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HP E8018A/19A Hitachi SH7708, 7709 Analysis Probe, HP B3759A Emulation Solution Interface Software

For use with
Logic Analyzers

Product Overview

Solution for Integration

The HP 8018A/19A Analysis Probe Solution and HP B3759A Emulation Solution Interface Software allows you to do software and hardware integration tasks more efficiently. This solution provides processor external bus real-time trace, source level correlated trace/triggering capability for the firmware engineer, and also processor external bus signal observation for the hardware engineer. All features can work together so that your team can work efficiently on system integration tasks.

This solution is not a bond-out-chip based solution. Therefore this solution works properly even if there is no bond-out-chip.

Analysis Probe

The HP 8018A/19A Analysis Probe Solution allows an easy and reliable connection of an HP logic analyzer to your Hitachi SH7708/09/18 PQFP target system for real-time, non-intrusive analysis. The analysis probe solution gives you a complete real-time trace up to 100MHz internal (or 60MHz external) operation, and without having to design any special debug connectors into your target system.

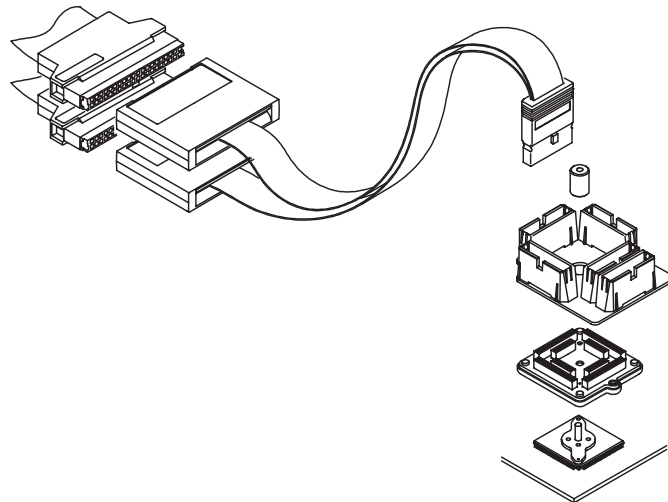


Figure 1: HP E8019A Analysis Probe

Emulation Solution Interface Software

The HP B3759A HP Emulation Solution Interface Software provides a user interface for HP 16600 and 16700 Series Logic Analyzers. This interface software works on Windows or Unix PC/WS machines connected to the HP 16600 and 16700 Series. This allows you to work on the PC/WS of your choice without regard to language, editor, etc. The interface software supports several kinds of memory systems. These memory systems are directly connected to a dedicated memory controller unit of SH7708/09. This

interface enables you to direct the inverse assembler to easily capture several kinds of memory bus cycles, including DRAM, EDO-DRAM, SDRAM, PCMCIA, Burst-ROM, etc. You can capture and display every kind of memory cycle and bus state with ADDRESS, DATA and STATUS schemes.

This software also provides a source level trace and triggering capability. You can see a complete source level trace display, and can specify any trigger point by pointing to a source line in a source window.

From Signal-Level to High-Level Source Code Analysis

While hardware designers need to analyze the prototype at the signal or bus level, software designers expect C-source level visibility during real time code execution.

This analysis capability can be delivered simultaneously with the HP E8018A/19A analysis probe and an HP B3759A interface software connected to the HP logic analyzer.

The HP E8018A/19A analysis probe sends every signal directly to the Logic Analyzer with appropriate state clocks. For state analysis, these state clocks are used as latch clocks in the logic analyzer. In addition, you can use these signals without a state clock for timing analysis.

On the state mode, an HP E8018A/19A analysis probe provides state-per-clock information to the HP B3759A emulation solution interface software. The interface software then provides a complete C-source level

Features

- Non-intrusive, real-time trace.
- Comprehensive display for all possible bus cycles.
- C-Source level display.
- C-Source level trigger (trigger on C-level instructions or global/static variables).
- Cross-triggering with other domain measurements.

These features give you a real time highly comprehensive trace list, ease of trigger setting, and cross-domain measurement capability for system integration.

