

LOGIC ANALYZERS

Selection Guide

HP's selection of logic analyzers consists of the HP 1650 series of portable logic analyzers and the HP 16500A logic analysis system. The following application reference guide provides a quick overview of HP analyzers, key measurement needs, and features. More information on logic analyzers is provided on the following pages.

Application Reference Guide

	1650B	1651B	1652B	1653B	1654B	16500A
Microprocessor Support						
8-bit	Y	Y	Y	Y	Y	Y
16-bit	Y		Y		Y	Y
32-bit	Y		Y			Y
RISC						Y
DSP	Y	Y	Y	Y	Y	Y
Multiple Microprocessor Support	Y		Y		Y	up to 10
Bus	Y	Y	Y	Y	Y	Y
Custom	Y	Y	Y	Y	Y	Y
Hardware Analysis						
Timing						
100 MHz/All Channels	Y	Y	Y	Y	Y	Y
1 GHz						Y
Glitch Detection	5 ns	5 ns	5 ns	5 ns	5 ns	2 ns
Maximum Channels	80	32	80	32	64	400 @ 100 80 @ 1 GHz
Digitizing Oscilloscope						
400 MSa/s-100 MHz BW			Y	Y		Y
1 GSa/s-250 MHz BW						Y
50 MBit/s Pattern Generation						Y
Cross-Domain Measurements						
Timing/State	Y	Y			Y	
Timing/State/Scope			Y	Y		Y
Software Analysis						
State Speed (MHz)	35	35	35	35	35	35/100
Channel Count	80	32	80	32	64	400/208
Sequencer Speed (MHz)	35	25	35	25	35	35/100
Correlated State Listings	Y	Y	Y	Y	Y	Y (100 MHz)
System Performance Analysis	Y	Y	Y	Y	Y	Y
Compare/Run Until	Y	Y	Y	Y	Y	Y
Chart Mode	Y	Y	Y	Y	Y	Y
System Features						
Portable	Y	Y	Y	Y	Y	
Modular						Y
Programmability			HP-IB/RS-232 on all			
Hard Copy Output			Variety of HP-IB or RS-232 printers			
Setup Storage/Auto Load	Y	Y	Y	Y	Y	Y
Data Storage			compatible disk files			
Color						Y
Keyboard/Mouse						Y
Page Reference	327	327	329	329	327	330

Logic Analysis Systems

HP 16500A	HP 16510B	HP 16515/516A	HP 16530/531A
5-slot mainframe	80 channels/card	1 GHz timing analysis	Oscilloscope time base and acquisition cards
9-inch color display	Up to 5 cards/16500A	16 channels/card	Up to 8 input channels per 16500A
Touch screen or mouse control	100 MHz sampling for timing analysis	Up to 80 channels with full capability/16500	Can be triggered by state or timing analysis
Two 3.5-inch disk drives	35 MHz maximum input clock in state analysis	1 ns resolution	400 Msamples/s for 100 MHz bandwidth for single-shot and repetitive signal analysis
Inter-card triggering via intermodule bus	Detects glitches as small as 5 ns	8 kbit/channel memory	Automatic measurements and statistics
Screen hard copy via RS-232 + HP-IB	Simultaneous state/timing analysis	HP 16520/521A	
Programmability via RS-232 + HP-IB		50 Mbit/s pattern generator	
Simultaneous display of state, timing, and oscilloscope traces	HP 16511B	Up to 204 channels/16500A	
Links to CAE and manufacturing testers	Combines two HP 16510B systems	ECL and TTL output	
	Triggers up to 160 channels wide	Can be combined with 16510B or 16515/516A for stimulus/response testing	
	HP 16540/541		HP 16532A
	100 MHz state/timing analysis		1-Gigasample/s oscilloscope
	4 kbit or 16 kbit/channel memory		250 MHz single-shot bandwidth
	Up to 208 channels per 16500A		2 channels per card
			Up to 10 channels per 16500A
			Automatic measurements and statistics