

FP11

CLR TST ABS NEG  
MD-11-DCFPH-B

EP DCFPH-B DL A

NOV 1976

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FICHE 1 OF 1

MADE IN USA

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EP11 BASIC INSTRUCTION TEST DCFPA - DCFPL  
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FP11 BASIC INSTRUCTION TEST DCFPA - DCFPL  
DESCRIPTION

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## 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.

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# H01

MAINDEC-11-DOFPH-B  
DOFPH.P11

TEST OF CLRF, CLRD, TSTF, TSTD, ABSF, ABSD, NEGF, NEGD MACY11 27(732) 17-SEP-76 10:45 PAGE 4

168  
168

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









L01

.TITLE MAINDEC-11-DCFPH-B TEST OF CLRF, CLRD, TSTF, TSTD, ABSF, ABSD, NEGF, NEGD  
:COPYRIGHT 1972, DIGITAL EQUIPMENT CORP., MAYNARD, MASS  
:PROGRAM BY KEN CHAPMAN  
.REM\*

| SWITCH | USE  |
|--------|--|
| 8      | 0 - LOAD UB REGISTER WITH SW<7:0><br>1 - LOOP ON TEST IN SW<7:0> |
| 9      | LOOP ON ERROR  |
| 10     | 0 - BELL ON PASS COMPLETE<br>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

| BIT | FPS | REASON                         | CODE | FEC | 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   |     | USREAK 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*                    |      |     |                         |

```

000001      .ENABL ABS
177776      N=      1
177570      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=      %5
000007      PC=      %7
000000      ACO=     %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      STQ0=    170007
170006      MRS=    170006
170004      LDSC=    170004

000000      .=      0
000200      .=      200
000200 000167 000622      JMP      BEG

000760      000760      .=      760
000762 170200      FLTERR: STFPS  FPS
000765 170367 000034      STST   FEC
000770 000000      HALT
000002 000002      RTI

```

;TRAP CATCHER FROM D - 776

```

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

001026 012706 000600      BEG:    MOV      #600,SP      ; ** STACK AT 600 **
001032 012737 001054 000004      MOV      #M1120,3#4  ; FIND OUT WHICH MACHINE THIS IS
001040 005737 177772      TST      3#177772  ; IS PIRQ THERE?
001044 012767 000006 015200      MOV      #6,YESRT  ; FUDGE IN RTT IF 11/45
001052 000403      BR

001054 016737 016334 000010 M1120: MOV      FPTADR,3#10  ; LOAD THE ILLEGAL INSTRUCTION VECTOR
                                ; WITH THE ADDRESS OF THE FPU.
                                ; THE FPU WILL HANDLE THE BAD OPCODES

001062 012737 000006 000004 BEGIN: MOV      #6,3#4      ; RESET 4
001070 012706 000600      MOV      #600,SP
001074 012737 016252 000014      MOV      #YESRT,3#14 ; SET TRACE TRAP VECTOR
001102 012777 017112 016312      MOV      #POWDN,3#DNVEC
001110 012777 000340 016306      MOV      #340,3#DNVEC+2
001116 012737 017312 000020      MOV      #.IOT,3#20  ; SET UP VECTOR 20
001124 012700 000030      MOV      #30,RO      ; SET RO TO VECTOR 30
001130 012720 016414      MOV      #.TRP,(0)+  ; SET EMT VECTOR
001134 012720 000340      MOV      #340,(0)+
001140 012720 016254      MOV      #.EMT,(0)+  ; SET TRAP VECTOR
001144 012710 000340      MOV      #340,(0)
001150 012777 000760 016240      MOV      #FLTERR,3#FPVECT ; LOAD INTERRUPT VECTOR
001156 012777 000340 016234      MOV      #340,3#FPVECT+2 ; LOCK UP PROCESSOR
001164 005067 177610      CLR      ICNT
001170 005067 016242      CLR      LAD

```



\*\*\*\*\*  
TEST 3: CLRF (CLEAR FLOATING POINT)  
DATA = 125252,125252  
FPS = 047404, FDST = M6-R7  
\*\*\*\*\*

|        |        |        |       |                  |                              |  |
|--------|--------|--------|-------|------------------|------------------------------|--|
| 001350 | 104400 |        | SCOPE |                  |                              |  |
| 001352 | 000402 |        | BR    | TST3             |                              |  |
| 001354 | 125252 | 125252 | DAT3: | 125252,125252    |                              |  |
| 001350 | 170127 | 047400 | TST3: | LDFPS #047400    | :LOAD FLOATING POINT STATUS  |  |
| 001354 | 016767 | 177764 |       | MOV DAT3, ANS1   | : "LOAD" 125252 INTO ANS1    |  |
| 001372 | 016767 | 177760 |       | MOV DAT3+2, ANS2 | : "LOAD" 125252 INTO ANS2    |  |
| 001400 | 170467 | 177376 | FP13: | CLRF ANS1        | :CLEAR ANS1, ANS2            |  |
| 001404 | 170200 |        |       | STFPS FPS        | :STORE FLOATING POINT STATUS |  |
| 001406 | 022700 | 047404 |       | CMP #047404, FPS | :CHECK FLOATING POINT STATUS |  |
| 001410 | 001401 |        |       | BEQ .+4          | :BRANCH IF OK                |  |
| 001414 | 104000 |        |       | HLT              | :FPS NOT EQUAL TO 047404     |  |
| 001416 | 005767 | 177360 |       | TST ANS1         | :CHECK ANS1                  |  |
| 001420 | 001401 |        |       | BEQ .+4          | :BRANCH IF OK                |  |
| 001424 | 104000 |        |       | HLT              | :ANS1 NOT EQUAL TO ZERO      |  |
| 001426 | 005767 | 177352 |       | TST ANS2         | :CHECK ANS2                  |  |
| 001430 | 001401 |        |       | BEQ .+4          | :BRANCH IF OK                |  |
| 001434 | 104000 |        |       | HLT              | :ANS2 NOT EQUAL TO ZERO      |  |

\*\*\*\*\*  
TEST 4: CLRF (CLEAR FLOATING POINT)  
DATA = 052525,052525  
FPS = 047404, FDST = M6-R7  
\*\*\*\*\*

|        |        |        |       |                  |                              |  |
|--------|--------|--------|-------|------------------|------------------------------|--|
| 001436 | 104400 |        | SCOPE |                  |                              |  |
| 001440 | 000402 |        | BR    | TST4             |                              |  |
| 001442 | 052525 | 052525 | DAT4: | 052525,052525    |                              |  |
| 001446 | 170127 | 047400 | TST4: | LDFPS #047400    | :LOAD FLOATING POINT STATUS  |  |
| 001450 | 016767 | 177764 |       | MOV DAT4, ANS1   | : "LOAD" 052525 INTO ANS1    |  |
| 001460 | 016767 | 177760 |       | MOV DAT4+2, ANS2 | : "LOAD" 052525 INTO ANS2    |  |
| 001466 | 170467 | 177310 | FP14: | CLRF ANS1        | :CLEAR ANS1, ANS2            |  |
| 001472 | 170200 |        |       | STFPS FPS        | :STORE FLOATING POINT STATUS |  |
| 001474 | 022700 | 047404 |       | CMP #047404, FPS | :CHECK FLOATING POINT STATUS |  |
| 001500 | 001401 |        |       | BEQ .+4          | :BRANCH IF OK                |  |
| 001502 | 104000 |        |       | HLT              | :FPS NOT EQUAL TO 047404     |  |
| 001504 | 005767 | 177272 |       | TST ANS1         | :CHECK ANS1                  |  |
| 001510 | 001401 |        |       | BEQ .+4          | :BRANCH IF OK                |  |
| 001512 | 104000 |        |       | HLT              | :ANS1 NOT EQUAL TO ZERO      |  |
| 001514 | 005767 | 177264 |       | TST ANS2         | :CHECK ANS2                  |  |
| 001520 | 001401 |        |       | BEQ .+4          | :BRANCH IF OK                |  |
| 001522 | 104000 |        |       | HLT              | :ANS2 NOT EQUAL TO ZERO      |  |



\*\*\*\*\*  
:TEST 5: CLRF (CLEAR FLOATING POINT)  
: DATA = 100000,000000  
: FPS = 047404, FDST = M6-R7  
\*\*\*\*\*

001524 104400  
001526 000402

SCOPE  
BR TST5

001530 100000 000000

DAT5: 100000,000000

001534 170127 047400  
001540 016767 177764 177234  
001546 016767 177760 177230  
001554 170467 177222  
001560 170200  
001566 022700 047404  
001568 001401  
001570 104000

TST5: LD FPS #047400 :LOAD FLOATING POINT STATUS  
MOV DAT5, ANS1 : "LOAD" 100000 INTO ANS1  
MOV DAT5+2, ANS2 : "LOAD" 000000 INTO ANS2  
FPIS: CLRF ANS1 :CLEAR ANS1, ANS2  
STFPS FPS :STORE FLOATING POINT STATUS  
CMP #047404, FPS :CHECK FLOATING POINT STATUS  
BEQ .+4 :BRANCH IF OK  
HLT :FPS NOT EQUAL TO 047404

001572 005767 177204  
001576 001401  
001600 104000

TST ANS1 :CHECK ANS1  
BEQ .+4 :BRANCH IF OK  
HLT :ANS1 NOT EQUAL TO ZERO

001602 005767 177176  
001606 001401  
001610 104000

TST ANS2 :CHECK ANS2  
BEQ .+4 :BRANCH IF OK  
HLT :ANS2 NOT EQUAL TO ZERO

\*\*\*\*\*  
:TEST 6: CLRF (CLEAR FLOATING POINT)  
: DATA = 000177,177777  
: FPS = 047404, FDST = M6-R7  
\*\*\*\*\*

001612 104400  
001614 000402

SCOPE  
BR TST6

001616 000177 177777

DAT6: 000177,177777

001622 170127 047400  
001628 016767 177764 177146  
001634 016767 177760 177142  
001642 170467 177134  
001648 170200  
001650 022700 047404  
001654 001401  
001656 104000

TST6: LD FPS #047400 :LOAD FLOATING POINT STATUS  
MOV DAT6, ANS1 : "LOAD" 000177 INTO ANS1  
MOV DAT6+2, ANS2 : "LOAD" 177777 INTO ANS2  
FPIS: CLRF ANS1 :CLEAR ANS1, ANS2  
STFPS FPS :STORE FLOATING POINT STATUS  
CMP #047404, FPS :CHECK FLOATING POINT STATUS  
BEQ .+4 :BRANCH IF OK  
HLT :FPS NOT EQUAL TO 047404

001660 005767 177116  
001664 001401  
001666 104000

TST ANS1 :CHECK ANS1  
BEQ .+4 :BRANCH IF OK  
HLT :ANS1 NOT EQUAL TO ZERO

001670 005767 177110  
001674 001401  
001676 104000

TST ANS2 :CHECK ANS2  
BEQ .+4 :BRANCH IF OK  
HLT :ANS2 NOT EQUAL TO ZERO

# E02

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DCFPH.P11

TEST OF CLRF, CLRD, TSTF, TSTD, ABSF, ABSD, NEGF, NEGD MACY11 27(732) 17-SEP-76 10:45 PAGE 14  
TEST SECTION

```
*****  
:TEST 7:          CLRF (CLEAR FLOATING POINT)  
:          DATA = 125252,125252  
:          FPS = 047404,   FDST = MO-ACC  
:          *****
```

```
001700 104400          SCOPE  
001702 000402          BR      TST7  
  
001704 125252 125252  DAT7: 125252,125252  
  
001710 170127 047400  TST7: LDFPS #047400      :LOAD FLOATING POINT STATUS  
001714 172467 177764      LDF  DAT7,   ACC      :LOAD 125252,125252 INTO ACC  
001720 170400          FPI7: CLRF  ACC      :CLEAR ACC  
001722 170200          STFPS FPS      :STORE FLOATING POINT STATUS  
001724 022700 047404  CMP  #047404,FPS :CHECK FLOATING POINT STATUS  
001730 001401          BEQ  .+4      :BRANCH IF OK  
001732 104000          HLT                    :FPS NOT EQUAL TO 047404  
  
001734 174067 177042  STF  ACC,   ANS1    :STORE ACC IN ANS1, ANS2  
001740 005767 177036  TST  ANS1    :CHECK ANS1  
001744 001401          BEQ  .+4      :BRANCH IF OK  
001746 104000          HLT                    :ANS1 NOT EQUAL TO ZERO  
  
001750 005767 177030  TST  ANS2    :CHECK ANS2  
001754 001401          BEQ  .+4      :BRANCH IF OK  
001756 104000          HLT                    :ANS2 NOT EQUAL TO ZERO
```

```
*****  
:TEST 10:         CLRF (CLEAR FLOATING POINT)  
:          DATA = 052525,052525  
:          FPS = 047404,   FDST = MO-ACC  
:          *****
```

```
001760 104400          SCOPE  
001762 000402          BR      TST10  
  
001764 052525 052525  DAT10: 052525,052525  
  
001770 170127 047400  TST10: LDFPS #047400      :LOAD FLOATING POINT STATUS  
001774 172467 177764      LDF  DAT10, ACC      :LOAD 052525,052525 INTO ACC  
002000 170400          FPI10: CLRF  ACC      :CLEAR ACC  
002002 170200          STFPS FPS      :STORE FLOATING POINT STATUS  
002004 022700 047404  CMP  #047404,FPS :CHECK FLOATING POINT STATUS  
002010 001401          BEQ  .+4      :BRANCH IF OK  
002012 104000          HLT                    :FPS NOT EQUAL TO 047404  
  
002014 174067 176762  STF  ACC,   ANS1    :STORE ACC IN ANS1, ANS2  
002020 005767 176756  TST  ANS1    :CHECK ANS1  
002024 001401          BEQ  .+4      :BRANCH IF OK  
002026 104000          HLT                    :ANS1 NOT EQUAL TO ZERO  
  
002030 005767 176750  TST  ANS2    :CHECK ANS2  
002034 001401          BEQ  .+4      :BRANCH IF OK  
002036 104000          HLT                    :ANS2 NOT EQUAL TO ZERO
```

F02

MAINDEC-11-DCFPH-B  
DCFPH.P11

TEST OF CLRF, CLRD, TSTF, TSTD, ABSF, ABSD, NEGF, NEGD MACY11 27(732) 17-SEP-76 10:45 PAGE 15  
TEST SECTION

\*\*\*\*\*  
:TEST 11: CLRD (CLEAR DOUBLE PERCISION)  
: DATA = 000000,000000,000000,000000  
: FPS = 047604, FDST = M6-R7  
\*\*\*\*\*

|        |        |        |        |         |                             |                               |  |
|--------|--------|--------|--------|---------|-----------------------------|-------------------------------|--|
| 002040 | 104400 |        |        | SCOPE   |                             |                               |  |
| 002042 | 000404 |        |        | BR      | TST11                       |                               |  |
| 002044 | 000000 | 000000 | 000000 | DATA11: | 000000,000000,000000,000000 |                               |  |
| 002052 | 000000 |        |        |         |                             |                               |  |
| 002054 | 170127 | 047600 |        | TST11:  | LDFPS #047600               | :LOAD FLOATING POINT STATUS   |  |
| 002060 | 016767 | 177760 | 176714 |         | MOV DAT11, ANS1             | : "LOAD" 000000 INTO ANS1     |  |
| 002066 | 016767 | 177754 | 176710 |         | MOV DAT11+2, ANS2           | : "LOAD" 000000 INTO ANS2     |  |
| 002074 | 016767 | 177750 | 176704 |         | MOV DAT11+4, ANS3           | : "LOAD" 000000 INTO ANS3     |  |
| 002102 | 016767 | 177744 | 176700 |         | MOV DAT11+6, ANS4           | : "LOAD" 000000 INTO ANS4     |  |
| 002110 | 170467 | 176666 |        | FPI11:  | CLRD ANS1                   | : CLEAR ANS1 THRU ANS4        |  |
| 002114 | 170200 |        |        |         | STFPS FPS                   | : STORE FLOATING POINT STATUS |  |
| 002116 | 022700 | 047604 |        |         | CMF #047604, FPS            | : CHECK FLOATING POINT STATUS |  |
| 002122 | 001401 |        |        |         | BEQ .+4                     | : BRANCH IF OK                |  |
| 002124 | 104000 |        |        |         | HLT                         | : FPS NOT EQUAL TO 047604     |  |
| 002126 | 005767 | 176650 |        |         | TST ANS1                    | : CHECK ANS1                  |  |
| 002132 | 001401 |        |        |         | BEQ .+4                     | : BRANCH IF OK                |  |
| 002134 | 104000 |        |        |         | HLT                         | : ANS1 NOT EQUAL TO ZERO      |  |
| 002136 | 005767 | 176642 |        |         | TST ANS2                    | : CHECK ANS2                  |  |
| 002142 | 001401 |        |        |         | BEQ .+4                     | : BRANCH IF OK                |  |
| 002144 | 104000 |        |        |         | HLT                         | : ANS2 NOT EQUAL TO ZERO      |  |
| 002146 | 005767 | 176634 |        |         | TST ANS3                    | : CHECK ANS3                  |  |
| 002152 | 001401 |        |        |         | BEQ .+4                     | : BRANCH IF OK                |  |
| 002154 | 104000 |        |        |         | HLT                         | : ANS3 NOT EQUAL TO ZERO      |  |
| 002156 | 005767 | 176626 |        |         | TST ANS4                    | : CHECK ANS4                  |  |
| 002162 | 001401 |        |        |         | BEQ .+4                     | : BRANCH IF OK                |  |
| 002164 | 104000 |        |        |         | HLT                         | : ANS4 NOT EQUAL TO ZERO      |  |

\*\*\*\*\*  
:TEST 12: CLRD (CLEAR DOUBLE PERCISION)  
: DATA = 177777,177777,177777,177777  
: FPS = 047604, FDST = M6-R7  
\*\*\*\*\*

|        |        |        |        |         |                             |                             |  |
|--------|--------|--------|--------|---------|-----------------------------|-----------------------------|--|
| 002166 | 104400 |        |        | SCOPE   |                             |                             |  |
| 002170 | 000404 |        |        | BR      | TST12                       |                             |  |
| 002172 | 177777 | 177777 | 177777 | DATA12: | 177777,177777,177777,177777 |                             |  |
| 002200 | 177777 |        |        |         |                             |                             |  |
| 002202 | 170127 | 047600 |        | TST12:  | LDFPS #047600               | :LOAD FLOATING POINT STATUS |  |
| 002206 | 016767 | 177760 | 176566 |         | MOV DAT12, ANS1             | : "LOAD" 177777 INTO ANS1   |  |
| 002214 | 016767 | 177754 | 176562 |         | MOV DAT12+2, ANS2           | : "LOAD" 177777 INTO ANS2   |  |
| 002222 | 016767 | 177750 | 176556 |         | MOV DAT12+4, ANS3           | : "LOAD" 177777 INTO ANS3   |  |
| 002230 | 016767 | 177744 | 176552 |         | MOV DAT12+6, ANS4           | : "LOAD" 177777 INTO ANS4   |  |

```

002236 170467 176540 FFI12: CLRD ANS1 :CLEAR ANS1 THRU ANS4
002242 170200 STFPS FPS :STORE FLOATING POINT STATUS
002244 022700 047604 CMP #047604,FPS :CHECK FLOATING POINT STATUS
002250 001401 BEQ .+4 :BRANCH IF OK
002252 104000 HLT :FPS NOT EQUAL TO 047604

002254 005767 176522 TST ANS1 :CHECK ANS1
002260 001401 BEQ .+4 :BRANCH IF OK
002262 104000 HLT :ANS1 NOT EQUAL TO ZERO

002264 005767 176514 TST ANS2 :CHECK ANS2
002270 001401 BEQ .+4 :BRANCH IF OK
002272 104000 HLT :ANS2 NOT EQUAL TO ZERO

002274 005767 176506 TST ANS3 :CHECK ANS3
002300 001401 BEQ .+4 :BRANCH IF OK
002302 104000 HLT :ANS3 NOT EQUAL TO ZERO

002304 005767 176500 TST ANS4 :CHECK ANS4
002310 001401 BEQ .+4 :BRANCH IF OK
002312 104000 HLT :ANS4 NOT EQUAL TO ZERO

```

```

*****
:TEST 13: CLRD (CLEAR DOUBLE PRECISION)
: DATA = 125252,125252,125252,125252
: FPS = 047604, FDST = M6-R7
*****

```

```

002314 104400 SCOPE
002316 000404 BR TST13

002320 125252 125252 125252 DAT13: 125252,125252,125252,125252
002326 125252

```

```

002330 170127 047600 TST13: LDFPS #047600 :LOAD FLOATING POINT STATUS
002334 016767 177760 MOV DAT13,ANS1 :"LOAD" 125252 INTO ANS1
002340 016767 177764 MOV DAT13+2,ANS2 :"LOAD" 125252 INTO ANS2
002350 016767 177750 MOV DAT13+4,ANS3 :"LOAD" 125252 INTO ANS3
002356 016767 177744 MOV DAT13+6,ANS4 :"LOAD" 125252 INTO ANS4
002364 170467 176412 FFI13: CLRD ANS1 :CLEAR ANS1 THRU ANS4
002370 170200 STFPS FPS :STORE FLOATING POINT STATUS
002372 022700 047604 CMP #047604,FPS :CHECK FLOATING POINT STATUS
002376 001401 BEQ .+4 :BRANCH IF OK
002400 104000 HLT :FPS NOT EQUAL TO 047604

002402 005767 176374 TST ANS1 :CHECK ANS1
002406 001401 BEQ .+4 :BRANCH IF OK
002410 104000 HLT :ANS1 NOT EQUAL TO ZERO

002412 005767 176366 TST ANS2 :CHECK ANS2
002416 001401 BEQ .+4 :BRANCH IF OK
002420 104000 HLT :ANS2 NOT EQUAL TO ZERO

002422 005767 176360 TST ANS3 :CHECK ANS3
002426 001401 BEQ .+4 :BRANCH IF OK
002430 104000 HLT :ANS3 NOT EQUAL TO ZERO

```

```

002432 005767 176352      TST      ANS4      :CHECK ANS4
002436 001401          BEQ      .+4      :BRANCH IF OK
002440 104000          HLT                      :ANS4 NOT EQUAL TO ZERO

```

```

*****
:TEST 14:      CLRD (CLEAR DOUBLE PRECISION)
:      DATA = 052525,052525,052525,052525
:      FPS = 047604,   FDST = M6-R7
*****

```

```

002442 104400          SCOPE
002444 000404          BR      TST14

002446 052525 052525 052525 DAT14: 052525,052525,052525,052525
002454 052525

```

```

002456 170127 047600      TST14:  LDFPS    #047600      :LOAD FLOATING POINT STATUS
002462 016767 177760      MOV      DAT14, ANS1      :"LOAD" 052525 INTO ANS1
002470 016767 177754      MOV      DAT14+2,ANS2    :"LOAD" 052525 INTO ANS2
002476 016767 177750      MOV      DAT14+4,ANS3    :"LOAD" 052525 INTO ANS3
002504 016767 177744      MOV      DAT14+6,ANS4    :"LOAD" 052525 INTO ANS4
002512 170467 176264      FPI14:  CLRD      ANS1      :CLEAR ANS1 THRU ANS4
002516 170200          STFPS    FPS              :STORE FLOATING POINT STATUS
002520 022700 047604      CMP      #047604,FPS      :CHECK FLOATING POINT STATUS
002524 001401          BEQ      .+4              :BRANCH IF OK
002526 104000          HLT                      :FPS NOT EQUAL TO 047604

```

```

002530 005767 176246      TST      ANS1      :CHECK ANS1
002534 001401          BEQ      .+4      :BRANCH IF OK
002536 104000          HLT                      :ANS1 NOT EQUAL TO ZERO

```

```

002540 005767 176240      TST      ANS2      :CHECK ANS2
002544 001401          BEQ      .+4      :BRANCH IF OK
002546 104000          HLT                      :ANS2 NOT EQUAL TO ZERO

```

```

002550 005767 176232      TST      ANS3      :CHECK ANS3
002554 001401          BEQ      .+4      :BRANCH IF OK
002556 104000          HLT                      :ANS3 NOT EQUAL TO ZERO

```

```

002560 005767 176224      TST      ANS4      :CHECK ANS4
002564 001401          BEQ      .+4      :BRANCH IF OK
002566 104000          HLT                      :ANS4 NOT EQUAL TO ZERO

```

```

*****
:TEST 15:      CLRD (CLEAR DOUBLE PRECISION)
:      DATA = 100000,000000,000000,000000
:      FPS = 047604,   FDST = M6-R7
*****

```

```

002570 104400          SCOPE
002572 000404          BR      TST15

002574 100000 000000 000000 DAT15: 100000,000000,000000,000000
002602 000000

```

```

002604 170127 047600          TST15: LDFPS #047600          :LOAD FLOATING POINT STATUS
002610 016767 177760 176164      MOV DAT15, ANS1          : "LOAD" 100000 INTO ANS1
002616 016767 177754 176160      MOV DAT15+2,ANS2        : "LOAD" 000000 INTO ANS2
002624 016767 177750 176154      MOV DAT15+4,ANS3        : "LOAD" 000000 INTO ANS3
002632 016767 177744 176150      MOV DAT15+6,ANS4        : "LOAD" 000000 INTO ANS4
002640 170467 176136          FPI15: CLRD ANS1          :CLEAR ANS1 THRU ANS4
002644 170200          STFPS FPS              :STORE FLOATING POINT STATUS
002646 022700 047604          CMP #047604,FPS         :CHECK FLOATING POINT STATUS
002652 001401          BEQ .+4                :BRANCH IF OK
002654 104000          HLT                    :FPS NOT EQUAL TO 047604

002656 005767 176120          TST ANS1                :CHECK ANS1
002662 001401          BEQ .+4                :BRANCH IF OK
002664 104000          HLT                    :ANS1 NOT EQUAL TO ZERO

002666 005767 176112          TST ANS2                :CHECK ANS2
002672 001401          BEQ .+4                :BRANCH IF OK
002674 104000          HLT                    :ANS2 NOT EQUAL TO ZERO

002676 005767 176104          TST ANS3                :CHECK ANS3
002702 001401          BEQ .+4                :BRANCH IF OK
002704 104000          HLT                    :ANS3 NOT EQUAL TO ZERO

002706 005767 176076          TST ANS4                :CHECK ANS4
002712 001401          BEQ .+4                :BRANCH IF OK
002714 104000          HLT                    :ANS4 NOT EQUAL TO ZERO

```

```

*****
:TEST 16:          CLRD (CLEAR DOUBLE PRECISION)
:          DATA = 000177,177777,177777,177777
:          FPS = 047604, FDST = M6-R7
*****

```

```

002716 104400          SCOPE
002720 000404          BR          TST16

002722 000177 177777 177777 DAT16: 000177,177777,177777,177777
002730 177777

002732 170127 047600          TST16: LDFPS #047600          :LOAD FLOATING POINT STATUS
002736 016767 177760 176036      MOV DAT16, ANS1          : "LOAD" 000177 INTO ANS1
002744 016767 177754 176032      MOV DAT16+2,ANS2        : "LOAD" 177777 INTO ANS2
002752 016767 177750 176026      MOV DAT16+4,ANS3        : "LOAD" 177777 INTO ANS3
002760 016767 177744 176022      MOV DAT16+6,ANS4        : "LOAD" 177777 INTO ANS4
002766 170467 176010          FPI16: CLRD ANS1          :CLEAR ANS1 THRU ANS4
002772 170200          STFPS FPS              :STORE FLOATING POINT STATUS
002774 022700 047604          CMP #047604,FPS         :CHECK FLOATING POINT STATUS
003000 001401          BEQ .+4                :BRANCH IF OK
003002 104000          HLT                    :FPS NOT EQUAL TO 047604

003004 005767 175772          TST ANS1                :CHECK ANS1
003010 001401          BEQ .+4                :BRANCH IF OK
003012 104000          HLT                    :ANS1 NOT EQUAL TO ZERO

003014 005767 175764          TST ANS2                :CHECK ANS2
003020 001401          BEQ .+4                :BRANCH IF OK

```

```

003022 104000          HLT          ;ANS2 NOT EQUAL TO ZERO
003024 005767 175756  TST      ANS3          ;CHECK ANS3
003030 001401          BEQ      .+4          ;BRANCH IF OK
003032 104000          HLT          ;ANS3 NOT EQUAL TO ZERO
003034 005767 175750  TST      ANS4          ;CHECK ANS4
003040 001401          BEQ      .+4          ;BRANCH IF OK
003042 104000          HLT          ;ANS4 NOT EQUAL TO ZERO

```

```

*****
:TEST 17:          CLRD (CLEAR DOUBLE PERCISION)
:          DATA = 125252,125252,125252,125252
:          FPS = 047604,   FDST = MO-AC1
*****

```

```

003044 104400          SCOPE
003046 000404          BR      TST17
003050 125252 125252 125252  DAT17: 125252,125252,125252,125252
003056 125252

```

```

003060 170127 047600  TST17: LDFPS  #047600          ;LOAD FLOATING POINT STATUS
003064 172567 177760  LDD      DAT17, AC1          ;LOAD 125252,125252,125252,125252 INTO AC1
003070 170401          FPI17: CLRD      AC1          ;CLEAR AC1
003072 170200          STFPS  FPS          ;STORE FLOATING POINT STATUS
003074 022700 047604  CMP      #047604,FPS        ;CHECK FLOATING POINT STATUS
003100 001401          BEQ      .+4          ;BRANCH IF OK
003102 104000          HLT          ;FPS NOT EQUAL TO 047604

```

```

003104 174167 175672  STD      AC1,   ANS1          ;STORE AC1 IN ANS1 THRU ANS4
003110 005767 175666  TST      ANS1          ;CHECK ANS1
003114 001401          BEQ      .+4          ;BRANCH IF OK
003116 104000          HLT          ;ANS1 NOT EQUAL TO ZERO

```

```

003120 005767 175660  TST      ANS2          ;CHECK ANS2
003124 001401          BEQ      .+4          ;BRANCH IF OK
003126 104000          HLT          ;ANS2 NOT EQUAL TO ZERO

```

```

003130 005767 175652  TST      ANS3          ;CHECK ANS3
003134 001401          BEQ      .+4          ;BRANCH IF OK
003136 104000          HLT          ;ANS3 NOT EQUAL TO ZERO

```

```

003140 005767 175644  TST      ANS4          ;CHECK ANS4
003144 001401          BEQ      .+4          ;BRANCH IF OK
003146 104000          HLT          ;ANS4 NOT EQUAL TO ZERO

```

```

*****
:TEST 20:          CLRD (CLEAR DOUBLE PERCISION)
:          DATA = 052525,052525,052525,052525
:          FPS = 047604,   FDST = MO-AC0
*****

```

```

003150 104400          SCOPE
003152 000404          BR      TST20

```

K02

MAINDEC-11-DCFPH-B  
DCFPH.P11

TEST OF CLRF, CLRD, TSTF, TSTD, ABSF, ABSD, NEGF, NEGD MACY11 27(732) 17-SEP-76 10:45 PAGE 20  
TEST SECTION

003154 052525 052525 052525 DAT20: 052525,052525,052525,052525  
003162 052525

003164 170127 047600 TST20: LDFPS #047600 ;LOAD FLOATING POINT STATUS  
003170 172457 177750 LD0 DAT20, ACO ;LOAD 052525,052525,052525,052525 INTO ACO  
003174 170400 FPI20: CLRD ACO ;CLEAR ACO  
003176 170200 STFPS FPS ;STORE FLOATING POINT STATUS  
003200 022700 047604 CMP #047604,FPS ;CHECK FLOATING POINT STATUS  
003204 001401 BEQ .+4 ;BRANCH IF OK  
003206 104000 HLT ;FPS NOT EQUAL TO 047604

003210 174067 175566 STD ACO, ANS1 ;STORE ACO IN ANS1 THRU ANS4  
003214 005767 175562 TST ANS1 ;CHECK ANS1  
003220 001401 BEQ .+4 ;BRANCH IF OK  
003222 104000 HLT ;ANS1 NOT EQUAL TO ZERO

003224 005767 175554 TST ANS2 ;CHECK ANS2  
003230 001401 BEQ .+4 ;BRANCH IF OK  
003232 104000 HLT ;ANS2 NOT EQUAL TO ZERO

003234 005767 175546 TST ANS3 ;CHECK ANS3  
003240 001401 BEQ .+4 ;BRANCH IF OK  
003242 104000 HLT ;ANS3 NOT EQUAL TO ZERO

003244 005767 175540 TST ANS4 ;CHECK ANS4  
003250 001401 BEQ .+4 ;BRANCH IF OK  
003252 104000 HLT ;ANS4 NOT EQUAL TO ZERO

\*\*\*\*\*  
:TEST 21: TEST TSTF (TEST FLOATING POINT)  
: TEST 000000,000000  
: FPS = 047404, FDST = M6-R7  
\*\*\*\*\*

003254 104400 SCOPE  
003256 000402 BR TST21

003260 000000 000000 DAT21: 000000,000000

003264 170127 047400 TST21: LDFPS #047400 ;LOAD FLOATING POINT STATUS  
003270 170567 177754 FPI21: TSTF DAT21 ;TEST 000000,000000  
003274 170200 STFPS FPS ;STORE FLOATING POINT STATUS  
003276 022700 047404 CMP #047404,FPS ;CHECK FLOATING POINT STATUS  
003302 001401 BEQ .+4 ;BRANCH IF OK  
003304 104000 HLT ;FPS NOT EQUAL TO 047404

