
9100A

FLUKE 8505A DMM Test Program

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NOTE: This document addresses the basic setup of the test for the Fluke 8505A DMM and provides notes on the software. For details on the use of the Fluke 5100B calibrator, the Fluke 9100A/AF or other instruments see the appropriate manuals.

SECTION 1 Equipment Required

- 1-1 Fluke 9100A/AF with at list 3 Mbyte of memory, software version 5.0 or earlier. (Ver 4.1 is OK)
- 1-2 Fluke 9000A-8080 interface pod.
- 1-3 Fluke 8840A/AF DMM.
- 1-4 Fluke 5100B calibrator.
- 1-5 Extender ASSY, Fluke P/N 425231. (Recommended)
- 1-6 BNC cable. (Fluke Y9111 or similar).
- 1-7 Several banana plugs cables.

SECTION 2

Setup

- 2-1 Copy the floppy disk labeled 8505_AF to the hard disk.
- 2-2 Remove the DMM top cover. Remove the CONTROLLER Assembly and take out the PCB. Remove the microprocessor (U15) from its socket and plug in 9000A-8080 pod. Plug the CONTROLLER PCB into P31L or P31M on the Motherboard. (for more details, please refer to the DMM Instruction Manual, section 4).
- 2-3 Connect a BNC Cable between SCAN ADVANCE output and TRIGGER input on the 8505's back panel.
- 2-4 Connect the 8505A DMM's sense inputs and source outputs to the calibrator's outputs and sense inputs respectively, using banana plugs cables.

CAUTION

MAKE SURE THE CONNECTION POLARITY IS CORRECT

- 2-5 Turn the Fluke 8505A on and then push the RESET button on the 9100A keypad.

- 2-6 To run the tests, execute program MAIN in UUT 8505A_AF.

SECTION 3

General notes

- 3-1 If you are prompted to probe the UUT, please refer to the 8505A schematic diagram and assembly layouts for the proper place to probe.
- 3-2 You may use the extender for better probing access.
- 3-3 There are only 5 menu options displayed at a time. If the "MORE SOFTKEYS" LED is lit, you will have more menu options when you press the "SOFT KEYS" key on the 9100A key pad.

CAUTION !!!

HIGH VOLTAGE is present on the 8505A and 5100B banana plugs when executing some of the analog tests.

- 3-4 If the RAM memory test fails then other tests may also fail.

SECTION 4

MENU Selections explanation

4-1 GO NOGO will execute all the test programs listed below one after the other.

4-2 SUBTEST will enable you to execute one test at a time. A sub menu will be displayed with the following selections:

CONTRLR -	controller assembly tests, program tst_cntrlr
DISPLAY -	display assembly tests, program tst_disply
ISOLATR -	isolator assembly tests, program tst_isoltr
ANALOG -	analog functions tests, program tst_analog

4-3 In all sub menus listed below, the ENTER key will perform as AllTests and the CLEAR key as EXIT.

SECTION 5

CONTROLLER SUB-MENU Selections explanation

5-1 BUS executes the program tst_bus. This program tests the address, data and control busses.

5-2 RAM executes program test_ram. 2 KByte of RAM are tested with testramfast.

5-3 ROM execute program test_rom. 16 KByte of ROM are tested with testromfull.

5-4 EEPROM executes program test_eepm. First the 512 bytes of the EEPROM data are dumped to a file. Then two sets of 512 bytes are loaded and tested using testromfull. Finally, the original data is loaded again.

5-5 INTERRUPT executes program test_intr. The program tests the MARK and the ACK Interrupts, and the REAR INPUT switch.

5-6 AllTests executes all the tests mentioned in 5-1 through 5-5 one after the other.

SECTION 6

DISPLAY SUB-MENU Selections explanation

6-1 LEDs executes the program test_leds. This program tests the LEDs' segments by illuminating them one after the other.

6-2 Switch executes program test_swch. This program tests the switches by instructing the operator to press each one of them.

6-3 AllTests executes all the tests mentioned in 6-1 and 6-2 above one after the other.

SECTION 7

ISOLTR SUB-MENU Selections explanation

7-1 Ext Trig executes the program test_trig. This program tests the external trigger by generating SCAN ADVANCE pulses.

7-2 Tnsfer executes program test_trsfr. This program tests the data transfer in the isolator by sending data to all modules and verifying that at list one module respond by ACK.

7-3 AllTests executes all the tests mentioned in 7-1 and 7-2 above one after the other.

SECTION 8

~~ANALOG SUB MENU~~ Selections explanation

CAUTION !!!

HIGH VOLTAGE is present on the 8505A and 5100B banana plugs when executing some of the analog tests.

8-1 Dig_If executes the program test_digif. This program tests the analog modules' digital interface by sending each one of them a byte of data and verifying they respond with ACK. Then some relays are activated and the operator has to verity by listening.

8-2 VDC executes program test_vdc. This program tests the DC measure function using the 5100B calibrator to simulate the inputs. The 8840A DMM is used to measure the input voltage of the A/D converter. The operator is prompted to connect the 8840A's probes to TP4 and TP6 on the A/D ASSY. These Test Points are easy to reach by lifting the top cover of the A/D ASSY. Then the operator is prompted to set the 5100B and 8840A to the required mode for each measurement.

8-3 VAC executes program test_vac. This program tests the AC measure function the same as describe in 8-2 for the DC function.

8-4 OHMS executes program test_ohms. This program tests the OHMS measure function the same as describe in 8-2 for the DC function.

8-5 A/D executes program test_ad. This program tests the A/D converter ASSY function the same as describe in 8-2 for the DC function, except here the measurement is automatic and the 8840A is used only if the test fails.

8-6 AllTests executes all the tests mentioned in 8-1 through 8-5 one after the other.

Of M... program test... This program tests the OHMS measure
... as described in 8-2 for the DC function.

8-3 V... executes program test... This program tests the AD converter A217
function the same as described in 8-1 for the DC function, except here the
measurement is automatic and the 8840A is used only if the test fails.

8-4 All tasks executes all the tasks mentioned in 8-1 through 8-3 one after the other.

END