# FP11

STS ILLEGAL INSTRUCTIONS

MD-11-DCFPB-B

FP DCFPB B DL A

OCT 1976

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FICHE 1 OF 1

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.REPT  0

## IDENTIFICATION

PRODUCT CODE:  MAINDEC-11-DCFPB
PRODUCT NAME:  FP11 BASIC INSTRUCTION TESTS
DATE CREATED:  MARCH 12, 1973
MAINTAINER:  DIAGNOSTIC GROUP
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| MAINDEC NO. | INSTRUCTIONS TESTED |
|---|---|
| DCFPA | LDFPS, STFPS, SETI, SETL |
| | SETF, SETD, CFCC |
| DCFPB | STST |
| DCFPC | LDF, LDD, STF, STD |
| DCFPD | ADDF, ADDD, SUBF, SUBD |
| DCFDE | CMDF, CMPD |
| DCFPF | MULF, MULD |
| DCFPG | DIVF, DIVD |
| DCFPH | CLRF, CLRD, TSTF, TSTD |
| | ABSF, ABSD, NEGF, NEGD |
| DCFPI | LDCFD, LDCDF, STCFD, STCDF |
| DCFPJ | LDCIF, LDCLF, LDCID, LDCLD |
| | STCFI, STCFL, STCDI, STCDL |
| DCFPK | LDEXP, STEXP |
| DCFPL | MODF, MODD |

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DESCRIPTION

1. ABSTRACT

THESE PROGRAMS TEST THE FP11 IN ALL MODES WITH FIXED NUMBER PATTERNS. THE PROGRAMS SHOULD BE RUN IN ORDER FOR AT LEAST 2 PASSES WITH ALL SWITCHES DOWN.

2. REQUIREMENTS

2.1 EQUIPMENT

PDP11/45 STANDARD COMPUTER WITH FP11 OPTION

2.2 STORAGE

PROGRAM STORAGE - THE ROUTINES USE MEMORY 0 - 17776

2.3 PRELIMINARY PROGRAMS

NONE

3. LOADING PROCEDURE

USE STANDARD PROCEDURE FOR ABS TAPES.

4. STARTING PROCEDURE

4.1 CONTROL SWITCH SETTINGS

SEE 5.1.1 (ALL DOWN FOR WORST CASE TESTING)

4.2 STARTING ADDRESS

THE PROGRAM SHOULD ALWAYS BE STARTED AT 200.

4.3 PROGRAM AND/OR OPERATOR ACTION

1) LOAD PROGRAM INTO MEMORY USING ABS LOADER.
2) LOAD ADDRESS 200.
3) SET SWITCHES (SEE SEC 5.1.1) ALL DOWN FOR WORST CASE
4) PRESS START.
5) THE PROGRAM WILL LOOP AND BELL WILL RING ONCE EVERY PASS
6) A MINIMUM OF TWO PASSES SHOULD ALWAYS BE RUN.

;66  7) THE DISPLAY ON THE 11/45 WILL SHOW THE ITERATION COUNT IN
;67  THE LEFT BYTE AND TEST NUMBER IN THE RIGHT. TO USE, SET THE

DATA DISPLAY SWITCH TO THE DISPLAY POSITION.

5. OPERATING PROCEDURE

5.1 OPERATIONAL SWITCH SETTINGS

AT SA 200 .. ALL SWITCHES DOWN IS WORST CASE TESTING. IF AN ERROR OCCURS, THAT TEST WILL BE LOOPED UPON UNTIL COMPLETION OF 256 CONSECUTIVE PASSES WITH NO ERRORS OF THE SUBTEST IF SW<9> SET TO A 1. THE BELL WILL RING UPON COMPLETION OF A PASS.

5.1.1 SWITCH SETTINGS ARE:

```
SW<15> = 1 ..... HALT ON ERROR
SW<14> = 1 ..... SCOPE LOOP
SW<13> = 1 ..... INHIBIT PRINTOUT
SW<12> = 1 ..... INHIBIT TRACE TRAPPING
SW<11> = 1 ..... INHIBIT ITERATIONS OF SUBTEST
SW<10> = 1 ..... BELL ON ERROR
         0 ..... BELL ON PASS COMPLETE
SW<09> = 1 ..... LOOP ON ERROR
SW<08> = 1 ..... LOOP ON TEST IN SW<7:0>
         0 ..... LOAD SW<7:0> INTO JB REGISTER
```

5.2 SUBROUTINE ABSTRACTS

5.2.1 SCOPE

THIS SUBROUTINE CALL IS PLACED BETWEEN EACH SUBTEST IN THE INSTRUCTION SECTION. IT RECORDS THE STARTING ADDRESS OF EACH SUBTEST AS IT IS BEING ENTERED IN LOCATION "LAD". IF A SCOPE LOOP IS REQUESTED, THE CURRENT SUBTEST WILL BE LOOPED UPON. SW<11> ON A 1 INHIBITS ITERATION OF SUBTESTS. THE CONTENTS OF LAD MAY BE USED TO DETERMINE THE LAST SUBTEST SUCCESSFULLY COMPLETED.

5.2.2 HLT

THIS ROUTINE PRINTS OUT AN ERROR MESSAGE (SEE 5.1.) IF A HLT IS EXECUTED. THE SUBTEST WILL BE LOOPED UPON UNTIL 256 CONSECUTIVE GOOD PASSES ARE COMPLETED IF SW 9 IS ON A 1. TO INHIBIT TYPEOUTS, PUT SW<13> ON A 1.

5.2.3  TRTRAP

IF SW(12) IS ON A 0, THE T BIT WILL BE SET ON ALTERNATE PASSES. WHEN SET, IT CAUSES A TRAP AFTER EACH INSTRUCTION. THE FIRST INSTRUCTION EXECUTED UPON TRAPPING IS AN "RTT" WHICH RETURNS TO THE INTERRUPTED SEQUENCE OF INSTRUCTIONS. THIS SEQUENCE IS CONTINUED UNTIL THE END OF THE PROGRAM IS REACHED.

5.2.4  TRAPCATCHER

A ".+2" - "HALT" SEQUENCE IS REPEATED FROM 0 - 776 TO CATCH ANY UNEXPECTED TRAPS. THUS ANY UNEXPECTED TRAPS OR INTERUPTS WILL HALT AT THE VECTOR + 2.

5.2.5  FLOATING POINT TRAP (TO 244)

THE FP11 INTERRUPT DISABLE BIT IS ALWAYS SET IN ALL OF THESE TESTS (EXCEPT DCFPA) SO NO TRAPS TO 244 SHOULD OCCUR. IF AN INTERRUPT OCCURS, THE PROGRAM WILL HALT AT 766 IN THE ROUTINE CALLED FLTERR AND DISPLAY THE FPS REGISTER IN R0.

6.  ERRORS

6.1  ERROR PRINTOUT

THE FORMAT IS AS FOLLOWS:

```
ADR  FPS  ANS1 ANS2 ANS3 ANS4 ANS5 ANS6 ANS7 ANS8
  FEC FEA
```

WHERE:

```
ADR    = ADDRESS OF ERROR HLT
FPS    = FLOATING POINT STATUS
FEC    = FLOATING EXCEPTION CODES (ERROR CODES)
FEA    = FLOATING EXCEPTION ADDRESS (ERROR ADDRESS)
ANS1-8 = ERROR DATA READ FROM THE FP11.  FROM 0-8  OF  THESE
         MAY  BE TYPED DEPENDING ON THE NUMBER FOLLOWING THE
         HLT; I.E., HLT+3 WOULD TYPE ANS1-ANS3.
```

TO FIND THE FAILING TEST, LOOK AT THE LISTING ABOVE THE ADDRESS TYPED.

6.2 ERROR RECOVERY

RESTART AT 200

7. RESTRICTIONS

NONE

8. MISCELLANEOUS

8.1 EXECUTION TIME

A BELL WILL RING WITHIN 15 SECONDS WITH ALL SWITCHES DOWN.

8.2 STACK POINTER

STACK IS INITALLY SET TO 600

8.3 POWER FAIL

EACH TEST CAN BE POWER FAILED WITH NO ERRORS EXCEPT ON THE FEC AND FEA. TO USE, START THE TEST AS USUAL AND POWER DOWN THEN UP AT ANY TIME. THE PROGRAM SHOULD TYPE "POWER" AND CONTINUE TO RUN WITH NO OTHER TYPEOUTS.

9. PROGRAM DESCRIPTION

THESE PROGRAMS TEST ALL THE INSTRUCTIONS ON THE FP11 IN ALL MODES. EACH PROGRAM HAS MANY SUBTESTS (THE CODE BETWEEN 2 SCOPE STATEMENTS) WHICH ARE RUN 256 TIMES BEFORE CONTINUING TO THE NEXT. SW<11> ON A 1 CAUSES EACH SUBTEST TO BE RUN ONLY ONCE. SW<9> ON A 1 ENABLES LOOP ON ERROR. THE ADDRESS ICNT (LOC 1000) AND DISPLAY REGISTER ON THE 11/45 EACH CONTAIN THE ITERATION COUNT IN THE LEFT BYTE AND THE TEST NUMBER IN THE RIGHT BYTE. ALL THE SUBTESTS SHOULD BE RUN SEQUENTIALLY BY STARTING AT 200 NOT BY STARTING AT THE BEGINNING OF THE SUBTEST. TO LOOP ON A PARTICULAR SUBTEST, PUT THE TEST NUMBER (SEE LISTING) IN THE RIGHT BYTE OF THE SWITCH REGISTER AND SW<8> ON A 1. THIS TEST WILL BE LOOPED UPON UNTIL SW<8> IS PUT ON A 0 OR THE RIGHT BYTE IS CHANGED. IF THE TEST IS NON-EXISTANT, THE PROGRAM WILL BE RUN AS USUAL.

.ENDP

```
.TITLE  MAINDEC-11-DCFPB-B      TEST OF STST AND ILLEGAL INSTRUCTIONS
;COPYRIGHT 1972, DIGITAL EQUIPMENT CORP., MAYNARD, MASS
;PROGRAM BY KEN CHAPMAN
.REM*

        SWITCH                  USE
        ------          --------------------
           8            0 - LOAD UB REGISTER WITH SW<7:0>
                        1 - LOOP ON TEST IN SW<7:0>
           9            LOOP ON ERROR
          10            0 - BELL ON PASS COMPLETE
                        1 - BELL ON ERROR
          11            INHIBIT ITERATIONS
          12            INHIBIT TRACE TRAP
          13            INHIBIT ERROR TYPEOUTS
          14            LOOP ON TEST
          15            HALT ON ERROR

OUTPUT FORM:

        ADR  FPS  ANS1 ANS2 ANS3 ANS4 ANS5 ANS6 ANS7 ANS8
           FEC  FEA

                FPS                                     FEC
        BIT     REASON                          CODE    ERROR
        ---     ------                          ----    -----
         0      CARRY                             0     ADDRESS ERROR
         1      OVERFLOW                          2     OPCODE ERROR
         2      ZERO                              4     DIVIDE BY ZERO
         3      NEGATIVE                          6     CONVERSION ERROR
         4      MAINTAINANCE MODE                10     OVERFLOW
         5      TRUNCATE MODE                    12     UNDERFLOW
         6      LONG INTEGER MODE                14     UNDEFINED VARIABLE (-0)
         7      DOUBLE PRECISION MODE            16     UBREAK TRAP
         8      INTERUPT ON CONVERSION ERROR
         9      INTERUPT ON OVERFLOW
        10      INTERUPT ON UNDERFLOW
        11      INTERUPT ON UNDEFINED VARIABLE
        12
        13
        14      INTERUPT DISABLE
        15      ERROR FLAG*
```

```
                                .ENABL  ABS
        000001                  N=      1
        177776                  PS=     177776
        177570                  SWR=    177570
        177570                  DISPLAY=SWR
        104400                  SCOPE=  TRAP
        104000                  HLT=    EMT
        000004                  TYPE=   IOT
        000207                  BELL=   207
        000000                  FPS=    %0
        000000                  R0=     %0
        000001                  R1=     %1
        000002                  R2=     %2
        000003                  R3=     %3
        000004                  R4=     %4
        000005                  R5=     %5
        000005                  TTY=    %5
        000006                  SP=     %6
        000007                  PC=     %7
        000000                  AC0=    %0
        000001                  AC1=    %1
        000002                  AC2=    %2
        000003                  AC3=    %3
        000004                  AC4=    %4
        000005                  AC5=    %5
        100000                  SW15=   100000
        040000                  SW14=    40000
        020000                  SW13=    20000
        010000                  SW12=    10000
        004000                  SW11=     4000
        002000                  SW10=     2000
        001000                  SW09=     1000
        000400                  SW08=      400
        170003                  LDUB=   170003
        170005                  STAO=   170005
        170007                  STQO=   170007
        170006                  MRS=    170006
        170004                  LDSC=   170004

        000000                  .=      0                       ;TRAP CATCHER FROM 0 - 776

        000200                  .=      200

000200  000167  000622                  JMP     BEG

        000760                  .=      760
000760  170200                  FLTERR: STFPS   FPS
000762  170367  000034                  STST    FEC
000766  000000                          HALT
000770  000002                          RTI
```

```
        001000                          .=      1000
001000  000000                          ICNT:   0                       ;ITERATION COUNT - LH   TEST NO. - RH
001002  000000                          ANS1:   0                       ;FIRST ANSWER (SEE CODE)
001004  000000                          ANS2:   0
001006  000000                          ANS3:   0
001010  000000                          ANS4:   0
001012  000000                          ANS5:   0
001014  000000                          ANS6:   0
001016  000000                          ANS7:   0
001020  000000                          ANS8:   0
001022  000000                          FEC:    0                       ;FLOATING EXCEPTION CODES
001024  000000                          FEA:    0                       ;FLOATING EXECPTION ADDRESS

001026  012706  000600                  BEG:    MOV     #600,SP         ;** STACK AT 600 **
001032  012737  001054  000004                  MOV     #M1120,@#4      ;FIND OUT WHICH MACHINE THIS IS
001040  005737  177772                          TST     @#177772        ;IS PIRQ THERE?
001044  012767  000006  013770                  MOV     #6,YESRT        ;FUDGE IN RTT IF 11/45
001052  000403                                  BR      BEGIN

001054  016737  015124  000010  M1120:  MOV     FPTADR,@#10             ;LOAD THE ILLEGAL INSTRUCTION VECTOR
                                                                        ; WITH THE ADDRESS OF THE FPJ.
                                                                        ; THE FPU WILL HANDLE THE BAD OPCODES
001062  012737  000006  000004  BEGIN:  MOV     #6,@#4                  ;RESET 4
001070  012706  000600                          MOV     #600,SP
001074  012737  015042  000014                  MOV     #YESRT,@#14     ;SET TRACE TRAP VECTOR
001102  012777  015702  015102                  MOV     #POWDWN,@DWNVEC
001110  012777  000340  015076                  MOV     #340,@DWNVEC+2
001116  012737  016102  000020                  MOV     #.IOT,@#20      ;SET UP VECTOR 20
001124  012700  000030                          MOV     #30,R0          ;SET R0 TO VECTOR 30
001130  012720  015204                          MOV     #.TRP,(0)+      ;SET EMT VECTOR
001134  012720  000340                          MOV     #340,(0)+
001140  012720  015044                          MOV     #.EMT,(0)+      ;SET TRAP VECTOR
001144  012710  000340                          MOV     #340,(0)
001150  012777  000760  015030                  MOV     #FLTERR,@FPVECT ;LOAD INTERUPT VECTOR
001156  012777  000340  015024                  MOV     #340,@FPVECT+2  ;LOCK UP PROCESSOR
001164  005067  177510                          CLR     ICNT
001170  005067  015032                          CLR     LAD
```

```
                                ;*****************************************************************
                                ;TEST 1:        TEST STST (STORE STATUS, I.E. FEC (FLOATING EXCEPTION
                                ;                        CODES) AND FEA (FLOATING EXCEPTION ADDRESS)).
                                ;                        ALSO TEST ALL ILLEGAL INSTRUCTIONS.
                                ;       ILLEGAL INSTRUCTION = 170013
                                ;       FPS = 147740,   FEC = 02,       FEA = FPI1
                                ;*****************************************************************

001174  104400                          SCOPE
001176  000401                          BR      TST1            ;SKIP DATA

001200  001002                  ADR1:   ANS1

001202  170127  047740          TST1:   LDFPS   #047740         ;LOAD FLOATING POINT STATUS
001206  012703  001200                  MOV     #ADR1,  %3      ;SET UP R3
001212  170013                  FPI1:   170013                  ;ILLEGAL INSTRUCTION
001214  022703  001200                  CMP     #ADR1,  %3      ;CHECK R3
001220  001407                          BEQ     TSA1            ;BRANCH IF OK
001222  010367  177554                  MOV     %3,     ANS1    ;STORE R3 FOR TYPING
001226  170200                          STFPS   FPS             ;STORE FPS FOR TYPING
001230  170367  177566                  STST    FEC             ;STORE FEC, FEA FOR TYPING
001234  104001                          HLT+1                   ;R3 NOT EQUAL TO #ADR1
001236  000401                          BR      .+4             ;SKIP STFPS

001240     000                  TSA1:
001240  170200                          STFPS   FPS             ;STORE FLOATING POINT STATUS
001242  170367  177554                  STST    FEC             ;STORE EXCEPTION CODES
001246  022700  147740                  CMP     #147740,FPS     ;CHECK FLOATING POINT STATUS
001252  001401                          BEQ     .+4             ;BRANCH IF OK
001254  104000                          HLT                     ;FPS NOT EQUAL TO 147740

001256  022767  000002  177536          CMP     #02,    FEC     ;CHECK FLOATING EXCEPTION CODE
001264  001401                          BEQ     .+4             ;BRANCH IF OK
001266  104000                          HLT                     ;FEC NOT EQUAL TO 02

001270  022767  001212  177526          CMP     #FPI1, FEA      ;CHECK FLOATING EXCEPTION ADDRESS
001276  001401                          BEQ     .+4             ;BRANCH IF OK
001300  104000                          HLT                     ;FEA NOT EQUAL TO FPI1

001302  126727  177472  000001          CMPB    ICNT,   #1      ;CHECK FOR RIGHT TEST
001310  001401                          BEQ     .+4             ;BRANCH IF OK
001312  104000                          HLT                     ;PC JUMPED TESTS


                                ;*****************************************************************
                                ;TEST 2:        TEST STST (STORE STATUS, I.E. FEC (FLOATING EXCEPTION
                                ;                        CODES) AND FEA (FLOATING EXCEPTION ADDRESS)).
                                ;                        ALSO TEST ALL ILLEGAL INSTRUCTIONS.
                                ;       ILLEGAL INSTRUCTION = 170014
                                ;       FPS = 147740,   FEC = 02,       FEA = FPI2
                                ;*****************************************************************

001314  104400                          SCOPE
001316  000401                          BR      TST2            ;SKIP DATA
```

```
001320  001002                  ADR2:   ANS1

001322  170127  047740          TST2:   LDFPS   #047740         ;LOAD FLOATING POINT STATUS
001326  012704  001320                  MOV     #ADR2,  %4      ;SET UP R4
001332  170014                  FPI2:   170014                  ;ILLEGAL INSTRUCTION
001334  022704  001320                  CMP     #ADR2,  %4      ;CHECK R4
001340  001407                          BEQ     TSA2            ;BRANCH IF OK
001342  010467  177434                  MOV     %4,     ANS1    ;STORE R4 FOR TYPING
001346  170200                          STFPS   FPS             ;STORE FPS FOR TYPING
001350  170367  177446                  STST    FEC             ;STORE FEC, FEA FOR TYPING
001354  104001                          HLT+1                   ;R4 NOT EQUAL TO #ADR2
001356  000401                          BR      .+4             ;SKIP STFPS

001360     000                  TSA2:
001360  170200                          STFPS   FPS             ;STORE FLOATING POINT STATUS
001362  170367  177434                  STST    FEC             ;STORE EXCEPTION CODES
001366  022700  147740                  CMP     #147740,FPS     ;CHECK FLOATING POINT STATUS
001372  001401                          BEQ     .+4             ;BRANCH IF OK
001374  104000                          HLT                     ;FPS NOT EQUAL TO 147740

001376  022767  000002  177416          CMP     #02.    FEC     ;CHECK FLOATING EXCEPTION CODE
001404  001401                          BEQ     .+4             ;BRANCH IF OK
001406  104000                          HLT                     ;FEC NOT EQUAL TO 02

001410  022767  001332  177406          CMP     #FPI2, FEA      ;CHECK FLOATING EXCEPTION ADDRESS
001416  001401                          BEQ     .+4             ;BRANCH IF OK
001420  104000                          HLT                     ;FEA NOT EQUAL TO FPI2

001422  126727  177352  000002          CMPB    ICNT,   #2      ;CHECK FOR RIGHT TEST
001430  001401                          BEQ     .+4             ;BRANCH IF OK
001432  104000                          HLT                     ;PC JUMPED TESTS

;
                                ;*******************************************************************
                                ;TEST 3:        TEST STST (STORE STATUS, I.E. FEC (FLOATING EXCEPTION
                                ;                       CODES) AND FEA (FLOATING EXCEPTION ADDRESS)).
                                ;                       ALSO TEST ALL ILLEGAL INSTRUCTIONS.
                                ;       ILLEGAL INSTRUCTION = 170015
                                ;       FPS = 147740,   FEC = 02,       FEA = FPI3
                                ;*******************************************************************

001434  104400                          SCOPE
001436  000401                          BR      TST3            ;SKIP DATA

001440  001002                  ADR3:   ANS1

001442  170127  047740          TST3:   LDFPS   #047740         ;LOAD FLOATING POINT STATUS
001446  012705  001440                  MOV     #ADR3,  %5      ;SET UP R5
001452  170015                  FPI3:   170015                  ;ILLEGAL INSTRUCTION
001454  022705  001440                  CMP     #ADR3,  %5      ;CHECK R5
001460  001407                          BEQ     TSA3            ;BRANCH IF OK
001462  010567  177314                  MOV     %5,     ANS1    ;STORE R5 FOR TYPING
001466  170200                          STFPS   FPS             ;STORE FPS FOR TYPING
001470  170367  177326                  STST    FEC             ;STORE FEC, FEA FOR TYPING
001474  104001                          HLT+1                   ;R5 NOT EQUAL TO #ADR3
001476  000401                          BR      .+4             ;SKIP STFPS
```

```
001500     000                    TSA3:
001500  170200                            STFPS   FPS                 ;STORE FLOATING POINT STATUS
001502  170367  177314                    STST    FEC                 ;STORE EXCEPTION CODES
001506  022700  147740                    CMP     #147740,FPS         ;CHECK FLOATING POINT STATUS
001512  001401                            BEQ     .+4                 ;BRANCH IF OK
001514  104000                            HLT                         ;FPS NOT EQUAL TO 147740

001516  022767  000002  177276            CMP     #02,    FEC         ;CHECK FLOATING EXCEPTION CODE
001524  001401                            BEQ     .+4                 ;BRANCH IF OK
001526  104000                            HLT                         ;FEC NOT EQUAL TO 02

001530  022767  001452  177266            CMP     #FPI3, FEA          ;CHECK FLOATING EXCEPTION ADDRESS
001536  001401                            BEQ     .+4                 ;BRANCH IF OK
001540  104000                            HLT                         ;FEA NOT EQUAL TO FPI3

001542  126727  177232  000003            CMPB    ICNT,   #3          ;CHECK FOR RIGHT TEST
001550  001401                            BEQ     .+4                 ;BRANCH IF OK
001552  104000                            HLT                         ;PC JUMPED TESTS

                                ;*****************************************************************
                                ;TEST 4:        TEST STST (STORE STATUS, I.E. FEC (FLOATING EXCEPTION
                                ;                       CODES) AND FEA (FLOATING EXCEPTION ADDRESS)).
                                ;                       ALSO TEST ALL ILLEGAL INSTRUCTIONS.
                                ;       ILLEGAL INSTRUCTION = 170016
                                ;       FPS = 147740,   FEC = 02,       FEA = FPI4
                                ;*****************************************************************

001554  104400                            SCOPE
001556  000401                            BR      TST4                ;SKIP DATA

001560  001002                  ADR4:     ANS1

001562  170127  047740          TST4:     LDFPS   #047740             ;LOAD FLOATING POINT STATUS
001566  010667  177212                    MOV     %6,     ANS2        ;SAVE R6
001572  170016                  FPI4:     170016                      ;ILLEGAL INSTRUCTION
001574  020667  177204                    CMP     %6,     ANS2        ;CHECK R6
001600  001411                            BEQ     TSA4                ;BRANCH IF OK
001602  010667  177174                    MOV     %6,     ANS1        ;STORE R6 FOR TYPING
001606  016706  177172                    MOV     ANS2,   %6          ;RESTORE R6
001612  170200                            STFPS   FPS                 ;STORE FPS FOR TYPING
001614  170367  177202                    STST    FEC                 ;STORE FEC, FEA FOR TYPING
001620  104002                            HLT+2                       ;R6 (ANS1) NOT EQUAL TO ANS2
001622  000401                            BR      .+4                 ;SKIP STFPS

001624     000                    TSA4:
001624  170200                            STFPS   FPS                 ;STORE FLOATING POINT STATUS
001626  170367  177170                    STST    FEC                 ;STORE EXCEPTION CODES
001632  022700  147740                    CMP     #147740,FPS         ;CHECK FLOATING POINT STATUS
001636  001401                            BEQ     .+4                 ;BRANCH IF OK
001640  104000                            HLT                         ;FPS NOT EQUAL TO 147740

001642  022767  000002  177152            CMP     #02,    FEC         ;CHECK FLOATING EXCEPTION CODE
001650  001401                            BEQ     .+4                 ;BRANCH IF OK
001652  104000                            HLT                         ;FEC NOT EQUAL TO 02
```

```
001654  022767  001572  177142          CMP     #FPI4, FEA      ;CHECK FLOATING EXCEPTION ADDRESS
001662  001401                          BEQ     .+4             ;BRANCH IF OK
001664  104000                          HLT                     ;FEA NOT EQUAL TO FPI4

001666  126727  177106  000004          CMPB    ICNT,   #4      ;CHECK FOR RIGHT TEST
001674  001401                          BEQ     .+4             ;BRANCH IF OK
001676  104000                          HLT                     ;PC JUMPED TESTS

                                ;*****************************************************************
                                ;TEST 5:        TEST STST (STORE STATUS, I.E. FEC (FLOATING EXCEPTION
                                ;                       CODES) AND FEA (FLOATING EXCEPTION ADDRESS)).
                                ;                       ALSO TEST ALL ILLEGAL INSTRUCTIONS.
                                ;       ILLEGAL INSTRUCTION = 170017
                                ;       FPS = 147740,   FEC = 02,       FEA = FPI5
                                ;*****************************************************************

001700  104400                          SCOPE
001702  000401                          BR      TST5            ;SKIP DATA

001704  001002                  ADR5:   ANSI

001706  170127  047740          TST5:   LDFPS   #047740         ;LOAD FLOATING POINT STATUS
001712  170017                  FPI5:   170017                  ;ILLEGAL INSTRUCTION
001714  170200                          STFPS   FPS             ;STORE FLOATING POINT STATUS
001716  170367  177100                  STST    FEC             ;STORE EXCEPTION CODES
001722  022700  147740                  CMP     #147740,FPS     ;CHECK FLOATING POINT STATUS
001726  001401                          BEQ     .+4             ;BRANCH IF OK
001730  104000                          HLT                     ;FPS NOT EQUAL TO 147740

001732  022767  000002  177062          CMP     #02,    FEC     ;CHECK FLOATING EXCEPTION CODE
001740  001401                          BEQ     .+4             ;BRANCH IF OK
001742  104000                          HLT                     ;FEC NOT EQUAL TO 02

001744  022767  001712  177052          CMP     #FPI5, FEA      ;CHECK FLOATING EXCEPTION ADDRESS
001752  001401                          BEQ     .+4             ;BRANCH IF OK
001754  104000                          HLT                     ;FEA NOT EQUAL TO FPI5

001756  126727  177016  000005          CMPB    ICNT,   #5      ;CHECK FOR RIGHT TEST
001764  001401                          BEQ     .+4             ;BRANCH IF OK
001766  104000                          HLT                     ;PC JUMPED TESTS

                                ;*****************************************************************
                                ;TEST 6:        TEST STST (STORE STATUS, I.E. FEC (FLOATING EXCEPTION
                                ;                       CODES) AND FEA (FLOATING EXCEPTION ADDRESS)).
                                ;                       ALSO TEST ALL ILLEGAL INSTRUCTIONS.
                                ;       ILLEGAL INSTRUCTION = 170020
                                ;       FPS = 147740,   FEC = 02,       FEA = FPI6
                                ;*****************************************************************

001770  104400                          SCOPE
001772  000401                          BR      TST6            ;SKIP DATA

001774  001002                  ADR6:   ANSI
```

```
001776  170127  047740          TST6:   LDFPS   #047740          ;LOAD FLOATING POINT STATUS
002002  012700  001774                  MOV     #ADR6,  %0        ;SET UP R0
002006  170020                  FPI6:   170020                    ;ILLEGAL INSTRUCTION
002010  022700  001774                  CMP     #ADR6,  %0        ;CHECK R0
002014  001407                          BEQ     TSA6              ;BRANCH IF OK
002016  010067  176760                  MOV     %0,     ANS1      ;STORE R0 FOR TYPING
002022  170200                          STFPS   FPS               ;STORE FPS FOR TYPING
002024  170367  176772                  STST    FEC               ;STORE FEC, FEA FOR TYPING
002030  104001                          HLT+1                     ;R0 NOT EQUAL TO #ADR6
002032  000401                          BR      .+4               ;SKIP STFPS

002034     000                  TSA6:
002034  170200                          STFPS   FPS               ;STORE FLOATING POINT STATUS
002036  170367  176760                  STST    FEC               ;STORE EXCEPTION CODES
002042  022700  147740                  CMP     #147740,FPS       ;CHECK FLOATING POINT STATUS
002046  001401                          BEQ     .+4               ;BRANCH IF OK
002050  104000                          HLT                       ;FPS NOT EQUAL TO 147740

002052  022767  000002  176742          CMP     #02,    FEC       ;CHECK FLOATING EXCEPTION CODE
002060  001401                          BEQ     .+4               ;BRANCH IF OK
002062  104000                          HLT                       ;FEC NOT EQUAL TO 02

002064  022767  002036  176732          CMP     #FPI6, FEA        ;CHECK FLOATING EXCEPTION ADDRESS
002072  001401                          BEQ     .+4               ;BRANCH IF OK
002074  104000                          HLT                       ;FEA NOT EQUAL TO FPI6

002076  126727  176676  000006          CMPB    ICNT,   #6        ;CHECK FOR RIGHT TEST
002104  001401                          BEQ     .+4               ;BRANCH IF OK
002106  104000                          HLT                       ;PC JUMPED TESTS

                                ;*****************************************************************
                                ;TEST 7:        TEST STST (STORE STATUS, I.E. FEC (FLOATING EXCEPTION
                                ;                       CODES) AND FEA (FLOATING EXCEPTION ADDRESS)).
                                ;                       ALSO TEST ALL ILLEGAL INSTRUCTIONS.
                                ;       ILLEGAL INSTRUCTION = 170021
                                ;       FPS = 147740,   FEC = 02,       FEA = FPI7
                                ;*****************************************************************

002110  104400                          SCOPE
002112  000401                          BR      TST7              ;SKIP DATA

002114  001002                  ADR7:   ANS1

002116  170127  047740          TST7:   LDFPS   #047740           ;LOAD FLOATING POINT STATUS
002122  012701  002114                  MOV     #ADR7,  %1        ;SET UP R1
002126  170021                  FPI7:   170021                    ;ILLEGAL INSTRUCTION
002130  022701  002120                  CMP     #ADR7+4,%1        ;CHECK R1
002134  001407                          BEQ     TSA7              ;BRANCH IF OK
002136  010167  176640                  MOV     %1,     ANS1      ;STORE R1 FOR TYPING
002142  170200                          STFPS   FPS               ;STORE FPS FOR TYPING
002144  170367  176652                  STST    FEC               ;STORE FEC, FEA FOR TYPING
002150  104001                          HLT+1                     ;R1 NOT EQUAL TO #ADR7
002152  000401                          BR      .+4               ;SKIP STFPS
```

```
002154     000                    TSA7:
002154  170200                            STFPS   FPS                 ;STORE FLOATING POINT STATUS
002156  170367  176640                    STST    FEC                 ;STORE EXCEPTION CODES
002162  022700  147740                    CMP     #147740,FPS         ;CHECK FLOATING POINT STATUS
002166  001401                            BEQ     .+4                 ;BRANCH IF OK
002170  104000                            HLT                         ;FPS NOT EQUAL TO 147740

002172  022767  000002  176622            CMP     #02,    FEC         ;CHECK FLOATING EXCEPTION CODE
002200  001401                            BEQ     .+4                 ;BRANCH IF OK
002202  104000                            HLT                         ;FEC NOT EQUAL TO 02

002204  022767  002126  176612            CMP     #FPI7, FEA          ;CHECK FLOATING EXCEPTION ADDRESS
002212  001401                            BEQ     .+4                 ;BRANCH IF OK
002214  104000                            HLT                         ;FEA NOT EQUAL TO FPI7

002216  126727  176556  000007            CMPB    ICNT,   #7          ;CHECK FOR RIGHT TEST
002224  001401                            BEQ     .+4                 ;BRANCH IF OK
002226  104000                            HLT                         ;PC JUMPED TESTS


                                ;*******************************************************************
                                ;TEST 10:       TEST STST (STORE STATUS, I.E. FEC (FLOATING EXCEPTION
                                ;                       CODES) AND FEA (FLOATING EXCEPTION ADDRESS)).
                                ;                       ALSO TEST ALL ILLEGAL INSTRUCTIONS.
                                ;       ILLEGAL INSTRUCTION = 170022
                                ;       FPS = 147740,   FEC = 02,       FEA = FPI10
                                ;*******************************************************************

002230  104400                            SCOPE
002232  000401                            BR      TST10               ;SKIP DATA

002234  001002                  ADR10:    ANSI

002236  170127  047740          TST10:    LDFPS   #047740             ;LOAD FLOATING POINT STATUS
002242  012702  002234                    MOV     #ADR10, %2          ;SET UP R2
002246  170022                  FPI10:    170022                      ;ILLEGAL INSTRUCTION
002250  022702  002240                    CMP     #ADR10+4,%2         ;CHECK R2
002254  001407                            BEQ     TSA10               ;BRANCH IF OK
002256  010267  176520                    MOV     %2,     ANSI        ;STORE R2 FOR TYPING
002262  170200                            STFPS   FPS                 ;STORE FPS FOR TYPING
002264  170367  176532                    STST    FEC                 ;STORE FEC, FEA FOR TYPING
002270  104001                            HLT+1                       ;R2 NOT EQUAL TO #ADR10
002272  000401                            BR      .+4                 ;SKIP STFPS

002274     000                  TSA10:
002274  170200                            STFPS   FPS                 ;STORE FLOATING POINT STATUS
002276  170367  176520                    STST    FEC                 ;STORE EXCEPTION CODES
002302  022700  147740                    CMP     #147740,FPS         ;CHECK FLOATING POINT STATUS
002306  001401                            BEQ     .+4                 ;BRANCH IF OK
002310  104000                            HLT                         ;FPS NOT EQUAL TO 147740

002312  022767  000002  176502            CMP     #02,    FEC         ;CHECK FLOATING EXCEPTION CODE
002320  001401                            BEQ     .+4                 ;BRANCH IF OK
002322  104000                            HLT                         ;FEC NOT EQUAL TO 02

002324  022767  002246  176472            CMP     #FPI10, FEA         ;CHECK FLOATING EXCEPTION ADDRESS
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```
002332  001401                          BEQ     .+4             ;BRANCH IF OK
002334  104000                          HLT                     ;FEA NOT EQUAL TO FPI10

002336  126727  176436  000010          CMPB    ICNT,   #10     ;CHECK FOR RIGHT TEST
002344  001401                          BEQ     .+4             ;BRANCH IF OK
002346  104000                          HLT                     ;PC JUMPED TESTS


                                ;*******************************************************************
                                ;TEST 11:       TEST STST (STORE STATUS, I.E. FEC (FLOATING EXCEPTION
                                ;                       CODES) AND FEA (FLOATING EXCEPTION ADDRESS)).
                                ;                       ALSO TEST ALL ILLEGAL INSTRUCTIONS.
                                ;       ILLEGAL INSTRUCTION = 170023
                                ;       FPS = 147740,   FEC = 02,       FEA = FPI11
                                ;*******************************************************************

002350  104400                          SCOPE
002352  000401                          BR      TST11           ;SKIP DATA

002354  001002                  ADR11:  ANS1

002356  170127  047740          TST11:  LDFPS   #047740         ;LOAD FLOATING POINT STATUS
002362  012703  002354                  MOV     #ADR11, %3      ;SET UP R3
002366  170023                  FPI11:  170023                  ;ILLEGAL INSTRUCTION
002370  022703  002354                  CMP     #ADR11, %3      ;CHECK R3
002374  001407                          BEQ     TSA11           ;BRANCH IF OK
002376  010367  176400                  MOV     %3,     ANS1    ;STORE R3 FOR TYPING
002402  170200                          STFPS   FPS             ;STORE FPS FOR TYPING
002404  170367  176412                  STST    FEC             ;STORE FEC, FEA FOR TYPING
002410  104001                          HLT+1                   ;R3 NOT EQUAL TO #ADR11
002412  000401                          BR      .+4             ;SKIP STFPS

002414     000                  TSA11:
002414  170200                          STFPS   FPS             ;STORE FLOATING POINT STATUS
002416  170367  176400                  STST    FEC             ;STORE EXCEPTION CODES
002422  022700  147740                  CMP     #147740,FPS     ;CHECK FLOATING POINT STATUS
002426  001401                          BEQ     .+4             ;BRANCH IF OK
002430  104000                          HLT                     ;FPS NOT EQUAL TO 147740

002432  022767  000002  176362          CMP     #02,    FEC     ;CHECK FLOATING EXCEPTION CODE
002440  001401                          BEQ     .+4             ;BRANCH IF OK
002442  104000                          HLT                     ;FEC NOT EQUAL TO 02

002444  022767  002366  176352          CMP     #FPI11, FEA     ;CHECK FLOATING EXCEPTION ADDRESS
002452  001401                          BEQ     .+4             ;BRANCH IF OK
002454  104000                          HLT                     ;FEA NOT EQUAL TO FPI11

002456  126727  176316  000011          CMPB    ICNT,   #11     ;CHECK FOR RIGHT TEST
002464  001401                          BEQ     .+4             ;BRANCH IF OK
002466  104000                          HLT                     ;PC JUMPED TESTS


                                ;*******************************************************************
                                ;TEST 12:       TEST STST (STORE STATUS, I.E. FEC (FLOATING EXCEPTION
                                ;                       CODES) AND FEA (FLOATING EXCEPTION ADDRESS)).
                                ;                       ALSO TEST ALL ILLEGAL INSTRUCTIONS.
```

