HP 64789B Emulator for the Intel 386EX Embedded Processor

Product Overview

The HP 64789B emulator supports the Intel 80386EX processor with real-time, no wait state emulation to 25 MHz in both real and protected modes. The emulator also fully supports the System Management Mode (SMM) operation. User selectable foreground and background monitors with dual port memory insure maximum transparency in varied operating environments.

The HP 64789B active probe implementation operates between 3.3V and 5V and has long 914 mm (36 inch) cables for easy target system access without sacrificing electrical transparency or clock speed. The probe contains a bond-out version of the microprocessor, emulation monitor, run control circuits and up to 8 Mbytes of emulation overlay memory. Extensive breakpoint capabilities provide considerable flexibility to start and stop program execution at specific locations within very complex code.

The emulation control and logic analyzer cards plug into the modular card cage common to all HP 64700 series emulators. Connection to the host computer occurs via LAN, RS232 or RS422. An easy to use Real Time C Debugger interface for the PC greatly simplifies the emulator command structure and allows even casual users to access the emulator's full potential.
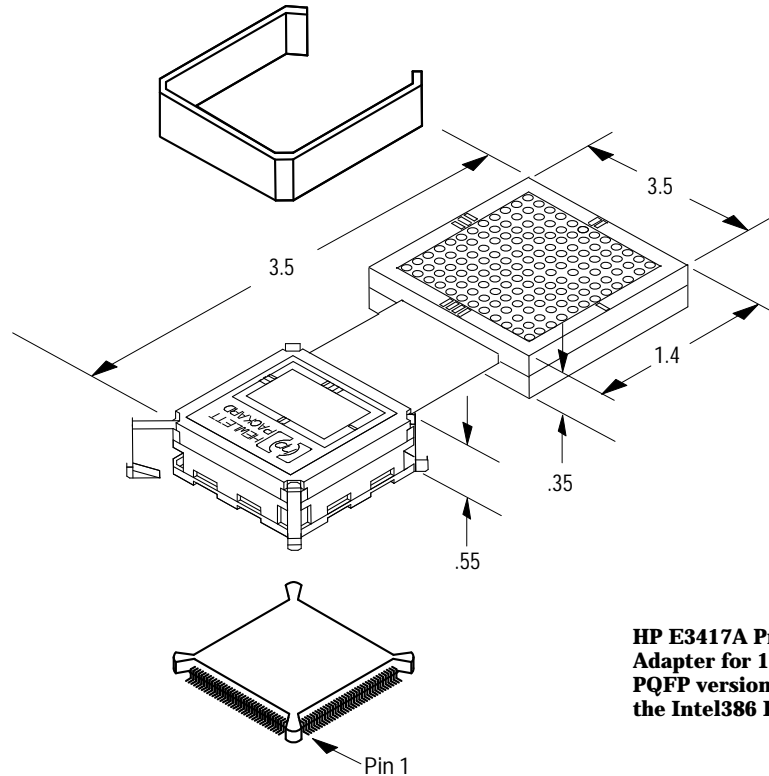

Features
- Real-time zero wait state operation from emulation or target memory to 25 MHz.

- Supports 3.3V to 5.5V operation.

- Active probe includes 8K of dual port emulation memory and supports up to 8 Mbytes of additional emulation overlay memory.

- Demo board with both 132 PQFP and 144 TQFP versions of the 386EX included for easy performance verification.

- Full symbolic debugging support for fast, easy development and debugging with HP user interface

- Supports both real and protected modes to facilitate code reuse.

- Background and foreground monitors support all run control features and require minimal resources from the target system.

- Flash EPROMs for easy firmware updates.

- Unlimited software breakpoints.

- Four hardware execution or access breakpoints.

- 8K, 64K or 256K analyzer trace buffer supports real-time analy sis of address, data and status/control information in conjunction with instruction dequeing of the trace list.

- Symbols inserted in the trace list help you to understand the code execution quickly.

- Display of current port and related timing information.

