HP 16500C Logic Analysis System and Measurement Modules

HP 16505A Prototype Analyzer and Tool Sets

Configuration Guide



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Overview

The HP 16500C logic analysis system and HP 16505A prototype analyzer work together to solve problems when verifying and debugging physical prototypes of complex digital electronic systems. They are designed to give you insight into both hardware and software. They are especially valuable in understanding software-hardware interaction. The HP 16500C logic analysis system can be used as a stand-alone component. The HP 16505A prototype analyzer adds a large-screen, windowed user interface and advanced analysis capabilities to the HP 16500C.

The HP 16500C and 16505A system includes the following components:

- An HP 16500C logic analyzer main- HP-IB (IEEE488) frame (required) with one HP 16501A expander frame (optional)
- An HP 16505A prototype analyzer (optional)
- Measurement modules for the HP 16500C (required)
- Preprocessors for microprocessors or buses (optional)
- Tool sets for the HP 16505A prototype analyzer (optional)

A broad variety of probing adapters and accessories are also available. For more information, refer to Accessories for HP Logic Analyzers, product overview, HP publication number 5963-3376E.

The HP 16500C Logic **Analysis System Mainframe and HP 16501A Expansion Frame**

The HP 16500C logic analysis system mainframe provides five slots for any of the measurement modules listed under "Measurement Modules" below. The HP 16501A expansion frame adds an additional five slots. One HP 16501A can be combined with one HP 16500C for a total of ten measurement modules in one system.

Interfaces provided on the HP 16500C

- LAN, IEEE802.3 Refer to "LAN", page 12
- RS-232-C, 9-pin connector
- Centronics parallel printer port

A 1.44 MB, 3.5 inch floppy drive and a hard disk drive are included in the HP 16500C. The standard HP 16500C comes with 8 MB of memory. DIN connectors are provided on the HP 16500C for a PS-2 keyboard and mouse. See "Accessories provided", page 4 and "Accessories available." A training kit is provided with the HP 16500C, as well as an installation guide, a user's guide, and a user's reference.

HP 16505A Prototype Analyzer

The HP 16505A prototype analyzer adds a large-screen, windowsbased user interface and advanced analysis capabilities to the HP 16500C. The HP 16505A supports one HP 16500C and one HP 16501A (optional).



Figure 1. HP 16500C and 16505A System

HP Model Number	er HP 16500C	HP 16501A ¹	HP 16505A ³
Accessories Provided	One PS-2 mouse One 10-conductor, flying-lead cable to connect the target control port to the target system Training kit		 Keyboard Mouse Cable to connect the HP 16505A to the HP 16500C
Accessories Available	HP E2427B keyboard. The keyboard includes an overlay for the special function keys. The HP 1181A testmobile system cart is recommended for the HP 16500C. Recommended accessories for use with the HP 1181A cart include: HP 35181D work surface for keyboard and mouse HP 35181G 133-mm (5.25-inch) storage drawer HP part number 5181-8723 support shelf		Monitor and monitor cable The HP 16505A supports any SVGA monitor with the characteristics shown below: Resolution Frequency 1024 x 768 60 Hz, 72 Hz, 75 Hz 800 x 600 75 Hz A monitor with 1024 x 768 or greater resolution is recommended. With option UF3, 1 MB video RAM, the HP 16505A supports SVGA monitors with 1280 x 1024 resolution at 50 Hz, 60 Hz, or 72 Hz. **The control of the control
Options Available			
Option No. ABD ABF ABJ ANT	Description German language training kit manual French language training kit manual Japanese language users guide and training kit manual	Japanese language users guide and training kit manual	 Add 64-MB RAM for a total of 96 MB. Recommended for use with 16500C systems with two or more 16554A, 16555A, 16555D, 16556A, or 16556D modules, and for use with the
W03 W30 0B0 0B1	 Convert standard one-year, return-to-HP warranty to three-month, on-site warranty Three-year, return-to-HP repair service Delete manual set 	Convert standard one-year, return-to-HP warranty to three-month, on-site warranty Three-year, return-to-HP repair service	 HP B4620A software analyzer. Convert standard one-year, return-to-HP warranty to three-month, on-site warrant Add service manual (not required for
0BF 0B3 001	 Add programmer's guide Add service guide 16 MB memory (recommended for use with the symbol download utility, for some very large symbol tables; also recommended when the HP 16501A expansion frame is used with the HP 16500C). Also recommended for use with the HP B3740A software analyzer. External removable hard disk drive 		normal operation).
908 UF3	Rackmount kit	Rackmount kit	1-MB video RAM. Enables support for SVGA local monitors with 1280 x 1024 resolution.
HP Reference Publications			1024 resolution. ew, pub. no. 5965-3187E

