

IDENTIFICATION

Product Code: MAINDEC-8/1-D01B-D  
Product Name: Instruction Test 1  
Date Created: March 25, 1968  
Maintainer: Diagnostic Group  
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1. ABSTRACT

This is a diagnostic program for testing the AND, TAD, and OPERATE instructions of the PDP-8I ONLY.

2. REQUIREMENTS

2.1 Equipment

A PDP-8I equipped with Teletype.

2.2 Storage

This program uses locations 0000-4354. The Binary Loader must be stored in the last memory page.

2.3 Preliminary Programs

3. LOADING PROCEDURE

3.1 Method

The standard Binary Loader is used.

4. STARTING PROCEDURE

4.1 Control Switch Settings

SR = 7777

4.2 Starting Address

0144

4.3 Operator Action

1. Set SR to 144 and press LOAD ADDRESS.
2. Set SR to 7777 and push START.
3. Program will halt. MA=146

4. If AC  $\neq$  0000 an error has occurred.

5. Push CONTINUE. Program will run until stopped or until an error is encountered.

5. OPERATING PROCEDURE

Same as section 4.

6. ERRORS

6.1 Error Halts and Description

See listing.

6.2 Error Recovery

If it is desired to loop on the test causing the error, replace the operate instruction preceding the HLT with a JMP to the beginning of the test.

7. RESTRICTIONS

7.1 Starting Restrictions (None)

7.2 Operating Restrictions

The interrupt is enabled during program operation. Any device, attached to the machine, which might cause spurious interrupts must be disabled.

8. MISCELLANEOUS

8.1 Execution Time

13 program loops per second.

9. PROGRAM DESCRIPTION

The program consists of many individual tests. In most cases each test checks only one function and uses previously tested functions as a basis for the test. The program counter action is strictly sequential except for SKIPS. The only JMP instructions used are at the end of the program.

The sequence of testing is as follows:

1. Test all operate functions individually except for rotates.
2. Test TAD instruction.
3. Test ROTATE functions.
4. Group I operate instruction test. All possible combinations.

5. Group 2 operate instruction test. All possible combinations.

6. Test AND instruction.

The Teletype bell rings after each 128 program loops.

10. LISTING