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                                        ;       ILLEGAL INSTRUCTION = 170024
                                        ;       FPS = 147740,   FEC = 02,       FEA = FPI12
                                        ;*******************************************************************

002470  104400                                  SCOPE
002472  000401                                  BR      TST12           ;SKIP DATA

002474  001002                          ADR12:  ANS1

002476  170127  047740                  TST12:  LDFPS   #047740         ;LOAD FLOATING POINT STATUS
002502  012704  002474                          MOV     #ADR12, %4      ;SET UP R4
002506  170024                          FPI12:  170024                  ;ILLEGAL INSTRUCTION
002510  022704  002474                          CMP     #ADR12, %4      ;CHECK R4
002514  001407                                  BEQ     TSA12           ;BRANCH IF OK
002516  010467  176260                          MOV     %4,     ANS1    ;STORE R4 FOR TYPING
002522  170200                                  STFPS   FPS             ;STORE FPS FOR TYPING
002524  170367  176272                          STST    FEC             ;STORE FEC, FEA FOR TYPING
002530  104001                                  HLT+1                   ;R4 NOT EQUAL TO #ADR12
002532  000401                                  BR      .+4             ;SKIP STFPS

002534     000                          TSA12:
002534  170200                                  STFPS   FPS             ;STORE FLOATING POINT STATUS
002536  170367  176260                          STST    FEC             ;STORE EXCEPTION CODES
002542  022700  147740                          CMP     #147740,FPS     ;CHECK FLOATING POINT STATUS
002546  001401                                  BEQ     .+4             ;BRANCH IF OK
002550  104000                                  HLT                     ;FPS NOT EQUAL TO 147740

002552  022767  000002  176242                  CMP     #02,    FEC     ;CHECK FLOATING EXCEPTION CODE
002560  001401                                  BEQ     .+4             ;BRANCH IF OK
002562  104000                                  HLT                     ;FEC NOT EQUAL TO 02

002564  022767  002506  176232                  CMP     #FPI12, FEA     ;CHECK FLOATING EXCEPTION ADDRESS
002572  001401                                  BEQ     .+4             ;BRANCH IF OK
002574  104000                                  HLT                     ;FEA NOT EQUAL TO FPI12

002576  126727  176176  000012                  CMPB    ICNT,   #12     ;CHECK FOR RIGHT TEST
002604  001401                                  BEQ     .+4             ;BRANCH IF OK
002606  104000                                  HLT                     ;PC JUMPED TESTS


                                        ;*******************************************************************
                                        ;TEST 13:       TEST STST (STORE STATUS, I.E. FEC (FLOATING EXCEPTION
                                        ;                       CODES) AND FEA (FLOATING EXCEPTION ADDRESS)).
                                        ;                       ALSO TEST ALL ILLEGAL INSTRUCTIONS.
                                        ;       ILLEGAL INSTRUCTION = 170025
                                        ;       FPS = 147740,   FEC = 02,       FEA = FPI13
                                        ;*******************************************************************

002610  104400                                  SCOPE
002612  000401                                  BR      TST13           ;SKIP DATA

002614  001002                          ADR13:  ANS1

002616  170127  047740                  TST13:  LDFPS   #047740         ;LOAD FLOATING POINT STATUS
002622  012705  002614                          MOV     #ADR13, %5      ;SET UP R5
002626  170025                          FPI13:  170025                  ;ILLEGAL INSTRUCTION
```

```
002630  022705  002614                  CMP     #ADR13, %5      ;CHECK R5
002634  001407                          BEQ     TSA13           ;BRANCH IF OK
002636  010567  176140                  MOV     %5,     ANS1    ;STORE R5 FOR TYPING
002642  170200                          STFPS   FPS             ;STORE FPS FOR TYPING
002644  170367  176152                  STST    FEC             ;STORE FEC, FEA FOR TYPING
002650  104001                          HLT+1                   ;R5 NOT EQUAL TO #ADR13
002652  000401                          BR      .+4             ;SKIP STFPS

002654     000                  TSA13:
002654  170200                          STFPS   FPS             ;STORE FLOATING POINT STATUS
002656  170367  176140                  STST    FEC             ;STORE EXCEPTION CODES
002662  022700  147740                  CMP     #147740,FPS     ;CHECK FLOATING POINT STATUS
002666  001401                          BEQ     .+4             ;BRANCH IF OK
002670  104000                          HLT                     ;FPS NOT EQUAL TO 147740

002672  022767  000002  176122          CMP     #02,    FEC     ;CHECK FLOATING EXCEPTION CODE
002700  001401                          BEQ     .+4             ;BRANCH IF OK
002702  104000                          HLT                     ;FEC NOT EQUAL TO 02

002704  022767  002626  176112          CMP     #FPI13, FEA     ;CHECK FLOATING EXCEPTION ADDRESS
002712  001401                          BEQ     .+4             ;BRANCH IF OK
002714  104000                          HLT                     ;FEA NOT EQUAL TO FPI13

002716  126727  176056  000013          CMPB    ICNT,   #13     ;CHECK FOR RIGHT TEST
002724  001401                          BEQ     .+4             ;BRANCH IF OK
002726  104000                          HLT                     ;PC JUMPED TESTS

                                ;*****************************************************************
                                ;TEST 14:       TEST STST (STORE STATUS, I.E. FEC (FLOATING EXCEPTION
                                ;                       CODES) AND FEA (FLOATING EXCEPTION ADDRESS)).
                                ;                       ALSO TEST ALL ILLEGAL INSTRUCTIONS.
                                ;       ILLEGAL INSTRUCTION = 170026
                                ;       FPS = 147740,   FEC = 02,       FEA = FPI14
                                ;*****************************************************************

002730  104400                          SCOPE
002732  000401                          BR      TST14           ;SKIP DATA

002734  001002                  FPI14:  ANS1

002736  170127  047740          TST14:  LDFPS   #047740         ;LOAD FLOATING POINT STATUS
002742  010667  176036                  MOV     %6,     ANS2    ;SAVE R6
002746  170026                  FPI14:  170026                  ;ILLEGAL INSTRUCTION
002750  020667  176030                  CMP     %6,     ANS2    ;CHECK R6
002754  001411                          BEQ     TSA14           ;BRANCH IF OK
002756  010667  176020                  MOV     %6,     ANS1    ;STORE R6 FOR TYPING
002762  016706  176016                  MOV     ANS2,   %6      ;RESTORE R6
002766  170200                          STFPS   FPS             ;STORE FPS FOR TYPING
002770  170367  176026                  STST    FEC             ;STORE FEC, FEA FOR TYPING
002774  104002                          HLT+2                   ;R6 (ANS1) NOT EQUAL TO ANS2
002776  000401                          BR      .+4             ;SKIP STFPS

003000     000                  TSA14:
003000  170200                          STFPS   FPS             ;STORE FLOATING POINT STATUS
003002  170367  176014                  STST    FEC             ;STORE EXCEPTION CODES
```

```
003006  022700  147740                  CMP     #147740,FPS     ;CHECK FLOATING POINT STATUS
003012  001401                          BEQ     .+4             ;BRANCH IF OK
003014  104000                          HLT                     ;FPS NOT EQUAL TO 147740

003016  022767  000002  175776          CMP     #02,    FEC     ;CHECK FLOATING EXCEPTION CODE
003024  001401                          BEQ     .+4             ;BRANCH IF OK
003026  104000                          HLT                     ;FEC NOT EQUAL TO 02

003030  022767  002746  175766          CMP     #FPI14, FEA     ;CHECK FLOATING EXCEPTION ADDRESS
003036  001401                          BEQ     .+4             ;BRANCH IF OK
003040  104000                          HLT                     ;FEA NOT EQUAL TO FPI14

003042  126727  175732  000014          CMPB    ICNT,   #14     ;CHECK FOR RIGHT TEST
003050  001401                          BEQ     .+4             ;BRANCH IF OK
003052  104000                          HLT                     ;PC JUMPED TESTS


                                ;*******************************************************************
                                ;TEST 15:       TEST STST (STORE STATUS, I.E. FEC (FLOATING EXCEPTION
                                ;                       CODES) AND FEA (FLOATING EXCEPTION ADDRESS)..
                                ;                       ALSO TEST ALL ILLEGAL INSTRUCTIONS.
                                ;       ILLEGAL INSTRUCTION = 170027
                                ;       FPS = 147740,   FEC = 02,       FEA = FPI15
                                ;*******************************************************************

003054  104400                          SCOPE
003056  000401                          BR      TST15           ;SKIP DATA

003060  001002                  ADR15:  ANSI

003062  170127  047740          TST15:  LDFPS   #047740         ;LOAD FLOATING POINT STATUS
003066  170027                  FPI15:  170027                  ;ILLEGAL INSTRUCTION
003070  000000                          HALT                    ;PC NOT PROPERLY UPDATED
003072  170200                          STFPS   FPS             ;STORE FLOATING POINT STATUS
003074  170367  175722                  STST    FEC             ;STORE EXCEPTION CODES
003100  022700  147740                  CMP     #147740,FPS     ;CHECK FLOATING POINT STATUS
003104  001401                          BEQ     .+4             ;BRANCH IF OK
003106  104000                          HLT                     ;FPS NOT EQUAL TO 147740

003110  022767  000002  175704          CMP     #02,    FEC     ;CHECK FLOATING EXCEPTION CODE
003116  001401                          BEQ     .+4             ;BRANCH IF OK
003120  104000                          HLT                     ;FEC NOT EQUAL TO 02

003122  022767  003066  175674          CMP     #FPI15, FEA     ;CHECK FLOATING EXCEPTION ADDRESS
003130  001401                          BEQ     .+4             ;BRANCH IF OK
003132  104000                          HLT                     ;FEA NOT EQUAL TO FPI15

003134  126727  175640  000015          CMPB    ICNT,   #15     ;CHECK FOR RIGHT TEST
003142  001401                          BEQ     .+4             ;BRANCH IF OK
003144  104000                          HLT                     ;PC JUMPED TESTS


                                ;*******************************************************************
                                ;TEST 16:       TEST STST (STORE STATUS, I.E. FEC (FLOATING EXCEPTION
                                ;                       CODES) AND FEA (FLOATING EXCEPTION ADDRESS)..
                                ;                       ALSO TEST ALL ILLEGAL INSTRUCTIONS.
```

```
                                        ;       ILLEGAL INSTRUCTION = 170030
                                        ;       FPS = 147740,   FEC = 02,       FEA = FPI16
                                        ;*******************************************************************

003146  104400                                  SCOPE
003150  000401                                  BR      TST16           ;SKIP DATA

003152  001002                          ADR16:  ANS1

003154  170127  047740                  TST16:  LDFPS   #047740         ;LOAD FLOATING POINT STATUS
003160  012700  003152                          MOV     #ADR16, %0      ;SET UP R0
003164  170030                          FPI16:  170030                  ;ILLEGAL INSTRUCTION
003166  022700  003154                          CMP     #ADR16+2,%0     ;CHECK R0
003172  001407                                  BEQ     TSA16           ;BRANCH IF OK
003174  010067  175602                          MOV     %0,     ANS1    ;STORE R0 FOR TYPING
003200  170200                                  STFPS   FPS             ;STORE FPS FOR TYPING
003202  170367  175614                          STST    FEC             ;STORE FEC, FEA FOR TYPING
003206  104001                                  HLT+1                   ;R0 NOT EQUAL TO #ADR16
003210  000401                                  BR      .+4             ;SKIP STFPS

003212     000                          TSA16:
003212  170200                                  STFPS   FPS             ;STORE FLOATING POINT STATUS
003214  170367  175602                          STST    FEC             ;STORE EXCEPTION CODES
003220  022700  147740                          CMP     #147740,FPS     ;CHECK FLOATING POINT STATUS
003224  001401                                  BEQ     .+4             ;BRANCH IF OK
003226  104000                                  HLT                     ;FPS NOT EQUAL TO 147740

003230  022767  000002  175564                  CMP     #02,    FEC     ;CHECK FLOATING EXCEPTION CODE
003236  001401                                  BEQ     .+4             ;BRANCH IF OK
003240  104000                                  HLT                     ;FEC NOT EQUAL TO 02

003242  022767  003164  175554                  CMP     #FPI16, FEA     ;CHECK FLOATING EXCEPTION ADDRESS
003250  001401                                  BEQ     .+4             ;BRANCH IF OK
003252  104000                                  HLT                     ;FEA NOT EQUAL TO FPI16

003254  126727  175520  000016                  CMPB    ICNT,   #16     ;CHECK FOR RIGHT TEST
003262  001401                                  BEQ     .+4             ;BRANCH IF OK
003264  104000                                  HLT                     ;PC JUMPED TESTS


                                        ;*******************************************************************
                                        ;TEST 17:       TEST STST (STORE STATUS, I.E. FEC (FLOATING EXCEPTION
                                        ;                       CODES) AND FEA (FLOATING EXCEPTION ADDRESS)).
                                        ;                       ALSO TEST ALL ILLEGAL INSTRUCTIONS.
                                        ;       ILLEGAL INSTRUCTION = 170031
                                        ;       FPS = 147740,   FEC = 02,       FEA = FPI17
                                        ;*******************************************************************

003266  104400                                  SCOPE
003270  000401                                  BR      TST17           ;SKIP DATA

003272  001002                          ADR17:  ANS1

003274  170127  047740                  TST17:  LDFPS   #047740         ;LOAD FLOATING POINT STATUS
003300  012701  003272                          MOV     #ADR17, %1      ;SET UP R1
003304  170031                          FPI17:  170031                  ;ILLEGAL INSTRUCTION
```

```
003306  022701  003274                  CMP     #ADR17+2,%1     ;CHECK R1
003312  001407                          BEQ     TSA17           ;BRANCH IF OK
003314  010167  175462                  MOV     %1,     ANS1    ;STORE R1 FOR TYPING
003320  170200                          STFPS   FPS             ;STORE FPS FOR TYPING
003322  170367  175474                  STST    FEC             ;STORE FEC, FEA FOR TYPING
003326  104001                          HLT+1                   ;R1 NOT EQUAL TO #ADR17
003330  000401                          BR      .+4             ;SKIP STFPS

003332     000                  TSA17:
003332  170200                          STFPS   FPS             ;STORE FLOATING POINT STATUS
003334  170367  175462                  STST    FEC             ;STORE EXCEPTION CODES
003340  022700  147740                  CMP     #147740,FPS     ;CHECK FLOATING POINT STATUS
003344  001401                          BEQ     .+4             ;BRANCH IF OK
003346  104000                          HLT                     ;FPS NOT EQUAL TO 147740

003350  022767  000002  175444          CMP     #02,    FEC     ;CHECK FLOATING EXCEPTION CODE
003356  001401                          BEQ     .+4             ;BRANCH IF OK
003360  104000                          HLT                     ;FEC NOT EQUAL TO 02

003362  022767  003304  175434          CMP     #FPI17, FEA     ;CHECK FLOATING EXCEPTION ADDRESS
003370  001401                          BEQ     .+4             ;BRANCH IF OK
003372  104000                          HLT                     ;FEA NOT EQUAL TO FPI17

003374  126727  175400  000017          CMPB    ICNT,   #17     ;CHECK FOR RIGHT TEST
003402  001401                          BEQ     .+4             ;BRANCH IF OK
003404  104000                          HLT                     ;PC JUMPED TESTS

                                ;*******************************************************************
                                ;TEST 20:       TEST STST (STORE STATUS, I.E. FEC (FLOATING EXCEPTION
                                ;                       CODES) AND FEA (FLOATING EXCEPTION ADDRESS)).
                                ;                       ALSO TEST ALL ILLEGAL INSTRUCTIONS.
                                ;       ILLEGAL INSTRUCTION = 170032
                                ;       FPS = 147740,   FEC = 02,       FEA = FPI20
                                ;*******************************************************************

003406  104400                          SCOPE
003410  000401                          BR      TST20           ;SKIP DATA

003412  001002                  ADR20:  ANS1

003414  170127  047740          TST20:  LDFPS   #047740         ;LOAD FLOATING POINT STATUS
003420  012702  003412                  MOV     #ADR20, %2      ;SET UP R2
003424  170032                  FPI20:  170032                  ;ILLEGAL INSTRUCTION
003426  022702  003414                  CMP     #ADR20+2,%2     ;CHECK R2
003432  001407                          BEQ     TSA20           ;BRANCH IF OK
003434  010267  175342                  MOV     %2,     ANS1    ;STORE R2 FOR TYPING
003440  170200                          STFPS   FPS             ;STORE FPS FOR TYPING
003442  170367  175354                  STST    FEC             ;STORE FEC, FEA FOR TYPING
003446  104001                          HLT+1                   ;R2 NOT EQUAL TO #ADR20
003450  000401                          BR      .+4             ;SKIP STFPS

003452     000                  TSA20:
003452  170200                          STFPS   FPS             ;STORE FLOATING POINT STATUS
003454  170367  175342                  STST    FEC             ;STORE EXCEPTION CODES
003460  022700  147740                  CMP     #147740,FPS     ;CHECK FLOATING POINT STATUS
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003464  001401                          BEQ     .+4             ;BRANCH IF OK
003466  104000                          HLT                     ;FPS NOT EQUAL TO 147740

003470  022767  000002  175324          CMP     #02,    FEC     ;CHECK FLOATING EXCEPTION CODE
003476  001401                          BEQ     .+4             ;BRANCH IF OK
003500  104000                          HLT                     ;FEC NOT EQUAL TO 02

003502  022767  003424  175314          CMP     #FPI20, FEA     ;CHECK FLOATING EXCEPTION ADDRESS
003510  001401                          BEQ     .+4             ;BRANCH IF OK
003512  104000                          HLT                     ;FEA NOT EQUAL TO FPI20

003514  126727  175260  000020          CMPB    ICNT,   #20     ;CHECK FOR RIGHT TEST
003522  001401                          BEQ     .+4             ;BRANCH IF OK
003524  104000                          HLT                     ;PC JUMPED TESTS


                                ;*******************************************************************
                                ;TEST 21:       TEST STST (STORE STATUS, I.E. FEC (FLOATING EXCEPTION
                                ;                       CODES) AND FEA (FLOATING EXCEPTION ADDRESS)..
                                ;                       ALSO TEST ALL ILLEGAL INSTRUCTIONS.
                                ;       ILLEGAL INSTRUCTION = 170033
                                ;       FPS = 147740,   FEC = 02,       FEA = FPI21
                                ;*******************************************************************

003526  104400                          SCOPE
003530  000401                          BR      TST21           ;SKIP DATA

003532  001002                  ADR21:  ANS1

003534  170127  047740          TST21:  LDFPS   #047740         ;LOAD FLOATING POINT STATUS
003540  012703  003532                  MOV     #ADR21, %3      ;SET UP R3
003544  170033                  FPI21:  170033                  ;ILLEGAL INSTRUCTION
003546  022703  003534                  CMP     #ADR21+2,%3     ;CHECK R3
003552  001407                          BEQ     TSA21           ;BRANCH IF OK
003554  010367  175222                  MOV     %3,     ANS1    ;STORE R3 FOR TYPING
003560  170200                          STFPS   FPS             ;STORE FPS FOR TYPING
003562  170367  175234                  STST    FEC             ;STORE FEC, FEA FOR TYPING
003566  104001                          HLT+1                   ;R3 NOT EQUAL TO #ADR21
003570  000401                          BR      .+4             ;SKIP STFPS

003572     000                  TSA21:
003572  170200                          STFPS   FPS             ;STORE FLOATING POINT STATUS
003574  170367  175222                  STST    FEC             ;STORE EXCEPTION CODES
003600  022700  147740                  CMP     #147740,FPS     ;CHECK FLOATING POINT STATUS
003604  001401                          BEQ     .+4             ;BRANCH IF OK
003606  104000                          HLT                     ;FPS NOT EQUAL TO 147740

003610  022767  000002  175204          CMP     #02,    FEC     ;CHECK FLOATING EXCEPTION CODE
003616  001401                          BEQ     .+4             ;BRANCH IF OK
003620  104000                          HLT                     ;FEC NOT EQUAL TO 02

003622  022767  003544  175174          CMP     #FPI21, FEA     ;CHECK FLOATING EXCEPTION ADDRESS
003630  001401                          BEQ     .+4             ;BRANCH IF OK
003632  104000                          HLT                     ;FEA NOT EQUAL TO FPI21

003634  126727  175140  000021          CMPB    ICNT,   #21     ;CHECK FOR RIGHT TEST
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003642  001401                          BEQ     .+4             ;BRANCH IF OK
003644  104000                          HLT                     ;PC JUMPED TESTS


                                ;*******************************************************************
                                ;TEST 22:       TEST STST (STORE STATUS, I.E. FEC (FLOATING EXCEPTION
                                ;                       CODES) AND FEA (FLOATING EXCEPTION ADDRESS)).
                                ;                       ALSO TEST ALL ILLEGAL INSTRUCTIONS.
                                ;       ILLEGAL INSTRUCTION = 170034
                                ;       FPS = 147740,   FEC = 02,       FEA = FPI22
                                ;*******************************************************************

003646  104400                          SCOPE
003650  000401                          BR      TST22           ;SKIP DATA

003652  001002                  ADR22:  ANS1

003654  170127  047740          TST22:  LDFPS   #047740         ;LOAD FLOATING POINT STATUS
003660  012704  003652                  MOV     #ADR22, %4      ;SET UP R4
003664  170034                  FPI22:  170034                  ;ILLEGAL INSTRUCTION
003666  022704  003654                  CMP     #ADR22+2,%4     ;CHECK R4
003672  001407                          BEQ     TSA22           ;BRANCH IF OK
003674  010467  175102                  MOV     %4,     ANS1    ;STORE R4 FOR TYPING
003700  170200                          STFPS   FPS             ;STORE FPS FOR TYPING
003702  170367  175114                  STST    FEC             ;STORE FEC, FEA FOR TYPING
003706  104001                          HLT+1                   ;R4 NOT EQUAL TO #ADR22
003710  000401                          BR      .+4             ;SKIP STFPS

003712     000                  TSA22:
003712  170200                          STFPS   FPS             ;STORE FLOATING POINT STATUS
003714  170367  175102                  STST    FEC             ;STORE EXCEPTION CODES
003720  022700  147740                  CMP     #147740,FPS     ;CHECK FLOATING POINT STATUS
003724  001401                          BEQ     .+4             ;BRANCH IF OK
003726  104000                          HLT                     ;FPS NOT EQUAL TO 147740

003730  022767  000002  175064          CMP     #02,    FEC     ;CHECK FLOATING EXCEPTION CODE
003736  001401                          BEQ     .+4             ;BRANCH IF OK
003740  104000                          HLT                     ;FEC NOT EQUAL TO 02

003742  022767  003664  175054          CMP     #FPI22, FEA     ;CHECK FLOATING EXCEPTION ADDRESS
003750  001401                          BEQ     .+4             ;BRANCH IF OK
003752  104000                          HLT                     ;FEA NOT EQUAL TO FPI22

003754  126727  175020  000022          CMPB    ICNT,   #22     ;CHECK FOR RIGHT TEST
003762  001401                          BEQ     .+4             ;BRANCH IF OK
003764  104000                          HLT                     ;PC JUMPED TESTS


                                ;*******************************************************************
                                ;TEST 23:       TEST STST (STORE STATUS, I.E. FEC (FLOATING EXCEPTION
                                ;                       CODES) AND FEA (FLOATING EXCEPTION ADDRESS)).
                                ;                       ALSO TEST ALL ILLEGAL INSTRUCTIONS.
                                ;       ILLEGAL INSTRUCTION = 170035
                                ;       FPS = 147740,   FEC = 02,       FEA = FPI23
                                ;*******************************************************************
```

```
003766  104400                          SCOPE
003770  000401                          BR      TST23           ;SKIP DATA

003772  001002                  ADR23:  ANS1

003774  170127  047740          TST23:  LDFPS   #047740         ;LOAD FLOATING POINT STATUS
004000  012705  003772                  MOV     #ADR23, %5      ;SET UP R5
004004  170035                  FPI23:  170035                  ;ILLEGAL INSTRUCTION
004006  022705  003774                  CMP     #ADR23+2,%5     ;CHECK R5
004012  001407                          BEQ     TSA23           ;BRANCH IF OK
004014  010567  174762                  MOV     %5,     ANS1    ;STORE R5 FOR TYPING
004020  170200                          STFPS   FPS             ;STORE FPS FOR TYPING
004022  170367  174774                  STST    FEC             ;STORE FEC, FEA FOR TYPING
004026  104001                          HLT+1                   ;R5 NOT EQUAL TO #ADR23
004030  000401                          BR      .+4             ;SKIP STFPS

004032     000                  TSA23:
004032  170200                          STFPS   FPS             ;STORE FLOATING POINT STATUS
004034  170367  174762                  STST    FEC             ;STORE EXCEPTION CODES
004040  022700  147740                  CMP     #147740,FPS     ;CHECK FLOATING POINT STATUS
004044  001401                          BEQ     .+4             ;BRANCH IF OK
004046  104000                          HLT                     ;FPS NOT EQUAL TO 147740

004050  022767  000002  174744          CMP     #02.    FEC     ;CHECK FLOATING EXCEPTION CODE
004056  001401                          BEQ     .+4             ;BRANCH IF OK
004060  104000                          HLT                     ;FEC NOT EQUAL TO 02

004062  022767  004004  174734          CMP     #FPI23, FEA     ;CHECK FLOATING EXCEPTION ADDRESS
004070  001401                          BEQ     .+4             ;BRANCH IF OK
004072  104000                          HLT                     ;FEA NOT EQUAL TO FPI23

004074  126727  174700  000023          CMPB    ICNT,   #23     ;CHECK FOR RIGHT TEST
004102  001401                          BEQ     .+4             ;BRANCH IF OK
004104  104000                          HLT                     ;PC JUMPED TESTS


                                ;*****************************************************************
                                ;TEST 24:       TEST STST (STORE STATUS, I.E. FEC (FLOATING EXCEPTION
                                ;                       CODES) AND FEA (FLOATING EXCEPTION ADDRESS)).
                                ;                       ALSO TEST ALL ILLEGAL INSTRUCTIONS.
                                ;       ILLEGAL INSTRUCTION = 170036
                                ;       FPS = 147740,   FEC = 02,       FEA = FPI24
                                ;*****************************************************************

004106  104400                          SCOPE
004110  000401                          BR      TST24           ;SKIP DATA

004112  001002                  ADR24:  ANS1

004114  170127  047740          TST24:  LDFPS   #047740         ;LOAD FLOATING POINT STATUS
004120  010667  174660                  MOV     %6,     ANS2    ;SAVE R6
004124  005746                          TST     -(%6)           ;SET UP THE STACK
004126  170036                  FPI24:  170036                  ;ILLEGAL INSTRUCTION
004130  020667  174650                  CMP     %6,     ANS2    ;CHECK R6
004134  001411                          BEQ     TSA24           ;BRANCH IF OK
004136  010667  174640                  MOV     %6,     ANS1    ;STORE R6 FOR TYPING
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004142  016706  174636                  MOV     ANS2,   %6      ;RESTORE R6
004146  170200                          STFPS   FPS             ;STORE FPS FOR TYPING
004150  170367  174646                  STST    FEC             ;STORE FEC, FEA FOR TYPING
004154  104002                          HLT+2                   ;R6 (ANS1) NOT EQUAL TO ANS2
004156  000401                          BR      .+4             ;SKIP STFPS

004160     000                  TSA24:
004160  170200                          STFPS   FPS             ;STORE FLOATING POINT STATUS
004162  170367  174634                  STST    FEC             ;STORE EXCEPTION CODES
004166  022700  147740                  CMP     #147740,FPS     ;CHECK FLOATING POINT STATUS
004172  001401                          BEQ     .+4             ;BRANCH IF OK
004174  104000                          HLT                     ;FPS NOT EQUAL TO 147740