- Passive Mode Analysis opera tion allows emulator probe to simply replace the processor under test which helps isolate system problems from test equipment problems.
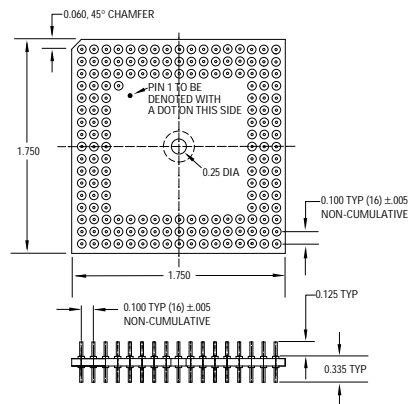
Probe Adapter
for HP 64789B

HP E3417A Probe adapter for 132 pin PQFP:

The HP E3417A probe adapter connects to 132 PQFP versions of the Intel386 EX processor and converts the signals to the 13X13 PGA pattern required by the emulator probe. The probe adapter snaps on to the device under test (DUT). In addition, the adapter has four clips that slide under the DUT to secure the connection.

Connection between the female PGA pattern found on the adapter transition board and the female PGA interfaceon the emulator probe is accomplished with a male to male PGA header (HP Part Number 64774-87604) which is shipped with each emulator probe. For pin protection, one or more PGA sockets (HP part number 1200-1920) may be used.

3.5

3.5

1.4

.35

.55

Pin 1

HP E3417A Probe Adapter for 132 PQFP version of the Intel386 EX

0.060, 45° CHAMFER

PIN 1 TO BE DENOTED WITH A DOT ON THIS SIDE

1.750

0.25 DIA

1.750

0.100 TYP (16) ±.005 NON-CUMULATIVE

0.100 TYP (16) ±.005 NON-CUMULATIVE

0.125 TYP

0.335 TYP

HP 64774-87604 PGA 13X13 male to male header

Ordering Information

HP E3417A Probe Adapter for 132PQFP $1280.00
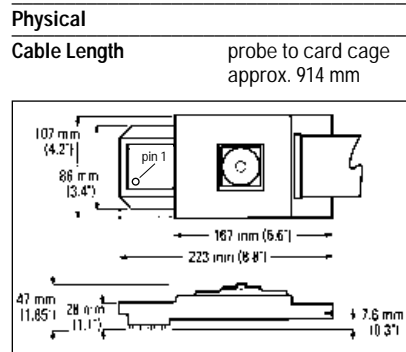
HP 64774-87604 PGA 13X13 male to male header $87.50

HP 1200-1920
PGA socket $26.00

Specifications

Processor Compatibility	Intel 386EX in 132 pin PQFP or 144 pin TQFP configurations.
Electrical	
Maximum Clock Speed	25MHz with no wait states required for emulation or target memory.
Minimum ClockSpeed	0Hz
Power:	500mA max from target system; all other power supplied by card cage.
Vcc Range	3.5V to 5.5V
Environmental	
Temperature	operating, 0.0 to + 40.0 C (=32.0 to + 104.0 F); nonoperating, - 40.0 to +70.0 C (-40.0 to +158.0 F).
Altitude	operating/nonoperating, 4600 m (15,000 ft.).
Relative Humidity	15% to 95%.

Regulatory Compliance (when installed in HP 64700 card cage)	
Electromagnetic Interference	CISPR 11:1990/EN 55011 (1991): group 1 class A
	IEC 801-2:1991/EN 50082-1 (1992): 4kV CD, 8kV AD
	IEC 801-3:1984/EN 50082-1 (1992): 3V/m, 80% modulation, 26MHZ - 1000 MHz
	IEC 801-4:1988/EN 50082-1 (1992): 0.5 kV signal lines, 1kV power lines.
Safety	self certified to UL 1244, IEC 348/HD 401 S1, CSA-C22.2 no.231 Series-M89
Physical	
Cable Length	probe to card cage approx. 914 mm

Development Tools for the Intel 386EX

Emulator	HP 64789B
Debugger/Emulator	HP B3637A Real Time C Debugger
Debugger Simulator	Green Hills Software Multi Environment
C Compiler	Green Hills Software Multi Environment Intel/MRI
Assembler	Intel/MRI
Linker Locator	Green Hills Software Multi Environment Intel/MRI

Ordering Information

Terminal-based emulation system for Intel 386EX

Model	Description
HP 64789B	Active probe emulator with 8kbyte of dual port emulation memory.
HP 64748C	Emulation control card
HP 64794A	8K-deep emulation bus analyzer, 80-channel
HP 64700B	Cardcage
HP B3637B	Real-time C Debugger
Emulation system options	
HP 64794C	64K-deep emulation bus analyzer, 80-channel
HP 64794D	256K-deep emulation bus analyzer
Probe Adapters	
HP E3417A	Connects to 132 PQFP
Contact HP field engineer for information on 144 TQFP	