

Agilent 54600-Series Oscilloscopes

Data Sheet

- 60/100/150/500 MHz bandwidth models with 2 or 4 channels
- Easy-to-use analog front panel
- Fast, responsive display
- Automatic measurements
- Pretrigger viewing, trace storage
- Optional remote control/hard copy



Analog feel and digital power for precise, accurate troubleshooting at an affordable price

With many models to choose from, you will be able to pick the oscilloscope that best fits your measurement and troubleshooting needs while meeting your budget.

Displays you can trust

Agilent Technologies 54600-series oscilloscopes feature real-time vector displays that give you a clear and accurate picture of your waveforms. Like analog oscilloscope displays, these enhanced displays give you waveform slew rate information at a glance, with brighter traces representing more slowly changing waveforms and dimmer traces representing more rapidly changing waveforms.

The multiprocessor architecture of Agilent 54600series oscilloscopes permits a display update rate of up to 3.0 million points per second. This fast display update means the oscilloscope screen reflects changes in the waveform instantaneously, giving you the display responsiveness you need to make adjustments quickly and see complex waveforms accurately.

Powerful digital features

The digital architecture of Agilent 54600-series oscilloscopes gives you a multitude of features that help you get your job done easier and faster:

- Pretrigger viewing capability lets you view events that you'd miss with an analog scope. This feature lets you see what happened before the trigger event, so you can troubleshoot more effectively.
- Autoscale frees you from resetting the scope every time you move the probe from test point to test point. You simply hit the autoscale button and it sets voltage, time and trigger parameters for you.
- With autostore, the waveform displays at full brightness while all previously acquired waveforms remain on the scope's screen at half brightness. You see a history of waveform activity while simultaneously viewing the live waveform.
- Automatic measurements of voltage, frequency and time, plus user-defined cursor measurements, make waveform characterization fast and easy.
- With peak detect, you won't have to worry about missing narrow glitches.



Agilent Technologies

Innovating the HP Way

The Agilent 54600 series includes eight models designed to meet your needs and your budget:

54600B 100 MHz oscilloscope

With 100 MHz bandwidth, two input channels, and sweep speeds from 2 ns/div to 5 ns/div, the 54600B is ideal for benchtop troubleshooting, production test, field service, and education or anywhere else you need a dependable scope with solid performance.

54645A MegaZoom oscilloscope

The 54645A is a dual-channel 100 MHz oscilloscope with 200 MSa/s and a full 1 MB of memory behind each of its channels. Through the application of MegaZoom technology, accessing this deep-memory is as easy as turning a knob—pan and zoom through the deep captured waveform to search for other troubleshooting clues.

54602B 4 (2 + 2)-channel oscilloscope

When you need more than 100 MHz of bandwidth, take a closer look at the 54602B scope. You get the same capabilities as the 54600B but with the added advantage of a 150 MHz bandwidth, 4 (2+2) channels, and 1 mV/div sensitivity.

54603B 60 MHz oscilloscope

The 54603B was designed with the tight budgets of colleges and universities in mind. Students can use the 60 MHz, 2-channel 54603B to understand circuit operation and learn standard measurement techniques on the same type of equipment they are likely to use when they graduate.

54610B 500 MHz oscilloscope

This lowest-cost, 2-channel 500 MHz scope offers a viewable external trigger and horizontal accuracy of 0.001%. The 54610B capabilities are well-suited for production test applications as well as general purpose troubleshooting.

54615B 1 GSa/s oscilloscope

With the 54615B you can capture narrow glitches and subtle details of your signal. This 2-channel scope combines 500 MHz bandwidth, 1 GSa/s sample rate and 1 nanosecond peak detection on both channels. The 54615B peak detection allows the scope to maintain the 1 GSa/s sample rate at all sweep speeds. A horizontal accuracy of 0.005% means you can make critical timing measurements with confidence.

54616B/C 2 GSa/s oscilloscope

The top-of-the-line 54616B offers the same benefits as the 54615B but with twice the sample rate— 2 GSa/s sampling rate, 500 MHz bandwidth, and 1 nanosecond peak detection. Plus, if you prefer a color display for waveform viewing, the 54616C color version is available.

