

### HP 16530A Timebase Card, HP 16531A 2-Channel Acquisition Card

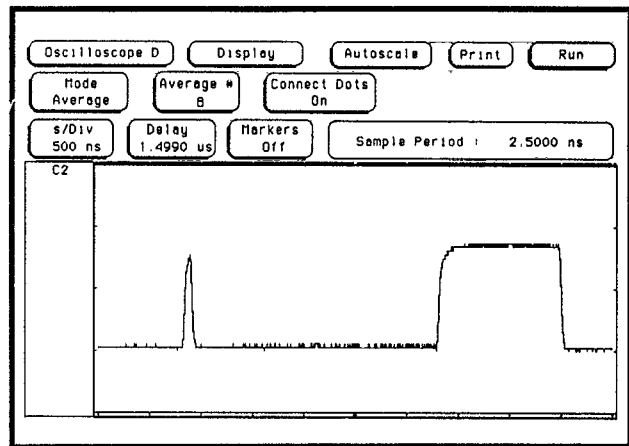
#### Built-in Full Featured Scope

The HP 16530A/16531A offers the advantages of a full-featured digitizing oscilloscope, integrated into your logic analyzer. You get a full 100-MHz analog-equivalent bandwidth scope with digitizing advantages such as autoscale, automatic measurements, powerful triggering, and negative time viewing.

Arm or trigger the oscilloscope from any other module in the HP 16500A logic analysis mainframe. You can capture and display the analog events that affect the digital system. Correlate the oscilloscope to state listings and timing waveforms to identify cause-and-effect relationships.

#### Correlate Single-Shot Events with Precision Time-Interval Measurements

Make time-interval measurements with markers at better than 1-ns accuracy single-shot (after deskewing). Accuracy at probe tip is ensured by a front-panel calibration routine that reduces channel-to-channel skew. You can also calibrate for delays caused by uneven probe lengths, to ensure that the measurement is correct.



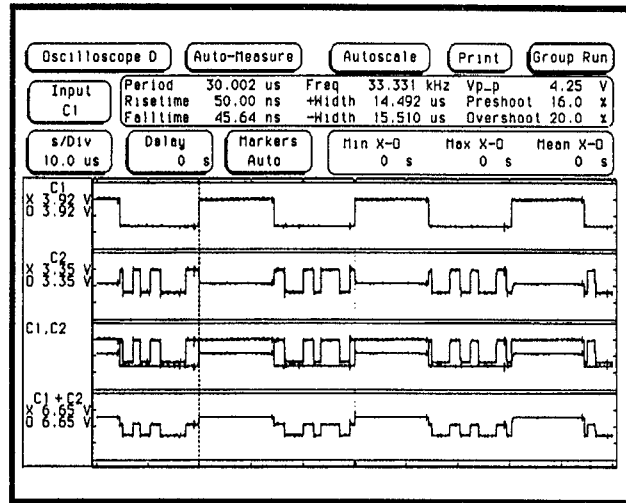
The HP 16530A/16531A Digitizing Oscilloscope finds a glitch.

#### Single-Shot Analysis

The HP 16531A 2-channel, 400-Msa/s digitizing oscilloscope captures 100-MHz bandwidth signals single-shot. You can capture up to eight channels simultaneously to determine relationships between infrequent events. A high-resolution color display and postcapture scroll and zoom allow detailed examination of waveforms.

#### Capture Many Waveforms Simultaneously

Run up to four HP 16531A oscilloscope cards with a single HP 16530A time-base card for simultaneous acquisition. The HP 16530A/16531A oscilloscope module can be configured to acquire from two to eight signals simultaneously. Save time when debugging and characterizing systems by observing multiple test points during each test.



Waveform match functions are available.

#### Measure Slow and Fast Events Simultaneously

Use the 4 K sample depth to measure periods and time intervals. Then zoom in for rise-time measurements. Add a second oscilloscope module to create a dual time base digitizing oscilloscope, and to display events with different time bases on the same screen.

#### Find the Causes of Errors

Each channel has 4 K memory depth for capturing events before or after the trigger event. View events up to 10 $\mu$ s before the trigger event with greater than 1 ns accuracy.

#### View Analog and Digital Waveforms – and More

Capture random signal variations with the Accumulate mode. Filter out noise with Average mode. Show true single-shot events with Single mode. Scan many periods of the waveform easily with the Connect-the-Dots feature. View analog-like waveforms with 6-bit vertical resolution. Analyze differential waveforms with the A-B mode. The HP 16530A/16531A gives you all of the features of a digitizing oscilloscope plus the power of a logic analyzer in one frame.

#### Automatic Measurements

Automatic pulse parameters allow fast analysis without having to count gratitudes. Parameters such as frequency, period, pulse width, peak-to-peak voltage, maximum voltage, minimum voltage, rise time, fall time, preshoot, and overshoot require just one keystroke. Measure voltage and timing relationships by placing the markers and reading the results on the display. Display the time between markers, acquire until capture specified time between markers, or perform statistical analysis on the time between markers. Setup is easy with automatic waveform scaling, TTL and ECL presets, and automatic marker placement on specified edges.

#### Key Specifications and Characteristics

Model Numbers	HP 16530A, HP 16531A
Bandwidth*	dc to 100 MHz (real time, dc coupled)
Maximum sample rate	400 MSa/s
Channel count	2, 4, 6, or 8 simultaneous channels. Maximum of 14 channels with the HP 16501A expansion frame.
Rise time**	3.5 ns
Vertical resolution	6 bits over 4 div ( $\pm 1.6\%$ )
Waveform record length	4096 points
Time-interval measurement accuracy	$\pm (0.02\% \times \text{time interval} + 750 \text{ ps})$
Input coupling	dc
Input resistance	1 M $\Omega$ , 50 $\Omega$
Input capacitance	13 pF (nominal)

\*Specifications

\*\*Rise time is calculated from: rise time = 0.35/bandwidth

See page 343 for ordering information.