¹ Note: To use an HP 16501A with an HP 16500B logic analysis frame, an HP 16500H interface module is required.

Note: A local monitor is not required for remote operation of the HP 16505A. However, a local monitor is required for system initialization and to update system software and for password entry.

³ Note: To use an HP 16505A with an HP 16500B logic analysis frame (or an HP 16500A which has been upgraded with an HP 16500U upgrade kit), an HP 16500H interface module is required. The interface module is not required to use the HP 16505A with an HP 16500C.

General-Purpose State and Timing Analyzers

	HP 16550A	HP 16554A	HP 16555A	HP 16555D	HP 16556A	HP 16556D
Channels Per Card	102	68	68	68	68	68
Maximum Channels on a Single Time	204	204	204	204	340	340
Base and Trigger						
Maximum Channels in a Single	510	340	340	340	340	340
HP 16500C Frame						
Maximum Channels in a System	1020	680	680	680	680	680
(one HP 16500C and one HP 16501A)						
Maximum State Clock Speed	100 MHz	70 MHz	110 MHz	110 MHz	100 MHz	100 MHz
Maximum Timing Sampling Rate	500 MHz	250 MHz	500 MHz	500 MHz	400 MHz	400 MHz
Memory Depth (Full Channel)	4K	500K	1 M	2 M	1 M	2 M
Number of State Clocks/Qualifiers	6	4	4	4	4	4
(see note)						

⁴ Note: Clocks and qualifiers are available only on the master card in multi-card configurations.

HP Model Number	HP 16554A, HP 16555A,	HP 16555D, HP 165	56A, HP 16556D	HP 16550A	
Accessories Provided	Description	HP Part Number	Quantity	Quantity	
	 Probe tip assemblies 	01650-61608	4	6	
	 Surface mount grabbers 	5090-4356	4 packages of 20	6 packages of 20	
	 Extra probe leads 	5959-9333	1 package of 5	1 package of 5	
	 Extra probe grounds 5 	5959-9334	4 packages of 5	6 packages of 5	
	 Probe cables 	16555-61606	2	3 (01660-61605)	
	 Probe cable ID clips 	16500-41201	0	1	
	 Probe cable and pod labels 	01650-94301	1	1	
	 Double probe adapter 5 	16542-61607	1	1	
	 Ferrite core assembly ⁵ 	16555-60001	2	0	
Options Available	Option Number	Description			
	ABJ	Japanese language ma	anual (not available on HP 1655	6A or 16556D)	
	ABO		uage training guide (Only availa	•	
	W03		rear, return-to-HP warranty to thr		
	W30	Three-year, return-to-HP repair service			
	0B0	Delete manual set			
	0BF	Add programmer's quic	de		
	0B3	Add service guide	40		
HP Reference	Accessories for HP Logic Analyzers, Product Overview, pub. no. 5963-3376E				
Publications	A Family of State and Timing Analyzers for the HP 16500B Logic Analysis System, Product Overview,				
	pub. no. 5962-7245E				

 $^{^{\}rm 5}$ Note: Included with HP 16554A, 16555A, 16555D, 16556A, and 16556D only

