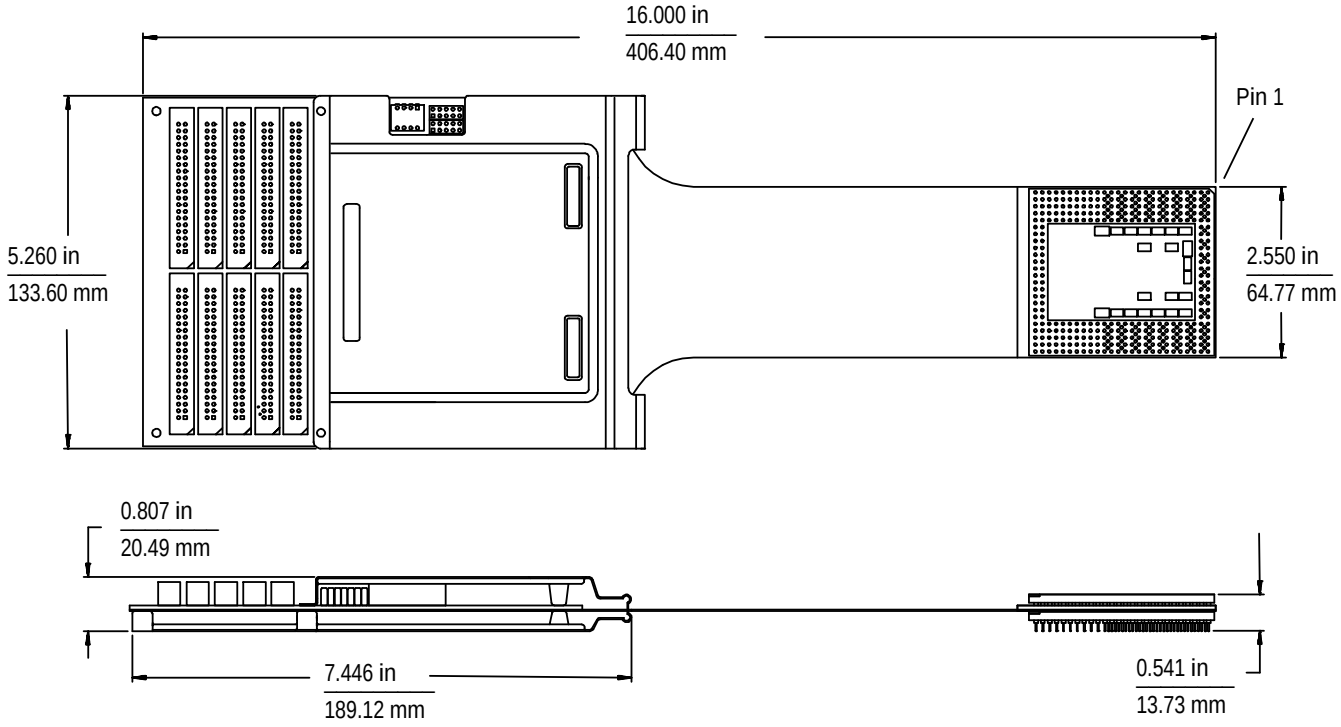
HP E2466B

Preprocessor Interface for the Intel Pentium® Pro Processor

For use with the HP 16500B logic analysis system

The HP E2466B preprocessor interface for the Pentium® Pro processor allows you to easily trace the operation of a Pentium Pro processor system. The preprocessor and its transaction tracker software for the HP 16500B logic analysis system simplify the analysis of the Pentium Pro multiprocessor bus. Bus transactions are summarized in the state listing display for rapid interpretation of bus operation. Bus timing diagrams displayed as waveforms are overlaid with status information for quickly identifying bus conditions. In addition, your time to insight into critical Pentium Pro system problems can be further reduced by using the HP 16505A prototype analyzer with the HP E2466B, and the HP 16500B logic analysis system.



Capturing Transactions

The HP E2466B keeps track of the Pentium Pro processor, making it simple for you to analyze its operation. Because several transactions may be pending on the Pentium Pro processor bus at one time, the HP E2466B preprocessor and transaction tracker keep track of the start and end of each bus phase. This information is used to save you time, by presenting a state listing of bus activity grouped by complete transactions.

