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Data Sheet

August 31, 2026

HP / AGILENT

HP / Agilent 54502A 400 MHZ DIGITIZING OSCILLOSCOPE

The HP 54502A is a 400 MHz repetitive / 100 MHz single-shot, 400 MSa/s, 2-channel digitizing oscilloscope in the 54500 family for both repetitive and real-time capture, with full digitizing features and HP-IB automation. Mixed repetitive and single-shot debugging to 100 MHz real-time, automated production test, and general-purpose 2-channel high-bandwidth bench work. 100 MHz single-shot bandwidth at 400 MSa/s Optional telecommunications mask template testing (Option 001) Offset Range >250 mV to 1.25 V/div: ± 50 V Net Weight Family: Approximately 10 kg (22 lb) Size Family: 194.3 mmHx 422.3 mmWx 355.6 mmDclass Specs from HP 54500 family catalog datasheet for 54502A. Offset ranges are OEM table values by vertical sensitivity band.



MODEL

**HP / Agilent
54502A**

CALIBRATION

**Available on
request**

CONDITION

Used

STATUS

In stock

RFQ / SKU

54502A

LISTING

<https://aumictechlabs.com/products/54502a-2/>

NIST-traceable cal

SAM registered

30-day returns

NAICS 423690 • 811210 • 541380

This unit

The HP/Agilent 54502A is a 400 MHz digitizing oscilloscope designed for signal acquisition and analysis in design verification, manufacturing test, and research environments. This dual-channel instrument captures both repetitive and single-shot signals with real-time sampling up to 400 MSa/s and delivers 400 MHz bandwidth in repetitive mode, 100 MHz in single-shot mode. With

2001-point memory depth in real-time acquisition and programmable triggering down to 1.75 ns glitch detection, the 54502A provides the timing resolution and measurement capability required for precision electronic testing. Technical Specifications Bandwidth Repetitive mode: DC to 400 MHz (-3 dB, DC coupled) Real-time (single-shot) mode: DC to 100 MHz (-3 dB, DC coupled) Bandwidth reduces to 100 MHz at 1 μ s/div and slower time-base settings Temperature-dependent reduction: 2.5 MHz per $^{\circ}$ C above +35 $^{\circ}$ C Sampling & Memory Maximum real-time sampling: 400 MSa/s per channel Real-time record length: 2001 points Repetitive record length: 501 points Vertical System Sensitivity: 2 mV/div to 5 V/div (8-bit, 10-bit via HP-IB with averaging) Input impedance: 1 M Ω , switchable Coupling: DC or AC Vertical gain accuracy: $\pm$ 0.08% per $^{\circ}$ C from calibration temperature Timebase & Triggering Time/division: 1 ns/div to 5 s/div Internal trigger: DC to 100 MHz coupling; 100–400 MHz sensitivity External trigger: DC to 250 MHz, down to 1.75 ns glitch detection Advanced triggering: Edge, pattern, state, delayed, and glitch modes Measurements & Interface 16 automatic pulse parameter measurements HP-IB (IEEE 488.2) programmability and waveform data access Power & Environment Input: 115/230 VAC (-25% to +15%), 48–66 Hz Power consumption: 350 VA maximum Operating temperature: $\pm$ 10 $^{\circ}$ C from calibration temperature (8+ averages required) Key Features Dual simultaneous channels for multi-signal comparison High real-time sampling rate supports fast transient capture Switchable input impedance and AC/DC coupling for flexible signal conditioning Advanced logic triggering with sub-nanosecond glitch detection Direct waveform access via HP-IB for automated test systems Typical Applications Design verification of high-speed digital and analog circuits Manufacturing test and quality assurance Signal integrity analysis in laboratory environments Single-shot pulse and transient characterization Compatibility & Integration HP-IB (IEEE 488.2) interface enables integration into automated test environments and remote instrument control.

54502A Characteristics / Specifications

PARAMETER	VALUE
Repetitive Bandwidth DC Coupled	400 MHz
Single Shot Bandwidth	100 MHz
Maximum Sample Rate	400 MSa/s
Number of Channels	2 simultaneous
Record Length Real Time	2001 points
Record Length Repetitive	501 points
Vertical Resolution	8 bits (10 bits via HP-IB with averaging)
Vertical Sensitivity Range	1 mV/div to 5 V/div class
Vertical Gain Accuracy DC	±1.25% of full scale
Bandwidth Limit	dc to 30 MHz switchable
AC Coupled Lower 3 dB Frequency	10 Hz
LF Reject Lower 3 dB Frequency	450 Hz
Rise Time Characteristic	3.5 ns
Time Base Range	1 ns/div to 5 s/div
Dual Time Base Windowing	Yes
Offset Range 2 mV to 50 mV/div	±2 V
HP IB Interface	Built-in
Net Weight Family	Approximately 10 kg (22 lb)
Size Family	194.3 mmHx 422.3 mmWx 355.6 mmDclass
Warranty OEM Catalog	Three years
Bandwidth	DC Coupled: 400 MHz
Rise Time	Characteristic: 3.5 ns

54502A Specifications

PARAMETER	VALUE
Agilent 54502A Digitizing Oscilloscope	Overview
Key Features	400 MHz repetitive bandwidth
Technical Specifications	Repetitive Bandwidth DC Coupled: 400 MHz
Notes	Specs from HP 54500 family catalog datasheet for 54502A. Offset ranges are OEM table values by vertical sensitivity band.

Full OEM specifications

Complete technical content extracted from the manufacturer datasheet. Sparse OEM tables are reconstructed as tables below; other text is preserved as paragraphs.

Specifications

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Repetitive Bandwidth DC Coupled	400 MHz
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Dual Time Base Windowing	Yes
Offset Range 2 mV to 50 mV/div	±2 V

Offset Range >50 mV to 250 mV/div: ±10 V
Offset Range >250 mV to 1.25 V/div: ±50 V
Offset Range >1.25 V to 5 V/div: ±250 V

Specifications

PARAMETER	VALUE
HP IB Interface	Built-in
Net Weight Family	Approximately 10 kg (22 lb)
Size Family	194.3 mmHx 422.3 mmWx 355.6 mmDclass

Warranty OEM Catalog: Three years

Notes

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sensitivity band.

Available from Aumictech

Used and refurbished unit evaluated in-house. Calibration: Available on request. Used · In stock.

Request a quote: sales@aumictech.com · +1 (484) 841-9341

Aumictech

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Technical content from manufacturer specifications. Unit photo/stock from Aumictech listing when available. Specifications subject to OEM documentation and unit condition.