High-Speed Timing and Synchronous State Analyzers, HP 16517A and 16518A

	Timing mode		Synchronous State Mode
	Full Channel	Half Channel	Full Channel
Maximum Sample Rate	2 GSa/s	4 GSa/s	1 GSa/s
			2 GSa/s ⁶
Channels Per Card	16	8	16
Maximum Channels on a Single	80	40	80
Time Base and Trigger, and in a			
Single HP 16500C Frame			
Maximum Channels in a System	160	80	160
(One HP 16500C and One			
HP 16501A)			
Memory Depth	64 K	128 K	64 K

Accessories Provided ⁷	Description		HP Part Number	Quantity in Kit
11011404	 Right angle ground 	leads	16517-82106	20
	 Ground extenders 	for 0.1-inch center connectors	16517-82105	20
	 4-to-1 ground conn 	ectors	16517-27601	2
	 Probe pins 		16517-82107	4
	Tack-on signal and ground wiresSMT grabbers for IC leads to 0.05-inch spacing		16517-82104 ng 16517-82108	4 each 20
	 Calibration pod 		16517-63201	1
Options Available	Option Number	Description		
	ABJ	 Japanese language man 	iual	
	W03	Convert standard one-ye to three-month, on-site v		
	W30	 Three-year, return-to-HF 	repair service	
HP Reference Publications	 4-GSa/s Timing and 1-GSa/s Synchronous State for the HP 16500A/B Logic Analysis System Color Brochure, pub. no. 5091-8096E 			
	 The HP 16517/18A, Technical Specifications, pub. no. 5091-7216E 			
	 Accessories for HP Logic Analyzers, Product Overview, pub. no. 5963-3376E 			

 $^{^6}$ With oversampling 7 To order a complete kit of all accessories, order HP part number 16517-68701 (for HP 16517A) or 16518-68701 (for HP 16518A).

Oscilloscope Modules, HP 16533A and HP 16534A

	HP 16533A	HP 16534A
Channels Per Card	2	2
Maximum Number of Channels on a	8	8
Single Trigger and Time Base		
Maximum Number of Channels in a	10	10
Single HP 16500C Frame		
Maximum Number of Channels in a	20	20
System (one HP 16500C and one		
HP 16501A)		
Bandwidth	250 MHz	500 MHz
Maximum Sampling Rate	1 GSa/s	2 GSa/s
Memory Depth	32K	32K

Accessories Provided	10:1, 10-pF, 1-MΩ prob	es, quantity two (HP 10441A)
Accessories Available	HP Model Number	Description
	HP 1144A HP 01144-61604 HP 1145A HP 1141A HP 1142A HP 10442A HP 10443A	Active probe, 800-MHz, 10:1, 1-M Ω , 2-pF ⁸ Adapter to provide power to two HP 1144A probes Dual, active, 750-MHz, 10:1, 1-M Ω , 1.6-pF probe ⁸ 200-MHz differential probe (requires HP 1142A power supply) Probe power supply (required for HP 1141A) 10:1, 500- Ω , 1.2-pF probe 20:1, 1000- Ω , 1.2-pF probe
Options Available	Option Number	Description
	ABJ W03 W30 0B0 001 (HP 16534A only)	Japanese language manual Convert standard one-year return-to-HP warranty to three-month on-site warranty Three-year return-to-HP repair service Delete manuals Add one HP 1145A, dual, active, 750-MHz probe
HP Reference Publications	Oscilloscope Modules for the HP 16500B Logic Analysis System, Product Overview, pub. no. 5964-0238E	

 $^{^{8}}$ Note: The HP 16533A and HP 16534A provide power for HP 1144A and HP 1145A active probes.

Measurement Modules

Pattern Generator, HP 16522A

The HP 16522A pattern generator can be operated independently, or up to five HP 16522As can be combined in a master-expander configuration. One HP 16522A operated as a master can support up to four HP 16522A expanders.