\*\*\*\*\*  
:TEST 22: TEST TSTF (TEST FLOATING POINT)  
: TEST 177777,177777  
: FPS = 047410, FDST = M6-R7  
\*\*\*\*\*

003306 104400 SCOPE  
003310 000402 BR TST22



003312 177777 177777  
003316 170127 047400  
003322 170567 177764  
003326 170200  
003330 022700 047410  
003334 001401  
003336 104000

DAT22: 177777,177777  
TST22: LDFPS #047400 ;LOAD FLOATING POINT STATUS  
FPI22: TSTF DAT22 ;TEST 177777,177777  
STFPS FPS ;STORE FLOATING POINT STATUS  
CMP #047410,FPS ;CHECK FLOATING POINT STATUS  
BEQ .+4 ;BRANCH IF OK  
HLT ;FPS NOT EQUAL TO 047410

\*\*\*\*\*  
:TEST 23: TEST TSTF (TEST FLOATING POINT)  
:TEST 052525,052525  
:FPS = 047400, FDST = M6-R7  
\*\*\*\*\*

003340 104400  
003342 000402  
003344 052525 052525  
003350 170127 047400  
003354 170567 177764  
003360 170200  
003362 022700 047400  
003366 001401  
003370 104000

SCOPE  
BR TST23  
DAT23: 052525,052525  
TST23: LDFPS #047400 ;LOAD FLOATING POINT STATUS  
FPI23: TSTF DAT23 ;TEST 052525,052525  
STFPS FPS ;STORE FLOATING POINT STATUS  
CMP #047400,FPS ;CHECK FLOATING POINT STATUS  
BEQ .+4 ;BRANCH IF OK  
HLT ;FPS NOT EQUAL TO 047400

\*\*\*\*\*  
:TEST 24: TEST TSTF (TEST FLOATING POINT)  
:TEST 125252,125252  
:FPS = 047410, FDST = M6-R7  
\*\*\*\*\*

003372 104400  
003374 000402  
003376 125252 125252  
003402 170127 047400  
003406 170567 177764  
003412 170200  
003414 022700 047410  
003420 001401  
003422 104000

SCOPE  
BR TST24  
DAT24: 125252,125252  
TST24: LDFPS #047400 ;LOAD FLOATING POINT STATUS  
FPI24: TSTF DAT24 ;TEST 125252,125252  
STFPS FPS ;STORE FLOATING POINT STATUS  
CMP #047410,FPS ;CHECK FLOATING POINT STATUS  
BEQ .+4 ;BRANCH IF OK  
HLT ;FPS NOT EQUAL TO 047410

\*\*\*\*\*  
:TEST 25: TEST TSTF (TEST FLOATING POINT)  
:TEST 077777,177777  
:FPS = 047400, FDST = M6-R7  
\*\*\*\*\*

003424 104400

SCOPE

M02

MAINDEC-11-DCFPH-B  
DCFPH.P11

TEST OF CLRF, CLRD, TSTF, TSTD, ABSF, ABSD, NEGF, NEGD MACY11 27(732) 17-SEP-76 10:45 PAGE 22  
TEST SECTION

```

003426 000402          BR      TST25
003430 077777 177777  DAT25: 077777,177777
003434 170127 047400  TST25: LDFPS  #047400      ;LOAD FLOATING POINT STATUS
003440 170567 177764  FPI25: TSTF   DAT25      ;TEST 077777,177777
003444 170200          STFPS  FPS             ;STORE FLOATING POINT STATUS
003446 022700 047400  CMP    #047400,FPS     ;CHECK FLOATING POINT STATUS
003452 001401          BEQ    .+4             ;BRANCH IF OK
003454 104000          HLT                    ;FPS NOT EQUAL TO 047400

```

```

:*****
:TEST 26:      TEST TSTF (TEST FLOATING POINT)
:              TEST 100000,000000
:              FPS = 147414,   FDST = M6-R7
:              FEC = 14,      FEA = FPI26
:*****

```

```

003456 104400          SCOPE
003460 000402          BR      TST26
003462 100000 000000  DAT26: 100000,000000
003466 170127 047400  TST26: LDFPS  #047400      ;LOAD FLOATING POINT STATUS
003472 170567 177764  FPI26: TSTF   DAT26      ;TEST 100000,000000
003476 170200          STFPS  FPS             ;STORE FLOATING POINT STATUS
003500 170367 175316  STST   FEC             ;STORE EXCEPTION CODES
003504 022700 147414  CMP    #147414,FPS     ;CHECK FLOATING POINT STATUS
003510 001401          BEQ    .+4             ;BRANCH IF OK
003512 104000          HLT                    ;FPS NOT EQUAL TO 147414

003514 022767 000014 175300  CMP    #14,   FEC      ;CHECK FLOATING EXCEPTION CODE
003522 001401          BEQ    .+4             ;BRANCH IF OK
003524 104000          HLT                    ;FEC NOT EQUAL TO 14

003526 022767 003472 175270  CMP    #FPI26, FEA     ;CHECK FLOATING EXCEPTION ADDRESS
003534 001401          BEQ    .+4             ;BRANCH IF OK
003536 104000          HLT                    ;FEA NOT EQUAL TO FPI26

```

```

:*****
:TEST 27:      TEST TSTF (TEST FLOATING POINT)
:              TEST 000200,000000
:              FPS = 047400,   FDST = M6-R7
:*****

```

```

003540 104400          SCOPE
003542 000402          BR      TST27
003544 000200 000000  DAT27: 000200,000000
003550 170127 047400  TST27: LDFPS  #047400      ;LOAD FLOATING POINT STATUS
003554 170567 177764  FPI27: TSTF   DAT27      ;TEST 000200,000000
003560 170200          STFPS  FPS             ;STORE FLOATING POINT STATUS
003562 022700 047400  CMP    #047400,FPS     ;CHECK FLOATING POINT STATUS

```

003566 001401 BEQ .+4 ;BRANCH IF OK  
003570 104000 HLT ;FPS NOT EQUAL TO 047400

\*\*\*\*\*  
:TEST 30: TEST TSTF (TEST FLOATING POINT)  
:TEST 100200,000000  
:FPS = 047410, FDST = M6-R7  
\*\*\*\*\*

003572 104400 SCOPE  
003574 000402 BR TST30

003576 100200 000000 DAT30: 100200,000000

003602 170127 047400 TST30: LDFPS #047400 ;LOAD FLOATING POINT STATUS  
003606 170567 177764 FPI30: TSTF DAT30 ;TEST 100200,000000  
003612 170200 STFPS FPS ;STORE FLOATING POINT STATUS  
003614 022700 047410 CMP #047410,FPS ;CHECK FLOATING POINT STATUS  
003620 001401 BEQ .+4 ;BRANCH IF OK  
003622 104000 HLT ;FPS NOT EQUAL TO 047410

\*\*\*\*\*  
:TEST 31: TEST TSTF (TEST FLOATING POINT)  
:TEST 000177,177777  
:FPS = 047404, FDST = M6-R7  
\*\*\*\*\*

003624 104400 SCOPE  
003626 000402 BR TST31

003630 000177 177777 DAT31: 000177,177777

003634 170127 047400 TST31: LDFPS #047400 ;LOAD FLOATING POINT STATUS  
003640 170567 177764 FPI31: TSTF DAT31 ;TEST 000177,177777  
003644 170200 STFPS FPS ;STORE FLOATING POINT STATUS  
003646 022700 047404 CMP #047404,FPS ;CHECK FLOATING POINT STATUS  
003652 001401 BEQ .+4 ;BRANCH IF OK  
003654 104000 HLT ;FPS NOT EQUAL TO 047404

\*\*\*\*\*  
:TEST 32: TEST TSTF (TEST FLOATING POINT)  
:TEST 100177,177777  
:FPS = 147414, FDST = M6-R7  
:FEC = 14, FEA = FPI32  
\*\*\*\*\*

003656 104400 SCOPE  
003660 000402 BR TST32

003662 100177 177777 DAT32: 100177,177777

003666 170127 047400 TST32: LDFPS #047400 ;LOAD FLOATING POINT STATUS  
003672 170567 177764 FPI32: TSTF DAT32 ;TEST 100177,177777

B03

```

000000 000000 000000      147414  :STORE FLOATING POINT STATUS
000000 000000 000000      147414  :CHECK FLOAING EXCEPTION CODES
000000 000000 000000      147414  :STORE FLOATING POINT STATUS
000000 000000 000000      147414  :CHECK FLOAING POINT STATUS
000000 000000 000000      147414  :BRANCH IF OK
000000 000000 000000      147414  :FPS NOT EQUAL TO 147414

000000 000000 000000      14       :CHECK FLOATING EXCEPTION CODE
000000 000000 000000      14       :BRANCH IF OK
000000 000000 000000      14       :FEC NOT EQUAL TO 14

000000 000000 000000      FPI32.  :CHECK FLOATING EXCEPTION ADDRESS
000000 000000 000000      FPI32.  :BRANCH IF OK
000000 000000 000000      FPI32.  :FEC NOT EQUAL TO FPI32
  
```

```

*****
:TEST 33:      TEST TSTF (TEST FLOATING POINT)
:      TEST 100000.000001
:      FPS = 003414.    FDST = M6-R7
*****
  
```

```

003740 104400      SCOPE
003740 000402      BR       TST33

003744 100000      DAT33: 100000.000001

003750 170127      TST33: LD FPS      #003400      :LOAD FLOATING POINT STATUS
003750 170567      FPI33: TSTF      DAT33      :TEST 100000.000001
003750 170200      :STEPS     FPS          :STORE FLOATING POINT STATUS
003750 022700      CMP       #003414.FPS   :CHECK FLOATING POINT STATUS
003750 001401      BEQ      .+4           :BRANCH IF OK
003750 104000      HLT                        :FPS NOT EQUAL TO 003414
  
```

```

*****
:TEST 34:      TEST TSTF (TEST FLOATING POINT)
:      TEST 000001.100000
:      FPS = 047404.    FDST = M6-R7
*****
  
```

```

003772 104400      SCOPE
003772 000402      BR       TST34

003776 000001      DAT34: 000001.100000

004002 170127      TST34: LD FPS      #047400      :LOAD FLOATING POINT STATUS
004002 170567      FPI34: TSTF      DAT34      :TEST 000001.100000
004002 170200      :STEPS     FPS          :STORE FLOATING POINT STATUS
004002 022700      CMP       #047404.FPS   :CHECK FLOATING POINT STATUS
004002 001401      BEQ      .+4           :BRANCH IF OK
004002 104000      HLT                        :FPS NOT EQUAL TO 047404
  
```

```

*****
:TEST 35:      TEST TSTF (TEST FLOATING POINT)
:      TEST 040252.125252
  
```

: FPS = 003400, FDST = M6-R7  
:\*\*\*\*\*

004024 104400  
004026 000402

SCOPE  
BR TST35

004030 040252 125252

DAT35: 040252,125252

004034 170127 003400  
004036 170567 177764  
004038 170900  
004040 022700 003400  
004042 001401  
004044 104000

TST35: LDFPS #003400 :LOAD FLOATING POINT STATUS  
FP135: TSTF DAT35 :TEST 040252,125252  
STFPS FPS :STORE FLOATING POINT STATUS  
CMP #003400,FPS :CHECK FLOATING POINT STATUS  
BEQ .+4 :BRANCH IF OK  
HLT :FPS NOT EQUAL TO 003400

:\*\*\*\*\*  
:TEST 36: TEST TSTF (TEST FLOATING POINT)  
: TEST 140125,052525  
: FPS = 047410, FDST = M6-R7  
:\*\*\*\*\*

004056 104400  
004058 000402

SCOPE  
BR TST36

004062 140125 052525

DAT36: 140125,052525

004066 170127 047400  
004068 170567 177764  
004070 170900  
004072 022700 047410  
004074 001401  
004076 104000

TST36: LDFPS #047400 :LOAD FLOATING POINT STATUS  
FP136: TSTF DAT36 :TEST 140125,052525  
STFPS FPS :STORE FLOATING POINT STATUS  
CMP #047410,FPS :CHECK FLOATING POINT STATUS  
BEQ .+4 :BRANCH IF OK  
HLT :FPS NOT EQUAL TO 047410

:\*\*\*\*\*  
:TEST 37: TEST TSTF (TEST FLOATING POINT)  
: TEST 040125,052525  
: FPS = 047400, FDST = M0-AC3  
:\*\*\*\*\*

004110 104400  
004112 000402

SCOPE  
BR TST37

004114 040125 052525

DAT37: 040125,052525

004120 170127 047400  
004122 172767 177764  
004124 170503  
004126 170200  
004128 022700 047400  
004130 001401  
004132 104000

TST37: LDFPS #047400 :LOAD FLOATING POINT STATUS  
LDF DAT37, AC3 :LOAD 040125,052525 INTO AC3  
FP137: TSTF AC3 :TEST AC3  
STFPS FPS :STORE FLOATING POINT STATUS  
CMP #047400,FPS :CHECK FLOATING POINT STATUS  
BEQ .+4 :BRANCH IF OK  
HLT :FPS NOT EQUAL TO 047400

004144 174367 174632  
004150 022767 040125 174624

STF AC3, ANS1 :STORE AC3 IN ANS1, ANS2  
CMP #040125,ANS1 :CHECK ANS1

D03

MANDEC-11-DOFPH-8  
DOFPH.01:

TEST OF CLRF, CLRD, TSTF, TSTD, ABSF, ABSD, NEGF, NEGD MACY11 27(732) 17-SEP-76 10:45 PAGE 26  
TEST SECTION

```

004156 001401      BEQ      .+4      ;BRANCH IF OK
004160 104002      HLT+2          ;AC3 CHANGED

004168 022767 052525 174614  CMP      #052525,ANS2 ;CHECK ANS2
004170 001401      BEQ      .+4      ;BRANCH IF OK
004172 104002      HLT+2          ;AC3 CHANGED

```

```

*****
:TEST 40:      TEST TSTF (TEST FLOATING POINT)
:      TEST 140252,125252
:      FPS = 047410,   FOST = M0-AC3
*****

```

```

004174 104400      SCOPE
004176 000402      BR      TST40

004200 140252 125252  DAT40: 140252,125252

004204 170127 047400  TST40: LD FPS      #047400      ;LOAD FLOATING POINT STATUS
004206 172767 177754  LD      DAT40, AC3      ;LOAD 140252,125252 INTO AC3
004208 170500  FP140: TSTF      AC3          ;TEST AC3
004210 170900  ST FPS      FPS          ;STORE FLOATING POINT STATUS
004212 022700 047410  CMP      #047410,FPS    ;CHECK FLOATING POINT STATUS
004214 001401  BEQ      .+4          ;BRANCH IF OK
004216 104002  HLT          ;FPS NOT EQUAL TO 047410

004220 174267 174544  ST      AC3, ANS1      ;STORE AC3 IN ANS1, ANS2
004222 022767 140252 174540  CMP      #140252,ANS1  ;CHECK ANS1
004224 001401  BEQ      .+4          ;BRANCH IF OK
004226 104002  HLT+2        ;AC3 CHANGED

004230 022767 125252 174530  CMP      #125252,ANS2  ;CHECK ANS2
004232 001401  BEQ      .+4          ;BRANCH IF OK
004234 104002  HLT+2        ;AC3 CHANGED

```

```

*****
:TEST 41:      TEST TSTD (TEST DOUBLE PRECISION)
:      TEST 000000,000000,000000,000000
:      FPS = 047604,   FOST = M6-R7
*****

```

```

004236 104400      SCOPE
004238 000404      BR      TST41

004242 000000 000000 000000 000000  DAT41: 000000,000000,000000,000000

004246 170127 047600  TST41: LD FPS      #047600      ;LOAD FLOATING POINT STATUS
004248 170567 177750  TSTD     DAT41      ;TEST 000000,000000,000000,000000
004250 170200  FP141: ST FPS      FPS          ;STORE FLOATING POINT STATUS
004252 022700 047604  CMP      #047604,FPS    ;CHECK FLOATING POINT STATUS
004254 001401  BEQ      .+4          ;BRANCH IF OK
004256 104002  HLT          ;FPS NOT EQUAL TO 047604

```

E03

MAINDEC-11-DCFPH-B  
DCFPH.P11

TEST OF CLRF, CLRD, TSTF, TSTD, ABSF, ABSD, NEGF, NEGD MACY11 27(732) 17-SEP-76 10:45 PAGE 27  
TEST SECTION

\*\*\*\*\*  
:TEST 42: TEST TSTD (TEST DOUBLE PRECISION)  
: TEST 177777,177777,177777,177777  
: FPS = 047610, FDST = M6-R7  
\*\*\*\*\*

004316 104400  
004320 000404

SCOPE  
BR TST42

004328 177777 177777 177777  
004332 177777

DAT42: 177777,177777,177777,177777

004340 170127 047600  
004344 170567 177760  
004348 170200  
004352 022700 047610  
004356 001401  
004360 104000

TST42: LDFPS #047600 :LOAD FLOATING POINT STATUS  
FP142: TSTD DAT42 :TEST 177777,177777,177777,177777  
STFPS FPS :STORE FLOATING POINT STATUS  
CMP #047610,FPS :CHECK FLOATING POINT STATUS  
BPO .+4 :BRANCH IF OK  
HLT :FPS NOT EQUAL TO 047610

\*\*\*\*\*  
:TEST 43: TEST TSTD (TEST DOUBLE PRECISION)  
: TEST 052525,052525,052525,052525  
: FPS = 047600, FDST = M6-R7  
\*\*\*\*\*

004364 104400  
004368 000404

SCOPE  
BR TST43

004376 052525 052525 052525  
004380 052525

DAT43: 052525,052525,052525,052525

004388 170127 047600  
004392 170567 177760  
004396 170200  
004400 022700 047600  
004404 001401  
004408 104000

TST43: LDFPS #047600 :LOAD FLOATING POINT STATUS  
FP142: TSTD DAT43 :TEST 052525,052525,052525,052525  
STFPS FPS :STORE FLOATING POINT STATUS  
CMP #047600,FPS :CHECK FLOATING POINT STATUS  
BPO .+4 :BRANCH IF OK  
HLT :FPS NOT EQUAL TO 047600

\*\*\*\*\*  
:TEST 44: TEST TSTD (TEST DOUBLE PRECISION)  
: TEST 125252,125252,125252,125252  
: FPS = 047610, FDST = M6-R7  
\*\*\*\*\*

004412 104400  
004416 000404

SCOPE  
BR TST44

004424 125252 125252 125252  
004428 125252

DAT44: 125252,125252,125252,125252

004436 170127 047600  
004440 170567 177760  
004444 170200

TST44: LDFPS #047600 :LOAD FLOATING POINT STATUS  
FP144: TSTD DAT44 :TEST 125252,125252,125252,125252  
STFPS FPS :STORE FLOATING POINT STATUS

# F03

MAINDEC-11-DOFPH-B  
DOFPH.911

TEST OF CLRF, CLRD, TSTF, TSTD, ABSF, ABSD, NEGF, NEGD MACY11 27(732) 17-SEP-76 10:45 PAGE 28  
TEST SECTION

```
004440 022700 047610      CMP      #047610,FPS      :CHECK FLOATING POINT STATUS
004444 001401      BEQ      .+4          :BRANCH IF OK
004446 104000      HLT                      :FPS NOT EQUAL TO 047610
```

```
*****
:TEST 45:      TEST TSTD (TEST DOUBLE PERCISION)
:      TEST 077777,177777,177777,177777
:      FPS = 047600,   FOST = M6-R7
*****
```

```
004450 104400
004452 000404
```

```
SCOPE
BR      TST45
```

```
004454 077777 177777 177777 DAT45: 077777,177777,177777,177777
004456 177777
```

```
004460 170127 047600      TST45:  LD FPS      #047600      :LOAD FLOATING POINT STATUS
004462 170567 177760      FPI45:  TSTD      DAT45          :TEST 077777,177777,177777,177777
004464 170200      ST FPS      FPS            :STORE FLOATING POINT STATUS
004466 022700 047600      CMP      #047600,FPS      :CHECK FLOATING POINT STATUS
004468 001401      BEQ      .+4          :BRANCH IF OK
004470 104000      HLT                      :FPS NOT EQUAL TO 047600
```

```
*****
:TEST 46:      TEST TSTD (TEST DOUBLE PERCISION)
:      TEST 100000,000000,000000,000000
:      FPS = 147614,   FOST = M6-R7
:      FEC = 14,      FEA = FPI46
*****
```

```
004506 104400
004508 000404
```

```
SCOPE
BR      TST46
```

```
004512 100000 000000 000000 DAT46: 100000,000000,000000,000000
004514 000000
```

```
004518 170127 047600      TST46:  LD FPS      #047600      :LOAD FLOATING POINT STATUS
004520 170567 177760      FPI46:  TSTD      DAT46          :TEST 100000,000000,000000,000000
004522 170200      ST FPS      FPS            :STORE FLOATING POINT STATUS
004524 170367 174262      STST     FEC            :STORE EXCEPTION CODES
004526 022700 147614      CMP      #147614,FPS      :CHECK FLOATING POINT STATUS
004528 001401      BEQ      .+4          :BRANCH IF OK
004530 104000      HLT                      :FPS NOT EQUAL TO 147614
```

```
004534 022767 000014 174244      CMP      #14,   FEC      :CHECK FLOATING EXCEPTION CODE
004536 001401      BEQ      .+4          :BRANCH IF OK
004538 104000      HLT                      :FEC NOT EQUAL TO 14
```

```
004542 022767 004526 174234      CMP      #FPI46, FEA      :CHECK FLOATING EXCEPTION ADDRESS
004544 001401      BEQ      .+4          :BRANCH IF OK
004546 104000      HLT                      :FEA NOT EQUAL TO FPI46
```

```
*****
```



G03

MAINDEC-11-DCFPH-8  
DCFPH.911

TEST OF CLRF, CLRD, TSTF, TSTD, ABSF, ABSD, NEGF, NEGD MACY11 27(732) 17-SEP-76 10:45 PAGE 29  
TEST SECTION

\*\*\*\*\*  
:TEST 47: TEST TSTD (TEST DOUBLE PERCISION)  
:TEST 000200,000000,000000,000000  
:FPS = 047600, FDST = M6-R7  
\*\*\*\*\*

004674 104400  
004676 000404

SCOPE  
BR TST47

004680 000200 000000 000000 DAT47: 000200,000000,000000,000000  
004682 000000

004610 170127 047600  
004612 170567 177760  
004614 170200  
004616 022700 047600  
004618 001401  
004620 104000

TST47: LDFFS #047600 :LOAD FLOATING POINT STATUS  
FPI47: TSTD DAT47 :TEST 000200,000000,000000,000000  
STFFS FPS :STORE FLOATING POINT STATUS  
CMP #047600,FPS :CHECK FLOATING POINT STATUS  
BEQ .+4 :BRANCH IF OK  
HLT :FPS NOT EQUAL TO 047600

\*\*\*\*\*  
:TEST 50: TEST TSTD (TEST DOUBLE PERCISION)  
:TEST 100200,000000,000000,000000  
:FPS = 047610, FDST = M6-R7  
\*\*\*\*\*

004632 104400  
004634 000404

SCOPE  
BR TST50

004636 100200 000000 000000 DAT50: 100200,000000,000000,000000  
004638 000000

004646 170127 047600  
004648 170567 177760  
004650 170200  
004652 022700 047610  
004654 001401  
004656 104000

TST50: LDFFS #047600 :LOAD FLOATING POINT STATUS  
FPI50: TSTD DAT50 :TEST 100200,000000,000000,000000  
STFFS FPS :STORE FLOATING POINT STATUS  
CMP #047610,FPS :CHECK FLOATING POINT STATUS  
BEQ .+4 :BRANCH IF OK  
HLT :FPS NOT EQUAL TO 047610

\*\*\*\*\*  
:TEST 51: TEST TSTD (TEST DOUBLE PERCISION)  
:TEST 000177,177777,177777,177777  
:FPS = 047604, FDST = M6-R7  
\*\*\*\*\*

004670 104400  
004672 000404

SCOPE  
BR TST51

004674 000177 177777 177777 DAT51: 000177,177777,177777,177777  
004702 177777

004704 170127 047600  
004710 170567 177760  
004714 170200  
004716 022700 047604  
004722 001401

TST51: LDFFS #047600 :LOAD FLOATING POINT STATUS  
FPI51: TSTD DAT51 :TEST 000177,177777,177777,177777  
STFFS FPS :STORE FLOATING POINT STATUS  
CMP #047604,FPS :CHECK FLOATING POINT STATUS  
BEQ .+4 :BRANCH IF OK

H03

MAINDEC-11-DCFPH-B  
DCFPH.P11

TEST OF CLRF, CLRD, TSTF, TSTD, ABSF, ABSD, NEGF, NEGD MACY11 27(732) 17-SEP-76 10:45 PAGE 30  
TEST SECTION

004724 104000 HLT ;FPS NOT EQUAL TO 047604

\*\*\*\*\*  
:TEST 52: TEST TSTD (TEST DOUBLE PERCISION)  
: TEST 100177,177777,177777,177777  
: FPS = 147614, FDST = M6-R7  
: FEC = 14, FEA = FPI52  
\*\*\*\*\*

004736 104400  
004738 000404

SCOPE  
BR TST52

004732 100177 177777 177777 DAT52: 100177,177777,177777,177777  
004740 177777

004746 170127 047600  
004748 170567 177760  
004750 170200  
004752 170367 174042  
004760 022700 147614  
004764 001401  
004766 104000

TST52: LDFPS #047600 ;LOAD FLOATING POINT STATUS  
FPI52: TSTD DAT52 ;TEST 100177,177777,177777,177777  
STFPS FPS ;STORE FLOATING POINT STATUS  
STST FEC ;STORE EXCEPTION CODES  
CMP #147614,FPS ;CHECK FLOATING POINT STATUS  
BEQ .+4 ;BRANCH IF OK  
HLT ;FPS NOT EQUAL TO 147614

004770 022767 000014 174024  
004776 001401  
005000 104000

CMP #14, FEC ;CHECK FLOATING EXCEPTION CODE  
BEQ .+4 ;BRANCH IF OK  
HLT ;FEC NOT EQUAL TO 14

005002 022767 004746 174014  
005010 001401  
005012 104000

CMP #FPI52, FEA ;CHECK FLOATING EXCEPTION ADDRESS  
BEQ .+4 ;BRANCH IF OK  
HLT ;FEA NOT EQUAL TO FPI52

\*\*\*\*\*  
:TEST 53: TEST TSTD (TEST DOUBLE PERCISION)  
: TEST 100000,000001,000001,000001  
: FPS = 003614, FDST = M6-R7  
\*\*\*\*\*

005014 104400  
005016 000404

SCOPE  
BR TST53

005020 100000 000001 000001 DAT53: 100000,000001,000001,000001  
005026 000001

005030 170127 003600  
005034 170567 177760  
005040 170200  
005042 022700 003614  
005046 001401  
005050 104000

TST53: LDFPS #003600 ;LOAD FLOATING POINT STATUS  
FPI53: TSTD DAT53 ;TEST 100000,000001,000001,000001  
STFPS FPS ;STORE FLOATING POINT STATUS  
CMP #003614,FPS ;CHECK FLOATING POINT STATUS  
BEQ .+4 ;BRANCH IF OK  
HLT ;FPS NOT EQUAL TO 003614

\*\*\*\*\*  
:TEST 54: TEST TSTD (TEST DOUBLE PERCISION)  
: TEST 000001,100000,100000,100000  
\*\*\*\*\*

: FPS = 047604, FDST = M6-R7  
:\*\*\*\*\*

005052 104400  
005054 000404

SCOPE  
BR TST54

005056 000001 100000 100000 DAT54: 000001,100000,100000,100000  
005054 100000

005056 170127 047600  
005057 170567 177760  
005058 170200  
005059 022700 047604  
005100 001401  
005106 104000

TST54: LDFPS #047600 :LOAD FLOATING POINT STATUS  
FPI54: TSTD DAT54 :TEST 000001,100000,100000,100000  
STFPS FPS :STORE FLOATING POINT STATUS  
CMP #047604,FPS :CHECK FLOATING POINT STATUS  
BEQ .+4 :BRANCH IF OK  
HLT :FPS NOT EQUAL TO 047604

:\*\*\*\*\*  
:TEST 55: TEST TSTD (TEST DOUBLE PERCISION)  
:TEST 040252,125252,125252,125252  
:FPS = 003600, FDST = M6-R7  
:\*\*\*\*\*

005110 104400  
005112 000404

SCOPE  
BR TST55

005114 040252 125252 125252 DAT55: 040252,125252,125252,125252  
005112 125252

005114 170127 003600  
005115 170567 177760  
005116 170200  
005117 022700 003600  
005118 001401  
005114 104000

TST55: LDFPS #003600 :LOAD FLOATING POINT STATUS  
FPI55: TSTD DAT55 :TEST 040252,125252,125252,125252  
STFPS FPS :STORE FLOATING POINT STATUS  
CMP #003600,FPS :CHECK FLOATING POINT STATUS  
BEQ .+4 :BRANCH IF OK  
HLT :FPS NOT EQUAL TO 003600

:\*\*\*\*\*  
:TEST 56: TEST TSTD (TEST DOUBLE PERCISION)  
:TEST 140125,052525,052525,052525  
:FPS = 047610, FDST = M6-R7  
:\*\*\*\*\*

005146 104400  
005150 000404

SCOPE  
BR TST56

005152 140125 052525 052525 DAT56: 140125,052525,052525,052525  
005150 052525

005152 170127 047600  
005156 170567 177760  
005172 170200  
005174 022700 047610  
005200 001401  
005202 104000

TST56: LDFPS #047600 :LOAD FLOATING POINT STATUS  
FPI56: TSTD DAT56 :TEST 140125,052525,052525,052525  
STFPS FPS :STORE FLOATING POINT STATUS  
CMP #047610,FPS :CHECK FLOATING POINT STATUS  
BEQ .+4 :BRANCH IF OK  
HLT :FPS NOT EQUAL TO 047610

\*\*\*\*\*  
:TEST 57: TEST TSTD (TEST DOUBLE PERCISION)  
:TEST 040125,052525,052525,052525  
:FPS = 047600, FDST = MD-AC1  
\*\*\*\*\*

|        |        |        |        |         |                             |  |  |
|--------|--------|--------|--------|---------|-----------------------------|--|--|
| 005204 | 104400 |        |        | SCOPE   |                             |  |  |
| 005206 | 000404 |        |        | BR      | TST57                       |  |  |
| 005210 | 040125 | 052525 | 052525 | DATA57: | 040125,052525,052525,052525 |  |  |
| 005216 | 052525 |        |        |         |                             |  |  |
| 005220 | 170127 | 047600 |        | TST57:  | LDFPS #047600               | :LOAD FLOATING POINT STATUS                |  |
| 005224 | 172567 | 177760 |        |         | LDD DAT57, AC1              | :LOAD 040125,052525,052525,052525 INTO AC1 |  |
| 005230 | 170501 |        |        | FPI57:  | TSTD AC1                    | :TEST AC1                                  |  |
| 005232 | 170200 |        |        |         | STFPS FPS                   | :STORE FLOATING POINT STATUS               |  |
| 005234 | 022700 | 047600 |        |         | CMP #047600,FPS             | :CHECK FLOATING POINT STATUS               |  |
| 005240 | 001401 |        |        |         | BEQ .+4                     | :BRANCH IF OK                              |  |
| 005242 | 104000 |        |        |         | HLT                         | :FPS NOT EQUAL TO 047600                   |  |
| 005244 | 174167 | 173532 |        | STD     | AC1, ANS1                   | :STORE AC1 IN ANS1 THRU ANS4               |  |
| 005250 | 022767 | 040125 | 173524 | CMP     | #040125,ANS1                | :040125 STILL IN AC1?                      |  |
| 005256 | 001401 |        |        | BEQ     | .+4                         | :BRANCH IF OK                              |  |
| 005260 | 104004 |        |        | HLT+4   |                             | :AC1 CHANGED                               |  |
| 005262 | 022767 | 052525 | 173514 | CMP     | #052525,ANS2                | :CHECK ANS2                                |  |
| 005270 | 001401 |        |        | BEQ     | .+4                         | :BRANCH IF OK                              |  |
| 005272 | 104004 |        |        | HLT+4   |                             | :AC1 CHANGED                               |  |
| 005274 | 022767 | 052525 | 173504 | CMP     | #052525,ANS3                | :CHECK ANS3                                |  |
| 005302 | 001401 |        |        | BEQ     | .+4                         | :BRANCH IF OK                              |  |
| 005304 | 104004 |        |        | HLT+4   |                             | :AC1 CHANGED                               |  |
| 005306 | 022767 | 052525 | 173474 | CMP     | #052525,ANS4                | :CHECK ANS4                                |  |
| 005314 | 001401 |        |        | BEQ     | .+4                         | :BRANCH IF OK                              |  |
| 005316 | 104004 |        |        | HLT+4   |                             | :AC1 CHANGED                               |  |

\*\*\*\*\*  
:TEST 60: TEST TSTD (TEST DOUBLE PERCISION)  
:TEST 140252,125252,125252,125252  
:FPS = 047610, FDST = MD-AC1  
\*\*\*\*\*

|        |        |        |        |         |                             |  |  |
|--------|--------|--------|--------|---------|-----------------------------|--|--|
| 005320 | 104400 |        |        | SCOPE   |                             |  |  |
| 005322 | 000404 |        |        | BR      | TST60                       |  |  |
| 005324 | 140252 | 125252 | 125252 | DATA60: | 140252,125252,125252,125252 |  |  |
| 005332 | 125252 |        |        |         |                             |  |  |
| 005334 | 170127 | 047600 |        | TST60:  | LDFPS #047600               | :LOAD FLOATING POINT STATUS                |  |
| 005340 | 172567 | 177760 |        |         | LDD DATA60, AC1             | :LOAD 140252,125252,125252,125252 INTO AC1 |  |
| 005344 | 170501 |        |        | FPI60:  | TSTD AC1                    | :TEST AC1                                  |  |
| 005346 | 170200 |        |        |         | STFPS FPS                   | :STORE FLOATING POINT STATUS               |  |
| 005350 | 022700 | 047610 |        |         | CMP #047610,FPS             | :CHECK FLOATING POINT STATUS               |  |