Signal Line Loading

- 10pF on all signals
- 100Kohms on all signals

Analyzer Pod Required

*See Table 2

Host Computer Supported by HP B3759A

HP S-700 workstation (HP-UX 9.00 or greater)
SUN workstation (Solaris 2.4 / SUN-OS 4.1.1 or greater)
PC (Windows 95/Windows NT 4.0 or greater)

Microprocessor	Package	External Bus Speed	Analysis Probe
Hitachi SH7708	144 pin QFP	Up to 60 MHz	HP E8018A
Hitachi SH7709	208 pin QFP	Up to 40 MHz	HP E8019A
Hitachi SH7718	144 pin QFP	Up to 60 MHz	HP E8018A

Table 1: Microprocessors Supported

External Bus Speed	Memory Types Combination			Required PODS	Minimum Logic Analyzer supported
	Other than EDO/SDRAM	EDO-DRAM	SDRAM		
>40MHz(*2)	YES	NO	NO	6	HP 16602A HP 16700+HP 16550A HP 16700 + HP 16555/6/7x2(*2)
	D.C.	YES	NO	8	HP 16601A HP 16700+HP 16550Ax2 HP 16700 + HP 16555/6/7x2(*2)
	YES (w/wait cycle)	D.C.	YES	8	HP 16601A HP 16700+HP 16550Ax2 HP 16700+ HP 16555/6/7x2(*2)
	YES (no-wait cycle)	D.C.	YES	10	HP 16600A HP 16700 + HP 16550Ax2 HP 16700 + HP 16555/6/7x3(*2)
<=40MHz(*1)(*2)	D.C.	D.C.	D.C.	6	HP 16602A HP 16700 + HP 16550A HP 16700 + HP 16555/6/7x2(*2)

Table 2: Logic Analyzer Supported

D.C. = Don't Care

(*1) Condition of <=40 MHz : CKIO (cycle) = min25ns, CKIO(low)=min10ns, CKIO(high)=min10ns

(*2) In case using the 16557, an external bus speed threshold would be up to 50 MHz.

Condition of <=50MHz: CKIO (cycle)=min20ns, CKIO (low)=min7.5ns, CKIO(high)=min7.5ns

