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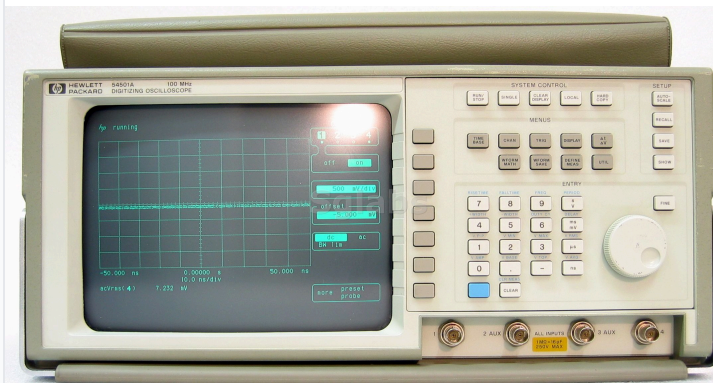
Data Sheet

August 31, 2026

HP / AGILENT

HP / Agilent 54501A 100 MHz Digitizing Oscilloscope

The HP 54501A is a 100 MHz, 4-channel digitizing oscilloscope in the 54500 family designed primarily for repetitive signals. OEM specifications list dc to 100 MHz repetitive bandwidth, 10 MSa/s sampling, dual-time-base windowing, TV trigger, and full HP-IB programmability. General-purpose repetitive-signal debugging, automated production test with HP-IB, TV-line triggering work, and portable field digital troubleshooting. 100 MHz repetitive bandwidth with 4 channels (2+2) Autoscaling and automatic pulse-parameter measurements Power Requirements: 115/230 Vac, 48 to 66 Hz, 350 VA maximum Shipping Weight: Approximately 20 kg (44 lb) Size: 194.3 mmHx 422.3 mmWx 355.6 mmD Notes Specs from HP 54501A pages in the 54500 family digitizing oscilloscopes catalog datasheet. Single-shot bandwidth is based on 10 points per period of input signal per OEM note.



MODEL

**HP / Agilent
54501A**

CALIBRATION

**Available on
request**

CONDITION

Used

STATUS

In stock

RFQ / SKU

54501A

LISTING

<https://aumictechlabs.com/products/54501a-2/>

NIST-traceable cal

SAM registered

30-day returns

NAICS 423690 • 811210 • 541380

This unit

The HP/Agilent 54501A is a 100 MHz, 4-channel digitizing oscilloscope engineered for repetitive signal acquisition and single-shot measurements. This instrument combines dual-time-base windowing with advanced logic triggering and automatic measurement capabilities, supporting both manual operation and integration into automated test equipment (ATE) systems. Full HP-IB

programmability enables deployment across research, device characterization, and production test environments. Technical Specifications Bandwidth & Timing DC-coupled repetitive: DC to 100 MHz (-3 dB) DC-coupled single-shot: DC to 1 MHz (10 points per period minimum) AC-coupled repetitive: 10 Hz to 100 MHz (-3 dB) AC-coupled single-shot: 10 Hz to 1 MHz Rise time: 3.5 ns Vertical Characteristics Channels 1 & 4: 5 mV/div to 5 V/div (1-2-5 sequence) Channels 2 & 3: 100 mV/div to 500 mV/div (1-2-5 sequence, limited attenuator inputs optimized for digital signals) Vertical gain accuracy (DC): $\pm 1.5\%$ Vertical resolution: 8-bit ADCs (7-bit effective below 7 mV/div) Dynamic range: ± 16 divisions from center Maximum input voltage: ± 250 V DC + peak AC (<10 kHz) Offset accuracy: $\pm 2\%$ of offset + $0.2 \times (\text{V/div}) + 0.075 \text{ div}/^\circ\text{C}$; $\pm 2\%$ of offset + $0.4 \times (\text{V/div}) + 0.15 \text{ div}/^\circ\text{C}$ at 5 mV/div Triggering Trigger level range: ± 6 divisions from center Minimum trigger pulse width: 7 ns Advanced logic triggering: edge, pattern, state, and delay modes TV trigger supported Acquisition 4-channel configuration (2+2): alternating pair acquisition when more than two channels active Dual time-base windowing with up to 20:1 expansion Memory depths: 500 points (real-time normal), 2000 points (real-time extended), 1024 points (repetitive 10 ns–5 s/div), 200–1000 points (repetitive faster timebases) Key Features Simultaneous operation: Channels 1 or 2 with Channels 3 or 4 Fine vertical sensitivity adjustment via keypad or FINE control Programmable via HP-IB for test automation Waveform zoom capability for detailed signal analysis Typical Applications Automated test equipment (ATE) integration Device and circuit characterization Repetitive signal analysis and single-shot capture Digital signal verification and validation Compatibility & Integration HP-IB programmability enables seamless incorporation into test systems and laboratory automation environments.

