

IDENTIFICATION

PRODUCT CODE: MA1NDEC-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

FDP-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 RESULT IS 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
*200
0200 0200
0200 5013 JMP START
0201 5032 JMP COMPAR

0000 0000 *0
0001 5001 0
0002 0002 JMP 1
0003 0003 2
0004 0000 3
0005 0000 0
0006 0000 0
0007 0000 0
0010 0000 UPPER, 0
0011 0000 LOWER, 0
0012 0000 LOWM, 0
0013 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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/PDP 8E MEMORY POWER ON OFF TEST

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0061 5252 LOREG.5252
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/ERROR WORD 5252