K03

```

005354 001401      BEQ      .+4      ;BRANCH IF OK
005356 104000      HLT
005360 174167 173416  STD      AC1, ANS1 ;STORE AC1 IN ANS1 THRU ANS4
005364 022767 140252 173410  CMP      #140252,ANS1 ;:140252 STILL IN AC1?
005372 001401      BEQ      .+4      ;BRANCH IF OK
005374 104004      HLT+4      ;AC1 CHANGED
005376 022767 125252 173400  CMP      #125252,ANS2 ;CHECK ANS2
005404 001401      BEQ      .+4      ;BRANCH IF OK
005406 104004      HLT+4      ;AC1 CHANGED
005410 022767 125252 173370  CMP      #125252,ANS3 ;CHECK ANS3
005416 001401      BEQ      .+4      ;BRANCH IF OK
005420 104004      HLT+4      ;AC1 CHANGED
005422 022767 125252 173360  CMP      #125252,ANS4 ;CHECK ANS4
005430 001401      BEQ      .+4      ;BRANCH IF OK
005432 104004      HLT+4      ;AC1 CHANGED

```

```

*****
:TEST 61: TEST ABSF (ABSOLUTE OF FLOATING POINT)
: MAGNITUDE 000000,000000 ==> 000000,000000
: FPS = 047404, FDST = M6-R7
*****

```

```

005434 104400      SCOPE
005436 170127 047400  TST61: LDFPS  #047400 ;LOAD FLOATING POINT STATUS
005442 012767 000000 173332  MOV      #000000,ANS1 ;"LOAD" 000000 INTO ANS1
005450 012767 000000 173326  MOV      #000000,ANS2 ;"LOAD" 000000 INTO ANS2
005456 170667 173320  FPI61: ABSF  ANS1 ;MAKE ANS1, ANS2 ABSOLUTE
005462 170200      STFPS  FPS ;STORE FLOATING POINT STATUS
005464 022700 047404  CMP      #047404,FPS ;CHECK FLOATING POINT STATUS
005470 001401      BEQ      .+4      ;BRANCH IF OK
005472 104000      HLT      ;FPS NOT EQUAL TO 047404
005474 022767 000000 173300  CMP      #000000,ANS1 ;CHECK ANS1
005502 001401      BEQ      .+4      ;BRANCH IF OK
005504 104002      HLT+2      ;ANS1 NOT EQUAL TO 000000
005506 022767 000000 173270  CMP      #000000,ANS2 ;CHECK ANS2
005514 001401      BEQ      .+4      ;BRANCH IF OK
005516 104002      HLT+2      ;ANS2 NOT EQUAL TO 000000

```

```

*****
:TEST 62: TEST ABSF (ABSOLUTE OF FLOATING POINT)
: MAGNITUDE 177777,177777 ==> 077777,177777
: FPS = 047400, FDST = M6-R7
*****

```

```

005520 104400      SCOPE
005522 170127 047400  TST62: LDFPS  #047400 ;LOAD FLOATING POINT STATUS
005526 012767 177777 173246  MOV      #177777,ANS1 ;"LOAD" 177777 INTO ANS1
005534 012767 177777 173242  MOV      #177777,ANS2 ;"LOAD" 177777 INTO ANS2

```

L03

MAINDEC-11-DCFPH-B  
DCFPH.P11

TEST OF CLRF, CLRD, TSTF, TSTD, ABSF, ABSD, NEGF, NEGQ MACY11 27(732) 17-SEP-76 10:45 PAGE 34  
TEST SECTION

```

005542 170667 173234      FPI62:  ABSF  ANS1      :MAKE ANS1, ANS2 ABSOLUTE
005546 170200              STFPS  FPS          :STORE FLOATING POINT STATUS
005550 022700 047400      CMP    #047400,FPS   :CHECK FLOATING POINT STATUS
005554 001401              BEQ    .+4           :BRANCH IF OK
005556 104000              HLT                    :FPS NOT EQUAL TO 047400

005560 022767 077777 173214      CMP    #077777,ANS1  :CHECK ANS1
005566 001401              BEQ    .+4           :BRANCH IF OK
005570 104002              HLT+2                :ANS1 NOT EQUAL TO 077777

005572 022767 177777 173204      CMP    #177777,ANS2  :CHECK ANS2
005500 001401              BEQ    .+4           :BRANCH IF OK
005602 104002              HLT+2                :ANS2 NOT EQUAL TO 177777

```

```

:*****
:TEST 63:      TEST ABSF (ABSOLUTE OF FLOATING POINT)
:              MAGNITUDE 052525,052525 ==> 052525,052525
:              FPS = 047400,  FDST = M6-R7
:*****

```

```

005604 104400              SCOPE
005606 170127 047400      TST63:  LDFPS  #047400    :LOAD FLOATING POINT STATUS
005612 012767 052525 173162      MOV    #052525,ANS1  :"LOAD" 052525 INTO ANS1
005620 012767 052525 173156      MOV    #052525,ANS2  :"LOAD" 052525 INTO ANS2
005626 170667 173150      FPI63:  ABSF  ANS1      :MAKE ANS1, ANS2 ABSOLUTE
005632 170200              STFPS  FPS          :STORE FLOATING POINT STATUS
005634 022700 047400      CMP    #047400,FPS   :CHECK FLOATING POINT STATUS
005640 001401              BEQ    .+4           :BRANCH IF OK
005642 104000              HLT                    :FPS NOT EQUAL TO 047400

005644 022767 052525 173130      CMP    #052525,ANS1  :CHECK ANS1
005652 001401              BEQ    .+4           :BRANCH IF OK
005654 104002              HLT+2                :ANS1 NOT EQUAL TO 052525

005656 022767 052525 173120      CMP    #052525,ANS2  :CHECK ANS2
005664 001401              BEQ    .+4           :BRANCH IF OK
005666 104002              HLT+2                :ANS2 NOT EQUAL TO 052525

```

```

:*****
:TEST 64:      TEST ABSF (ABSOLUTE OF FLOATING POINT)
:              MAGNITUDE 125252,125252 ==> 025252,125252
:              FPS = 047400,  FDST = M6-R7
:*****

```

```

005670 104400              SCOPE
005672 170127 047400      TST64:  LDFPS  #047400    :LOAD FLOATING POINT STATUS
005676 012767 125252 173076      MOV    #125252,ANS1  :"LOAD" 125252 INTO ANS1
005704 012767 125252 173072      MOV    #125252,ANS2  :"LOAD" 125252 INTO ANS2
005712 170667 173064      FPI64:  ABSF  ANS1      :MAKE ANS1, ANS2 ABSOLUTE
005716 170200              STFPS  FPS          :STORE FLOATING POINT STATUS
005720 022700 047400      CMP    #047400,FPS   :CHECK FLOATING POINT STATUS
005724 001401              BEQ    .+4           :BRANCH IF OK
005726 104000              HLT                    :FPS NOT EQUAL TO 047400

```

M03

MAINDEC-11-DCFPH-B  
DCFPH.P11

TEST OF CLRF, CLRD, TSTF, TSTD, ABSF, ABSD, NEGF, NEGD MACY11 27(732) 17-SEP-76 10:45 PAGE 35  
TEST SECTION

```

005730 022767 025252 173044      CMP      #025252,ANS1      ;CHECK ANS1
005736 001401      BEQ      .+4            ;BRANCH IF OK
005740 104002      HLT+2      ;ANS1 NOT EQUAL TO 025252

005742 022767 125252 173034      CMP      #125252,ANS2      ;CHECK ANS2
005750 001401      BEQ      .+4            ;BRANCH IF OK
005752 104002      HLT+2      ;ANS2 NOT EQUAL TO 125252

```

```

*****
:TEST 65:      TEST ABSF (ABSOLUTE OF FLOATING POINT)
:              MAGNITUDE 077777,177777 ==> 077777,177777
:              FPS = 047400,      FDST = M6-R7
*****

```

```

005754 104400      SCOPE
005756 170127 047400      LDFPS      #047400      ;LOAD FLOATING POINT STATUS
005762 012767 077777 173012      MOV      #077777,ANS1      ;"LOAD" 077777 INTO ANS1
005770 012767 177777 173006      MOV      #177777,ANS2      ;"LOAD" 177777 INTO ANS2
005776 170667 173000      FPI65:  ABSF      ANS1      ;MAKE ANS1, ANS2 ABSOLUTE
006002 170200      STFPS      FPS      ;STORE FLOATING POINT STATUS
006004 022700 047400      CMP      #047400,FPS      ;CHECK FLOATING POINT STATUS
006010 001401      BEQ      .+4            ;BRANCH IF OK
006012 104000      HLT      ;FPS NOT EQUAL TO 047400

006014 022767 077777 172760      CMP      #077777,ANS1      ;CHECK ANS1
006022 001401      BEQ      .+4            ;BRANCH IF OK
006024 104002      HLT+2      ;ANS1 NOT EQUAL TO 077777

006026 022767 177777 172750      CMP      #177777,ANS2      ;CHECK ANS2
006034 001401      BEQ      .+4            ;BRANCH IF OK
006036 104002      HLT+2      ;ANS2 NOT EQUAL TO 177777

```

```

*****
:TEST 66:      TEST ABSF (ABSOLUTE OF FLOATING POINT)
:              MAGNITUDE 100000,000000 ==> 100000,000000
:              FPS = 147414,      FDST = M6-R7
:              FEC = 14,      FEA = FPI66
*****

```

```

006040 104400      SCOPE
006042 170127 047400      LDFPS      #047400      ;LOAD FLOATING POINT STATUS
006046 012767 100000 172726      MOV      #100000,ANS1      ;"LOAD" 100000 INTO ANS1
006054 012767 000000 172722      MOV      #000000,ANS2      ;"LOAD" 000000 INTO ANS2
006062 170667 172714      FPI66:  ABSF      ANS1      ;MAKE ANS1, ANS2 ABSOLUTE
006066 170200      STFPS      FPS      ;STORE FLOATING POINT STATUS
006070 170367 172726      STST      FEC      ;STORE EXCEPTION CODES
006074 022700 147414      CMP      #147414,FPS      ;CHECK FLOATING POINT STATUS
006100 001401      BEQ      .+4            ;BRANCH IF OK
006102 104000      HLT      ;FPS NOT EQUAL TO 147414

006104 022767 000014 172710      CMP      #14,      FEC      ;CHECK FLOATING EXCEPTION CODE
006112 001401      BEQ      .+4            ;BRANCH IF OK
006114 104000      HLT      ;FEC NOT EQUAL TO 14

```

```

006116 022767 006062 172700      CMP      #FPI66, FEA      ;CHECK FLOATING EXCEPTION ADDRESS
006124 001401      BEQ      .+4            ;BRANCH IF OK
006126 104000      HLT                                ;FEA NOT EQUAL TO FPI66

006130 022767 100000 172644      CMP      #100000,ANS1   ;CHECK ANS1
006136 001401      BEQ      .+4            ;BRANCH IF OK
006140 104002      HLT+2          ;ANS1 NOT EQUAL TO 100000

006142 022767 000000 172634      CMP      #000000,ANS2   ;CHECK ANS2
006150 001401      BEQ      .+4            ;BRANCH IF OK
006152 104002      HLT+2          ;ANS2 NOT EQUAL TO 000000

```

```

*****
:TEST 67:      TEST ABSF (ABSOLUTE OF FLOATING POINT)
:              MAGNITUDE 000200,000000 ==> 000200,000000
:              FPS = 047400,   FDST = M6-R7
*****

```

```

006154 104400      SCOPE
006156 170127 047400      LDFPS      #047400      ;LOAD FLOATING POINT STATUS
006162 012767 000200 172612      MOV      #000200,ANS1   ;"LOAD" 000200 INTO ANS1
006170 012767 000000 172606      MOV      #000000,ANS2   ;"LOAD" 000000 INTO ANS2
006176 170667 172600      FPI67:    ABSF      ANS1      ;MAKE ANS1, ANS2 ABSOLUTE
006202 170200      STFPS     FPS          ;STORE FLOATING POINT STATUS
006204 022700 047400      CMP      #047400,FPS    ;CHECK FLOATING POINT STATUS
006210 001401      BEQ      .+4            ;BRANCH IF OK
006212 104000      HLT                                ;FPS NOT EQUAL TO 047400

006214 022767 000200 172560      CMP      #000200,ANS1   ;CHECK ANS1
006222 001401      BEQ      .+4            ;BRANCH IF OK
006224 104002      HLT+2          ;ANS1 NOT EQUAL TO 000200

006226 022767 000000 172550      CMP      #000000,ANS2   ;CHECK ANS2
006234 001401      BEQ      .+4            ;BRANCH IF OK
006236 104002      HLT+2          ;ANS2 NOT EQUAL TO 000000

```

```

*****
:TEST 70:      TEST ABSF (ABSOLUTE OF FLOATING POINT)
:              MAGNITUDE 100200,000000 ==> 000200,000000
:              FPS = 047400,   FDST = M6-R7
*****

```

```

006240 104400      SCOPE
006242 170127 047400      LDFPS      #047400      ;LOAD FLOATING POINT STATUS
006246 012767 100200 172526      MOV      #100200,ANS1   ;"LOAD" 100200 INTO ANS1
006254 012767 000000 172522      MOV      #000000,ANS2   ;"LOAD" 000000 INTO ANS2
006262 170667 172514      FPI70:    ABSF      ANS1      ;MAKE ANS1, ANS2 ABSOLUTE
006266 170200      STFPS     FPS          ;STORE FLOATING POINT STATUS
006270 022700 047400      CMP      #047400,FPS    ;CHECK FLOATING POINT STATUS
006274 001401      BEQ      .+4            ;BRANCH IF OK
006276 104000      HLT                                ;FPS NOT EQUAL TO 047400

006300 022767 000200 172474      CMP      #000200,ANS1   ;CHECK ANS1
006306 001401      BEQ      .+4            ;BRANCH IF OK

```



```

006210 104002 HLT+2 :ANS1 NOT EQUAL TO 000200
006213 022767 000000 172464 CMP #000000,ANS2 :CHECK ANS2
006214 001401 BEQ .+4 :BRANCH IF OK
006215 104002 HLT+2 :ANS2 NOT EQUAL TO 000000

```

```

*****
TEST 71: TEST ABSF (ABSOLUTE OF FLOATING POINT)
MAGNITUDE 000177,177777 ==> 000000,000000
FPS = 047404, FOST = M6-R7
*****

```

```

006224 104400 SCOPE
006225 170127 047400 LDFPS #047400 :LOAD FLOATING POINT STATUS
006226 012767 000177 MOV #000177,ANS1 :"LOAD" 000177 INTO ANS1
006227 012767 177777 MOV #177777,ANS2 :"LOAD" 177777 INTO ANS2
006228 170667 172430 ABSF ANS1 :MAKE ANS1, ANS2 ABSOLUTE
006229 170200 STFPS FPS :STORE FLOATING POINT STATUS
006230 022700 047404 CMP #047404,FPS :CHECK FLOATING POINT STATUS
006231 001401 BEQ .+4 :BRANCH IF OK
006232 104000 HLT :FPS NOT EQUAL TO 047404

```

```

006264 022767 000000 172410 CMP #000000,ANS1 :CHECK ANS1
006265 001401 BEQ .+4 :BRANCH IF OK
006266 104002 HLT+2 :ANS1 NOT EQUAL TO 000000

```

```

006276 022767 000000 172400 CMP #000000,ANS2 :CHECK ANS2
006277 001401 BEQ .+4 :BRANCH IF OK
006278 104002 HLT+2 :ANS2 NOT EQUAL TO 000000

```

```

*****
TEST 72: TEST ABSF (ABSOLUTE OF FLOATING POINT)
MAGNITUDE 100177,177777 ==> 100177,177777
FPS = 147414, FOST = M6-R7
FEC = 14, FEA = FPI72
*****

```

```

006410 104400 SCOPE
006411 170127 047400 LDFPS #047400 :LOAD FLOATING POINT STATUS
006412 012767 100177 MOV #100177,ANS1 :"LOAD" 100177 INTO ANS1
006413 012767 177777 MOV #177777,ANS2 :"LOAD" 177777 INTO ANS2
006414 170667 172344 ABSF ANS1 :MAKE ANS1, ANS2 ABSOLUTE
006415 170200 STFPS FPS :STORE FLOATING POINT STATUS
006416 170367 172356 STST FEC :STORE EXCEPTION CODES
006417 022700 147414 CMP #147414,FPS :CHECK FLOATING POINT STATUS
006418 001401 BEQ .+4 :BRANCH IF OK
006419 104000 HLT :FPS NOT EQUAL TO 147414

```

```

006464 022767 000014 172340 CMP #14, FEC :CHECK FLOATING EXCEPTION CODE
006465 001401 BEQ .+4 :BRANCH IF OK
006466 104000 HLT :FEC NOT EQUAL TO 14

```

```

006466 022767 006432 172330 CMP #FPI72, FEA :CHECK FLOATING EXCEPTION ADDRESS
006474 001401 BEQ .+4 :BRANCH IF OK

```

```

006476 104000          HLT          :FEA NOT EQUAL TO FPI72
006500 022767 100177 172274      CMP          #100177,ANS1      :CHECK ANS1
006506 001401          BEQ          .+4          :BRANCH IF OK
006510 104002          HLT+2         :ANS1 NOT EQUAL TO 100177
006512 022767 177777 172264      CMP          #177777,ANS2     :CHECK ANS2
006520 001401          BEQ          .+4          :BRANCH IF OK
006522 104002          HLT+2         :ANS2 NOT EQUAL TO 177777

```

```

*****
:TEST 73:          TEST ABSF (ABSOLUTE OF FLOATING POINT)
:          MAGNITUDE 100000,000001 ==> 000000,000000
:          FPS = 003404,   FDST = M6-R7
*****

```

```

006524 104400          SCOPE
006526 170127          LDFPS          #003400          :LOAD FLOATING POINT STATUS
006530 012767          MOV          #100000,ANS1     :"LOAD" 100000 INTO ANS1
006534 012767          MOV          #000001,ANS2     :"LOAD" 000001 INTO ANS2
006538 170667          ABSF          ANS1          :MAKE ANS1, ANS2 ABSOLUTE
006542 170200          STFPS          FPS          :STORE FLOATING POINT STATUS
006546 022700 003404      CMP          #003404,FPS      :CHECK FLOATING POINT STATUS
006550 001401          BEQ          .+4          :BRANCH IF OK
006552 104000          HLT          :FPS NOT EQUAL TO 003404
006554 022767 000000 172210      CMP          #000000,ANS1     :CHECK ANS1
006558 001401          BEQ          .+4          :BRANCH IF OK
006562 104002          HLT+2         :ANS1 NOT EQUAL TO 000000
006576 022767 000000 172200      CMP          #000000,ANS2     :CHECK ANS2
006580 001401          BEQ          .+4          :BRANCH IF OK
006584 104002          HLT+2         :ANS2 NOT EQUAL TO 000000

```

```

*****
:TEST 74:          TEST ABSF (ABSOLUTE OF FLOATING POINT)
:          MAGNITUDE 000001,100000 ==> 000000,000000
:          FPS = 003404,   FDST = M6-R7
*****

```

```

006510 104400          SCOPE
006512 170127          LDFPS          #003400          :LOAD FLOATING POINT STATUS
006516 012767          MOV          #000001,ANS1     :"LOAD" 000001 INTO ANS1
006520 012767          MOV          #100000,ANS2     :"LOAD" 100000 INTO ANS2
006524 170667          ABSF          ANS1          :MAKE ANS1, ANS2 ABSOLUTE
006528 170200          STFPS          FPS          :STORE FLOATING POINT STATUS
006532 022700 003404      CMP          #003404,FPS      :CHECK FLOATING POINT STATUS
006536 001401          BEQ          .+4          :BRANCH IF OK
006540 104000          HLT          :FPS NOT EQUAL TO 003404
006550 022767 000000 172124      CMP          #000000,ANS1     :CHECK ANS1
006554 001401          BEQ          .+4          :BRANCH IF OK
006558 104002          HLT+2         :ANS1 NOT EQUAL TO 000000

```

```

006668 022767 000000 172114      CMP      #000000,ANS2      :CHECK ANS2
006670 001401      BFC      .+4              :BRANCH IF OK
006672 104002      HLT+2                    :ANS2 NOT EQUAL TO 000000

```

```

*****
:TEST 75:      TEST ABSF (ABSOLUTE OF FLOATING POINT)
:      MAGNITUDE 040252,125252 ==> 040252,125252
:      FPS = 047400,   FDST = M6-R7
*****

```

```

006730 104000      SCOPE
006732 001401      LD FPS                   :LOAD FLOATING POINT STATUS
006734 001401      MOV      #047400,ANS1   :"LOAD" 040252 INTO ANS1
006736 001401      MOV      #125252,ANS2   :"LOAD" 125252 INTO ANS2
006738 001401      ABSF     ANS1           :MAKE ANS1, ANS2 ABSOLUTE
006740 001401      ST FPS                   :STORE FLOATING POINT STATUS
006742 001401      CMP      #047400,FPS   :CHECK FLOATING POINT STATUS
006744 001401      BFC      .+4              :BRANCH IF OK
006746 104000      HLT                    :FPS NOT EQUAL TO 047400

```

```

006734 022767 040252 172040      CMP      #040252,ANS1   :CHECK ANS1
006736 001401      BFC      .+4              :BRANCH IF OK
006738 104002      HLT+2                    :ANS1 NOT EQUAL TO 040252

```

```

006746 022767 125252 172030      CMP      #125252,ANS2   :CHECK ANS2
006748 001401      BFC      .+4              :BRANCH IF OK
006750 104002      HLT+2                    :ANS2 NOT EQUAL TO 125252

```

```

*****
:TEST 76:      TEST ABSF (ABSOLUTE OF FLOATING POINT)
:      MAGNITUDE 140125,052525 ==> 040125,052525
:      FPS = 047400,   FDST = M6-R7
*****

```

```

007000 104000      SCOPE
007002 001401      LD FPS                   :LOAD FLOATING POINT STATUS
007004 001401      MOV      #140125,ANS1   :"LOAD" 140125 INTO ANS1
007006 001401      MOV      #052525,ANS2   :"LOAD" 052525 INTO ANS2
007008 001401      ABSF     ANS1           :MAKE ANS1, ANS2 ABSOLUTE
007010 001401      ST FPS                   :STORE FLOATING POINT STATUS
007012 001401      CMP      #047400,FPS   :CHECK FLOATING POINT STATUS
007014 001401      BFC      .+4              :BRANCH IF OK
007016 104000      HLT                    :FPS NOT EQUAL TO 047400

```

```

007020 022767 040125 171754      CMP      #040125,ANS1   :CHECK ANS1
007022 001401      BFC      .+4              :BRANCH IF OK
007024 104002      HLT+2                    :ANS1 NOT EQUAL TO 040125

```

```

007032 022767 052525 171744      CMP      #052525,ANS2   :CHECK ANS2
007034 001401      BFC      .+4              :BRANCH IF OK
007036 104002      HLT+2                    :ANS2 NOT EQUAL TO 052525

```

```

*****

```

# E04

MAINDEC-11-DOFPH-B  
DOFPH.P11

TEST OF CLRF, CLRD, TSTF, TSTD, ABSF, ABSD, NEGF, NEGQ MACY11 27(732) 17-SEP-76 10:45 PAGE 40  
TEST SECTION

:TEST 77: TEST ABSF (ABSOLUTE OF FLOATING POINT)  
: MAGNITUDE 040125,052525 ==> 040125,052525  
: FPS = 047400, FOST = MO-AC2  
:\*\*\*\*\*

|        |        |        |        |        |                 |                               |  |
|--------|--------|--------|--------|--------|-----------------|-------------------------------|--|
| 007044 | 104400 |        |        | SCOPE  |                 |                               |  |
| 007046 | 000402 |        |        | BR     | TST77           |                               |  |
| 007050 | 040125 | 052525 |        | DAT77: | 040125,052525   |                               |  |
| 007054 | 170127 | 047400 |        | TST77: | LOFPS #047400   | :LOAD FLOATING POINT STATUS   |  |
| 007056 | 172667 | 177764 |        |        | LOF DAT77, AC2  | :LOAD 040125,052525 INTO AC2  |  |
| 007060 | 170602 |        |        | FPI77: | ABSF AC2        | :MAKE AC2 ABSOLUTE            |  |
| 007064 | 170200 |        |        |        | STFPS FPS       | :STORE FLOATING POINT STATUS  |  |
| 007066 | 022700 | 047400 |        |        | CMP #047400,FPS | :CHECK FLOATING POINT STATUS  |  |
| 007070 | 001401 |        |        |        | BEG .+4         | :BRANCH IF OK                 |  |
| 007074 | 104000 |        |        |        | HLT             | :FPS NOT EQUAL TO 047400      |  |
| 007100 | 174267 | 171676 |        | STF    | AC2, ANS1       | :STORE ABSOLUTE IN ANS1, ANS2 |  |
| 007104 | 022767 | 040125 | 171670 | CMP    | #040125,ANS1    | :CHECK ANS1                   |  |
| 007108 | 001401 |        |        | BEG    | .+4             | :BRANCH IF OK                 |  |
| 007112 | 104002 |        |        | HLT+2  |                 | :ANS1 NOT EQUAL TO 040125     |  |
| 007116 | 022767 | 052525 | 171660 | CMP    | #052525,ANS2    | :CHECK ANS2                   |  |
| 007120 | 001401 |        |        | BEG    | .+4             | :BRANCH IF OK                 |  |
| 007124 | 104002 |        |        | HLT+2  |                 | :ANS2 NOT EQUAL TO 052525     |  |

:\*\*\*\*\*  
:TEST 100: TEST ABSF (ABSOLUTE OF FLOATING POINT)  
: MAGNITUDE 140252,125252 ==> 040252,125252  
: FPS = 047400, FOST = MO-AC2  
:\*\*\*\*\*

|        |        |        |        |         |                 |                               |  |
|--------|--------|--------|--------|---------|-----------------|-------------------------------|--|
| 007130 | 104400 |        |        | SCOPE   |                 |                               |  |
| 007132 | 000402 |        |        | BR      | TST100          |                               |  |
| 007134 | 140252 | 125252 |        | DAT100: | 140252,125252   |                               |  |
| 007140 | 170127 | 047400 |        | TST100: | LOFPS #047400   | :LOAD FLOATING POINT STATUS   |  |
| 007144 | 172667 | 177764 |        |         | LOF DAT100, AC2 | :LOAD 140252,125252 INTO AC2  |  |
| 007150 | 170602 |        |        | FPI100: | ABSF AC2        | :MAKE AC2 ABSOLUTE            |  |
| 007152 | 170200 |        |        |         | STFPS FPS       | :STORE FLOATING POINT STATUS  |  |
| 007154 | 022700 | 047400 |        |         | CMP #047400,FPS | :CHECK FLOATING POINT STATUS  |  |
| 007160 | 001401 |        |        |         | BEG .+4         | :BRANCH IF OK                 |  |
| 007162 | 104000 |        |        |         | HLT             | :FPS NOT EQUAL TO 047400      |  |
| 007164 | 174267 | 171612 |        | STF     | AC2, ANS1       | :STORE ABSOLUTE IN ANS1, ANS2 |  |
| 007170 | 022767 | 040252 | 171604 | CMP     | #040252,ANS1    | :CHECK ANS1                   |  |
| 007176 | 001401 |        |        | BEG     | .+4             | :BRANCH IF OK                 |  |
| 007200 | 104002 |        |        | HLT+2   |                 | :ANS1 NOT EQUAL TO 040252     |  |
| 007202 | 022767 | 125252 | 171574 | CMP     | #125252,ANS2    | :CHECK ANS2                   |  |
| 007210 | 001401 |        |        | BEG     | .+4             | :BRANCH IF OK                 |  |
| 007212 | 104002 |        |        | HLT+2   |                 | :ANS2 NOT EQUAL TO 125252     |  |

F04

\*\*\*\*\*  
:TEST 101: TEST ABSD (ABSOLUTE OF DOUBLE PERCISION)  
: MAGNITUDE 000000,000000,000000,000000 ==> 000000,000000,000000,000000  
: FPS = 047604, FDST = M6-R7  
:\*\*\*\*\*

|        |        |        |        |               |              |                               |
|--------|--------|--------|--------|---------------|--------------|-------------------------------|
| 007214 | 104400 |        |        | SCOPE         |              |                               |
| 007216 | 170127 | 047600 |        | TST101: LDFPS | #047600      | :LOAD FLOATING POINT STATUS   |
| 007218 | 012767 | 000000 | 171552 | MOV           | #000000,ANS1 | : "LOAD" 000000 INTO ANS1     |
| 007220 | 012767 | 000000 | 171546 | MOV           | #000000,ANS2 | : "LOAD" 000000 INTO ANS2     |
| 007222 | 012767 | 000000 | 171540 | MOV           | #000000,ANS3 | : "LOAD" 000000 INTO ANS3     |
| 007224 | 012767 | 000000 | 171536 | MOV           | #000000,ANS4 | : "LOAD" 000000 INTO ANS4     |
| 007226 | 170667 | 171524 |        | FPI101: ABSD  | ANS1         | :MAKE ANS1 THRU ANS4 ABSOLUTE |
| 007228 | 170200 |        |        | STFPS         | FPS          | :STORE FLOATING POINT STATUS  |
| 007230 | 022700 | 047604 |        | CMP           | #047604,FPS  | :CHECK FLOATING POINT STATUS  |
| 007232 | 001401 |        |        | BEG           | .+4          | :BRANCH IF OK                 |
| 007234 | 104000 |        |        | HLT           |              | :FPS NOT EQUAL TO 047604      |
|        |        |        |        |               |              |                               |
| 007270 | 022767 | 000000 | 171504 | CMP           | #000000,ANS1 | :CHECK ANS1                   |
| 007272 | 001401 |        |        | BEG           | .+4          | :BRANCH IF OK                 |
| 007274 | 104004 |        |        | HLT+4         |              | :ANS1 NOT EQUAL TO 000000     |
|        |        |        |        |               |              |                               |
| 007302 | 022767 | 000000 | 171474 | CMP           | #000000,ANS2 | :CHECK ANS2                   |
| 007304 | 001401 |        |        | BEG           | .+4          | :BRANCH IF OK                 |
| 007306 | 104004 |        |        | HLT+4         |              | :ANS2 NOT EQUAL TO 000000     |
|        |        |        |        |               |              |                               |
| 007314 | 022767 | 000000 | 171464 | CMP           | #000000,ANS3 | :CHECK ANS3                   |
| 007316 | 001401 |        |        | BEG           | .+4          | :BRANCH IF OK                 |
| 007318 | 104004 |        |        | HLT+4         |              | :ANS3 NOT EQUAL TO 000000     |
|        |        |        |        |               |              |                               |
| 007326 | 022767 | 000000 | 171454 | CMP           | #000000,ANS4 | :CHECK ANS4                   |
| 007328 | 001401 |        |        | BEG           | .+4          | :BRANCH IF OK                 |
| 007330 | 104004 |        |        | HLT+4         |              | :ANS4 NOT EQUAL TO 000000     |

\*\*\*\*\*  
:TEST 102: TEST ABSD (ABSOLUTE OF DOUBLE PERCISION)  
: MAGNITUDE 177777,177777,177777,177777 ==> 077777,177777,177777,177777  
: FPS = 047600, FDST = M6-R7  
:\*\*\*\*\*

|        |        |        |        |               |              |                               |
|--------|--------|--------|--------|---------------|--------------|-------------------------------|
| 007340 | 104400 |        |        | SCOPE         |              |                               |
| 007342 | 170127 | 047600 |        | TST102: LDFPS | #047600      | :LOAD FLOATING POINT STATUS   |
| 007344 | 012767 | 177777 | 171426 | MOV           | #177777,ANS1 | : "LOAD" 177777 INTO ANS1     |
| 007346 | 012767 | 177777 | 171420 | MOV           | #177777,ANS2 | : "LOAD" 177777 INTO ANS2     |
| 007348 | 012767 | 177777 | 171416 | MOV           | #177777,ANS3 | : "LOAD" 177777 INTO ANS3     |
| 007350 | 012767 | 177777 | 171412 | MOV           | #177777,ANS4 | : "LOAD" 177777 INTO ANS4     |
| 007352 | 170667 | 171400 |        | FPI102: ABSD  | ANS1         | :MAKE ANS1 THRU ANS4 ABSOLUTE |
| 007354 | 170200 |        |        | STFPS         | FPS          | :STORE FLOATING POINT STATUS  |
| 007356 | 022700 | 047600 |        | CMP           | #047600,FPS  | :CHECK FLOATING POINT STATUS  |
| 007358 | 001401 |        |        | BEG           | .+4          | :BRANCH IF OK                 |
| 007360 | 104000 |        |        | HLT           |              | :FPS NOT EQUAL TO 047600      |
|        |        |        |        |               |              |                               |
| 007414 | 022767 | 077777 | 171360 | CMP           | #077777,ANS1 | :CHECK ANS1                   |
| 007416 | 001401 |        |        | BEG           | .+4          | :BRANCH IF OK                 |

```

007424 104004          HLT+4          ;ANS1 NOT EQUAL TO 077777
007426 022767 177777 171350  CMP          #177777,ANS2  ;CHECK ANS2
007424 001401          BEQ          .+4    ;BRANCH IF OK
007436 104004          HLT+4          ;ANS2 NOT EQUAL TO 177777
007440 022767 177777 171340  CMP          #177777,ANS3  ;CHECK ANS3
007446 001401          BEQ          .+4    ;BRANCH IF OK
007450 104004          HLT+4          ;ANS3 NOT EQUAL TO 177777
007452 022767 177777 171330  CMP          #177777,ANS4  ;CHECK ANS4
007460 001401          BEQ          .+4    ;BRANCH IF OK
007462 104004          HLT+4          ;ANS4 NOT EQUAL TO 177777

