IDENTIFICATION

Product Code:	MAINDEC-08-DILAC-B-D
Product Name:	LA180 Printer Diagnostic
Date:	July 1976
Maintainer:	Diagnostic Group
Author:	Robert Baker/Bruce Hansen

Table of Contents

1.0 ABSTRACT

The diagnostics for the LA180 printer are designed to exercise all areas of the printer, simulating worse case conditions to detect both mechanical and electrical faults. Additional facilities within the diagnostic program will aid in isolation of any fault conditions detected.

Operation of the diagnostic program will be controlled from the processor switch register or from an available console device. The operator will be given as much control over the operation of the program as possible while trying to keep the control scheme simple.

This diagnostic program was designed to run in 4K or less of memory.

2.0 REQUIREMENTS

2.1 Equipment

This diagnostic was written to run on all models of the PDP-8 processor with a LA180 printer using the standard LA180 parallel interface. The program will use a standard console device, if available, for operator instructions and error reporting. It is suggested that a console device be used when running this diagnostic but it is not required if the CPU has a hardware switch register. If any non-standard IOT codes are used for either the LA180 or the console device, change the IOT codes at PTRIOT and IOTSEL before starting the program.

The diagnostic was made capable of running with either of two interfaces in June of 1976. The first being the standard LA180 parallel interface, and the second being the PDP-8A Option Board 1's 12 Bit Parallel I/O Interface.

2.2 Storage

This program uses most of 4K of memory without affecting the area used by the Binary Loader.

2.3 Preliminary Programs

All applicable PDP-08 diagnostics should be run successfully on the processor.

3.0 LOADING PROCEDURE & INITIALIZATION

Load the LA180 diagnostic program following normal procedures.

If a hardware switch register does not exist or to use the software switch register control when a hardware switch register is available, set bit 0 of location 21 to 0 before starting the diagnostic. Location 20 will then be used as the software switch register (SSR). Make sure the SSR is set as desired before starting the program. Refer to Section 5.3 for a description of the dynamic SSR routine operation.

If the PDP-8A Option Board 1's 12 Bit Parallel I/O interface is to be used instead of the standard LA180 Parallel interface, set bit 1 of location 21 to 1 before starting the diagnostic. If the PDP-8A Option Board 1's 12 Bit Parallel I/O interface is to be used, set switch S1-9 on the PDP-8A Option Board 1 to the "ON" position.

Refer to the Test Address Table in the program listing for details on changing the printing test sequence or deleting tests from the diagnostic.

4.0 STARTING PROCEDURES

Starting Addresses:

200 = General Start:
Run operator intervention tests then enter printing test sequence.

201 = Restart:
Enter printing test sequence directly skipping operator intervention tests.

202 = Go directly to console terminal keyboard control - select test.

Starting at 200 will run the entire diagnostic package. The program will first execute the operator intervention tests and then enter the printing test sequence where it will loop continuously. Starting at 201 (the restart) will skip the operator intervention tests and enter the printing test sequence directly. Starting at 202 will cause the program to go directly to console keyboard control if a console device exists, otherwise, the program will halt waiting for a test selection from the processor switch register. Also, by placing the Halt and Select Test switch up (1) before starting the diagnostic, the diagnostic will halt waiting for a test selection from the processor switch register after initialization of the program.

To start the diagnostic program; set the desired starting address in the switch register and depress load address, set the processor switch register options as desired (see section 5.1), and depress start. The diagnostic program will now run in the manner selected.