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Data Sheet

August 31, 2026

HP / AGILENT

HP / Agilent 54641A 2-Channel, 350 MHz Oscilloscope

The Agilent 54641A is a 2-channel MegaZoom oscilloscope with 350 MHz bandwidth, 2 GSa/s interleaved maximum sample rate, and 8 MB interleaved MegaZoom deep memory (4 MB per channel). OEM 54600-series datasheets specify 1 ns peak detection at max sample rate, 8-bit vertical resolution (12-bit high-resolution mode at slow sweeps), and standard serial triggering including CAN, I2C, LIN, SPI, and USB. 350 MHz embedded mixed-signal debug, long non-repeating capture with deep memory, and serial-bus trigger isolation on 2-channel analog designs. BW Limit: approximately 25 MHz selectable Channel Isolation DC to Max BW: greater than 40 dB Serial Triggers Standard: CAN, I2C, LIN, SPI, USB Specs from Agilent Technologies 54600-Series Oscilloscopes data sheet and 54640-series service guide rows for 54641A. Maximum sample rate and memory are interleaved.



MODEL

**HP / Agilent
54641A**

CALIBRATION

**Available on
request**

CONDITION

Used

STATUS

In stock

RFQ / SKU

54641A

LISTING

<https://aumictechlabs.com/products/54641a-2/>

NIST-traceable cal

SAM registered

30-day returns

NAICS 423690 · 811210 · 541380

This unit

The HP/Agilent 54641A is a 2-channel digital storage oscilloscope delivering 350 MHz bandwidth and 2 GSa/s maximum sample rate for demanding electronics testing and signal analysis. The instrument combines 8 MB of interleaved MegaZoom deep memory with a high-definition 7-inch monochrome CRT display capable of rendering up to 25 million vectors per second. Advanced

triggering across edge, pulse width, pattern, and protocol modes - including CAN, I2C, LIN, SPI, and USB - enables precise signal capture in complex systems. Technical Specifications

Bandwidth: 350 MHz Channels: 2 analog Maximum Sample Rate: 2 GSa/s (interleaved) Record Length: 8 MB interleaved (4 MB per channel) Vertical Resolution: 8 bits Vertical Sensitivity: 2 mV/div to 5 V/div Vertical Accuracy: $\pm(2\% \text{ of reading} + 0.02 \text{ div})$ Input Coupling: AC ($\sim 10 \text{ Hz}$), DC, Noise Reject, HF Reject, LF Reject ($\sim 50 \text{ kHz}$) Horizontal Sweep Speed: 1 ns/div to 50 s/div Horizontal Accuracy: $\pm 0.01\%$ Display: 7-inch monochrome CRT, high-definition with 32 intensity levels Update Rate: Up to 25 million vectors/sec Trigger Sensitivity (Analog): $< 10 \text{ mV/div}$ for $\geq 10 \text{ mV/div}$ settings; greater of 1 div or 5 mV for $< 10 \text{ mV/div}$ settings External Trigger Sensitivity: $< 100 \text{ mV}$ (DC to 100 MHz), $< 200 \text{ mV}$ (100 MHz to max bandwidth) Key Features MegaZoom deep memory architecture with 32 intensity mapping levels for waveform analysis Protocol-aware triggering: CAN, I2C, LIN, SPI, USB with frame-level synchronization Waveform math functions: subtract, multiply, integrate, differentiate Fast Fourier Transform (FFT) for spectrum analysis Automatic measurements and manual cursor-based analysis Built-in 1.44 MB floppy disk drive for waveform storage and screen capture Connectivity & Integration Parallel port and RS-232 interface standard Optional GPIB interface module for automated test systems Data transfer to PC via standard interfaces Typical Applications Electronics debugging, signal integrity analysis, embedded systems development, and protocol validation in automotive, industrial control, and communications environments.

54641A Characteristics / Specifications

PARAMETER	VALUE
Analog Channels	2 simultaneous
Bandwidth DC Coupled	dc to 350 MHz
Bandwidth AC Coupled	3.5 Hz to 350 MHz
Calculated Risetime	approximately 1.0 ns
Max Sample Rate Interleaved	2 GSa/s
Max Sample Rate Per Channel	1 GSa/s
Max Memory Depth Interleaved	8 MB
Max Memory Depth Per Channel	4 MB
Single Shot Bandwidth	350 MHz maximum
Vertical Resolution	8 bits
Peak Detection	1 ns at max sample rate
High Resolution Mode	12 bits when ≥ 100 us/div (average mode ave=1)
Vertical Range	2 mV/div to 5 V/div
Input Resistance	1 Mohm $\pm 1\%$, 50 ohm selectable
Input Capacitance	approximately 13 pF
Coupling	ac, dc
BW Limit	approximately 25 MHz selectable
Maximum Input CAT I	300 Vrms, 400 Vpk
Maximum Input 50 Ohm	5 Vrms
Channel Isolation DC to Max BW	greater than 40 dB
Offset Range less than 10 mV/div	± 5 V
Averaging	selectable 2 to 16383
Serial Triggers Standard	CAN, I2C, LIN, SPI, USB
Bandwidth	DC Coupled: dc to 350 MHz

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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Notes	
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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

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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.