```

```

*****
:TEST 103:      TEST ABSD (ABSOLUTE OF DOUBLE PRECISION)
:              MAGNITUDE 052525,052525,052525,052525 ==> 052525,052525,052525,052525
:              FPS = 047600,   FOST = M6-R7
*****

```

```

007464 104400          SCOPE
007466 170127 047600  TST103:  LD FPS          #047600          ;LOAD FLOATING POINT STATUS
007472 012767 052525 171302  MOV          #052525,ANS1  ;"LOAD" 052525 INTO ANS1
007500 012767 052525 171276  MOV          #052525,ANS2  ;"LOAD" 052525 INTO ANS2
007506 012767 052525 171272  MOV          #052525,ANS3  ;"LOAD" 052525 INTO ANS3
007514 012767 052525 171266  MOV          #052525,ANS4  ;"LOAD" 052525 INTO ANS4
007522 170657 171254  FPI103:  ABSD          ANS1          ;MAKE ANS1 THRU ANS4 ABSOLUTE
007526 170200          ST FPS          FPS          ;STORE FLOATING POINT STATUS
007530 022700 047600  CMP          #047600,FPS  ;CHECK FLOATING POINT STATUS
007534 001401          BEQ          .+4    ;BRANCH IF OK
007536 104000          HLT          ;FPS NOT EQUAL TO 047600
007540 022767 052525 171234  CMP          #052525,ANS1  ;CHECK ANS1
007546 001401          BEQ          .+4    ;BRANCH IF OK
007550 104004          HLT+4          ;ANS1 NOT EQUAL TO 052525
007552 022767 052525 171224  CMP          #052525,ANS2  ;CHECK ANS2
007556 001401          BEQ          .+4    ;BRANCH IF OK
007558 104004          HLT+4          ;ANS2 NOT EQUAL TO 052525
007564 022767 052525 171214  CMP          #052525,ANS3  ;CHECK ANS3
007572 001401          BEQ          .+4    ;BRANCH IF OK
007574 104004          HLT+4          ;ANS3 NOT EQUAL TO 052525
007576 022767 052525 171204  CMP          #052525,ANS4  ;CHECK ANS4
007604 001401          BEQ          .+4    ;BRANCH IF OK
007606 104004          HLT+4          ;ANS4 NOT EQUAL TO 052525

```

```

*****
:TEST 104:      TEST ABSD (ABSOLUTE OF DOUBLE PRECISION)
:              MAGNITUDE 125252,125252,125252,125252 ==> 025252,125252,125252,125252
:              FPS = 047600,   FOST = M6-R7
*****

```

H04

|        |        |        |        |               |              |                               |
|--------|--------|--------|--------|---------------|--------------|-------------------------------|
| 007610 | 104400 |        |        | SCOPE         |              |                               |
| 007612 | 170127 | 047600 |        | TST104: LDFPS | #047600      | :LOAD FLOATING POINT STATUS   |
| 007616 | 012767 | 125252 | 171156 | MOV           | #125252,ANS1 | : "LOAD" 125252 INTO ANS1     |
| 007624 | 012767 | 125252 | 171153 | MOV           | #125252,ANS2 | : "LOAD" 125252 INTO ANS2     |
| 007632 | 012767 | 125252 | 171146 | MOV           | #125252,ANS3 | : "LOAD" 125252 INTO ANS3     |
| 007640 | 012767 | 125252 | 171143 | MOV           | #125252,ANS4 | : "LOAD" 125252 INTO ANS4     |
| 007646 | 170667 | 171130 |        | FPI104: ABSD  | ANS1         | :MAKE ANS1 THRU ANS4 ABSOLUTE |
| 007652 | 170200 |        |        | STFPS         | FPS          | :STORE FLOATING POINT STATUS  |
| 007654 | 022700 | 047600 |        | CMP           | #047600,FPS  | :CHECK FLOATING POINT STATUS  |
| 007660 | 001401 |        |        | BEQ           | .+4          | :BRANCH IF OK                 |
| 007662 | 104000 |        |        | HLT           |              | :FPS NOT EQUAL TO 047600      |
|        |        |        |        |               |              |                               |
| 007664 | 022767 | 025252 | 171110 | CMP           | #025252,ANS1 | :CHECK ANS1                   |
| 007672 | 001401 |        |        | BEQ           | .+4          | :BRANCH IF OK                 |
| 007674 | 104004 |        |        | HLT+4         |              | :ANS1 NOT EQUAL TO 025252     |
|        |        |        |        |               |              |                               |
| 007676 | 022767 | 125252 | 171100 | CMP           | #125252,ANS2 | :CHECK ANS2                   |
| 007704 | 001401 |        |        | BEQ           | .+4          | :BRANCH IF OK                 |
| 007706 | 104004 |        |        | HLT+4         |              | :ANS2 NOT EQUAL TO 125252     |
|        |        |        |        |               |              |                               |
| 007710 | 022767 | 125252 | 171070 | CMP           | #125252,ANS3 | :CHECK ANS3                   |
| 007716 | 001401 |        |        | BEQ           | .+4          | :BRANCH IF OK                 |
| 007720 | 104004 |        |        | HLT+4         |              | :ANS3 NOT EQUAL TO 125252     |
|        |        |        |        |               |              |                               |
| 007722 | 022767 | 125252 | 171060 | CMP           | #125252,ANS4 | :CHECK ANS4                   |
| 007730 | 001401 |        |        | BEQ           | .+4          | :BRANCH IF OK                 |
| 007732 | 104004 |        |        | HLT+4         |              | :ANS4 NOT EQUAL TO 125252     |

\*\*\*\*\*  
:TEST 105: TEST ABSD (ABSOLUTE OF DOUBLE PRECISION)  
: MAGNITUDE 077777,177777,177777,177777 ==> 077777,177777,177777,177777  
: FPS = 047600, FDST = M5-R7  
\*\*\*\*\*

|        |        |        |        |               |              |                               |
|--------|--------|--------|--------|---------------|--------------|-------------------------------|
| 007734 | 104400 |        |        | SCOPE         |              |                               |
| 007736 | 170127 | 047600 |        | TST105: LDFPS | #047600      | :LOAD FLOATING POINT STATUS   |
| 007742 | 012767 | 077777 | 171032 | MOV           | #077777,ANS1 | : "LOAD" 077777 INTO ANS1     |
| 007750 | 012767 | 177777 | 171026 | MOV           | #177777,ANS2 | : "LOAD" 177777 INTO ANS2     |
| 007756 | 012767 | 177777 | 171022 | MOV           | #177777,ANS3 | : "LOAD" 177777 INTO ANS3     |
| 007764 | 012767 | 177777 | 171016 | MOV           | #177777,ANS4 | : "LOAD" 177777 INTO ANS4     |
| 007772 | 170667 | 171004 |        | FPI105: ABSD  | ANS1         | :MAKE ANS1 THRU ANS4 ABSOLUTE |
| 007776 | 170200 |        |        | STFPS         | FPS          | :STORE FLOATING POINT STATUS  |
| 010000 | 022700 | 047600 |        | CMP           | #047600,FPS  | :CHECK FLOATING POINT STATUS  |
| 010004 | 001401 |        |        | BEQ           | .+4          | :BRANCH IF OK                 |
| 010006 | 104000 |        |        | HLT           |              | :FPS NOT EQUAL TO 047600      |
|        |        |        |        |               |              |                               |
| 010010 | 022767 | 077777 | 170764 | CMP           | #077777,ANS1 | :CHECK ANS1                   |
| 010016 | 001401 |        |        | BEQ           | .+4          | :BRANCH IF OK                 |
| 010020 | 104004 |        |        | HLT+4         |              | :ANS1 NOT EQUAL TO 077777     |
|        |        |        |        |               |              |                               |
| 010022 | 022767 | 177777 | 170754 | CMP           | #177777,ANS2 | :CHECK ANS2                   |
| 010030 | 001401 |        |        | BEQ           | .+4          | :BRANCH IF OK                 |
| 010032 | 104004 |        |        | HLT+4         |              | :ANS2 NOT EQUAL TO 177777     |
|        |        |        |        |               |              |                               |
| 010034 | 022767 | 177777 | 170744 | CMP           | #177777,ANS3 | :CHECK ANS3                   |

```

010042 001401      BEQ      .+4      ;BRANCH IF OK
010044 104004      HLT+4          ;ANS3 NOT EQUAL TO 177777

010046 022767 177777 170734  CMP      #177777,ANS4 ;CHECK ANS4
010054 001401      BEQ      .+4      ;BRANCH IF OK
010056 104004      HLT+4          ;ANS4 NOT EQUAL TO 177777

```

```

*****
:TEST 106:      TEST ABSD (ABSOLUTE OF DOUBLE PERCISION)
:              MAGNITUDE 100000,000000,000000,000000 ==> 100000,000000,000000,000000
:              FPS = 147614,   FDST = M6-R7
:              FEC = 14,      FEA = FPI106
*****

```

```

010060 104400      SCOPE
010062 170127 047600  TST106: LDFPS  #047600      ;LOAD FLOATING POINT STATUS
010066 012767 100000 170706  MOV      #100000,ANS1 ;"LOAD" 100000 INTO ANS1
010074 012767 000000 170702  MOV      #000000,ANS2 ;"LOAD" 000000 INTO ANS2
010102 012767 000000 170676  MOV      #000000,ANS3 ;"LOAD" 000000 INTO ANS3
010110 012767 000000 170672  MOV      #000000,ANS4 ;"LOAD" 000000 INTO ANS4
010116 170667 170660  FPI106: ABSD  ANS1      ;MAKE ANS1 THRU ANS4 ABSOLUTE
010122 170200      STFPS          ;STORE FLOATING POINT STATUS
010124 170367 170672  STST        FEC        ;STORE EXCEPTION CODES
010130 022700 147614  CMP      #147614,FPS   ;CHECK FLOATING POINT STATUS
010134 001401      BEQ      .+4      ;BRANCH IF OK
010136 104000      HLT          ;FPS NOT EQUAL TO 147614

010140 022767 000014 170654  CMP      #14,   FEC    ;CHECK FLOATING EXCEPTION CODE
010146 001401      BEQ      .+4      ;BRANCH IF OK
010150 104000      HLT          ;FEC NOT EQUAL TO 14

010152 022767 010116 170644  CMP      #FPI106,FEA  ;CHECK FLOATING EXCEPTION ADDRESS
010160 001401      BEQ      .+4      ;BRANCH IF OK
010162 104000      HLT          ;FEA NOT EQUAL TO FPI106

010164 022767 100000 170610  CMP      #100000,ANS1 ;CHECK ANS1
010172 001401      BEQ      .+4      ;BRANCH IF OK
010174 104004      HLT+4          ;ANS1 NOT EQUAL TO 100000

010176 022767 000000 170600  CMP      #000000,ANS2 ;CHECK ANS2
010204 001401      BEQ      .+4      ;BRANCH IF OK
010206 104004      HLT+4          ;ANS2 NOT EQUAL TO 000000

010210 022767 000000 170570  CMP      #000000,ANS3 ;CHECK ANS3
010216 001401      BEQ      .+4      ;BRANCH IF OK
010220 104004      HLT+4          ;ANS3 NOT EQUAL TO 000000

010222 022767 000000 170560  CMP      #000000,ANS4 ;CHECK ANS4
010230 001401      BEQ      .+4      ;BRANCH IF OK
010232 104004      HLT+4          ;ANS4 NOT EQUAL TO 000000

```

```

*****
:TEST 107:      TEST ABSD (ABSOLUTE OF DOUBLE PERCISION)
:              MAGNITUDE 000200,000000,000000,000000 ==> 000200,000000,000000,000000
:

```



: FPS = 047600, FDST = M6-R7  
:\*\*\*\*\*

|        |        |        |        |         |       |              |                               |
|--------|--------|--------|--------|---------|-------|--------------|-------------------------------|
| 010234 | 104400 |        |        |         |       |              |                               |
| 010236 | 170127 | 047600 |        | TST107: | LDFPS | #047600      | :LOAD FLOATING POINT STATUS   |
| 010242 | 012767 | 000200 | 170532 |         | MOV   | #000200,ANS1 | : "LOAD" 000200 INTO ANS1     |
| 010250 | 012767 | 000000 | 170526 |         | MOV   | #000000,ANS2 | : "LOAD" 000000 INTO ANS2     |
| 010256 | 012767 | 000000 | 170522 |         | MOV   | #000000,ANS3 | : "LOAD" 000000 INTO ANS3     |
| 010264 | 012767 | 000000 | 170516 |         | MOV   | #000000,ANS4 | : "LOAD" 000000 INTO ANS4     |
| 010272 | 170667 | 170504 |        | FPI107: | ABSD  | ANS1         | :MAKE ANS1 THRU ANS4 ABSOLUTE |
| 010276 | 170200 |        |        |         | STFPS | FPS          | :STORE FLOATING POINT STATUS  |
| 010300 | 022700 | 047600 |        |         | CMP   | #047600,FPS  | :CHECK FLOATING POINT STATUS  |
| 010304 | 001401 |        |        |         | BEQ   | .+4          | :BRANCH IF OK                 |
| 010306 | 104000 |        |        |         | HLT   |              | :FPS NOT EQUAL TO 047600      |
|        |        |        |        |         |       |              |                               |
| 010310 | 022767 | 000200 | 170464 |         | CMP   | #000200,ANS1 | :CHECK ANS1                   |
| 010316 | 001401 |        |        |         | BEQ   | .+4          | :BRANCH IF OK                 |
| 010320 | 104004 |        |        |         | HLT+4 |              | :ANS1 NOT EQUAL TO 000200     |
|        |        |        |        |         |       |              |                               |
| 010322 | 022767 | 000000 | 170454 |         | CMP   | #000000,ANS2 | :CHECK ANS2                   |
| 010330 | 001401 |        |        |         | BEQ   | .+4          | :BRANCH IF OK                 |
| 010332 | 104004 |        |        |         | HLT+4 |              | :ANS2 NOT EQUAL TO 000000     |
|        |        |        |        |         |       |              |                               |
| 010334 | 022767 | 000000 | 170444 |         | CMP   | #000000,ANS3 | :CHECK ANS3                   |
| 010342 | 001401 |        |        |         | BEQ   | .+4          | :BRANCH IF OK                 |
| 010344 | 104004 |        |        |         | HLT+4 |              | :ANS3 NOT EQUAL TO 000000     |
|        |        |        |        |         |       |              |                               |
| 010346 | 022767 | 000000 | 170434 |         | CMP   | #000000,ANS4 | :CHECK ANS4                   |
| 010354 | 001401 |        |        |         | BEQ   | .+4          | :BRANCH IF OK                 |
| 010356 | 104004 |        |        |         | HLT+4 |              | :ANS4 NOT EQUAL TO 000000     |

:\*\*\*\*\*  
:TEST 110: TEST ABSD (ABSOLUTE OF DOUBLE PRECISION)  
:MAGNITUDE 100200,000000,000000,000000 ==> 000200,000000,000000,000000  
:FPS = 047600, FDST = M6-R7  
:\*\*\*\*\*

|        |        |        |        |         |       |              |                               |
|--------|--------|--------|--------|---------|-------|--------------|-------------------------------|
| 010360 | 104400 |        |        |         |       |              |                               |
| 010362 | 170127 | 047600 |        | TST110: | LDFPS | #047600      | :LOAD FLOATING POINT STATUS   |
| 010366 | 012767 | 100200 | 170406 |         | MOV   | #100200,ANS1 | : "LOAD" 100200 INTO ANS1     |
| 010374 | 012767 | 000000 | 170402 |         | MOV   | #000000,ANS2 | : "LOAD" 000000 INTO ANS2     |
| 010402 | 012767 | 000000 | 170376 |         | MOV   | #000000,ANS3 | : "LOAD" 000000 INTO ANS3     |
| 010410 | 012767 | 000000 | 170372 |         | MOV   | #000000,ANS4 | : "LOAD" 000000 INTO ANS4     |
| 010416 | 170667 | 170360 |        | FPI110: | ABSD  | ANS1         | :MAKE ANS1 THRU ANS4 ABSOLUTE |
| 010422 | 170200 |        |        |         | STFPS | FPS          | :STORE FLOATING POINT STATUS  |
| 010424 | 022700 | 047600 |        |         | CMP   | #047600,FPS  | :CHECK FLOATING POINT STATUS  |
| 010430 | 001401 |        |        |         | BEQ   | .+4          | :BRANCH IF OK                 |
| 010432 | 104000 |        |        |         | HLT   |              | :FPS NOT EQUAL TO 047600      |
|        |        |        |        |         |       |              |                               |
| 010434 | 022767 | 000200 | 170340 |         | CMP   | #000200,ANS1 | :CHECK ANS1                   |
| 010442 | 001401 |        |        |         | BEQ   | .+4          | :BRANCH IF OK                 |
| 010444 | 104004 |        |        |         | HLT+4 |              | :ANS1 NOT EQUAL TO 000200     |
|        |        |        |        |         |       |              |                               |
| 010446 | 022767 | 000000 | 170330 |         | CMP   | #000000,ANS2 | :CHECK ANS2                   |
| 010454 | 001401 |        |        |         | BEQ   | .+4          | :BRANCH IF OK                 |

K04

MAINDEC-11-DCFPH-B  
DCFPH.F11

TEST OF CLRF, CLRD, TSTF, TSTD, ABSF, ABSD, NEGF, NEGQ MACY11 27(732) 17-SEP-76 10:45 PAGE 46  
TEST SECTION

```

010456 104004          HLT+4          ;ANS2 NOT EQUAL TO 000000
010460 022767 000000 170320  CMP      #000000,ANS3  ;CHECK ANS3
010466 001401          BEQ      .+4          ;BRANCH IF OK
010470 104004          HLT+4          ;ANS3 NOT EQUAL TO 000000

010472 022767 000000 170310  CMP      #000000,ANS4  ;CHECK ANS4
010500 001401          BEQ      .+4          ;BRANCH IF OK
010502 104004          HLT+4          ;ANS4 NOT EQUAL TO 000000

```

```

:*****
:TEST 111:      TEST ABSD (ABSOLUTE OF DOUBLE PERCISION)
:              MAGNITUDE 000177,177777,177777,177777 ==> 000000,000000,000000,000000
:              FPS = 047604,  FDST = M6-R7
:*****

```

```

010504 104400          SCOPE
010506 170127 047600  TST111: LDFPS  #047600          ;LOAD FLOATING POINT STATUS
010512 012767 000177 170262  MOV      #000177,ANS1  ;"LOAD" 000177 INTO ANS1
010520 012767 177777 170256  MOV      #177777,ANS2  ;"LOAD" 177777 INTO ANS2
010526 012767 177777 170252  MOV      #177777,ANS3  ;"LOAD" 177777 INTO ANS3
010534 012767 177777 170246  MOV      #177777,ANS4  ;"LOAD" 177777 INTO ANS4
010542 170667 170234  FPI111: ABSD  ANS1          ;MAKE ANS1 THRU ANS4 ABSOLUTE
010546 170200          STFPS  FPS              ;STORE FLOATING POINT STATUS
010550 022700 047604  CMP      #047604,FPS   ;CHECK FLOATING POINT STATUS
010554 001401          BEQ      .+4          ;BRANCH IF OK
010556 104000          HLT          ;FPS NOT EQUAL TO 047604

010560 022767 000000 170214  CMP      #000000,ANS1  ;CHECK ANS1
010566 001401          BEQ      .+4          ;BRANCH IF OK
010570 104004          HLT+4          ;ANS1 NOT EQUAL TO 000000

010572 022767 000000 170204  CMP      #000000,ANS2  ;CHECK ANS2
010600 001401          BEQ      .+4          ;BRANCH IF OK
010602 104004          HLT+4          ;ANS2 NOT EQUAL TO 000000

010604 022767 000000 170174  CMP      #000000,ANS3  ;CHECK ANS3
010612 001401          BEQ      .+4          ;BRANCH IF OK
010614 104004          HLT+4          ;ANS3 NOT EQUAL TO 000000

010616 022767 000000 170164  CMP      #000000,ANS4  ;CHECK ANS4
010624 001401          BEQ      .+4          ;BRANCH IF OK
010626 104004          HLT+4          ;ANS4 NOT EQUAL TO 000000

```

```

:*****
:TEST 112:      TEST ABSD (ABSOLUTE OF DOUBLE PERCISION)
:              MAGNITUDE 100177,177777,177777,177777 ==> 100177,177777,177777,177777
:              FPS = 147614,  FDST = M6-R7
:              FEC = 14,      FEA = FPI112
:*****

```

```

010630 104400          SCOPE
010632 170127 047600  TST112: LDFPS  #047600          ;LOAD FLOATING POINT STATUS
010636 012767 100177 170136  MOV      #100177,ANS1  ;"LOAD" 100177 INTO ANS1

```

```

010644 012767 177777 170132      MOV      #177777,ANS2      ;"LOAD" 177777 INTO ANS2
010652 012767 177777 170126      MOV      #177777,ANS3      ;"LOAD" 177777 INTO ANS3
010660 012767 177777 170122      MOV      #177777,ANS4      ;"LOAD" 177777 INTO ANS4
010666 170667 170110      FPI112: ABSD  ANS1      ;MAKE ANS1 THRU ANS4 ABSOLUTE
010672 170200      STFPS  FPS      ;STORE FLOATING POINT STATUS
010674 170367 170122      STST   FEC      ;STORE EXCEPTION CODES
010700 022700 147614      CMP     #147614,FPS      ;CHECK FLOATING POINT STATUS
010704 001401      BEQ    .+4          ;BRANCH IF OK
010706 104000      HLT                    ;FPS NOT EQUAL TO 147614

010710 022767 000014 170104      CMP     #14,   FEC      ;CHECK FLOATING EXCEPTION CODE
010716 001401      BEQ    .+4          ;BRANCH IF OK
010720 104000      HLT                    ;FEC NOT EQUAL TO 14

010722 022767 010666 170074      CMP     #FPI112, FEA     ;CHECK FLOATING EXCEPTION ADDRESS
010730 001401      BEQ    .+4          ;BRANCH IF OK
010732 104000      HLT                    ;FEA NOT EQUAL TO FPI112

010734 022767 100177 170040      CMP     #100177,ANS1     ;CHECK ANS1
010742 001401      BEQ    .+4          ;BRANCH IF OK
010744 104004      HLT+4                ;ANS1 NOT EQUAL TO 100177

010746 022767 177777 170030      CMP     #177777,ANS2     ;CHECK ANS2
010754 001401      BEQ    .+4          ;BRANCH IF OK
010756 104004      HLT+4                ;ANS2 NOT EQUAL TO 177777

010760 022767 177777 170020      CMP     #177777,ANS3     ;CHECK ANS3
010766 001401      BEQ    .+4          ;BRANCH IF OK
010770 104004      HLT+4                ;ANS3 NOT EQUAL TO 177777

010772 022767 177777 170010      CMP     #177777,ANS4     ;CHECK ANS4
011000 001401      BEQ    .+4          ;BRANCH IF OK
011002 104004      HLT+4                ;ANS4 NOT EQUAL TO 177777

```

```

*****
:TEST 113:      TEST ABSD (ABSOLUTE OF DOUBLE PERCISION)
:              MAGNITUDE 100000,000001,000001,000001 ==> 000000,000000,000000,000000
:              FPS = 003604,   FDST = M6-R7
*****

```

```

011004 104400      SCOPE
011006 170127 003600      TST113: LDFPS  #003600      ;LOAD FLOATING POINT STATUS
011012 012767 100000 167762      MOV      #100000,ANS1     ;"LOAD" 100000 INTO ANS1
011020 012767 000001 167756      MOV      #000001,ANS2     ;"LOAD" 000001 INTO ANS2
011026 012767 000001 167752      MOV      #000001,ANS3     ;"LOAD" 000001 INTO ANS3
011034 012767 000001 167746      MOV      #000001,ANS4     ;"LOAD" 000001 INTO ANS4
011042 170667 167734      FPI113: ABSD  ANS1      ;MAKE ANS1 THRU ANS4 ABSOLUTE
011046 170200      STFPS  FPS      ;STORE FLOATING POINT STATUS
011050 022700 003604      CMP     #003604,FPS      ;CHECK FLOATING POINT STATUS
011054 001401      BEQ    .+4          ;BRANCH IF OK
011056 104000      HLT                    ;FPS NOT EQUAL TO 003604

011060 022767 000000 167714      CMP     #000000,ANS1     ;CHECK ANS1
011066 001401      BEQ    .+4          ;BRANCH IF OK
011070 104004      HLT+4                ;ANS1 NOT EQUAL TO 000000

```

M04

MAINDEC-11-DCFPH-B  
DCFPH.P11

TEST OF CLRF, CLRD, TSTF, TSTD, ABSF, ABSD, NEGF, NEGD MACY11 27(732) 17-SEP-76 10:45 PAGE 48  
TEST SECTION

```

011072 022767 000000 167704      CMP      #000000,ANS2      ;CHECK ANS2
011100 001401      BEQ      .+4            ;BRANCH IF OK
011102 104004      HLT+4          ;ANS2 NOT EQUAL TO 000000

011104 022767 000000 167674      CMP      #000000,ANS3      ;CHECK ANS3
011112 001401      BEQ      .+4            ;BRANCH IF OK
011114 104004      HLT+4          ;ANS3 NOT EQUAL TO 000000

011116 022767 000000 167654      CMP      #000000,ANS4      ;CHECK ANS4
011124 001401      BEQ      .+4            ;BRANCH IF OK
011126 104004      HLT+4          ;ANS4 NOT EQUAL TO 000000

```

```

:*****
:TEST 114:      TEST ABSD (ABSOLUTE OF DOUBLE PERCISION)
:              MAGNITUDE 000001,100000,100000,100000 ==> 000000,000000,000000,000000
:              FPS = 003604,   FDST = M6-R7
:*****

```

```

011130 104400      SCOPE
011132 170127 003600      TST114: LDFPS      #003600      ;LOAD FLOATING POINT STATUS
011136 012767 000001 167636      MOV      #000001,ANS1     ;"LOAD" 000001 INTO ANS1
011144 012767 100000 167632      MOV      #100000,ANS2     ;"LOAD" 100000 INTO ANS2
011152 012767 100000 167626      MOV      #100000,ANS3     ;"LOAD" 100000 INTO ANS3
011160 012767 100000 167622      MOV      #100000,ANS4     ;"LOAD" 100000 INTO ANS4
011166 170667 167610      FPI114: ABSD      ANS1     ;MAKE ANS1 THRU ANS4 ABSOLUTE
011172 170200      STFPS      FPS           ;STORE FLOATING POINT STATUS
011174 022700 003604      CMP      #003604,FPS      ;CHECK FLOATING POINT STATUS
011200 001401      BEQ      .+4            ;BRANCH IF OK
011202 104000      HLT          ;FPS NOT EQUAL TO 003604

011204 022767 000000 167570      CMP      #000000,ANS1     ;CHECK ANS1
011212 001401      BEQ      .+4            ;BRANCH IF OK
011214 104004      HLT+4          ;ANS1 NOT EQUAL TO 000000

011216 022767 000000 167560      CMP      #000000,ANS2     ;CHECK ANS2
011224 001401      BEQ      .+4            ;BRANCH IF OK
011226 104004      HLT+4          ;ANS2 NOT EQUAL TO 000000

011230 022767 000000 167550      CMP      #000000,ANS3     ;CHECK ANS3
011236 001401      BEQ      .+4            ;BRANCH IF OK
011240 104004      HLT+4          ;ANS3 NOT EQUAL TO 000000

011242 022767 000000 167540      CMP      #000000,ANS4     ;CHECK ANS4
011250 001401      BEQ      .+4            ;BRANCH IF OK
011252 104004      HLT+4          ;ANS4 NOT EQUAL TO 000000

```

```

:*****
:TEST 115:      TEST ABSD (ABSOLUTE OF DOUBLE PERCISION)
:              MAGNITUDE 040252,125252,125252,125252 ==> 040252,125252,125252,125252
:              FPS = 047600,   FDST = M6-R7
:*****

```

```

011254 104400      SCOPE

```

|        |        |        |        |               |              |                               |
|--------|--------|--------|--------|---------------|--------------|-------------------------------|
| 011256 | 170127 | 047600 |        | TST115: LDFPS | #047600      | :LOAD FLOATING POINT STATUS   |
| 011262 | 012767 | 040252 | 167512 | MOV           | #040252,ANS1 | : "LOAD" 040252 INTO ANS1     |
| 011270 | 012767 | 125252 | 167506 | MOV           | #125252,ANS2 | : "LOAD" 125252 INTO ANS2     |
| 011276 | 012767 | 125252 | 167502 | MOV           | #125252,ANS3 | : "LOAD" 125252 INTO ANS3     |
| 011304 | 012767 | 125252 | 167476 | MOV           | #125252,ANS4 | : "LOAD" 125252 INTO ANS4     |
| 011312 | 170667 | 167464 |        | FPI115: ABSD  | ANS1         | :MAKE ANS1 THRU ANS4 ABSOLUTE |
| 011316 | 170200 |        |        | STFPS         | FPS          | :STORE FLOATING POINT STATUS  |
| 011320 | 022700 | 047600 |        | CMP           | #047600,FPS  | :CHECK FLOATING POINT STATUS  |
| 011324 | 001401 |        |        | BEQ           | .+4          | :BRANCH IF OK                 |
| 011326 | 104000 |        |        | HLT           |              | :FPS NOT EQUAL TO 047600      |
|        |        |        |        |               |              |                               |
| 011330 | 022767 | 040252 | 167444 | CMP           | #040252,ANS1 | :CHECK ANS1                   |
| 011336 | 001401 |        |        | BEQ           | .+4          | :BRANCH IF OK                 |
| 011340 | 104004 |        |        | HLT+4         |              | :ANS1 NOT EQUAL TO 040252     |
|        |        |        |        |               |              |                               |
| 011342 | 022767 | 125252 | 167434 | CMP           | #125252,ANS2 | :CHECK ANS2                   |
| 011350 | 001401 |        |        | BEQ           | .+4          | :BRANCH IF OK                 |
| 011352 | 104004 |        |        | HLT+4         |              | :ANS2 NOT EQUAL TO 125252     |
|        |        |        |        |               |              |                               |
| 011354 | 022767 | 125252 | 167424 | CMP           | #125252,ANS3 | :CHECK ANS3                   |
| 011362 | 001401 |        |        | BEQ           | .+4          | :BRANCH IF OK                 |
| 011364 | 104004 |        |        | HLT+4         |              | :ANS3 NOT EQUAL TO 125252     |
|        |        |        |        |               |              |                               |
| 011366 | 022767 | 125252 | 167414 | CMP           | #125252,ANS4 | :CHECK ANS4                   |
| 011374 | 001401 |        |        | BEQ           | .+4          | :BRANCH IF OK                 |
| 011376 | 104004 |        |        | HLT+4         |              | :ANS4 NOT EQUAL TO 125252     |

\*\*\*\*\*  
:TEST 116: TEST ABSD (ABSOLUTE OF DOUBLE PRECISION)  
: MAGNITUDE 140125,052525,052525,052525 ==> 040125,052525,052525,052525  
: FPS = 047600, FDST = M6-R7  
:\*\*\*\*\*

|        |        |        |        |               |              |                               |
|--------|--------|--------|--------|---------------|--------------|-------------------------------|
| 011400 | 104400 |        |        | SCOPE         |              |                               |
| 011402 | 170127 | 047600 |        | TST116: LDFPS | #047600      | :LOAD FLOATING POINT STATUS   |
| 011406 | 012767 | 140125 | 167366 | MOV           | #140125,ANS1 | : "LOAD" 140125 INTO ANS1     |
| 011414 | 012767 | 052525 | 167362 | MOV           | #052525,ANS2 | : "LOAD" 052525 INTO ANS2     |
| 011422 | 012767 | 052525 | 167356 | MOV           | #052525,ANS3 | : "LOAD" 052525 INTO ANS3     |
| 011430 | 012767 | 052525 | 167352 | MOV           | #052525,ANS4 | : "LOAD" 052525 INTO ANS4     |
| 011436 | 170667 | 167340 |        | FPI116: ABSD  | ANS1         | :MAKE ANS1 THRU ANS4 ABSOLUTE |
| 011442 | 170200 |        |        | STFPS         | FPS          | :STORE FLOATING POINT STATUS  |
| 011444 | 022700 | 047600 |        | CMP           | #047600,FPS  | :CHECK FLOATING POINT STATUS  |
| 011450 | 001401 |        |        | BEQ           | .+4          | :BRANCH IF OK                 |
| 011452 | 104000 |        |        | HLT           |              | :FPS NOT EQUAL TO 047600      |
|        |        |        |        |               |              |                               |
| 011454 | 022767 | 040125 | 167320 | CMP           | #040125,ANS1 | :CHECK ANS1                   |
| 011462 | 001401 |        |        | BEQ           | .+4          | :BRANCH IF OK                 |
| 011464 | 104004 |        |        | HLT+4         |              | :ANS1 NOT EQUAL TO 040125     |
|        |        |        |        |               |              |                               |
| 011466 | 022767 | 052525 | 167310 | CMP           | #052525,ANS2 | :CHECK ANS2                   |
| 011474 | 001401 |        |        | BEQ           | .+4          | :BRANCH IF OK                 |
| 011476 | 104004 |        |        | HLT+4         |              | :ANS2 NOT EQUAL TO 052525     |
|        |        |        |        |               |              |                               |
| 011500 | 022767 | 052525 | 167300 | CMP           | #052525,ANS3 | :CHECK ANS3                   |
| 011506 | 001401 |        |        | BEQ           | .+4          | :BRANCH IF OK                 |