004176  022767  000002  174616          CMP     #02.    FEC     ;CHECK FLOATING EXCEPTION CODE
004204  001401                          BEQ     .+4             ;BRANCH IF OK
004206  104000                          HLT                     ;FEC NOT EQUAL TO 02

004210  022767  004126  174608          CMP     #FPI24. FEA     ;CHECK FLOATING EXCEPTION ADDRESS
004216  001401                          BEQ     .+4             ;BRANCH IF OK
004220  104000                          HLT                     ;FEA NOT EQUAL TO FPI24

004222  126727  174552  000024          CMPB    ICNT.   #24     ;CHECK FOR RIGHT TEST
004230  001401                          BEQ     .+4             ;BRANCH IF OK
004232  104000                          HLT                     ;PC JUMPED TESTS


                        ;*******************************************************************
                        ;TEST 25:       TEST STST (STORE STATUS, I.E. FEC (FLOATING EXCEPTION
                        ;                       CODES) AND FEA (FLOATING EXCEPTION ADDRESS)).
                        ;                       ALSO TEST ALL ILLEGAL INSTRUCTIONS.
                        ;       ILLEGAL INSTRUCTION = 170037
                        ;       FPS = 147740,   FEC = 02,       FEA = FPI25
                        ;*******************************************************************

004234  104400                          SCOPE
004236  000401                          BR      TST25           ;SKIP DATA

004240  001002                  ADR25:  ANS1

004242  170127  047740          TST25:  LDFPS   #047740         ;LOAD FLOATING POINT STATUS
004246  170037                  FPI25:  170037                  ;ILLEGAL INSTRUCTION
004250  000000                          HALT                    ;PC NOT PROPERLY UPDATED
004252  170200                          STFPS   FPS             ;STORE FLOATING POINT STATUS
004254  170367  174542                  STST    FEC             ;STORE EXCEPTION CODES
004260  022700  147740                  CMP     #147740,FPS     ;CHECK FLOATING POINT STATUS
004264  001401                          BEQ     .+4             ;BRANCH IF OK
004266  104000                          HLT                     ;FPS NOT EQUAL TO 147740

004270  022767  000002  174524          CMP     #02.    FEC     ;CHECK FLOATING EXCEPTION CODE
004276  001401                          BEQ     .+4             ;BRANCH IF OK
004300  104000                          HLT                     ;FEC NOT EQUAL TO 02

004302  022767  004246  174514          CMP     #FPI25, FEA     ;CHECK FLOATING EXCEPTION ADDRESS
004310  001401                          BEQ     .+4             ;BRANCH IF OK
004312  104000                          HLT                     ;FEA NOT EQUAL TO FPI25
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004314  126727  174460  000025          CMPB    ICNT,   #25     ;CHECK FOR RIGHT TEST
004322  001401                          BEQ     .+4             ;BRANCH IF OK
004324  104000                          HLT                     ;PC JUMPED TESTS


                                ;*******************************************************************
                                ;TEST 26:       TEST STST (STORE STATUS, I.E. FEC (FLOATING EXCEPTION
                                ;                       CODES) AND FEA (FLOATING EXCEPTION ADDRESS)).
                                ;                       ALSO TEST ALL ILLEGAL INSTRUCTIONS.
                                ;       ILLEGAL INSTRUCTION = 170040
                                ;       FPS = 147740,   FEC = 02,       FEA = FPI26
                                ;*******************************************************************

004326  104400                          SCOPE
004330  000401                          BR      TST26           ;SKIP DATA

004332  001302                  ADR26:  ANS1

004334  170127  047740          TST26:  LDFPS   #047740         ;LOAD FLOATING POINT STATUS
004340  012700  004332                  MOV     #ADR26, R0      ;SET UP R0
004344  170040                  FPI26:  170040                  ;ILLEGAL INSTRUCTION
004346  022700  004332                  CMP     #ADR26, R0      ;CHECK R0
004352  001407                          BEQ     TSA26           ;BRANCH IF OK
004354  010067  174422                  MOV     R0,     ANS1    ;STORE R0 FOR TYPING
004360  170200                          STFPS   FPS             ;STORE FPS FOR TYPING
004362  170367  174434                  STST    FEC             ;STORE FEC, FEA FOR TYPING
004366  104001                          HLT+1                   ;R0 NOT EQUAL TO #ADR26
004370  000401                          BR      .+4             ;SKIP STFPS

004372     000                  TSA26:
004372  170200                          STFPS   FPS             ;STORE FLOATING POINT STATUS
004374  170367  174422                  STST    FEC             ;STORE EXCEPTION CODES
004400  022700  147740                  CMP     #147740,FPS     ;CHECK FLOATING POINT STATUS
004404  001401                          BEQ     .+4             ;BRANCH IF OK
004406  104000                          HLT                     ;FPS NOT EQUAL TO 147740

004410  022767  000002  174404          CMP     #02,    FEC     ;CHECK FLOATING EXCEPTION CODE
004416  001401                          BEQ     .+4             ;BRANCH IF OK
004420  104000                          HLT                     ;FEC NOT EQUAL TO 02

004422  022767  004344  174374          CMP     #FPI26, FEA     ;CHECK FLOATING EXCEPTION ADDRESS
004430  001401                          BEQ     .+4             ;BRANCH IF OK
004432  104000                          HLT                     ;FEA NOT EQUAL TO FPI26

004434  126727  174340  000026          CMPB    ICNT,   #26     ;CHECK FOR RIGHT TEST
004442  001401                          BEQ     .+4             ;BRANCH IF OK
004444  104000                          HLT                     ;PC JUMPED TESTS


                                ;*******************************************************************
                                ;TEST 27:       TEST STST (STORE STATUS, I.E. FEC (FLOATING EXCEPTION
                                ;                       CODES) AND FEA (FLOATING EXCEPTION ADDRESS)).
                                ;                       ALSO TEST ALL ILLEGAL INSTRUCTIONS.
                                ;       ILLEGAL INSTRUCTION = 170041
                                ;       FPS = 147740,   FEC = 02,       FEA = FPI27
                                ;*******************************************************************
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```
004446  104400                          SCOPE
004450  000401                          BR      TST27           ;SKIP DATA

004452  001002                  ADR27:  ANS1

004454  170127  047740          TST27:  LDFPS   #047740         ;LOAD FLOATING POINT STATUS
004460  012701  004456                  MOV     #ADR27+4,%1     ;SET UP R1
004464  170041                  FPI27:  170041                  ;ILLEGAL INSTRUCTION
004466  022701  004452                  CMP     #ADR27, %1      ;CHECK R1
004472  001407                          BEQ     TSA27           ;BRANCH IF OK
004474  010167  174302                  MOV     %1,     ANS1    ;STORE R1 FOR TYPING
004500  170200                          STFPS   FPS             ;STORE FPS FOR TYPING
004502  170367  174314                  STST    FEC             ;STORE FEC, FEA FOR TYPING
004506  104001                          HLT+1                   ;R1 NOT EQUAL TO #ADR27
004510  000401                          BR      .+4             ;SKIP STFPS

004512     000                  TSA27:
004512  170200                          STFPS   FPS             ;STORE FLOATING POINT STATUS
004514  170367  174302                  STST    FEC             ;STORE EXCEPTION CODES
004520  022700  147740                  CMP     #147740,FPS     ;CHECK FLOATING POINT STATUS
004524  001401                          BEQ     .+4             ;BRANCH IF OK
004526  104000                          HLT                     ;FPS NOT EQUAL TO 147740

004530  022767  000002  174264          CMP     #02,    FEC     ;CHECK FLOATING EXCEPTION CODE
004536  001401                          BEQ     .+4             ;BRANCH IF OK
004540  104000                          HLT                     ;FEC NOT EQUAL TO 02

004542  022767  004464  174254          CMP     #FPI27, FEA     ;CHECK FLOATING EXCEPTION ADDRESS
004550  001401                          BEQ     .+4             ;BRANCH IF OK
004552  104000                          HLT                     ;FEA NOT EQUAL TO FPI27

004554  126727  174220  000027          CMPB    ICNT,   #27     ;CHECK FOR RIGHT TEST
004562  001401                          BEQ     .+4             ;BRANCH IF OK
004564  104000                          HLT                     ;PC JUMPED TESTS


                                ;*******************************************************************
                                ;TEST 30:       TEST STST (STORE STATUS, I.E. FEC (FLOATING EXCEPTION
                                ;                       CODES) AND FEA (FLOATING EXCEPTION ADDRESS)).
                                ;                       ALSO TEST ALL ILLEGAL INSTRUCTIONS.
                                ;       ILLEGAL INSTRUCTION = 170042
                                ;       FPS = 147740,   FEC = 02,       FEA = FPI30
                                ;*******************************************************************

004566  104400                          SCOPE
004570  000401                          BR      TST30           ;SKIP DATA

004572  001002                  ADR30:  ANS1

004574  170127  047740          TST30:  LDFPS   #047740         ;LOAD FLOATING POINT STATUS
004600  012702  004576                  MOV     #ADR30+4,%2     ;SET UP R2
004604  170042                  FPI30:  170042                  ;ILLEGAL INSTRUCTION
004606  022702  004572                  CMP     #ADR30, %2      ;CHECK R2
004612  001407                          BEQ     TSA30           ;BRANCH IF OK
004614  010267  174162                  MOV     %2,     ANS1    ;STORE R2 FOR TYPING
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```
004620  170200                          STFPS   FPS             ;STORE FPS FOR TYPING
004622  170367  174174                  STST    FEC             ;STORE FEC, FEA FOR TYPING
004626  104001                          HLT+1                   ;R2 NOT EQUAL TO #ADR30
004630  000401                          BR      .+4             ;SKIP STFPS

004632     000                  TSA30:
004632  170200                          STFPS   FPS             ;STORE FLOATING POINT STATUS
004634  170367  174162                  STST    FEC             ;STORE EXCEPTION CODES
004640  022700  147740                  CMP     #147740,FPS     ;CHECK FLOATING POINT STATUS
004644  001401                          BEQ     .+4             ;BRANCH IF OK
004646  104000                          HLT                     ;FPS NOT EQUAL TO 147740

004650  022767  000002  174144          CMP     #02.    FEC     ;CHECK FLOATING EXCEPTION CODE
004656  001401                          BEQ     .+4             ;BRANCH IF OK
004660  104000                          HLT                     ;FEC NOT EQUAL TO 02

004662  022767  004604  174134          CMP     #FPI30. FEA     ;CHECK FLOATING EXCEPTION ADDRESS
004670  001401                          BEQ     .+4             ;BRANCH IF OK
004672  104000                          HLT                     ;FEA NOT EQUAL TO FPI30

004674  126727  174100  000030          CMPB    ICNT.   #30     ;CHECK FOR RIGHT TEST
004702  001401                          BEQ     .+4             ;BRANCH IF OK
004704  104000                          HLT                     ;PC JUMPED TESTS


                             ;*****************************************************************
                             ;TEST 31:      TEST STST (STORE STATUS, I.E. FEC (FLOATING EXCEPTION
                             ;                       CODES) AND FEA (FLOATING EXCEPTION ADDRESS) .
                             ;                       ALSO TEST ALL ILLEGAL INSTRUCTIONS.
                             ;       ILLEGAL INSTRUCTION = 170043
                             ;       FPS = 147740.   FEC = 02,       FEA = FPI31
                             ;*****************************************************************

004706  104400                          SCOPE
004710  000401                          BR      TST31           ;SKIP DATA

004712  001002               ADR31:     ANSI

004714  170127  047740       TST31:     LDFPS   #047740         ;LOAD FLOATING POINT STATUS
004720  012703  004712                  MOV     #ADR31, %3      ;SET UP R3
004724  170043               FPI31:     170043                  ;ILLEGAL INSTRUCTION
004726  022703  004712                  CMP     #ADR31, %3      ;CHECK R3
004732  001407                          BEQ     TSA31           ;BRANCH IF OK
004734  010367  174042                  MOV     %3,     ANSI    ;STORE R3 FOR TYPING
004740  170200                          STFPS   FPS             ;STORE FPS FOR TYPING
004742  170367  174054                  STST    FEC             ;STORE FEC, FEA FOR TYPING
004746  104001                          HLT+1                   ;R3 NOT EQUAL TO #ADR31
004750  000401                          BR      .+4             ;SKIP STFPS

004752     000               TSA31:
004752  170200                          STFPS   FPS             ;STORE FLOATING POINT STATUS
004754  170367  174042                  STST    FEC             ;STORE EXCEPTION CODES
004760  022700  147740.                 CMP     #147740,FPS     ;CHECK FLOATING POINT STATUS
004764  001401                          BEQ     .+4             ;BRANCH IF OK
004766  104000                          HLT                     ;FPS NOT EQUAL TO 147740
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```
004770  022767  000002  174024        CMP     #02.    FEC     ;CHECK FLOATING EXCEPTION CODE
004776  001401                        BEQ     .+4             ;BRANCH IF OK
005000  104000                        HLT                     ;FEC NOT EQUAL TO 02

005002  022767  004724  174014        CMP     #FPI31, FEA     ;CHECK FLOATING EXCEPTION ADDRESS
005010  001401                        BEQ     .+4             ;BRANCH IF OK
005012  104000                        HLT                     ;FEA NOT EQUAL TO FPI31

005014  126727  173760  000031        CMPB    ICNT.   #31     ;CHECK FOR RIGHT TEST
005022  001401                        BEQ     .+4             ;BRANCH IF OK
005024  104000                        HLT                     ;PC JUMPED TESTS


                                ;*******************************************************************
                                ;TEST 32:       TEST STST (STORE STATUS, I.E. FEC (FLOATING EXCEPTION
                                ;                       CODES) AND FEA (FLOATING EXCEPTION ADDRESS) .
                                ;                       ALSO TEST ALL ILLEGAL INSTRUCTIONS.
                                ;       ILLEGAL INSTRUCTION = 170044
                                ;       FPS = 147740,   FEC = 02,       FEA = FPI32
                                ;*******************************************************************

005026  104400                        SCOPE
005030  000401                        BR      TST32           ;SKIP DATA

005032  001002                  ADR32:  ANS1
005034  170127  047740          TST32:  LDFPS   #047740         ;LOAD FLOATING POINT STATUS
005040  012704  005032                  MOV     #ADR32, %4      ;SET UP R4
005044  170044                  FPI32:  170044                  ;ILLEGAL INSTRUCTION
005046  022704  005032                  CMP     #ADR32, %4      ;CHECK R4
005052  001407                          BEQ     TSA32           ;BRANCH IF OK
005054  010467  173722                  MOV     %4,     ANS1    ;STORE R4 FOR TYPING
005060  170200                          STFPS   FPS             ;STORE FPS FOR TYPING
005062  170367  173734                  STST    FEC             ;STORE FEC, FEA FOR TYPING
005066  104001                          HLT+1                   ;R4 NOT EQUAL TO #ADR32
005070  000401                          BR      .+4             ;SKIP STFPS

005072     000                  TSA32:
005072  170200                          STFPS   FPS             ;STORE FLOATING POINT STATUS
005074  170367  173722                  STST    FEC             ;STORE EXCEPTION CODES
005100  022700  147740                  CMP     #147740,FPS     ;CHECK FLOATING POINT STATUS
005104  001401                          BEQ     .+4             ;BRANCH IF OK
005106  104000                          HLT                     ;FPS NOT EQUAL TO 147740

005110  022767  000002  173704          CMP     #02.    FEC     ;CHECK FLOATING EXCEPTION CODE
005116  001401                          BEQ     .+4             ;BRANCH IF OK
005120  104000                          HLT                     ;FEC NOT EQUAL TO 02

005122  022767  005044  173674          CMP     #FPI32, FEA     ;CHECK FLOATING EXCEPTION ADDRESS .
005130  001401                          BEQ     .+4             ;BRANCH IF OK
005132  104000                          HLT                     ;FEA NOT EQUAL TO FPI32

005134  126727  173640  000032          CMPB    ICNT.   #32     ;CHECK FOR RIGHT TEST
005142  001401                          BEQ     .+4             ;BRANCH IF OK
005144  104000                          HLT                     ;PC JUMPED TESTS
```

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                                        ;*******************************************************************
                                        ;TEST 33:       TEST STST (STORE STATUS, I.E. FEC (FLOATING EXCEPTION
                                        ;                       CODES) AND FEA (FLOATING EXCEPTION ADDRESS)).
                                        ;                       ALSO TEST ALL ILLEGAL INSTRUCTIONS.
                                        ;       ILLEGAL INSTRUCTION = 170045
                                        ;       FPS = 147740,   FEC = 02,       FEA = FPI33
                                        ;*******************************************************************

005146  104400                                  SCOPE
005150  000421                                  BR      TST33           ;SKIP DATA

005152  001002                          ADR33:  ANS1

005154  170127  047740                  TST33:  LDFPS   #047740         ;LOAD FLOATING POINT STATUS
005160  012705  005152                          MOV     #ADR33, R5      ;SET UP R5
005164  170045                          FPI33:  170045                  ;ILLEGAL INSTRUCTION
005166  022705  005152                          CMP     #ADR33, R5      ;CHECK R5
005172  001407                                  BEQ     TSA33           ;BRANCH IF OK
005174  010567  173602                          MOV     R5,     ANS1    ;STORE R5 FOR TYPING
005200  170200                                  STFPS   FPS             ;STORE FPS FOR TYPING
005202  170367  173614                          STST    FEC             ;STORE FEC, FEA FOR TYPING
005206  104001                                  HLT+1                   ;R5 NOT EQUAL TO #ADR33
005210  000401                                  BR      .+4             ;SKIP STFPS

005212     000                          TSA33:
005212  170200                                  STFPS   FPS             ;STORE FLOATING POINT STATUS
005214  170367  173602                          STST    FEC             ;STORE EXCEPTION CODES
005220  022700  147740                          CMP     #147740,FPS     ;CHECK FLOATING POINT STATUS
005224  001401                                  BEQ     .+4             ;BRANCH IF OK
005226  104000                                  HLT                     ;FPS NOT EQUAL TO 147740

005230  022767  000002  173564                  CMP     #02,    FEC     ;CHECK FLOATING EXCEPTION CODE
005236  001401                                  BEQ     .+4             ;BRANCH IF OK
005240  104000                                  HLT                     ;FEC NOT EQUAL TO 02

005242  022767  005164  173554                  CMP     #FPI33, FEA     ;CHECK FLOATING EXCEPTION ADDRESS
005250  001401                                  BEQ     .+4             ;BRANCH IF OK
005252  104000                                  HLT                     ;FEA NOT EQUAL TO FPI33

005254  126727  173520  000033                  CMPB    ICNT,   #33     ;CHECK FOR RIGHT TEST
005262  001401                                  BEQ     .+4             ;BRANCH IF OK
005264  104000                                  HLT                     ;PC JUMPED TESTS

                                        ;*******************************************************************
                                        ;TEST 34:       TEST STST (STORE STATUS, I.E. FEC (FLOATING EXCEPTION
                                        ;                       CODES) AND FEA (FLOATING EXCEPTION ADDRESS)).
                                        ;                       ALSO TEST ALL ILLEGAL INSTRUCTIONS.
                                        ;       ILLEGAL INSTRUCTION = 170046
                                        ;       FPS = 147740,   FEC = 02,       FEA = FPI34
                                        ;*******************************************************************

005266  104400                                  SCOPE
005270  000421                                  BR      TST34           ;SKIP DATA
```

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005272  001002                  ADR34:  ANS1

005274  170127  047740          TST34:  LDFPS   #047740            ;LOAD FLOATING POINT STATUS
005300  010667  173500                  MOV     %6,     ANS2        ;SAVE R6
005304  170046                  FPI34:  170046                      ;ILLEGAL INSTRUCTION
005306  020667  173472                  CMP     %6,     ANS2        ;CHECK R6
005312  001411                          BEQ     TSA34               ;BRANCH IF OK
005314  010667  173462                  MOV     %6,     ANS1        ;STORE R6 FOR TYPING
005320  016706  173460                  MOV     ANS2,   %6          ;RESTORE R6
005324  170200                          STFPS   FPS                 ;STORE FPS FOR TYPING
005326  170367  173470                  STST    FEC                 ;STORE FEC, FEA FOR TYPING
005332  104002                          HLT+2                       ;R6 (ANS1) NOT EQUAL TO ANS2
005334  000401                          BR      .+4                 ;SKIP STFPS

005336     000                  TSA34:
005336  170200                          STFPS   FPS                 ;STORE FLOATING POINT STATUS
005340  170367  173456                  STST    FEC                 ;STORE EXCEPTION CODES
005344  022700  147740                  CMP     #147740,FPS         ;CHECK FLOATING POINT STATUS
005350  001401                          BEQ     .+4                 ;BRANCH IF OK
005352  104000                          HLT                         ;FPS NOT EQUAL TO 147740

005354  022767  000002  173440          CMP     #02,    FEC         ;CHECK FLOATING EXCEPTION CODE
005362  001401                          BEQ     .+4                 ;BRANCH IF OK
005364  104000                          HLT                         ;FEC NOT EQUAL TO 02

005366  022767  005304  173430          CMP     #FPI34, FEA         ;CHECK FLOATING EXCEPTION ADDRESS
005374  001401                          BEQ     .+4                 ;BRANCH IF OK
005376  104000                          HLT                         ;FEA NOT EQUAL TO FPI34

005400  126727  173374  000034          CMPB    ICNT,   #34         ;CHECK FOR RIGHT TEST
005406  001401                          BEQ     .+4                 ;BRANCH IF OK
005410  104000                          HLT                         ;PC JUMPED TESTS


                        ;*****************************************************************
                        ;TEST 35:       TEST STST (STORE STATUS, I.E. FEC (FLOATING EXCEPTION
                        ;                       CODES) AND FEA (FLOATING EXCEPTION ADDRESS) .
                        ;                       ALSO TEST ALL ILLEGAL INSTRUCTIONS.
                        ;       ILLEGAL INSTRUCTION = 170050
                        ;       FPS = 147740,   FEC = 02,       FEA = FPI35
                        ;*****************************************************************

005412  104400                          SCOPE
005414  000401                          BR      TST35               ;SKIP DATA