Expandable features to meet your changing needs

The Agilent 54600-series oscilloscopes can be easily and inexpensively upgraded with add-on modules and software to provide advanced capabilities:

- Interface modules give you remote control and hard-copy output to RS-232, GPIB, and parallel printers and plotters.
- Measurement Storage modules offer interfacing and printing plus advanced features like FFT, mask testing, and additional memory.
- Agilent BenchLink XL 54600 free software captures screen images, gathers waveform data, and stores instrument setups, all from the familiar environment of MS Excel or Word. Ships free with each module.
- Optional Agilent BenchLink Scope is a standalone software package for bringing waveform images and points into your PC. Use it when you need Windows 3.1 compatibility, don't have Excel or Word, or need to access trace memory from your PC.

Enhanced TV/video trigger

With Option 005 you gain the ability to trigger and perform highly detailed measurements on the video components of your system. For more information see Agilent publication number 5968-2611. Not available on the 54600B, 54603B, or 54645D scopes.

Technical Specifications

	54603B	54600B	54645A	54602B	54610B	54615B/16B/16C
Bandwidth CH 1 and 2 ac coupled CH 3 and 4	dc-60 MHz 10 Hz-60 MHz NA	dc-100 MHz 10 Hz-100 MHz NA	dc-100 MHz ⁺⁺ 1.5 Hz-100 MHz ⁺⁺ NA	dc-150 MHz* 10 Hz-150 MHz* dc-250 MHz	dc-500 MHz 10 Hz-500 MHz NA	dc-500 MHz 10 Hz-500 MHz NA
Single shot bandwidth	dc-2 MHz	dc-2 MHz	dc-50 MHz	dc-2 MHz	dc-2 MHz	54615B 250 MHz 54616B/C 500 MHz
Number of channels	2	2	2	4 (2+2)	2	2
Sensitivity CH 1 and 2 CH 3 and 4	2 mV/div to 5 V/div NA	2 mV/div to 5 V/div NA	1 mV/div to 5 V/div NA	1 mV/div to 5 V/div 0.1 and 0.5 V/div	2 mV/div to 5 V/div NA	2 mV/div to 5 V/div NA
dc gain accuracy	± 2%	± 1.5%	± 1.5%	± 1.5%	± 2%	± 2%
Rise time (calculated) CH 1 and 2 CH 3 and 4	<5.83 ns NA	<3.5 ns NA	<3.5 ns NA	<2.33 ns <1.4 ns	<700 ps NA	<700 ps NA
Input impedance	1 MΩ, ~ 13 pF	1 MΩ, ~ 18 pF	1 MΩ, ~ 13 pF	1 MΩ, ~ 13 pF	1 M Ω , ~ 9 pF or 50 Ω selectable	1 M Ω , ~ 9 pF or 50 Ω selectable
Input coupling CH 1 and 2 CH 3 and 4	dc, ac or ground NA	dc, ac or ground NA	dc, ac or ground NA	dc, ac or ground dc or ground	dc, ac or ground NA	dc, ac or ground NA
Maximum input (dc + peak ac)	400 V	400 V	400 V	400 V	250 V or 5 Vrms in 50 Ω mode	250 V or 5 Vrms in 50 Ω mode
Timebase range (main and delayed)	5 s/div to 5 ns/div	5 s/div to 2 ns/div	5 s/div to 2 ns/div	5 s/div to 2 ns/div	5 s/div to 1 ns/div	5 s/div to 1 ns/div
Trigger sources	CH 1, 2, line, or ext.	CH 1, 2, line, or ext.	CH 1, 2, line, or ext.	CH 1, 2, 3, 4, line	CH 1, 2, line, or ext.	CH 1, 2, line, or ext.
Horizontal accuracy	± 0.01%	± 0.01%	± 0.01%	± 0.01%	± 0.01%	±0.005%
Horizontal resolution	100 ps	100 ps	40 ps	100 ps	100 ps	20 ps
Trigger sensitivity dc to 25 MHz 25 MHz to max. bandwidth	0.35 div or 3.5 mV 1 div or 10 mV	0.35 div or 3.5 mV 1 div or 10 mV	0.35 div or 3.5 mV 1 div or 10 mV	0.35 div or 3.5 mV 1 div or 2 mV**	0.35 div or 3.5 mV 1 div or 10 mV [†]	0.5 div or 5.0 mV*** 1 div or 10 mV ⁺
Maximum sample rate single shot	20 MSa/s	20 MSa/s	200 MSa/s	20 MSa/s	20 MSa/s	54615 1 GSa/s 54616 2 GSa/s
repetitive	10 GSa/s	10 GSa/s	>10 GSa/s	10 GSa/s	10 GSa/s	>10 GSa/s
Record length	4,000 points 2,000 points	4,000 points 2,000 points	1M points 1M points	4,000 points 2,000 points	4,000 points 2,000 points	5,000 points 5,000 points
Max. display update rate	1,500,000 points/sec	1,500,000 points/sec	3,000,000 points/sec	1,500,000 points/sec	1,500,000 points/sec	500,000 points/sec
Resolution	8 bits					
Power	Voltage: 100-240 Vac, 45 to 440 Hz, 220 VA maximum					
Net weight	Approx. 6.2 kg (14 lbs)					
Size (excl. handle)	172 mm H x 322 mm W x 317 mm D (6.8 x 12.7 x 12.5 in)					
Warranty	3 years					

