IDENTIFICATION

PRODUCT CODE: MAINDEC-8E-D1GB-D

PRODUCT NAME: PDP-8E MEMORY POWER ON/OFF TEST

DATE CREATED: JUNE 11, 1971

MAINTAINER: DIAGNOSTIC GROUP

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1. ABSTRACT

THIS PROGRAM IS A MEMORY DATA VALIDITY TEST TO BE USED AFTER A SIMULATED POWER FAIL.

2 REQUIREMENTS

EQUIPMENT

PDP-8E EQUIPPED WITH TELETYPE

STORAGE

MEMORY LOCATIONS 0000(8) - - 7601(8)

BINARY LOADER AND RIM MUST BE STORED IN LAST MEMORY PAGE.

3. USAGE

3.1 LOADING

NORMAL BINARY TAPE LOADING PROCEDURES

3.2 START UP AND/OR ENTRY

LOAD ADDRESS 0200, PRESS CLEAR AND THEN CONT. THE PROGRAM SHOULD THEN HALT AT LOCATION 0031(8). LOAD ADDRESS 0201, PRESS CLEAR AND THEN CONT. THE PROGRAM SHOULD NOW LOOP.

3.3 ERRORS IN USAGE

ERRORS DETECTED BY THE PROGRAM CAUSE THE PROGRAM TO HALT AT MEMORY LOCATION 0047(8). THE CONTENTS OF MEMORY ADDRESS 0011(8) AND 0012(8) INDICATE THE ADDRESSES OF THE DATA THAT FAILED TO CHECK-SUM. MEMORY ADDRESSES 0007(8) AND 0010(8) CONTAIN THE DATA WORDS THAT FAILED TO CHECK-SUM.

LOWER ADDRESS = (0011(8)) = 202(8)-4001(8)

UPPER ADDRESS = (0012(8)) = 4002(8)-7601(8)

LOWER ERROR WORD = (0007(8)) = 2525(8)

UPPER ERROR WORD = (0010(8)) = 5252(8)

3.4 ERROR RECOVERY

PRESS CONTINUE TO TEST FOR OTHER ERROR WORDS IN MEMORY. TO RELOAD MEMORY DO 3.2.

4. DESCRIPTION

4.1 THIS PROGRAM TESTS MEMORY FOR BIT DROP OUT AND PICK UP AFTER A SIMULATED POWER FAILURE HAS OCCURRED.

BY STARTING THE PROGRAM AT MEMORY ADDRESS 200(8), DATA WORDS CONSISTING OF 2525(8) ARE WRITTEN INTO MEMORY LOCATIONS 0202(8) - - 4001(8), AND DATA WORDS CONSISTING OF 5252(8) ARE WRITTEN INTO MEMORY LOCATIONS 4002(8) - - 7601(8) AFTER WHICH THE PROGRAM HALTS AT MEMORY ADDRESS 0031(8). LOAD ADDRESS 0201(8) AND RESTART THE PROGRAM; THE PROGRAM WILL 2'S ADD THE CONTENTS OF MEMORY LOCATION 202(8) WITH 4002(8). IF THE RESULTS EQUALS 7777(8) THE PROGRAM WILL 2'S ADD THE CONTENTS OF MEMORY LOCATIONS 203(8) WITH 4003(8) ETC. UNTIL THE MEMORY ADDRESSES OF 4001(8) AND 7601(8) ARE TESTED. THE PROGRAM STAYS IN THE 2'S ADD COMPARE LOOP UNTIL AN ERROR OCCURS. CONCURRENTLY CYCLE THE POWER TO THE PDP-8E OFF AND ON. AFTER THE POWER HAS BEEN REAPPLIED TO THE PDP-8E, LOAD ADDRESS 201(8) AND PRESS CLEAR AND THEN CONTINUE. IF AN ERROR OCCURRED DURING THE POWER CYCLING, THE PROGRAM HALTS AT LOCATION 0047(8). THE PROGRAM MAY BE RESTARTED AT MEMORY ADDRESS 0201(8) AS MANY TIMES AS DESIRED. RESTART ADDRESS TO FILL MEMORY WITH DATA WORDS IS 0200(8).

4.2 EXAMPLES AND/OR APPLICATIONS

A HALT OCCURS AT MEMORY ADDRESS 0047(8).

ADDRESS 007(8) = 2535 (DATA WORD)

ADDRESS 0010(8) = 5252 (DATA WORD)

ADDRESS 0011(8) = 0270 (ADDRESS WORD)

ADDRESS 0012(8) = 4070 (ADDRESS WORD)

BIT 8 WAS PICKED UP AT MEMORY ADDRESS 0270(8).

5. EXECUTION TIME

1 MSEC/LOOP

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                    /PDP 8E MEMORY POWER ON OFF TEST
          0200      *200
0200      5013              JMP START
0201      5032              JMP COMPAR

          0000      *0
0000      0000              0
0001      5001              JMP 1
0002      0002              2
0003      0003              3
0004      0000              0
0005      0000              0
0006      0000              0
0007      0000      UPPER,  0
0010      0000      LOWER,  0
0011      0000      LOWM,   0
0012      0000      HIGH,   0
0013      7300      START,  CLA CLL           /START INITIAL
0014      1056              TAD K0201
0015      3011              DCA LOWM
0016      1057              TAD K4001
0017      3012              DCA HIGH
0020      1060      WRKON,  TAD UPREG
0021      3411              DCA I LOWM
0022      1061              TAD LOREG
0023      3412              DCA I HIGH
0024      1011              TAD LOWM
0025      7041              CIA
0026      1057              TAD K4001
0027      7640              SZA CLA
0030      5020              JMP WRKON
0031      7402      STEND,  HLT               /TURN POWER ON OFF
0032      7300      COMPAR, CLA CLL
0033      1056              TAD K0201
0034      3011              DCA LOWM
0035      1057              TAD K4001
0036      3012              DCA HIGH
0037      1411              TAD I LOWM        /LOWM=UPPER ADDRESS 202-4001
0040      3007              DCA UPPER
0041      1412              TAD I HIGH        /HIGH=LOWER ADDRESS 4002-7601
0042      3010              DCA LOWER
0043      1007              TAD UPPER
0044      1010              TAD LOWER
0045      7040              CMA
0046      7440              SZA
0047      7402      E1,     HLT               /ERROR,DOES NOT COMPARE
0050      1011              TAD LOWM
0051      7041              CIA
0052      1057              TAD K4001
0053      7640              SZA CLA
0054      5037              JMP COMPAR+5      /RETURN TO CHECK MEMORY
0055      5032              JMP COMPAR        /END OF TEST AREA GO TO SETUP
0056      0201      K0201,  0201
0057      4001      K4001,  4001
0060      2525      UPREG,  2525              /ERROR WORD 2525
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0061  5252    LOREG,5252          /ERROR WORD 5252
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