005416  001002                  ADR35:  ANS1

005420  170127  047740          TST35:  LDFPS   #047740             ;LOAD FLOATING POINT STATUS
005424  012700  005420                  MOV     #ADR35+2,%0         ;SET UP R0
005430  170050                  FPI35:  170050                      ;ILLEGAL INSTRUCTION
005432  022700  005416                  CMP     #ADR35, %0          ;CHECK R0
005436  001407                          BEQ     TSA35               ;BRANCH IF OK
005440  010067  173336                  MOV     %0,     ANS1        ;STORE R0 FOR TYPING
005444  170200                          STFPS   FPS                 ;STORE FPS FOR TYPING
005446  170367  173350                  STST    FEC                 ;STORE FEC, FEA FOR TYPING
005452  104001                          HLT+1                       ;R0 NOT EQUAL TO #ADR35
```

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005454  000401                          BR      .+4             ;SKIP STFPS

005456     000                  TSA35:
005456  170200                          STFPS   FPS             ;STORE FLOATING POINT STATUS
005460  170367  173336                  STST    FEC             ;STORE EXCEPTION CODES
005464  022700  147740                  CMP     #147740,FPS     ;CHECK FLOATING POINT STATUS
005470  001401                          BEQ     .+4             ;BRANCH IF OK
005472  104000                          HLT                     ;FPS NOT EQUAL TO 147740

005474  022767  000002  173320          CMP     #02,    FEC     ;CHECK FLOATING EXCEPTION CODE
005502  001401                          BEQ     .+4             ;BRANCH IF OK
005504  104000                          HLT                     ;FEC NOT EQUAL TO 02

005506  022767  005430  173310          CMP     #FPI35, FEA     ;CHECK FLOATING EXCEPTION ADDRESS
005514  001401                          BEQ     .+4             ;BRANCH IF OK
005516  104000                          HLT                     ;FEA NOT EQUAL TO FPI35

005520  126727  173254  000035          CMPB    ICNT,   #35     ;CHECK FOR RIGHT TEST
005526  001401                          BEQ     .+4             ;BRANCH IF OK
005530  104000                          HLT                     ;PC JUMPED TESTS


                                ;*****************************************************************
                                ;TEST 36:       TEST STST (STORE STATUS, I.E. FEC (FLOATING EXCEPTION
                                ;                       CODES) AND FEA (FLOATING EXCEPTION ADDRESS) .
                                ;                       ALSO TEST ALL ILLEGAL INSTRUCTIONS.
                                ;       ILLEGAL INSTRUCTION = 170051
                                ;       FPS = 147740,   FEC = 02,       FEA = FPI36
                                ;*****************************************************************

005532  104400                          SCOPE
005534  000401                          BR      TST36           ;SKIP DATA

005536  001002               ADR36:     ANSI

005540  170127  047740       TST36:     LDFPS   #047740         ;LOAD FLOATING POINT STATUS
005544  012701  005540                  MOV     #ADR36+2,%1     ;SET UP R1
005550  170051               FPI36:     170051                  ;ILLEGAL INSTRUCTION
005552  022701  005536                  CMP     #ADR36, %1      ;CHECK R1
005556  001407                          BEQ     TSA36           ;BRANCH IF OK
005560  010167  173216                  MOV     %1,     ANSI    ;STORE R1 FOR TYPING
005564  170200                          STFPS   FPS             ;STORE FPS FOR TYPING
005566  170367  173230                  STST    FEC             ;STORE FEC, FEA FOR TYPING
005572  104001                          HLT+1                   ;R1 NOT EQUAL TO #ADR36
005574  000401                          BR      .+4             ;SKIP STFPS

005576     000                  TSA36:
005576  170200                          STFPS   FPS             ;STORE FLOATING POINT STATUS
005600  170367  173216                  STST    FEC             ;STORE EXCEPTION CODES
005604  022700  147740                  CMP     #147740,FPS     ;CHECK FLOATING POINT STATUS
005610  001401                          BEQ     .+4             ;BRANCH IF OK
005612  104000                          HLT                     ;FPS NOT EQUAL TO 147740

005614  022767  000002  173200          CMP     #02,    FEC     ;CHECK FLOATING EXCEPTION CODE
005622  001401                          BEQ     .+4             ;BRANCH IF OK
005624  104000                          HLT                     ;FEC NOT EQUAL TO 02
```

```
005626  022767  005550  173170          CMP     #FPI36, FEA     ;CHECK FLOATING EXCEPTION ADDRESS
005634  001401                          BEQ     .+4             ;BRANCH IF OK
005636  104000                          HLT                     ;FEA NOT EQUAL TO FPI36

005640  126727  173134  000036          CMPB    ICNT,   #36     ;CHECK FOR RIGHT TEST
005646  001401                          BEQ     .+4             ;BRANCH IF OK
005650  104000                          HLT                     ;PC JUMPED TESTS


                                ;*******************************************************************
                                ;TEST 37:       TEST STST (STORE STATUS, I.E. FEC (FLOATING EXCEPTION
                                ;                       CODES) AND FEA (FLOATING EXCEPTION ADDRESS)).
                                ;                       ALSO TEST ALL ILLEGAL INSTRUCTIONS.
                                ;       ILLEGAL INSTRUCTION = 170052
                                ;       FPS = 147740,   FEC = 02,       FEA = FPI37
                                ;*******************************************************************

005652  104400                          SCOPE
005654  000401                          BR      TST37           ;SKIP DATA

005656  001002                  ADR37:  ANS1

005660  170127  047740          TST37:  LDFPS   #047740         ;LOAD FLOATING POINT STATUS
005664  012702  005660                  MOV     #ADR37+2,%2     ;SET UP R2
005670  170052                  FPI37:  170052                  ;ILLEGAL INSTRUCTION
005672  022702  005656                  CMP     #ADR37, %2      ;CHECK R2
005676  001407                          BEQ     TSA37           ;BRANCH IF OK
005700  010267  173076                  MOV     %2,     ANS1    ;STORE R2 FOR TYPING
005704  170200                          STFPS   FPS             ;STORE FPS FOR TYPING
005706  170367  173110                  STST    FEC             ;STORE FEC, FEA FOR TYPING
005712  104001                          HLT+1                   ;R2 NOT EQUAL TO #ADR37
005714  000401                          BR      .+4             ;SKIP STFPS

005716     000                  TSA37:
005716  170200                          STFPS   FPS             ;STORE FLOATING POINT STATUS
005720  170367  173076                  STST    FEC             ;STORE EXCEPTION CODES
005724  022700  147740                  CMP     #147740,FPS     ;CHECK FLOATING POINT STATUS
005730  001401                          BEQ     .+4             ;BRANCH IF OK
005732  104000                          HLT                     ;FPS NOT EQUAL TO 147740

005734  022767  000002  173060          CMP     #02,    FEC     ;CHECK FLOATING EXCEPTION CODE
005742  001401                          BEQ     .+4             ;BRANCH IF OK
005744  104000                          HLT                     ;FEC NOT EQUAL TO 02

005746  022767  005670  173050          CMP     #FPI37, FEA     ;CHECK FLOATING EXCEPTION ADDRESS
005754  001401                          BEQ     .+4             ;BRANCH IF OK
005756  104000                          HLT                     ;FEA NOT EQUAL TO FPI37

005760  126727  173014  000037          CMPB    ICNT,   #37     ;CHECK FOR RIGHT TEST
005766  001401                          BEQ     .+4             ;BRANCH IF OK
005770  104000                          HLT                     ;PC JUMPED TESTS


                                ;*******************************************************************
                                ;TEST 40:       TEST STST (STORE STATUS, I.E. FEC (FLOATING EXCEPTION
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                                        ;                       CODES) AND FEA (FLOATING EXCEPTION ADDRESS).
                                        ;                       ALSO TEST ALL ILLEGAL INSTRUCTIONS.
                                        ;       ILLEGAL INSTRUCTION = 170053
                                        ;       FPS = 147740,   FEC = 02,       FEA = FPI40
                                        ;*******************************************************************

005772  104400                                  SCOPE
005774  000401                                  BR      TST40           ;SKIP DATA

005776  001002                          ADR40:  ANS1

006000  170127  047740                  TST40:  LDFPS   #047740         ;LOAD FLOATING POINT STATUS
006004  012703  006000                          MOV     #ADR40+2,%3     ;SET UP R3
006010  170053                          FPI40:  170053                  ;ILLEGAL INSTRUCTION
006012  022703  005776                          CMP     #ADR40, %3      ;CHECK R3
006016  001407                                  BEQ     TSA40           ;BRANCH IF OK
006020  010367  172756                          MOV     %3,     ANS1    ;STORE R3 FOR TYPING
006024  170200                                  STFPS   FPS             ;STORE FPS FOR TYPING
006026  170367  172770                          STST    FEC             ;STORE FEC, FEA FOR TYPING
006032  104001                                  HLT+1                   ;R3 NOT EQUAL TO #ADR40
006034  000401                                  BR      .+4             ;SKIP STFPS

006036     000                          TSA40:
006036  170200                                  STFPS   FPS             ;STORE FLOATING POINT STATUS
006040  170367  172756                          STST    FEC             ;STORE EXCEPTION CODES
006044  022700  147740                          CMP     #147740,FPS     ;CHECK FLOATING POINT STATUS
006050  001401                                  BEQ     .+4             ;BRANCH IF OK
006052  104000                                  HLT                     ;FPS NOT EQUAL TO 147740

006054  022767  000002  172740                  CMP     #02.    FEC     ;CHECK FLOATING EXCEPTION CODE
006062  001401                                  BEQ     .+4             ;BRANCH IF OK
006064  104000                                  HLT                     ;FEC NOT EQUAL TO 02

006066  022767  006010  172730                  CMP     #FPI40, FEA     ;CHECK FLOATING EXCEPTION ADDRESS
006074  001401                                  BEQ     .+4             ;BRANCH IF OK
006076  104000                                  HLT                     ;FEA NOT EQUAL TO FPI40

006100  126727  172674  000040                  CMPB    ICNT,   #40     ;CHECK FOR RIGHT TEST
006106  001401                                  BEQ     .+4             ;BRANCH IF OK
006110  104000                                  HLT                     ;PC JUMPED TESTS


                                        ;*******************************************************************
                                        ;TEST 41:       TEST STST (STORE STATUS, I.E. FEC (FLOATING EXCEPTION
                                        ;                       CODES) AND FEA (FLOATING EXCEPTION ADDRESS) .
                                        ;                       ALSO TEST ALL ILLEGAL INSTRUCTIONS.
                                        ;       ILLEGAL INSTRUCTION = 170054
                                        ;       FPS = 147740,   FEC = 02.       FEA = FPI41
                                        ;*******************************************************************

006112  104400                                  SCOPE
006114  000401                                  BR      TST41           ;SKIP DATA

006116  001002                          ADR41:  ANS1

006120  170127  047740                  TST41:  LDFPS   #047740         ;LOAD FLOATING POINT STATUS
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006124  012704  006120                  MOV     #ADR41+2,%4     ;SET UP R4
006130  170054                  FPI41:  170054                  ;ILLEGAL INSTRUCTION
006132  022704  006116                  CMP     #ADR41, %4      ;CHECK R4
006136  001407                          BEQ     TSA41           ;BRANCH IF OK
006140  010467  172536                  MOV     %4,     ANS1    ;STORE R4 FOR TYPING
006144  170200                          STFPS   FPS             ;STORE FPS FOR TYPING
006146  170367  172650                  STST    FEC             ;STORE FEC, FEA FOR TYPING
006152  104001                          HLT+1                   ;R4 NOT EQUAL TO #ADR41
006154  000401                          BR      .+4             ;SKIP STFPS

006156     000                  TSA41:
006156  170200                          STFPS   FPS             ;STORE FLOATING POINT STATUS
006160  170367  172636                  STST    FEC             ;STORE EXCEPTION CODES
006164  022700  147740                  CMP     #147740,FPS     ;CHECK FLOATING POINT STATUS
006170  001401                          BEQ     .+4             ;BRANCH IF OK
006172  104000                          HLT                     ;FPS NOT EQUAL TO 147740

006174  022767  000002  172620          CMP     #02,    FEC     ;CHECK FLOATING EXCEPTION CODE
006202  001401                          BEQ     .+4             ;BRANCH IF OK
006204  104000                          HLT                     ;FEC NOT EQUAL TO 02

006206  022767  006130  172610          CMP     #FPI41, FEA     ;CHECK FLOATING EXCEPTION ADDRESS
006214  001401                          BEQ     .+4             ;BRANCH IF OK
006216  104000                          HLT                     ;FEA NOT EQUAL TO FPI41

006220  126727  172554  000041          CMPB    ICNT,   #41     ;CHECK FOR RIGHT TEST
006226  001401                          BEQ     .+4             ;BRANCH IF OK
006230  104000                          HLT                     ;PC JUMPED TESTS

                                ;*******************************************************************
                                ;TEST 42:       TEST STST (STORE STATUS, I.E. FEC (FLOATING EXCEPTION
                                ;                       CODES) AND FEA (FLOATING EXCEPTION ADDRESS)).
                                ;                       ALSO TEST ALL ILLEGAL INSTRUCTIONS.
                                ;       ILLEGAL INSTRUCTION = 170055
                                ;       FPS = 147740,   FEC = 02,       FEA = FPI42
                                ;*******************************************************************

006232  104400                          SCOPE
006234  000401                          BR      TST42           ;SKIP DATA

006236  001002                  ADR42:  ANS1

006240  170127  047740          TST42:  LDFPS   #047740         ;LOAD FLOATING POINT STATUS
006244  012705  006240                  MOV     #ADR42+2,%5     ;SET UP R5
006250  170055                  FPI42:  170055                  ;ILLEGAL INSTRUCTION
006252  022705  006236                  CMP     #ADR42, %5      ;CHECK R5
006256  001407                          BEQ     TSA42           ;BRANCH IF OK
006260  010567  172516                  MOV     %5,     ANS1    ;STORE R5 FOR TYPING
006264  170200                          STFPS   FPS             ;STORE FPS FOR TYPING
006266  170367  172530                  STST    FEC             ;STORE FEC, FEA FOR TYPING
006272  104001                          HLT+1                   ;R5 NOT EQUAL TO #ADR42
006274  000401                          BR      .+4             ;SKIP STFPS

006276     000                  TSA42:
006276  170200                          STFPS   FPS             ;STORE FLOATING POINT STATUS
```

```
006300  170367  172516                  STST    FEC                 ;STORE EXCEPTION CODES
006304  022700  147740                  CMP     #147740,FPS         ;CHECK FLOATING POINT STATUS
006310  001401                          BEQ     .+4                 ;BRANCH IF OK
006312  104000                          HLT                         ;FPS NOT EQUAL TO 147740

006314  022767  000002  172500          CMP     #02,    FEC         ;CHECK FLOATING EXCEPTION CODE
006322  001401                          BEQ     .+4                 ;BRANCH IF OK
006324  104000                          HLT                         ;FEC NOT EQUAL TO 02

006326  022767  006250  172470          CMP     #FPI42, FEA         ;CHECK FLOATING EXCEPTION ADDRESS
006334  001401                          BEQ     .+4                 ;BRANCH IF OK
006336  104000                          HLT                         ;FEA NOT EQUAL TO FPI42

006340  126727  172434  000042          CMPB    ICNT,   #42         ;CHECK FOR RIGHT TEST
006346  001401                          BEQ     .+4                 ;BRANCH IF OK
006350  104000                          HLT                         ;PC JUMPED TESTS


                                ;*******************************************************************
                                ;TEST 43:       TEST STST (STORE STATUS, I.E. FEC (FLOATING EXCEPTION
                                ;                       CODES) AND FEA (FLOATING EXCEPTION ADDRESS)).
                                ;                       ALSO TEST ALL ILLEGAL INSTRUCTIONS.
                                ;       ILLEGAL INSTRUCTION = 170056
                                ;       FPS = 147740,   FEC = 02,       FEA = FPI43
                                ;*******************************************************************

006352  104400                          SCOPE
006354  000401                          BR      TST43               ;SKIP DATA

006356  001002                  ADR43:  ANS1

006360  170127  047740          TST43:  LDFPS   #047740             ;LOAD FLOATING POINT STATUS
006364  010667  172414                  MOV     %6,     ANS2        ;SAVE R6
006370  170056                  FPI43:  170056                      ;ILLEGAL INSTRUCTION
006372  005726                          TST     (%6)+               ;RESTORE THE STACK
006374  020667  172404                  CMP     %6,     ANS2        ;CHECK R6
006400  001411                          BEQ     TSA43               ;BRANCH IF OK
006402  010667  172374                  MOV     %6,     ANS1        ;STORE R6 FOR TYPING
006406  016706  172372                  MOV     ANS2,   %6          ;RESTORE R6
006412  170200                          STFPS   FPS                 ;STORE FPS FOR TYPING
006414  170367  172402                  STST    FEC                 ;STORE FEC, FEA FOR TYPING
006420  104002                          HLT+2                       ;R6 (ANS1) NOT EQUAL TO ANS2
006422  000401                          BR      .+4                 ;SKIP STFPS

006424     000                  TSA43:
006424  170200                          STFPS   FPS                 ;STORE FLOATING POINT STATUS
006426  170367  172370                  STST    FEC                 ;STORE EXCEPTION CODES
006432  022700  147740                  CMP     #147740,FPS         ;CHECK FLOATING POINT STATUS
006436  001401                          BEQ     .+4                 ;BRANCH IF OK
006440  104000                          HLT                         ;FPS NOT EQUAL TO 147740

006442  022767  000002  172352          CMP     #02,    FEC         ;CHECK FLOATING EXCEPTION CODE
006450  001401                          BEQ     .+4                 ;BRANCH IF OK
006452  104000                          HLT                         ;FEC NOT EQUAL TO 02

006454  022767  006370  172342          CMP     #FPI43, FEA         ;CHECK FLOATING EXCEPTION ADDRESS
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006462  001401                          BEQ     .+4             ;BRANCH IF OK
006464  104000                          HLT                     ;FEA NOT EQUAL TO FPI43

006466  126727  172306  000043          CMPB    ICNT,   #43     ;CHECK FOR RIGHT TEST
006474  001401                          BEQ     .+4             ;BRANCH IF OK
006476  104000                          HLT                     ;PC JUMPED TESTS


                                ;*******************************************************************
                                ;TEST 44:       TEST STST (STORE STATUS, I.E. FEC (FLOATING EXCEPTION
                                ;                       CODES) AND FEA (FLOATING EXCEPTION ADDRESS)).
                                ;                       ALSO TEST ALL ILLEGAL INSTRUCTIONS.
                                ;       ILLEGAL INSTRUCTION = 170060
                                ;       FPS = 147740,   FEC = 02,       FEA = FPI44
                                ;*******************************************************************

006500  104400                          SCOPE
006502  000401                          BR      TST44           ;SKIP DATA

006504  001002                  ADR44:  ANS1

006506  170127  047740          TST44:  LDFPS   #047740         ;LOAD FLOATING POINT STATUS
006512  012700  006504                  MOV     #ADR44, %0      ;SET UP R0
006516  170060                  FPI44:  170060                  ;ILLEGAL INSTRUCTION
006520  000000                          HALT                    ;INDEX VALUE OF 0 GOT EXICUTED
006522  022700  006504                  CMP     #ADR44, %0      ;CHECK R0
006526  001407                          BEQ     TSA44           ;BRANCH IF OK
006530  010067  172246                  MOV     %0,     ANS1    ;STORE R0 FOR TYPING
006534  170200                          STFPS   FPS             ;STORE FPS FOR TYPING
006536  170367  172260                  STST    FEC             ;STORE FEC, FEA FOR TYPING
006542  104001                          HLT+1                   ;R0 NOT EQUAL TO #ADR44
006544  000401                          BR      .+4             ;SKIP STFPS

006546     000                  TSA44:
006546  170200                          STFPS   FPS             ;STORE FLOATING POINT STATUS
006550  170367  172246                  STST    FEC             ;STORE EXCEPTION CODES
006554  022700  147740                  CMP     #147740,FPS     ;CHECK FLOATING POINT STATUS
006560  001401                          BEQ     .+4             ;BRANCH IF OK
006562  104000                          HLT                     ;FPS NOT EQUAL TO 147740

006564  022767  000002  172230          CMP     #02,    FEC     ;CHECK FLOATING EXCEPTION CODE
006572  001401                          BEQ     .+4             ;BRANCH IF OK
006574  104000                          HLT                     ;FEC NOT EQUAL TO 02

006576  022767  006516  172220          CMP     #FPI44, FEA     ;CHECK FLOATING EXCEPTION ADDRESS
006604  001401                          BEQ     .+4             ;BRANCH IF OK
006606  104000                          HLT                     ;FEA NOT EQUAL TO FPI44

006610  126727  172164  000044          CMPB    ICNT,   #44     ;CHECK FOR RIGHT TEST
006616  001401                          BEQ     .+4             ;BRANCH IF OK
006620  104000                          HLT                     ;PC JUMPED TESTS


                                ;*******************************************************************
                                ;TEST 45:       TEST STST (STORE STATUS, I.E. FEC (FLOATING EXCEPTION
                                ;                       CODES) AND FEA (FLOATING EXCEPTION ADDRESS)).
```

```
                                ;                       ALSO TEST ALL ILLEGAL INSTRUCTIONS.
                                ;       ILLEGAL INSTRUCTION = 170061
                                ;       FPS = 147740,   FEC = 02,       FEA = FPI45
                                ;*******************************************************************

006622  104400                          SCOPE
006624  000401                          BR      TST45           ;SKIP DATA

006626  001002                  ADR45:  ANS1

006630  170127  047740          TST45:  LDFPS   #047740         ;LOAD FLOATING POINT STATUS
006634  012701  006626                  MOV     #ADR45, %1      ;SET UP R1
006640  170061                  FPI45:  170061                  ;ILLEGAL INSTRUCTION
006642  000000                          HALT                    ;INDEX VALUE OF 0 GOT EXICUTED
006644  022701  006626                  CMP     #ADR45, %1      ;CHECK R1
006650  001407                          BEQ     TSA45           ;BRANCH IF OK
006652  010167  172124                  MOV     %1,     ANS1    ;STORE R1 FOR TYPING
006656  170200                          STFPS   FPS             ;STORE FPS FOR TYPING
006660  170367  172136                  STST    FEC             ;STORE FEC, FEA FOR TYPING
006664  104001                          HLT+1                   ;R1 NOT EQUAL TO #ADR45
006666  000401                          BR      .+4             ;SKIP STFPS

006670     000                  TSA45:
006670  170200                          STFPS   FPS             ;STORE FLOATING POINT STATUS
006672  170367  172124                  STST    FEC             ;STORE EXCEPTION CODES
006676  022700  147740                  CMP     #147740,FPS     ;CHECK FLOATING POINT STATUS
006702  001401                          BEQ     .+4             ;BRANCH IF OK
006704  104000                          HLT                     ;FPS NOT EQUAL TO 147740

006706  022767  000002  172106          CMP     #02,    FEC     ;CHECK FLOATING EXCEPTION CODE
006714  001401                          BEQ     .+4             ;BRANCH IF OK
006716  104000                          HLT                     ;FEC NOT EQUAL TO 02

006720  022767  006640  172076          CMP     #FPI45, FEA     ;CHECK FLOATING EXCEPTION ADDRESS
006726  001401                          BEQ     .+4             ;BRANCH IF OK
006730  104000                          HLT                     ;FEA NOT EQUAL TO FPI45

006732  126727  172042  000045          CMPB    ICNT,   #45     ;CHECK FOR RIGHT TEST
006740  001401                          BEQ     .+4             ;BRANCH IF OK
006742  104000                          HLT                     ;PC JUMPED TESTS


                                ;*******************************************************************
                                ;TEST 46:       TEST STST (STORE STATUS, I.E. FEC (FLOATING EXCEPTION
                                ;                       CODES  AND FEA (FLOATING EXCEPTION ADDRESS)).
                                ;                       ALSO TEST ALL ILLEGAL INSTRUCTIONS.
                                ;       ILLEGAL INSTRUCTION = 170062
                                ;       FPS = 147740,   FEC = 02,       FEA = FPI46
                                ;*******************************************************************

006744  104400                          SCOPE
006746  000401                          BR      TST46           ;SKIP DATA

006750  001002                  ADR46   ANS1

006752  170127  047740          TST46:  LDFPS   #047740         ;LOAD FLOATING POINT STATUS
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006756  012702  006750                 MOV     #ADR46, %2      ;SET UP R2
006762  170062                  FPI46:  170062                  ;ILLEGAL INSTRUCTION
006764  000000                          HALT                    ;INDEX VALUE OF 0 GOT EXECUTED
006766  022702  006750                  CMP     #ADR46, %2      ;CHECK R2
006772  001407                          BEQ     TSA46           ;BRANCH IF OK
006774  010267  172002                  MOV     %2,     ANS1    ;STORE R2 FOR TYPING
007000  170200                          STFPS   FPS             ;STORE FPS FOR TYPING
007002  170367  172014                  STST    FEC             ;STORE FEC, FEA FOR TYPING
007006  104001                          HLT+1                   ;R2 NOT EQUAL TO #ADR46
007010  000401                          BR      .+4             ;SKIP STFPS

007012     000                  TSA46:
007012  170200                          STFPS   FPS             ;STORE FLOATING POINT STATUS
007014  170367  172002                  STST    FEC             ;STORE EXCEPTION CODES
007020  022700  147740                  CMP     #147740,FPS     ;CHECK FLOATING POINT STATUS
007024  001401                          BEQ     .+4             ;BRANCH IF OK
007026  104000                          HLT                     ;FPS NOT EQUAL TO 147740

007030  022767  000002  171764          CMP     #02.    FEC     ;CHECK FLOATING EXCEPTION CODE
007036  001401                          BEQ     .+4             ;BRANCH IF OK
007040  104000                          HLT                     ;FEC NOT EQUAL TO 02

007042  022767  006762  171754          CMP     #FPI46, FEA     ;CHECK FLOATING EXCEPTION ADDRESS
007050  001401                          BEQ     .+4             ;BRANCH IF OK
007052  104000                          HLT                     ;FEA NOT EQUAL TO FPI46

007054  126727  171720  000046          CMPB    ICNT.   #46     ;CHECK FOR RIGHT TEST
007062  001401                          BEQ     .+4             ;BRANCH IF OK
007064  104000                          HLT                     ;PC JUMPED TESTS


                                ;*****************************************************************
                                ;TEST 47:       TEST STST (STORE STATUS, I.E. FEC (FLOATING EXCEPTION
                                ;                       CODES) AND FEA (FLOATING EXCEPTION ADDRESS)).
                                ;                       ALSO TEST ALL ILLEGAL INSTRUCTIONS.
                                ;       ILLEGAL INSTRUCTION = 170063
                                ;       FPS = 147740,   FEC = 02,       FEA = FPI47
                                ;*****************************************************************

007066  104400                          SCOPE
007070  000401                          BR      TST47           ;SKIP DATA

007072  001002                  ADR47:  ANS1

007074  170127  047740          TST47:  LDFPS   #047740         ;LOAD FLOATING POINT STATUS
007100  012703  007072                  MOV     #ADR47, %3      ;SET UP R3
007104  170063                  FPI47:  170063                  ;ILLEGAL INSTRUCTION
007106  000000                          HALT                    ;INDEX VALUE OF 0 GOT EXECUTED
007110  022703  007072                  CMP     #ADR47, %3      ;CHECK R3
007114  001407                          BEQ     TSA47           ;BRANCH IF OK
007116  010367  171660                  MOV     %3,     ANS1    ;STORE R3 FOR TYPING
007122  170200                          STFPS   FPS             ;STORE FPS FOR TYPING
007124  170367  171672                  STST    FEC             ;STORE FEC, FEA FOR TYPING
007130  104001                          HLT+1                   ;R3 NOT EQUAL TO #ADR47
007132  000401                          BR      .+4             ;SKIP STFPS
```

```
007134     000                          TSA47:
007134  170200                                  STFPS   FPS                 ;STORE FLOATING POINT STATUS
007136  170367  171660                          STST    FEC                 ;STORE EXCEPTION CODES
007142  022700  147740                          CMP     #147740,FPS         ;CHECK FLOATING POINT STATUS
007146  001401                                  BEQ     .+4                 ;BRANCH IF OK
007150  104000                                  HLT                         ;FPS NOT EQUAL TO 147740

007152  022767  000002  171642                  CMP     #02.    FEC         ;CHECK FLOATING EXCEPTION CODE
007160  001401                                  BEQ     .+4                 ;BRANCH IF OK
007162  104000                                  HLT                         ;FEC NOT EQUAL TO 02

007164  022767  007104  171632                  CMP     #FPI47, FEA         ;CHECK FLOATING EXCEPTION ADDRESS
007172  001401                                  BEQ     .+4                 ;BRANCH IF OK
007174  104000                                  HLT                         ;FEA NOT EQUAL TO FPI47

007176  126727  171576  000047                  CMPB    ICNT.   #47         ;CHECK FOR RIGHT TEST
007204  001401                                  BEQ     .+4                 ;BRANCH IF OK
007206  104000                                  HLT                         ;PC JUMPED TESTS


                                        ;*****************************************************************
                                        ;TEST 50:       TEST STST (STORE STATUS, I.E. FEC (FLOATING EXCEPTION
                                        ;                       CODES) AND FEA (FLOATING EXCEPTION ADDRESS)).
                                        ;                       ALSO TEST ALL ILLEGAL INSTRUCTIONS.
                                        ;       ILLEGAL INSTRUCTION = 170064
                                        ;       FPS = 147740,   FEC = 02.       FEA = FPI50
                                        ;*****************************************************************

007210  104400                                  SCOPE
007212  000401                                  BR      TST50               ;SKIP DATA

007214  001002                          ADR50:  ANS1

007216  170127  047740                  TST50:  LDFPS   #047740             ;LOAD FLOATING POINT STATUS
007222  012704  007214                          MOV     #ADR50, %4          ;SET UP R4
007226  170064                          FPI50:  170064                      ;ILLEGAL INSTRUCTION
007230  000000                                  HALT                        ;INDEX VALUE OF 0 GOT EXECUTED
007232  022704  007214                          CMP     #ADR50, %4          ;CHECK R4
007236  001407                                  BEQ     TSA50               ;BRANCH IF OK
007240  010467  171536                          MOV     %4      ANS1        ;STORE R4 FOR TYPING
007244  170200                                  STFPS   FPS                 ;STORE FPS FOR TYPING
007246  170367  171550                          STST    FEC                 ;STORE FEC, FEA FOR TYPING
007252  104001                                  HLT+1                       ;R4 NOT EQUAL TO #ADR50
007254  000401                                  BR      .+4                 ;SKIP STFPS

007256     000                          TSA50:
007256  170200                                  STFPS   FPS                 ;STORE FLOATING POINT STATUS
007260  170367  171536                          STST    FEC                 ;STORE EXCEPTION CODES
007264  022700  147740                          CMP     #147740,FPS         ;CHECK FLOATING POINT STATUS
007270  001401                                  BEQ     .+4                 ;BRANCH IF OK
007272  104000                                  HLT                         ;FPS NOT EQUAL TO 147740

007274  022767  000002  171520                  CMP     #02.    FEC         ;CHECK FLOATING EXCEPTION CODE
007302  001401                                  BEQ     .+4                 ;BRANCH IF OK
007304  104000                                  HLT                         ;FEC NOT EQUAL TO 02
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007306  022767  007226  171510          CMP     #FPI50, FEA     ;CHECK FLOATING EXCEPTION ADDRESS
007314  001401                          BEQ     .+4             ;BRANCH IF OK
007316  104000                          HLT                     ;FEA NOT EQUAL TO FPI50

007320  126727  171454  000050          CMPB    ICNT,   #50     ;CHECK FOR RIGHT TEST
007326  001401                          BEQ     .+4             ;BRANCH IF OK
007330  104000                          HLT                     ;PC JUMPED TESTS


                                ;*******************************************************************
                                ;TEST 51:       TEST STST (STORE STATUS, I.E. FEC (FLOATING EXCEPTION
                                ;                       CODES) AND FEA (FLOATING EXCEPTION ADDRESS).
                                ;                       ALSO TEST ALL ILLEGAL INSTRUCTIONS.
                                ;       ILLEGAL INSTRUCTION = 170065
                                ;       FPS = 147740,   FEC = 02,       FEA = FPI51
                                ;*******************************************************************

007332  104400                          SCOPE
007334  000401                          BR      TST51           ;SKIP DATA

007336  001002                  ADR51:  ANS1

007340  170127  047740          TST51:  LDFPS   #047740         ;LOAD FLOATING POINT STATUS
007344  012705  007336                  MOV     #ADR51, %5      ;SET UP R5
007350  170065                  FPI51:  170065                  ;ILLEGAL INSTRUCTION
007352  000000                          HALT                    ;INDEX VALUE OF 0 GOT EXECUTED
007354  022705  007336                  CMP     #ADR51, %5      ;CHECK R5
007360  001407                          BEQ     TSAS1           ;BRANCH IF OK
007362  010567  171414                  MOV     %5,     ANS1    ;STORE R5 FOR TYPING
007366  170200                          STFPS   FPS             ;STORE FPS FOR TYPING
007370  170367  171426                  STST    FEC             ;STORE FEC, FEA FOR TYPING
007374  104001                          HLT+1                   ;R5 NOT EQUAL TO #ADR51
007376  000401                          BR      .+4             ;SKIP STFPS

007400     000                  TSAS1:
007400  170200                          STFPS   FPS             ;STORE FLOATING POINT STATUS
007402  170367  171414                  STST    FEC             ;STORE EXCEPTION CODES
007406  022700  147740                  CMP     #147740,FPS     ;CHECK FLOATING POINT STATUS
007412  001401                          BEQ     .+4             ;BRANCH IF OK
007414  104000                          HLT                     ;FPS NOT EQUAL TO 147740

007416  022767  000002  171375          CMP     #02.    FEC     ;CHECK FLOATING EXCEPTION CODE
007424  001401                          BEQ     .+4             ;BRANCH IF OK
007426  104000                          HLT                     ;FEC NOT EQUAL TO 02

007430  022767  007350  171366          CMP     #FPI51, FEA     ;CHECK FLOATING EXCEPTION ADDRESS
007436  001401                          BEQ     .+4             ;BRANCH IF OK
007440  104000                          HLT                     ;FEA NOT EQUAL TO FPI51

007442  126727  171332  000051          CMPB    ICNT,   #51     ;CHECK FOR RIGHT TEST
007450  001401                          BEQ     .+4             ;BRANCH IF OK
007452  104000                          HLT                     ;PC JUMPED TESTS


                                ;*******************************************************************
                                ;TEST 52:       TEST STST (STORE STATUS, I.E. FEC (FLOATING EXCEPTION
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                                        ;                       CODES) AND FEA (FLOATING EXCEPTION ADDRESS...
                                        ;                       ALSO TEST ALL ILLEGAL INSTRUCTIONS.
                                        ;       ILLEGAL INSTRUCTION = 170066
                                        ;       FPS = 147740,   FEC = 02,       FEA = FPIS2
                                        ;*******************************************************************

007454  104400                                  SCOPE
007456  000401                                  BR      TST52           ;SKIP DATA

007460  001002                          ADR52:  ANS1

007462  170127  047740                  TST52:  LDFPS   #047740         ;LOAD FLOATING POINT STATUS
007466  010667  171312                          MOV     %6,     ANS2    ;SAVE R6
007472  170066                          FPIS2:  170066                  ;ILLEGAL INSTRUCTION
007474  000000                                  HALT                    ;INDEX VALUE OF 0 GOT EXECUTED
007476  020667  171302                          CMP     %6,     ANS2    ;CHECK R6
007502  001411                                  BEQ     TSAS2           ;BRANCH IF OK
007504  010667  171272                          MOV     %6,     ANS1    ;STORE R6 FOR TYPING
007510  016706  171270                          MOV     ANS2,   %6      ;RESTORE R6
007514  170200                                  STFPS   FPS             ;STORE FPS FOR TYPING
007516  170367  171300                          STST    FEC             ;STORE FEC, FEA FOR TYPING
007522  104002                                  HLT+2                   ;R6 (ANS1) NOT EQUAL TO ANS2
007524  000401                                  BR      .+4             ;SKIP STFPS

007526     000                          TSAS2:
007526  170200                                  STFPS   FPS             ;STORE FLOATING POINT STATUS
007530  170367  171266                          STST    FEC             ;STORE EXCEPTION CODES
007534  022700  147740                          CMP     #147740,FPS     ;CHECK FLOATING POINT STATUS
007540  001401                                  BEQ     .+4             ;BRANCH IF OK
007542  104000                                  HLT                     ;FPS NOT EQUAL TO 147740

007544  022767  000002  171250                  CMP     #02,    FEC     ;CHECK FLOATING EXCEPTION CODE
007552  001401                                  BEQ     .+4             ;BRANCH IF OK
007554  104000                                  HLT                     ;FEC NOT EQUAL TO 02

007556  022767  007472  171240                  CMP     #FPIS2, FEA     ;CHECK FLOATING EXCEPTION ADDRESS
007564  001401                                  BEQ     .+4             ;BRANCH IF OK
007566  104000                                  HLT                     ;FEA NOT EQUAL TO FPIS2

007570  126727  171204  000052                  CMPB    ICNT,   #52     ;CHECK FOR RIGHT TEST
007576  001401                                  BEQ     .+4             ;BRANCH IF OK
007600  104000                                  HLT                     ;PC JUMPED TESTS


                                        ;*******************************************************************
                                        ;TEST 53:               TEST STST (STORE STATUS, I.E. FEC (FLOATING EXCEPTION
                                        ;                       CODES) AND FEA (FLOATING EXCEPTION ADDRESS)...
                                        ;                       ALSO TEST ALL ILLEGAL INSTRUCTIONS.
                                        ;       ILLEGAL INSTRUCTION = 170067
                                        ;       FPS = 147740,   FEC = 02,       FEA = FPIS3
                                        ;*******************************************************************

007602  104400                                  SCOPE
007604  000401                                  BR      TST53           ;SKIP DATA

007606  001002                          ADR53:  ANS1
```

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007610  170127  047740          TST53:  LDFPS   #047740          ;LOAD FLOATING POINT STATUS
007614  170067                  FPI53:  170067                   ;ILLEGAL INSTRUCTION
007616  000000                          HALT                     ;INDEX VALUE OF 0 GOT EXECUTED
007620  170200                          STFPS   FPS              ;STORE FLOATING POINT STATUS
007622  170367  171174                  STST    FEC              ;STORE EXCEPTION CODES
007626  022700  147740                  CMP     #147740,FPS      ;CHECK FLOATING POINT STATUS
007632  001401                          BEQ     .+4              ;BRANCH IF OK
007634  104000                          HLT                      ;FPS NOT EQUAL TO 147740

007636  022767  000002  171156          CMP     #02,    FEC      ;CHECK FLOATING EXCEPTION CODE
007644  001401                          BEQ     .+4              ;BRANCH IF OK
007646  104000                          HLT                      ;FEC NOT EQUAL TO 02

007650  022767  007614  171146          CMP     #FPI53, FEA      ;CHECK FLOATING EXCEPTION ADDRESS
007656  001401                          BEQ     .+4              ;BRANCH IF OK
007660  104000                          HLT                      ;FEA NOT EQUAL TO FPI53

007662  126727  171112  000053          CMPB    IONT,   #53      ;CHECK FOR RIGHT TEST
007670  001401                          BEQ     .+4              ;BRANCH IF OK
007672  104000                          HLT                      ;PC JUMPED TESTS


                                ;*****************************************************************
                                ;TEST 54:       TEST STST (STORE STATUS, I.E. FEC (FLOATING EXCEPTION
                                ;                       CODES) AND FEA (FLOATING EXCEPTION ADDRESS).
                                ;                       ALSO TEST ALL ILLEGAL INSTRUCTIONS.
                                ;       ILLEGAL INSTRUCTION = 170070
                                ;       FPS = 147740,   FEC = 02.       FEA = FPI54
                                ;*****************************************************************

007674  104400                          SCOPE
007676  000401                          BR      TST54            ;SKIP DATA

007700  001002                  ADR54:  ANS1

007702  170127  047740          TST54:  LDFPS   #047740          ;LOAD FLOATING POINT STATUS
007706  012700  007700                  MOV     #ADR54, %0       ;SET UP R0
007712  170070                  FPI54:  170070                   ;ILLEGAL INSTRUCTION
007714  000000                          HALT                     ;INDEX VALUE OF 0 GOT EXECUTED
007716  022700  007700                  CMP     #ADR54, %0       ;CHECK R0
007722  001407                          BEQ     TSA54            ;BRANCH IF OK
007724  010067  171052                  MOV     %0,     ANS1     ;STORE R0 FOR TYPING
007730  170200                          STFPS   FPS              ;STORE FPS FOR TYPING
007732  170367  171064                  STST    FEC              ;STORE FEC, FEA FOR TYPING
007736  104001                          HLT+1                    ;R0 NOT EQUAL TO #ADR54
007740  000401                          BR      .+4              ;SKIP STFPS

007742     000                  TSA54:
007742  170200                          STFPS   FPS              ;STORE FLOATING POINT STATUS
007744  170367  171052                  STST    FEC              ;STORE EXCEPTION CODES
007750  022700  147740                  CMP     #147740,FPS      ;CHECK FLOATING POINT STATUS
007754  001401                          BEQ     .+4              ;BRANCH IF OK
007756  104000                          HLT                      ;FPS NOT EQUAL TO 147740

007760  022767  000002  171034          CMP     #02,    FEC      ;CHECK FLOATING EXCEPTION CODE
```

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007766  001401                          BEQ     .+4             ;BRANCH IF OK
007770  104000                          HLT                     ;FEC NOT EQUAL TO 02

007772  022767  007712  171024          CMP     #FPI54, FEA     ;CHECK FLOATING EXCEPTION ADDRESS
010000  001401                          BEQ     .+4             ;BRANCH IF OK
010002  104000                          HLT                     ;FEA NOT EQUAL TO FPI54

010004  126727  170770  000054          CMPB    ICNT,   #54     ;CHECK FOR RIGHT TEST
010012  001401                          BEQ     .+4             ;BRANCH IF OK
010014  104000                          HLT                     ;PC JUMPED TESTS


                                ;*******************************************************************
                                ;TEST 55:       TEST STST (STORE STATUS, I.E. FEC (FLOATING EXCEPTION
                                ;                       CODES) AND FEA (FLOATING EXCEPTION ADDRESS) .
                                ;                       ALSO TEST ALL ILLEGAL INSTRUCTIONS.
                                ;       ILLEGAL INSTRUCTION = 170071
                                ;       FPS = 147740,   FEC = 02,       FEA = FPI55
                                ;*******************************************************************

010016  104400                          SCOPE
010020  000401                          BR      TST55           ;SKIP DATA

010022  001002                  ADRSS:  ANS1

010024  170127  047740          TST55:  LDFPS   #047740         ;LOAD FLOATING POINT STATUS
010030  012701  010022                  MOV     #ADRSS, %1      ;SET UP R1
010034  170071                  FPI55:  170071                  ;ILLEGAL INSTRUCTION
010036  000000                          HALT                    ;INDEX VALUE OF 0 GOT EXECUTED
010040  022701  010022                  CMP     #ADRSS, %1      ;CHECK R1
010044  001407                          BEQ     TSASS           ;BRANCH IF OK
010046  010167  170730                  MOV     %1      ANS1    ;STORE R1 FOR TYPING
010052  170200                          STFPS   FPS             ;STORE FPS FOR TYPING
010054  170367  170742                  STST    FEC             ;STORE FEC, FEA FOR TYPING
010060  104001                          HLT+1                   ;R1 NOT EQUAL TO #ADRSS
010062  000401                          BR      .+4             ;SKIP STFPS

010064     000                  TSASS:
010064  170200                          STFPS   FPS             ;STORE FLOATING POINT STATUS
010066  170367  170730                  STST    FEC             ;STORE EXCEPTION CODES
010072  022700  147740                  CMP     #147740,FPS     ;CHECK FLOATING POINT STATUS
010076  001401                          BEQ     .+4             ;BRANCH IF OK
010100  104000                          HLT                     ;FPS NOT EQUAL TO 147740

010102  022767  000002  170712          CMP     #02,    FEC     ;CHECK FLOATING EXCEPTION CODE
010110  001401                          BEQ     .+4             ;BRANCH IF OK
010112  104000                          HLT                     ;FEC NOT EQUAL TO 02

010114  022767  010034  170722          CMP     #FPI55, FEA     ;CHECK FLOATING EXCEPTION ADDRESS
010122  001401                          BEQ     .+4             ;BRANCH IF OK
010124  104000                          HLT                     ;FEA NOT EQUAL TO FPI55

010126  126727  170646  000055          CMPB    ICNT,   #55     ;CHECK FOR RIGHT TEST
010134  001401                          BEQ     .+4             ;BRANCH IF OK
010136  104000                          HLT                     ;PC JUMPED TESTS
```