Capabilities

20
40
200
200
400
200 MHz
258,048 vectors

Accessories Available	HP Model Number	Description	
	HP 10460A	TTL clock pod 9	
	HP 10461A	Eight-channel TTL data pod ¹⁰	
	HP 10462A	Eight-channel, three-state TTL/CMOS data pod ¹⁰	
	HP 10463A	ECL clock pod ⁹	
	HP 10464A	Eight-channel, ECL terminated data pod ¹⁰	
	HP 10465A	Eight-channel, ECL unterminated data pod ¹⁰	
	HP 10466A	Eight-channel, three-state TTL/3.3-V data pod ¹⁰	
	HP 10474A	Eight-channel, probe lead set 9,10	
	HP 10374A	Eight-channel, coaxial probe lead set (recommended for unterminated ECL pods only) 9,10	
Options Available	Option Number	Description	
	W03	Convert standard one-year, return-to-HP warranty to three-month, on-site warranty	
	W30	Three-year, return-to-HP repair service	
	0B0	Delete manuals	
	011	TTL clock pod and lead set 9	
	012	Three-state, TTL/3.3V data pod and lead set 10	
	013	Three-state, TTL/CMOS data pod and lead set 10	
	014	TTL data pod and lead set 10	
	021	ECL clock pod and lead set ⁹	
	022	ECL terminated data pod and lead set ¹⁰	
	023	ECL unterminated data pod and lead set ¹⁰	
HP Reference		Accessories for HP Logic Analyzers, Product Overview, pub. no. 5963-3376E.	
Publications HP 16522A 200 Mvector/sec Pattern Generator Module for the HP 16500B Logic Analysis System, Product Overview, pub. no. 5964-2250E			

⁹ Note: At least one clock pod and lead set must be ordered for each HP 16522A used as a master.
¹⁰ Note: Order at least one data pod and lead set for each eight HP 16522A output channels that you intend to use (maximum of five per HP 16522A).

The HP MultiProbe System

The HP MultiProbe system allows you to connect active oscilloscope probes simultaneously to hundreds of nodes. You can then select any two signals at a time for scope acquisition and viewing without having to move scope probes.

An HP MultiProbe system consists of the following components:

- An HP 16500C logic analysis mainframe
- An HP 16535A MultiProbe control module
- One or more HP MultiProbe pods
- An oscilloscope

HP 16500C Logic Analysis Mainframe (See page 3)

HP MultiProbe Control Module, HP 16535A

The HP 16535A MultiProbe control module provides power and control to HP MultiProbe pods. One HP 16535A supports up to four HP MultiProbe pods. Two SMA outputs on the HP 16535A connect to the oscilloscope. Two SMA-BNC cables are provided with the HP 16535A for this purpose. MultiProbe control modules can be used when more than four MultiProbe pods are required, or when more than two scope channels are desired.

HP MultiProbe Pods

Up to four pods can be connected to one MultiProbe control module.

The HP E5320A is a 9-to-2, general-purpose pod. It has nine miniature scope-probe, flying-lead inputs.

The HP E5321A is a 240-to-2 high-density pod. It attaches directly to a 240-pin QFP with leads spaced at 0.5 mm.

The HP E5322A is a 208-to-2 high-density pod. It attaches directly to either 208-pin QFPs with leads spaced at 0.5 mm, or 160-pin QFPs with leads spaced at 0.65 mm.

Oscilloscope

Any oscilloscope can be used with the HP MultiProbe system. When the HP 16533A or HP 16534A oscilloscope is used in the same HP 16500C system with the HP 16535A MultiProbe control module:

- The user interface for the MultiProbe signal selection is integrated into the scope user interface in the HP 16500C menu system.
- The signal labels assigned in the HP MultiProbe system are used in the scope displays.
- The calibration factors for the MultiProbe system are automatically applied in the scope.

The oscilloscope inputs must be terminated in 50 Ω . If the scope does not have a 50 Ω input impedance, external 50 Ω terminations must be used.

