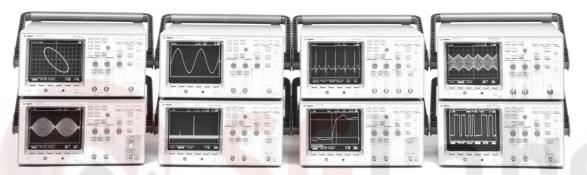


Agilent 54600-Series Oscilloscopes

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 | | 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 NA | | dc, ac or ground NA | dc, ac or ground dc or ground | dc, ac or ground NA | dc, ac or ground NA | |
| Maximum in <mark>put</mark> (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 | |
| Timebas <mark>e</mark> range (main a <mark>nd delayed)</mark> | 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 s <mark>ources</mark> | CH 1, 2, line, or ext. | CH 1, 2, line, or ext. | CH 1, 2, line, or ext. | CH 1, 2, 3, 4, line ± 0.01% | CH 1, 2, line, or ext. ± 0.01% | CH 1, 2, line, or ext. | |
| Horizontal accuracy | ± 0.01% | ± 0.01% | ± 0.01% | | | ±0.005% | |
| Horizontal resolution | 100 ps | 100 ps | 40 ps |) 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 | | | 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 | c, 45 to 440 Hz, 220 V | A 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.

3

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 | | | |
| | | | |
| 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. ± 0.4% of full scale | | | |

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

| Bandwidth Limit | ~ 30 MHz | | | | |
|-----------------------------------|--|--|--|--|--|
| Inversion | CH 1 and CH 2 | | | | |
| CMRR | ~ 20dB at 50 MHz | | | | |
| Dynamic Range | ± 12 div from center screen | | | | |
| Input R and C | 1 M Ω , ~ 9 pf or 50 Ω selectable | | | | |
| Maximum Input | 250 V (dc + peak ac) or 5 Vrms in 50 Ω mode | | | | |
| 50 Ω Protection | Protects 50 Ω 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. ± 0.4% of full scale | | | | |

Horizontal System

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

Delayed Sweep

| Coupling | ac, dc, LF reject, HF reject, and noise reject. LF and HF: -3db at ~ 50 kHz | | | | | |
|--|---|--|--|--|--|--|
| Modes | Auto, Autolevel, Normal, Single, and TV | | | | | |
| 54645A Glitch triggering | Minimum width 8 ns, Operators: <, >, or range | | | | | |
| 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 (both fields selected, 54602B and 54610B) Holdoff | Oscilloscope triggers on the vertical sync pulse in both fields, allowing use with noninterlaced video. Adjustable from 200 ns to ~ 13 s | | | | | |
| External Trigger (54600) | 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 (54610 | B, 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 50Ω selectable | | | | | |
| Maximum Input | 250 V (dc + peak ac) or | | | | | |
| | 5 Vrms in 50 Ω mode | | | | | |
| Trig <mark>ger Vie</mark> w | ger View External trigger is viewable. | | | | | |
| | | | | | | |

X-Y Operation

Bandwidth is > 350MHz (not available on 54615B)

| Z-Blanking | | | | |
|-------------------------------|--|--|--|--|
| Bandwidth Phase Difference | | | | |
| | | | | |

(54610B only)

TTL high blanks trace (not available on 54615B, 54616B/C) X and Y same as vertical system ± 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 Resolution | 7-inch Raster CRT 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, <mark>54616B/C</mark> | 1 ns glitch capture | | | | |
| 54645A | 5 ns | | | | |
| Average | Number of averages selectable at 8, 64, 256 | | | | |
| | | | | | |

