

IDENTIFICATION

PRODUCT CODE: MAINDEC-8E-D1FB-D
PRODUCT NAME: PDP-8E EXTENDED MEMORY ADDRESS
TEST (EA8E)
DATE: JUNE 14, 1971
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1. ABSTRACT

The PDP-8E Extended Memory Address Test is designed to detect any location that cannot be uniquely addressed. This is performed by a series of four test routines which will test systems equipped with from 8K to 32K words of core memory. Automatic program relocation is provided in order to test all memory fields from each memory field. Teletype print-outs are provided for error identification, and the operator is given a degree of control over the program by various SR settings.

2. REQUIREMENTS

2.1 Equipment

A PDP-8E computer equipped with a minimum of 8K words of core memory.

2.2 Storage

The program occupies core locations 0000 to 3777.

2.3 Preliminary Programs

The Binary Loader must be in memory. Also, all diagnostics for a basic 4K PDP-8E must have been previously run successfully.

3. LOADING PROCEDURE

Load the program with the Binary Loader (BIN). The program may be loaded into any desired core stack by having BIN in that core stack.

4. OPERATING PROCEDURE

4.1 Program and Operator Action

- A. Set the SR to the INSTRUCTION FIELD and DATA FIELD of the stack which contains the program.
- B. Press key EXTD ADDR LOAD.
- C. Set the SR for desired starting address according to the following table.

ADDRESS	TEST EXECUTION
0200	Run all tests
0201	Run only test 1
0202	Run only test 2
0203	Run only test 3
0204	Run only test 4

- D. Press keys ADDR LOAD, CLEAR, and CONT. A setup SR message will be printed.
- E. Set the SR for desired operation according to the following table.

SWITCH	0 (down)	1 (up)
SR00	continue after error	halt after error
SR01	timeout errors	inhibit error timeouts
SR02	normal	TTY bell on error
SR03	relocate program	inhibit program relocation
SR04	normal	change stack limits
SR05	normal	halt after current test
SR06-08	starting stack limit (0-7)	
SR09-11	ending stack limit (0-7)	

Set to 0002

- F. Press key CONT.

4.2 Detailed SR Explanation

- SR00-02 SR02, if set, will ring the TTY bell once for each error. SR00 and SR01 have no effect with SR02 set.
- SR03 SR03 may be set or reset at any time and the program will act accordingly
- SR04 SR04 allows the operator to change the stack limits as defined by SR06-11.
- SR05 SR05 is normal halt for program
- SR06-08 These switches define the starting stack limit (normally 0).
- SR09-11 These switches define the ending stack limit (normally 7)

4.3 Example of Selecting Stacks for Test

Example 1: SR = 0007, 28K system

Stacks selected for testing are 6,5,4,3,2,1,0

Example 2: SR = 0004, 28K System

Stacks selected for testing are 4,3,2,1,0

Example 3: SR = 0022 28K System

Stacks selected for testing are 2
(No relocation will occur)

Example 4: SR = 0041 28K System

Stacks selected for testing are 6,5,4,1,0

NOTE 1: Stacks not in the system are automatically de-selected as is Example 1. Stack 7 is not present therefore not selected.

NOTE 2: A single stack can be selected for testing providing the program is not in that stack as in Example 3.

NOTE 3: Any stack or group of stacks can be by-passed as in Example 4. Stacks 2 and 3 are not selected, stack 7 is not present.

5. ERRORS

The contents of a given memory test location should always be equal to its address or the complement of its address. If it is not, a test error will result. A relocation error will occur if the relocation comparison check fails.

5.1 Test Error Typeouts

For the first error encountered a header will be typed out followed by the pertinent data. For all subsequent errors, only the pertinent data will be typed. The format is as follows:

PR LOC ADDR GOOD BAD TEST

PR LOC = the program address where the error JMS occurred.
(Includes Field)