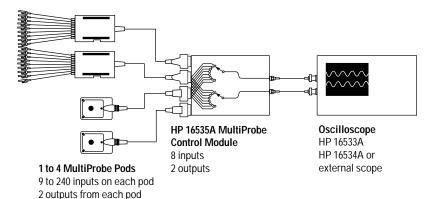


Figure 2. The HP MultiProbe System

The HP MultiProbe System

HP MultiProbe Control N	Module, HP 16535A		
Accessories Provided	Two 4-inch SMA-BNC cable	es (HP part number 16535-61603).	
Options	Option number W03 W30 0B0 0B1	Description Convert standard one-year, return-to-HP warranty to three, month on-site warranty Three-year, return-to-HP repair service Delete manual set Add manual set	
HP MultiProbe Pods			
HP E5320A 9-to-2, general-pur	pose MultiProbe pod.		
Accessories Provided	QuantityHP Part Number1E5320-26101416517-8210710E5320-8210510 eachE5320-8210110E5320-821041E5320-66502	Description • Flexible direct ground pin • Signal probe pin • Ground extenders for use with 0.1 inch center-to-center connectors • SMT tack-on signal and ground wires • Right angle ground leads • Calibration fixture	
Accessories Available	HP Model Number 16517-82102	Description Surface mount grabbers (quantity 20)	
Options	Option number W03 W30 001 002	Description Convert standard one-year, return-to-HP warranty to three-month on-site warranty Three-year, return-to-HP repair service Delete accessories Delete calibration fixture	
HP E5321A 240-to-2 high-densi		Delete calibration nature	
Option	Option number W03 W30 001 101 201	Description Convert standard one-year, return-to-HP warranty to three-month, on-site warranty Three-year, return-to-HP repair service 240-pin QFP personality adapter kit. Contains everything needed for first-time installation of an HP E5321A pod on a 240-pin QFP IC 240-pin QFP personality adapter Retainer kit, includes five retainers, two knurled nuts, and glue	
	202 301	Locator tool Calibration kit, includes calibration fixture and calibration adapter	
HP E5322A 208-to-2 high-densi	ity MultiProbe pod		
Options	Option number W03 W30 001	Description Convert standard one-year, return-to-HP warranty to three-month, on-site warranty Three-year return-to-HP repair service 208-pin QFP personality adapter kit. Contains everything needed for first-time installation of an HP E5322A pod on a 208-pin QFP IC	
	002 101 102 201 202 203 301	160-pin QFP personality adapter kit. Contains everything needed for first-time installation of an HP E5322A pod on a 160-pin QFP IC 208-pin QFP personality adapter 160-pin QFP personality adapter Retainer kit for either 160-pin or 208-pin QFPs. Includes five retainers, two knurled nuts, and glue Locator tool for 208-pin QFPs Locator tool for 160-pin QFPs Calibration kit, includes calibration fixture and calibration adapter	
HP Reference Publications	The HP MultiProbe System,	Color Brochure, pub. no. 5964-0239E Technical Specifications, pub. no. 5964-0237E Configuration Guide, pub. no. 5964-0236E	

HP B3740A Software Analyzer

The HP B3740A software analyzer is a software package that runs on a computer and provides a real-time trace in high-level source language from state data acquired by an HP 1655X series state analyzer.

Required Hardware

- Logic analysis system mainframe: HP 16500C with option 001 or HP 16500B option 001 with a 16500H
- State analyzer module: HP 16550A, 16554A, 16555A, 16555D, 16556A, or 16556D
- Preprocessor:

Any HP or third-party supplied preprocessor that supports the HP 1655X series analyzers

Language tool connectivity

Any language system that generates the following file formats: IEEE695, OMF 86/286/386, Elf/Dwarf 1.0/1.1, GNU a.out, OMF196, TI COFF

If your language system generates a different file format, a generic ASCII format is supported.

Computer

PC minimum configuration:

- 25-MHz 386
- 4M free hard disk space
- Windows 3.1

HP series 700 workstation minimum configuration:

• HP-UX 9.0

Sun Sparc minimum configuration:
• SUN/OS 4.1.3 or SUN Solaris 2.3

For more information about the HP B3740A, refer to the following publications:

HP B3740A Software Analyzer, product overview, 5962-7114E HP B3740A Configuration Guide, 5962-9887E

Tool Sets for the HP 16505A Prototype Analyzer

Tool sets are licensed to the HP 16505A on which they are installed.