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                                ;*******************************************************************
                                ;TEST 56:       TEST STST (STORE STATUS, I.E. FEC (FLOATING EXCEPTION
                                ;                       CODES) AND FEA (FLOATING EXCEPTION ADDRESS)).
                                ;                       ALSO TEST ALL ILLEGAL INSTRUCTIONS.
                                ;       ILLEGAL INSTRUCTION = 170072
                                ;       FPS = 147740,   FEC = 02,       FEA = FPI56
                                ;*******************************************************************

010140  104400                          SCOPE
010142  000401                          BR      TST56           ;SKIP DATA

010144  001002                  ADR56:  ANS1

010146  170127  047740          TST56:  LDFPS   #047740         ;LOAD FLOATING POINT STATUS
010152  012702  010144                  MOV     #ADR56, %2      ;SET UP R2
010156  170072                  FPI56:  170072                  ;ILLEGAL INSTRUCTION
010160  000000                          HALT                    ;INDEX VALUE OF 0 GOT EXECUTED
010162  022702  010144                  CMP     #ADR56, %2      ;CHECK R2
010166  001407                          BEQ     TSA56           ;BRANCH IF OK
010170  010267  170606                  MOV     %2,     ANS1    ;STORE R2 FOR TYPING
010174  170200                          STFPS   FPS             ;STORE FPS FOR TYPING
010176  170367  170620                  STST    FEC             ;STORE FEC, FEA FOR TYPING
010202  104001                          HLT+1                   ;R2 NOT EQUAL TO #ADR56
010204  000401                          BR      .+4             ;SKIP STFPS

010206     000                  TSA56:
010206  170200                          STFPS   FPS             ;STORE FLOATING POINT STATUS
010210  170367  170606                  STST    FEC             ;STORE EXCEPTION CODES
010214  022700  147740                  CMP     #147740,FPS     ;CHECK FLOATING POINT STATUS
010220  001401                          BEQ     .+4             ;BRANCH IF OK
010222  104000                          HLT                     ;FPS NOT EQUAL TO 147740

010224  022767  000002  170570          CMP     #02,    FEC     ;CHECK FLOATING EXCEPTION CODE
010232  001401                          BEQ     .+4             ;BRANCH IF OK
010234  104000                          HLT                     ;FEC NOT EQUAL TO 02

010236  022767  010156  170560          CMP     #FPI56, FEA     ;CHECK FLOATING EXCEPTION ADDRESS
010244  001401                          BEQ     .+4             ;BRANCH IF OK
010246  104000                          HLT                     ;FEA NOT EQUAL TO FPI56

010250  126727  170524  000056          CMPB    ICNT,   #56     ;CHECK FOR RIGHT TEST
010256  001401                          BEQ     .+4             ;BRANCH IF OK
010260  104000                          HLT                     ;PC JUMPED TESTS


                                ;*******************************************************************
                                ;TEST 57:       TEST STST (STORE STATUS, I.E. FEC (FLOATING EXCEPTION
                                ;                       CODES) AND FEA (FLOATING EXCEPTION ADDRESS)).
                                ;                       ALSO TEST ALL ILLEGAL INSTRUCTIONS.
                                ;       ILLEGAL INSTRUCTION = 170073
                                ;       FPS = 147740,   FEC = 02,       FEA = FPI57
                                ;*******************************************************************

010262  104400                          SCOPE
010264  000401                          BR      TST57           ;SKIP DATA
```

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010266  001002                  ADR57:  ANS1

010270  170127  047740          TST57:  LDFPS   #047740        ;LOAD FLOATING POINT STATUS
010274  012703  010266                  MOV     #ADR57, %3      ;SET UP R3
010300  170073                  FPI57:  170073                  ;ILLEGAL INSTRUCTION
010302  000000                          HALT                    ;INDEX VALUE OF 0 GOT EXECUTED
010304  022703  010266                  CMP     #ADR57, %3      ;CHECK R3
010310  001407                          BEQ     TSA57           ;BRANCH IF OK
010312  010367  170464                  MOV     %3,     ANS1    ;STORE R3 FOR TYPING
010316  170200                          STFPS   FPS             ;STORE FPS FOR TYPING
010320  170367  170476                  STST    FEC             ;STORE FEC, FEA FOR TYPING
010324  104001                          HLT+1                   ;R3 NOT EQUAL TO #ADR57
010326  000401                          BR      .+4             ;SKIP STFPS

010330     000                  TSA57:
010330  170200                          STFPS   FPS             ;STORE FLOATING POINT STATUS
010332  170367  170464                  STST    FEC             ;STORE EXCEPTION CODES
010336  022700  147740                  CMP     #147740,FPS     ;CHECK FLOATING POINT STATUS
010342  001401                          BEQ     .+4             ;BRANCH IF OK
010344  104000                          HLT                     ;FPS NOT EQUAL TO 147740

010346  022767  000002  170446          CMP     #02,    FEC     ;CHECK FLOATING EXCEPTION CODE
010354  001401                          BEQ     .+4             ;BRANCH IF OK
010356  104000                          HLT                     ;FEC NOT EQUAL TO 02

010360  022767  010300  170436          CMP     #FPI57, FEA     ;CHECK FLOATING EXCEPTION ADDRESS
010366  001401                          BEQ     .+4             ;BRANCH IF OK
010370  104000                          HLT                     ;FEA NOT EQUAL TO FPI57

010372  126727  170402  000057          CMPB    ICNT,   #57     ;CHECK FOR RIGHT TEST
010400  001401                          BEQ     .+4             ;BRANCH IF OK
010402  104000                          HLT                     ;PC JUMPED TES 5

                                ;*******************************************************************
                                ;TEST 60:       TEST STST (STORE STATUS, I.E. FEC (FLOATING EXCEPTION
                                ;                       CODES) AND FEA (FLOATING EXCEPTION ADDRESS)..
                                ;                       ALSO TEST ALL ILLEGAL INSTRUCTIONS.
                                ;       ILLEGAL INSTRUCTION = 170074
                                ;       FPS = 147740,   FEC = 02,       FEA = FPI60
                                ;*******************************************************************

010404  104400                          SCOPE
010406  000401                          BR      TST60           ;SKIP DATA

010410  001002                  ADR60:  ANS1

010412  170127  047740          TST60:  LDFPS   #047740         ;LOAD FLOATING POINT STATUS
010416  012704  010410                  MOV     #ADR60, %4      ;SET UP R4
010422  170074                  FPI60:  170074                  ;ILLEGAL INSTRUCTION
010424  000000                          HALT                    ;INDEX VALUE OF 0 GOT EXECUTED
010426  022704  010410                  CMP     #ADR60, %4      ;CHECK R4
010432  001407                          BEQ     TSA60           ;BRANCH IF OK
010434  010467  170342                  MOV     %4,     ANS1    ;STORE R4 FOR TYPING
010440  170200                          STFPS   FPS             ;STORE FPS FOR TYPING
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010442  170367  170354                  STST    FEC             ;STORE FEC, FEA FOR TYPING
010446  104001                          HLT+1                   ;R4 NOT EQUAL TO #ADR60
010450  000401                          BR      .+4             ;SKIP STFPS

010452     000                  TSA60:
010452  170200                          STFPS   FPS             ;STORE FLOATING POINT STATUS
010454  170367  170342                  STST    FEC             ;STORE EXCEPTION CODES
010460  022700  147740                  CMP     #147740,FPS     ;CHECK FLOATING POINT STATUS
010464  001401                          BEQ     .+4             ;BRANCH IF OK
010466  104000                          HLT                     ;FPS NOT EQUAL TO 147740

010470  022767  000002  170324          CMP     #02,    FEC     ;CHECK FLOATING EXCEPTION CODE
010476  001401                          BEQ     .+4             ;BRANCH IF OK
010500  104000                          HLT                     ;FEC NOT EQUAL TO 02

010502  022767  010422  170314          CMP     #FPI60, FEA     ;CHECK FLOATING EXCEPTION ADDRESS
010510  001401                          BEQ     .+4             ;BRANCH IF OK
010512  104000                          HLT                     ;FEA NOT EQUAL TO FPI60

010514  126727  170260  000060          CMPB    ICNT,   #60     ;CHECK FOR RIGHT TEST
010522  001401                          BEQ     .+4             ;BRANCH IF OK
010524  104000                          HLT                     ;PC JUMPED TESTS


                        ;*******************************************************************
                        ;TEST 61:       TEST STST (STORE STATUS, I.E. FEC (FLOATING EXCEPTION
                        ;                       CODES) AND FEA (FLOATING EXCEPTION ADDRESS)).
                        ;                       ALSO TEST ALL ILLEGAL INSTRUCTIONS.
                        ;       ILLEGAL INSTRUCTION = 170075
                        ;       FPS = 147740,   FEC = 02,       FEA = FPI61
                        ;*******************************************************************

010526  104400                          SCOPE
010530  000401                          BR      TST61           ;SKIP DATA

010532  001002               ADR61:     ANS1

010534  170127  047740       TST61:     LDFPS   #047740         ;LOAD FLOATING POINT STATUS
010540  012705  010532                  MOV     #ADR61, %5      ;SET UP R5
010544  170075               FPI61:     170075                  ;ILLEGAL INSTRUCTION
010546  000000                          HALT                    ;INDEX VALUE OF 0 GOT EXECUTED
010550  022705  010532                  CMP     #ADR61, %5      ;CHECK R5
010554  001407                          BEQ     TSA61           ;BRANCH IF OK
010556  010567  170220                  MOV     %5,     ANS1    ;STORE R5 FOR TYPING
010562  170200                          STFPS   FPS             ;STORE FPS FOR TYPING
010564  170367  170232                  STST    FEC             ;STORE FEC, FEA FOR TYPING
010570  104001                          HLT+1                   ;R5 NOT EQUAL TO #ADR61
010572  000401                          BR      .+4             ;SKIP STFPS

010574     000               TSA61:
010574  170200                          STFPS   FPS             ;STORE FLOATING POINT STATUS
010576  170367  170220                  STST    FEC             ;STORE EXCEPTION CODES
010602  022700  147740                  CMP     #147740,FPS     ;CHECK FLOATING POINT STATUS
010606  001401                          BEQ     .+4             ;BRANCH IF OK
010610  104000                          HLT                     ;FPS NOT EQUAL TO 147740
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010612  022767  000002  170202          CMP     #02,    FEC     ;CHECK FLOATING EXCEPTION CODE
010620  001401                          BEQ     .+4             ;BRANCH IF OK
010622  104000                          HLT                     ;FEC NOT EQUAL TO 02

010624  022767  010544  170172          CMP     #FPI61, FEA     ;CHECK FLOATING EXCEPTION ADDRESS
010632  001401                          BEQ     .+4             ;BRANCH IF OK
010634  104000                          HLT                     ;FEA NOT EQUAL TO FPI61

010636  126727  170136  000061          CMPB    ICNT,   #61     ;CHECK FOR RIGHT TEST
010644  001401                          BEQ     .+4             ;BRANCH IF OK
010646  104000                          HLT                     ;PC JUMPED TESTS


                                ;*******************************************************************
                                ;TEST 62:       TEST STST (STORE STATUS, I.E. FEC (FLOATING EXCEPTION
                                ;                       CODES) AND FEA (FLOATING EXCEPTION ADDRESS)).
                                ;                       ALSO TEST ALL ILLEGAL INSTRUCTIONS.
                                ;       ILLEGAL INSTRUCTION = 170076
                                ;       FPS = 147740,   FEC = 02,       FEA = FPI62
                                ;*******************************************************************

010650  104400                          SCOPE
010652  000401                          BR      TST62           ;SKIP DATA

010654  001002                  ADR62:  ANS1
010656  170127  047740          TST62:  LDFPS   #047740         ;LOAD FLOATING POINT STATUS
010662  010667  170116                  MOV     %6,     ANS2    ;SAVE R6
010666  170076                  FPI62:  170076                  ;ILLEGAL INSTRUCTION
010670  000000                          HALT                    ;INDEX VALUE OF 0 GOT EXICUTED
010672  020667  170106                  CMP     %6,     ANS2    ;CHECK R6
010676  001411                          BEQ     TSA62           ;BRANCH IF OK
010700  010667  170076                  MOV     %6,     ANS1    ;STORE R6 FOR TYPING
010704  016706  170074                  MOV     ANS2,   %6      ;RESTORE R6
010710  170200                          STFPS   FPS             ;STORE FPS FOR TYPING
010712  170367  170104                  STST    FEC             ;STORE FEC, FEA FOR TYPING
010716  104002                          HLT+2                   ;R6 (ANS1) NOT EQUAL TO ANS2
010720  000401                          BR      .+4             ;SKIP STFPS

010722     000                  TSA62:
010722  170200                          STFPS   FPS             ;STORE FLOATING POINT STATUS
010724  170367  170072                  STST    FEC             ;STORE EXCEPTION CODES
010730  022700  147740                  CMP     #147740,FPS     ;CHECK FLOATING POINT STATUS
010734  001401                          BEQ     .+4             ;BRANCH IF OK
010736  104000                          HLT                     ;FPS NOT EQUAL TO 147740

010740  022767  000002  170054          CMP     #02,    FEC     ;CHECK FLOATING EXCEPTION CODE
010746  001401                          BEQ     .+4             ;BRANCH IF OK
010750  104000                          HLT                     ;FEC NOT EQUAL TO 02

010752  022767  010666  170044          CMP     #FPI62, FEA     ;CHECK FLOATING EXCEPTION ADDRESS
010760  001401                          BEQ     .+4             ;BRANCH IF OK
010762  104000                          HLT                     ;FEA NOT EQUAL TO FPI62

010764  126727  170010  000062          CMPB    ICNT,   #62     ;CHECK FOR RIGHT TEST
010772  001401                          BEQ     .+4             ;BRANCH IF OK
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010774  104000                          HLT                     ;PC JUMPED TESTS

                                ;*****************************************************************
                                ;TEST 63:       TEST STST (STORE STATUS, I.E. FEC (FLOATING EXCEPTION
                                ;                       CODES) AND FEA (FLOATING EXCEPTION ADDRESS)).
                                ;                       ALSO TEST ALL ILLEGAL INSTRUCTIONS.
                                ;       ILLEGAL INSTRUCTION = 170077
                                ;       FPS = 147740,   FEC = 02,       FEA = FPI63
                                ;*****************************************************************

010776  104400                          SCOPE
011000  000401                          BR      TST63           ;SKIP DATA

011002  001002                  ADR63:  ANS1

011004  170127  047740          TST63:  LDFPS   #047740         ;LOAD FLOATING POINT STATUS
011010  170077                  FPI63:  170077                  ;ILLEGAL INSTRUCTION
011012  000000                          HALT                    ;INDEX VALUE OF 0 GOT EXICUTED
011014  170200                          STFPS   FPS             ;STORE FLOATING POINT STATUS
011016  170367  170000                  STST    FEC             ;STORE EXCEPTION CODES
011022  022700  147740                  CMP     #147740,FPS     ;CHECK FLOATING POINT STATUS
011026  001401                          BEQ     .+4             ;BRANCH IF OK
011030  104000                          HLT                     ;FPS NOT EQUAL TO 147740

011032  022767  000002  167762          CMP     #02,    FEC      CHECK FLOATING EXCEPTION CODE
011040  001401                          BEQ     .+4             ;BRANCH IF OK
011042  104000                          HLT                     ;FEC NOT EQUAL TO 02

011044  022767  011010  167752          CMP     #FPI63, FEA     ;CHECK FLOATING EXCEPTION ADDRESS
011052  001401                          BEQ     .+4             ;BRANCH IF OK
011054  104000                          HLT                     ;FEA NOT EQUAL TO FPI63

011056  126727  167716  000063          CMPB    ICNT,   #63     ;CHECK FOR RIGHT TEST
011064  001401                          BEQ     .+4             ;BRANCH IF OK
011066  104000                          HLT                     ;PC JUMPED TESTS


                                ;*****************************************************************
                                ;TEST 64:       TEST STST (STORE STATUS, I.E. FEC (FLOATING EXCEPTION
                                ;                       CODES) AND FEA (FLOATING EXCEPTION ADDRESS)).
                                ;                       ALSO TEST ALL ILLEGAL INSTRUCTIONS.
                                ;       ILLEGAL INSTRUCTION = 170406
                                ;       FPS = 147740,   FEC = 02,       FEA = FPI64
                                ;*****************************************************************

011070  104400                          SCOPE
011072  000401                          BR      TST64           ;SKIP DATA

011074  001002                  ADR64:  ANS1

011076  170127  047740          TST64:  LDFPS   #047740         ;LOAD FLOATING POINT STATUS
011102  010667  167676                  MOV     %6,     ANS2    ;SAVE R6
011106  170406                  FPI64:  170406                  ;ILLEGAL INSTRUCTION
011110  020667  167670                  CMP     %6,     ANS2    ;CHECK R6
011114  001411                          BEQ     TSA64           ;BRANCH IF OK
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011116  010667  167660                  MOV     %6,     ANS1    ;STORE R6 FOR TYPING
011122  016706  167656                  MOV     ANS2,   %6      ;RESTORE R6
011126  170200                          STFPS   FPS             ;STORE FPS FOR TYPING
011130  170367  167666                  STST    FEC             ;STORE FEC, FEA FOR TYPING
011134  104002                          HLT+2                   ;R6 (ANS1) NOT EQUAL TO ANS2
011136  000401                          BR      .+4             ;SKIP STFPS

011140     000                  TSA64:
011140  170200                          STFPS   FPS             ;STORE FLOATING POINT STATUS
011142  170367  167654                  STST    FEC             ;STORE EXCEPTION CODES
011146  022700  147740                  CMP     #147740,FPS     ;CHECK FLOATING POINT STATUS
011152  001401                          BEQ     .+4             ;BRANCH IF OK
011154  104000                          HLT                     ;FPS NOT EQUAL TO 147740

011156  022767  000002  167636          CMP     #02,    FEC     ;CHECK FLOATING EXCEPTION CODE
011164  001401                          BEQ     .+4             ;BRANCH IF OK
011166  104000                          HLT                     ;FEC NOT EQUAL TO 02

011170  022767  011106  167626          CMP     #FPI64, FEA     ;CHECK FLOATING EXCEPTION ADDRESS
011176  001401                          BEQ     .+4             ;BRANCH IF OK
011200  104000                          HLT                     ;FEA NOT EQUAL TO FPI64

011202  126727  167572  000064          CMPB    ICNT,   #64     ;CHECK FOR RIGHT TEST
011210  001401                          BEQ     .+4             ;BRANCH IF OK
011212  104000                          HLT                     ;PC JUMPED TESTS

                                ;*****************************************************************
                                ;TEST 65:       TEST STST (STORE STATUS, I.E. FEC (FLOATING EXCEPTION
                                ;                       CODES) AND FEA (FLOATING EXCEPTION ADDRESS)).
                                ;                       ALSO TEST ALL ILLEGAL INSTRUCTIONS.
                                ;       ILLEGAL INSTRUCTION = 170407
                                ;       FPS = 147740,   FEC = 02,       FEA = FPI65
                                ;*****************************************************************

011214  104400                          SCOPE
011216  000401                          BR      TST65           ;SKIP DATA

011220  001002                  ADR65:  ANS1

011222  170127  047740          TST65:  LDFPS   #047740         ;LOAD FLOATING POINT STATUS
011226  170407                  FPI65:  170407                  ;ILLEGAL INSTRUCTION
011230  170200                          STFPS   FPS             ;STORE FLOATING POINT STATUS
011232  170367  167564                  STST    FEC             ;STORE EXCEPTION CODES
011236  022700  147740                  CMP     #147740,FPS     ;CHECK FLOATING POINT STATUS
011242  001401                          BEQ     .+4             ;BRANCH IF OK
011244  104000                          HLT                     ;FPS NOT EQUAL TO 147740

011246  022767  000002  167546          CMP     #02,    FEC     ;CHECK FLOATING EXCEPTION CODE
011254  001401                          BEQ     .+4             ;BRANCH IF OK
011256  104000                          HLT                     ;FEC NOT EQUAL TO 02

011260  022767  011226  167536          CMP     #FPI65, FEA     ;CHECK FLOATING EXCEPTION ADDRESS
011266  001401                          BEQ     .+4             ;BRANCH IF OK
011270  104000                          HLT                     ;FEA NOT EQUAL TO FPI65
```

```
011272  126727  167502  000065          CMPB    ICNT,   #65     ;CHECK FOR RIGHT TEST
011300  001401                          BEQ     .+4             ;BRANCH IF OK
011302  104000                          HLT                     ;PC JUMPED TESTS


                                ;*****************************************************************
                                ;TEST 66:       TEST STST (STORE STATUS, I.E. FEC (FLOATING EXCEPTION
                                ;                       CODES) AND FEA (FLOATING EXCEPTION ADDRESS)).
                                ;                       ALSO TEST ALL ILLEGAL INSTRUCTIONS.
                                ;       ILLEGAL INSTRUCTION = 170506
                                ;       FPS = 147740,   FEC = 02,       FEA = FPI66
                                ;*****************************************************************

011304  104400                          SCOPE
011306  000401                          BR      TST66           ;SKIP DATA

011310  001002                  ADR66:  ANS1

011312  170127  047740          TST66:  LDFPS   #047740         ;LOAD FLOATING POINT STATUS
011316  010667  167462                  MOV     %6,     ANS2    ;SAVE R6
011322  170506                  FPI66:  170506                  ;ILLEGAL INSTRUCTION
011324  020667  167454                  CMP     %6,     ANS2    ;CHECK R6
011330  001411                          BEQ     TSA66           ;BRANCH IF OK
011332  010667  167444                  MOV     %6,     ANS1    ;STORE R6 FOR TYPING
011336  016706  167442                  MOV     ANS2,   %6      ;RESTORE R6
011342  170200                          STFPS   FPS             ;STORE FPS FOR TYPING
011344  170367  167452                  STST    FEC             ;STORE FEC, FEA FOR TYPING
011350  104002                          HLT+2                   ;R6 (ANS1) NOT EQUAL TO ANS2
011352  000401                          BR      .+4             ;SKIP STFPS

011354     000                  TSA66:
011354  170200                          STFPS   FPS             ;STORE FLOATING POINT STATUS
011356  170367  167440                  STST    FEC             ;STORE EXCEPTION CODES
011362  022700  147740                  CMP     #147740,FPS     ;CHECK FLOATING POINT STATUS
011366  001401                          BEQ     .+4             ;BRANCH IF OK
011370  104000                          HLT                     ;FPS NOT EQUAL TO 147740

011372  022767  000002  167422          CMP     #02,    FEC     ;CHECK FLOATING EXCEPTION CODE
011400  001401                          BEQ     .+4             ;BRANCH IF OK
011402  104000                          HLT                     ;FEC NOT EQUAL TO 02

011404  022767  011322  167412          CMP     #FPI66, FEA     ;CHECK FLOATING EXCEPTION ADDRESS
011412  001401                          BEQ     .+4             ;BRANCH IF OK
011414  104000                          HLT                     ;FEA NOT EQUAL TO FPI66

011416  126727  167356  000066          CMPB    ICNT,   #66     ;CHECK FOR RIGHT TEST
011424  001401                          BEQ     .+4             ;BRANCH IF OK
011426  104000                          HLT                     ;PC JUMPED TESTS


                                ;*****************************************************************
                                ;TEST 67:       TEST STST (STORE STATUS, I.E. FEC (FLOATING EXCEPTION
                                ;                       CODES) AND FEA (FLOATING EXCEPTION ADDRESS)).
                                ;                       ALSO TEST ALL ILLEGAL INSTRUCTIONS.
                                ;       ILLEGAL INSTRUCTION = 170507
                                ;       FPS = 147740,   FEC = 02,       FEA = FPI67
```

```
                                        ;*******************************************************************
011430  104400                                  SCOPE
011432  000401                                  BR      TST67           ;SKIP DATA

011434  001002                          ADR67:  ANS1

011436  170127  047740                  TST67:  LDFPS   #047740         ;LOAD FLOATING POINT STATUS
011442  170507                          FPI67:  170507                  ;ILLEGAL INSTRUCTION
011444  170200                                  STFPS   FPS             ;STORE FLOATING POINT STATUS
011446  170367  167350                          STST    FEC             ;STORE EXCEPTION CODES
011452  022700  147740                          CMP     #147740,FPS     ;CHECK FLOATING POINT STATUS
011456  001401                                  BEQ     .+4             ;BRANCH IF OK
011460  104000                                  HLT                     ;FPS NOT EQUAL TO 147740

011462  022767  000002  167332                  CMP     #02,    FEC     ;CHECK FLOATING EXCEPTION CODE
011470  001401                                  BEQ     .+4             ;BRANCH IF OK
011472  104000                                  HLT                     ;FEC NOT EQUAL TO 02

011474  022767  011442  167322                  CMP     #FPI67, FEA     ;CHECK FLOATING EXCEPTION ADDRESS
011502  001401                                  BEQ     .+4             ;BRANCH IF OK
011504  104000                                  HLT                     ;FEA NOT EQUAL TO FPI67

011506  126727  167266  000067                  CMPB    ICNT,   #67     ;CHECK FOR RIGHT TEST
011514  001401                                  BEQ     .+4             ;BRANCH IF OK
011516  104000                                  HLT                     ;PC JUMPED TESTS

                                        ;*******************************************************************
                                        ;TEST 70:       TEST STST (STORE STATUS, I.E. FEC (FLOATING EXCEPTION
                                        ;                       CODES) AND FEA (FLOATING EXCEPTION ADDRESS)..
                                        ;                       ALSO TEST ALL ILLEGAL INSTRUCTIONS.
                                        ;       ILLEGAL INSTRUCTION = 170606
                                        ;       FPS = 147740,   FEC = 02,       FEA = FPI70
                                        ;*******************************************************************

011520  104400                                  SCOPE
011522  000401                                  BR      TST70           ;SKIP DATA

011524  001002                          ADR70:  ANS1

011526  170127  047740                  TST70:  LDFPS   #047740         ;LOAD FLOATING POINT STATUS
011532  010667  167246                          MOV     %6,     ANS2    ;SAVE R6
011536  170606                          FPI70:  170606                  ;ILLEGAL INSTRUCTION
011540  020667  167240                          CMP     %6,     ANS2    ;CHECK R6
011544  001411                                  BEQ     TSA70           ;BRANCH IF OK
011546  010667  167230                          MOV     %6,     ANS1    ;STORE R6 FOR TYPING
011552  016706  167226                          MOV     ANS2,   %6      ;RESTORE R6
011556  170200                                  STFPS   FPS             ;STORE FPS FOR TYPING
011560  170367  167236                          STST    FEC             ;STORE FEC, FEA FOR TYPING
011564  104002                                  HLT+2                   ;R6 (ANS1) NOT EQUAL TO ANS2
011566  000401                                  BR      .+4             ;SKIP STFPS

011570     000                          TSA70:
011570  170200                                  STFPS   FPS             ;STORE FLOATING POINT STATUS
011572  170367  167224                          STST    FEC             ;STORE EXCEPTION CODES
```

```
011576  022700  147740                  CMP     #147740,FPS     ;CHECK FLOATING POINT STATUS
011602  001401                          BEQ     .+4             ;BRANCH IF OK
011604  104000                          HLT                     ;FPS NOT EQUAL TO 147740

011606  022767  000002  167206          CMP     #02,    FEC     ;CHECK FLOATING EXCEPTION CODE
011614  001401                          BEQ     .+4             ;BRANCH IF OK
011616  104000                          HLT                     ;FEC NOT EQUAL TO 02

011620  022767  011536  167176          CMP     #FPI70, FEA     ;CHECK FLOATING EXCEPTION ADDRESS
011626  001401                          BEQ     .+4             ;BRANCH IF OK
011630  104000                          HLT                     ;FEA NOT EQUAL TO FPI70

011632  126727  167142  000070          CMPB    ICNT,   #70     ;CHECK FOR RIGHT TEST
011640  001401                          BEQ     .+4             ;BRANCH IF OK
011642  104000                          HLT                     ;PC JUMPED TESTS


                                ;*******************************************************************
                                ;TEST 71:       TEST STST (STORE STATUS, I.E. FEC (FLOATING EXCEPTION
                                ;                       CODES) AND FEA (FLOATING EXCEPTION ADDRESS)).
                                ;                       ALSO TEST ALL ILLEGAL INSTRUCTIONS.
                                ;       ILLEGAL INSTRUCTION = 170607
                                ;       FPS = 147740,   FEC = 02,       FEA = FPI71
                                ;*******************************************************************

011644  104400                          SCOPE
011646  000401                          BR      TST71           ;SKIP DATA

011650  001002                  ADR71:  ANSI

011652  170127  047740          TST71:  LDFPS   #047740         ;LOAD FLOATING POINT STATUS
011656  170607                  FPI71:  170607                  ;ILLEGAL INSTRUCTION
011660  170200                          STFPS   FPS             ;STORE FLOATING POINT STATUS
011662  170367  167134                  STST    FEC             ;STORE EXCEPTION CODES
011666  022700  147740                  CMP     #147740,FPS     ;CHECK FLOATING POINT STATUS
011672  001401                          BEQ     .+4             ;BRANCH IF OK
011674  104000                          HLT                     ;FPS NOT EQUAL TO 147740

011676  022767  000002  167116          CMP     #02,    FEC     ;CHECK FLOATING EXCEPTION CODE
011704  001401                          BEQ     .+4             ;BRANCH IF OK
011706  104000                          HLT                     ;FEC NOT EQUAL TO 02

011710  022767  011656  167106          CMP     #FPI71, FEA     ;CHECK FLOATING EXCEPTION ADDRESS
011716  001401                          BEQ     .+4             ;BRANCH IF OK
011720  104000                          HLT                     ;FEA NOT EQUAL TO FPI71

011722  126727  167052  000071          CMPB    ICNT,   #71     ;CHECK FOR RIGHT TEST
011730  001401                          BEQ     .+4             ;BRANCH IF OK
011732  104000                          HLT                     ;PC JUMPED TESTS


                                ;*******************************************************************
                                ;TEST 72:       TEST STST (STORE STATUS, I.E. FEC (FLOATING EXCEPTION
                                ;                       CODES) AND FEA (FLOATING EXCEPTION ADDRESS)).
                                ;                       ALSO TEST ALL ILLEGAL INSTRUCTIONS.
                                ;       ILLEGAL INSTRUCTION = 170706
```

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                                        ;       FPS = 147740,   FEC = 02,       FEA = FPI72
                                        ;*******************************************************************

011734  104400                                  SCOPE
011736  000401                                  BR      TST72           ;SKIP DATA

011740  001002                          ADR72:  ANS1

011742  170127  047740                  TST72:  LDFPS   #047740         ;LOAD FLOATING POINT STATUS
011746  010667  167032                          MOV     %6,     ANS2    ;SAVE R6
011752  170706                          FPI72:  170706                  ;ILLEGAL INSTRUCTION
011754  020667  167024                          CMP     %6,     ANS2    ;CHECK R6
011760  001411                                  BEQ     TSA72           ;BRANCH IF OK
011762  010667  167014                          MOV     %6,     ANS1    ;STORE R6 FOR TYPING
011766  016706  167012                          MOV     ANS2,   %6      ;RESTORE R6
011772  170200                                  STFPS   FPS             ;STORE FPS FOR TYPING
011774  170367  167022                          STST    FEC             ;STORE FEC, FEA FOR TYPING
012000  104002                                  HLT+2                   ;R6 (ANS1) NOT EQUAL TO ANS2
012002  000401                                  BR      .+4             ;SKIP STFPS

012004     000                          TSA72:
012004  170200                                  STFPS   FPS             ;STORE FLOATING POINT STATUS
012006  170367  167010                          STST    FEC             ;STORE EXCEPTION CODES
012012  022700  147740                          CMP     #147740,FPS     ;CHECK FLOATING POINT STATUS
012016  001401                                  BEQ     .+4             ;BRANCH IF OK
012020  104000                                  HLT                     ;FPS NOT EQUAL TO 147740

012022  022767  000002  166772                  CMP     #02,    FEC     ;CHECK FLOATING EXCEPTION CODE
012030  001401                                  BEQ     .+4             ;BRANCH IF OK
012032  104000                                  HLT                     ;FEC NOT EQUAL TO 02

012034  022767  011752  166762                  CMP     #FPI72, FEA     ;CHECK FLOATING EXCEPTION ADDRESS
012042  001401                                  BEQ     .+4             ;BRANCH IF OK
012044  104000                                  HLT                     ;FEA NOT EQUAL TO FPI72

012046  126727  166726  000072                  CMPB    ICNT,   #72     ;CHECK FOR RIGHT TEST
012054  001401                                  BEQ     .+4             ;BRANCH IF OK
012056  104000                                  HLT                     ;PC JUMPED TESTS


                                        ;*******************************************************************
                                        ;TEST 73:       TEST STST (STORE STATUS, I.E. FEC (FLOATING EXCEPTION
                                        ;                       CODES) AND FEA (FLOATING EXCEPTION ADDRESS)).
                                        ;                       ALSO TEST ALL ILLEGAL INSTRUCTIONS.
                                        ;       ILLEGAL INSTRUCTION = 170707
                                        ;       FPS = 147740,   FEC = 02,       FEA = FPI73
                                        ;*******************************************************************