Identifying Transactions

The type is identified for you by the HP E2466B and presented in the analyzer's listing display. Each transaction displayed starts with the request type, such as memory read, I/O write, and code read. Additional information provided in the listing display includes error phase results, snoop results, response, and data. Transaction duration measured in bus clocks is summarized at the end of each transaction listed.

Selecting Transactions

Focus your analysis of the activities on the Pentium Pro multiprocessor bus by choosing to display those operations that give you the best view of the problem. Included with the HP E2466B is a complete set of filters that allow you to selectively list transactions by agent and transaction type. For example, you can list only branch trace messages originating from agent 0.

Displaying Bus Phase

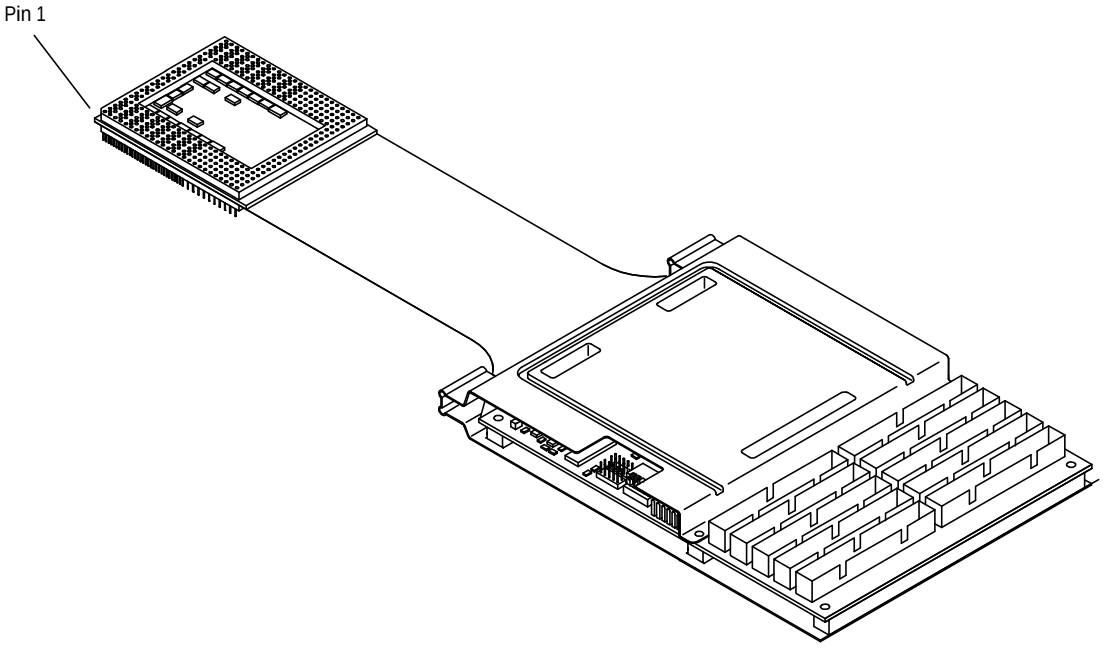
For your convenience, each phase of a transaction is displayed in order of occurrence. The HP E2466B clearly identifies and presents request, snoop, error, response, and data phases of the Pentium Pro processor's multiprocessor bus.

Viewing Bus Timing

Visibility into bus timing of the Pentium Pro processor is made easy with the HP E2466B preprocessor. Configuration software provided with the HP E2466B presets the HP 16500B logic analyzer's timing display into Pentium Pro processor bus-specific-signal groupings. Bus status information overlays each waveform group, enhancing your insight into the sequence of Pentium Pro processor bus events. Bus timing measurements are made simply and directly using markers active in the logic analyzer timing display.

Observing APIC Bus Messages

View Advanced Programmable Interrupt Controller (APIC) bus messages in easy to understand mnemonics. Included with the HP E2466B is software that decodes APIC bus activity.