Maximum bandwidth on CH 1 and 2 is 100 MHz at 1, 2, and 5 mV/div.
64602B, for ranges 1, 2, and 5 mV/div, sensitivity between 25 MHz and 100 MHz on CH 1 and 2 is 2 div or 4 mV.
Trigger sensitivity from dc to 100 MHz.
Trigger sensitivity from 100 MHz to max. bandwidth.
Maximum bandwidth on CH 1 and 2 is 75 MHz at 1, 2 and 5 mV/div.

Vertical System (Agilent 54600B, 54646B, 54602B, 54603B)

Bandwidth Limit	~ 20 MHz	
Inversion	CH 1 and CH 2	
CMRR	~ 20 dB at 50 MHz	
Dynamic Range	± 8 div from center screen	
Input R and C	1 MΩ , ~ 13 pf	
Maximum Input	400 V (dc + peak ac)	
Math Functions	CH 1 + or – CH 2	
Cursor Accuracy ^{[1][2]}		
Single Cursor	Vert. Acc. \pm 1.2% of full scale, \pm 0.5% of position value	
Dual Cursor	Vert. Acc. \pm 0.4% of full scale	

Vertical System (Agilent 54610B, 54615B, 54616B/C)

Bandwidth Limit Inversion CMRR Dynamic Range Input R and C Maximum Input 50Ω Protection	~ 30 MHz CH 1 and CH 2 ~ 20dB at 50 MHz ± 12 div from center screen 1 MΩ, ~ 9 pf or 50Ω selectable 250 V (dc + peak ac) or 5 Vrms in 50Ω mode Protects 50Ω load from excessive voltage	
Time Skew	Adjustable over a range of ±25ns to remove effects of cabling	
Probe Sense	Automatic readout of 1X, 10X, 20X, 50X and 100X probes	
Math Functions	CH 1 + or – CH 2	
Cursor Accuracy [1][2]		
Single Cursor	Vert. Acc. \pm 1.2% of full scale, \pm 0.5% of position value	
Dual Cursor	Vert. Acc. \pm 0.4% of full scale	

Horizontal System

Cursor Accuracy $(\Delta t \text{ and } 1/\Delta t)^{[3]}$	\pm 0.01% \pm 0.2% of full scale \pm 200 ps
Delay Jitter	10 ppm ppm (54615B, 54616B/C)
Pretrigger Delay	≥ 10 div
(Negative time)	
Posttrigger Delay	at least 2,560 div or 50 ms.
(Trigger to start of sweep)	Not to exceed 100 s.