012060  104400                                  SCOPE
012062  000401                                  BR      TST73           ;SKIP DATA

012064  001002                          ADR73:  ANS1

012066  170127  047740                  TST73:  LDFPS   #047740         ;LOAD FLOATING POINT STATUS
012072  170707                          FPI73:  170707                  ;ILLEGAL INSTRUCTION
012074  170200                                  STFPS   FPS             ;STORE FLOATING POINT STATUS
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012076  170367  166720                STST    FEC                 ;STORE EXCEPTION CODES
012102  022700  147740                CMP     #147740,FPS         ;CHECK FLOATING POINT STATUS
012106  001401                        BEQ     .+4                 ;BRANCH IF OK
012110  104000                        HLT                         ;FPS NOT EQUAL TO 147740

012112  022767  000002  166702        CMP     #02,    FEC         ;CHECK FLOATING EXCEPTION CODE
012120  001401                        BEQ     .+4                 ;BRANCH IF OK
012122  104000                        HLT                         ;FEC NOT EQUAL TO 02

012124  022767  012072  166672        CMP     #FPI73, FEA         ;CHECK FLOATING EXCEPTION ADDRESS
012132  001401                        BEQ     .+4                 ;BRANCH IF OK
012134  104000                        HLT                         ;FEA NOT EQUAL TO FPI73

012136  126727  166636  000073        CMPB    ANS1,   #73         ;CHECK FOR RIGHT TEST
012144  001401                        BEQ     .+4                 ;BRANCH IF OK
012146  104000                        HLT                         ;PC JUMPED TESTS


                                ;*******************************************************************
                                ;TEST 74:       TEST STST (STORE STATUS. I.E. FEC (FLOATING EXCEPTION
                                ;                       CODES) AND FEA (FLOATING EXCEPTION ADDRESS)).
                                ;                       ALSO TEST ALL ILLEGAL INSTRUCTIONS.
                                ;       ILLEGAL INSTRUCTION = 171006
                                ;       FPS = 147740,   FEC = 02,       FEA = FPI74
                                ;*******************************************************************

012150  104400                        SCOPE
012152  000401                        BR      TST74               ;SKIP DATA

012154  001002                  ADR74:ANS1

012156  170127  047740          TST74:LDFPS   #047740             ;LOAD FLOATING POINT STATUS
012162  010667  166616                MOV     %6,     ANS2        ;SAVE R6
012166  171006                  FPI74:171006                      ;ILLEGAL INSTRUCTION
012170  020667  166610                CMP     %6,     ANS2        ;CHECK R6
012174  001411                        BEQ     TSA74               ;BRANCH IF OK
012176  010667  166600                MOV     %6,     ANS1        ;STORE R6 FOR TYPING
012202  016706  166576                MOV     ANS2,   %6          ;RESTORE R6
012206  170200                        STFPS   FPS                 ;STORE FPS FOR TYPING
012210  170367  166608                STST    FEC                 ;STORE FEC, FEA FOR TYPING
012214  104002                        HLT+2                       ;R6 (ANS1) NOT EQUAL TO ANS2
012216  000401                        BR      .+4                 ;SKIP STFPS

012220     000                  TSA74:
012220  170200                        STFPS   FPS                 ;STORE FLOATING POINT STATUS
012222  170367  166574                STST    FEC                 ;STORE EXCEPTION CODES
012226  022700  147740                CMP     #147740,FPS         ;CHECK FLOATING POINT STATUS
012232  001401                        BEQ     .+4                 ;BRANCH IF OK
012234  104000                        HLT                         ;FPS NOT EQUAL TO 147740

012236  022767  000002  166556        CMP     #02,    FEC         ;CHECK FLOATING EXCEPTION CODE
012244  001401                        BEQ     .+4                 ;BRANCH IF OK
012246  104000                        HLT                         ;FEC NOT EQUAL TO 02

012250  022767  012166  166546        CMP     #FPI74, FEA         ;CHECK FLOATING EXCEPTION ADDRESS
012256  001401                        BEQ     .+4                 ;BRANCH IF OK
```

```
012260  104000                          HLT                     ;FEA NOT EQUAL TO FPI74

012262  126727  166512  000074          CMPB    ICNT,   #74     ;CHECK FOR RIGHT TEST
012270  001401                          BEQ     .+4             ;BRANCH IF OK
012272  104000                          HLT                     ;PC JUMPED TESTS


                                ;*******************************************************************
                                ;TEST 75:       TEST STST (STORE STATUS, I.E. FEC (FLOATING EXCEPTION
                                ;                       CODES) AND FEA (FLOATING EXCEPTION ADDRESS)).
                                ;                       ALSO TEST ALL ILLEGAL INSTRUCTIONS.
                                ;       ILLEGAL INSTRUCTION = 171007
                                ;       FPS = 147740,   FEC = 02,       FEA = FPI75
                                ;*******************************************************************

012274  104400                          SCOPE
012276  000401                          BR      TST75           ;SKIP DATA

012300  001002                  ADR75:  ANS1

012302  170127  047740          TST75:  LDFPS   #047740         ;LOAD FLOATING POINT STATUS
012306  171007                  FPI75:  171007                  ;ILLEGAL INSTRUCTION
012310  170200                          STFPS   FPS             ;STORE FLOATING POINT STATUS
012312  170367  166504                  STST    FEC             ;STORE EXCEPTION CODES
012316  022700  147740                  CMP     #147740,FPS     ;CHECK FLOATING POINT STATUS
012322  001401                          BEQ     .+4             ;BRANCH IF OK
012324  104000                          HLT                     ;FPS NOT EQUAL TO 147740

012326  022767  000002  166466          CMP     #02,    FEC     ;CHECK FLOATING EXCEPTION CODE
012334  001401                          BEQ     .+4             ;BRANCH IF OK
012336  104000                          HLT                     ;FEC NOT EQUAL TO 02

012340  022767  012306  166456          CMP     #FPI75, FEA     ;CHECK FLOATING EXCEPTION ADDRESS
012346  001401                          BEQ     .+4             ;BRANCH IF OK
012350  104000                          HLT                     ;FEA NOT EQUAL TO FPI75

012352  126727  166422  000075          CMPB    ICNT,   #75     ;CHECK FOR RIGHT TEST
012360  001401                          BEQ     .+4             ;BRANCH IF OK
012362  104000                          HLT                     ;PC JUMPED TESTS


                                ;*******************************************************************
                                ;TEST 76:       TEST STST (STORE STATUS, I.E. FEC (FLOATING EXCEPTION
                                ;                       CODES) AND FEA (FLOATING EXCEPTION ADDRESS)).
                                ;                       ALSO TEST ALL ILLEGAL INSTRUCTIONS.
                                ;       ILLEGAL INSTRUCTION = 171406
                                ;       FPS = 147740,   FEC = 02,       FEA = FPI76
                                ;*******************************************************************

012364  104400                          SCOPE
012366  000401                          BR      TST76           ;SKIP DATA

012370  001002                  ADR76:  ANS1

012372  170127  047740          TST76:  LDFPS   #047740         ;LOAD FLOATING POINT STATUS
012376  010667  166402                  MOV     %6,     ANS2    ;SAVE R6
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012402  171406                  FPI76:  171406                          ;ILLEGAL INSTRUCTION
012404  020667  166374                  CMP     %6,     ANS2            ;CHECK R6
012410  001411                          BEQ     TSA76                   ;BRANCH IF OK
012412  010667  166364                  MOV     %6,     ANS1            ;STORE R6 FOR TYPING
012416  016706  166362                  MOV     ANS2,   %6              ;RESTORE R6
012422  170200                          STFPS   FPS                     ;STORE FPS FOR TYPING
012424  170367  166372                  STST    FEC                     ;STORE FEC, FEA FOR TYPING
012430  104002                          HLT+2                           ;R6 (ANS1) NOT EQUAL TO ANS2
012432  000401                          BR      .+4                     ;SKIP STFPS

012434     000                  TSA76:
012434  170200                          STFPS   FPS                     ;STORE FLOATING POINT STATUS
012436  170367  166360                  STST    FEC                     ;STORE EXCEPTION CODES
012442  022700  147740                  CMP     #147740,FPS             ;CHECK FLOATING POINT STATUS
012446  001401                          BEQ     .+4                     ;BRANCH IF OK
012450  104000                          HLT                             ;FPS NOT EQUAL TO 147740

012452  022767  000002  166342          CMP     #02,    FEC             ;CHECK FLOATING EXCEPTION CODE
012460  001401                          BEQ     .+4                     ;BRANCH IF OK
012462  104000                          HLT                             ;FEC NOT EQUAL TO 02

012464  022767  012402  166332          CMP     #FPI76, FEA             ;CHECK FLOATING EXCEPTION ADDRESS
012472  001401                          BEQ     .+4                     ;BRANCH IF OK
012474  104000                          HLT                             ;FEA NOT EQUAL TO FPI76

012476  126727  166276  000076          CMPB    ICNT,   #76             ;CHECK FOR RIGHT TEST
012504  001401                          BEQ     .+4                     ;BRANCH IF OK
012506  104000                          HLT                             ;PC JUMPED TESTS

                                ;*******************************************************************
                                ;TEST 77:       TEST STST (STORE STATUS, I.E. FEC (FLOATING EXCEPTION
                                ;                       CODES) AND FEA (FLOATING EXCEPTION ADDRESS).
                                ;                       ALSO TEST ALL ILLEGAL INSTRUCTIONS.
                                ;       ILLEGAL INSTRUCTION = 171407
                                ;       FPS = 147740,   FEC = 02,       FEA = FPI77
                                ;*******************************************************************

012510  104400                          SCOPE
012512  000401                          BR      TST77                   ;SKIP DATA

012514  001002                  ADR77:  ANS1

012516  170127  047740          TST77:  LDFPS   #047740                 ;LOAD FLOATING POINT STATUS
012522  171407                  FPI77:  171407                          ;ILLEGAL INSTRUCTION
012524  170200                          STFPS   FPS                     ;STORE FLOATING POINT STATUS
012526  170367  166270                  STST    FEC                     ;STORE EXCEPTION CODES
012532  022700  147740                  CMP     #147740,FPS             ;CHECK FLOATING POINT STATUS
012536  001401                          BEQ     .+4                     ;BRANCH IF OK
012540  104000                          HLT                             ;FPS NOT EQUAL TO 147740

012542  022767  000002  166252          CMP     #02,    FEC             ;CHECK FLOATING EXCEPTION CODE
012550  001401                          BEQ     .+4                     ;BRANCH IF OK
012552  104000                          HLT                             ;FEC NOT EQUAL TO 02

012554  022767  012522  166242          CMP     #FPI77, FEA             ;CHECK FLOATING EXCEPTION ADDRESS
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012562  001401                          BEQ     .+4             ;BRANCH IF OK
012564  104000                          HLT                     ;FEA NOT EQUAL TO FPI77

012566  126727  166206  000077          CMPB    ICNT,   #77     ;CHECK FOR RIGHT TEST
012574  001401                          BEQ     .+4             ;BRANCH IF OK
012576  104000                          HLT                     ;PC JUMPED TESTS


                                ;*******************************************************************
                                ;TEST 100:      TEST STST (STORE STATUS, I.E. FEC (FLOATING EXCEPTION
                                ;                       CODES) AND FEA (FLOATING EXCEPTION ADDRESS )).
                                ;                       ALSO TEST ALL ILLEGAL INSTRUCTIONS.
                                ;       ILLEGAL INSTRUCTION = 172006
                                ;       FPS = 147740,   FEC = 02,       FEA = FPI100
                                ;*******************************************************************

012600  104400                          SCOPE
012602  000401                          BR      TST100          ;SKIP DATA

012604  001002                  ADR100: ANS1

012606  170127  047740          TST100: LDFPS   #047740         ;LOAD FLOATING POINT STATUS
012612  010667  166166                  MOV     %6,     ANS2    ;SAVE R6
012616  172006                  FPI100: 172006                  ;ILLEGAL INSTRUCTION
012620  020667  166160                  CMP     %6,     ANS2    ;CHECK R6
012624  001411                          BEQ     TSA100          ;BRANCH IF OK
012626  010667  166150                  MOV     %6,     ANS1    ;STORE R6 FOR TYPING
012632  016706  166146                  MOV     ANS2,   %6      ;RESTORE R6
012636  170200                          STFPS   FPS             ;STORE FPS FOR TYPING
012640  170367  166156                  STST    FEC             ;STORE FEC, FEA FOR TYPING
012644  104002                          HLT+2                   ;R6 (ANS1) NOT EQUAL TO ANS2
012646  000401                          BR      .+4             ;SKIP STFPS

012650     000                  TSA100:
012650  170200                          STFPS   FPS             ;STORE FLOATING POINT STATUS
012652  170367  166144                  STST    FEC             ;STORE EXCEPTION CODES
012656  022700  147740                  CMP     #147740,FPS     ;CHECK FLOATING POINT STATUS
012662  001401                          BEQ     .+4             ;BRANCH IF OK
012664  104000                          HLT                     ;FPS NOT EQUAL TO 147740

012666  022767  000002  166126          CMP     #02,    FEC     ;CHECK FLOATING EXCEPTION CODE
012674  001401                          BEQ     .+4             ;BRANCH IF OK
012676  104000                          HLT                     ;FEC NOT EQUAL TO 02

012700  022767  012616  166116          CMP     #FPI100, FEA    ;CHECK FLOATING EXCEPTION ADDRESS
012706  001401                          BEQ     .+4             ;BRANCH IF OK
012710  104000                          HLT                     ;FEA NOT EQUAL TO FPI100

012712  126727  166062  000100          CMPB    ICNT,   #100    ;CHECK FOR RIGHT TEST
012720  001401                          BEQ     .+4             ;BRANCH IF  K
012722  104000                          HLT                     ;PC JUMPED TESTS


                                ;*******************************************************************
                                ;TEST 101:      TEST STST (STORE STATUS, I.E. FEC (FLOATING EXCEPTION
                                ;                       CODES) AND FEA (FLOATING EXCEPTION ADDRESS )).
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                                        ;                    ALSO TEST ALL ILLEGAL INSTRUCTIONS.
                                        ;        ILLEGAL INSTRUCTION = 172007
                                        ;        FPS = 147740,    FEC = 02,        FEA = FPI101
                                        ;*****************************************************************

012724  104400                                   SCOPE
012726  000401                                   BR      TST101          ;SKIP DATA

012730  001002                          ADR101:  ANS1

012732  170127  047740                  TST101:  LDFPS   #047740         ;LOAD FLOATING POINT STATUS
012736  172007                          FPI101:  172007                  ;ILLEGAL INSTRUCTION
012740  170200                                   STFPS   FPS             ;STORE FLOATING POINT STATUS
012742  170367  166054                           STST    FEC             ;STORE EXCEPTION CODES
012746  022700  147740                           CMP     #147740,FPS     ;CHECK FLOATING POINT STATUS
012752  001401                                   BEQ     .+4             ;BRANCH IF OK
012754  104000                                   HLT                     ;FPS NOT EQUAL TO 147740

012756  022767  000002  166036                   CMP     #02,    FEC     ;CHECK FLOATING EXCEPTION CODE
012764  001401                                   BEQ     .+4             ;BRANCH IF OK
012766  104000                                   HLT                     ;FEC NOT EQUAL TO 02

012770  022767  012736  166026                   CMP     #FPI101, FEA    ;CHECK FLOATING EXCEPTION ADDRESS
012776  001401                                   BEQ     .+4             ;BRANCH IF OK
013000  104000                                   HLT                     ;FEA NOT EQUAL TO FPI101

013002  126727  165772  000101                   CMPB    ICNT,   #101    ;CHECK FOR RIGHT TEST
013010  001401                                   BEQ     .+4             ;BRANCH IF OK
013012  104000                                   HLT                     ;PC JUMPED TESTS

                                        ;*****************************************************************
                                        ;TEST 102:       TEST STST (STORE STATUS, I.E. FEC (FLOATING EXCEPTION
                                        ;                        CODES) AND FEA (FLOATING EXCEPTION ADDRESS)).
                                        ;                        ALSO TEST ALL ILLEGAL INSTRUCTIONS.
                                        ;        ILLEGAL INSTRUCTION = 172406
                                        ;        FPS = 147740,    FEC = 02,        FEA = FPI102
                                        ;*****************************************************************

013014  104400                                   SCOPE
013016  000401                                   BR      TST102          ;SKIP DATA

