

**Aumictech**

Test & measurement · bought, sold, repaired, calibrated

Data Sheet

August 14, 2026

HP / AGILENT

HP / Agilent 54641D 2+16 Channel, 350 MHz Mixed-Signal Oscilloscope

HP Agilent 54641D MegaZoom Mixed Signal Oscilloscope The Agilent 54641D is a 350 MHz mixed-signal MegaZoom oscilloscope with 2 analog channels plus 16 digital channels. OEM 54600-series datasheets specify 2 GSa/s interleaved analog sampling (1 GSa/s per channel), 8 MB interleaved analog MegaZoom memory, and 1 GSa/s / 4 MB on the digital channels. MCU and DSP mixed analog/digital debug at 350 MHz, correlating buses with analog rails using deep memory, and serial-bus trigger isolation with standard CAN, I2C, LIN, SPI, and USB triggers. The Agilent 54641D is a 350 MHz mixed-signal MegaZoom oscilloscope with 2 analog channels plus 16 digital channels. OEM 54600-series datasheets specify 2 GSa/s interleaved analog sampling (1 GSa/s per channel), 8 MB interleaved analog MegaZoom memory, and 1 GSa/s / 4 MB on the digital channels. MCU and DSP mixed analog/digital debug at 350 MHz, correlating buses with analog rails using deep memory, and serial-bus trigger isolation with standard CAN, I2C, LIN, SPI, and USB triggers. 2 analog plus 16 digital MSO channels time aligned



MODEL

**HP / Agilent
54641D**

CALIBRATION

**Available on
request**

CONDITION

Used

STATUS

In stock

RFQ / SKU

54641D

LISTING

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

NIST-traceable cal

SAM registered

30-day returns

NAICS 423690 · 811210 · 541380

This unit

The HP/Agilent 54641D is a mixed-signal oscilloscope engineered for simultaneous acquisition and analysis of analog and digital signals in embedded system development. This 2+16 channel instrument combines 2 analog channels at 350 MHz bandwidth with 16 digital channels, delivering 2 GSa/s maximum sample rate per channel and 4–8 MB MegaZoom deep memory for capturing extended or complex waveforms without loss of interactivity.

Technical Specifications

Analog Channels: 2 at 350 MHz bandwidth
Digital Channels: 16
Maximum Sample Rate: 2 GSa/s per channel
Memory Depth: 4 MB to 8 MB MegaZoom deep memory
Display: High-definition system with superior horizontal resolution
Operating Temperature: Up to +71 °C
Operating Humidity: 95% RH at 40 °C for 24 hours
Operating Altitude: To 4,570 m (15,000 ft)
Safety Compliance: IEC 61010-1, UL 3111, CSA C22.2 No. 1010.1
Installation Category: CAT I, CAT II
Pollution Degree: 2
Vibration: Class B1 and MIL-PRF-28800F; Class 3 random
Shock: Class B1 and MIL-PRF-28800F (operating 30 g, 1/2 sine, 11-ms duration)

Key Features Edge, pattern, and pulse-width triggering
Serial protocol triggering for I2C, CAN, LIN, SPI, and USB
Optional CAN trigger module (N2758A)
Infinite persistence waveform accumulation
Waveform math: FFT, subtract, multiply, integrate, differentiate
Autoscale and one-button setup
Quick measurements with integrated counter
Cursor-based manual analysis
Built-in floppy, RS-232, and parallel ports

Typical Applications Embedded system debugging, mixed-signal protocol analysis, and complex signal capture requiring simultaneous analog–digital visibility.