Delayed Sweep

Main Sweep	Delayed Sweep
5 s/div to 10 ms/div	up to 200X main
5 ms/div and faster	up to 2 ns/div
54610B, 15B/16B/16C	up to 1ns/div

Trigger System

Coupling	ac, dc, LF reject, HF reject, and noise reject.		
Madaa	LF and HF: -3db at ~ 50 kHz		
Modes	Auto, Autolevel, Normal, Single, and TV		
54645A Glitch	Minimum width 8 ns, Operators: <, >, or rang		
triggering			
TV Triggering	TV line and field. 0.5 div of composite sync for stable display (Ch 1 and Ch 2)		
TV Functions			
Line Counting	Delay time calibrated in NTSC and PAL line numbers		
All Field Trigger	Oscilloscope triggers on the vertical		
(both fields selected,	sync pulse in both fields, allowing use		
54602B and 54610B)	with noninterlaced video.		
Holdoff	Adjustable from 200 ns to \sim 13 s		
External Trigger (54600E	3, 54603B, 54645A)		
Range Sensitivity	±18V		
• ·	dc to 25 MHz: < 50mV		
	25 MHz to 100 MHz: < 100mV		
Coupling	dc, HF reject and noise reject		
Input R and C	1MΩ, ~ 13pf		
Maximum Input	400 V (dc + peak ac)		
External Trigger (54610E	8, 54615B, 54616B/C)		
Range Sensitivity	±18V (54610B)		
	± 2 V (54615B, 54616B/C)		
	dc to 100 MHz: < 75mV		
	100 MHz to 500 MHz: < 150mV		
Coupling dc and ground			
Input R and C	$1M\Omega$, ~ 12pf or 50 Ω selectable		
Maximum Input	250 V (dc + peak ac) or		
	5 Vrms in 50 Ω mode		
Trigger View	External trigger is viewable.		
	Bandwidth is > 350MHz		
(54610B only)			

X-Y Operation

Z-Blanking	TTL high blanks trace (not available on 54615B, 54616B/C)
Bandwidth	X and Y same as vertical system
Phase Difference	± 3 degrees at 100 kHz
	± 3 degrees at 10 MHz (54615B, 54616B/C)

Temperature ± 10°C from calibration
 Use full scale at 80mV for 2mV/div and 5 mV/div ranges
 Use full scale of 50 ns for 2 ns/div

Display System

Display	7-inch Raster CRT	
Resolution	255 vertical by 500 horizontal points	
Controls	Front-panel intensity control	
Graticule	8 X 10 grid or frame	
Autostore	Autostore saves previous sweeps in	
	half bright display and the most recent sweep	
	in full bright display.	
Display (54616C)	5.8 inch Active Matrix Color LCD Display	

Acquisition System

Simultaneous Channels 54600B/54610B, 54615B, 54616B	Channels 1 and 2	
54602B	Channels 1 and 2 or 3 and 4	
Record Length	4,000 points Vectors off	
-	2,000 points Vectors on and/or single shot	
54615B, 54616B/C	5,000 points	
54645A	1 million points	
Max Update Rate	Vectors off: 1,500,000 points/sec	
	Vectors on: 60 full screens/sec, independent	
	of number of waveforms being displayed	
54615B, 54616B/C	500,000 points/sec	
54645A	3,000,000 points/sec	
Usable Single-Shot	2 MHz, single channel	
Bandwidth	1 MHz, dual channel	
54615B	250 MHz	
54616B/C	500 MHz	
54645A	50 MHz	
Peak Detect	50 ns glitch capture (100 ns dual channel) at sweep speeds of 50 µs/div and greater	
54615B, 54616B/C	1 ns glitch capture	
54645A	5 ns	
Average	Number of averages selectable at 8, 64, 256	

Advanced Functions

Voltage	Measurements are continuously updated Vavg, Vrms, Vpp, Vtop, Vbase, Vmin, and Vmax
Time	Frequency, Period, + Width, – Width, Duty Cycle, Rise Time, and Fall Time
Cursors	Manually or automatically placed
Setup Functions	
Autoscale	Sets the vertical and horizontal deflection and the trigger level
Save/Recall	10 front-panel setups
Trace Memory	Two volatile pixel memories