013020  001002                          ADR102:  ANS1

013022  170127  047740                  TST102:  LDFPS   #047740         ;LOAD FLOATING POINT STATUS
013026  010667  165752                           MOV     %6,     ANS2    ;SAVE R6
013032  172406                          FPI102:  172406                  ;ILLEGAL INSTRUCTION
013034  020667  165744                           CMP     %6,     ANS2    ;CHECK R6
013040  001411                                   BEQ     TSA102          ;BRANCH IF OK
013042  010667  165734                           MOV     %6,     ANS1    ;STORE R6 FOR TYPING
013046  016706  165732                           MOV     ANS2,   %6      ;RESTORE R6
013052  170200                                   STFPS   FPS             ;STORE FPS FOR TYPING
013054  170367  165742                           STST    FEC             ;STORE FEC, FEA FOR TYPING
013060  104002                                   HLT+2                   ;R6 (ANS1) NOT EQUAL TO ANS2
013062  000401                                   BR      .+4             ;SKIP STFPS
```

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013064     000                    TSA102:
013064  170200                            STFPS   FPS              ;STORE FLOATING POINT STATUS
013066  170367  165730                    STST    FEC              ;STORE EXCEPTION CODES
013072  022700  147740                    CMP     #147740,FPS      ;CHECK FLOATING POINT STATUS
013076  001401                            BEQ     .+4              ;BRANCH IF OK
013100  104000                            HLT                      ;FPS NOT EQUAL TO 147740

013102  022767  000002  165712            CMP     #02,    FEC      ;CHECK FLOATING EXCEPTION CODE
013110  001401                            BEQ     .+4              ;BRANCH IF OK
013112  104000                            HLT                      ;FEC NOT EQUAL TO 02

013114  022767  013032  165702            CMP     #FPI102, FEA     ;CHECK FLOATING EXCEPTION ADDRESS
013122  001401                            BEQ     .+4              ;BRANCH IF OK
013124  104000                            HLT                      ;FEA NOT EQUAL TO FPI102

013126  126727  165646  000102            CMPB    ICNT,   #102     ;CHECK FOR RIGHT TEST
013134  001401                            BEQ     .+4              ;BRANCH IF OK
013136  104000                            HLT                      ;PC JUMPED TESTS


                                ;*******************************************************************
                                ;TEST 103:      TEST STST (STORE STATUS, I.E. FEC (FLOATING EXCEPTION
                                ;                       CODES) AND FEA (FLOATING EXCEPTION ADDRESS)).
                                ;                       ALSO TEST ALL ILLEGAL INSTRUCTIONS.
                                ;       ILLEGAL INSTRUCTION = 172407
                                ;       FPS = 147740,   FEC = 02,       FEA = FPI103
                                ;*******************************************************************

013140  104400                            SCOPE
013142  000401                            BR      TST103           ;SKIP DATA

013144  001002                  ADR103:   ANS1

013146  170127  047740          TST103:   LDFPS   #047740          ;LOAD FLOATING POINT STATUS
013152  172407                  FPI103:   172407                   ;ILLEGAL INSTRUCTION
013154  170200                            STFPS   FPS              ;STORE FLOATING POINT STATUS
013156  170367  165640                    STST    FEC              ;STORE EXCEPTION CODES
013162  022700  147740                    CMP     #147740,FPS      ;CHECK FLOATING POINT STATUS
013166  001401                            BEQ     .+4              ;BRANCH IF OK
013170  104000                            HLT                      ;FPS NOT EQUAL TO 147740

013172  022767  000002  165622            CMP     #02,    FEC      ;CHECK FLOATING EXCEPTION CODE
013200  001401                            BEQ     .+4              ;BRANCH IF OK
013202  104000                            HLT                      ;FEC NOT EQUAL TO 02

013204  022767  013152  165612            CMP     #FPI103, FEA     ;CHECK FLOATING EXCEPTION ADDRESS
013212  001401                            BEQ     .+4              ;BRANCH IF OK
013214  104000                            HLT                      ;FEA NOT EQUAL TO FPI103

013216  126727  165558  000103            CMPB    ICNT,   #103     ;CHECK FOR RIGHT TEST
013224  001401                            BEQ     .+4              ;BRANCH IF OK
013226  104000                            HLT                      ;PC JUMPED TESTS


                                ;*******************************************************************
                                ;TEST 104:      TEST STST (STORE STATUS, I.E. FEC (FLOATING EXCEPTION
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                                        ;                       CODES) AND FEA (FLOATING EXCEPTION ADDRESS)).
                                        ;                       ALSO TEST ALL ILLEGAL INSTRUCTIONS.
                                        ;       ILLEGAL INSTRUCTION = 173006
                                        ;       FPS = 147740,   FEC = 02,       FEA = FPI104
                                        ;*******************************************************************

013230  104400                                  SCOPE
013232  000401                                  BR      TST104          ;SKIP DATA

013234  001002                          ADR104: ANS1

013236  170127  047740                  TST104: LDFPS   #047740         ;LOAD FLOATING POINT STATUS
013242  010667  165536                          MOV     %6,     ANS2    ;SAVE R6
013246  173006                          FPI104: 173006                  ;ILLEGAL INSTRUCTION
013250  020667  165530                          CMP     %6,     ANS2    ;CHECK R6
013254  001411                                  BEQ     TSA104          ;BRANCH IF OK
013256  010667  165520                          MOV     %6,     ANS1    ;STORE R6 FOR TYPING
013262  016706  165516                          MOV     ANS2,   %6      ;RESTORE R6
013266  170200                                  STFPS   FPS             ;STORE FPS FOR TYPING
013270  170367  165526                          STST    FEC             ;STORE FEC, FEA FOR TYPING
013274  104002                                  HLT+2                   ;R6 (ANS1) NOT EQUAL TO ANS2
013276  000401                                  BR      .+4             ;SKIP STFPS

013300     000                          TSA104:
013300  170200                                  STFPS   FPS             ;STORE FLOATING POINT STATUS
013302  170367  165514                          STST    FEC             ;STORE EXCEPTION CODES
013306  022700  147740                          CMP     #147740,FPS     ;CHECK FLOATING POINT STATUS
013312  001401                                  BEQ     .+4             ;BRANCH IF OK
013314  104000                                  HLT                     ;FPS NOT EQUAL TO 147740

013316  022767  000002  165476                  CMP     #02,    FEC     ;CHECK FLOATING EXCEPTION CODE
013324  001401                                  BEQ     .+4             ;BRANCH IF OK
013326  104000                                  HLT                     ;FEC NOT EQUAL TO 02

013330  022767  013246  165466                  CMP     #FPI104, FEA    ;CHECK FLOATING EXCEPTION ADDRESS
013336  001401                                  BEQ     .+4             ;BRANCH IF OK
013340  104000                                  HLT                     ;FEA NOT EQUAL TO FPI104

013342  126727  165432  000104                  CMPB    ICNT,   #104    ;CHECK FOR RIGHT TEST
013350  001401                                  BEQ     .+4             ;BRANCH IF OK
013352  104000                                  HLT                     ;PC JUMPED TESTS


                                        ;*******************************************************************
                                        ;TEST 105:      TEST STST (STORE STATUS, I.E. FEC (FLOATING EXCEPTION
                                        ;                       CODES) AND FEA (FLOATING EXCEPTION ADDRESS)).
                                        ;                       ALSO TEST ALL ILLEGAL INSTRUCTIONS.
                                        ;       ILLEGAL INSTRUCTION = 173007
                                        ;       FPS = 147740,   FEC = 02,       FEA = FPI105
                                        ;*******************************************************************

013354  104400                                  SCOPE
013356  000401                                  BR      TST105          ;SKIP DATA

013360  001002                          ADR105: ANS1
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013362  170127  047740          TST105: LDFPS   #047740          ;LOAD FLOATING POINT STATUS
013366  173007                  FPI105: 173007                    ;ILLEGAL INSTRUCTION
013370  170200                          STFPS   FPS               ;STORE FLOATING POINT STATUS
013372  170367  165424                  STST    FEC               ;STORE EXCEPTION CODES
013376  022700  147740                  CMP     #147740,FPS       ;CHECK FLOATING POINT STATUS
013402  001401                          BEQ     .+4               ;BRANCH IF OK
013404  104000                          HLT                       ;FPS NOT EQUAL TO 147740

013406  022767  000002  165406          CMP     #02,    FEC       ;CHECK FLOATING EXCEPTION CODE
013414  001401                          BEQ     .+4               ;BRANCH IF OK
013416  104000                          HLT                       ;FEC NOT EQUAL TO 02

013420  022767  013366  165376          CMP     #FPI105, FEA      ;CHECK FLOATING EXCEPTION ADDRESS
013426  001401                          BEQ     .+4               ;BRANCH IF OK
013430  104000                          HLT                       ;FEA NOT EQUAL TO FPI105

013432  126727  165342  000105          CMPB    ICNT,   #105      ;CHECK FOR RIGHT TEST
013440  001401                          BEQ     .+4               ;BRANCH IF OK
013442  104000                          HLT                       ;PC JUMPED TESTS


                                ;*******************************************************************
                                ;TEST 106:      TEST STST (STORE STATUS, I.E. FEC (FLOATING EXCEPTION
                                ;                        CODES) AND FEA (FLOATING EXCEPTION ADDRESS)).
                                ;                        ALSO TEST ALL ILLEGAL INSTRUCTIONS.
                                ;       ILLEGAL INSTRUCTION = 173406
                                ;       FPS = 147740,   FEC = 02,       FEA = FPI106
                                ;*******************************************************************

013444  104400                          SCOPE
013446  000401                          BR      TST106            ;SKIP DATA

013450  001002                  ADR106: ANS1

013452  170127  047740          TST106: LDFPS   #047740           ;LOAD FLOATING POINT STATUS
013456  010667  165322                  MOV     %6,     ANS2      ;SAVE R6
013462  173406                  FPI106: 173406                    ;ILLEGAL INSTRUCTION
013464  020667  165314                  CMP     %6,     ANS2      ;CHECK R6
013470  001411                          BEQ     TSA106            ;BRANCH IF OK
013472  010667  165304                  MOV     %6,     ANS1      ;STORE R6 FOR TYPING
013476  016706  165302                  MOV     ANS2,   %6        ;RESTORE R6
013502  170200                          STFPS   FPS               ;STORE FPS FOR TYPING
013504  170367  165312                  STST    FEC               ;STORE FEC, FEA FOR TYPING
013510  104002                          HLT+2                     ;R6 (ANS1) NOT EQUAL TO ANS2
013512  000401                          BR      .+4               ;SKIP STFPS

013514     000                  TSA106:
013514  170200                          STFPS   FPS               ;STORE FLOATING POINT STATUS
013516  170367  165300                  STST    FEC               ;STORE EXCEPTION CODES
013522  022700  147740                  CMP     #147740,FPS       ;CHECK FLOATING POINT STATUS
013526  001401                          BEQ     .+4               ;BRANCH IF OK
013530  104000                          HLT                       ;FPS NOT EQUAL TO 147740

013532  022767  000002  165262          CMP     #02,    FEC       ;CHECK FLOATING EXCEPTION CODE
013540  001401                          BEQ     .+4               ;BRANCH IF OK
013542  104000                          HLT                       ;FEC NOT EQUAL TO 02
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013544  022767  013462  165252          CMP     #FPI106, FEA    ;CHECK FLOATING EXCEPTION ADDRESS
013552  001401                          BEQ     .+4             ;BRANCH IF OK
013554  104000                          HLT                     ;FEA NOT EQUAL TO FPI106

013556  126727  165216  000106          CMPB    ICNT,   #106    ;CHECK FOR RIGHT TEST
013564  001401                          BEQ     .+4             ;BRANCH IF OK
013566  104000                          HLT                     ;PC JUMPED TESTS

                                ;*****************************************************************
                                ;TEST 107:      TEST STST (STORE STATUS, I.E. FEC (FLOATING EXCEPTION
                                ;                       CODES) AND FEA (FLOATING EXCEPTION ADDRESS)).
                                ;                       ALSO TEST ALL ILLEGAL INSTRUCTIONS.
                                ;       ILLEGAL INSTRUCTION = 173407
                                ;       FPS = 147740,   FEC = 02,       FEA = FPI107
                                ;*****************************************************************

013570  104400                          SCOPE
013572  000401                          BR      TST107          ;SKIP DATA

013574  001002                  ADR107: ANS1

013576  170127  047740          TST107: LDFPS   #047740         ;LOAD FLOATING POINT STATUS
013602  173407                  FPI107: 173407                  ;ILLEGAL INSTRUCTION
013604  170200                          STFPS   FPS             ;STORE FLOATING POINT STATUS
013606  170367  165210                  STST    FEC             ;STORE EXCEPTION CODES
013612  022700  147740                  CMP     #147740,FPS     ;CHECK FLOATING POINT STATUS
013616  001401                          BEQ     .+4             ;BRANCH IF OK
013620  104000                          HLT                     ;FPS NOT EQUAL TO 147740

013622  022767  000002  165172          CMP     #02.    FEC     ;CHECK FLOATING EXCEPTION CODE
013630  001401                          BEQ     .+4             ;BRANCH IF OK
013632  104000                          HLT                     ;FEC NOT EQUAL TO 02

013634  022767  013602  165162          CMP     #FPI107, FEA    ;CHECK FLOATING EXCEPTION ADDRESS
013642  001401                          BEQ     .+4             ;BRANCH IF OK
013644  104000                          HLT                     ;FEA NOT EQUAL TO FPI107

013646  126727  165126  000107          CMPB    ICNT,   #107    ;CHECK FOR RIGHT TEST
013654  001401                          BEQ     .+4             ;BRANCH IF OK
013656  104000                          HLT                     ;PC JUMPED TESTS

                                ;*****************************************************************
                                ;TEST 110:      TEST STST (STORE STATUS, I.E. FEC (FLOATING EXCEPTION
                                ;                       CODES) AND FEA (FLOATING EXCEPTION ADDRESS)).
                                ;                       ALSO TEST ALL ILLEGAL INSTRUCTIONS.
                                ;       ILLEGAL INSTRUCTION = 174006
                                ;       FPS = 147740,   FEC = 02,       FEA = FPI110
                                ;*****************************************************************

013660  104400                          SCOPE
013662  000401                          BR      TST110          ;SKIP DATA

013664  001002                  ADR110: ANS1
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013666  170127  047740          TST110: LDFPS   #047740          ;LOAD FLOATING POINT STATUS
013672  010667  165106                  MOV     %6,     ANS2      ;SAVE R6
013676  174006                  FPI110: 174006                    ;ILLEGAL INSTRUCTION
013700  020667  165100                  CMP     %6,     ANS2      ;CHECK R6
013704  001411                          BEQ     TSA110            ;BRANCH IF OK
013706  010667  165070                  MOV     %6,     ANS1      ;STORE R6 FOR TYPING
013712  016706  165066                  MOV     ANS2,   %6        ;RESTORE R6
013716  170200                          STFPS   FPS               ;STORE FPS FOR TYPING
013720  170367  165076                  STST    FEC               ;STORE FEC, FEA FOR TYPING
013724  104002                          HLT+2                     ;R6 (ANS1) NOT EQUAL TO ANS2
013726  000401                          BR      .+4               ;SKIP STFPS

013730     000                  TSA110:
013730  170200                          STFPS   FPS               ;STORE FLOATING POINT STATUS
013732  170367  165064                  STST    FEC               ;STORE EXCEPTION CODES
013736  022700  147740                  CMP     #147740,FPS       ;CHECK FLOATING POINT STATUS
013742  001401                          BEQ     .+4               ;BRANCH IF OK
013744  104000                          HLT                       ;FPS NOT EQUAL TO 147740

013746  022767  000002  165046          CMP     #02,    FEC       ;CHECK FLOATING EXCEPTION CODE
013754  001401                          BEQ     .+4               ;BRANCH IF OK
013756  104000                          HLT                       ;FEC NOT EQUAL TO 02

013760  022767  013676  165036          CMP     #FPI110, FEA      ;CHECK FLOA ING EXCEPTION ADDRESS
013766  001401                          BEQ     .+4               ;BRANCH IF OK
013770  104000                          HLT                       ;FEA NOT EQUAL TO FPI110

013772  126727  165002  000110          CMPB    ICNT,   #110      ;CHECK FOR RIGHT TEST
014000  001401                          BEQ     .+4               ;BRANCH IF OK
014002  104000                          HLT                       ;PC JUMPED TESTS


                                ;*****************************************************************
                                ;TEST 111:      TEST STST (STORE STATUS, I.E. FEC (FLOATING EXCEPTION
                                ;                       CODES) AND FEA (FLOATING EXCEPTION ADDRESS)).
                                ;                       ALSO TEST ALL ILLEGAL INSTRUCTIONS.
                                ;       ILLEGAL INSTRUCTION = 174007
                                ;       FPS = 147740,   FEC = 02,       FEA = FPI111
                                ;*****************************************************************

014004  104400                          SCOPE
014006  000401                          BR      TST111            ;SKIP DATA

014010  001002                  ADR111: ANS1

014012  170127  047740          TST111: LDFPS   #047740           ;LOAD FLOATING POINT STATUS
014016  174007                  FPI111: 174007                    ;ILLEGAL INSTRUCTION
014020  170200                          STFPS   FPS               ;STORE FLOATING POINT STATUS
014022  170367  164774                  STST    FEC               ;STORE EXCEPTION CODES
014026  022700  147740                  CMP     #147740,FPS       ;CHECK FLOATING POINT STATUS
014032  001401                          BEQ     .+4               ;BRANCH IF OK
014034  104000                          HLT                       ;FPS NOT EQUAL TO 147740

014036  022767  000002  164756          CMP     #02,    FEC       ;CHECK FLOATING EXCEPTION CODE
014044  001401                          BEQ     .+4               ;BRANCH IF OK
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014046  104000                          HLT                     ;FEC NOT EQUAL TO 02

014050  022767  014016  164746          CMP     #FPI111, FEA    ;CHECK FLOATING EXCEPTION ADDRESS
014056  001401                          BEQ     .+4             ;BRANCH IF OK
014060  104000                          HLT                     ;FEA NOT EQUAL TO FPI111

014062  126727  164712  000111          CMPB    ICNT,   #111    ;CHECK FOR RIGHT TEST
014070  001401                          BEQ     .+4             ;BRANCH IF OK
014072  104000                          HLT                     ;PC JUMPED TESTS


                                ;*******************************************************************
                                ;TEST 112:      TEST STST (STORE STATUS, I.E. FEC (FLOATING EXCEPTION
                                ;                       CODES) AND FEA (FLOATING EXCEPTION ADDRESS)).
                                ;                       ALSO TEST ALL ILLEGAL INSTRUCTIONS.
                                ;       ILLEGAL INSTRUCTION = 174406
                                ;       FPS = 147740,   FEC = 02,       FEA = FPI112
                                ;*******************************************************************

014074  104400                          SCOPE
014076  000401                          BR      TST112          ;SKIP DATA

014100  001002                  ADR112: ANS1

014102  170127  047740          TST112: LDFPS   #047740         ;LOAD FLOATING POINT STATUS
014106  010667  164672                  MOV     %6,     ANS2    ;SAVE R6
014112  174406                  FPI112: 174406                  ;ILLEGAL INSTRUCTION
014114  020667  164664                  CMP     %6,     ANS2    ;CHECK R6
014120  001411                          BEQ     TSA112          ;BRANCH IF OK
014122  010667  164654                  MOV     %6,     ANS1    ;STORE R6 FOR TYPING
014126  016706  164652                  MOV     ANS2,   %6      ;RESTORE R6
014132  170200                          STFPS   FPS             ;STORE FPS FOR TYPING
014134  170367  164662                  STST    FEC             ;STORE FEC, FEA FOR TYPING
014140  104002                          HLT+2                   ;R6 (ANS1) NOT EQUAL TO ANS2
014142  000401                          BR      .+4             ;SKIP STFPS

014144     000                  TSA112:
014144  170200                          STFPS   FPS             ;STORE FLOATING POINT STATUS
014146  170367  164650                  STST    FEC             ;STORE EXCEPTION CODES
014152  022700  147740                  CMP     #147740,FPS     ;CHECK FLOATING POINT STATUS
014156  001401                          BEQ     .+4             ;BRANCH IF OK
014160  104000                          HLT                     ;FPS NOT EQUAL TO 147740

014162  022767  000002  164632          CMP     #02,    FEC     ;CHECK FLOATING EXCEPTION CODE
014170  001401                          BEQ     .+4             ;BRANCH IF OK
014172  104000                          HLT                     ;FEC NOT EQUAL TO 02

014174  022767  014112  164622          CMP     #FPI112, FEA    ;CHECK FLOATING EXCEPTION ADDRESS
014202  001401                          BEQ     .+4             ;BRANCH IF OK
014204  104000                          HLT                     ;FEA NOT EQUAL TO FPI112

014206  126727  164566  000112          CMPB    ICNT,   #112    ;CHECK FOR RIGHT TEST
014214  001401                          BEQ     .+4             ;BRANCH IF OK
014216  104000                          HLT                     ;PC JUMPED TESTS
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                                ;*******************************************************************
                                ;TEST 113:      TEST STST (STORE STATUS, I.E. FEC (FLOATING EXCEPTION
                                ;                        CODES) AND FEA (FLOATING EXCEPTION ADDRESS)).
                                ;                        ALSO TEST ALL ILLEGAL INSTRUCTIONS.
                                ;       ILLEGAL INSTRUCTION = 174407
                                ;       FPS = 147740,   FEC = 02,       FEA = FPI113
                                ;*******************************************************************

014220  104400                          SCOPE
014222  000401                          BR      TST113          ;SKIP DATA

014224  001002                  ADR113: ANS1

014226  170127  047740          TST113: LDFPS   #047740         ;LOAD FLOATING POINT STATUS
014232  174407                  FPI113: 174407                  ;ILLEGAL INSTRUCTION
014234  170200                          STFPS   FPS             ;STORE FLOATING POINT STATUS
014236  170367  164560                  STST    FEC             ;STORE EXCEPTION CODES
014242  022700  147740                  CMP     #147740,FPS     ;CHECK FLOATING POINT STATUS
014246  001401                          BEQ     .+4             ;BRANCH IF OK
014250  104000                          HLT                     ;FPS NOT EQUAL TO 147740

014252  022767  000002  164542          CMP     #02,    FEC     ;CHECK FLOATING EXCEPTION CODE
014260  001401                          BEQ     .+4             ;BRANCH IF OK
014262  104000                          HLT                     ;FEC NOT EQUAL TO 02

014264  022767  014232  164532          CMP     #FPI113, FEA    ;CHECK FLOATING EXCEPTION ADDRESS
014272  001401                          BEQ     .+4             ;BRANCH IF OK
014274  104000                          HLT                     ;FEA NOT EQUAL TO FPI113

014276  126727  164476  000113          CMPB    ICNT,   #113    ;CHECK FOR RIGHT TEST
014304  001401                          BEQ     .+4             ;BRANCH IF OK
014306  104000                          HLT                     ;PC JUMPED TESTS


                                ;*******************************************************************
                                ;TEST 114:      TEST STST (STORE STATUS, I.E. FEC (FLOATING EXCEPTION
                                ;                        CODES) AND FEA (FLOATING EXCEPTION ADDRESS)).
                                ;                        ALSO TEST ALL ILLEGAL INSTRUCTIONS.
                                ;       ILLEGAL INSTRUCTION = 176006
                                ;       FPS = 147740,   FEC = 02,       FEA = FPI114
                                ;*******************************************************************

014310  104400                          SCOPE
014312  000401                          BR      TST114          ;SKIP DATA

014314  001002                  ADR114: ANS1

014316  170127  047740          TST114: LDFPS   #047740         ;LOAD FLOATING POINT STATUS
014322  010667  164456                  MOV     %6,     ANS2    ;SAVE R6
014326  176006                  FPI114: 176006                  ;ILLEGAL INSTRUCTION
014330  020667  164450                  CMP     %6,     ANS2    ;CHECK R6
014334  001411                          BEQ     TSA114          ;BRANCH IF OK
014336  010667  164440                  MOV     %6,     ANS1    ;STORE R6 FOR TYPING
014342  016706  164438                  MOV     ANS2,   %6      ;RESTORE R6
014346  170200                          STFPS   FPS             ;STORE FPS FOR TYPING
014350  170367  164446                  STST    FEC             ;STORE FEC, FEA FOR TYPING
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014354  104002                          HLT+2                   ;R6 (ANS1) NOT EQUAL TO ANS2
014356  000401                          BR      .+4             ;SKIP STFPS

014360     000                  TSA114:
014360  170200                          STFPS   FPS             ;STORE FLOATING POINT STATUS
014362  170367  164434                  STST    FEC             ;STORE EXCEPTION CODES
014366  022700  147740                  CMP     #147740,FPS     ;CHECK FLOATING POINT STATUS
014372  001401                          BEQ     .+4             ;BRANCH IF OK
014374  104000                          HLT                     ;FPS NOT EQUAL TO 147740

014376  022767  000002  164416          CMP     #02.    FEC     ;CHECK FLOATING EXCEPTION CODE
014404  001401                          BEQ     .+4             ;BRANCH IF OK
014406  104000                          HLT                     ;FEC NOT EQUAL TO 02

014410  022767  014326  164406          CMP     #FPI114, FEA    ;CHECK FLOATING EXCEPTION ADDRESS
014416  001401                          BEQ     .+4             ;BRANCH IF OK
014420  104000                          HLT                     ;FEA NOT EQUAL TO FPI114

014422  126727  164352  000114          CMPB    ICNT.   #114    ;CHECK FOR RIGHT TEST
014430  001401                          BEQ     .+4             ;BRANCH IF OK
014432  104000                          HLT                     ;PC JUMPED TESTS


                        ;*******************************************************************
                        ;TEST 115:      TEST STST (STORE STATUS, I.E. FEC (FLOATING EXCEPTION
                        ;                       CODES) AND FEA (FLOATING EXCEPTION ADDRESS) .
                        ;                       ALSO TEST ALL ILLEGAL INSTRUCTIONS.
                        ;       ILLEGAL INSTRUCTION = 176007
                        ;       FPS = 147740,   FEC = 02.       FEA = FPI115
                        ;*******************************************************************

014434  104400                          SCOPE
014436  000401                          BR      TST115          ;SKIP DATA

014440  001002                  ADR115: ANS1

014442  170127  047740          TST115: LDFPS   #047740         ;LOAD FLOATING POINT STATUS
014446  176007                  FPI115: 176007                  ;ILLEGAL INSTRUCTION
014450  170200                          STFPS   FPS             ;STORE FLOATING POINT STATUS
014452  170367  164344                  STST    FEC             ;STORE EXCEPTION CODES
014456  022700  147740                  CMP     #147740,FPS     ;CHECK FLOATING POINT STATUS
014462  001401                          BEQ     .+4             ;BRANCH IF OK
014464  104000                          HLT                     ;FPS NOT EQUAL TO 147740

014466  022767  000002  164326          CMP     #02.    FEC     ;CHECK FLOATING EXCEPTION CODE
014474  001401                          BEQ     .+4             ;BRANCH IF OK
014476  104000                          HLT                     ;FEC NOT EQUAL TO 02

014500  022767  014446  164316          CMP     #FPI115, FEA    ;CHECK FLOATING EXCEPTION ADDRESS
014506  001401                          BEQ     .+4             ;BRANCH IF OK
014510  104000                          HLT                     ;FEA NOT EQUAL TO FPI115

014512  126727  164262  000115          CMPB    ICNT.   #115    ;CHECK FOR RIGHT TEST
014520  001401                          BEQ     .+4             ;BRANCH IF OK
014522  104000                          HLT                     ;PC JUMPED TESTS
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                                ;*******************************************************************
                                ;TEST 116:      TEST STST (STORE STATUS, I.E. FEC (FLOATING EXCEPTION
                                ;                        CODES) AND FEA (FLOATING EXCEPTION ADDRESS)).
                                ;                        ALSO TEST ALL ILLEGAL INSTRUCTIONS.
                                ;       ILLEGAL INSTRUCTION = 177406
                                ;       FPS = 147740,   FEC = 02,       FEA = FPI116
                                ;*******************************************************************

014524  104400                          SCOPE
014526  000401                          BR      TST116          ;SKIP DATA

014530  001002                  ADR116: ANS1

014532  170127  047740          TST116: LDFPS   #047740         ;LOAD FLOATING POINT STATUS
014536  010667  164242                  MOV     %6,     ANS2    ;SAVE R6
014542  177406                  FPI116: 177406                  ;ILLEGAL INSTRUCTION
014544  020667  164234                  CMP     %6,     ANS2    ;CHECK R6
014550  001411                          BEQ     TSA116          ;BRANCH IF OK
014552  010667  164224                  MOV     %6,     ANS1    ;STORE R6 FOR TYPING
014556  016706  164222                  MOV     ANS2,   %6      ;RESTORE R6
014562  170200                          STFPS   FPS             ;STORE FPS FOR TYPING
014564  170367  164232                  STST    FEC             ;STORE FEC, FEA FOR TYPING
014570  104002                          HLT+2                   ;R6 (ANS1) NOT EQUAL TO ANS2
014572  000401                          BR      .+4             ;SKIP STFPS

014574     000                  TSA116:
014574  170200                          STFPS   FPS             ;STORE FLOATING POINT STATUS
014576  170367  164220                  STST    FEC             ;STORE EXCEPTION CODES
014602  022700  147740                  CMP     #147740,FPS     ;CHECK FLOATING POINT STATUS
014606  001401                          BEQ     .+4             ;BRANCH IF OK
014610  104000                          HLT                     ;FPS NOT EQUAL TO 147740

014612  022767  000002  164202          CMP     #02,    FEC     ;CHECK FLOATING EXCEPTION CODE
014620  001401                          BEQ     .+4             ;BRANCH IF OK
014622  104000                          HLT                     ;FEC NOT EQUAL TO 02

014624  022767  014542  164172          CMP     #FPI116, FEA    ;CHECK FLOATING EXCEPTION ADDRESS
014632  001401                          BEQ     .+4             ;BRANCH IF OK
014634  104000                          HLT                     ;FEA NOT EQUAL TO FPI116

014636  126727  164136  000116          CMPB    ICNT,   #116    ;CHECK FOR RIGHT TEST
014644  001401                          BEQ     .+4             ;BRANCH IF OK
014646  104000                          HLT                     ;PC JUMPED TESTS


                                ;*******************************************************************
                                ;TEST 117:      TEST STST (STORE STATUS, I.E. FEC (FLOATING EXCEPTION
                                ;                        CODES) AND FEA (FLOATING EXCEPTION ADDRESS)).
                                ;                        ALSO TEST ALL ILLEGAL INSTRUCTIONS.
                                ;       ILLEGAL INSTRUCTION = 177407
                                ;       FPS = 147740,   FEC = 02,       FEA = FPI117
                                ;*******************************************************************

014650  104400                          SCOPE
014652  000401                          BR      TST117          ;SKIP DATA
```

```
014654  001002                          ADR117: ANS1

014656  170127  047740                  TST117: LDFPS   #047740        ;LOAD FLOATING POINT STATUS
014662  177407                          FPI117: 177407                  ;ILLEGAL INSTRUCTION
014664  170200                                  STFPS   FPS             ;STORE FLOATING POINT STATUS
014666  170367  164130                          STST    FEC             ;STORE EXCEPTION CODES
014672  022700  147740                          CMP     #147740,FPS     ;CHECK FLOATING POINT STATUS
014676  001401                                  BEQ     .+4             ;BRANCH IF OK
014700  104000                                  HLT                     ;FPS NOT EQUAL TO 147740

014702  022767  000002  164112                  CMP     #02.    FEC     ;CHECK FLOATING EXCEPTION CODE
014710  001401                                  BEQ     .+4             ;BRANCH IF OK
014712  104000                                  HLT                     ;FEC NOT EQUAL TO 02

014714  022767  014662  164102                  CMP     #FPI117, FEA    ;CHECK FLOATING EXCEPTION ADDRESS
014722  001401                                  BEQ     .+4             ;BRANCH IF OK
014724  104000                                  HLT                     ;FEA NOT EQUAL TO FPI117

014726  125727  164046  000117                  CMPB    ICNT.   #117    ;CHECK FOR RIGHT TEST
014734  001401                                  BEQ     .+4             ;BRANCH IF OK
014736  104000                                  HLT                     ;PC JUMPED TESTS
```

```
014740  104400                      DONE:   SCOPE
014742  032737  002000  177570               BIT     #SW10,@#SWR     ;RING THE BELL?
014750  001005                              BNE     1$              ;NO!
014752  012767  000207  001242              MOV     #BELL,.TYPE     ;TYPE A BELL
014760  000004  016222                      TYPE    ,.TYPE
014764  005046                      1$:     CLR     -(6)            ;CLEAR TRACE TRAP
014766  032737  010000  177570              BIT     #SW12,@#SWR     ;RUN WITH TRT?
014774  001010                              BNE     2$
014776  005167  001222                      COM     TRPB
015002  100005                              BPL     2$
015004  052716  000020                      BIS     #20,(6)         ;SET TRACE TRAP
015010  012746  001062                      MOV     #BEGIN,-(6)     ;JUMP TO START OF TEST
015014  000412                              BR      YESRT
015016  012746  001062              2$:     MOV     #BEGIN,-(6)     ;JUMP TO START OF TEST
015022  013700  000042                      MOV     @#42,R0         ;GET MONITOR ADDRESS
015026  001404                              BEQ     3$              ;IF NONE
015030  004710                              JSR     7,(0)           ;GO TO MONITOR
015032  000240                              NOP
015034  000240                              NOP
015036  000240                              NOP
015040  000002                      3$:     RTI
015042  000002                      YESRT:  RTI                     ;RETURN TO PROGRAM FROM TRAP

015044  032737  000400  177570      .EMT:   BIT     #SW08,@#SWR     ;KILL LDUB OR LOOP ON SPEC. TEST
015052  001404                              BEQ     1$
015054  123767  177570  163716              CMPB    @#SWR,ICNT      ;ON RIGHT TEST?   *SW7-0*
015062  001437                              BEQ     OVER
015064  113703  177570              1$:     MOVB    @#SWR,R3        ;GET LB BITS
015070  170003                              LDUB
015072  032737  040000  177570              BIT     #SW14,@#SWR     ;LOOP ON TEST
015100  001026                              BNE     KIT
015102  032737  004000  177570              BIT     #SW11,@#SWR     ;KILL ITERATIONS
015110  001012                              BNE     SAVLAD
015112  105767  163663                      TSTB    ICNT+1
015116  001404                              BEQ     2$              ;BRANCH IF FIRST
015120  126767  001106  163653              CMPB    TIMES,ICNT+1    ;DONE?
015126  001013                              BNE     KIT             ;BRANCH IF NOT
015130  112767  000001  163643      2$:     MOVB    #1,ICNT+1       ;FIRST ITERATION
015136  105267  163636              SAVLAD: INCB    ICNT            ;COUNT TEST NUMBERS
015142  011667  001060                      MOV     (6),LAD         ;SAVE LOOP ADDRESS
015146  016737  163626  177570              MOV     ICNT,@#DISPLAY  ;DISPLAY TEST NO. AND ITERATION COUNT
015154  000002                              RTI                     ;RETURN

015156  105267  163617              KIT:    INCB    ICNT+1
015162  016737  163612  177570      OVER:   MOV     ICNT,@#DISPLAY  ;SET UP DISPLAY
015170  005767  001032                      TST     LAD             ;FIRST ONE?
015174  001760                              BEQ     SAVLAD
015176  016716  001024                      MOV     LAD,(6)         ;FUDGE RETURN ADDRESS
015202  000002                              RTI                     ;FIXES PS
```

```
015204  032737  002000  177570  .TRP:  BIT     #SW10,@#SWR     ;BELL ON ERROR?
015212  001405                         BEQ     1$              ;NO - SKIP
015214  012767  000207  001000         MOV     #BELL,.TYPE     ;TYPE A BELL
015222  000004  016222                 TYPE    .TYPE
015226  004767  000406          1$:    JSR     PC,ERROR        ;COUNT THE NUMBER OF ERRORS
015232  010446                         MOV     R4,-(6)
015234  032737  020000  177570         BIT     #SW13,@#SWR     ;SKIP TYPEOUT IF SET
015242  001072                         BNE     4$
015244  000004  016170                 TYPE    ,RETURN
015250  016646  000002                 MOV     2(6),-(6)       ;PUT ADDRESS OF INSTRUCTION ON STACK
015254  162716  000002                 SUB     #2,(6)
015260  011605                         MOV     (6),TTY         ;TYPE (6) IN OCTAL
015262  004767  000212                 JSR     %7,PRINTR       ;TYPE LEADING ZERO'S
015266  000004  016176                 TYPE    ,SPACE+3
015272  010005                         MOV     R0,TTY          ;TYPE R0 IN OCTAL
015274  004767  000200                 JSR     %7,PRINTR       ;TYPE LEADING ZERO'S
015300  000004  016177                 TYPE    ,SPACE+4
015304  012703  001002                 MOV     #ANS1,R3        ;ADDRESS OF DATA
015310  113604                         MOVB    @(6)+,R4        ;AMOUNT OF DATA IN TABLE
015312  001426                         BEQ     3$
015314  100016                         BPL     2$              ;TYPE STACK?
015316  016667  000006  163456         MOV     6(6),ANS1
015324  016667  000010  163452         MOV     10(6),ANS2
015332  016667  000012  163446         MOV     12(6),ANS3
015340  016667  000014  163442         MOV     14(6),ANS4
015346  042704  177600                 BIC     #177600,R4      ;CLEAR SIGN
015352  000004  016177          2$:    TYPE    ,SPACE+4
015356  012305                         MOV     (3)+,TTY        ;TYPE (3)+ IN OCTAL
015360  004767  000114                 JSR     %7,PRINTR       ;TYPE LEADING ZERO'S
015364  005304                         DEC     R4
015366  001371                         BNE     2$
015370  005700                  3$:    TST     FPS
015372  100016                         BPL     4$
015374  000004  016173                 TYPE    ,SPACE
015400  170367  163416                 STST    FEC
015404  016705  163412                 MOV     FEC,TTY         ;TYPE FEC IN OCTAL
015410  004767  000064                 JSR     %7,PRINTR       ;TYPE LEADING ZERO'S
015414  000004  016176                 TYPE    ,SPACE+3
015420  016705  163400                 MOV     FEA,TTY         ;TYPE FEA IN OCTAL
015424  004767  000050                 JSR     %7,PRINTR       ;TYPE LEADING ZERO'S
015430  012604                  4$:    MOV     (6)+,R4
015432  005737  177570                 TST     @#SWR           ;HALT ON ERROR
015436  100001                         BPL     .+4             ;SKIP IF CONTINUE
015440  000000                         HALT                    ;HALT ON ERROR!
015442  032737  001000  177570         BIT     #SW09,@#SWR     ;CHECK FOR INHIBIT LOOP ON ERROR
015450  001001                         BNE     .+4             ;SKIP IF LOOP ON ERROR
015452  000002                         RTI
015454  105067  163321                 CLRB    ICNT+1
015460  032737  000400  177570         BIT     #SW08,@#SWR     ;CHECK FOR LOAD MICROBREAK
015466  001233                         BNE     KIT             ;BRANCH IF NOT
015470  113703  177570                 MOVB    @#SWR,R3        ;PUT MICROBREAK ADDRESS IN R3
015474  170003                         LDUB                    ;LOAD MICROBREAK
015476  000627                         BR      KIT             ;LOOP ON TEST UNTIL NO ERRORS
```

```
015500  112767  000001  000130  PRINTR: MOVB    #1,A4$          ;SET ZERO FILL SWITCH
015506  000402                          BR      .+6
015510  005067  000122          PRINTS: CLR     A4$             ;SUPRESS LEADING ZERO'S
015514  112767  177772  000115          MOVB    #-6,A4$+1       ;SET COUNT
015522  010446                          MOV     R4,-(6)         ;SAVE R4
015524  012704  015626                  MOV     #3$,R4          ;SET POINTER TO FIRST ASCII CHAR.
015530  105014                          CLRB    (4)             ;CLEAR FIRST BYTE
015532  000405                          BR      2$              ;ROTATE FIRST BIT
015534  105014                  1$:     CLRB    (4)             ;CLEAR BYTE OF CHARACTER
015536  006105                          ROL     TTY             ;ROTATE BIT INTO C
015540  106114                          ROLB    (4)             ;PACK IT
015542  006105                          ROL     TTY             ;ROTATE BIT INTO C
015544  106114                          ROLB    (4)             ;PACK IT
015546  006105                  2$:     ROL     TTY             ;ROTATE BIT INTO C
015550  106114                          ROLB    (4)             ;PACK IT
015552  105714                          TSTB    (4)
015554  001402                          BEQ     .+6
015556  105267  000054                  INCB    A4$
015562  105767  000050                  TSTB    A4$             ;CHECK FILL SWITCH
015566  001402                          BEQ     .+6
015570  152724  000060                  BISB    #'0,(4)+        ;MAKE INTO ASCII CHAR
015574  105267  000037                  INCB    A4$+1
015600  001355                          BNE     1$              ;REPEAT
015602  022704  015626                  CMP     #3$,R4
015606  001002                          BNE     .+6
015610  112724  000060                  MOVB    #'0,(4)+
015614  105014                          CLRB    (4)
015616  000004  015626                  TYPE    ,3$             ;TYPE IT
015622  012604                          MOV     (6)+,R4         ;RESTORE R4
015624  000207                          RTS     PC

015626  000004                  3$:     .BLKW   4
015636  000000                  A4$:    0

015640  005267  000364          ERROR:  INC     ERRORS          ;COUNT ERRORS
015644  132737  000001  000041          BITB    #1,@#41         ;AUTO MODE?
015652  001412                          BEQ     1$              ;NO!
015654  022767  000010  000346          CMP     #10.,ERRORS     ;TOO MANY?
015662  001006                          BNE     1$              ;NOT YET
015664  013700  000042                  MOV     @#42,R0         ;GET ADDRESS
015670  001403                          BEQ     1$              ;FORGET IT IF ZERO
015672  005037  000042                  CLR     @#42            ;ZAP 42
015676  004710                          JSR     PC,(0)          ;CALL THE MONITOR
015700  000207                  1$:     RTS     PC              ;RETURN
```

```
015702  012777  016076  000306  POWDWN: MOV     #ILLUP,@UPVEC    ;SET FOR FAST UP
015710  012777  000340  000302          MOV     #340,@UPVEC+2    ;PRIO:7
015716  170246                          STFPS   -(6)             ;GET THE FPS
015720  170011                          SETD
015722  174046                          STD     AC0,-(6)         ;SAVE AC'S
015724  174146                          STD     AC1,-(6)
015726  174246                          STD     AC2,-(6)
015730  174346                          STD     AC3,-(6)
015732  172404                          LDD     AC4,AC0
015734  174046                          STD     AC0,-(6)
015736  172405                          LDD     AC5,AC0
015740  174046                          STD     AC0,-(6)
015742  010046                          MOV     R0,-(6)          ;SAVE REGISTERS
015744  010146                          MOV     R1,-(6)
015746  010246                          MOV     R2,-(6)
015750  010346                          MOV     R3,-(6)
015752  010446                          MOV     R4,-(6)
015754  010546                          MOV     R5,-(6)
015756  010667  000220                  MOV     SP,SAVE6         ;SAVE SP
015762  012777  015772  000226          MOV     #POWUP,@UPVEC    ;SET UP VECTOR
015770  000000                          HALT

015772  016706  000204          POWUP:  MOV     SAVE6,SP         ;GET SP
015776  005001                          CLR     R1               ;WAIT LOOP FOR THE TTY
016000  005201                  1$:     INC     R1
016002  001376                          BNE     1$
016004  012605                          MOV     (6)+,R5          ;GET THE REGISTERS
016006  012604                          MOV     (6)+,R4
016010  012603                          MOV     (6)+,R3
016012  012602                          MOV     (6)+,R2
016014  012601                          MOV     (6)+,R1
016016  012600                          MOV     (6)+,R0
016020  170011                          SETD
016022  172426                          LDD     (6)+,AC0         ;RESTORE THE AC'S
016024  174005                          STD     AC0,AC5
016026  172426                          LDD     (6)+,AC0
016030  174004                          STD     AC0,AC4
016032  172726                          LDD     (6)+,AC3
016034  172626                          LDD     (6)+,AC2
016036  172526                          LDD     (6)+,AC1
016040  172426                          LDD     (6)+,AC0
016042  170126                          LDFPS   (6)+             ;RESTORE FPS
016044  012777  015702  000140          MOV     #POWDWN,@DWNVEC  ;SET UP THE POWER DOWN VECTOR
016052  012777  000340  000134          MOV     #340,@DWNVEC+2
016060  000004  016064                  TYPE    ..+2             ;.ASCIZ <15><12>"POWER"
016074  000002                          RTI

016076  000000                  ILLUP:  HALT                     ;THE POWER UP SEQUENCE WAS STARTED
016100  000776                          BR      .-2              ; BEFORE THE POWER DOWN WAS COMPLETE
```

```
016102  010546                  .IOT:   MOV     TTY,-(6)          ;SAVE TTY
016104  017605  000002                  MOV     @2(6),TTY         ;GET ADDRESS TO BE TYPED
016110  105715                  1$:     TSTB    (TTY)             ;TERMINATOR?
016112  001406                          BEQ     2$
016114  112537  177566                  MOVB    (TTY)+,@#177566   ;LOAD AND TYPE THE CHARACTER
016120  105737  177564                  TSTB    @#177564          ;IS THE PRINTER READY
016124  100375                          BPL     .-4
016126  000770                          BR      1$                ;GET THE NEXT CHARACTER
016130  017646  000002          2$:     MOV     @2(6),-(6)        ;GET ADDRESS TO BE TYPED
016134  062766  000002  000004          ADD     #2,4(6)           ;ADD 2 TO THE ADDRESS
016142  022666  000002                  CMP     (6)+,2(6)         ;IS IT .+2?
016146  001006                          BNE     3$                ;NO
016150  062705  000002                  ADD     #2,TTY            ;ADD 2 TO THE ADDRESS
016154  042705  000001                  BIC     #1,TTY            ;BACK UP TO AN EVEN BYTE
016160  010566  000002                  MOV     TTY,2(6)          ;RESTORE ADDRESS
016164  012605                  3$:     MOV     (6)+,TTY          ;RESTORE TTY
016166  000002                          RTI                       ;RETURN

016170  005015     000          RETURN: .ASCIZ  <15><12>          ;RETURN AND LINEFEED
016173     015  020012  020040  SPACE:  .ASCIZ  <15><12>"   "     ;RETURN AND 3 SPACES
016200     000
        016202                  .EVEN
016202  000000                  SAVE6:  0
016204  172160                  FPTADR: 172160                    ;FLOATING POINT ADDRESS ON THE 11/20
016206  000244  000246          FPVECT: 244,246                   ;FLOATING POINT VECTOR ADDRESS
016212  000024  000026          DWNVEC: 24,26                     ;POWER DOWN VECTOR ADDRESS
016216  000024  000026          UPVEC:  24,26                     ;POWER UP VECTOR ADDRESS
016222  000000                  .TYPE:  0
016224  000000                  TRPB:   0
016226  000000                  LAD:    0                         ;LOOP ADDRESS
016230  000000                  ERRORS: 0                         ;ERROR COUNT
016232  000377                  TIMES:  377                       ;ITERATION COUNT
        000001                  .END
```

```
AC0     =%000000        391#   3938   3942*   3943   3944*   3945   3967*   3968   3969*   3970   3974*
AC1     =%000001        392#   3939   3973*
AC2     =%000002        393#   3940   3972*
AC3     =%000003        394#   3941   3971*
AC4     =%000004        395#   3942   3970*
AC5     =%000005        396#   3944   3968*
ADR1      001200        472#    475    477
ADR10     002234        771#    774    776
ADR100    012604       3167#
ADR101    012730       3212#
ADR102    013020       3246#
ADR103    013144       3291#
ADR104    013234       3325#
ADR105    013360       3370#
ADR106    013450       3404#
ADR107    013574       3449#
ADR11     002354        815#    818    820
ADR110    013664       3483#
ADR111    014010       3528#
ADR112    014100       3562#
ADR113    014224       3607#
ADR114    014314       3641#
ADR115    014440       3686#
ADR116    014530       3720#
ADR117    014654       3765#
ADR12     002474        859#    862    864
ADR13     002614        903#    906    908
ADR14     002734        947#
ADR15     003060        992#
ADR16     003152       1027#   1030   1032
ADR17     003272       1071#   1074   1076
ADR2      001320        516#    519    521
ADR20     003412       1115#   1118   1120
ADR21     003532       1159#   1162   1164
ADR22     003652       1203#   1206   1208
ADR23     003772       1247#   1250   1252
ADR24     004112       1291#
ADR25     004240       1337#
ADR26     004332       1372#   1375   1377
ADR27     004452       1416#   1419   1421
ADR3      001440        560#    563    565
ADR30     004572       1460#   1463   1465
ADR31     004712       1504#   1507   1509
ADR32     005032       1548#   1551   1553
ADR33     005152       1592#   1595   1597
ADR34     005272       1636#
ADR35     005416       1681#   1684   1686
ADR36     005536       1725#   1728   1730
ADR37     005656       1769#   1772   1774
ADR4      001560        604#
ADR40     005776       1813#   1816   1818
ADR41     006116       1857#   1860   1862
ADR42     006236       1901#   1904   1906
ADR43     006356       1945#
ADR44     006504       1991#   1994   1997
ADR45     006626       2036#   2039   2042
```