B05

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TEST OF CLRF, CLRD, TSTF, TSTO, ABSF, ABSO, NEGF, NEGQ MACY11 27(732) 17-SEP-76 10:45 PAGE 50  
TEST SECTION

```

011510 104004 HLT+4 ;ANS3 NOT EQUAL TO 052525
011512 001401 052525 167270 CMP #052525,ANS4 ;CHECK ANS4
011514 001401 BEQ .+4 ;BRANCH IF OK
011516 104004 HLT+4 ;ANS4 NOT EQUAL TO 052525

```

```

*****
:TEST 117: TEST ABSO (ABSOLUTE OF DOUBLE PRECISION)
: MAGNITUDE 040125,052525,052525,052525 ==> 040125,052525,052525,052525
: FPS = 047600, FDST = MO-AC1
*****

```

```

011518 104400 SCOPE
011520 000404 BR TST117
011522 040125 052525 052525 052525 DAT117: 040125,052525,052525,052525
011524 170127 047600 TST117: LD FPS #047600 ;LOAD FLOATING POINT STATUS
011526 177760 177760 LDD DAT117, AC1 ;LOAD 040125,052525,052525,052525 INTO AC1
011528 170601 052525 FPI117: ABSO AC1 ;MAKE AC1 ABSOLUTE
011530 170200 ST FPS FPS ;STORE FLOATING POINT STATUS
011532 022700 047600 CMP #047600,FPS ;CHECK FLOATING POINT STATUS
011534 001401 BEQ .+4 ;BRANCH IF OK
011536 104000 HLT ;FPS NOT EQUAL TO 047600
011538 174167 167212 167204 STD AC1,ANS1 ;STORE ABSOLUTE IN ANS1 THRU ANS4
011540 022767 040125 167204 CMP #040125,ANS1 ;CHECK ANS1
011542 001401 BEQ .+4 ;BRANCH IF OK
011544 104004 HLT+4 ;ANS1 NOT EQUAL TO 040125
011546 022767 052525 167174 CMP #052525,ANS2 ;ANSWER EQUAL 052525?
011548 001401 BEQ .+4 ;BRANCH IF OK
011550 104004 HLT+4 ;ANS2 NOT EQUAL TO 052525
011552 022767 052525 167164 CMP #052525,ANS3 ;CHECK ANS3
011554 001401 BEQ .+4 ;BRANCH IF OK
011556 104004 HLT+4 ;ANS3 NOT EQUAL TO 052525
011558 022767 052525 167154 CMP #052525,ANS4 ;CHECK ANS4
011560 001401 BEQ .+4 ;BRANCH IF OK
011562 104004 HLT+4 ;ANS4 NOT EQUAL TO 052525

```

```

*****
:TEST 120: TEST ABSO (ABSOLUTE OF DOUBLE PRECISION)
: MAGNITUDE 140252,125252,125252,125252 ==> 040252,125252,125252,125252
: FPS = 047600, FDST = MO-AC1
*****

```

```

011564 104400 SCOPE
011566 000404 BR TST120
011568 140252 125252 125252 125252 DAT120: 140252,125252,125252,125252
011570 125252 125252

```

```

011705 170127 047600 TST120: LD FPS #047600 :LOAD FLOATING POINT STATUS
011706 177760 :LD DAT120, AC1 :LOAD 140252,125252,125252,125252 INTO AC1
011707 170127 177760 FPI120: MBSO AC1 :MAKE AC1 ABSOLUTE
011708 170127 047600 ST FPS FPS :STORE FLOATING POINT STATUS
011709 022700 047600 CMP #047600,FPS :CHECK FLOATING POINT STATUS
011710 001401 :BEQ .+4 :BRANCH IF OK
011711 104000 HLT :FPS NOT EQUAL TO 047600

011712 174167 167076 STD AC1, ANS1 :STORE ABSOLUTE IN ANS1 THRU ANS4
011713 022700 040252 167070 CMP #040252,ANS1 :CHECK ANS1
011714 001401 :BEQ .+4 :BRANCH IF OK
011715 104004 HLT+4 :ANS1 NOT EQUAL TO 040252

011716 022767 125252 167060 CMP #125252,ANS2 :ANSWER EQUAL 125252?
011717 001401 :BEQ .+4 :BRANCH IF OK
011718 104004 HLT+4 :ANS2 NOT EQUAL TO 125252

011719 022767 125252 167050 CMP #125252,ANS3 :CHECK ANS3
011720 001401 :BEQ .+4 :BRANCH IF OK
011721 104004 HLT+4 :ANS3 NOT EQUAL TO 125252

011722 022767 125252 167040 CMP #125252,ANS4 :CHECK ANS4
011723 001401 :BEQ .+4 :BRANCH IF OK
011724 104004 HLT+4 :ANS4 NOT EQUAL TO 125252

```

```

*****
:TEST 121: NEG (NEGATE FLOATING POINT)
:-(000000,000000) = 000000,000000
:FPS = 047404, FDST = M6-R7
*****

```

```

012014 104400 TST121: SCOPE
012015 170127 047400 LD FPS #047400 :LOAD FLOATING POINT STATUS
012016 012767 000000 167012 MOV #000000,ANS1 :"LOAD" 000000 INTO ANS1
012017 012767 000000 167006 MOV #000000,ANS2 :"LOAD" 000000 INTO ANS2
012018 170767 167000 FPI121: NEGF ANS1 :NEGATE ANS1, ANS2
012019 170200 ST FPS FPS :STORE FLOATING POINT STATUS
012020 022700 047404 CMP #047404,FPS :CHECK FLOATING POINT STATUS
012021 001401 :BEQ .+4 :BRANCH IF OK
012022 104000 HLT :FPS NOT EQUAL TO 047404

012023 022767 000000 166760 CMP #000000,ANS1 :CHECK ANS1
012024 001401 :BEQ .+4 :BRANCH IF OK
012025 104002 HLT+2 :ANS1 NOT EQUAL TO 000000

012026 022767 000000 166750 CMP #000000,ANS2 :CHECK ANS2
012027 001401 :BEQ .+4 :BRANCH IF OK
012028 104002 HLT+2 :ANS2 NOT EQUAL TO 000000

```

```

*****
:TEST 122: NEG (NEGATE FLOATING POINT)
:-(177777,177777) = 077777,177777
:FPS = 047400, FDST = M6-R7
*****

```

\*\*\*\*\*

|          |          |        |        |         |      |              |  |                              |  |
|----------|----------|--------|--------|---------|------|--------------|--|------------------------------|--|
| 00000000 | 00000000 | 047400 |        | TST122: | SCOP |              |  |                              |  |
| 00000000 | 00000000 | 177777 | 166674 |         | LD   | #047400      |  | :LOAD FLOATING POINT STATUS  |  |
| 00000000 | 00000000 | 177777 |        |         | MOV  | #177777,ANS1 |  | : "LOAD" 177777 INTO ANS1    |  |
| 00000000 | 00000000 | 177777 |        |         | MOV  | #177777,ANS2 |  | : "LOAD" 177777 INTO ANS2    |  |
| 00000000 | 00000000 | 177777 |        | TST122: | NEG  | ANS1         |  | :NEGATE ANS1, ANS2           |  |
| 00000000 | 00000000 | 047400 |        |         | ST   | ANS          |  | :STORE FLOATING POINT STATUS |  |
| 00000000 | 00000000 | 047400 |        |         | COMP | #047400,FPS  |  | :CHECK FLOATING POINT STATUS |  |
| 00000000 | 00000000 | 047400 |        |         | BEQ  | +.4          |  | :BRANCH IF OK                |  |
| 00000000 | 00000000 | 047400 |        |         | HLT  |              |  | :FPS NOT EQUAL TO 047400     |  |
| 00000000 | 00000000 | 077777 | 166674 |         | COMP | #077777,ANS1 |  | :CHECK ANS1                  |  |
| 00000000 | 00000000 | 077777 |        |         | BEQ  | +.4          |  | :BRANCH IF OK                |  |
| 00000000 | 00000000 | 077777 |        |         | HLT  | +2           |  | :ANS1 NOT EQUAL TO 077777    |  |
| 00000000 | 00000000 | 177777 | 166674 |         | COMP | #177777,ANS2 |  | :CHECK ANS2                  |  |
| 00000000 | 00000000 | 177777 |        |         | BEQ  | +.4          |  | :BRANCH IF OK                |  |
| 00000000 | 00000000 | 177777 |        |         | HLT  | +2           |  | :ANS2 NOT EQUAL TO 177777    |  |

\*\*\*\*\*

TEST 123: NEG (NEGATE FLOATING POINT)  
 -(052525.052525) = 152525.052525  
 FPS = 047410, FOST = M6-R7

\*\*\*\*\*

|          |          |        |        |         |      |              |  |                              |  |
|----------|----------|--------|--------|---------|------|--------------|--|------------------------------|--|
| 00000000 | 00000000 | 047410 |        | TST123: | SCOP |              |  |                              |  |
| 00000000 | 00000000 | 152525 | 166610 |         | LD   | #047410      |  | :LOAD FLOATING POINT STATUS  |  |
| 00000000 | 00000000 | 152525 |        |         | MOV  | #052525,ANS1 |  | : "LOAD" 052525 INTO ANS1    |  |
| 00000000 | 00000000 | 152525 |        |         | MOV  | #052525,ANS2 |  | : "LOAD" 052525 INTO ANS2    |  |
| 00000000 | 00000000 | 152525 |        | TST123: | NEG  | ANS1         |  | :NEGATE ANS1, ANS2           |  |
| 00000000 | 00000000 | 047410 |        |         | ST   | ANS          |  | :STORE FLOATING POINT STATUS |  |
| 00000000 | 00000000 | 047410 |        |         | COMP | #047410,FPS  |  | :CHECK FLOATING POINT STATUS |  |
| 00000000 | 00000000 | 047410 |        |         | BEQ  | +.4          |  | :BRANCH IF OK                |  |
| 00000000 | 00000000 | 047410 |        |         | HLT  |              |  | :FPS NOT EQUAL TO 047410     |  |
| 00000000 | 00000000 | 152525 | 166610 |         | COMP | #152525,ANS1 |  | :CHECK ANS1                  |  |
| 00000000 | 00000000 | 152525 |        |         | BEQ  | +.4          |  | :BRANCH IF OK                |  |
| 00000000 | 00000000 | 152525 |        |         | HLT  | +2           |  | :ANS1 NOT EQUAL TO 152525    |  |
| 00000000 | 00000000 | 052525 | 166600 |         | COMP | #052525,ANS2 |  | :CHECK ANS2                  |  |
| 00000000 | 00000000 | 052525 |        |         | BEQ  | +.4          |  | :BRANCH IF OK                |  |
| 00000000 | 00000000 | 052525 |        |         | HLT  | +2           |  | :ANS2 NOT EQUAL TO 052525    |  |

\*\*\*\*\*

TEST 124: NEG (NEGATE FLOATING POINT)  
 -(125252.125252) = 025252.125252  
 FPS = 047400, FOST = M6-R7

\*\*\*\*\*

|          |          |        |  |         |      |              |  |                             |  |
|----------|----------|--------|--|---------|------|--------------|--|-----------------------------|--|
| 00000000 | 00000000 | 047400 |  | TST124: | SCOP |              |  |                             |  |
| 00000000 | 00000000 | 125252 |  |         | LD   | #047400      |  | :LOAD FLOATING POINT STATUS |  |
| 00000000 | 00000000 | 125252 |  |         | MOV  | #125252,ANS1 |  | : "LOAD" 125252 INTO ANS1   |  |
| 00000000 | 00000000 | 125252 |  |         | MOV  | #125252,ANS2 |  | : "LOAD" 125252 INTO ANS2   |  |



E05

MAINDEX-11-DOFPH-3  
DOFPH.F11

TEST OF CLRF, CLRD, TSTF, TSTD, ABSF, ABSD, NEGF, NEGD MACY11 27(732) 17-SEP-76 10:45 PAGE 53  
TEST SECTION

|        |        |        |        |              |              |                              |
|--------|--------|--------|--------|--------------|--------------|------------------------------|
| 012327 | 170767 | 166544 |        | FPI124: NEGF | ANS1         | :NEGATE ANS1, ANS2           |
| 012328 | 170200 |        |        | STFPS        | FPS          | :STORE FLOATING POINT STATUS |
| 012329 | 022700 | 047400 |        | CMP          | #047400,FPS  | :CHECK FLOATING POINT STATUS |
| 012330 | 001401 |        |        | BEG          | .+4          | :BRANCH IF OK                |
| 012331 | 104000 |        |        | HLT          |              | :FPS NOT EQUAL TO 047400     |
|        |        |        |        |              |              |                              |
| 012335 | 022767 | 025252 | 166524 | CMP          | #025252,ANS1 | :CHECK ANS1                  |
| 012336 | 001401 |        |        | BEG          | .+4          | :BRANCH IF OK                |
| 012337 | 104002 |        |        | HLT+2        |              | :ANS1 NOT EQUAL TO 025252    |
|        |        |        |        |              |              |                              |
| 012338 | 022767 | 125252 | 166514 | CMP          | #125252,ANS2 | :CHECK ANS2                  |
| 012339 | 001401 |        |        | BEG          | .+4          | :BRANCH IF OK                |
| 012340 | 104002 |        |        | HLT+2        |              | :ANS2 NOT EQUAL TO 125252    |

```

*****
:TEST 125:      NEGF (NEGATE FLOATING POINT)
:              -(077777,177777) = 177777,177777
:              FPS = 047410,  FOST = M6-R7
*****

```

|        |        |        |        |               |              |                              |
|--------|--------|--------|--------|---------------|--------------|------------------------------|
| 012327 | 104400 |        |        | TST125: SCOPE |              |                              |
| 012328 | 170127 | 047400 |        | LDFPS         | #047400      | :LOAD FLOATING POINT STATUS  |
| 012329 | 012767 | 077777 | 166472 | MOV           | #077777,ANS1 | : "LOAD" 077777 INTO ANS1    |
| 012330 | 012767 | 177777 | 166466 | MOV           | #177777,ANS2 | : "LOAD" 177777 INTO ANS2    |
| 012331 | 170767 | 166460 |        | FPI125: NEGF  | ANS1         | :NEGATE ANS1, ANS2           |
| 012332 | 170200 |        |        | STFPS         | FPS          | :STORE FLOATING POINT STATUS |
| 012333 | 022700 | 047410 |        | CMP           | #047410,FPS  | :CHECK FLOATING POINT STATUS |
| 012334 | 001401 |        |        | BEG           | .+4          | :BRANCH IF OK                |
| 012335 | 104000 |        |        | HLT           |              | :FPS NOT EQUAL TO 047410     |
|        |        |        |        |               |              |                              |
| 012334 | 022767 | 177777 | 166440 | CMP           | #177777,ANS1 | :CHECK ANS1                  |
| 012335 | 001401 |        |        | BEG           | .+4          | :BRANCH IF OK                |
| 012336 | 104002 |        |        | HLT+2         |              | :ANS1 NOT EQUAL TO 177777    |
|        |        |        |        |               |              |                              |
| 012334 | 022767 | 177777 | 166430 | CMP           | #177777,ANS2 | :CHECK ANS2                  |
| 012335 | 001401 |        |        | BEG           | .+4          | :BRANCH IF OK                |
| 012336 | 104002 |        |        | HLT+2         |              | :ANS2 NOT EQUAL TO 177777    |

```

*****
:TEST 126:      NEGF (NEGATE FLOATING POINT)
:              -(100000,000000) = 100000,000000
:              FPS = 147414,  FOST = M6-R7
:              FEC = 14,      FEA = FPI126
*****

```

|        |        |        |        |               |              |                              |
|--------|--------|--------|--------|---------------|--------------|------------------------------|
| 012336 | 104400 |        |        | TST126: SCOPE |              |                              |
| 012337 | 170127 | 047400 |        | LDFPS         | #047400      | :LOAD FLOATING POINT STATUS  |
| 012338 | 012767 | 100000 | 166406 | MOV           | #100000,ANS1 | : "LOAD" 100000 INTO ANS1    |
| 012339 | 012767 | 000000 | 166402 | MOV           | #000000,ANS2 | : "LOAD" 000000 INTO ANS2    |
| 012340 | 170767 | 166374 |        | FPI126: NEGF  | ANS1         | :NEGATE ANS1, ANS2           |
| 012341 | 170200 |        |        | STFPS         | FPS          | :STORE FLOATING POINT STATUS |
| 012342 | 170367 | 166406 |        | STST          | FEC          | :STORE EXCEPTION CODES       |
| 012343 | 022700 | 147414 |        | CMP           | #147414,FPS  | :CHECK FLOATING POINT STATUS |
| 012344 | 001401 |        |        | BEG           | .+4          | :BRANCH IF OK                |

# F05

MAINDEC-11-DOFPH-8  
DOFPH.P11

TEST OF CLRF, CLRD, TSTF, TSTD, ABSF, ABSD, NEGF, NEGD MACY11 27(732) 17-SEP-76 10:45 PAGE 54  
TEST SECTION

```

012422 104000          HLT          :FPS NOT EQUAL TO 147414
012434 022767 000014 166370      CMP          #14,   FEC          :CHECK FLOATING EXCEPTION CODE
012436 001401          BEQ          .+4          :BRANCH IF OK
012438 104000          HLT          :FEC NOT EQUAL TO 14
012436 022767 012402 166360      CMP          #FPI126, FEA        :CHECK FLOATING EXCEPTION ADDRESS
012444 001401          BEQ          .+4          :BRANCH IF OK
012446 104000          HLT          :FEA NOT EQUAL TO FPI126
012450 022767 100000 166324      CMP          #100000,ANS1      :CHECK ANS1
012452 001401          BEQ          .+4          :BRANCH IF OK
012454 104002          HLT+2        :ANS1 NOT EQUAL TO 100000
012458 022767 000000 166314      CMP          #000000,ANS2      :CHECK ANS2
012460 001401          BEQ          .+4          :BRANCH IF OK
012462 104002          HLT+2        :ANS2 NOT EQUAL TO 000000
    
```

```

*****
:TEST 127:      NEGF (NEGATE FLOATING POINT)
:              -(000200,000000) = 100200,000000
:              FPS = 047410,   FDST = M6-R7
*****
    
```

```

012474 104400          SCOPE
012476 170127 047400      TST127: LDFPS          #047400          :LOAD FLOATING POINT STATUS
012502 012767 000200 166272      MOV          #000200,ANS1      :"LOAD" 000200 INTO ANS1
012510 012767 000000 166266      MOV          #000000,ANS2      :"LOAD" 000000 INTO ANS2
012516 170767 166260      FPI127: NEGF          ANS1      :NEGATE ANS1, ANS2
012522 170200          STFPS          FPS          :STORE FLOATING POINT STATUS
012524 022700 047410      CMP          #047410,FPS        :CHECK FLOATING POINT STATUS
012530 001401          BEQ          .+4          :BRANCH IF OK
012532 104000          HLT          :FPS NOT EQUAL TO 047410
012534 022767 100200 166240      CMP          #100200,ANS1      :CHECK ANS1
012542 001401          BEQ          .+4          :BRANCH IF OK
012544 104002          HLT+2        :ANS1 NOT EQUAL TO 100200
012546 022767 000000 166230      CMP          #000000,ANS2      :CHECK ANS2
012554 001401          BEQ          .+4          :BRANCH IF OK
012556 104002          HLT+2        :ANS2 NOT EQUAL TO 000000
    
```

```

*****
:TEST 130:      NEGF (NEGATE FLOATING POINT)
:              -(100200,000000) = 000200,000000
:              FPS = 047400,   FDST = M6-R7
*****
    
```

```

012560 104400          SCOPE
012562 170127 047400      TST130: LDFPS          #047400          :LOAD FLOATING POINT STATUS
012564 012767 100200 166206      MOV          #100200,ANS1      :"LOAD" 100200 INTO ANS1
012566 012767 000000 166202      MOV          #000000,ANS2      :"LOAD" 000000 INTO ANS2
012574 012767 000000          FPI130: NEGF          ANS1      :NEGATE ANS1, ANS2
012602 170767 166174          STFPS          FPS          :STORE FLOATING POINT STATUS
012606 170200
    
```

G05

MAINDEC-11-DOFPH-B  
DOFPH.P11

TEST OF CLRF, CLRD, TSTF, TSTD, ABSF, ABSD, NEGF, NEGD MACY11 27(732) 17-SEP-76 10:45 PAGE 55  
TEST SECTION

|        |        |        |        |       |              |                              |
|--------|--------|--------|--------|-------|--------------|------------------------------|
| 012610 | 022700 | 047400 |        | CMP   | #047400,FPS  | :CHECK FLOATING POINT STATUS |
| 012614 | 001401 |        |        | BEQ   | +.4          | :BRANCH IF OK                |
| 012616 | 104000 |        |        | HLT   |              | :FPS NOT EQUAL TO 047400     |
|        |        |        |        |       |              |                              |
| 012620 | 022767 | 000200 | 166154 | CMP   | #000200,ANS1 | :CHECK ANS1                  |
| 012626 | 001401 |        |        | BEQ   | +.4          | :BRANCH IF OK                |
| 012630 | 104002 |        |        | HLT+2 |              | :ANS1 NOT EQUAL TO 000200    |
|        |        |        |        |       |              |                              |
| 012632 | 022767 | 000000 | 166144 | CMP   | #000000,ANS2 | :CHECK ANS2                  |
| 012640 | 001401 |        |        | BEQ   | +.4          | :BRANCH IF OK                |
| 012642 | 104002 |        |        | HLT+2 |              | :ANS2 NOT EQUAL TO 000000    |

```

*****
:TEST 131:      NEGf (NEGATE FLOATING POINT)
:              -(000177,177777) = 000000,000000
:              FPS = 047404,   FDST = M6-R7
*****

```

|        |        |        |        |         |       |              |
|--------|--------|--------|--------|---------|-------|--------------|
| 012644 | 104400 |        |        |         |       |              |
| 012646 | 170127 | 047400 |        | TST131: | LDFPS | #047400      |
| 012648 | 012767 | 000177 | 166122 |         | MOV   | #000177,ANS1 |
| 012650 | 012767 | 177777 | 166116 |         | MOV   | #177777,ANS2 |
| 012652 | 170767 | 166110 |        | FPI131: | NEGF  | ANS1         |
| 012654 | 170200 |        |        |         | STFPS | FPS          |
| 012656 | 022700 | 047404 |        |         | CMP   | #047404,FPS  |
| 012658 | 001401 |        |        |         | BEQ   | +.4          |
| 012660 | 104000 |        |        |         | HLT   |              |
|        |        |        |        |         |       |              |
| 012704 | 022767 | 000000 | 166070 |         | CMP   | #000000,ANS1 |
| 012710 | 001401 |        |        |         | BEQ   | +.4          |
| 012714 | 104002 |        |        |         | HLT+2 |              |
|        |        |        |        |         |       |              |
| 012716 | 022767 | 000000 | 166060 |         | CMP   | #000000,ANS2 |
| 012724 | 001401 |        |        |         | BEQ   | +.4          |
| 012726 | 104002 |        |        |         | HLT+2 |              |

```

*****
:TEST 132:      NEGf (NEGATE FLOATING POINT)
:              -(100177,177777) = 100177,177777
:              FPS = 147414,   FDST = M6-R7
:              FEC = 14,      FEA = FPI132
*****

```

|        |        |        |        |         |       |              |
|--------|--------|--------|--------|---------|-------|--------------|
| 012730 | 104400 |        |        |         |       |              |
| 012732 | 170127 | 047400 |        | TST132: | LDFPS | #047400      |
| 012734 | 012767 | 100177 | 166036 |         | MOV   | #100177,ANS1 |
| 012736 | 012767 | 177777 | 166032 |         | MOV   | #177777,ANS2 |
| 012738 | 170767 | 166024 |        | FPI132: | NEGF  | ANS1         |
| 012740 | 170200 |        |        |         | STFPS | FPS          |
| 012742 | 170267 | 166036 |        |         | STST  | FEC          |
| 012744 | 022700 | 147414 |        |         | CMP   | #147414,FPS  |
| 012746 | 001401 |        |        |         | BEQ   | +.4          |
| 012748 | 104000 |        |        |         | HLT   |              |

H05

MAINDEC-11-DOFPH-S  
DOFPH.P11

TEST OF CLRF, CLRD, TSTF, TSTD, ABSF, ABSD, NEGF, NEGD MACY11 27(732) 17-SEP-76 10:45 PAGE 56  
TEST SECTION

|        |        |        |        |       |              |                                   |
|--------|--------|--------|--------|-------|--------------|-----------------------------------|
| 012774 | 022767 | 000014 | 166020 | CMP   | #14, FEC     | :CHECK FLOATING EXCEPTION CODE    |
| 013002 | 001401 |        |        | BEQ   | +.4          | :BRANCH IF OK                     |
| 013004 | 104000 |        |        | HLT   |              | :FEC NOT EQUAL TO 14              |
|        |        |        |        |       |              |                                   |
| 013006 | 022767 | 012752 | 166010 | CMP   | #FPI132, FEA | :CHECK FLOATING EXCEPTION ADDRESS |
| 013014 | 001401 |        |        | BEQ   | +.4          | :BRANCH IF OK                     |
| 013016 | 104000 |        |        | HLT   |              | :FEA NOT EQUAL TO FPI132          |
|        |        |        |        |       |              |                                   |
| 013020 | 022767 | 100177 | 165754 | CMP   | #100177,ANS1 | :CHECK ANS1                       |
| 013026 | 001401 |        |        | BEQ   | +.4          | :BRANCH IF OK                     |
| 013030 | 104002 |        |        | HLT+2 |              | :ANS1 NOT EQUAL TO 100177         |
|        |        |        |        |       |              |                                   |
| 013032 | 022767 | 177777 | 165744 | CMP   | #177777,ANS2 | :CHECK ANS2                       |
| 013040 | 001401 |        |        | BEQ   | +.4          | :BRANCH IF OK                     |
| 013042 | 104002 |        |        | HLT+2 |              | :ANS2 NOT EQUAL TO 177777         |

\*\*\*\*\*  
:TEST 133: NEGf (NEGATE FLOATING POINT)  
: -(100000,000001) = 000000,000000  
: FPS = 003404, FDST = M6-R7  
\*\*\*\*\*

|        |        |        |        |         |       |  |
|--------|--------|--------|--------|---------|-------|--|
| 013044 | 104400 |        |        |         |       |  |
| 013046 | 170127 | 003400 |        | TST133: | LDFPS | #003400 :LOAD FLOATING POINT STATUS      |
| 013050 | 012767 | 100000 | 165722 |         | MOV   | #100000,ANS1 : "LOAD" 100000 INTO ANS1   |
| 013060 | 012767 | 000001 | 165716 |         | MOV   | #000001,ANS2 : "LOAD" 000001 INTO ANS2   |
| 013066 | 170767 | 165710 |        | FPI133: | NEGF  | ANS1 :NEGATE ANS1, ANS2                  |
| 013072 | 170200 |        |        |         | STFPS | FPS :STORE FLOATING POINT STATUS         |
| 013074 | 022700 | 003404 |        |         | CMP   | #003404,FPS :CHECK FLOATING POINT STATUS |
| 013100 | 001401 |        |        |         | BEQ   | +.4 :BRANCH IF OK                        |
| 013102 | 104000 |        |        |         | HLT   | :FPS NOT EQUAL TO 003404                 |
|        |        |        |        |         |       |  |
| 013104 | 022767 | 000000 | 165670 |         | CMP   | #000000,ANS1 :CHECK ANS1                 |
| 013112 | 001401 |        |        |         | BEQ   | +.4 :BRANCH IF OK                        |
| 013114 | 104002 |        |        |         | HLT+2 | :ANS1 NOT EQUAL TO 000000                |
|        |        |        |        |         |       |  |
| 013116 | 022767 | 000000 | 165660 |         | CMP   | #000000,ANS2 :CHECK ANS2                 |
| 013124 | 001401 |        |        |         | BEQ   | +.4 :BRANCH IF OK                        |
| 013126 | 104002 |        |        |         | HLT+2 | :ANS2 NOT EQUAL TO 000000                |

\*\*\*\*\*  
:TEST 134: NEGf (NEGATE FLOATING POINT)  
: -(000001,100000) = 000000,000000  
: FPS = 003404, FDST = M6-R7  
\*\*\*\*\*

|        |        |        |        |         |       |  |
|--------|--------|--------|--------|---------|-------|--|
| 013130 | 104400 |        |        |         |       |  |
| 013132 | 170127 | 003400 |        | TST134: | LDFPS | #003400 :LOAD FLOATING POINT STATUS      |
| 013136 | 012767 | 000001 | 165636 |         | MOV   | #000001,ANS1 : "LOAD" 000001 INTO ANS1   |
| 013144 | 012767 | 100000 | 165632 |         | MOV   | #100000,ANS2 : "LOAD" 100000 INTO ANS2   |
| 013152 | 170767 | 165624 |        | FPI134: | NEGF  | ANS1 :NEGATE ANS1, ANS2                  |
| 013160 | 170200 |        |        |         | STFPS | FPS :STORE FLOATING POINT STATUS         |
| 013162 | 022700 | 003404 |        |         | CMP   | #003404,FPS :CHECK FLOATING POINT STATUS |
| 013164 | 001401 |        |        |         | BEQ   | +.4 :BRANCH IF OK                        |

```

013166 104000          HLT          :FPS NOT EQUAL TO 003404
013170 022767 000000 165604      CMP          #000000,ANS1      :CHECK ANS1
013176 001401          BEQ          .+4          :BRANCH IF OK
013200 104002          HLT+2        :ANS1 NOT EQUAL TO 000000
013202 022767 000000 165574      CMP          #000000,ANS2      :CHECK ANS2
013210 001401          BEQ          .+4          :BRANCH IF OK
013212 104002          HLT+2        :ANS2 NOT EQUAL TO 000000

```

```

*****
:TEST 135:          NEG (NEGATE FLOATING POINT)
:          -(040125,052525) = 140125,052525
:          FPS = 047410,   FDST = M6-R7
*****

```

```

013214 104400          SCOPE
013216 170127 047400      TST135: LDFPS          #047400          :LOAD FLOATING POINT STATUS
013222 012767 040125 165552      MOV          #040125,ANS1      :"LOAD" 040125 INTO ANS1
013230 012767 052525 165546      MOV          #052525,ANS2      :"LOAD" 052525 INTO ANS2
013236 170767 165540      FPI135: NEG          ANS1          :NEGATE ANS1, ANS2
013242 170200          STFPS          FPS          :STORE FLOATING POINT STATUS
013244 022700 047410      CMP          #047410,FPS        :CHECK FLOATING POINT STATUS
013250 001401          BEQ          .+4          :BRANCH IF OK
013252 104000          HLT          :FPS NOT EQUAL TO 047410
013254 022767 140125 165520      CMP          #140125,ANS1      :CHECK ANS1
013262 001401          BEQ          .+4          :BRANCH IF OK
013264 104002          HLT+2        :ANS1 NOT EQUAL TO 140125
013266 022767 052525 165510      CMP          #052525,ANS2      :CHECK ANS2
013274 001401          BEQ          .+4          :BRANCH IF OK
013276 104002          HLT+2        :ANS2 NOT EQUAL TO 052525

```

```

*****
:TEST 136:          NEG (NEGATE FLOATING POINT)
:          -(140252,125252) = 040252,125252
:          FPS = 047400,   FDST = M6-R7
*****

```

```

013300 104400          SCOPE
013302 170127 047400      TST136: LDFPS          #047400          :LOAD FLOATING POINT STATUS
013306 012767 140252 165466      MOV          #140252,ANS1      :"LOAD" 140252 INTO ANS1
013314 012767 125252 165462      MOV          #125252,ANS2      :"LOAD" 125252 INTO ANS2
013322 170767 165454      FPI136: NEG          ANS1          :NEGATE ANS1, ANS2
013326 170200          STFPS          FPS          :STORE FLOATING POINT STATUS
013330 022700 047400      CMP          #047400,FPS        :CHECK FLOATING POINT STATUS
013334 001401          BEQ          .+4          :BRANCH IF OK
013336 104000          HLT          :FPS NOT EQUAL TO 047400
013340 022767 040252 165434      CMP          #040252,ANS1      :CHECK ANS1
013346 001401          BEQ          .+4          :BRANCH IF OK
013350 104002          HLT+2        :ANS1 NOT EQUAL TO 040252

```

|        |        |        |        |       |              |                           |
|--------|--------|--------|--------|-------|--------------|---------------------------|
| 013352 | 022767 | 125252 | 165424 | CMP   | #125252,ANS2 | :CHECK ANS2               |
| 013350 | 001401 |        |        | BEQ   | .+4          | :BRANCH IF OK             |
| 013352 | 104002 |        |        | HLT+2 |              | :ANS2 NOT EQUAL TO 125252 |

```

*****
:TEST 137:      NEGF (NEGATE FLOATING POINT)
:              -(052525,052525) = 152525,052525
:              FPS = 047410,  FDST = MO-ACO
*****