Compatibility & Integration Compatible with InfiniiVision oscilloscope probe family (10070C, 10073C, 10074C logic analyzer probe solutions)
Interfaces with HP BenchLink Scope software on Windows (3.1, 95, NT) for waveform data transfer and trace image export

54641D Characteristics / Specifications

PARAMETER	VALUE
Analog Channels	2 simultaneous
Digital Channels	16 labeled D15 to D0
Bandwidth DC Coupled Analog	dc to 350 MHz
Bandwidth AC Coupled Analog	3.5 Hz to 350 MHz
Calculated Risetime Analog	approximately 1.0 ns
Analog Max Sample Rate Interleaved	2 GSa/s
Analog Max Sample Rate Per Channel	1 GSa/s
Analog Max Memory Interleaved	8 MB
Analog Max Memory Per Channel	4 MB
Digital Max Sample Rate	1 GSa/s
Digital Max Memory Depth	4 MB
Digital Vertical Resolution	1 bit
Digital Glitch Detection Min Pulse	5 ns
Single Shot Bandwidth Analog	350 MHz maximum
Analog Vertical Resolution	8 bits
Analog Peak Detection	1 ns at max sample rate
High Resolution Mode	12 bits when greater than or equal to 100 us/div average mode ave=1
Analog Vertical Range	2 mV/div to 5 V/div
Analog Input Resistance	1 Mohm plus or minus 1%, 50 ohm selectable
Analog Input Capacitance	approximately 13 pF
Analog Maximum Input CAT I	300 Vrms, 400 Vpk
Analog Noise Peak to Peak	3% full scale or 3 mV whichever greater
DC Vertical Gain Accuracy	plus or minus 2.0% full scale
Digital Maximum Input Voltage	plus or minus 40 V peak CATIDigital Input Resistance At Probe Tip: 100 kOhm plus or minus 2%
Digital Minimum Input Swing	500 mV peak to peak

PARAMETER	VALUE
Serial Triggers Standard	CAN, I2C, LIN, SPI, USB
Net Weight	6.82 kg (15 lb)
Line Voltage	100 to 240 VAC 50/60 Hz CAT II; 100 to 132 VAC 440 Hz CAT II
Bandwidth	DC Coupled Analog: 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	
Specifications	
PARAMETER	VALUE
Analog Channels	2 simultaneous
Digital Channels	16 labeled D15 to D0
Bandwidth DC Coupled Analog	dc to 350 MHz
Bandwidth AC Coupled Analog	3.5 Hz to 350 MHz
Calculated Risetime Analog	approximately 1.0 ns
Analog Max Sample Rate Interleaved	2 GSa/s
Analog Max Sample Rate Per Channel	1 GSa/s
Analog Max Memory Interleaved	8 MB
Analog Max Memory Per Channel	4 MB
Digital Max Sample Rate	1 GSa/s
Digital Max Memory Depth	4 MB
Digital Vertical Resolution	1 bit
Digital Glitch Detection Min Pulse	5 ns
Single Shot Bandwidth Analog	350 MHz maximum
Analog Vertical Resolution	8 bits
Analog Peak Detection	1 ns at max sample rate
High Resolution Mode	12 bits when greater than or equal to 100 us/div average mode ave=1
Analog Vertical Range	2 mV/div to 5 V/div
Analog Input Resistance	1 Mohm plus or minus 1%, 50 ohm selectable
Analog Input Capacitance	approximately 13 pF
Analog Maximum Input CAT I	300 Vrms, 400 Vpk
Analog Noise Peak to Peak	3% full scale or 3 mV whichever greater
DC Vertical Gain Accuracy	plus or minus 2.0% full scale
Digital Maximum Input Voltage	plus or minus 40 V peak CATIDigital Input Resistance At Probe Tip: 100 kOhm plus or minus 2%
Digital Minimum Input Swing	500 mV peak to peak

PARAMETER	VALUE
Serial Triggers Standard	CAN, I2C, LIN, SPI, USB
Net Weight	6.82 kg (15 lb)
Line Voltage	100 to 240 VAC 50/60 Hz CAT II; 100 to 132 VAC 440 Hz CAT II

Notes
Specs from Agilent 54600-Series Oscilloscopes data sheet rows for 54641D. Analog MegaZoom depth and digital pod memory are specified separately.

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
sales@aumictech.com · +1 (484) 841-9341
<https://aumictechlabs.com>

NIST-traceable calibration · SAM registered ·
30-day returns
NAICS 423690 · 811210 · 541380
Generated August 14, 2026

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