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LOGIC ANALYZERS

Logic Analysis Systems

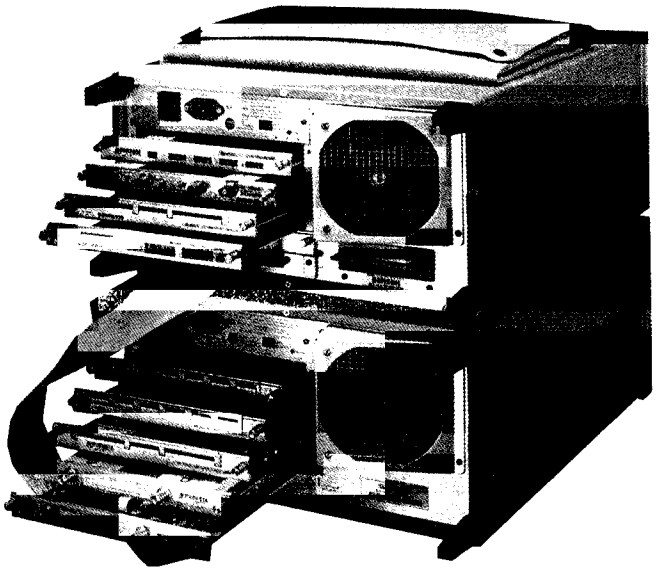
HP 16500A and Measurement Modules

- Modular, configurable logic analysis system
- Expandable, up to nine different measurement modules
- Powerful cross-module triggering
- 100-MHz state analysis
- Support for most microprocessors
- 1-GHz timing and pattern generation modules



HP 16500A

DESIGNED FOR HP-IB SYSTEMS



The HP 16500A supports six different measurement modules.

HP 16500A Modular Logic Analysis System

The HP 16500A logic analysis system can be configured for a wide range of measurement tasks, including microprocessor debug, hardware design verification and debug, software performance analysis, characterization, and functional pass/fail testing. Start with a focused system, then expand as your needs evolve.

The HP 16500A logic analysis five card slots accept six different measurement modules. With the HP 16500A, you can do the following:

- Customize your own system by adding cards to the five card slots.
- Make time-correlated measurements between cards using the intermodule bus.
- Compare hardware measurement data with design simulation data.
- Program the HP 16500A with easily understood commands through HP-IB or RS-232C built-in interfaces.
- Store setups and measurement results in either of two built-in disk drives for fast recall or permanent record.
- Generate report-quality documentation with pushbutton ease.

HP 16501A Logic Analysis System Expansion Frame

The expansion frame provides an additional four* slots to your HP 16500A Logic Analysis System, giving you control of up to nine measurement modules from your HP 16500A's interface. With the expansion frame you can now cross-trigger up to nine measurement modules and then view your results on the same screen with 10 ns time correlation.

Color Touchscreen, Mouse, and Keyboard

Save time and reduce errors with the HP 16500A color touch screen. Simply point to the field you want to change; the touchscreen eliminates the need to search a front panel for the right button. Pop-up menus offer all choices at a glance, and the software does not allow you to make an incorrect choice. Front-panel operations can also be executed via mouse and/or keyboard providing complete user-interface flexibility.

Color discriminates between overlapped traces and emphasizes important points. In addition, you can customize for personal preference and environmental considerations. Even infrequent users spend less time making measurements and more time analyzing the results.

Data display areas are not touch-sensitive, so there is no need to worry about losing your latest acquisition.

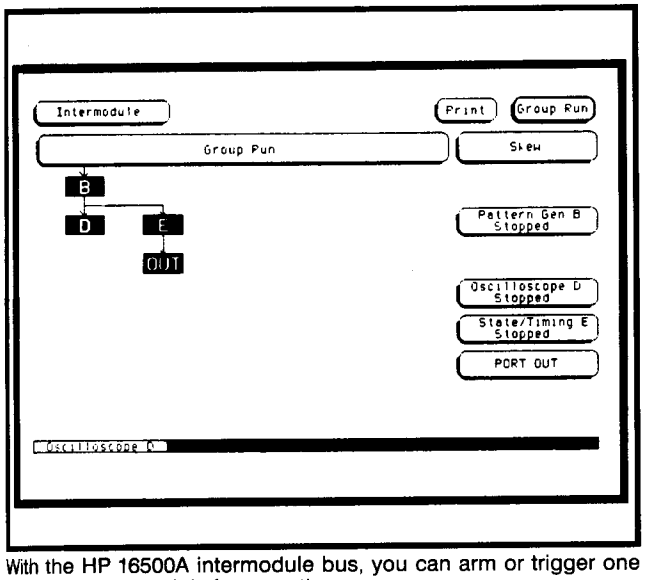
Use Cross-Domain Triggering for Complex Measurements

Use state to arm timing, or use timing to arm state when the symptom of a problem is best isolated with one analyzer and the cause is best isolated with the other. For example, track a microprocessor program flow around a hardware interrupt. Find the edge of the interrupt signal with the timing analyzer. After the signal is found, the timing analyzer can arm the state analyzer to start acquiring data.