```

|        |        |        |        |         |               |                               |
|--------|--------|--------|--------|---------|---------------|-------------------------------|
| 013354 | 104400 |        |        | SCOPE   |               |                               |
| 013355 | 000402 |        |        | BR      | TST137        |                               |
| 013370 | 052525 | 052525 |        | DAT137: | 052525,052525 |                               |
| 013374 | 170127 | 047400 |        | TST137: | LDFPS #047400 | :LOAD FLOATING POINT STATUS   |
| 013400 | 172467 | 177764 |        | LDF     | DAT137, ACO   | :LOAD 052525,052525 INTO ACO  |
| 013404 | 170700 |        |        | FPI137: | NEGF ACO      | :NEGATE ACO                   |
| 013406 | 170200 |        |        | STFPS   | FPS           | :STORE FLOATING POINT STATUS  |
| 013410 | 022700 | 047410 |        | CMP     | #047410,FPS   | :CHECK FLOATING POINT STATUS  |
| 013414 | 001401 |        |        | BEQ     | .+4           | :BRANCH IF OK                 |
| 013416 | 104000 |        |        | HLT     |               | :FPS NOT EQUAL TO 047410      |
| 013420 | 174067 | 165356 |        | STF     | ACO, ANS1     | :STORE NEGATIVE IN ANS1, ANS2 |
| 013424 | 022767 | 152525 | 165350 | CMP     | #152525,ANS1  | :CHECK ANS1                   |
| 013432 | 001401 |        |        | BEQ     | .+4           | :BRANCH IF OK                 |
| 013434 | 104002 |        |        | HLT+2   |               | :ANS1 NOT EQUAL TO 152525     |
| 013436 | 022767 | 052525 | 165340 | CMP     | #052525,ANS2  | :CHECK ANS2                   |
| 013444 | 001401 |        |        | BEQ     | .+4           | :BRANCH IF OK                 |
| 013446 | 104002 |        |        | HLT+2   |               | :ANS2 NOT EQUAL TO 052525     |

```

*****
:TEST 140:      NEGF (NEGATE FLOATING POINT)
:              -(125252,125252) = 025252,125252
:              FPS = 047400,  FDST = MO-AC3
*****

```

|        |        |        |        |         |               |                               |
|--------|--------|--------|--------|---------|---------------|-------------------------------|
| 013450 | 104400 |        |        | SCOPE   |               |                               |
| 013452 | 000402 |        |        | BR      | TST140        |                               |
| 013454 | 125252 | 125252 |        | DAT140: | 125252,125252 |                               |
| 013460 | 170127 | 047400 |        | TST140: | LDFPS #047400 | :LOAD FLOATING POINT STATUS   |
| 013464 | 172767 | 177764 |        | LDF     | DAT140, AC3   | :LOAD 125252,125252 INTO AC3  |
| 013470 | 170703 |        |        | FPI140: | NEGF AC3      | :NEGATE AC3                   |
| 013472 | 170200 |        |        | STFPS   | FPS           | :STORE FLOATING POINT STATUS  |
| 013474 | 022700 | 047400 |        | CMP     | #047400,FPS   | :CHECK FLOATING POINT STATUS  |
| 013500 | 001401 |        |        | BEQ     | .+4           | :BRANCH IF OK                 |
| 013502 | 104000 |        |        | HLT     |               | :FPS NOT EQUAL TO 047400      |
| 013504 | 174367 | 165272 |        | STF     | AC3, ANS1     | :STORE NEGATIVE IN ANS1, ANS2 |
| 013510 | 022767 | 025252 | 165264 | CMP     | #025252,ANS1  | :CHECK ANS1                   |
| 013516 | 001401 |        |        | BEQ     | .+4           | :BRANCH IF OK                 |

K05

MAINDEC-11-DCFPH-B  
DCFPH.P11

TEST OF CLRF, CLRD, TSTF, TSTD, ABSF, ABSD, NEGF, NEGJ MACY11 27(732) 17-SEP-76 10:45 PAGE 59  
TEST SECTION

|        |        |        |        |       |              |                           |
|--------|--------|--------|--------|-------|--------------|---------------------------|
| 013520 | 104002 |        |        | HLT+2 |              | ;ANS1 NOT EQUAL TO 025252 |
| 013522 | 022767 | 125252 | 165254 | CMP   | #125252,ANS2 | ;CHECK ANS2               |
| 013530 | 001401 |        |        | BEQ   | .+4          | ;BRANCH IF OK             |
| 013532 | 104002 |        |        | HLT+2 |              | ;ANS2 NOT EQUAL TO 125252 |

```

*****
:TEST 141:      NEGJ (NEGATE DOUBLE PERCISION)
:              -(000000,000000,000000,000000) = 000000,000000,000000,000000
:              FPS = 047604,  FDST = M6-R7
*****

```

|        |        |        |        |               |              |                              |
|--------|--------|--------|--------|---------------|--------------|------------------------------|
| 013534 | 104400 |        |        | SCOPE         |              |                              |
| 013536 | 170127 | 047600 |        | TST141: LDFPS | #047600      | ;LOAD FLOATING POINT STATUS  |
| 013542 | 012767 | 000000 | 165232 | MOV           | #000000,ANS1 | ; "LOAD" 000000 INTO ANS1    |
| 013550 | 012767 | 000000 | 165226 | MOV           | #000000,ANS2 | ; "LOAD" 000000 INTO ANS2    |
| 013556 | 012767 | 000000 | 165222 | MOV           | #000000,ANS3 | ; "LOAD" 000000 INTO ANS3    |
| 013564 | 012767 | 000000 | 165216 | MOV           | #000000,ANS4 | ; "LOAD" 000000 INTO ANS4    |
| 013572 | 170767 | 165204 |        | FPI141: NEGJ  | ANS1         | ;NEGATE ANS1 THRU ANS4       |
| 013576 | 170200 |        |        | STFPS         | FPS          | ;STORE FLOATING POINT STATUS |
| 013600 | 022700 | 047604 |        | CMP           | #047604,FPS  | ;CHECK FLOATING POINT STATUS |
| 013604 | 001401 |        |        | BEQ           | .+4          | ;BRANCH IF OK                |
| 013606 | 104000 |        |        | HLT           |              | ;FPS NOT EQUAL TO 047604     |
|        |        |        |        |               |              |                              |
| 013610 | 022767 | 000000 | 165164 | CMP           | #000000,ANS1 | ;CHECK ANS1                  |
| 013616 | 001401 |        |        | BEQ           | .+4          | ;BRANCH IF OK                |
| 013620 | 104004 |        |        | HLT+4         |              | ;ANS1 NOT EQUAL TO 000000    |
|        |        |        |        |               |              |                              |
| 013622 | 022767 | 000000 | 165154 | CMP           | #000000,ANS2 | ;CHECK ANS2                  |
| 013630 | 001401 |        |        | BEQ           | .+4          | ;BRANCH IF OK                |
| 013632 | 104004 |        |        | HLT+4         |              | ;ANS2 NOT EQUAL TO 000000    |
|        |        |        |        |               |              |                              |
| 013634 | 022767 | 000000 | 165144 | CMP           | #000000,ANS3 | ;CHECK ANS3                  |
| 013642 | 001401 |        |        | BEQ           | .+4          | ;BRANCH IF OK                |
| 013644 | 104004 |        |        | HLT+4         |              | ;ANS3 NOT EQUAL TO 000000    |
|        |        |        |        |               |              |                              |
| 013646 | 022767 | 000000 | 165134 | CMP           | #000000,ANS4 | ;CHECK ANS4                  |
| 013654 | 001401 |        |        | BEQ           | .+4          | ;BRANCH IF OK                |
| 013656 | 104004 |        |        | HLT+4         |              | ;ANS4 NOT EQUAL TO 000000    |

```

*****
:TEST 142:      NEGJ (NEGATE DOUBLE PERCISION)
:              -(177777,177777,177777,177777) = 077777,177777,177777,177777
:              FPS = 047600,  FDST = M6-R7
*****

```

|        |        |        |        |               |              |                              |
|--------|--------|--------|--------|---------------|--------------|------------------------------|
| 013660 | 104400 |        |        | SCOPE         |              |                              |
| 013662 | 170127 | 047600 |        | TST142: LDFPS | #047600      | ;LOAD FLOATING POINT STATUS  |
| 013666 | 012767 | 177777 | 165106 | MOV           | #177777,ANS1 | ; "LOAD" 177777 INTO ANS1    |
| 013674 | 012767 | 177777 | 165102 | MOV           | #177777,ANS2 | ; "LOAD" 177777 INTO ANS2    |
| 013702 | 012767 | 177777 | 165076 | MOV           | #177777,ANS3 | ; "LOAD" 177777 INTO ANS3    |
| 013710 | 012767 | 177777 | 165072 | MOV           | #177777,ANS4 | ; "LOAD" 177777 INTO ANS4    |
| 013716 | 170767 | 165060 |        | FPI142: NEGJ  | ANS1         | ;NEGATE ANS1 THRU ANS4       |
| 013722 | 170200 |        |        | STFPS         | FPS          | ;STORE FLOATING POINT STATUS |

```

013724 022700 047600      CMP      #047600,FPS      ;CHECK FLOATING POINT STATUS
013730 001401      BEQ      .+4          ;BRANCH IF OK
013732 104000      HLT          ;FPS NOT EQUAL TO 047600

013734 022767 077777 165040    CMP      #077777,ANS1  ;CHECK ANS1
013742 001401      BEQ      .+4          ;BRANCH IF OK
013744 104004      HLT+4        ;ANS1 NOT EQUAL TO 077777

013746 022767 177777 165030    CMP      #177777,ANS2  ;CHECK ANS2
013754 001401      BEQ      .+4          ;BRANCH IF OK
013756 104004      HLT+4        ;ANS2 NOT EQUAL TO 177777

013760 022767 177777 165020    CMP      #177777,ANS3  ;CHECK ANS3
013766 001401      BEQ      .+4          ;BRANCH IF OK
013770 104004      HLT+4        ;ANS3 NOT EQUAL TO 177777

013772 022767 177777 165010    CMP      #177777,ANS4  ;CHECK ANS4
014000 001401      BEQ      .+4          ;BRANCH IF OK
014002 104004      HLT+4        ;ANS4 NOT EQUAL TO 177777

```

```

:*****
:TEST 143:      NEGD (NEGATE DOUBLE PERCISION)
:              -(052525,052525,052525,052525) = 152525,052525,052525,052525
:              FPS = 047610,  FDST = M6-R7
:*****

```

```

014004 104400      SCOPE
014006 170127 047600      TST143: LDFPS      #047600      ;LOAD FLOATING POINT STATUS
014012 012767 052525 164762    MOV      #052525,ANS1  ;"LOAD" 052525 INTO ANS1
014020 012767 052525 164756    MOV      #052525,ANS2  ;"LOAD" 052525 INTO ANS2
014026 012767 052525 164752    MOV      #052525,ANS3  ;"LOAD" 052525 INTO ANS3
014034 012767 052525 164746    MOV      #052525,ANS4  ;"LOAD" 052525 INTO ANS4
014042 170767 164734      FPI143: NEGD      ANS1      ;NEGATE ANS1 THRU ANS4
014046 170200      STFPS      FPS          ;STORE FLOATING POINT STATUS
014050 022700 047610      CMP      #047610,FPS  ;CHECK FLOATING POINT STATUS
014054 001401      BEQ      .+4          ;BRANCH IF OK
014056 104000      HLT          ;FPS NOT EQUAL TO 047610

014060 022767 152525 164714    CMP      #152525,ANS1  ;CHECK ANS1
014066 001401      BEQ      .+4          ;BRANCH IF OK
014070 104004      HLT+4        ;ANS1 NOT EQUAL TO 152525

014072 022767 052525 164704    CMP      #052525,ANS2  ;CHECK ANS2
014100 001401      BEQ      .+4          ;BRANCH IF OK
014102 104004      HLT+4        ;ANS2 NOT EQUAL TO 052525

014104 022767 052525 164674    CMP      #052525,ANS3  ;CHECK ANS3
014112 001401      BEQ      .+4          ;BRANCH IF OK
014114 104004      HLT+4        ;ANS3 NOT EQUAL TO 052525

014116 022767 052525 164664    CMP      #052525,ANS4  ;CHECK ANS4
014124 001401      BEQ      .+4          ;BRANCH IF OK
014126 104004      HLT+4        ;ANS4 NOT EQUAL TO 052525

```



M05

\*\*\*\*\*  
:TEST 144: NEG D (NEGATE DOUBLE PERCISION)  
:-(125252,125252,125252,125252) = 025252,125252,125252,125252  
:FPS = 047600, FDST = M6-R7  
:\*\*\*\*\*

|        |        |        |        |               |              |                              |
|--------|--------|--------|--------|---------------|--------------|------------------------------|
| 014130 | 104400 |        |        | SCOPE         |              |                              |
| 014132 | 170127 | 047600 |        | TST144: LDFPS | #047600      | :LOAD FLOATING POINT STATUS  |
| 014136 | 012767 | 125252 | 164636 | MOV           | #125252,ANS1 | : "LOAD" 125252 INTO ANS1    |
| 014144 | 012767 | 125252 | 164632 | MOV           | #125252,ANS2 | : "LOAD" 125252 INTO ANS2    |
| 014152 | 012767 | 125252 | 164626 | MOV           | #125252,ANS3 | : "LOAD" 125252 INTO ANS3    |
| 014160 | 012767 | 125252 | 164622 | MOV           | #125252,ANS4 | : "LOAD" 125252 INTO ANS4    |
| 014166 | 170767 | 164610 |        | FPI144: NEG D | ANS1         | :NEGATE ANS1 THRU ANS4       |
| 014172 | 170200 |        |        | STFPS         | FPS          | :STORE FLOATING POINT STATUS |
| 014174 | 022700 | 047600 |        | CMP           | #047600,FPS  | :CHECK FLOATING POINT STATUS |
| 014200 | 001401 |        |        | BEQ           | .+4          | :BRANCH IF OK                |
| 014202 | 104000 |        |        | HLT           |              | :FPS NOT EQUAL TO 047600     |
|        |        |        |        |               |              |                              |
| 014204 | 022767 | 025252 | 164570 | CMP           | #025252,ANS1 | :CHECK ANS1                  |
| 014212 | 001401 |        |        | BEQ           | .+4          | :BRANCH IF OK                |
| 014214 | 104004 |        |        | HLT+4         |              | :ANS1 NOT EQUAL TO 025252    |
|        |        |        |        |               |              |                              |
| 014216 | 022767 | 125252 | 164560 | CMP           | #125252,ANS2 | :CHECK ANS2                  |
| 014224 | 001401 |        |        | BEQ           | .+4          | :BRANCH IF OK                |
| 014226 | 104004 |        |        | HLT+4         |              | :ANS2 NOT EQUAL TO 125252    |
|        |        |        |        |               |              |                              |
| 014230 | 022767 | 125252 | 164550 | CMP           | #125252,ANS3 | :CHECK ANS3                  |
| 014236 | 001401 |        |        | BEQ           | .+4          | :BRANCH IF OK                |
| 014240 | 104004 |        |        | HLT+4         |              | :ANS3 NOT EQUAL TO 125252    |
|        |        |        |        |               |              |                              |
| 014242 | 022767 | 125252 | 164540 | CMP           | #125252,ANS4 | :CHECK ANS4                  |
| 014250 | 001401 |        |        | BEQ           | .+4          | :BRANCH IF OK                |
| 014252 | 104004 |        |        | HLT+4         |              | :ANS4 NOT EQUAL TO 125252    |

\*\*\*\*\*  
:TEST 145: NEG D (NEGATE DOUBLE PERCISION)  
:-(077777,177777,177777,177777) = 177777,177777,177777,177777  
:FPS = 047610, FDST = M6-R7  
:\*\*\*\*\*

|        |        |        |        |               |              |                              |
|--------|--------|--------|--------|---------------|--------------|------------------------------|
| 014254 | 104400 |        |        | SCOPE         |              |                              |
| 014256 | 170127 | 047600 |        | TST145: LDFPS | #047600      | :LOAD FLOATING POINT STATUS  |
| 014262 | 012767 | 077777 | 164512 | MOV           | #077777,ANS1 | : "LOAD" 077777 INTO ANS1    |
| 014270 | 012767 | 177777 | 164506 | MOV           | #177777,ANS2 | : "LOAD" 177777 INTO ANS2    |
| 014276 | 012767 | 177777 | 164502 | MOV           | #177777,ANS3 | : "LOAD" 177777 INTO ANS3    |
| 014304 | 012767 | 177777 | 164476 | MOV           | #177777,ANS4 | : "LOAD" 177777 INTO ANS4    |
| 014312 | 170767 | 164464 |        | FPI145: NEG D | ANS1         | :NEGATE ANS1 THRU ANS4       |
| 014316 | 170200 |        |        | STFPS         | FPS          | :STORE FLOATING POINT STATUS |
| 014320 | 022700 | 047610 |        | CMP           | #047610,FPS  | :CHECK FLOATING POINT STATUS |
| 014324 | 001401 |        |        | BEQ           | .+4          | :BRANCH IF OK                |
| 014326 | 104000 |        |        | HLT           |              | :FPS NOT EQUAL TO 047610     |
|        |        |        |        |               |              |                              |
| 014330 | 022767 | 177777 | 164444 | CMP           | #177777,ANS1 | :CHECK ANS1                  |
| 014336 | 001401 |        |        | BEQ           | .+4          | :BRANCH IF OK                |
| 014340 | 104004 |        |        | HLT+4         |              | :ANS1 NOT EQUAL TO 177777    |

|        |        |        |        |       |              |                           |
|--------|--------|--------|--------|-------|--------------|---------------------------|
| 014342 | 022767 | 177777 | 164434 | CMP   | #177777,ANS2 | :CHECK ANS2               |
| 014350 | 001401 |        |        | BEQ   | +.4          | :BRANCH IF OK             |
| 014352 | 104004 |        |        | HLT+4 |              | :ANS2 NOT EQUAL TO 177777 |
|        |        |        |        |       |              |                           |
| 014354 | 022767 | 177777 | 164424 | CMP   | #177777,ANS3 | :CHECK ANS3               |
| 014362 | 001401 |        |        | BEQ   | +.4          | :BRANCH IF OK             |
| 014364 | 104004 |        |        | HLT+4 |              | :ANS3 NOT EQUAL TO 177777 |
|        |        |        |        |       |              |                           |
| 014366 | 022767 | 177777 | 164414 | CMP   | #177777,ANS4 | :CHECK ANS4               |
| 014374 | 001401 |        |        | BEQ   | +.4          | :BRANCH IF OK             |
| 014376 | 104004 |        |        | HLT+4 |              | :ANS4 NOT EQUAL TO 177777 |

```

*****
:TEST 146:      NEG D (NEGATE DOUBLE PERCISION)
:              -(100000,000000,000000,000000) = 100000,000000,000000,000000
:              FPS = 147614,   FDST = M6-R7
:              FEC = 14,      FEA = FPI146
*****

```

|        |        |        |        |               |              |                                   |
|--------|--------|--------|--------|---------------|--------------|-----------------------------------|
| 014400 | 104400 |        |        | SCOPE         |              |                                   |
| 014402 | 170127 | 047600 |        | TST146: LDFPS | #047600      | :LOAD FLOATING POINT STATUS       |
| 014406 | 012767 | 100000 | 164366 | MOV           | #100000,ANS1 | : "LOAD" 100000 INTO ANS1         |
| 014414 | 012767 | 000000 | 164362 | MOV           | #000000,ANS2 | : "LOAD" 000000 INTO ANS2         |
| 014422 | 012767 | 000000 | 164356 | MOV           | #000000,ANS3 | : "LOAD" 000000 INTO ANS3         |
| 014430 | 012767 | 000000 | 164352 | MOV           | #000000,ANS4 | : "LOAD" 000000 INTO ANS4         |
| 014436 | 170767 | 164340 |        | FPI146: NEG D | ANS1         | :NEGATE ANS1 THRU ANS4            |
| 014442 | 170200 |        |        | STFPS         | FPS          | :STORE FLOATING POINT STATUS      |
| 014444 | 170367 | 164352 |        | STST          | FEC          | :STORE EXCEPTION CODES            |
| 014450 | 022700 | 147614 |        | CMP           | #147614,FPS  | :CHECK FLOATING POINT STATUS      |
| 014454 | 001401 |        |        | BEQ           | +.4          | :BRANCH IF OK                     |
| 014456 | 104000 |        |        | HLT           |              | :FPS NOT EQUAL TO 147614          |
|        |        |        |        |               |              |                                   |
| 014460 | 022767 | 000014 | 164334 | CMP           | #14, FEC     | :CHECK FLOATING EXCEPTION CODE    |
| 014466 | 001401 |        |        | BEQ           | +.4          | :BRANCH IF OK                     |
| 014470 | 104000 |        |        | HLT           |              | :FEC NOT EQUAL TO 14              |
|        |        |        |        |               |              |                                   |
| 014472 | 022767 | 014436 | 164324 | CMP           | #FPI146, FEA | :CHECK FLOATING EXCEPTION ADDRESS |
| 014500 | 001401 |        |        | BEQ           | +.4          | :BRANCH IF OK                     |
| 014502 | 104000 |        |        | HLT           |              | :FEA NOT EQUAL TO FPI146          |
|        |        |        |        |               |              |                                   |
| 014504 | 022767 | 100000 | 164270 | CMP           | #100000,ANS1 | :CHECK ANS1                       |
| 014512 | 001401 |        |        | BEQ           | +.4          | :BRANCH IF OK                     |
| 014514 | 104004 |        |        | HLT+4         |              | :ANS1 NOT EQUAL TO 100000         |
|        |        |        |        |               |              |                                   |
| 014516 | 022767 | 000000 | 164260 | CMP           | #000000,ANS2 | :CHECK ANS2                       |
| 014524 | 001401 |        |        | BEQ           | +.4          | :BRANCH IF OK                     |
| 014526 | 104004 |        |        | HLT+4         |              | :ANS2 NOT EQUAL TO 000000         |
|        |        |        |        |               |              |                                   |
| 014530 | 022767 | 000000 | 164250 | CMP           | #000000,ANS3 | :CHECK ANS3                       |
| 014536 | 001401 |        |        | BEQ           | +.4          | :BRANCH IF OK                     |
| 014540 | 104004 |        |        | HLT+4         |              | :ANS3 NOT EQUAL TO 000000         |
|        |        |        |        |               |              |                                   |
| 014542 | 022767 | 000000 | 164240 | CMP           | #000000,ANS4 | :CHECK ANS4                       |
| 014550 | 001401 |        |        | BEQ           | +.4          | :BRANCH IF OK                     |

014662 104004

HLT+4

:ANS4 NOT EQUAL TO 000000

\*\*\*\*\*  
:TEST 147: NEGQ (NEGATE DOUBLE PRECISION)  
:(000200,000000,000000,000000) = 100200,000000,000000,000000  
:FPS = 047610, FDST = M6-R7  
\*\*\*\*\*

014662 104004  
014663 104004  
014664 104004  
014665 104004  
014666 104004  
014667 104004  
014668 104004  
014669 104004  
014670 104004  
014671 104004  
014672 104004  
014673 104004  
014674 104004  
014675 104004  
014676 104004

000000  
000000  
000000  
000000  
000000  
000000  
000000  
000000  
000000  
000000  
000000  
000000  
000000  
000000  
000000  
000000

TST147: SCOPE  
LDFPS  
MOV #047600  
MOV #000200,ANS1  
MOV #000000,ANS2  
MOV #000000,ANS3  
MOV #000000,ANS4  
FPI147: NEGQ ANS1  
STFPS FPS  
CMP #047610,FPS  
BEQ .+4  
HLT

:LOAD FLOATING POINT STATUS  
:"LOAD" 000200 INTO ANS1  
:"LOAD" 000000 INTO ANS2  
:"LOAD" 000000 INTO ANS3  
:"LOAD" 000000 INTO ANS4  
:NEGATE ANS1 THRU ANS4  
:STORE FLOATING POINT STATUS  
:CHECK FLOATING POINT STATUS  
:BRANCH IF OK  
:FPS NOT EQUAL TO 047610

014630 022767 100200 164144  
014635 001401  
014640 104004

000000  
000000  
000000

CMP #100200,ANS1  
BEQ .+4  
HLT+4

:CHECK ANS1  
:BRANCH IF OK  
:ANS1 NOT EQUAL TO 100200

014642 022767 000000 164134  
014647 001401  
014652 104004

000000  
000000  
000000

CMP #000000,ANS2  
BEQ .+4  
HLT+4

:CHECK ANS2  
:BRANCH IF OK  
:ANS2 NOT EQUAL TO 000000

014654 022767 000000 164124  
014659 001401  
014664 104004

000000  
000000  
000000

CMP #000000,ANS3  
BEQ .+4  
HLT+4

:CHECK ANS3  
:BRANCH IF OK  
:ANS3 NOT EQUAL TO 000000

014666 022767 000000 164114  
014671 001401  
014676 104004

000000  
000000  
000000

CMP #000000,ANS4  
BEQ .+4  
HLT+4

:CHECK ANS4  
:BRANCH IF OK  
:ANS4 NOT EQUAL TO 000000

\*\*\*\*\*  
:TEST 150: NEGQ (NEGATE DOUBLE PRECISION)  
:(100200,000000,000000,000000) = 000200,000000,000000,000000  
:FPS = 047600, FDST = M6-R7  
\*\*\*\*\*

014700 104400  
014702 170127 047600  
014706 012767 100200 164056  
014714 012767 000000 164052  
014722 012767 000000 164056  
014730 012767 000000 164052  
014736 170767 164040  
014742 170200  
014744 022700 047600  
014750 001401  
014752 104000

000000  
000000  
000000  
000000  
000000  
000000  
000000  
000000  
000000  
000000  
000000  
000000  
000000  
000000  
000000

TST150: SCOPE  
LDFPS  
MOV #047600  
MOV #100200,ANS1  
MOV #000000,ANS2  
MOV #000000,ANS3  
MOV #000000,ANS4  
FPI150: NEGQ ANS1  
STFPS FPS  
CMP #047600,FPS  
BEQ .+4  
HLT

:LOAD FLOATING POINT STATUS  
:"LOAD" 100200 INTO ANS1  
:"LOAD" 000000 INTO ANS2  
:"LOAD" 000000 INTO ANS3  
:"LOAD" 000000 INTO ANS4  
:NEGATE ANS1 THRU ANS4  
:STORE FLOATING POINT STATUS  
:CHECK FLOATING POINT STATUS  
:BRANCH IF OK  
:FPS NOT EQUAL TO 047600

```

014754 022767 000200 164020      CMP      #000200,ANS1      :CHECK ANS1
014756 001401      BFO      .+4              :BRANCH IF OK
014758 104004      HLT+4      :ANS1 NOT EQUAL TO 000200

014776 022767 000000 164010      CMP      #000000,ANS2      :CHECK ANS2
014778 001401      BFO      .+4              :BRANCH IF OK
014780 104004      HLT+4      :ANS2 NOT EQUAL TO 000000

015000 022767 000000 164000      CMP      #000000,ANS3      :CHECK ANS3
015002 001401      BFO      .+4              :BRANCH IF OK
015004 104004      HLT+4      :ANS3 NOT EQUAL TO 000000

015016 022767 000000 163770      CMP      #000000,ANS4      :CHECK ANS4
015018 001401      BFO      .+4              :BRANCH IF OK
015020 104004      HLT+4      :ANS4 NOT EQUAL TO 000000

```

```

*****
:TEST 151:      NEGD (NEGATE DOUBLE PERCISION)
:              -(000177.177777.177777.177777) = 000000.000000.000000.000000
:              FPS = 047604,   FOST = M6-R7
*****

```

```

015032 104000      SCOPE
015034 170177      LD FPS      #047600
015036 000177      MOV      #000177,ANS1      :LOAD FLOATING POINT STATUS
015038 177777      MOV      #177777,ANS2      :LOAD 177777 INTO ANS2
015040 177777      MOV      #177777,ANS3      :LOAD 177777 INTO ANS3
015042 177777      MOV      #177777,ANS4      :LOAD 177777 INTO ANS4
015044 170177      NEG      ANS1              :NEGATE ANS1 THRU ANS4
015046 170177      ST FPS      #047604,FPS      :STORE FLOATING POINT STATUS
015048 000177      BFO      .+4              :CHECK FLOATING POINT STATUS
015050 104000      HLT      :FPS NOT EQUAL TO 047604

015100 022767 000000 163674      CMP      #000000,ANS1      :CHECK ANS1
015102 001401      BFO      .+4              :BRANCH IF OK
015104 104004      HLT+4      :ANS1 NOT EQUAL TO 000000

015110 022767 000000 163664      CMP      #000000,ANS2      :CHECK ANS2
015112 001401      BFO      .+4              :BRANCH IF OK
015114 104004      HLT+4      :ANS2 NOT EQUAL TO 000000

015120 022767 000000 163654      CMP      #000000,ANS3      :CHECK ANS3
015122 001401      BFO      .+4              :BRANCH IF OK
015124 104004      HLT+4      :ANS3 NOT EQUAL TO 000000

015130 022767 000000 163644      CMP      #000000,ANS4      :CHECK ANS4
015132 001401      BFO      .+4              :BRANCH IF OK
015134 104004      HLT+4      :ANS4 NOT EQUAL TO 000000

```

```

*****
:TEST 152:      NEGD (NEGATE DOUBLE PERCISION)
:              -(100177.177777.177777.177777) = 100177.177777.177777.177777
:              FPS = 147614,   FOST = M6-R7
*****

```



E06

MAINDEC-11-DOFPH-8  
DOFPH.P11

TEST OF CLRF, CLRD, TSTF, TSTD, ABSF, ABSD, NEGF, NEGD MACY11 27(732) 17-SEP-76 10:45 PAGE 66  
TEST SECTION

```

0100274 001401 BEQ .+4 :BRANCH IF OK
0100276 104000 HLT :FPS NOT EQUAL TO 003604

0100300 022767 000000 163374 CMP #000000,ANS1 :CHECK ANS1
0100302 001401 :BRANCH IF OK
0100304 104004 HLT.+4 :ANS1 NOT EQUAL TO 000000

0100308 022767 000000 163364 CMP #000000,ANS2 :CHECK ANS2
0100310 001401 :BRANCH IF OK
0100312 104004 HLT.+4 :ANS2 NOT EQUAL TO 000000

0100316 022767 000000 163354 CMP #000000,ANS3 :CHECK ANS3
0100318 001401 :BRANCH IF OK
0100320 104004 HLT.+4 :ANS3 NOT EQUAL TO 000000

0100324 022767 000000 163344 CMP #000000,ANS4 :CHECK ANS4
0100326 001401 :BRANCH IF OK
0100328 104004 HLT.+4 :ANS4 NOT EQUAL TO 000000

```

```

*****
:TEST 154: NEGD (NEGATE DOUBLE PRECISION)
:-(000001,100000,100000,100000) = 000000,000000,000000,000000
:FPS = 003604, FDST = M6-R7
*****

```

```

0100332 104400 003600 TST154: SCOPF :LOAD FLOATING POINT STATUS
0100334 01701200 000001 163316 LDTFPS :"LOAD" 000001 INTO ANS1
0100336 0102767 100000 163310 MOV #000001,ANS1 :"LOAD" 100000 INTO ANS2
0100338 0102767 100000 163304 MOV #100000,ANS2 :"LOAD" 100000 INTO ANS3
0100340 0102767 100000 163300 MOV #100000,ANS3 :"LOAD" 100000 INTO ANS4
0100342 0102767 100000 163296 MOV #100000,ANS4 :"LOAD" 100000 INTO ANS4
0100344 170767 163270 FP154: NEGD ANS1 :NEGATE ANS1 THRU ANS4
0100346 170767 STFPS :STORE FLOATING POINT STATUS
0100348 022700 003604 CMP #003604,FPS :CHECK FLOATING POINT STATUS
0100350 001401 BEQ .+4 :BRANCH IF OK
0100352 104000 HLT :FPS NOT EQUAL TO 003604

0100354 022767 000000 163250 CMP #000000,ANS1 :CHECK ANS1
0100356 001401 :BRANCH IF OK
0100358 104004 HLT.+4 :ANS1 NOT EQUAL TO 000000

0100362 022767 000000 163240 CMP #000000,ANS2 :CHECK ANS2
0100364 001401 :BRANCH IF OK
0100366 104004 HLT.+4 :ANS2 NOT EQUAL TO 000000

0100370 022767 000000 163230 CMP #000000,ANS3 :CHECK ANS3
0100372 001401 :BRANCH IF OK
0100374 104004 HLT.+4 :ANS3 NOT EQUAL TO 000000

0100378 022767 000000 163220 CMP #000000,ANS4 :CHECK ANS4
0100380 001401 :BRANCH IF OK
0100382 104004 HLT.+4 :ANS4 NOT EQUAL TO 000000

```

```

*****

```

F06

:TEST 155: NEGD (NEGATE DOUBLE PRECISION)  
:-(140125,052525,052525,052525) = 040125,052525,052525,052525  
:FPS = 047600, FDST = M6-R7  
:\*\*\*\*\*

015674 104400  
015676 170127 047600  
015680 012767 140125 163172  
015684 012767 052525 163166  
015688 012767 052525 163162  
015692 012767 052525 163156  
015696 170767 163144  
015700 170200  
015704 022700 047600  
015708 001401  
015712 104000

