Fluke 9000A-201 Clip-On Adapter Instruction Sheet

Using the 9000A-201 Clip-On Option

The 9000A-201 Clip-On Adapter enables the 9000A-8051 Interface Pod and a 9000 Series Micro-System Troubleshooter to be used with UUTs that have a soldered-in microprocessor. The 9000A-8051 Interface Pod is normally used with UUTs that have socketed microprocessors. The microprocessor is removed and replaced by the Pod's DIP plug. If the microprocessor is soldered into place, then the Clip-On Adapter is used to connect the Pod to the UUT.

This Instruction Sheet contains the basic information for using the Clip-On Adapter. For more complete information, refer to Appendix B in the 9000A-8051 Interface Pod Instruction manual.

Theory of Operation

When Switch 6 on the Pod is set to the CLIP-ON position, the Pod pulls pin 9 (RST) high via a 1k ohm resistor. When RST is thus held high, all of the 8051's lines, except the two clock lines XTAL1 and XTAL2, are forced to high impedance states. This allows the Pod to over drive the soldered-in microprocessor while connected to it with the Clip-On Adapter. The UUT must not try to force the RST line low (either by a gate or by a pull-down resistor smaller than 4k ohms). If the Reset line goes to peripherals, such as PIAs or CRT Controllers, they will be held reset.

Configuration Switches

Set Switch 6, the UUT Connection switch, to the CLIP-ON position.

Set Switches 7 and 8, the Clock Configuration switches, as follows:

O   For UUTs with an external crystal, set Switch 7 to the XTAL position, and set Switch 8 to the XTAL1 position.

O   For UUTs with external TTL clocks, set the switches according to instructions in Paragraph 2-3 of the 9000A-8051 Interface Pod Instruction manual.

Testing With the Clip-On Adapter

Once the Pod is attached to the UUT with the Clip-On Adapter, most test procedures remain the same. Resets will not be received from the UUT during RUN UUT, since the RST line is already high. Since some UUTs will not operate without Resets, it may be possible for RUN UUT to fail on those devices.

Some 8051 microprocessors with -AH part-number suffixes have a test mode that is activated by holding RST high and driving ALE and PSEN low during an external program Read. This test mode drives all port pins low for one bus

FLUKE

cycle after a UUT access. Although this does not interfere with the Pod's operation, it could cause spurious accesses or unwanted port action. This test mode will also cause RUN UUT to fail, since the Pod and the soldered-in microprocessor will both conflict on the bus.

Troubleshooting a Clip-On Adapter

If the Pod passes its Self Test but does not work with the Clip-On Adapter, check the adapter with the following tests:

1. Plug a 40-pin header into the Pod's Self-Test Socket, then attach the Pod plug using the Clip-On Adapter. Press BUS TEST to initiate a self test, which will test the adapter for continuity.

2. Connect the Pod to the UUT using the Clip-On Adapter, and use an oscilloscope to check that a clock signal is present at both the UUT, pins 18 and/or 19, and at the Pod plug, pins 18 and 19.

3. Verify that the logic level at pin 9 of the UUT's soldered-in microprocessor (the Pod-driven RST signal) is at least 4 volts.

If these procedures do not yield a solution, contact your nearest Fluke Technical Service Center for advice.

Clip-On Adapter Assembly P/N 739490

Pod Plug

Align pin 1

Clip-On Adapter

Align pin 1

Cable P/N 744714

Clip P/N 740639

Soldered-In Microprocessor