- HP B4600A System Performance Analysis Tool Set
- HP B4620A Software Analyzer Tool Set (Option ANT, additional 64 MB RAM for the HP 16505A, is recommended)

For more information about HP 16505A tool sets, refer to the following publications:

The HP B4600A System
Performance Analysis Tool Set for
the HP 16505A Prototype
Analyzer, product overview, pub.
no. 5964-3561E

The HP B4620A Software Analyzer Tool Set for the HP 16505A Prototype Analyzer, product overview, 5964-9333E

Run Control

Processor Probe Model Number	Processors Supported
HP E3491A	Pentium® Icomp Index 735/90 MHz and 815/100 MHz

The HP 16505A prototype analyzer provides a user interface for the HP E3491A processor probe. A user interface is also available as part of debuggers provided by third parties. Call your local HP sales office for more information on these debuggers. The HP 16500C does not provide a user interface for this processor probe.

For more information about run control, refer to the following publications:

HP E3491A, product overview, 5963-6855E

Upgrade Kit

The HP E2479A upgrade kit upgrades either an HP 16500A or HP 16500B to the configuration of the HP 16500C.

Note: The HP E2479A upgrade adds a LAN interface, a Centronics parallel printer port, a high-speed port for the HP 16505A, and the connector for an HP 16501A expansion frame. The HP E2479A upgrade kit also includes a PS-2 style mouse.

The HP E2479A upgrade kit must be installed by an HP service center. Installation is included in the purchase of the HP E2479A.

Training and Consulting

The following information applies to the U. S. only. In other areas, contact your HP sales office for information on consulting services and training.

"Improving Productivity Through Logic Analysis" Training

This one-or two-day course can be delivered for up to ten students at either an HP site or at the customer's site.

16500C +24Z One-day course "Improving Productivity Through Logic Analysis"

16500C +24Y Two-day course "Improving Productivity Through Logic Analysis"

Productivity Assistance

Hourly HP Test and Measurement Specialist productivity assistance is available. Hourly charges apply from portal to portal to cover travel charges. Consulting product number: HP 50629F

Printing

Recommended Printers: HP DeskJet 680C (Color)

HP LaserJet 4L (Black & White)

The HP 16505A supports network printing.

	HP 16500C	HP 16505A
Interfaces for Printers	Centronics RS-232-C HP-IB (IEEE 488)	Centronics (for local printers)
		LAN
Printers Supported	Printers that support the HP Printer Control Language (PCL)	PostScript™ compatible printers
	Recommended: HP DeskJet, HP LaserJet	Printers that support the HP Printer Control Language (PCL)
	Epson FX80, LX80, and MX80 printers with a Centronics or RS-232-C interface are supported in the Epson 8-bit graphics mode.	

LAN

The HP 16500C and HP 16505A support the X window system version 11, release 5 (X11R5).

	HP 16500C	HP 16505A
Physical Connection	RJ-45 connector for direct connection to 10Base-T ("Ethertwist") networks	RJ-45 connector for direct connection to 10Base-T ("ethertwist") networks
	BNC connector for direct connection to 10Base2 ("Thinlan") networks	15-pin access unit interface (AUI) connector
Protocols Supported	TCP/IP NFS FTP SNMP	TCP/IP NFS FTP SNMP RPC Berkeley Sockets Telnet (for remote start only)

System Software

To receive the latest system software, order from the following table:

	HP Part Number
HP 16500C	16500-68737 (Floppy disks)
HP 16505A	16505-68702 (Floppy disks)
	16505-83505 (Hard disk with software preloaded)

Compatibility Matrix

A $\sqrt{}$ indicates that the measurement module is supported.