TST155: SCOPE  
LDFPS #047600  
MOV #140125,ANS1  
MOV #052525,ANS2  
MOV #052525,ANS3  
MOV #052525,ANS4  
FPI155: NEGD ANS1  
STFPS FPS  
CMP #047600,FPS  
BEQ .+4  
HLT

:LOAD FLOATING POINT STATUS  
:"LOAD" 140125 INTO ANS1  
:"LOAD" 052525 INTO ANS2  
:"LOAD" 052525 INTO ANS3  
:"LOAD" 052525 INTO ANS4  
:NEGATE ANS1 THRU ANS4  
:STORE FLOATING POINT STATUS  
:CHECK FLOATING POINT STATUS  
:BRANCH IF OK  
:FPS NOT EQUAL TO 047600

015650 022767 040125 163124  
015654 001401  
015658 104004

CMP #040125,ANS1  
BEQ .+4  
HLT+4

:CHECK ANS1  
:BRANCH IF OK  
:ANS1 NOT EQUAL TO 040125

015662 022767 052525 163114  
015666 001401  
015670 104004

CMP #052525,ANS2  
BEQ .+4  
HLT+4

:CHECK ANS2  
:BRANCH IF OK  
:ANS2 NOT EQUAL TO 052525

015674 022767 052525 163104  
015678 001401  
015682 104004

CMP #052525,ANS3  
BEQ .+4  
HLT+4

:CHECK ANS3  
:BRANCH IF OK  
:ANS3 NOT EQUAL TO 052525

015706 022767 052525 163074  
015710 001401  
015714 104004

CMP #052525,ANS4  
BEQ .+4  
HLT+4

:CHECK ANS4  
:BRANCH IF OK  
:ANS4 NOT EQUAL TO 052525

:\*\*\*\*\*  
:TEST 156: NEGD (NEGATE DOUBLE PRECISION)  
:-(052525,052525,052525,052525) = 152525,052525,052525,052525  
:FPS = 047610, FDST = M0-ACC  
:\*\*\*\*\*

015720 104400  
015722 000404

SCOPE  
BR TST156

015724 052525 052525 052525  
015728 052525

DAT156: 052525,052525,052525,052525

015734 170127 047600  
015738 172467 177760  
015742 170700  
015746 170200  
015750 022700 047610  
015754 001401  
015758 104000

TST156: LDFPS #047600  
LDD DAT156, ACC  
FPI156: NEGD ACC  
STFPS FPS  
CMP #047610,FPS  
BEQ .+4  
HLT

:LOAD FLOATING POINT STATUS  
:LOAD 052525,052525,052525,052525 INTO ACC  
:NEGATE ACC  
:STORE FLOATING POINT STATUS  
:CHECK FLOATING POINT STATUS  
:BRANCH IF OK  
:FPS NOT EQUAL TO 047610

015760 174067 163016  
015764 022767 152525 163010

STD ACC, ANS1  
CMP #152525,ANS1

:STORE NEGATIVE IN ANS1 THRU ANS4  
:CHECK ANS1

```

015772 001401      BEQ      .+4      :BRANCH IF OK
015774 104004      HLT+4          :ANS1 NOT EQUAL TO 152525

015776 022767 052525 163000    CMP      #052525,ANS2 :CHECK ANS2
015804 001401      BEQ      .+4      :BRANCH IF OK
015806 104004      HLT+4          :ANS2 NOT EQUAL TO 052525

016010 022767 052525 162770    CMP      #052525,ANS3 :CHECK ANS3
016016 001401      BEQ      .+4      :BRANCH IF OK
016020 104004      HLT+4          :ANS3 NOT EQUAL TO 052525

016022 022767 052525 162760    CMP      #052525,ANS4 :CHECK ANS4
016030 001401      BEQ      .+4      :BRANCH IF OK
016032 104004      HLT+4          :ANS4 NOT EQUAL TO 052525

```

```

*****
:TEST 157:      NEGD (NEGATE DOUBLE PRECISION)
:              -(125252,125252,125252,125252) = 025252,125252,125252,125252
:              FPS = 047600,  FDST = MD-AC2
*****

```

```

016034 104400      SCOPE
016036 000404      BR      TST157

016040 125252 125252 125252 125252  DAT157: 125252,125252,125252,125252
016046 125252

016050 170127 047600    TST157: LDFFS    #047600    :LOAD FLOATING POINT STATUS
016054 172667 177760    LDD     DAT157, AC2  :LOAD 125252,125252,125252,125252 INTO AC2
016060 170702  FP1157: NEGD     AC2     :NEGATE AC2
016062 170200  STFFS    FPS       :STORE FLOATING POINT STATUS
016064 022700 047600    CMP     #047600,FPS :CHECK FLOATING POINT STATUS
016070 001401  BEQ     .+4        :BRANCH IF OK
016072 104000  HLT     :FPS NOT EQUAL TO 047600

016074 174267 162702 162674  STD     AC2, ANS1   :STORE NEGATIVE IN ANS1 THRU ANS4
016100 022767 025252 162674  CMP     #025252,ANS1 :CHECK ANS1
016106 001401  BEQ     .+4        :BRANCH IF OK
016110 104004  HLT+4   :ANS1 NOT EQUAL TO 025252

016112 022767 125252 162664  CMP     #125252,ANS2 :CHECK ANS2
016120 001401  BEQ     .+4        :BRANCH IF OK
016122 104004  HLT+4   :ANS2 NOT EQUAL TO 125252

016124 022767 125252 162664  CMP     #125252,ANS3 :CHECK ANS3
016132 001401  BEQ     .+4        :BRANCH IF OK
016134 104004  HLT+4   :ANS3 NOT EQUAL TO 125252

016136 022767 125252 162644  CMP     #125252,ANS4 :CHECK ANS4
016144 001401  BEQ     .+4        :BRANCH IF OK
016146 104004  HLT+4   :ANS4 NOT EQUAL TO 125252

```



# H06

MAINDEC-11-DCFPH-B  
DCFPH.P11

TEST OF CLRF, CLRD, TSTF, TSTD, ABSF, ABSD, NEGF, NEG0 MACY11 27(732) 17-SEP-76 10:45 PAGE 59  
BELL AND SCOPE ROUTINE

|        |        |        |        |         |       |                |                                       |
|--------|--------|--------|--------|---------|-------|----------------|---------------------------------------|
| 016150 | 104400 |        |        | DONE:   | SCOPE |                |                                       |
| 016152 | 032737 | 002000 | 177570 |         | BIT   | #SW10,0#SWR    | :RING THE BELL?                       |
| 016154 | 001005 |        |        |         | BNE   | 1\$            | :NO!                                  |
| 016156 | 012757 | 000207 | 001242 |         | MOV   | #BELL,.TYPE    | :TYPE A BELL                          |
| 016158 | 000004 | 017432 |        |         | TYPE  | -.TYPE         |                                       |
| 016160 | 005046 |        |        | 1\$:    | CLR   | -(6)           | :CLEAR TRACE TRAP                     |
| 016162 | 032737 | 010000 | 177570 |         | BIT   | #SW12,0#SWR    | :RUN WITH TRT?                        |
| 016164 | 001010 |        |        |         | BNE   | 2\$            |                                       |
| 016166 | 005167 | 001222 |        |         | COM   | TRPB           |                                       |
| 016168 | 100005 |        |        |         | BPL   | 2\$            |                                       |
| 016170 | 052716 | 000020 |        |         | BIS   | #20,(6)        | :SET TRACE TRAP                       |
| 016172 | 012746 | 001062 |        |         | MOV   | #BEGIN,-(6)    | :JUMP TO START OF TEST                |
| 016174 | 000412 |        |        |         | BR    | YESRT          |                                       |
| 016176 | 012746 | 001062 |        | 2\$:    | MOV   | #BEGIN,-(6)    | :JUMP TO START OF TEST                |
| 016178 | 012700 | 000042 |        |         | MOV   | P#42,R0        | :GET MONITOR ADDRESS                  |
| 016180 | 001404 |        |        |         | BEQ   | 3\$            | :IF NONE                              |
| 016182 | 004710 |        |        |         | JSR   | 7,(0)          | :GO TO MONITOR                        |
| 016184 | 000240 |        |        |         | NOP   |                |                                       |
| 016186 | 000240 |        |        |         | NOP   |                |                                       |
| 016188 | 000240 |        |        |         | NOP   |                |                                       |
| 016190 | 000002 |        |        | 3\$:    | RTI   |                |                                       |
| 016192 | 000002 |        |        | YESRT:  | RTI   |                | :RETURN TO PROGRAM FROM TRAP          |
| 016254 | 032737 | 000400 | 177570 | .EMT:   | BIT   | #SW08,0#SWR    | :KILL LDUB OR LOOP ON SPEC. TEST      |
| 016256 | 001404 |        |        |         | BEQ   | 1\$            |                                       |
| 016258 | 123767 | 177570 | 162506 |         | CMPS  | 0#SWR,ICNT     | :ON RIGHT TEST? *SW7-0*               |
| 016260 | 001437 |        |        |         | BEQ   | OVER           |                                       |
| 016262 | 113703 | 177570 |        | 1\$:    | MOV8  | 0#SWR,R3       | :GET US BITS                          |
| 016264 | 170003 |        |        |         | LDUB  |                |                                       |
| 016266 | 032737 | 040000 | 177570 |         | BIT   | #SW14,0#SWR    | :LOOP ON TEST                         |
| 016268 | 001026 |        |        |         | BNE   | KIT            |                                       |
| 016270 | 032737 | 004000 | 177570 |         | BIT   | #SW11,0#SWR    | :KILL ITERATIONS                      |
| 016272 | 001012 |        |        |         | BNE   | SAVLAD         |                                       |
| 016274 | 105767 | 162453 |        |         | TSTB  | ICNT+1         |                                       |
| 016276 | 001404 |        |        |         | BEQ   | 2\$            | :BRANCH IF FIRST                      |
| 016278 | 126767 | 001106 | 162443 |         | CMPS  | TIMES,ICNT+1   | :DONE?                                |
| 016280 | 001013 |        |        |         | BNE   | KIT            | :BRANCH IF NOT                        |
| 016282 | 112767 | 000001 | 162433 | 2\$:    | MOV8  | #1,ICNT+1      | :FIRST ITERATION                      |
| 016284 | 105267 | 162426 |        | SAVLAD: | INCB  | ICNT           | :COUNT TEST NUMBERS                   |
| 016286 | 011667 | 001060 |        |         | MOV   | (6) LAD        | :SAVE LOOP ADDRESS                    |
| 016288 | 016737 | 162416 | 177570 |         | MOV   | ICNT,0#DISPLAY | :DISPLAY TEST NO. AND ITERATION COUNT |
| 016290 | 000002 |        |        |         | RTI   |                | :RETURN                               |
| 016366 | 105267 | 162407 |        | KIT:    | INCB  | ICNT+1         |                                       |
| 016368 | 016737 | 162402 | 177570 | OVER:   | MOV   | ICNT,0#DISPLAY | :SET UP DISPLAY                       |
| 016370 | 005767 | 001032 |        |         | LAD   |                | :FIRST ONE?                           |
| 016372 | 001760 |        |        |         | BEQ   | SAVLAD         |                                       |
| 016374 | 016716 | 001024 |        |         | MOV   | LAD,(6)        | :FUDGE RETURN ADDRESS                 |
| 016376 | 000002 |        |        |         | RTI   |                | :FIXES PS                             |

|        |        |        |        |       |      |             |                                      |
|--------|--------|--------|--------|-------|------|-------------|--------------------------------------|
| 016414 | 032737 | 002000 | 177570 | .TRP: | BIT  | #SW10,0#SWR | :BELL ON ERROR?                      |
| 016432 | 001405 |        |        |       | BEQ  | 1\$         | :NO - SKIP                           |
| 016434 | 012767 | 000207 | 001000 |       | MOV  | #BELL,TYPE  | :TYPE A BELL                         |
| 016432 | 000004 | 017432 |        |       | TYPE | .TYPE       |                                      |
| 016436 | 004767 | 000406 |        | 1\$:  | JSR  | PC,ERROR    | :COUNT THE NUMBER OF ERRORS          |
| 016442 | 010446 |        |        |       | MOV  | R4,-(6)     |                                      |
| 016444 | 032737 | 020000 | 177570 |       | BIT  | #SW13,0#SWR | :SKIP TYPEOUT IF SET                 |
| 016452 | 001072 |        |        |       | BNE  | 4\$         |                                      |
| 016454 | 000004 | 017400 |        |       | TYPE | .RETURN     |                                      |
| 016460 | 016546 | 000002 |        |       | MOV  | 2(6),-(6)   | :PUT ADDRESS OF INSTRUCTION ON STACK |
| 016464 | 162716 | 000002 |        |       | SUB  | #2,(6)      |                                      |
| 016470 | 011605 |        |        |       | MOV  | (5),TTY     | :TYPE (6) IN OCTAL                   |
| 016472 | 004767 | 000212 |        |       | JSR  | %7,PRINTR   | :TYPE LEADING ZERO'S                 |
| 016476 | 000004 | 017406 |        |       | TYPE | .SPACE+3    |                                      |
| 016502 | 010005 |        |        |       | MOV  | R0,TTY      | :TYPE R0 IN OCTAL                    |
| 016504 | 004767 | 000200 |        |       | JSR  | %7,PRINTR   | :TYPE LEADING ZERO'S                 |
| 016510 | 000004 | 017407 |        |       | TYPE | .SPACE+4    |                                      |
| 016514 | 012703 | 001002 |        |       | MOV  | #ANS1,R3    | :ADDRESS OF DATA                     |
| 016520 | 113604 |        |        |       | MOVB | 0(6)+,R4    | :AMOUNT OF DATA IN TABLE             |
| 016522 | 001426 |        |        |       | BEQ  | 2\$         |                                      |
| 016524 | 100016 |        |        |       | BPL  | 2\$         | :TYPE STACK?                         |
| 016526 | 016667 | 000006 | 162246 |       | MOV  | 6(6),ANS1   |                                      |
| 016534 | 016667 | 000010 | 162242 |       | MOV  | 10(6),ANS2  |                                      |
| 016542 | 016667 | 000012 | 162236 |       | MOV  | 12(6),ANS3  |                                      |
| 016550 | 016667 | 000014 | 162232 |       | MOV  | 14(6),ANS4  |                                      |
| 016556 | 042704 | 177600 |        |       | BIC  | #177600,R4  | :CLEAR SIGN                          |
| 016562 | 000004 | 017407 |        | 2\$:  | TYPE | .SPACE+4    |                                      |
| 016566 | 012305 |        |        |       | MOV  | (3)+,TTY    | :TYPE (3)+ IN OCTAL                  |
| 016570 | 004767 | 000114 |        |       | JSR  | %7,PRINTR   | :TYPE LEADING ZERO'S                 |
| 016574 | 005304 |        |        |       | DEC  | R4          |                                      |
| 016576 | 001371 |        |        |       | BNE  | 2\$         |                                      |
| 016600 | 005700 |        |        | 3\$:  | TST  | FPS         |                                      |
| 016602 | 100016 |        |        |       | BPL  | 4\$         |                                      |
| 016604 | 000004 | 017403 |        |       | TYPE | .SPACE      |                                      |
| 016610 | 170367 | 162206 |        |       | STST | FEC         |                                      |
| 016614 | 016705 | 162202 |        |       | MOV  | FEC,TTY     | :TYPE FEC IN OCTAL                   |
| 016620 | 004767 | 000064 |        |       | JSR  | %7,PRINTR   | :TYPE LEADING ZERO'S                 |
| 016624 | 000004 | 017406 |        |       | TYPE | .SPACE+3    |                                      |
| 016630 | 016705 | 162170 |        |       | MOV  | FEA,TTY     | :TYPE FEA IN OCTAL                   |
| 016634 | 004767 | 000050 |        |       | JSR  | %7,PRINTR   | :TYPE LEADING ZERO'S                 |
| 016640 | 012604 |        |        | 4\$:  | MOV  | (6)+,R4     |                                      |
| 016642 | 005737 | 177570 |        |       | TST  | 0#SWR       | :HALT ON ERROR                       |
| 016646 | 100001 |        |        |       | BPL  | .+4         | :SKIP IF CONTINUE                    |
| 016650 | 000000 |        |        |       | HALT |             | :HALT ON ERROR!                      |
| 016652 | 032737 | 001000 | 177570 |       | BIT  | #SW09,0#SWR | :CHECK FOR INHIBIT LOOP ON ERROR     |
| 016660 | 001001 |        |        |       | BNE  | .+4         | :SKIP IF LOOP ON ERROR               |
| 016662 | 000002 |        |        |       | RTI  |             |                                      |
| 016664 | 105067 | 162111 |        |       | CLRB | ICNT+1      |                                      |
| 016670 | 032737 | 000400 | 177570 |       | BIT  | #SW08,0#SWR | :CHECK FOR LOAD MICROBREAK           |
| 016676 | 001233 |        |        |       | BNE  | KIT         | :BRANCH IF NOT                       |
| 016700 | 113703 | 177570 |        |       | MOVB | 0#SWR,R3    | :PUT MICROBREAK ADDRESS IN R3        |
| 016704 | 170003 |        |        |       | LDUB |             | :LOAD MICROBREAK                     |
| 016706 | 000627 |        |        |       | BR   | KIT         | :LOOP ON TEST UNTIL NO ERRORS        |

```

016710 112767 000001 000130 PRINTR: MOVB #1,A4$ ;SET ZERO FILL SWITCH
016716 000402 BR .+6
016720 005067 000122 PRINTS: CLR A4$ ;SUPRESS LEADING ZERO'S
016724 112767 177772 000115 MOVB #-6,A4$+1 ;SET COUNT
016732 010446 MOV R4,-(6) ;SAVE R4
016734 012704 017036 MOV #3$,R4 ;SET POINTER TO FIRST ASCII CHAR.
016740 105014 CLRB (4) ;CLEAR FIRST BYTE
016742 000405 BR 2$ ;ROTATE FIRST BIT
016744 105014 1$: CLRB (4) ;CLEAR BYTE OF CHARACTER
016746 006105 ROL TTY ;ROTATE BIT INTO C
016750 106114 ROLB (4) ;PACK IT
016752 006105 ROL TTY ;ROTATE BIT INTO C
016754 106114 ROLB (4) ;PACK IT
016756 006105 2$: ROL TTY ;ROTATE BIT INTO C
016760 106114 ROLB (4) ;PACK IT
016762 105714 TSTB (4)
016764 001402 BEQ .+6
016766 105267 000054 INCB A4$
016772 105767 000050 TSTB A4$ ;CHECK FILL SWITCH
016776 001402 BEQ .+6
017000 152724 000060 BISB #'0,(4)+ ;MAKE INTO ASCII CHAR
017004 105267 000037 INCB A4$+1
017010 001355 BNE 1$ ;REPEAT
017012 022704 017036 CMP #3$,R4
017016 001002 BNE .+6
017020 112724 000060 MOVB #'0,(4)+
017024 105014 CLRB (4)
017026 000004 017036 TYPE .3$ ;TYPE IT
017032 012604 MOV (6)+,R4 ;RESTORE R4
017034 000207 RTS PC

017036 000004 3$: .BLKW 4
017046 000000 A4$: 0

017050 005267 000364 ERROR: INC ERRORS ;COUNT ERRORS
017054 132737 000001 000041 BITB #1,2#41 ;AUTO MODE?
017062 001412 BEQ 1$ ;NO!
017064 022767 000010 000346 CMP #10,ERRORS ;TOO MANY?
017072 001006 BNE 1$ ;NOT YET
017074 013700 000042 MOV 2#42,R0 ;GET ADDRESS
017100 001403 BEQ 1$ ;FORGET IT IF ZERO
017102 005037 000042 CLR 2#42 ;ZAP 42
017106 004710 JSR PC,(0) ;CALL THE MONITOR
017110 000207 1$: RTS PC ;RETURN

```

# K06

MAINDEC-11-DCFPH-B  
DCFPH.P11

TEST OF CLRF, CLRD, TSTF, TSTD, ABSF, ABSD, NEGF, NEGQ, MACY11 27(732) 17-SEP-76 10:45 PAGE 72  
POWER DOWN AND UP ROUTINES

```

017112 012777 017306 000306 POWDWN: MOV #ILLUP, 3UPVEC ;SET FOR FAST UP
017120 012777 000340 000302 MOV #340, 3UPVEC+2 ;PRIO:7
017126 170246 STFPS -(6) ;GET THE FPS
017130 170011 SETD ;
017132 174046 STD ACO, -(6) ;SAVE AC'S
017134 174146 STD AC1, -(6)
017136 174246 STD AC2, -(6)
017140 174346 STD AC3, -(6)
017142 172404 LDD AC4, ACO
017144 174046 STD ACO, -(6)
017146 172405 LDD AC5, ACO
017150 174046 STD ACO, -(6)
017152 010046 MOV RO, -(6) ;SAVE REGISTERS
017154 010146 MOV R1, -(6)
017156 010246 MOV R2, -(6)
017160 010346 MOV R3, -(6)
017162 010446 MOV R4, -(6)
017164 010546 MOV R5, -(6)
017166 010667 000220 000226 MOV SP, SAVE6 ;SAVE SP
017172 012777 017202 000226 MOV #POWUP, 3UPVEC ;SET UP VECTOR
017200 000000 HALT

017202 016706 000204 POWUP: MOV SAVE6, SP ;GET SP
017206 005001 CLR R1 ;WAIT LOOP FOR THE TTY
017210 005201 1$: INC R1
017212 001376 BNE 1$
017214 012605 MOV (6)+, R5 ;GET THE REGISTERS
017216 012604 MOV (6)+, R4
017220 012603 MOV (6)+, R3
017222 012602 MOV (6)+, R2
017224 012601 MOV (6)+, R1
017226 012600 MOV (6)+, RO
017230 170011 SETD ;
017232 172426 LDD (6)+, ACO ;RESTORE THE AC'S
017234 174005 STD ACO, AC5
017236 172426 LDD (6)+, ACO
017240 174004 STD ACO, AC4
017242 172726 LDD (6)+, AC3
017244 172626 LDD (6)+, AC2
017246 172526 LDD (6)+, AC1
017250 172426 LDD (6)+, ACO
017252 170126 LDFPS (6)+ ;RESTORE FPS
017254 012777 017112 000140 MOV #POWDWN, 3DWNVEC ;SET UP THE POWER DOWN VECTOR
017262 012777 000340 000134 MOV #340, 3DWNVEC+2
017270 000004 017274 TYPE ..+2 ;.ASCIZ <15><12>"POWER"
017304 000002 RTI

017306 000000 ILLUP: HALT ;THE POWER UP SEQUENCE WAS STARTED
017310 00077E BR .-2 ; BEFORE THE POWER DOWN WAS COMPLETE

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# L06

MAINDEC-11-DCFPH-B  
DCFPH.P11

TEST OF CLRF, CLRD, TSTF, TSTD, ABSF, ABSD, NEGF, NEGD MACY11 27(732) 17-SEP-76 10:45 PAGE 73  
TYPE ROUTINE AND DATA AREA

```

017312 010546          .IOT:  MOV      TTY, -(6)          ;SAVE TTY
017314 017605 000002          MOV      @2(6), TTY      ;GET ADDRESS TO BE TYPED
017320 105715          1$:   TSTB   (TTY)          ;TERMINATOR?
017322 001406          BEQ     2$              ;
017324 112537 177566          MOVB   (TTY)+, @#177566 ;LOAD AND TYPE THE CHARACTER
017330 105737 177564          TSTB   @#177564        ;IS THE PRINTER READY
017334 100375          BPL     -4              ;
017336 000770          BR     1$              ;GET THE NEXT CHARACTER
017340 017646 000002          2$:   MOV      @2(6), -(6) ;GET ADDRESS TO BE TYPED
017344 062766 000002 000004          ADD      #2, 4(6)       ;ADD 2 TO THE ADDRESS
017352 022666 000002          CMP      (6)+, 2(6)     ;IS IT .+2?
017356 001006          BNE     3$              ;NO
017358 062705 000002          ADD      #2, TTY        ;ADD 2 TO THE ADDRESS
017364 042705 000001          BIC     #1, TTY        ;BACK UP TO AN EVEN BYTE
017370 010566 000002          MOV      TTY, 2(6)     ;RESTORE ADDRESS
017374 012605          3$:   MOV      (6)+, TTY    ;RESTORE TTY
017376 000002          RTI                    ;RETURN

017400 005015 000          RETURN: .ASCIZ <15><12> ;RETURN AND LINEFEED
017403 015 020012 020040 SPACE:  .ASCIZ <15><12>" " ;RETURN AND 3 SPACES
017410 000