Advanced Functions

| Automatic Measurements | Measurements are continuously updated | | | |
|------------------------|---|--|--|--|
| Voltage | 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

| Power Line Requirement | S | | | | |
|-------------------------|---|--|--|--|--|
| Line Voltage Range | 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, | | | | |
| SHUCK | 3 shocks per axis along major axis. | | | | |
| | Total of 18 shocks | | | | |
| Size (excluding handle) | Height: 172 mm (6.8 in) | | | | |
| SIZE (EXCluding manule) | | | | | |
| | Width: 322 mm (12.7 in) | | | | |
| Mainhé | Depth: 317 mm (12.5 in) | | | | |
| Weight | 6.2 kg (14 lbs) | | | | |
| Safety | CSA Certification, | | | | |
| | IEC 348 | | | | |
| | 111 1011 1 1 | | | | |
| Warranty | UL 1244 listed 3 years | | | | |

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

Optional Add-on Modules Trace Memory up to 100 nonvolatile memories Memories 1-3 High speed storage without compression. Agilent 54650A GPIB Interface Module Memories 4 – 100 Storage with compression. Storage time is Description Full GPIB remote control approximately 7 seconds. Number of traces Direct printing to GPIB printers and plotters that can be stored is a function of complexity, Converts scope's 2 trace memories to with the minimum being 4 highly complex traces and the maximum being 96. non-volatile memory IEEE-488.2 compatible Memory Labeling An onscreen text editor is provided for creating Printer Support HP ThinkJet, HP QuietJet, HP PaintJet, labels up to 20 characters. Each label contains HP LaserJet; HP-GL compatible plotters the date and time it was saved. **Real Time Clock** 24-hour format with battery back-up. Can be set from front panel. Agilent 54652B RS-232 Parallel Interface Module 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, generates mask from displayed waveform with **RS-232 Specifications** and Operation 9 pin (m) DTE Port **Connector Type** selectable tolerance. Mask editor function Cable 34398A (provided) allows pixel-by-pixel editing and line drawing. X0n/Xoff, hardwire Protocols Smoothing function performs a running average Data Bits 8 of 3 pixels. Parity None Action on Failure Save failed trace to memory with date and time Baud Rates 1200, 2400, 9600, 19200 of the failure Printer Support HP ThinkJet, HP QuietJet, HP PaintJet, HP Print failed trace with date and time of the LaserJet; HP-GL compatible plotters failure **Parallel Specifications** Count the failure and maintain pass/fail Connector Type 25 pin (f) statistics while continuing the test Cable C2950A Epson FX-80 or HP PCL compatible printers Printer Support

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 Function 2 | Addition, subtraction, and multiplication Differentiation, integration, and FFT |
|--------------------------|--|
| FFT | tost |
| 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. |

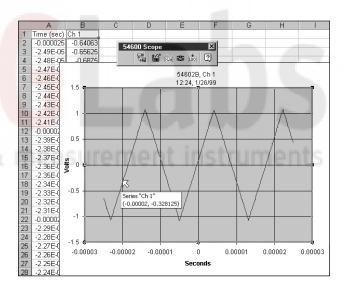
Additional Measurement Accessories 10100C 50 $\Omega \pm 1\%$ Feedthrough Termination BNC (f) to BNC (m), Frequency range dc-300 MHz, Max. VSWR 1.1:1 11094B 75 $\Omega \pm 0.2\%$ Feedthrough Termination BNC (f) to BNC (m), maximum power 1 Watt E9637A Dual Banana(m) to BNC (f) Adapter 10110B Dual Banana(m) to BNC (m) Adapter **Additional Accessories** 10098A Front Panel Cover and Pouch Kit This kit will add the Option 101 front panel cover and pouch to any 54600-series oscilloscope 1183A **Testmobile Scope** Cart for 54600-series scopes



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 probes (for 54610B, 54615B, an **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

10070B1:1 probe10071B10:1 probe10072BSMT probing kit10073B10:1 500 MHz probe with readout10074B10:1 150 MHz probe with readout10442B10:1 Resistive divider probe for 50 Ω inputs.10100C50 Ω feedthrough termination11094B75 $\Omega \pm 2\%$ Feedthrough TerminationBNC(f) to BNC (m)5081-76901007X probe accessory kit5081-77051007X probe-to-BNC (m) adapter34397AInverter, 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

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