General

D			
Power Line Requirement Line Voltage Range	ts 100 Vac to 240 Vac		
Line Voltage Selection	Automatic		
Line Frequency	45 Hz to 440 Hz		
Max Power	220 VA		
Consumption	300 VA (54615B, 54616B/C)		
Environmental	The instrument meets the requirements of		
Characteristics	MIL-T-28800D for Type III, Class 3,		
	Style D equipment as described below.		
Ambient Temperature			
Operating	-10°C to +55°C		
Nonoperating	–51°C to + 71°C		
Humidity ^[1]			
Operating	95% RH at 40°C for 24 Hrs		
Nonoperating	90% RH at 65°C for 24 Hrs		
Altitude			
Operating	to 4,500 m (15,000 ft)		
Nonoperating	to 15,000 m (50,000 ft)		
EMI (Commercial)	Meets FTZ 1046 Class B		
EMI (MIL-T-28800D)	Meets requirements in accordance with		
	Paragraph 3.8.3, EMI Type III, and		
	MIL-STD-461C as modified by Table XII.		
CE01,CE03	Full limits		
CS01, CS02, CS06	Full limits		
RE01	15 dB relaxation to 20 kHz; exceptioned from		
	20 kHz to 50 kHz		
RE02 (With Opt 002)	Full limits of class A1c and A1f		
(Without Opt 002)	10 dB relaxation from 14 kHz to 100 kHz		
RS02	Exceptioned		
	•		
RS03 (With Opt 001)	Slight trace shift from 80 MHz to 200 MHz		
Vibration	Operating: 15 minutes along each of the		
	3 major axes; 0.025 inch p-p displacement,		
	10 Hz to 55 Hz in one-minute cycles. Held for		
	10 minutes at 55 Hz (4 g at 55 Hz).		
Shock	Operating: 30 g, $1/_2$ sine, 11 ms duration,		
OHOUR	3 shocks per axis along major axis.		
	Total of 18 shocks		
Size (excluding handle)	Height: 172 mm (6.8 in)		
	Width: 322 mm (12.7 in)		
	Depth: 317 mm (12.5 in)		
Weight	6.2 kg (14 lbs)		
Safety	CSA Certification,		
	IEC 348		
	UL 1244 listed		

 $\left[1\right]$ Tested to Agilent Environmental Specification Section 758 for Class B-1 products

Optional Add-on Modules Agilent 54650A GPIB Interface Module		Trace Memory	up to 100 nonvolatile memories	
		Memories 1 – 3 Memories 4 – 100	High speed storage without compression.	
Description	Full GPIB remote control Direct printing to GPIB printers and plotters Converts scope's 2 trace memories to non-volatile memory		Storage with compression. Storage time is approximately 7 seconds. Number of traces that can be stored is a function of complexity, with the minimum being 4 highly complex traces and the maximum being 96.	
Printer Support	IEEE-488.2 compatible HP ThinkJet, HP QuietJet, HP PaintJet, HP LaserJet; HP-GL compatible plotters	Memory Labeling	An onscreen text editor is provided for creating labels up to 20 characters. Each label contains the date and time it was saved.	
Agilent 54652B RS-232 Parallel Interface Module		Real Time Clock	24-hour format with battery back-up. Can be set from front panel.	
Description	Full RS-232 remote control	Unattended Waveform Monitoring		
	Direct printing to RS-232 and parallel printers	Testing Method	Comparison to waveform mask.	
	Converts scope's 2 trace memories to	Number of Masks	2	
	non-volatile memory	Mask Generation	Automask, controlled from the front panel,	
RS-232 Specifications Connector Type Cable Protocols Data Bits	9 pin (m) DTE Port 34398A (provided) X0n/Xoff, hardwire 8	and Operation	generates mask from displayed waveform with selectable tolerance. Mask editor function allows pixel-by-pixel editing and line drawing. Smoothing function performs a running average of 3 pixels.	
Parity Baud Rates Printer Support	None 1200, 2400, 9600, 19200 HP ThinkJet, HP QuietJet, HP PaintJet, HP LaserJet; HP-GL compatible plotters	Action on Failure	Save failed trace to memory with date and time of the failure Print failed trace with date and time of the failure	
Parallel Specifications Connector Type Cable Printer Support			Count the failure and maintain pass/fail statistics while continuing the test	

Agilent 54657A (GPIB) and 54659B (RS-232) Measurement Storage Modules

These modules incorporate the relevant GPIB or RS-232 control and printing capabilities specified above, as well as the following features.

