

IDENTIFICATION

PRODUCT CODE: MAINDEC-08-DKVTB-A-D
PRODUCT NAME: VT78 CPU DIAGNOSTIC
PRODUCT DATE: JULY 1977
MAINTAINER: DIAGNOSTIC GROUP
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1.0 **ABSTRACT**

THIS DIAGNOSTIC WILL TEST ALL THE LOGIC ON THE VT78 PROCESSOR MODULE THAT CAN BE TESTED VIA PROGRAM INSTRUCTION. THE MODULE LOGIC TESTED INCLUDES THE PDP-8 CPU, MEMORY EXTENSION CONTROL, FLOPPY INTERFACE, THREE SERIAL LINE UNITS (SLU) AND THE PARALLEL I/O INTERFACE. THE DIAGNOSTIC IS ORGANIZED WITH A SOFTWARE MODULE FOR EACH OF THESE BASIC HARDWARE COMPONENTS. THE MAIN MEMORY FOR THIS PROCESSOR IS CONTAINED ON A SEPARATE "DAUGHTER" MODULE AND IS TESTED VIA THE VT78 MOS MEMORY DIAGNOSTIC (MAINDEC-08-DKVTA-A).

THE STANDARD PDP-8 CONSOLE PACKAGE WITH SOFTWARE CONTROLLED SWITCH REGISTER HAS BEEN INCORPORATED INTO THIS DIAGNOSTIC TO ALLOW THE PROGRAM TO RUN ON THE VT78 SYSTEM WHICH HAS NO HARDWARE SWITCH REGISTER. THIS PACKAGE PROVIDES AN INTERFACE BETWEEN THE USER AND THE DIAGNOSTIC VIA THE VIDEO DISPLAY/KEYBOARD TERMINAL.

THE VT78 PROCESSOR MODULE CONTAINS A SMALL AMOUNT OF LOGIC WHICH CAN NOT BE TESTED WITHOUT EXTERNAL DEVICES ATTACHED TO THE VT78 PERIPHERAL PORTS. FOR MANUFACTURING PURPOSES, A SPECIAL PERIPHERAL SIMULATOR PACKAGE HAS BEEN DESIGNED TO PLUG INTO THE VT78 PORTS AND PROVIDE DIAGNOSTIC ACCESS TO ALL MODULE LOGIC. THIS DIAGNOSTIC IS COMPATIBLE WITH THE HARDWARE SIMULATOR. ALL OTHER USERS OF THE DIAGNOSTIC WHICH DO NOT HAVE THE HARDWARE SIMULATOR, CAN FULLY TEST THE MODULE BY RUNNING BOTH THIS DIAGNOSTIC AND THE PERIPHERAL DIAGNOSTICS WITH RESPECTIVE PERIPHERALS ATTACHED TO VT78 SYSTEM.

THE PROGRAM IS COMPATIBLE WITH THE PDP-8 APT TEST SYSTEM.

THIS DIAGNOSTIC WILL RUN ONLY ON THE VT78 SYSTEM - IT WILL NOT RUN ON ANY OTHER PDP-8 SYSTEM.

2.0 **REQUIREMENTS**

2.1 **HARDWARE**

THE FOLLOWING HARDWARE IS REQUIRED FOR EXECUTION OF THIS PROGRAM:

VT78 VIDEO DATA PROCESSOR (INCLUDES PROCESSOR MODULE, 16K
MEMORY MODULE, SIGNAL DISTRIBUTION BOARD,
VIDEO DISPLAY AND KEYBOARD)

OPTIONAL EQUIPMENT INCLUDES THE PERIPHERAL SIMULATOR, THE RX01 DISKETTE SUBSYSTEM, AND THE LQP OR LA180 PRINTER.

NOTE: THE VIDEO DISPLAY AND KEYBOARD ARE NOT REQUIRED FOR TESTING UNDER APT CONTROL.

2.2 SOFTWARE -----

THE SOFTWARE ENVIRONMENTS IN WHICH THIS PROGRAM WILL EXECUTE INCLUDE:

- 1) STAND ALONE
- 2) UNDER OS/8 CONTROL
- 3) UNDER APT CONTROL

2.3 STORAGE -----

THE PROGRAM OCCUPIES 8K OF MEMORY(2 FIELDS) AND MUST BE LOADED INTO FIELDS 0 AND 1.

2.4 PREREQUISITE SOFTWARE -----

THE PANEL HANDLER AND BOOTSTRAP PORTIONS OF THE RESIDENT CONTROL PANEL PROGRAM MUST RUN SUCCESSFULLY TO PERMIT LOADING OF THIS DIAGNOSTIC. THE RESIDENT DIAGNOSTIC SHOULD ALSO BE RUN PRIOR TO ATTEMPTING TO EXECUTE ANY VT78 SYSTEM DIAGNOSTICS.

3.0 RELATED DOCUMENTS -----

VT78 HARDWARE SPECIFICATION
STANDARD APT SYSTEM TO PDP-8 DIAGNOSTIC INTERFACE
MR78BA USER INFORMATION DOCUMENT
MR78BB USER INFORMATION DOCUMENT

4.0 RESTRICTIONS -----

DURING MUCH OF THE SLU TEST SECTION OF THE DIAGNOSTIC, THE SLU WHICH INTERFACES TO THE VIDEO DISPLAY/KEYBOARD IS LOOPED UPON ITSELF. WHILE LOOPED, ANY ATTEMPT BY THE OPERATOR TO GAIN CONTROL VIA KEYBOARD INTERVENTION IS BLOCKED. THE OPERATOR CAN REGAIN SYSTEM CONTROL AT ANY TIME THROUGH USE OF THE START BUTTON ON THE SIDE OF THE VT78.