	HP 16500A	HP 16500B, HP 16500A with HP 16500U	HP 16500C, 16500A or 16500B with HP E2479A	HP 16505A
HP 16510A	√	V	V	
HP 16510B	√	V	V	
HP 16511B	√	V	V	
HP 16515/16A	V	V	V	
HP 16517/18A	V		√	√
HP 16520/21A	√	V	V	
HP 16522A		V	V	
HP 16530/31A	V	V	V	
HP 16532A	√	V	V	√
HP 16533A		√	V	√
HP 16534A		V	V	V
HP 16535A		√	V	√
HP 16540/41A	√	V	V	
HP 16540/41D	V	√	V	
HP 16542A	√	√	V	
HP 16550A	√	√	V	√
HP 16554A		√	V	√
HP 16555A/D		V	V	√
HP 16556A/D		√	V	V

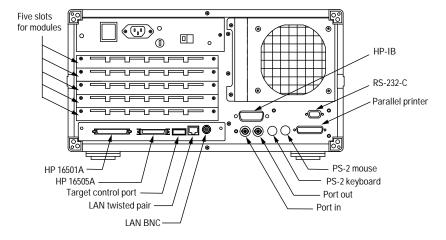


Figure 3. Rear View of HP 16500C

For more information, refer to the following publications:

Title	Publication Description	HP Publication Number
HP 16500C Logic Analysis System and HP 16505A Prototype Analyzer	Product Overview	5965-3187E
The HP 16500C Logic Analysis System Frame and HP 16501A Expansion Frame	Technical Specifications	5965-3184E
Accessories for HP Logic Analyzers	Product Overview	5963-3376E
A Family of State and Timing Analyzers for the HP 16500B Logic Analysis System	Product Overview	5962-7245E
4-GSa/s Timing and 1-GSa/s Synchronous State for the HP 16500A/B Logic Analysis System	Color Brochure	5091-8096E
The HP 16517/18A Technical Specifications	Technical Specifications	5091-7216E
1-GSa/s and 2-GSa/s Oscilloscope Modules for the HP 16500B Logic Analysis System	Product Overview	5964-0238E
HP 16522A 200 Mvector/sec Pattern Generator Module for the HP 16500B Logic Analysis System	Product Overview	5964-2250E
The HP MultiProbe System	Color Brochure	5964-0239E
The HP MultiProbe System	Technical Specifications	5964-0237E
The HP MultiProbe System	Configuration Guide	5964-0236E
The HP B4600A System Performance Analysis Tool Set for the HP 16505A Prototype Analyzer	Product Overview	5964-3561E
The HP B4620A Software Analyzer Tool Set for the HP 16505A Prototype Analyzer	Product Overview	5964-9333E
HP E3491A	Product Overview	5963-6855E
HP Rack Solutions Catalog	Catalog	5963-1053E
Microprocessor and Bus interfaces for HP Logic Analyzers	Technical Data	5963-2435E
Probing Solutions for TQFP/CQFP/PQFP Packages	Product Overview	5965-2790E

For more information about **Hewlett-Packard test & measurement** products, applications, services, and for a current sales office listing, visit our web sites: http://www.hp.com/go/tmdir http://www.hp.com/go/logicanalyzer http://www.hp.com/go/emulator You can also contact one of the following centers and ask for a test and

measurement sales representative.

United States:

Hewlett-Packard Company Test and Measurement Call Center P.O. Box 4026 Englewood, CO 80155-4026 1 800 452 4844

Canada:

Hewlett-Packard Canada Ltd. 5150 Spectrum Way Mississauga, Ontario L4W 5G1 (905) 206 4725

Europe:

Hewlett-Packard **European Marketing Centre** P.O. Box 999 1180 AZ Amstelveen The Netherlands (31 20) 547 9900

Japan:

Hewlett-Packard Japan Ltd. Measurement Assistance Center 9-1, Takakura-Cho, Hachioji-Shi, Tokyo 192, Japan Tel: (81) 426 56 7832 Fax: (81) 426 56-7840

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Tel: (305) 267 4245 (305) 267-4220 Fax: (305) 267-4288

Australia/New Zealand:

Hewlett-Packard Australia Ltd. 31-41 Joseph Street Blackburn, Victoria 3130 Australia

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Data subject to change. Printed in the U.S.A. 5965-3185E

5/97

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