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Data Sheet

August 13, 2026

HP / AGILENT

HP / Agilent 54831D 4+16-Channel, 600 MHz Mixed-Signal Infiniium Oscilloscope

Agilent 54831D Infiniium 600 MHz Mixed Signal Oscilloscope The Agilent 54831D is a 4-analog plus 16-digital channel Infiniium mixed-signal oscilloscope with 600 MHz bandwidth, up to 4 GSa/s sample rate, and MegaZoom deep memory (2 Mpts/ch standard, 4 Mpts max; options to 64 Mpts/ch / 128 Mpts max). Calculated rise time at 50 ohm is 583 ps. Windows-based open system supports advanced triggering across analog and digital channels. Mixed analog/digital debug of complex embedded systems; 600 MHz signal integrity; long deep-memory captures; eye/jitter measurements with Infiniium analysis tools. The Agilent 54831D is a 4-analog plus 16-digital channel Infiniium mixed-signal oscilloscope with 600 MHz bandwidth, up to 4 GSa/s sample rate, and MegaZoom deep memory (2 Mpts/ch standard, 4 Mpts max; options to 64 Mpts/ch / 128 Mpts max). Calculated rise time at 50 ohm is 583 ps. Windows-based open system supports advanced triggering across analog and digital channels. Mixed analog/digital debug of complex embedded systems; 600 MHz signal integrity; long deep-memory captures; eye/jitter measurements with Infiniium analysis tools.



MODEL

**HP / Agilent
54831D**

CALIBRATION

**Available on
request**

CONDITION

Used

STATUS

In stock

RFQ / SKU

54831D

LISTING

<https://aumictechlabs.com/products/54831d-2/>

NIST-traceable cal

SAM registered

30-day returns

NAICS 423690 • 811210 • 541380

This unit

The HP/Agilent 54831D is a 4+16-channel mixed-signal oscilloscope combining analog waveform capture with 16-channel logic analysis in a single, time-aligned display. The 600 MHz analog bandwidth instrument simultaneously acquires analog signals on four channels and digital timing data across 16 logic channels, enabling direct correlation of cause and effect in mixed analog-digital circuit troubleshooting.

Technical Specifications
Analog Bandwidth: 600 MHz
Analog Channels: 4 at up to 4 GSa/s (2-channel mode) or 2 GSa/s (4-channel mode)
Digital Channels: 16 for logic-level timing capture
Rise Time: 583 ps
Memory Depth: 2 Mpts/channel standard (4 Mpts maximum); optional up to 64 Mpts/channel (128 Mpts maximum)
Input Impedance: 1 M Ω typical with standard 1165A passive probe
FFT Frequency Range: DC to 2 GHz (2 channels interleaved), DC to 1 GHz per channel

Key Features
Mixed-signal triggering across all 16 digital and 4 analog channels for isolation and analysis of complex signal interactions
14 waveform math functions including FFT magnitude/phase, Add, Subtract, Multiply, Divide, Average, Differentiate, Integrate, Min/Max, Magnify, Invert, and Versus
QuickMeasure+ button for instant common measurements with statistics
AutoProbe interface for automatic configuration with passive, active, and differential probes
640×480 integrated LCD; external VGA output to 1280×1024 resolution
Web-enabled remote control and email-on-trigger capability
Windows XP Pro open platform; runs Agilent VEE, Excel, and MATLAB directly on scope
512 MB CPU memory, ≥20 GB HDD storage, 1.44 MB floppy, CD-ROM drive

Typical Applications
Mixed-signal circuit design verification, embedded system debugging, power delivery analysis, protocol decode and timing correlation, and hardware-software integration testing.

Compatibility & Integration
Connectivity includes LAN (10/100 Mbps), GPIB, USB, VGA, PS/2, and Centronics ports. AutoProbe support enables seamless probe recognition across the Agilent passive and active probe portfolio.

Features & description

From manufacturer datasheet

Features

- 4 analog + 16 digital channels
- 600 MHz; 4 GSa/s; MegaZoom up to 128 Mpts optional
- Segmented memory acquisition mode
- Powerful mixed-signal triggering across all channels
- Color-graded persistence histograms FFT eye tools