017412 017412          .EVEN
017412 000000          SAVE6: 0
017414 172160          FPTADR: 172160          ;FLOATING POINT ADDRESS ON THE 11/20
017416 000244 000246          FPVECT: 244, 246      ;FLOATING POINT VECTOR ADDRESS
017422 000024 000026          DWNVEC: 24, 26       ;POWER DOWN VECTOR ADDRESS
017426 000024 000026          UPVEC:  24, 26       ;POWER UP VECTOR ADDRESS
017432 000000          .TYPE: 0
017434 000000          TRPB:  0
017436 000000          LAD:   0              ;LOOP ADDRESS
017440 000000          ERRORS: 0             ;ERROR COUNT
017442 000377          TIMES: 377           ;ITERATION COUNT
000001          .END

```

M06

|      |          |       |       |       |       |       |       |       |       |       |       |       |       |       |
|------|----------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| AC0  | =%000000 | 391#  | 640*  | 641*  | 647   | 668*  | 669*  | 675   | 969*  | 969*  | 975   | 3109* | 3110* | 3116  |
| AC1  | =%000001 | 3643* | 3644* | 3650  | 3856  | 3960* | 3861  | 3862* | 3863  | 3885* | 3886  | 3887* | 3888  | 3892* |
| AC2  | =%000002 | 392#  | 931*  | 932*  | 938   | 1650* | 1651  | 1657  | 1688* | 1689  | 1695  | 2664* | 2665* | 2671  |
| AC3  | =%000003 | 2702* | 2703* | 2709  | 3857  | 3891* |       |       |       |       |       |       |       |       |
| AC4  | =%000004 | 393#  | 2095* | 2096* | 2102  | 2124* | 2125* | 2131  | 3681* | 3682* | 3688  | 3858  | 3890* |       |
| AC5  | =%000005 | 394#  | 1291* | 1292  | 1298  | 1320* | 1321  | 1327  | 3138* | 3139* | 3145  | 3859  | 3889* |       |
| ANS1 | 001002   | 395#  | 3860  | 3888* |       |       |       |       |       |       |       |       |       |       |
|      |          | 396#  | 3862  | 3886* |       |       |       |       |       |       |       |       |       |       |
|      |          | 425#  | 472*  | 474*  | 480   | 500*  | 502*  | 508   | 528*  | 530*  | 536   | 556*  | 558*  | 564   |
|      |          | 584*  | 586*  | 592   | 612*  | 614*  | 620   | 647*  | 648   | 675*  | 676   | 697*  | 701*  | 707   |
|      |          | 736*  | 740*  | 746   | 775*  | 779*  | 785   | 814*  | 818*  | 824   | 853*  | 857*  | 863   | 892*  |
|      |          | 896*  | 902   | 938*  | 939   | 975*  | 976   | 1298* | 1299  | 1327* | 1328  | 1657* | 1658  | 1695* |
|      |          | 1696  | 1721* | 1723* | 1729  | 1746* | 1748* | 1754  | 1771* | 1773* | 1779  | 1796* | 1798* | 1804  |
|      |          | 1821* | 1823* | 1829  | 1847* | 1849* | 1864  | 1881* | 1883* | 1889  | 1906* | 1908* | 1914  | 1931* |
|      |          | 1933* | 1939  | 1957* | 1959* | 1974  | 1991* | 1993* | 1999  | 2016* | 2018* | 2024  | 2041* | 2043* |
|      |          | 2049  | 2066* | 2068* | 2074  | 2102* | 2103  | 2131* | 2132  | 2149* | 2153* | 2159  | 2184* | 2188* |
|      |          | 2194  | 2219* | 2223* | 2229  | 2254* | 2258* | 2264  | 2289* | 2293* | 2299  | 2325* | 2329* | 2344  |
|      |          | 2369* | 2373* | 2379  | 2404* | 2408* | 2414  | 2439* | 2443* | 2449  | 2475* | 2479* | 2494  | 2519* |
|      |          | 2523* | 2529  | 2554* | 2558* | 2564  | 2589* | 2593* | 2599  | 2624* | 2628* | 2634  | 2671* | 2672  |
|      |          | 2709* | 2710  | 2735* | 2737* | 2743  | 2760* | 2762* | 2768  | 2785* | 2787* | 2793  | 2810* | 2812* |
|      |          | 2818  | 2835* | 2837* | 2843  | 2861* | 2863* | 2878  | 2895* | 2897* | 2903  | 2920* | 2922* | 2928  |
|      |          | 2945* | 2947* | 2953  | 2971* | 2973* | 2988  | 3005* | 3007* | 3013  | 3030* | 3032* | 3038  | 3055* |
|      |          | 3057* | 3063  | 3080* | 3082* | 3088  | 3116* | 3117  | 3145* | 3146  | 3163* | 3167* | 3173  | 3198* |
|      |          | 3202* | 3208  | 3233* | 3237* | 3243  | 3268* | 3272* | 3278  | 3303* | 3307* | 3313  | 3339* | 3343* |
|      |          | 3358  | 3383* | 3387* | 3393  | 3418* | 3422* | 3428  | 3453* | 3457* | 3463  | 3489* | 3493* | 3509  |
|      |          | 3533* | 3537* | 3543  | 3568* | 3572* | 3578  | 3603* | 3607* | 3613  | 3650* | 3651  | 3682* | 3689  |
|      |          | 3772  | 3776* |       |       |       |       |       |       |       |       |       |       |       |
| ANS2 | 001004   | 426#  | 473*  | 484   | 501*  | 512   | 529*  | 540   | 557*  | 568   | 585*  | 596   | 613*  | 624   |
|      |          | 652   | 680   | 698*  | 711   | 737*  | 750   | 776*  | 789   | 815*  | 828   | 854*  | 867   | 893*  |
|      |          | 906   | 943   | 980   | 1303  | 1332  | 1662  | 1700  | 1722* | 1733  | 1747* | 1758  | 1772* | 1783  |
|      |          | 1797* | 1808  | 1822* | 1833  | 1848* | 1868  | 1882* | 1893  | 1907* | 1918  | 1932* | 1943  | 1958* |
|      |          | 1978  | 1992* | 2003  | 2017* | 2028  | 2042* | 2053  | 2067* | 2078  | 2107  | 2136  | 2150* | 2163  |
|      |          | 2185* | 2198  | 2220* | 2233  | 2255* | 2268  | 2290* | 2303  | 2326* | 2348  | 2370* | 2383  | 2405* |
|      |          | 2418  | 2440* | 2453  | 2476* | 2498  | 2520* | 2533  | 2555* | 2568  | 2590* | 2603  | 2625* | 2638  |
|      |          | 2676  | 2714  | 2736* | 2747  | 2761* | 2772  | 2786* | 2797  | 2811* | 2822  | 2836* | 2847  | 2862* |
|      |          | 2882  | 2896* | 2907  | 2921* | 2932  | 2946* | 2957  | 2972* | 2992  | 3006* | 3017  | 3031* | 3042  |
|      |          | 3056* | 3067  | 3081* | 3092  | 3121  | 3150  | 3164* | 3177  | 3199* | 3212  | 3234* | 3247  | 3269* |
|      |          | 3282  | 3304* | 3317  | 3340* | 3362  | 3384* | 3397  | 3419* | 3432  | 3454* | 3467  | 3490* | 3512  |
|      |          | 3534* | 3547  | 3569* | 3582  | 3604* | 3617  | 3655  | 3693  | 3777* |       |       |       |       |
| ANS3 | 001006   | 427#  | 699*  | 715   | 738*  | 754   | 777*  | 793   | 816*  | 832   | 855*  | 871   | 894*  | 910   |
|      |          | 947   | 984   | 1666  | 1704  | 2151* | 2167  | 2186* | 2202  | 2221* | 2237  | 2256* | 2272  | 2291* |
|      |          | 2307  | 2327* | 2352  | 2371* | 2387  | 2406* | 2422  | 2441* | 2457  | 2477* | 2502  | 2521* | 2537  |
|      |          | 2556* | 2572  | 2591* | 2607  | 2626* | 2642  | 2680  | 2718  | 3165* | 3181  | 3200* | 3216  | 3235* |
|      |          | 3251  | 3270* | 3286  | 3305* | 3321  | 3341* | 3366  | 3385* | 3401  | 3420* | 3436  | 3455* | 3471  |
|      |          | 3491* | 3516  | 3535* | 3551  | 3570* | 3586  | 3605* | 3621  | 3659  | 3697  | 3778* |       |       |
| ANS4 | 001010   | 428#  | 700*  | 719   | 739*  | 758   | 778*  | 797   | 817*  | 836   | 856*  | 875   | 895*  | 914   |
|      |          | 951   | 988   | 1670  | 1708  | 2152* | 2171  | 2187* | 2206  | 2222* | 2241  | 2257* | 2276  | 2292* |
|      |          | 2311  | 2328* | 2356  | 2372* | 2391  | 2407* | 2426  | 2442* | 2461  | 2478* | 2506  | 2522* | 2541  |
|      |          | 2557* | 2576  | 2592* | 2611  | 2627* | 2646  | 2684  | 2722  | 3166* | 3185  | 3201* | 3220  | 3236* |
|      |          | 3255  | 3271* | 3290  | 3306* | 3325  | 3342* | 3370  | 3386* | 3405  | 3421* | 3440  | 3456* | 3475  |
|      |          | 3492* | 3520  | 3536* | 3555  | 3571* | 3590  | 3606* | 3625  | 3663  | 3701  | 3779* |       |       |
| ANS5 | 001012   | 429#  |       |       |       |       |       |       |       |       |       |       |       |       |
| ANS6 | 001014   | 430#  |       |       |       |       |       |       |       |       |       |       |       |       |
| ANS7 | 001016   | 431#  |       |       |       |       |       |       |       |       |       |       |       |       |
| ANS8 | 001020   | 432#  |       |       |       |       |       |       |       |       |       |       |       |       |
| ANS  | 017046   | 3808* | 3810* | 3811* | 3825* | 3826  | 3829* | 3840* |       |       |       |       |       |       |

|        |        |       |      |      |      |     |
|--------|--------|-------|------|------|------|-----|
| BEG    | 001026 | 415   | 436# |      |      |     |
| BEGIN  | 001062 | 440   | 445# | 3717 | 3719 |     |
| BELL = | 000207 | 380#  | 3709 | 3757 |      |     |
| DAT1   | 001200 | 469#  | 472  | 473  |      |     |
| DAT10  | 001764 | 665#  | 668  |      |      |     |
| DAT100 | 007134 | 2121# | 2124 |      |      |     |
| DAT11  | 002044 | 693#  | 697  | 698  | 699  | 700 |
| DAT117 | 011530 | 2660# | 2664 |      |      |     |
| DAT12  | 002172 | 732#  | 736  | 737  | 738  | 739 |
| DAT120 | 011644 | 2698# | 2702 |      |      |     |
| DAT13  | 002320 | 771#  | 775  | 776  | 777  | 778 |
| DAT137 | 013370 | 3106# | 3109 |      |      |     |
| DAT14  | 002446 | 810#  | 814  | 815  | 816  | 817 |
| DAT140 | 013454 | 3135# | 3138 |      |      |     |
| DAT15  | 002574 | 849#  | 853  | 854  | 855  | 856 |
| DAT156 | 015724 | 3639# | 3643 |      |      |     |
| DAT157 | 016040 | 3677# | 3691 |      |      |     |
| DAT16  | 002722 | 888#  | 892  | 893  | 894  | 895 |
| DAT17  | 003050 | 927#  | 931  |      |      |     |
| DAT2   | 001266 | 497#  | 500  | 501  |      |     |
| DAT20  | 003154 | 964#  | 968  |      |      |     |
| DAT21  | 003260 | 1002# | 1005 |      |      |     |
| DAT22  | 003312 | 1021# | 1024 |      |      |     |
| DAT23  | 003344 | 1040# | 1043 |      |      |     |
| DAT24  | 003376 | 1059# | 1062 |      |      |     |
| DAT25  | 003430 | 1078# | 1081 |      |      |     |
| DAT26  | 003462 | 1098# | 1101 |      |      |     |
| DAT27  | 003544 | 1126# | 1129 |      |      |     |
| DAT3   | 001354 | 525#  | 528  | 529  |      |     |
| DAT30  | 003576 | 1145# | 1148 |      |      |     |
| DAT31  | 003630 | 1164# | 1167 |      |      |     |
| DAT32  | 003662 | 1184# | 1187 |      |      |     |
| DAT33  | 003744 | 1212# | 1215 |      |      |     |
| DAT34  | 003776 | 1231# | 1234 |      |      |     |
| DAT35  | 004030 | 1250# | 1253 |      |      |     |
| DAT36  | 004062 | 1269# | 1272 |      |      |     |
| DAT37  | 004114 | 1288# | 1291 |      |      |     |
| DAT4   | 001442 | 553#  | 556  | 557  |      |     |
| DAT40  | 004200 | 1317# | 1320 |      |      |     |
| DAT41  | 004264 | 1346# | 1350 |      |      |     |
| DAT42  | 004322 | 1366# | 1370 |      |      |     |
| DAT43  | 004360 | 1386# | 1390 |      |      |     |
| DAT44  | 004416 | 1406# | 1410 |      |      |     |
| DAT45  | 004454 | 1426# | 1430 |      |      |     |
| DAT46  | 004512 | 1447# | 1451 |      |      |     |
| DAT47  | 004600 | 1476# | 1480 |      |      |     |
| DAT5   | 001530 | 581#  | 584  | 585  |      |     |
| DAT50  | 004636 | 1496# | 1500 |      |      |     |
| DAT51  | 004674 | 1516# | 1520 |      |      |     |
| DAT52  | 004732 | 1537# | 1541 |      |      |     |
| DAT53  | 005020 | 1566# | 1570 |      |      |     |
| DAT54  | 005056 | 1586# | 1590 |      |      |     |
| DAT55  | 005114 | 1606# | 1610 |      |      |     |
| DAT56  | 005152 | 1626# | 1630 |      |      |     |
| DAT57  | 005210 | 1646# | 1650 |      |      |     |
| DATE   | 001616 | 609#  | 612  | 613  |      |     |















|       |       |       |       |       |      |       |      |      |
|-------|-------|-------|-------|-------|------|-------|------|------|
| 3790* | 3793* | 3817* | 3819* | 3821* | 3901 | 3902* | 3903 | 3905 |
| 3768  | 3771  | 3781  | 3788  | 3792  | 3835 | 3896  |      |      |
| 3757* | 3758  | 3828* |       |       |      |       |      |      |

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| CLRF | CLRD | TSTF | TSTD | ABSF | ABSD | NEGF | NEG0 | MACY11 | 27(732) | 17-SEP-76 | 10:45 | PAGE | 95 |
|------|------|------|------|------|------|------|------|--------|---------|-----------|-------|------|----|
| 3766 | 3769 | 3782 | 3790 | 3793 |      |      |      |        |         |           |       |      |    |
| 503  | 531  | 559  | 587  | 615  | 642  | 670  | 702  | 741    | 780     | 819       | 858   | 897  |    |
| 1006 | 1035 | 1044 | 1053 | 1082 | 1102 | 1130 | 1149 | 1168   | 1188    | 1216      | 1235  | 1254 |    |
| 1333 | 1351 | 1371 | 1391 | 1411 | 1431 | 1452 | 1481 | 1501   | 1521    | 1542      | 1571  | 1591 |    |
| 1660 | 1724 | 1749 | 1774 | 1799 | 1824 | 1850 | 1884 | 1904   | 1939    | 1964      | 1990  | 2014 |    |
| 2097 | 2125 | 2154 | 2189 | 2224 | 2259 | 2289 | 2324 | 2330   | 2374    | 2409      | 2444  | 2480 |    |
| 2629 | 2666 | 2704 | 2738 | 2763 | 2788 | 2813 | 2838 | 2864   | 2890    | 2916      | 2942  | 2968 |    |
| 3059 | 3083 | 3111 | 3140 | 3168 | 3203 | 3238 | 3273 | 3308   | 3344    | 3380      | 3416  | 3452 |    |
| 3573 | 3608 | 3645 | 3683 |      |      |      |      |        |         |           |       |      |    |
| 2210 | 2245 | 2280 | 2315 | 2360 | 2395 | 2430 | 2465 | 2510   | 2545    | 2580      | 2615  |      |    |
| 1762 | 1787 | 1812 | 1837 | 1872 | 1897 | 1922 | 1947 | 1982   | 2007    | 2032      | 2057  |      |    |
| 762  | 801  | 840  | 879  |      |      |      |      |        |         |           |       |      |    |
| 544  | 572  | 600  |      |      |      |      |      |        |         |           |       |      |    |
| 3224 | 3259 | 3294 | 3329 | 3374 | 3409 | 3444 | 3479 | 3524   | 3559    | 3594      |       |      |    |
| 2776 | 2801 | 2826 | 2851 | 2886 | 2911 | 2936 | 2961 | 2996   | 3021    | 3046      | 3071  |      |    |
| 1376 | 1396 | 1416 | 1436 | 1466 | 1486 | 1506 | 1526 | 1556   | 1576    | 1596      | 1616  |      |    |
| 1030 | 1049 | 1068 | 1087 | 1116 | 1135 | 1154 | 1173 | 1202   | 1221    | 1240      | 1259  |      |    |

# J07

|      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| ABSD | 2153 | 2188 | 2223 | 2258 | 2293 | 2329 | 2373 | 2408 | 2443 | 2479 | 2523 | 2558 | 2593 | 2628 | 2665 |
| ABSF | 1723 | 1748 | 1773 | 1798 | 1823 | 1849 | 1883 | 1908 | 1933 | 1959 | 1993 | 2018 | 2043 | 2068 | 2096 |
| ADD  | 3910 | 3913 |      |      |      |      |      |      |      |      |      |      |      |      |      |
| BEQ  | 477  | 481  | 485  | 505  | 509  | 513  | 533  | 537  | 541  | 561  | 565  | 569  | 589  | 593  | 597  |
|      | 617  | 621  | 625  | 644  | 649  | 653  | 672  | 677  | 681  | 704  | 708  | 712  | 716  | 720  | 743  |
|      | 747  | 751  | 755  | 759  | 782  | 786  | 790  | 794  | 798  | 821  | 825  | 829  | 833  | 837  | 860  |
|      | 864  | 868  | 872  | 876  | 899  | 903  | 907  | 911  | 915  | 935  | 940  | 944  | 948  | 952  | 972  |
|      | 977  | 981  | 985  | 989  | 1008 | 1027 | 1046 | 1065 | 1084 | 1105 | 1109 | 1113 | 1132 | 1151 | 1170 |
|      | 1191 | 1195 | 1199 | 1218 | 1237 | 1256 | 1275 | 1295 | 1300 | 1304 | 1324 | 1329 | 1333 | 1353 | 1373 |
|      | 1393 | 1412 | 1433 | 1455 | 1459 | 1463 | 1483 | 1503 | 1523 | 1545 | 1549 | 1553 | 1573 | 1593 | 1613 |
|      | 1633 | 1654 | 1659 | 1662 | 1667 | 1671 | 1692 | 1697 | 1701 | 1705 | 1709 | 1726 | 1730 | 1734 | 1751 |
|      | 1755 | 1759 | 1776 | 1780 | 1784 | 1801 | 1805 | 1809 | 1826 | 1830 | 1834 | 1853 | 1857 | 1861 | 1865 |
|      | 1869 | 1886 | 1890 | 1894 | 1911 | 1915 | 1919 | 1936 | 1940 | 1944 | 1962 | 1967 | 1971 | 1975 | 1979 |
|      | 1996 | 2000 | 2004 | 2021 | 2025 | 2029 | 2046 | 2050 | 2054 | 2071 | 2075 | 2079 | 2099 | 2104 | 2108 |
|      | 2128 | 2132 | 2137 | 2156 | 2160 | 2164 | 2168 | 2172 | 2191 | 2195 | 2199 | 2203 | 2207 | 2226 | 2230 |
|      | 2244 | 2248 | 2242 | 2261 | 2265 | 2269 | 2273 | 2277 | 2296 | 2300 | 2304 | 2308 | 2312 | 2332 | 2337 |
|      | 2341 | 2345 | 2349 | 2353 | 2357 | 2376 | 2380 | 2384 | 2388 | 2392 | 2411 | 2415 | 2419 | 2423 | 2427 |
|      | 2446 | 2450 | 2454 | 2458 | 2462 | 2483 | 2487 | 2491 | 2495 | 2499 | 2503 | 2507 | 2526 | 2530 | 2534 |
|      | 2538 | 2542 | 2561 | 2565 | 2569 | 2573 | 2577 | 2596 | 2600 | 2604 | 2608 | 2612 | 2631 | 2635 | 2639 |
|      | 2643 | 2647 | 2668 | 2672 | 2677 | 2681 | 2685 | 2706 | 2711 | 2715 | 2719 | 2723 | 2740 | 2744 | 2748 |
|      | 2764 | 2769 | 2773 | 2790 | 2794 | 2798 | 2815 | 2819 | 2823 | 2840 | 2844 | 2848 | 2867 | 2871 | 2875 |
|      | 2899 | 2903 | 2900 | 2904 | 2908 | 2925 | 2929 | 2933 | 2950 | 2954 | 2958 | 2977 | 2981 | 2985 | 2989 |
|      | 3012 | 3016 | 3014 | 3018 | 3035 | 3039 | 3043 | 3060 | 3064 | 3068 | 3085 | 3089 | 3093 | 3113 | 3118 |
|      | 3122 | 3142 | 3147 | 3151 | 3170 | 3174 | 3178 | 3182 | 3186 | 3205 | 3209 | 3213 | 3217 | 3221 | 3240 |
|      | 3244 | 3248 | 3252 | 3256 | 3275 | 3279 | 3283 | 3287 | 3291 | 3310 | 3314 | 3318 | 3322 | 3326 | 3347 |
|      | 3351 | 3355 | 3359 | 3363 | 3367 | 3371 | 3390 | 3394 | 3398 | 3402 | 3406 | 3425 | 3429 | 3433 | 3437 |
|      | 3441 | 3460 | 3464 | 3468 | 3472 | 3476 | 3497 | 3501 | 3505 | 3509 | 3513 | 3517 | 3521 | 3540 | 3544 |
|      | 3548 | 3552 | 3556 | 3575 | 3579 | 3583 | 3587 | 3591 | 3610 | 3614 | 3618 | 3622 | 3626 | 3647 | 3651 |
|      | 3655 | 3660 | 3664 | 3685 | 3690 | 3694 | 3698 | 3702 | 3721 | 3730 | 3732 | 3740 | 3752 | 3756 | 3774 |
|      | 3784 | 3827 | 3844 | 3848 | 3904 |      |      |      |      |      |      |      |      |      |      |
|      | 3914 |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
|      | 3916 |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
|      | 3918 |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
|      | 3920 |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
|      | 3922 |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
|      | 3924 |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
|      | 3926 |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
|      | 3928 |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
|      | 3930 |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
|      | 3932 |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
|      | 3934 |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
|      | 3936 |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
|      | 3938 |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
|      | 3940 |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
|      | 3942 |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
|      | 3944 |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
|      | 3946 |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
|      | 3948 |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
|      | 3950 |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
|      | 3952 |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
|      | 3954 |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
|      | 3956 |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
|      | 3958 |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
|      | 3960 |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
|      | 3962 |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
|      | 3964 |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
|      | 3966 |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
|      | 3968 |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
|      | 3970 |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
|      | 3972 |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
|      | 3974 |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
|      | 3976 |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
|      | 3978 |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
|      | 3980 |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
|      | 3982 |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
|      | 3984 |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
|      | 3986 |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
|      | 3988 |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
|      | 3990 |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
|      | 3992 |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
|      | 3994 |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
|      | 3996 |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
|      | 3998 |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
|      | 4000 |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
|      | 4002 |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
|      | 4004 |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
|      | 4006 |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
|      | 4008 |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
|      | 4010 |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
|      | 4012 |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
|      | 4014 |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
|      | 4016 |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
|      | 4018 |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
|      | 4020 |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
|      | 4022 |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
|      | 4024 |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
|      | 4026 |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
|      | 4028 |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
|      | 4030 |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
|      | 4032 |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
|      | 4034 |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
|      | 4036 |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
|      | 4038 |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
|      | 4040 |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
|      | 4042 |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
|      | 4044 |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
|      | 4046 |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
|      | 4048 |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
|      | 4050 |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
|      | 4052 |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
|      | 4054 |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
|      | 4056 |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
|      | 4058 |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
|      | 4060 |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
|      | 4062 |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
|      | 4064 |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
|      | 4066 |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
|      | 4068 |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
|      | 4070 |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
|      | 4072 |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
|      | 4074 |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
|      | 4076 |      |      |      | </   |      |      |      |      |      |      |      |      |      |      |



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MAINDEC-11-DOFPH-B  
DOFPH.P11

CROSS REFERENCE TABLE

TEST OF CLRF, CLRD, TSTF, TSTD, ABSF, ABSD, NEGF, NEGD  
-- PERMANENT SYMBOLS

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|       |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
|-------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
|       | 2155 | 2159 | 2163 | 2167 | 2171 | 2190 | 2194 | 2198 | 2202 | 2206 | 2225 | 2229 | 2233 | 2237 | 2241 |
|       | 2260 | 2264 | 2268 | 2272 | 2276 | 2295 | 2299 | 2303 | 2307 | 2311 | 2322 | 2326 | 2340 | 2344 | 2348 |
|       | 2353 | 2356 | 2375 | 2379 | 2383 | 2387 | 2391 | 2410 | 2414 | 2418 | 2422 | 2426 | 2445 | 2449 | 2453 |
|       | 2457 | 2461 | 2482 | 2486 | 2490 | 2494 | 2498 | 2502 | 2506 | 2525 | 2529 | 2533 | 2537 | 2541 | 2550 |
|       | 2554 | 2559 | 2572 | 2576 | 2595 | 2599 | 2603 | 2607 | 2611 | 2630 | 2634 | 2638 | 2642 | 2646 | 2667 |
|       | 2672 | 2676 | 2680 | 2684 | 2705 | 2710 | 2714 | 2718 | 2722 | 2739 | 2743 | 2747 | 2764 | 2768 | 2772 |
|       | 2789 | 2793 | 2797 | 2814 | 2818 | 2822 | 2839 | 2843 | 2847 | 2866 | 2870 | 2874 | 2878 | 2882 | 2899 |
|       | 2903 | 2907 | 2924 | 2928 | 2932 | 2949 | 2953 | 2957 | 2976 | 2980 | 2984 | 2988 | 2992 | 3009 | 3012 |
|       | 3017 | 3034 | 3038 | 3042 | 3059 | 3063 | 3067 | 3084 | 3088 | 3092 | 3112 | 3117 | 3121 | 3141 | 3146 |
|       | 3150 | 3169 | 3173 | 3177 | 3181 | 3185 | 3204 | 3208 | 3212 | 3216 | 3220 | 3239 | 3243 | 3247 | 3251 |
|       | 3255 | 3274 | 3278 | 3282 | 3286 | 3290 | 3309 | 3313 | 3317 | 3321 | 3325 | 3346 | 3350 | 3354 | 3358 |
|       | 3362 | 3366 | 3370 | 3389 | 3393 | 3397 | 3401 | 3405 | 3424 | 3428 | 3432 | 3436 | 3440 | 3459 | 3463 |
|       | 3467 | 3471 | 3475 | 3496 | 3500 | 3504 | 3508 | 3512 | 3516 | 3520 | 3539 | 3543 | 3547 | 3551 | 3555 |
|       | 3574 | 3578 | 3582 | 3586 | 3590 | 3609 | 3613 | 3617 | 3621 | 3625 | 3646 | 3651 | 3655 | 3659 | 3663 |
|       | 3684 | 3699 | 3693 | 3697 | 3701 | 3831 | 3845 | 3911 |      |      |      |      |      |      |      |
| CMFB  | 3731 | 3741 |      |      |      |      |      |      |      |      |      |      |      |      |      |
| COM   | 3714 |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| DEC   | 3784 |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| MMT   | 378  |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| HALT  | 412  | 420  | 3798 | 3872 | 3899 |      |      |      |      |      |      |      |      |      |      |
| INC   | 3842 | 3876 |      |      |      |      |      |      |      |      |      |      |      |      |      |
| INCB  | 3744 | 3749 | 3825 | 3829 |      |      |      |      |      |      |      |      |      |      |      |
| IOI   | 379  |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| JMP   | 415  |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| JSR   | 3722 | 3759 | 3767 | 3770 | 3783 | 3791 | 3794 | 3850 |      |      |      |      |      |      |      |
| LDD   | 921  | 968  | 1650 | 1688 | 2664 | 2702 | 3643 | 3681 | 3860 | 3862 | 3885 | 3887 | 3889 | 3890 | 3891 |
|       | 3892 |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| LDF   | 640  | 668  | 1291 | 1320 | 2095 | 2124 | 3109 | 3138 |      |      |      |      |      |      |      |
| LDFPS | 471  | 499  | 527  | 555  | 583  | 611  | 639  | 667  | 696  | 735  | 774  | 813  | 852  | 891  | 930  |
|       | 967  | 1004 | 1023 | 1042 | 1061 | 1080 | 1100 | 1128 | 1147 | 1166 | 1186 | 1214 | 1233 | 1252 | 1271 |
|       | 1290 | 1319 | 1349 | 1369 | 1389 | 1409 | 1429 | 1450 | 1479 | 1499 | 1519 | 1540 | 1569 | 1599 | 1609 |
|       | 1629 | 1649 | 1687 | 1720 | 1745 | 1770 | 1795 | 1820 | 1846 | 1880 | 1905 | 1930 | 1956 | 1990 | 2015 |
|       | 2040 | 2065 | 2094 | 2123 | 2148 | 2183 | 2218 | 2253 | 2288 | 2324 | 2368 | 2403 | 2438 | 2474 | 2518 |
|       | 2553 | 2588 | 2623 | 2663 | 2701 | 2734 | 2759 | 2784 | 2809 | 2834 | 2860 | 2894 | 2919 | 2944 | 2970 |
|       | 3004 | 3029 | 3054 | 3079 | 3108 | 3137 | 3162 | 3197 | 3232 | 3267 | 3302 | 3338 | 3382 | 3417 | 3452 |
|       | 3488 | 3532 | 3567 | 3602 | 3642 | 3680 | 3893 |      |      |      |      |      |      |      |      |
| LDUB  | 3734 | 3806 |      |      |      |      |      |      |      |      |      |      |      |      |      |
| MOV   | 436  | 437  | 439  | 442  | 445  | 446  | 447  | 448  | 449  | 450  | 451  | 452  | 453  | 454  | 455  |
|       | 456  | 457  | 472  | 473  | 500  | 501  | 528  | 529  | 556  | 557  | 584  | 585  | 612  | 613  | 697  |
|       | 698  | 699  | 700  | 736  | 737  | 738  | 739  | 775  | 776  | 777  | 778  | 814  | 815  | 816  | 917  |
|       | 853  | 854  | 855  | 856  | 892  | 893  | 894  | 895  | 1721 | 1722 | 1746 | 1747 | 1771 | 1772 | 1796 |
|       | 1797 | 1821 | 1822 | 1847 | 1848 | 1881 | 1882 | 1906 | 1907 | 1931 | 1932 | 1957 | 1958 | 1991 | 1992 |
|       | 2016 | 2017 | 2041 | 2042 | 2066 | 2067 | 2149 | 2150 | 2151 | 2152 | 2184 | 2185 | 2186 | 2187 | 2219 |
|       | 2220 | 2221 | 2222 | 2254 | 2255 | 2256 | 2257 | 2289 | 2290 | 2291 | 2292 | 2325 | 2326 | 2327 | 2328 |
|       | 2369 | 2370 | 2371 | 2372 | 2404 | 2405 | 2406 | 2407 | 2439 | 2440 | 2441 | 2442 | 2475 | 2476 | 2477 |
|       | 2478 | 2519 | 2520 | 2521 | 2522 | 2554 | 2555 | 2556 | 2557 | 2589 | 2590 | 2591 | 2592 | 2624 | 2625 |
|       | 2626 | 2627 | 2735 | 2736 | 2760 | 2761 | 2785 | 2786 | 2810 | 2811 | 2835 | 2836 | 2861 | 2862 | 2895 |
|       | 2896 | 2920 | 2921 | 2945 | 2946 | 2971 | 2972 | 3005 | 3006 | 3030 | 3031 | 3055 | 3056 | 3080 | 3081 |
|       | 3163 | 3164 | 3165 | 3166 | 3198 | 3199 | 3200 | 3201 | 3233 | 3234 | 3235 | 3236 | 3268 | 3269 | 3270 |
|       | 3271 | 3303 | 3304 | 3305 | 3306 | 3339 | 3340 | 3341 | 3342 | 3383 | 3384 | 3385 | 3386 | 3418 | 3419 |
|       | 3420 | 3421 | 3453 | 3454 | 3455 | 3456 | 3489 | 3490 | 3491 | 3492 | 3533 | 3534 | 3535 | 3536 | 3568 |
|       | 3569 | 3570 | 3571 | 3603 | 3604 | 3605 | 3606 | 3709 | 3717 | 3719 | 3720 | 3745 | 3746 | 3750 | 3753 |
|       | 3757 | 3760 | 3764 | 3766 | 3769 | 3772 | 3776 | 3777 | 3778 | 3779 | 3782 | 3790 | 3793 | 3795 | 3812 |
|       | 3813 | 3836 | 3847 | 3852 | 3853 | 3864 | 3865 | 3866 | 3867 | 3868 | 3869 | 3870 | 3871 | 3874 | 3878 |
|       | 3879 | 3880 | 3881 | 3882 | 3883 | 3894 | 3895 | 3901 | 3902 | 3909 | 3915 | 3916 |      |      |      |
| MOVE  | 3733 | 3743 | 3773 | 3805 | 3808 | 3811 | 3833 | 3905 |      |      |      |      |      |      |      |

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|        |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
|--------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| NEG D  | 3167 | 3202 | 3237 | 3272 | 3307 | 3343 | 3387 | 3422 | 3457 | 3493 | 3537 | 3572 | 3607 | 3644 | 3682 |
| NEGF   | 2737 | 2762 | 2787 | 2812 | 2837 | 2863 | 2897 | 2922 | 2947 | 2973 | 3007 | 3032 | 3057 | 3082 | 3110 |
| NOP    | 3139 |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| ROL    | 3723 | 3724 | 3725 |      |      |      |      |      |      |      |      |      |      |      |      |
| ROLB   | 3917 | 3919 | 3921 |      |      |      |      |      |      |      |      |      |      |      |      |
| RTI    | 3818 | 3820 | 3822 |      |      |      |      |      |      |      |      |      |      |      |      |
| RTS    | 421  | 3726 | 3727 | 3747 | 3754 | 3801 | 3897 | 3917 |      |      |      |      |      |      |      |
| SETD   | 3837 | 3851 |      |      |      |      |      |      |      |      |      |      |      |      |      |
| STD    | 3855 | 3894 |      |      |      |      |      |      |      |      |      |      |      |      |      |
|        | 938  | 975  | 1657 | 1695 | 2671 | 2709 | 3650 | 3688 | 3856 | 3857 | 3858 | 3859 | 3861 | 3863 | 3886 |
| STF    | 3888 |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| STFPS  | 647  | 675  | 1298 | 1327 | 2102 | 2131 | 3116 | 3145 |      |      |      |      |      |      |      |
|        | 418  | 475  | 503  | 531  | 559  | 587  | 615  | 642  | 670  | 702  | 741  | 780  | 819  | 858  | 897  |
|        | 923  | 970  | 1006 | 1025 | 1044 | 1063 | 1082 | 1102 | 1130 | 1149 | 1168 | 1188 | 1216 | 1235 | 1254 |
|        | 1273 | 1293 | 1322 | 1351 | 1371 | 1391 | 1411 | 1431 | 1452 | 1481 | 1501 | 1521 | 1542 | 1571 | 1591 |
|        | 1611 | 1631 | 1652 | 1690 | 1724 | 1749 | 1774 | 1799 | 1824 | 1850 | 1884 | 1909 | 1934 | 1960 | 1994 |
|        | 2019 | 2044 | 2069 | 2097 | 2126 | 2154 | 2189 | 2224 | 2259 | 2294 | 2330 | 2374 | 2409 | 2444 | 2480 |
|        | 2524 | 2559 | 2594 | 2629 | 2666 | 2704 | 2739 | 2763 | 2788 | 2813 | 2838 | 2864 | 2898 | 2923 | 2948 |
|        | 2974 | 3008 | 3033 | 3058 | 3083 | 3111 | 3140 | 3168 | 3203 | 3238 | 3273 | 3308 | 3344 | 3388 | 3423 |
| STST   | 3458 | 3494 | 3538 | 3573 | 3608 | 3645 | 3683 | 3854 |      |      |      |      |      |      |      |
| SUB    | 419  | 1103 | 1189 | 1453 | 1543 | 1851 | 1961 | 2331 | 2481 | 2865 | 2975 | 3345 | 3495 | 3789 |      |
| TRAP   | 3765 |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| TST    | 377  |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
|        | 438  | 480  | 484  | 508  | 512  | 536  | 540  | 564  | 568  | 592  | 596  | 620  | 624  | 648  | 652  |
|        | 676  | 680  | 707  | 711  | 715  | 719  | 746  | 750  | 754  | 758  | 785  | 789  | 793  | 797  | 824  |
|        | 828  | 832  | 836  | 863  | 867  | 871  | 875  | 902  | 906  | 910  | 914  | 939  | 943  | 947  | 951  |
|        | 976  | 980  | 984  | 988  | 3751 | 3786 | 3796 |      |      |      |      |      |      |      |      |
| TSTB   | 3739 | 3823 | 3826 | 3903 | 3906 |      |      |      |      |      |      |      |      |      |      |
| TSTD   | 1350 | 1370 | 1390 | 1410 | 1430 | 1451 | 1480 | 1500 | 1520 | 1541 | 1570 | 1590 | 1610 | 1630 | 1651 |
|        | 1689 |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| TSTF   | 1005 | 1024 | 1043 | 1062 | 1081 | 1101 | 1129 | 1148 | 1167 | 1187 | 1215 | 1234 | 1253 | 1272 | 1292 |
|        | 1321 |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| .ASCIZ | 3897 | 3919 | 3920 |      |      |      |      |      |      |      |      |      |      |      |      |
| .BLKW  | 3839 |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| .ENABL | 372  |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| .END   | 3933 |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| .ENDC  | 464  | 476  | 480  | 492  | 504  | 508  | 520  | 532  | 536  | 548  | 560  | 564  | 576  | 588  | 592  |
|        | 604  | 616  | 620  | 632  | 643  | 647  | 660  | 671  | 675  | 688  | 703  | 707  | 727  | 742  | 746  |
|        | 766  | 781  | 785  | 805  | 820  | 824  | 844  | 859  | 863  | 883  | 898  | 902  | 922  | 934  | 938  |
|        | 959  | 971  | 975  | 997  | 1007 | 1011 | 1016 | 1026 | 1030 | 1035 | 1045 | 1049 | 1054 | 1064 | 1068 |
|        | 1073 | 1083 | 1087 | 1093 | 1104 | 1116 | 1121 | 1131 | 1135 | 1140 | 1150 | 1154 | 1159 | 1169 | 1173 |
|        | 1179 | 1190 | 1202 | 1207 | 1217 | 1221 | 1226 | 1236 | 1240 | 1245 | 1255 | 1259 | 1264 | 1274 | 1278 |
|        | 1283 | 1294 | 1298 | 1312 | 1323 | 1327 | 1341 | 1352 | 1356 | 1361 | 1372 | 1376 | 1381 | 1392 | 1396 |
|        | 1401 | 1412 | 1416 | 1421 | 1432 | 1436 | 1442 | 1454 | 1466 | 1471 | 1482 | 1486 | 1491 | 1502 | 1506 |
|        | 1511 | 1522 | 1526 | 1532 | 1544 | 1556 | 1561 | 1572 | 1576 | 1581 | 1592 | 1596 | 1601 | 1612 | 1616 |
|        | 1621 | 1632 | 1636 | 1641 | 1653 | 1657 | 1679 | 1691 | 1695 | 1717 | 1725 | 1729 | 1742 | 1750 | 1754 |
|        | 1767 | 1775 | 1779 | 1792 | 1800 | 1804 | 1817 | 1825 | 1829 | 1843 | 1852 | 1864 | 1877 | 1885 | 1889 |
|        | 1902 | 1910 | 1914 | 1927 | 1935 | 1939 | 1953 | 1962 | 1974 | 1987 | 1995 | 1999 | 2012 | 2020 | 2024 |
|        | 2037 | 2045 | 2049 | 2062 | 2070 | 2074 | 2087 | 2098 | 2102 | 2116 | 2127 | 2131 | 2145 | 2155 | 2159 |
|        | 2180 | 2190 | 2194 | 2215 | 2225 | 2229 | 2250 | 2260 | 2264 | 2285 | 2295 | 2299 | 2321 | 2333 | 2344 |
|        | 2365 | 2375 | 2379 | 2400 | 2410 | 2414 | 2435 | 2445 | 2449 | 2471 | 2482 | 2494 | 2515 | 2525 | 2529 |
|        | 2550 | 2560 | 2564 | 2585 | 2595 | 2599 | 2620 | 2630 | 2634 | 2655 | 2667 | 2671 | 2693 | 2705 | 2709 |
|        | 2731 | 2739 | 2743 | 2756 | 2764 | 2768 | 2781 | 2789 | 2793 | 2806 | 2814 | 2818 | 2831 | 2839 | 2843 |
|        | 2857 | 2866 | 2878 | 2891 | 2899 | 2903 | 2916 | 2924 | 2928 | 2941 | 2949 | 2953 | 2967 | 2976 | 2988 |
|        | 3001 | 3009 | 3013 | 3026 | 3034 | 3038 | 3051 | 3059 | 3063 | 3076 | 3084 | 3088 | 3101 | 3112 | 3116 |
|        | 3130 | 3141 | 3145 | 3159 | 3169 | 3173 | 3194 | 3204 | 3208 | 3229 | 3239 | 3243 | 3264 | 3274 | 3278 |



N07

ERRORS DETECTED: 0  
DEFAULT GLOBALS GENERATED: 0

\*, DCFPH.SEG/SOL/CRF/PAGNUM=DCFPH  
RUN-TIME: 22 34 5 SECONDS  
RUN-TIME RATIO: 264/64=4.1  
CORE USED: 12K (23 PAGES)

