T176B	3435	TST115	1715	TST173	3306	TST250	4707
T176B1	3431	TST116	1726	TST174	3335	TST251	4732
T177A	3475	TST117	1741	TST175	3370	TST26	0543
T177A1	3500	TST12	0361	TST176	3423	TST27	0556
T177B	3465	TST120	1754	TST177	3453	TST3	0267
T177B1	3461	TST121	1773	TST2	0253	TST30	0577
T200A	3525	TST122	2010	TST20	0443	TST31	0610
T200A1	3530	TST123	2036	TST200	3503	TST32	0624
T200B	3515	TST124	2065	TST201	3533	TST33	0635
T200B1	3511	TST125	2114	TST202	3605	TST34	0646
T201A	3575	TST126	2142	TST203	3617	TST35	0656
T201B	3546	TST127	2171	TST204	3631	TST36	0666
T205A	3656	TST13	0373	TST205	3643	TST37	0676
T206A	3674	TST130	2222	TST206	3661	TST4	0275
T207A	3712	TST131	2242	TST207	3677	TST40	0706
T214A	4010	TST132	2264	TST21	0454	TST41	0720
T215A	4027	TST133	2303	TST210	3715	TST42	0731
T216A	4046	TST134	2330	TST211	3730	TST43	0742
T22A	0475	TST135	2350	TST212	3744	TST44	0755
T230A	4311	TST136	2367	TST213	3760	TST45	1000
T45A	1014	TST137	2406	TST214	3774	TST46	1017
T45B	1002	TST14	0402	TST215	4013	TST47	1036
T46A	1033	TST140	2426	TST216	4032	TST5	0307
T46B	1024	TST141	2442	TST217	4051	TST50	1055
T47A	1052	TST142	2456	TST22	0465	TST51	1074
T47B	1043	TST143	2471	TST220	0074	TST52	1107
T50A	1071	TST144	2505	TST221	4117	TST53	1121
T50B	1057	TST145	2521	TST222	4142	TST54	1134
T70A	1351	TST146	2535	TST223	4157	TST55	1147
T70B	1341	TST147	2551	TST224	4174	TST56	1161
T71A	1370	TST15	0411	TST225	4211	TST57	1172
T71B	1360	TST150	2577	TST226	4230	TST6	0324
TIMCLK	5771	TST151	2625	TST227	4247	TST60	1203
TIMFLG	0176	TST152	2653	TST23	0500	TST61	1216
TMS	6046	TST153	2701	TST230	4266	TST62	1231
TST0	0223	TST154	2727	TST231	4316	TST63	1246
TST1	0237	TST155	2755	TST232	4334	TST64	1263
TST10	0341	TST156	2770	TST233	4354	TST65	1274
TST100	1504	TST157	3005	TST234	4374	TST66	1310
TST101	1500	TST16	0424	TST235	4416	TST67	1321
TST102	1533	TST160	3030	TST36	4440	TST7	0332
TST103	1547	TST161	3047	TST37	4461	TST70	1335
TST104	1561	TST162	3065	TST24	0514	TST71	1354
TST105	1571	TST163	3104	TST240	4502	TST72	1373

TSY73	1406	XSYNC	0057
TSY74	1423	XTYPE	0107
TSY75	1440	XWAIT	5642
TSY76	1454		
TSY77	1470		
TYPE	5056		
XBELL	0110		
XCLOCK	0074		
XLREG	0060		
XCLRF	0101		
XCRS1	0171		
XCRS2	0172		
XCRS3	0173		
XCRS4	0174		
XCRS5	0175		
XCRSEP	0063		
XGEM	0167		
XGYAD	0067		
XIOTA	0020		
XIOTB	0021		
XIOTC	0022		
XIOTD	0023		
XIOTE	0024		
XIOTF	0025		
XIOTF1	0026		
XIOTG	0027		
XIOTH	0030		
XIOTI	0031		
XIOTJ	0032		
XIOTK	0033		
XIOTS	0034		
XIOTS1	0035		
XIOTS2	0036		
XIOTS3	0037		
XISZ	0054		
XLAS	0066		
XMESS	0105		
XMITT	0064		
XMITT1	0065		
XOCTEL	0104		
XOPR	0105		
XPASS	0170		
XPIG01	0047		
XPIG02	0050		
XPIG03	0051		
XPIG04	0052		
XPIG05	0053		
XPRINT	0106		
XREG	0102		
XSETD	0164		
XSNDRV	0056		
XSORT	0103		

ERRORS DETECTED: 0
LINKS GENERATED: 0
RUN-TIME: 21 SECONDS
3K CORE USED