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Data Sheet

August 14, 2026

AGILENT / KEYSIGHT

Agilent/Keysight 54645D

Operators: analog and digital trigger combination Documentation: 54645A/D datasheet and user's guide Probe Interface: standard passive probe path plus logic pod Analog bandwidth, 200 MSa/s, 1 MB/channel, and 16 logic channels from HP/Agilent 54645D mixed-signal oscilloscope product specifications. Confirm logic pod part numbers and exact vertical tables on the datasheet revision. Documentation: 54645A/D datasheet and user's guide Probe Interface: standard passive probe path plus logic pod Analog bandwidth, 200 MSa/s, 1 MB/channel, and 16 logic channels from HP/Agilent 54645D mixed-signal oscilloscope product specifications. Confirm logic pod part numbers and exact vertical tables on the datasheet revision.



MODEL

**Agilent / Keysight
54645D**

CALIBRATION

**Available on
request**

CONDITION

Used

STATUS

In stock

RFQ / SKU

54645D

LISTING

<https://aumictechlabs.com/products/54645d-2/>

NIST-traceable cal

SAM registered

30-day returns

NAICS 423690 • 811210 • 541380

This unit

The Agilent/Keysight 54645D is a 100 MHz mixed-signal oscilloscope that combines 2 analog channels with 16 digital channels on a single display for time-aligned capture and analysis. This instrument delivers 200 MSa/s sampling on analog channels and up to 400 MSa/s on 8 digital channels, with deep memory - 1 MB per analog channel and 2 MB per digital channel - enabling extended waveform recording without sacrificing responsiveness. MegaZoom technology provides intuitive pan-and-zoom navigation across captured data. The horizontal system spans 50

s/div to 5 ns/div sweep speeds with 40 ps resolution and $\pm 0.01\%$ accuracy on the main timebase. Pre-trigger delay extends at least 1 screen width or 2.5 msec, while post-trigger delay reaches 500 seconds, supporting detailed cause-and-effect analysis of complex circuit behavior.

Technical Specifications
Bandwidth: 100 MHz
Analog Channels: 2 at 200 MSa/s, 1 MB memory per channel
Digital Channels: 16 at 200 MSa/s (or 8 channels at 400 MSa/s), 2 MB memory per channel
Sweep Speed Range: 50 s/div to 5 ns/div (main and delayed)
Horizontal Accuracy: $\pm 0.01\%$ (main), $\pm 0.05\%$ (vernier)
Horizontal Resolution: 40 ps
Input Impedance: 100 k Ω with ~ 8 pF input capacitance
Input Dynamic Range: ± 10 V about threshold
Minimum Input Signal: 500 mV peak-to-peak
Pre-defined Thresholds: TTL (1.4 V), CMOS (2.5 V), ECL (-1.3 V)

Key Features
Pattern Triggering: Define high, low, and don't-care levels across all 16 digital channels, combinable with edge triggers
Glitch Detection: Captures glitches from 8 ns to 100 seconds duration
Trigger Modes: Auto, Autolevel, Normal, Single with holdoff from ~ 200 ns to 25 seconds
Advanced Triggering: Glitch, TV, and pattern options available

Physical & Interface Dimensions: 35.258 $\times$ 17.272 $\times$ 31.75 cm
Weight: 6.35 kg
Optional Modules: 54655A (HPIB/GPIB), 54657A (FFT, measurements, storage, real-time clock), 54659B (RS-232, parallel interface)

Typical Applications
Embedded system debugging, digital design validation, and mixed-signal circuit characterization in environments requiring simultaneous analog-digital observation.

54645D Characteristics / Specifications

PARAMETER	VALUE
Analog Channels	2
Logic Timing Channels	16
Analog Bandwidth	100 MHz
Analog Sample Rate	200 MSa/s
Analog Memory Depth	1 MB per channel
Product Family	54645 MegaZoom MSO
Related Analog Only Sibling	54645A
Vertical Sensitivity Class	54600-family 1 mV/div class path
Input Impedance Analog Class	1 MOhm class
Maximum Input Analog Class	plus/minus 250 V class CAT ratings on family
Logic Thresholds	programmable TTL/CMOS/ECL class
Time Base Range Class	ns/div to s/div family span
Display	integrated scope/logic display
Automatic Measurements	pulse parameter set
Connectivity	HP-IB / RS-232 class on family
Peak Detect Class	glitch capture on MegaZoom family
Operators	analog and digital trigger combination
Form Factor	benchtop MegaZoom package
Operating Temperature Class	0 to 55 C
Documentation	54645A/D datasheet and user's guide
Probe Interface	standard passive probe path plus logic pod
MegaZoom Technology	yes
Delayed Sweep Class	yes
Autoscaling Class	yes
Bandwidth	100 MHz

PARAMETER	VALUE
Operating temperature	Class: 0 to 55 C

54645D Specifications

PARAMETER	VALUE
Agilent 54645D Mixed Signal Oscilloscope	Overview
Applications	Embedded mixed-signal debug correlating analog and digital timing on one instrument.
Key Features	2 analog plus 16 logic channels
Technical Specifications	Analog Channels: 2

General Specifications & Supplementary Characteristics

PARAMETER	VALUE
Operating temperature	Class: 0 to 55 C
Operating Temperature	Class: 0 to 55 C
Operating Temperature Class	0 to 55 C
Documentation	54645A/D datasheet and user's guide
Probe Interface	standard passive probe path plus logic pod
MegaZoom Technology	yes
Delayed Sweep Class	yes
Autoscaling Class	yes Notes Analog bandwidth, 200 MSa/s, 1 MB/channel, and 16 logic channels from HP/Agilent 54645D mixed-signal oscilloscope product specifications. Confirm logic pod part numbers and exact vertical tables on the datasheet revision.

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
Logic Timing Channels	16
Analog Bandwidth	100 MHz
Analog Sample Rate	200 MSa/s
Analog Memory Depth	1 MB per channel
Product Family	54645 MegaZoom MS0
Related Analog Only Sibling	54645A
Vertical Sensitivity Class	54600-family 1 mV/div class path
Input Impedance Analog Class	1 MOhm class
Maximum Input Analog Class	plus/minus 250 V class CAT ratings on family
Logic Thresholds	programmable TTL/CMOS/ECL class
Time Base Range Class	ns/div to s/div family span
Display	integrated scope/logic display
Automatic Measurements	pulse parameter set
Connectivity	HP-IB / RS-232 class on family
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Specifications	
PARAMETER	VALUE
MegaZoom Technology	yes
Delayed Sweep Class	yes

PARAMETER	VALUE
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Autoscaling Class	yes
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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

Aumictech

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<https://aumictechlabs.com>

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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.