54831D Characteristics / Specifications

PARAMETER	VALUE
Model	54831D
Manufacturer	Agilent / Keysight
Instrument Type	Mixed signal oscilloscope
Family	Infiniium 54830 series
Alias	Agilent 54831D; Keysight 54831D; HP 54831D
Analog Channels	4
Digital Channels	16 (D15 to D0)
Bandwidth At 50 Ohm	600 MHz (-3 dB)
Calculated Rise Time At 50 Ohm	583 ps
Maximum Real Time Sample Rate	4 GSa/s
Standard Memory Depth	2 Mpts/ch (4 Mpts max interleaved)
Digital Sample Rate Maximum	1 GSa/s
Digital Memory Depth Per Channel	32 M
Equivalent Time Sample Rate Max	250 GSa/s
Input Impedance	1 M ohm plus/minus 1 percent (13 pF typical); 50 ohm plus/minus 1.5 percent
Input Coupling 1 M Ohm	AC DC
Input Coupling 50 Ohm	DC
Hardware Bandwidth Limit	20 MHz
Vertical Resolution	8 bits; greater than or equal to 12 bits with averaging
Maximum Input 1 M Ohm	150 V rms or DC CATIMaximum Input 50 Ohm: 5 Vrms CATIMain Timebase Range: 500 ps/div to 20 s/div
Timebase Accuracy	15 ppm
Digital Input Impedance	100 k ohm plus/minus 2 percent about 8 pF
Digital Minimum Swing	500 mV peak to peak
Digital Maximum Input	plus/minus 40 V peak CATIDigital Dynamic Range: plus/minus 10 V about threshold

PARAMETER	VALUE
Mains	100-240 VAC plus/minus 10 percent; 47 to 440 Hz; 390 W max
Net Weight	13.4 kg (29.5 lb)
Shipping Weight	16.4 kg (36.1 lb)
Related 2 Plus 16 Sibling	54830D
Related 1 GHz 4 Plus	54832D
Standard Probes	1165A 10:1 10 M ohm qty 4 plus MSO logic cable kit
Bandwidth	At 50 Ohm: 600 MHz (-3 dB)
Rise Time	At 50 Ohm: 583 ps

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
Digital Sample Rate Maximum	1 GSa/s
Digital Memory Depth Per Channel	32 M
Equivalent Time Sample Rate Max	250 GSa/s
Input Impedance	1 M ohm plus/minus 1 percent (13 pF typical); 50 ohm plus/minus 1.5 percent
Input Coupling 1 M Ohm	AC DC
Input Coupling 50 Ohm	DC
Hardware Bandwidth Limit	20 MHz
Vertical Resolution	8 bits; greater than or equal to 12 bits with averaging
Maximum Input 1 M Ohm	150 V rms or DC CAT I
Maximum Input 50 Ohm	5 Vrms CAT I
Main Timebase Range	500 ps/div to 20 s/div
Timebase Accuracy	15 ppm
Digital Input Impedance	100 k ohm plus/minus 2 percent about 8 pF
Digital Minimum Swing	500 mV peak to peak
Digital Maximum Input	plus/minus 40 V peak CAT I
Digital Dynamic Range	plus/minus 10 V about threshold
Mains	100-240 VAC plus/minus 10 percent; 47 to 440 Hz; 390 W max
Net Weight	13.4 kg (29.5 lb)
Shipping Weight	16.4 kg (36.1 lb)
Related 2 Plus 16 Sibling	54830D
Related 1 GHz 4 Plus 16	54832D
Standard Probes	1165A 10:1 10 M ohm qty 4 plus MSO logic cable kit
Specifications	
PARAMETER	VALUE
Model	54831D

PARAMETER	VALUE
Manufacturer	Agilent / Keysight
Instrument Type	Mixed signal oscilloscope
Family	Infiniium 54830 series
Alias	Agilent 54831D; Keysight 54831D; HP 54831D
Analog Channels	4
Digital Channels	16 (D15 to D0)
Bandwidth At 50 Ohm	600 MHz (-3 dB)
Calculated Rise Time At 50 Ohm	583 ps
Maximum Real Time Sample Rate	4 GSa/s
Standard Memory Depth	2 Mpts/ch (4 Mpts max interleaved)

Optional Memory Max: 64 Mpts/ch (128 Mpts max)

Specifications

PARAMETER	VALUE
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Digital Memory Depth Per Channel	32 M
Equivalent Time Sample Rate Max	250 GSa/s
Input Impedance	1 M ohm plus/minus 1 percent (13 pF typical); 50 ohm plus/minus 1.5 percent
Input Coupling 1 M Ohm	AC DC
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Net Weight	13.4 kg (29.5 lb)
Shipping Weight	16.4 kg (36.1 lb)
Related 2 Plus 16 Sibling	54830D

PARAMETER	VALUE
Related 1 GHz 4 Plus 16	54832D
Standard Probes	1165A 10:1 10 M ohm qty 4 plus MSO logic cable kit

Notes

Specs from Agilent Infiniium 54830 Series Oscilloscopes data sheet for the 54831D column. Confirm installed memory options (040/080/160/320/640) and probe set.

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.