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ADR46   006750          2081#   2084    2087
ADR47   007072          2126#   2129    2132
ADR5    001704           649#
ADR50   007214          2171#   2174    2177
ADR51   007336          2216#   2219    2222
ADR52   007460          2261#
ADR53   007606          2307#
ADR54   007700          2342#   2345    2348
ADR55   010022          2387#   2390    2393
ADR56   010144          2432#   2435    2438
ADR57   010266          2477#   2480    2483
ADR6    001774           683#    686     688
ADR60   010410          2522#   2525    2528
ADR61   010532          2567#   2570    2573
ADR62   010654          2612#
ADR63   011002          2658#
ADR64   011074          2693#
ADR65   011220          2738#
ADR66   011310          2772#
ADR67   011434          2817#
ADR7    002114           727#    730     732
ADR70   011524          2851#
ADR71   011650          2896#
ADR72   011740          2930#
ADR73   012064          2975#
ADR74   012154          3009#
ADR75   012300          3054#
ADR76   012370          3088#
ADR77   012514          3133#
ANS1    001002           425#    472     479*    516     523*    560     567*    604     611*    649     683     690*    727
                         734*    771     778*    815     822*    859     866*    903     910*    947     954*    992     1027
                        1034*   1071    1078*   1115    1122*   1159    1166*   1203    1210*   1247    1254*   1291    1299*
                        1337    1372    1379*   1416    1423*   1460    1467*   1504    1511*   1548    1555*   1592    1599*
                        1636    1643*   1681    1688*   1725    1732*   1769    1776*   1813    1820*   1857    1864*   1901
                        1908*   1945    1953*   1991    1999*   2036    2044*   2081    2089*   2126    2134*   2171    2179*
                        2216    2224*   2261    2269*   2307    2342    2350*   2387    2395*   2432    2440*   2477    2485*
                        2522    2530*   2567    2575*   2612    2620*   2658    2693    2700*   2738    2772    2779*   2817
                        2851    2858*   2896    2930    2937*   2975    3009    3016*   3054    3088    3095*   3133    3167
                        3174*   3212    3246    3253*   3291    3325    3332*   3370    3404    3411*   3449    3483    3490*
                        3528    3562    3569*   3607    3641    3648*   3686    3720    3727*   3765    3854    3858*
ANS2    001004           426#    607*    609     612     950*    952     955     1294*   1297    1300    1639*   1641    1644
                        1948*   1951    1954    2264*   2267    2270    2615*   2618    2621    2696*   2698    2701    2775*
                        2777    2780    2854*   2856    2859    2933*   2935    2938    3012*   3014    3017    3091*   3093
                        3096    3170*   3172    3175    3249*   3251    3254    3328*   3330    3333    3407*   3409    3412
                        3486*   3488    3491    3565*   3567    3570    3644*   3646    3649    3723*   3725    3728    3859*
ANS3    001006           427#    3860*
ANS4    001010           428#    3861*
ANS5    001012           429#
ANS6    001014           430#
ANS7    001016           431#
ANS8    001020           432#
A4$     015636          3890*   3892*   3893*   3907*   3908    3911*   3922#
BEG     001026           415     436#
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BELL  = 000207           380#    3791    3839
DISPLA= 177570           376#    3828*   3832*
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| | | | | | | | | | | | | | | |
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| ERROR | 015640 | 3841 | 3924# | | | | | | | | | | | |
| ERRORS | 016230 | 3924* | 3927 | 4013# | | | | | | | | | | |
| FEA | 001024 | 434# | 496 | 540 | 584 | 629 | 663 | 707 | 751 | 795 | 839 | 883 | 927 | 972 |
| | | 1007 | 1051 | 1095 | 1139 | 1183 | 1227 | 1271 | 1317 | 1352 | 1396 | 1440 | 1484 | 1528 |
| | | 1572 | 1616 | 1661 | 1705 | 1749 | 1793 | 1837 | 1881 | 1925 | 1971 | 2016 | 2061 | 2106 |
| | | 2151 | 2196 | 2241 | 2287 | 2322 | 2367 | 2412 | 2457 | 2502 | 2547 | 2592 | 2638 | 2673 |
| | | 2718 | 2752 | 2797 | 2831 | 2876 | 2910 | 2955 | 2989 | 3034 | 3068 | 3113 | 3147 | 3192 |
| | | 3226 | 3271 | 3305 | 3350 | 3384 | 3429 | 3463 | 3508 | 3542 | 3587 | 3621 | 3666 | 3700 |
| | | 3745 | 3779 | 3875 | | | | | | | | | | |
| FEC | 001022 | 419* | 433# | 481* | 487* | 492 | 525* | 531* | 536 | 569* | 575* | 580 | 614* | 620* |
| | | 625 | 654* | 659 | 692* | 698* | 703 | 736* | 742* | 747 | 780* | 786* | 791 | 824* |
| | | 830* | 835 | 868* | 874* | 879 | 912* | 918* | 923 | 957* | 963* | 968 | 998* | 1003 |
| | | 1036* | 1042* | 1047 | 1080* | 1086* | 1091 | 1124* | 1130* | 1135 | 1168* | 1174* | 1179 | 1212* |
| | | 1218* | 1223 | 1256* | 1262* | 1267 | 1302* | 1308* | 1313 | 1343* | 1348 | 1381* | 1387* | 1392 |
| | | 1425* | 1431* | 1436 | 1469* | 1475* | 1480 | 1513* | 1519* | 1524 | 1557* | 1563* | 1568 | 1601* |
| | | 1607* | 1612 | 1646* | 1652* | 1657 | 1690* | 1696* | 1701 | 1734* | 1740* | 1745 | 1778* | 1784* |
| | | 1789 | 1822* | 1828* | 1833 | 1866* | 1872* | 1877 | 1910* | 1916* | 1921 | 1956* | 1962* | 1967 |
| | | 2001* | 2007* | 2012 | 2046* | 2052* | 2057 | 2091* | 2097* | 2102 | 2136* | 2142* | 2147 | 2181* |
| | | 2187* | 2192 | 2226* | 2232* | 2237 | 2272* | 2278* | 2283 | 2313* | 2318 | 2352* | 2358* | 2363 |
| | | 2397* | 2403* | 2408 | 2442* | 2448* | 2453 | 2487* | 2493* | 2498 | 2532* | 2538* | 2543 | 2577* |
| | | 2583* | 2588 | 2623* | 2629* | 2634 | 2664* | 2669 | 2703* | 2709* | 2714 | 2743* | 2748 | 2782* |
| | | 2788* | 2793 | 2822* | 2827 | 2861* | 2867* | 2872 | 2901* | 2906 | 2940* | 2946* | 2951 | 2980* |
| | | 2985 | 3019* | 3025* | 3030 | 3059* | 3064 | 3098* | 3104* | 3109 | 3138* | 3143 | 3177* | 3183* |
| | | 3188 | 3217* | 3222 | 3256* | 3262* | 3267 | 3296* | 3301 | 3335* | 3341* | 3346 | 3375* | 3380 |
| | | 3414* | 3420* | 3425 | 3454* | 3459 | 3493* | 3499* | 3504 | 3533* | 3538 | 3572* | 3578* | 3583 |
| | | 3612* | 3617 | 3651* | 3657* | 3662 | 3691* | 3696 | 3730* | 3736* | 3741 | 3770* | 3775 | 3871* |
| | | 3872 | | | | | | | | | | | | |
| FLTERR | 000760 | 418# | 456 | | | | | | | | | | | |
| FPI1 | 001212 | 476# | 496 | | | | | | | | | | | |
| FPI10 | 002246 | 775# | 795 | | | | | | | | | | | |
| FPI100 | 012616 | 3171# | 3192 | | | | | | | | | | | |
| FPI101 | 012736 | 3215# | 3226 | | | | | | | | | | | |
| FPI102 | 013032 | 3250# | 3271 | | | | | | | | | | | |
| FPI103 | 013152 | 3294# | 3305 | | | | | | | | | | | |
| FPI104 | 013246 | 3329# | 3350 | | | | | | | | | | | |
| FPI105 | 013366 | 3373# | 3384 | | | | | | | | | | | |
| FPI106 | 013462 | 3408# | 3429 | | | | | | | | | | | |
| FPI107 | 013602 | 3452# | 3463 | | | | | | | | | | | |
| FPI11 | 002366 | 819# | 839 | | | | | | | | | | | |
| FPI110 | 013676 | 3487# | 3508 | | | | | | | | | | | |
| FPI111 | 014016 | 3531# | 3542 | | | | | | | | | | | |
| FPI112 | 014112 | 3566# | 3587 | | | | | | | | | | | |
| FPI113 | 014232 | 3610# | 3621 | | | | | | | | | | | |
| FPI114 | 014326 | 3645# | 3666 | | | | | | | | | | | |
| FPI115 | 014446 | 3689# | 3700 | | | | | | | | | | | |
| FPI116 | 014542 | 3724# | 3745 | | | | | | | | | | | |
| FPI117 | 014662 | 3768# | 3779 | | | | | | | | | | | |
| FPI12 | 002506 | 863# | 883 | | | | | | | | | | | |
| FPI13 | 002626 | 907# | 927 | | | | | | | | | | | |
| FPI14 | 002746 | 951# | 972 | | | | | | | | | | | |
| FPI15 | 003066 | 995# | 1007 | | | | | | | | | | | |
| FPI16 | 003164 | 1031# | 1051 | | | | | | | | | | | |
| FPI17 | 003304 | 1075# | 1095 | | | | | | | | | | | |
| FPI2 | 001332 | 520# | 540 | | | | | | | | | | | |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| FPI20 | 003424 | 1119# | 1139 | | | | | | | | | | |
| FPI21 | 003544 | 1163# | 1183 | | | | | | | | | | |
| FPI22 | 003664 | 1207# | 1227 | | | | | | | | | | |
| FPI23 | 004004 | 1251# | 1271 | | | | | | | | | | |
| FPI24 | 004126 | 1296# | 1317 | | | | | | | | | | |
| FPI25 | 004246 | 1340# | 1352 | | | | | | | | | | |
| FPI26 | 004344 | 1376# | 1396 | | | | | | | | | | |
| FPI27 | 004464 | 1420# | 1440 | | | | | | | | | | |
| FPI3 | 001452 | 564# | 584 | | | | | | | | | | |
| FPI30 | 004604 | 1464# | 1484 | | | | | | | | | | |
| FPI31 | 004724 | 1508# | 1528 | | | | | | | | | | |
| FPI32 | 005044 | 1552# | 1572 | | | | | | | | | | |
| FPI33 | 005164 | 1596# | 1616 | | | | | | | | | | |
| FPI34 | 005304 | 1640# | 1661 | | | | | | | | | | |
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| FPI36 | 005550 | 1729# | 1749 | | | | | | | | | | |
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| FPI4 | 001572 | 608# | 629 | | | | | | | | | | |
| FPI40 | 006010 | 1817# | 1837 | | | | | | | | | | |
| FPI41 | 006130 | 1861# | 1881 | | | | | | | | | | |
| FPI42 | 006250 | 1905# | 1925 | | | | | | | | | | |
| FPI43 | 006370 | 1949# | 1971 | | | | | | | | | | |
| FPI44 | 006516 | 1995# | 2016 | | | | | | | | | | |
| FPI45 | 006640 | 2040# | 2061 | | | | | | | | | | |
| FPI46 | 006762 | 2085# | 2106 | | | | | | | | | | |
| FPI47 | 007104 | 2130# | 2151 | | | | | | | | | | |
| FPI5 | 001712 | 652# | 663 | | | | | | | | | | |
| FPI50 | 007226 | 2175# | 2196 | | | | | | | | | | |
| FPI51 | 007350 | 2220# | 2241 | | | | | | | | | | |
| FPI52 | 007472 | 2265# | 2287 | | | | | | | | | | |
| FPI53 | 007614 | 2310# | 2322 | | | | | | | | | | |
| FPI54 | 007712 | 2346# | 2367 | | | | | | | | | | |
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| FPI57 | 010300 | 2481# | 2502 | | | | | | | | | | |
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| FPI60 | 010422 | 2526# | 2547 | | | | | | | | | | |
| FPI61 | 010544 | 2571# | 2592 | | | | | | | | | | |
| FPI62 | 010666 | 2616# | 2638 | | | | | | | | | | |
| FPI63 | 011010 | 2661# | 2673 | | | | | | | | | | |
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| FPI65 | 011226 | 2741# | 2752 | | | | | | | | | | |
| FPI66 | 011322 | 2776# | 2797 | | | | | | | | | | |
| FPI67 | 011442 | 2820# | 2831 | | | | | | | | | | |
| FPI7 | 002126 | 731# | 751 | | | | | | | | | | |
| FPI70 | 011536 | 2855# | 2876 | | | | | | | | | | |
| FPI71 | 011656 | 2899# | 2910 | | | | | | | | | | |
| FPI72 | 011752 | 2934# | 2955 | | | | | | | | | | |
| FPI73 | 012072 | 2978# | 2989 | | | | | | | | | | |
| FPI74 | 012166 | 3013# | 3034 | | | | | | | | | | |
| FPI75 | 012306 | 3057# | 3068 | | | | | | | | | | |
| FPI76 | 012402 | 3092# | 3113 | | | | | | | | | | |
| FPI77 | 012522 | 3136# | 3147 | | | | | | | | | | |
| FPS | =000000 | 381# | 418# | 480# | 486# | 488 | 524# | 530# | 532 | 568# | 574# | 576 | 613# | 619# |
| | | 621 | 653# | 655 | 691# | 697# | 699 | 735# | 741# | 743 | 779# | 785# | 821 | 823# |
| | | 829# | 831 | 867# | 873# | 875 | 911# | 917# | 919 | 956# | 962# | 964 | 997# | 999 |

| | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 1035* | 1041* | 1043 | 1079* | 1085* | 1087 | 1123* | 1129* | 1131 | 1167* | 1173* | 1175 | 1211* |
| | | 1217* | 1219 | 1255* | 1261* | 1263 | 1301* | 1307* | 1309 | 1342* | 1344 | 1380* | 1386* | 1388 |
| | | 1424* | 1430* | 1432 | 1468* | 1474* | 1476 | 1512* | 1518* | 1520 | 1556* | 1562* | 1564 | 1600* |
| | | 1606* | 1608 | 1645* | 1651* | 1653 | 1689* | 1695* | 1697 | 1733* | 1739* | 1741 | 1777* | 1783* |
| | | 1785 | 1821* | 1827* | 1829 | 1865* | 1871* | 1873 | 1909* | 1915* | 1917 | 1955* | 1961* | 1963 |
| | | 2000* | 2006* | 2008 | 2045* | 2051* | 2053 | 2090* | 2096* | 2098 | 2135* | 2141* | 2143 | 2180* |
| | | 2186* | 2188 | 2225* | 2231* | 2233 | 2271* | 2277* | 2279 | 2312* | 2314 | 2351* | 2357* | 2359 |
| | | 2396* | 2402* | 2404 | 2441* | 2447* | 2449 | 2486* | 2492* | 2494 | 2531* | 2537* | 2539 | 2576* |
| | | 2582* | 2584 | 2622* | 2628* | 2630 | 2663* | 2665 | 2702* | 2708* | 2710 | 2742* | 2744 | 2781* |
| | | 2787* | 2789 | 2821* | 2823 | 2860* | 2866* | 2868 | 2900* | 2902 | 2933* | 2945* | 2947 | 2973* |
| | | 2981 | 3018* | 3024* | 3026 | 3058* | 3060 | 3097* | 3103* | 3105 | 3137* | 3139 | 3176* | 3182* |
| | | 3184 | 3216* | 3218 | 3255* | 3261* | 3263 | 3295* | 3297 | 3334* | 3340* | 3342 | 3374* | 3376 |
| | | 3413* | 3419* | 3421 | 3453* | 3455 | 3492* | 3498* | 3500 | 3532* | 3534 | 3571* | 3577* | 3579 |
| | | 3611* | 3613 | 3650* | 3656* | 3658 | 3690* | 3692 | 3729* | 3735* | 3737 | 3769* | 3771 | 3868 |
| FPTADR | 016204 | 442 | 4006# | | | | | | | | | | | |
| FPVECT | 016206 | 456* | 457* | 4007# | | | | | | | | | | |
| H | = 104000 | 378# | 482 | 490 | 494 | 498 | 502 | 526 | 534 | 538 | 542 | 546 | 570 | 578 |
| | | 582 | 563 | 590 | 615 | 623 | 627 | 631 | 635 | 657 | 661 | 665 | 669 | 693 |
| | | 701 | 705 | 709 | 713 | 737 | 745 | 749 | 753 | 757 | 781 | 799 | 793 | 797 |
| | | 801 | 825 | 833 | 837 | 841 | 845 | 869 | 877 | 881 | 885 | 889 | 913 | 921 |
| | | 925 | 929 | 933 | 958 | 966 | 970 | 974 | 978 | 1001 | 1005 | 1009 | 1013 | 1037 |
| | | 1045 | 1049 | 1053 | 1057 | 1081 | 1089 | 1093 | 1097 | 1101 | 1125 | 1133 | 1137 | 1141 |
| | | 1145 | 1169 | 1177 | 1181 | 1185 | 1189 | 1213 | 1221 | 1225 | 1229 | 1233 | 1257 | 1265 |
| | | 1269 | 1273 | 1277 | 1303 | 1311 | 1315 | 1319 | 1323 | 1346 | 1350 | 1354 | 1358 | 1382 |
| | | 1390 | 1394 | 1398 | 1402 | 1426 | 1434 | 1438 | 1442 | 1446 | 1470 | 1478 | 1482 | 1486 |
| | | 1490 | 1514 | 1522 | 1526 | 1530 | 1534 | 1558 | 1566 | 1570 | 1574 | 1578 | 1602 | 1610 |
| | | 1614 | 1618 | 1622 | 1647 | 1655 | 1659 | 1663 | 1667 | 1691 | 1699 | 1703 | 1707 | 1711 |
| | | 1735 | 1743 | 1747 | 1751 | 1755 | 1779 | 1787 | 1791 | 1795 | 1799 | 1823 | 1831 | 1835 |
| | | 1839 | 1843 | 1867 | 1875 | 1879 | 1883 | 1887 | 1911 | 1919 | 1923 | 1927 | 1931 | 1955 |
| | | 1965 | 1969 | 1973 | 1977 | 2002 | 2010 | 2014 | 2018 | 2022 | 2047 | 2055 | 2059 | 2063 |
| | | 2067 | 2092 | 2100 | 2104 | 2108 | 2112 | 2137 | 2145 | 2149 | 2153 | 2157 | 2182 | 2190 |
| | | 2194 | 2198 | 2202 | 2227 | 2235 | 2239 | 2243 | 2247 | 2273 | 2281 | 2285 | 2289 | 2293 |
| | | 2316 | 2320 | 2324 | 2328 | 2353 | 2361 | 2365 | 2369 | 2373 | 2398 | 2406 | 2410 | 2414 |
| | | 2418 | 2443 | 2451 | 2455 | 2459 | 2463 | 2488 | 2496 | 2500 | 2504 | 2508 | 2533 | 2541 |
| | | 2545 | 2549 | 2553 | 2578 | 2586 | 2590 | 2594 | 2598 | 2624 | 2632 | 2636 | 2640 | 2644 |
| | | 2667 | 2671 | 2675 | 2679 | 2704 | 2712 | 2716 | 2720 | 2724 | 2746 | 2750 | 2754 | 2758 |
| | | 2783 | 2791 | 2795 | 2799 | 2803 | 2825 | 2829 | 2833 | 2837 | 2862 | 2870 | 2874 | 2878 |
| | | 2882 | 2904 | 2908 | 2912 | 2916 | 2941 | 2949 | 2953 | 2957 | 2961 | 2983 | 2987 | 2991 |
| | | 2995 | 3020 | 3028 | 3032 | 3036 | 3040 | 3062 | 3066 | 3070 | 3074 | 3099 | 3107 | 3111 |
| | | 3115 | 3119 | 3141 | 3145 | 3149 | 3153 | 3178 | 3186 | 3190 | 3194 | 3198 | 3220 | 3224 |
| | | 3228 | 3232 | 3257 | 3265 | 3269 | 3273 | 3277 | 3299 | 3303 | 3307 | 3311 | 3336 | 3344 |
| | | 3348 | 3352 | 3356 | 3378 | 3382 | 3386 | 3390 | 3415 | 3423 | 3427 | 3431 | 3435 | 3451 |
| | | 3461 | 3465 | 3469 | 3494 | 3502 | 3506 | 3510 | 3514 | 3536 | 3540 | 3544 | 3549 | 3573 |
| | | 3581 | 3585 | 3589 | 3593 | 3615 | 3619 | 3623 | 3627 | 3652 | 3660 | 3664 | 3669 | 3673 |
| | | 3694 | 3698 | 3702 | 3706 | 3731 | 3739 | 3743 | 3747 | 3751 | 3773 | 3777 | 3781 | 3785 |
| CONT | 001000 | 424# | 458* | 500 | 544 | 588 | 633 | 667 | 711 | 755 | 799 | 843 | 887 | 931 |
| | | 976 | 1011 | 1055 | 1099 | 1143 | 1187 | 1231 | 1275 | 1321 | 1356 | 1400 | 1444 | 1488 |
| | | 1532 | 1576 | 1620 | 1665 | 1709 | 1753 | 1797 | 1841 | 1885 | 1929 | 1975 | 2020 | 2065 |
| | | 2110 | 2155 | 2200 | 2245 | 2291 | 2326 | 2371 | 2416 | 2461 | 2506 | 2551 | 2596 | 2641 |
| | | 2677 | 2722 | 2756 | 2801 | 2835 | 2880 | 2914 | 2959 | 2993 | 3039 | 3073 | 3117 | 3151 |
| | | 3196 | 3230 | 3275 | 3309 | 3354 | 3388 | 3433 | 3467 | 3512 | 3546 | 3591 | 3625 | 3660 |
| | | 3704 | 3749 | 3783 | 3813 | 3821 | 3823 | 3825* | 3826* | 3828 | 3831* | 3832 | 3834* | |
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| [illegible] | 015156 | 3818 | 3824 | 3831# | 3886 | 3889 | | | | | | | | |
| [illegible] | 016206 | 459* | 3827* | 3833 | 3835 | 4012# | | | | | | | | |
| [illegible] | = 170000 | 409# | | | | | | | | | | | | |

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LOOB    = 170003        405#
MRS     = 170006        408#
M1120   001054          437     442#
        = 000120        373#    460     504#    548#    592#    637#    671#    715#    759#    803#    847#    891#    935#
                        980#    1015#   1059#   1103#   1147#   1191#   1235#   1279#   1325#   1360#   1404#   1448#   1492#
                        1536#   1580#   1624#   1669#   1713#   1757#   1801#   1845#   1889#   1933#   1979#   2024#   2069#
                        2114#   2159#   2204#   2249#   2295#   2330#   2375#   2420#   2465#   2510#   2555#   2600#   2646#
                        2681#   2726#   2760#   2805#   2839#   2884#   2918#   2963#   2997#   3042#   3076#   3121#   3155#
                        3200#   3234#   3279#   3313#   3358#   3392#   3437#   3471#   3516#   3550#   3595#   3629#   3674#
                        3708#   3753#   3787#
OVER    015162          3814    3832#
P       =%000007        390#    3841*   3919*   3932*   3933*
PCDOWN  015702          448     3934#   3976
PCUP    015772          3953    3956#
PRINTR  015500          3849    3852    3865    3873    3876    3890#
PRINTS  015510          3892#
PS      = 177776        374#
RETURN  016170          3845    4001#
R0      =%000000        382#    451*    3802*   3851    3929*   3946    3965*
R1      =%000001        383#    3947    3957*   3958*   3964*
R2      =%000002        384#    3948    3963*
R3      =%000003        385#    3815*   3854*   3887*   3949    3962*
R4      =%000004        386#    3842    3855*   3862*   3866*   3877*   3894    3895*   3913    3918*   3950    3961*
R5      =%000005        387#    3951    3960*
SAVE6   016202          3952*   3956    4005#
SAVLAC  015136          3820    3826#   3834
SCOPE   = 104400        377#    469     513     557     601     646     680     724     768     812     856     900     944
                        989     1024    1068    1112    1156    1200    1244    1288    1334    1369    1413    1457    1501
                        1545    1589    1633    1678    1722    1766    1810    1854    1898    1942    1989    2033    2078
                        2123    2168    2213    2258    2304    2339    2384    2429    2474    2519    2564    2609    2655
                        2690    2735    2769    2814    2848    2893    2927    2972    3006    3051    3085    3130    3164
                        3209    3243    3288    3322    3367    3401    3446    3480    3525    3559    3604    3639    3683
                        3717    3762    3788
SP      =%000006        389#    436*    446*    3952    3956*
SPACE   016173          3850    3853    3863    3870    3874    4002#
STA0    = 170005        406#
STC0    = 170007        407#
SWR     = 177570        375#    376     3789    3794    3811    3813    3815    3817    3819    3837    3843    3879    3931
                        3885    3887
SW08    = 000400        404#    3811    3885
SW09    = 001000        403#    3881
SW10    = 002000        402#    3789    3837
SW11    = 004000        401#    3819
SW12    = 010000        400#    3794
SW13    = 020000        399#    3843
SW14    = 040000        398#    3817
SW15    = 100000        397#
TIMES   016232          3823    4014#
TPPB    016224          3796*   4011#
TSA1    001240          478     485#
TSA10   002274          777     784#
TSA100  012650          3173    3181#
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TSA106  013514          3410    3418#
TSA11   002414          821     829#
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| | | | |
|---|---|---|---|
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| TSA13 | 002654 | 909 | 916# |
| TSA14 | 003000 | 953 | 961# |
| TSA16 | 003212 | [illegible] | 1040# |
| TSA1[illegible] | 003332 | 1077 | 1084# |
| TSA2 | 001360 | 522 | 529# |
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| TSA22 | 003712 | 1209 | 1216# |
| TSA23 | 004032 | 1253 | 1260# |
| TSA24 | 004160 | 1298 | 1306# |
| TSA26 | 004372 | 1378 | 1385# |
| TSA27 | 004512 | 1422 | 1429# |
| TSA3 | 001500 | 566 | 573# |
| TSA30 | 004632 | 1466 | 1473# |
| TSA31 | 004752 | 1510 | 1517# |
| TSA32 | 005072 | 1554 | 1561# |
| TSA33 | 005212 | 1598 | 1605# |
| TSA34 | 005336 | 1642 | 1650# |
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| | | 660 | 664 | 668 | 694 | 700 | 704 | 708 | 712 | 738 | 744 | 748 | 752 | 756 |
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| | | 1698 | 1702 | 1706 | 1710 | 1736 | 1742 | 1746 | 1750 | 1754 | 1780 | 1786 | 1790 | 1734 |
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| | | 1922 | 1926 | 1930 | 1958 | 1964 | 1968 | 1972 | 1976 | 2003 | 2009 | 2013 | 2017 | 2021 |
| | | 2048 | 2054 | 2058 | 2062 | 2066 | 2093 | 2099 | 2103 | 2107 | 2111 | 2138 | 2144 | 2148 |
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| | | 2745 | 2749 | 2753 | 2757 | 2784 | 2790 | 2794 | 2798 | 2802 | 2824 | 2828 | 2832 | 2836 |
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| | | 3193 | 3197 | 3219 | 3223 | 3227 | 3231 | 3258 | 3264 | 3268 | 3272 | 3276 | 3298 | 3302 |
| | | 3306 | 3310 | 3337 | 3343 | 3347 | 3351 | 3355 | 3377 | 3381 | 3385 | 3389 | 3416 | 3422 |
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| | | | | | | |
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| .TRB | 015204 | 452 | 3837# | | | |
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| SDUMP | 372# | | | | | | | | | | | | | | |
| STATUS | 372# | 486 | 530 | 574 | 619 | 653 | 697 | 741 | 785 | 829 | 873 | 917 | 962 | 997 | 1041 |
| | 1085 | 1129 | 1173 | 1217 | 1261 | 1307 | 1342 | 1386 | 1430 | 1474 | 1518 | 1562 | 1606 | 1651 | 1695 |
| | 1739 | 1783 | 1827 | 1871 | 1915 | 1961 | 2006 | 2051 | 2096 | 2141 | 2186 | 2231 | 2277 | 2312 | 2357 |
| | 2402 | 2447 | 2492 | 2537 | 2582 | 2628 | 2663 | 2708 | 2742 | 2787 | 2821 | 2866 | 2900 | 2945 | 2979 |
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| | 3611 | 3656 | 3690 | 3735 | 3769 | | | | | | | | | | |
| T.PEM | 372# | 3791 | 3839 | | | | | | | | | | | | |
| $STST | 460# | 504 | 548 | 592 | 637 | 671 | 715 | 759 | 803 | 847 | 891 | 935 | 980 | 1015 | 1059 |
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| | 1757 | 1801 | 1845 | 1889 | 1933 | 1979 | 2024 | 2069 | 2114 | 2159 | 2204 | 2249 | 2295 | 2330 | 2375 |
| | 2420 | 2465 | 2510 | 2555 | 2600 | 2646 | 2681 | 2726 | 2760 | 2805 | 2839 | 2884 | 2919 | 2963 | 2997 |
| | 3042 | 3076 | 3121 | 3155 | 3200 | 3234 | 3279 | 3313 | 3358 | 3392 | 3437 | 3471 | 3516 | 3550 | 3595 |
| | 3629 | 3674 | 3708 | 3753 | | | | | | | | | | | |

| | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ADD | 3992 | 3995 | | | | | | | | | | | | | |
| BEG | 478 | 489 | 493 | 497 | 501 | 522 | 533 | 537 | 541 | 545 | 566 | 577 | 581 | 585 | 589 |
| | 610 | 622 | 626 | 630 | 634 | 655 | 660 | 664 | 668 | 689 | 700 | 704 | 708 | 712 | 723 |
| | 744 | 748 | 752 | 756 | 777 | 788 | 792 | 796 | 800 | 821 | 832 | 836 | 840 | 844 | 865 |
| | 876 | 880 | 884 | 888 | 909 | 920 | 924 | 928 | 932 | 953 | 965 | 969 | 973 | 977 | 1000 |
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| | 1662 | 1666 | 1687 | 1698 | 1702 | 1706 | 1710 | 1731 | 1742 | 1746 | 1750 | 1754 | 1775 | 1786 | 1790 |
| | 1794 | 1798 | 1819 | 1830 | 1834 | 1838 | 1842 | 1863 | 1874 | 1878 | 1882 | 1886 | 1907 | 1918 | 1922 |
| | 1926 | 1930 | 1952 | 1964 | 1968 | 1972 | 1976 | 1998 | 2009 | 2013 | 2017 | 2021 | 2043 | 2054 | 2058 |
| | 2062 | 2066 | 2088 | 2099 | 2103 | 2107 | 2111 | 2133 | 2144 | 2148 | 2152 | 2156 | 2178 | 2189 | 2193 |
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| | 2745 | 2749 | 2753 | 2757 | 2778 | 2790 | 2794 | 2798 | 2802 | 2824 | 2828 | 2832 | 2836 | 2857 | 2869 |
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| | 3268 | 3272 | 3276 | 3298 | 3302 | 3306 | 3310 | 3331 | 3343 | 3347 | 3351 | 3355 | 3377 | 3381 | 3385 |
| | 3389 | 3410 | 3422 | 3426 | 3430 | 3434 | 3456 | 3460 | 3464 | 3468 | 3489 | 3501 | 3505 | 3509 | 3513 |
| | 3535 | 3539 | 3543 | 3547 | 3568 | 3580 | 3584 | 3588 | 3592 | 3614 | 3618 | 3622 | 3626 | 3647 | 3659 |
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| BISB | 3910 | | | | | | | | | | | | | | |
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| BPL | 3797 | 3857 | 3869 | 3879 | 3989 | | | | | | | | | | |
| BR | 440 | 470 | 483 | 514 | 527 | 558 | 571 | 602 | 616 | 647 | 681 | 694 | 725 | 738 | 769 |
| | 782 | 813 | 826 | 857 | 870 | 901 | 914 | 945 | 959 | 990 | 1025 | 1038 | 1069 | 1082 | 1113 |
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| | 1471 | 1502 | 1515 | 1546 | 1559 | 1590 | 1603 | 1634 | 1648 | 1679 | 1692 | 1723 | 1736 | 1767 | 1780 |
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| CLRB | 3824 | 3896 | 3898 | 3916 | | | | | | | | | | | |
| CMP | 477 | 488 | 492 | 496 | 521 | 532 | 536 | 540 | 565 | 576 | 580 | 594 | 609 | 621 | 625 |
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| | 1793 | 1818 | 1829 | 1833 | 1837 | 1862 | 1873 | 1877 | 1881 | 1906 | 1917 | 1921 | 1925 | 1951 | 1963 |
| | 1967 | 1971 | 1997 | 2008 | 2012 | 2016 | 2042 | 2053 | 2057 | 2061 | 2087 | 2098 | 2102 | 2126 | 2133 |

| | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
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| INC | 3924 | 3958 | | | | | | | | | | | | | |
| INCB | 3826 | 3831 | 3907 | 3911 | | | | | | | | | | | |
| IOT | 379 | | | | | | | | | | | | | | |
| JMP | 415 | | | | | | | | | | | | | | |
| JSR | 3804 | 3841 | 3849 | 3852 | 3865 | 3873 | 3876 | 3932 | | | | | | | |
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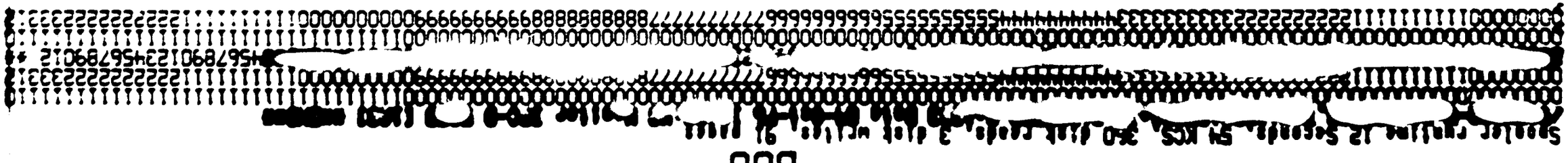
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