Waveform Math Functions

Function 1	Addition, subtraction, and multiplication
Function 2	Differentiation, integration, and FFT
FFT	
Windows	Exponential, flat top, Hanning and rectangular
Samples	1024 points

Specifications for Agilent 54600-series Scope Probes

Probe Model Number	Bandwidth	Division Ratio	Approx. length	Input R	Approx. Input C	Rise-time	Max input dc + peak ac	Scope Compatibility
10070B	20 MHz	1:1	1.5m	1 MΩ	70 pF	<17.5 ns	400 V	54600 series
10071B	150 MHz	10:1	1.5m	10 MΩ	15 pF	<2.33 ns	500 V	54600/02/03/45B
10073B 10074B	500 MHz 150 MHz	1:1 10:1	1.5m 1.5m	2.2 MΩ 10 MΩ	12 pF 12 pF	<0.7 ns <2.33 ns	500 V 500 V	54610/15/16B 54645A
10442B	1 GHz	10:1	2.0m	500 Ω	1.2 pF	<0.35 ns	10 V	scopes with 50 Ω inputs

Probe Accessories

10072A	SMT Probe tips for 1007X probes This accessory kit contains 2 dual-lead adapters and 8 IC clips, so connecting to ICs and standard board headers is easy.
5081-7705	BNC Adapter for 1007X probes This accessory clips on the end of the probe and allows the probe to mate with BNC (f) connectors.
5081-7690	Replacement Accessory Kit for 1007X probes This kit contains replacement Hook Tip, IC Tip, Ground Bayonet, Ground Lead, Adjustment Tool, and Probe Identification Tags.

Additional Measurement Accessories

Auditional Micubal child				
10100C	50 $\Omega \pm 1\%$ Feedthrough Termination BNC (f) to BNC (m), Frequency range			
	dc-300 MHz. Max. VSWR 1.1:1			
11094B	$75 \ \Omega \pm 0.2\%$ Feedthrough Termination			
	BNC (f) to BNC (m), maximum power 1 Watt			
E9637A	Dual Banana(m) to BNC (f) Adapter			
10110B	Dual Banana(m) to BNC (m) Adapter			
Additional Accessories				
Additional Accessories 10098A	Front Panel Cover and Pouch Kit			
	This kit will add the Option 101 front panel			
	This kit will add the Option 101 front panel cover and pouch to any 54600-series			
	This kit will add the Option 101 front panel			
	This kit will add the Option 101 front panel cover and pouch to any 54600-series			
10098A	This kit will add the Option 101 front panel cover and pouch to any 54600-series oscilloscope			



Agilent BenchLink XL 54600 Software PC Connectivity Made Easy

Receive Agilent BenchLink XL 54600 software FREE with the purchase of

any module listed above. Use it to retrieve waveform images, waveform data—even automatic measurements—directly into MicroSoft Excel and Word without programming. Additionally, an ActiveX control simplifies programming in Visual Basic, VBA, Visual C++, Agilent VEE, and National Instruments LabVIEW.



Ordering Information

Agilent 54600-Series Oscilloscopes 54600B Two-channel, 100 MHz Oscilloscope 54602B Four-channel, 150 MHz Oscilloscope 54603B Two-channel, 60 MHz Oscilloscope Each of the above oscilloscopes comes with two 1.5 meter 10X probes (10071A), a user and service guide, and power cord.

54610B Two-channel, 500 MHz, 20 MSa/s Oscilloscope 54615B Two-channel, 500 MHz, 1 GSa/s Oscilloscope 54616B Two-channel, 500 MHz, 2 GSa/s Oscilloscope 54616C Color two-channel, 500 MHz, 2 GSa/s, Oscilloscope 54645A Two-channel, 100 MHz, 200 MSa/s Oscilloscope 54645D Two-channel and 16 timing channel

100 MHz MSO Oscilloscope

Each of the above oscilloscopes comes with two 1.5 meter 10X probes, a user and service guide, and power cord.

