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Data Sheet

August 15, 2026

AGILENT / KEYSIGHT

Agilent/Keysight U4164A

Agilent Keysight U4164A Logic Analyzer Module 136 Channel The Keysight U4164A is a 136-channel AXIe logic analyzer module for state capture up to 4 Gb/s and timing to 10 GHz. OEM data sheet 5992-1057EN lists 12.5 GHz timing zoom with 256 K samples, memory depth from 2 M to 400 M samples, 100 ps by 100 mV minimum eye, and quad-sample state mode for DDR4/LPDDR4 above 2.5 Gb/s. General-purpose high-speed digital debug plus DDR4/LPDDR4 validation with simultaneous read/write capture, BGA/interposer/mid-bus/flying-lead probing, and Multiframe systems up to 10,880 channels. The Keysight U4164A is a 136-channel AXIe logic analyzer module for state capture up to 4 Gb/s and timing to 10 GHz. OEM data sheet 5992-1057EN lists 12.5 GHz timing zoom with 256 K samples, memory depth from 2 M to 400 M samples, 100 ps by 100 mV minimum eye, and quad-sample state mode for DDR4/LPDDR4 above 2.5 Gb/s. General-purpose high-speed digital debug plus DDR4/LPDDR4 validation with simultaneous read/write capture, BGA/interposer/mid-bus/flying-lead probing, and Multiframe systems up to 10,880 channels.



MODEL

**Agilent / Keysight
U4164A**

CALIBRATION

**Available on
request**

CONDITION

Used

STATUS

In stock

RFQ / SKU

U4164A

LISTING

<https://aumictechlabs.com/products/u4164a-2/>

NIST-traceable cal

SAM registered

30-day returns

NAICS 423690 · 811210 · 541380

This unit

The Keysight U4164A is an AXIe-based logic analyzer module that delivers high-speed digital system validation through advanced signal acquisition and analysis. With up to 136 channels per module and timing performance to 10 GHz, it captures complex memory interface transactions

across DDR and LPDDR families. The module integrates into Keysight AXIe chassis platforms, scaling to meet demanding debug and validation workloads on digital designs.

Technical Specifications Acquisition & Performance

- Maximum channels: 136 per module
- State mode data rate: Up to 4 Gb/s (68 channels); 2.5 Gb/s (full 136 channels)
- Timing mode data rate: Up to 10 GHz
- Timing zoom: 12.5 GHz, 256K deep
- Memory depth: 400 Mpts (full-channel timing 400 Mb; half-channel 800 Mb; quarter-channel 1.6 Gb)
- Option -016 increases memory to 16 Mb; Option -004 to 4 Mb

Sampling Modes

- Conventional state sampling: Both edges of clock (synchronous)
- Dual-sample state mode: Rising and falling edge captures on one clock edge; reduces channel count to 68 per module
- Quad-sample state mode: Four samples at two independently adjusted thresholds per probe point; channel count 34 per module; requires Option -02G

Signal Integrity

- Eye scan technology: 5 ps × 5 mV scan increments; automatic sampling point placement within eye
- Clock hysteresis control: Adjusts state mode sensitivity to mitigate noise on clock inputs
- Dual thresholds: Available in dual-sample state mode
- De-skew control: Timing mode feature

Key Features

- Multi-sample capture modes enable independent read/write edge analysis on memory interfaces
- Precision eye scan automatically optimizes sampling position for signal reliability
- Hysteresis control addresses clock integrity issues on noisy or floating clock inputs

Typical Applications

- DDR5, DDR4, DDR3, DDR2, DDR memory interface validation
- LPDDR5, LPDDR4, LPDDR3, LPDDR2, LPDDR protocol debugging
- High-speed memory subsystem characterization

Compatibility & Integration

Compatible with Keysight AXIe chassis including M9502A and M9505A platforms.

U4164A Characteristics / Specifications

PARAMETER	VALUE
Instrument Type	AXIe logic analyzer module
Channels Per Module	136
Channels Two Modules	272
Channels Three Modules	408
Max Channels One Timebase	408
State Data Rate 02g Full	2.5 Gb/s on 136 channels using either or both clock edges (spec)
State Data Rate 02g Half	4 Gb/s on 68 channels, either clock edge (typ)
State Data Rate 01g Full	2.5 Gb/s on 136 channels using both clock edges (spec)
State Data Rate 01g Half	2.8 Gb/s on 68 channels, either clock edge (typ)
State Data Rate 7	1.4 Gb/s on 136 channels using both clock edges (spec)
State Data Rate Base	700 Mb/s on 136 channels using both clock edges (spec)
Max State Clock 02g	2.5 GHz typical
Min State Clock Single Edge	12.5 MHz typical
Min State Clock Both Edges	6.25 MHz typical
Min Data Valid Window	100 ps typical
Min Setup Time	50 ps typical
Min Hold Time	50 ps typical
Min Eye Height	100 mV typical
Sample Position Accuracy	plus or minus 150 ps typical
Sample Position Range	7 ns typical
Timing Zoom	12.5 GHz with 256 K sample memory
Full Channel Timing Rate	2.5 GHz (400 ps min sample period)
Half Channel Timing Rate	5 GHz (200 ps min sample period)
Quarter Channel Timing Rate	10 GHz (100 ps min sample period)
Base Memory Depth	2 M samples

PARAMETER	VALUE
Maximum Memory Depth	400 M samples (license)
Input Amplitude Typical	greater than or equal to 350 mV
Voltage Threshold Range	minus 5 V to plus 5 V (minus 4 V to plus 4 V in dual/quad sample)
Threshold Resolution	2 mV typical
Threshold Accuracy	plus or minus (30 mV + 1 percent of setting) typical
Timer Resolution	5 ns
Weight	2.34 kg
Operating Temperature	0 C to plus 40 C
Operating Humidity	0 to 80 percent RH at 40 C
Operating Altitude	0 to 3000 m
Storage Temperature	minus 40 C to plus 75 C
Literature	Keysight 5992-1057EN
Data Rate	02g Full: 2.5 Gb/s on 136 channels using either or both clock edges (spec)
Humidity	0 to 80 percent RH at 40 C

General Specifications & Supplementary Characteristics

PARAMETER	VALUE
Storage temperature	minus 40 C to plus 75 C
Operating temperature	0 C to plus 40 C
Operating Temperature	0 C to plus 40 C
Humidity	0 to 80 percent RH at 40 C
Operating Humidity	0 to 80 percent RH at 40 C
Operating Altitude	0 to 3000 m
Literature	Keysight 5992-1057EN Notes From Keysight U4164A Logic Analyzer Module data sheet 5992-1057EN state, timing, trigger, and environmental tables. All specifications refer to a U4164A plus U4201A cable plus a Keysight Soft Touch probe unless noted.

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
Instrument Type	AXIe logic analyzer module
Channels Per Module	136
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State Data Rate 02g Half	4 Gb/s on 68 channels, either clock edge (typ)
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State Data Rate 01g Half	2.8 Gb/s on 68 channels, either clock edge (typ)
State Data Rate 700	1.4 Gb/s on 136 channels using both clock edges (spec)
State Data Rate Base	700 Mb/s on 136 channels using both clock edges (spec)
Max State Clock 02g	2.5 GHz typical
Min State Clock Single Edge	12.5 MHz typical
Min State Clock Both Edges	6.25 MHz typical
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Literature	Keysight 5992-1057EN

Notes
From Keysight U4164A Logic Analyzer Module data sheet 5992-1057EN state, timing, trigger, and environmental tables. All specifications refer to a U4164A plus U4201A cable plus a Keysight Soft Touch probe unless noted.

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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30-day returns
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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.