Features

Transaction tracker bus phase displays
Request Phase
Snoop Phase
Error Phase
Response Phase
Data Phase
Summary Information (transaction timing measured in bus clocks)

Display filter options
Selectively display the most important transactions by using state listing filters.

Agents	ADS#, DID[7:0]#, (Ab[23:16]#)
Symmetric 1:	Show/Suppress
Symmetric 2:	Show/Suppress
Symmetric 3:	Show/Suppress
Symmetric 4:	Show/Suppress
Priority:	Show/Suppress

Transaction Types	ADS#, REQa[4:0]#, REQb[4:0]#
Deferred Replies:	Show/Suppress
Interrupt Acknowledge:	Show/Suppress
Special Transactions:	Show/Suppress
Branch Trace Messages:	Show/Suppress
I/O Reads:	Show/Suppress
I/O Writes:	Show/Suppress
Memory Read & Invalidate:	Show/Suppress
Memory Reads – Data:	Show/Suppress
Memory Reads – Code:	Show/Suppress
Memory Writes:	Show/Suppress
Memory Writebacks:	Show/Suppress

Note: Agents and transaction type filter terms are combined in display by "ANDing."

Clock Qualification

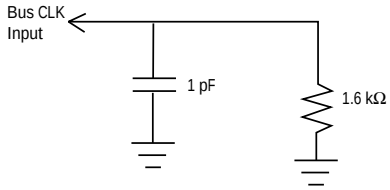
Expanded Mode: Enables logic analyzer clocking while transactions are outstanding on the Pentium Pro bus.

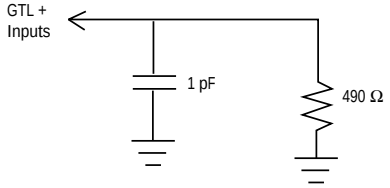
Compacted Mode: Maximizes logic analyzer memory utilization by only enabling clocking during transaction phases and transfer of reset configuration information on the Pentium Pro bus.

Specifications

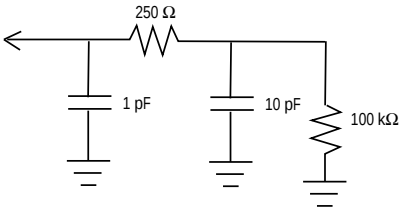
Processor	Pentium Pro processor
Package	387 pin SPGA
Logic Analysis Probes Required	10 (compatible with HP 16550A, 16554A, 16555A, and 16556A logic analyzer modules for the HP 16500B Logic Analysis system)

Signal Line Loading





3.3V Tolerant, APIC, and JTAG Inputs



Clock Frequency	66 MHz maximum for external BCLK
Target Signal Amplitude	800 mV p-p minimum for all GTL+ signals
Timing Analysis	3 ns channel-to-channel skew (typical)
Power Requirements	Supplied by the logic analyzer
Environmental Temperature	
Operating	0 to 55 °C (+32 to +131 °F)
Nonoperating	– 40 to 75 °C (– 40 to +167 °F)
Altitude	
Operating	4,600 m (15,000 ft)
Nonoperating	15,300 m (50,000 ft)
Humidity	Up to 90% noncondensing. Avoid sudden, extreme temperature changes that could cause condensation within the instrument.

Ordering Information

HP E2466B
Preprocessor interface for the Intel Pentium Pro processor (requires HP 16500B mainframe)

HP 16554A
500K-Sample, 70-MHz state/250-MHz timing logic analyzer module (Requires an HP 16500B mainframe)

HP 16555A
1M-Sample, 110-MHz state/500-MHz timing logic analyzer module (Requires an HP 16500B mainframe)

HP 16556A
1 M-Sample, 100 MHz state/400 MHz timing logic analyzer module (Requires an HP 16500B mainframe)

10390A, Option 006
System Performance Analysis software for HP 16554A, HP 16555A, and HP 16556A

HP 16550A
100-MHz state/500-MHz timing logic analyzer module

10390A, Option 004
System Performance Analysis software for HP 16550A

HP 16500B
Logic Analysis System Mainframe

HP 16505A
Prototype Analysis System

HP 16500U
Upgrades an HP 16500A mainframe to an HP 16500B mainframe

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