Options

Opt. 001 RS-03 Magnetic interface shielding added to CR Opt. 002 RE-02 Display shield added to CRT to reduce radiated interface

Opt. 005 Enhanced TV/video triggering (not 54600/03B/645D)

Opt. 090 Delete probes (for 54600/02/03B)

Opt. 090 Delete probes (for 54610B, 54615B, and 54616B/C)

Opt. 090 Delete probe (for 54645A)

Opt. 101 Accessory pouch and front panel cover (10098A)

Opt. 102 Two additional 10071B probes (54602B only)

Opt. 103 Operator training kit

(includes training signal board and lab workbook) Opt. 104 Carrying case

(protects scope for shipping or baggage checking) Opt. 106 HP BenchLink Scope software for Windows (HP 34810B)

Opt. 1CM Rack Mount Kit (P/N 5062-7345)

Opt. W50 Additional 2-year warranty (5-year total), starting at

Manual options (please specify one)

ABA US English	ABF French	, ABJ Japanese
ABD German	ABZ Italian	AB1 Korean
ABE Spanish	ABO Taiwan Chinese	

Agilent 54650-series enhancement modules

(each includes HP BenchLink XL 54600 Software) 54650A GPIB interface module 54652B RS-232 and parallel interface module (includes RS-232 cable) 54657A GPIB measurement/storage module 54659B RS-232 and parallel measurement/storage module (includes RS-232 cable) *E2657A GPIB Connectivity Kit *E2658A RS-232 Connectivity Kit * Kit includes Measurement Storage Module, HP 34810B BenchLink Scope Software and cable

Additional oscilloscope accessories, probes and terminations

10070B 1:1 probe 10071B 10:1 probe 10072B SMT probing kit 10073B 10:1 500 MHz probe with readout 10074B 10:1 150 MHz probe with readout **10442B** 10:1 Resistive divider probe for 50 Ω inputs. **10100C** 50 Ω feedthrough termination **11094B** 75 Ω ±2% Feedthrough Termination BNC(f) to BNC (m) 5081-7690 1007X probe accessory kit 5081-7705 1007X probe-to-BNC (m) adapter 34397A Inverter, 12 Volt dc to 115 V ac

HP 34810-Series BenchLink Software

HP 34810B BenchLink Scope Software Includes software on 3.5" disk, user's guide (all languages). GPIB or RS-232 module needed for connection to scope.

Agilent Technologies' Test and Measurement Support, Services, and Assistance

Agilent Technologies aims to maximize the value you receive, while minimizing your risk and problems. We strive to ensure that you get the test and measurement capabilities you paid for and obtain the support you need. Our extensive support resources and services can help you choose the right Agilent products for your applications and apply them successfully. Every instrument and system we sell has a global warranty. Support is available for at least five years beyond the production life of the product. Two concepts underlie Agilent's overall support policy: "Our Promise" and "Your Advantage."

Our Promise

"Our Promise" means your Agilent test and measurement equipment will meet its advertised performance and functionality. When you are choosing new equipment, we will help you with product information, including realistic performance specifications and practical recommendations from experienced test engineers. When you use Agilent equipment, we can verify that it works properly, help with product operation, and provide basic measurement assistance for the use of specified capabilities, at no extra cost upon request. Many self-help tools are available.

Your Advantage

"Your Advantage" means that Agilent offers a wide range of additional expert test and measurement services, which you can purchase according to your unique technical and business needs. Solve problems efficiently and gain a competitive edge by contracting with us for calibration, extra-cost upgrades, outof-warranty repairs, and on-site education and training, as well as design, system integration, project management, and other professional services. Experienced Agilent engineers and technicians worldwide can help you maximize your productivity, optimize the return on investment of your Agilent instruments and systems, and obtain dependable measurement accuracy for the life of those products.

Get assistance with all your test and measurement needs at: www.agilent.com/find/assist

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Innovating the HP Way