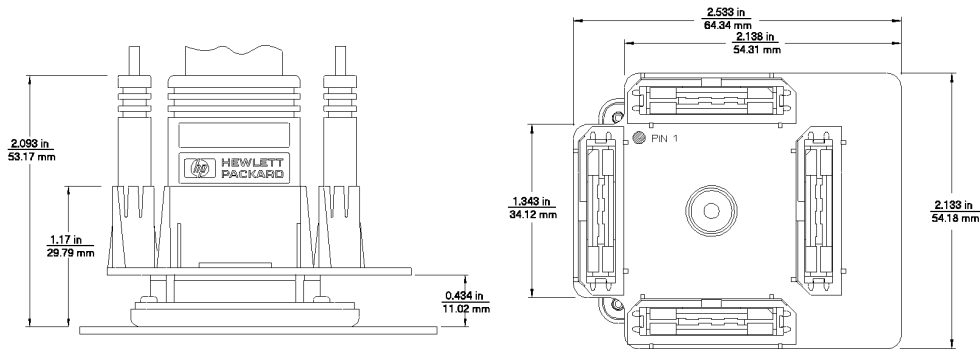


Figure 2: HP E8018A Dimension

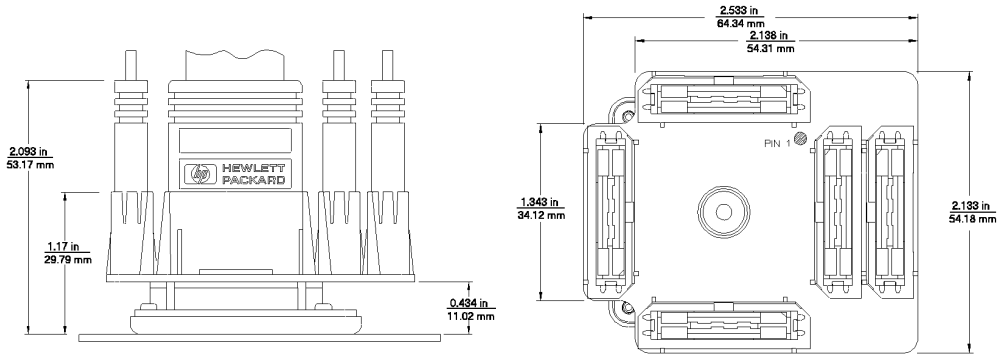
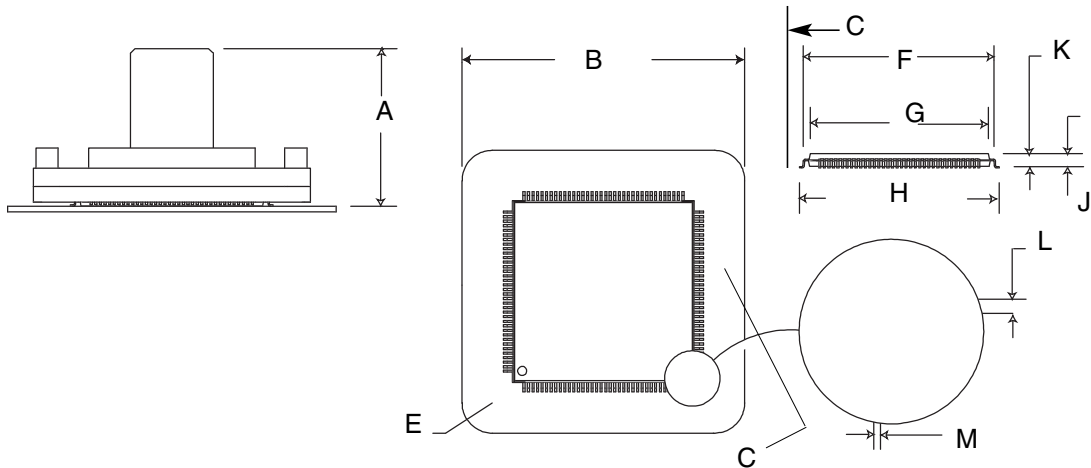


Figure 3: HP E8019A Dimension



Adapter	A	B	E	F	G	H	J	K	L	M
144-pin QFP (inches)	0.674	1.24	0.14	0.827 (min)	0.795 (max)	.0866 +/-0.008	0.053 to 0.057	0.057 to 0.063	0.02 +/-0.001	0.009 +/-0.002
(millimeters)	17.13	31.5	3.5	21 (min)	20.2 (max)	22 +/-0.20	1.35 to 1.45	1.450 to 1.600	0.5 +/-0.03	0.22 +/-0.05
208-pin QFP (inches)	0.76	1.507	0.149	1.14 (min)	1.11 (max)	1.197 to 1.213	0.126 to 0.146	0.136 to 0.161	0.0197 +/-0.0012	0.0087 +/-0.0015
(millimeters)	19.2	38.3	3.8	28.85 (min)	28.20 (max)	30.4 to 30.8	3.20 to 3.70	3.45 to 3.60	0.500 +/-0.03	0.220 +/-0.16

Figure4: Elastomeric Probe Dimensions for 144-pin QFP and 208-pin QFP

Ordering Information

Analysis Probe

HP E8018A Hitachi SH7708/18
Analysis Probe
HP E8019A Hitachi SH7709
Analysis Probe

Note:

HP B3759A emulation solution interface software must be ordered together.

Both analysis probes consists of:

- Elastomeric probing tool set
- Analysis probe with Mictor connector
- Hi-Density termination adapter set

Emulation Solution Interface Software

- HP B3759A #700 emulation solution IF SW for SH3

	Hitachi		Green Hills	
	C	ASM	C	ASM
s700	4.1A	3.1	1.8.8	1.8.8
Sun (Sun OS)	4.1A	3.1	1.8.8	1.8.8
Sun Solaris	4.1A	3.1	1.8.8	1.8.8
Windows95/ NT	4.1A	3.1	1.8.8	1.8.8

Table 3: Support languages for Emulation Solution Interface Software

Warranty Information

These Hewlett-Packard hardware products have a warranty against defects in material and workmanship for a period of one year from the date of shipment. During this warranty period, Hewlett-Packard Company will, at its option, either repair or replace products that prove to be defective.

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