IDENTIFICATION

Product Code: MAINDEC-8I-D02B-D

Product Name: Instruction Test 2

Date Created: March 21, 1968

Maintainer: Diagnostic Group

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1.   ABSTRACT

This program is an extensive test of autoindexing, indirect addressing, and the DCA instruction for the PDP-8I. It also offers minimal testing for interrupt and the AND, TAD, ISZ, JMP and JMS instructions.

2.   REQUIREMENTS

2.1   Equipment

PDP-8I, 8S equipped with Teletype

2.2   Storage

The program occupies memory locations 0000-4021. The Binary Loader must be stored in the last memory page.

2.3   Preliminary Programs

It is assumed that Maindec 8I-D01(n) has been run successfully.

3.   LOADING PROCEDURE

3.1   Method

The standard Binary Loader is used.

4.   STARTING PROCEDURE

4.1   Control Switch Settings (None)

4.2   Starting Address

201

4.3   Operator Action

a. Set the SWITCH REGISTER to 201. Press LOAD ADDRESS.
b. PUSH START. A programmed halt occurs when an error is encountered.

1

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

All peripheral devices must be functioning to a degree that the processor START button will clear their flags and no FLAGS will turn on unless authorized.

8.   MISCELLANEOUS

8.1   Execution Time

Five program loops per second.

9.   PROGRAM DESCRIPTION

The program is a series of many small individual tests. Each test is performed using previously checked functions to validate the test. When an error is encountered, the operator should insert a jump instruction into memory to cause the program to loop on the failing test. The problem can then be found by using the oscilloscope.

The individual program tests are grouped into the following classifications and are performed in the order shown:

         1.   DCA Test

         2.   Indirect Addressing Test

            a.   using TAD

            b.   using AND

3. Autoindex Test

    a. using AND
    b. using DCA
    c. using TAD

4. Interrupt Test

    a. following NOP
    b. following TAD
    c. following AND
    d. following DCA
    e. following ISZ
    f. following JMP
    g. following JMS
    h. following CLA
    i. following TSF

5. Check for unauthorized Autoindexing

At the completion of 40 program loops the bell rings to assure the operator that the program is functioning properly.

10.   LISTING