*The HP 16501A interfaces with the HP 16500A via an expansion frame interface card that occupies one of the HP 16500A's five module slots. The expansion frame has five slots, providing a total of nine measurement module slots when combined with the HP 16500A.

Perform Time-Correlated State Analysis of Multiple Microprocessors

In multiple microprocessor environments, systems are driven by multiple clocks. The HP 16500A/16510B provides simultaneous capture of separately clocked systems while time-tagging all states. You can capture the states from several microprocessors, then analyze their flow with interleaved, time-correlated state displays. You can monitor up to 10 independently clocked microprocessor systems with five HP 16510B modules while monitoring the activity with state-to-state time-correlated listings or monitor multiple RISC systems at speed with the HP 16540A/D and HP 16541A/D.



With the HP 16500A intermodule bus, you can arm or trigger one measurement module from another.

Configure Your System

The HP 16500A Logic Analysis System can be configured for your debug, characterization, systems integration, or pass/fail testing applications. Start with a focused system, then expand it as your needs evolve. For example, start with an 80-channel logic analyzer and a 2-channel oscilloscope, then add more capability as needed.

High-Performance System

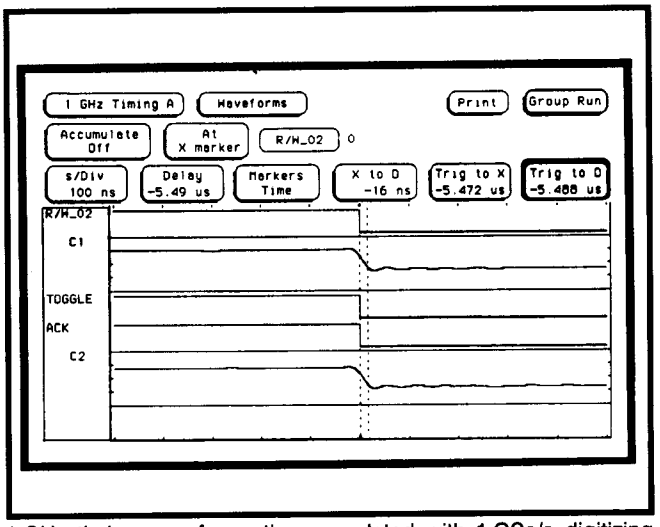
Verify or analyze the performance of circuits through combined analog, state, and timing measurements. The five card slots hold state/timing cards, timing cards, pattern generator cards, and digitizing oscilloscope cards. Use these cards in combination to make measurements that could not be made with separate instruments. For example, state can arm both oscilloscope and timing waveform capture, allowing you to display a mixture of timing and scope waveforms on screen to measure time relationships between events.

Store Setups and Data Quickly

It is easy to store and retrieve measurement results and setups with the two built-in 3½-inch disk drives. Use the back disk drive for the operating system, leaving the front disk free for measurement files.

Correlate 1-GHz Timing with Oscilloscope Waveforms

Connect several 1-GHz timing lines while probing simultaneously with oscilloscope channels. For example, configure 32 channels of 1-GHz timing with four oscilloscope channels to provide time correlation from a single trace point. This procedure allows you to capture the number of channels you need while simultaneously capturing parametric information.



1-GHz timing waveforms time correlated with 1-GSa/s digitizing oscilloscope waveforms.

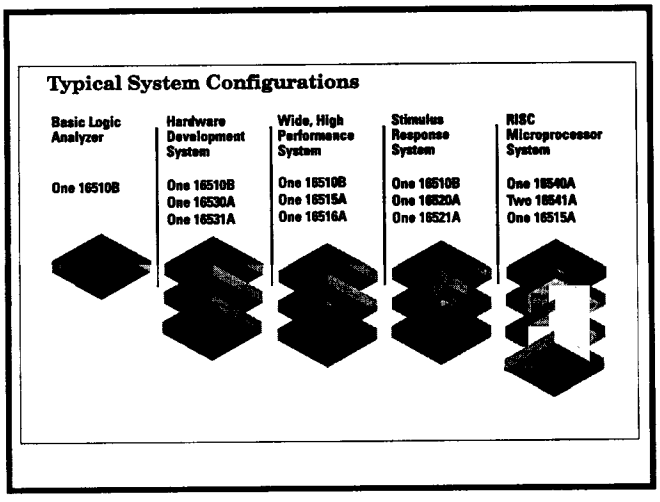
Application Driven Trigger Selection

Select the trigger mode that best suits your application. Use glitch, state, analog, or timing triggers to capture state, analog, and/or timing data. To analyze interrupt handling in a microprocessor system, use the oscilloscope to arm timing, state, and analog on the asynchronous interrupt. Then capture microprocessor program flow with state, capture control lines with timing, and capture the interrupt line with the scope. The HP 16500A Logic Analysis System connects state, timing, analog, and pattern generation trigger qualification serially or in parallel in any order to meet your needs.

Generate Patterns Interactively

Generate patterns triggered by the intermodule bus or by the pattern generator's external qualification. The intermodule bus provides state, analog, timing, and/or pattern generator program flow qualification. Test your circuit's response to patterns derived from simulation, for rigorous functional analysis of prototypes. You can quickly generate pattern generator programs using the HP 10392A state-to-pattern generator link.

See page 343 for ordering information.



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