54501A Characteristics / Specifications

PARAMETER	VALUE
Repetitive Bandwidth DC Coupled	dc to 100 MHz (-3 dB)
Single Shot Bandwidth DC Coupled	dc to 1 MHz
Repetitive Bandwidth AC Coupled	10 Hz to 100 MHz (-3 dB)
Single Shot Bandwidth AC Coupled	10 Hz to 1 MHz
Maximum Sample Rate	10 MSa/s
Number of Channels	4 (2+2)
Simultaneous Acquisition	Channels 1 and 4 simultaneous; 2 and 3 alternate when four used
Vertical Sensitivity Range	5 mV/div to 5 V/div
Vertical Gain Accuracy DC	±1.5%
Vertical Resolution Display	8 bit ADC (±0.4%)
Vertical Resolution via HP IB with Averaging	10 bits (±0.1%)
Rise Time	3.5 ns
Time Base Range	2 ns/div to 5 s/div
Time Base Accuracy	0.005%
Maximum Time Base Resolution	100 ps
Memory Depth Display	501 points
Memory Depth via HP IB	1024 points
Input RC Nominal	1 MOhm, 16 pF
Max Input Voltage	±250 V (dc + peak ac <10 kHz)
Offset Range 5 to 50 mV/div	±2 V
Offset Range 0.1 to 1 V/div	±20 V
Offset Range 1 to 5 V/div	±200 V
Channel to Channel Isolation dc to 20 MHz	40 dB
Channel to Channel Isolation 20 to 100 MHz	30 dB

PARAMETER	VALUE
Power Requirements	115/230 Vac, 48 to 66 Hz, 350 VA maximum
Net Weight	Approximately 10 kg (22 lb)
Shipping Weight	Approximately 20 kg (44 lb)
Size	194.3 mmHx 422.3 mmWx 355.6 mmD Notes Specs from HP 54501A pages in the 54500 family digitizing oscilloscopes catalog datasheet. Single-shot bandwidth is based on 10 points per period of input signal per OEM note.
Bandwidth	DC Coupled: dc to 100 MHz (-3 dB)

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 list dc to 100 MHz repetitive bandwidth, 10 MSa/s sampling, dual-time-base windowing, TV trigger, and full HP-IB programmability.

Applications

General-purpose repetitive-signal debugging, automated production test with HP-IB, TV-line triggering work, and portable field digital troubleshooting.

Key Features

100 MHz repetitive bandwidth with 4 channels (2+2)

Autoscaling and automatic pulse-parameter measurements

Dual-time-base windowing

Advanced logic triggering and TV trigger

Measurement limit testing

Nonvolatile setup and waveform memories

Full HP-IB programmability

Technical Specifications

Technical Specifications

PARAMETER	VALUE
Repetitive Bandwidth DC Coupled	dc to 100 MHz (-3 dB)
Single Shot Bandwidth DC Coupled	dc to 1 MHz
Repetitive Bandwidth AC Coupled	10 Hz to 100 MHz (-3 dB)
Single Shot Bandwidth AC Coupled	10 Hz to 1 MHz
Maximum Sample Rate	10 MSa/s
Number of Channels	4 (2+2)
Simultaneous Acquisition	Channels 1 and 4 simultaneous; 2 and 3 alternate when four used
Vertical Sensitivity Range	5 mV/div to 5 V/div
Vertical Gain Accuracy DC	±1.5%
Vertical Resolution Display	8 bit ADC (±0.4%)
Vertical Resolution via HP IB with Averaging	10 bits (±0.1%)
Rise Time	3.5 ns
Time Base Range	2 ns/div to 5 s/div
Time Base Accuracy	0.005%
Maximum Time Base Resolution	100 ps
Memory Depth Display	501 points
Memory Depth via HP IB	1024 points
Input RC Nominal	1 MOhm, 16 pF

PARAMETER	VALUE
Max Input Voltage	±250 V (dc + peak ac <10 kHz)
Offset Range 5 to 50 mV/div	±2 V
Offset Range 0.1 to 1 V/div	±20 V
Offset Range 1 to 5 V/div	±200 V

Channel to Channel Isolation dc to 20 MHz: 40 dB
Channel to Channel Isolation 20 to 100 MHz: 30 dB

Specifications

PARAMETER	VALUE
Power Requirements	115/230 Vac, 48 to 66 Hz, 350 VA maximum
Net Weight	Approximately 10 kg (22 lb)
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Size	194.3 mmHx 422.3 mmWx 355.6 mmD Notes

Specs from HP 54501A pages in the 54500 family digitizing oscilloscopes catalog datasheet. Single-shot bandwidth is based on 10 points per period of input signal per OEM note.

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

788 S 500 E, Pleasant Grove, UT 84062
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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.