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Data Sheet

August 13, 2026

KEYSIGHT / AGILENT

Keysight (Agilent) U4154B 4 Gb/s State Mode Logic Analyzer Module

Agilent / Keysight U4154B 4 Gb/s State Mode AXIe Logic Analyzer Module The Keysight U4154B is a 1-slot AXIe logic analyzer module providing state capture to 4 Gb/s on 68 channels (dual-sample) or 2.5 Gb/s on 136 channels (Option 02G), with Timing Zoom at 12.5 GHz and memory depth options to 200 M samples. Up to three modules combine for 408 channels on one time base and trigger. Reliable capture on eyes as small as 100 ps by 100 mV. DDR2/3/4 and LPDDR2/3/4 validation including simultaneous read/write capture; high-speed ASIC/FPGA and memory bus debug to 4 Gb/s; multi-module AXIe systems for wide buses; simultaneous state plus high-resolution Timing Zoom analysis. The Keysight U4154B is a 1-slot AXIe logic analyzer module providing state capture to 4 Gb/s on 68 channels (dual-sample) or 2.5 Gb/s on 136 channels (Option 02G), with Timing Zoom at 12.5 GHz and memory depth options to 200 M samples. Up to three modules combine for 408 channels on one time base and trigger. Reliable capture on eyes as small as 100 ps by 100 mV. DDR2/3/4 and LPDDR2/3/4 validation including simultaneous read/write capture; high-speed ASIC/FPGA and memory bus debug to 4 Gb/s; multi-module AXIe systems for wide buses; simultaneous state plus high-resolution Timing Zoom analysis.



MODEL

**Keysight / Agilent
U4154B**

CALIBRATION

**Available on
request**

CONDITION

Used

STATUS

In stock

RFQ / SKU

U4154B

LISTING

<https://aumictechlabs.com/products/u4154b-2/>

NIST-traceable cal

SAM registered

30-day returns

NAICS 423690 · 811210 · 541380

This unit

The Keysight U4154B is a 4 Gb/s state mode logic analyzer module built on the AXIe platform for high-speed digital system analysis and debug. It captures and analyzes complex digital signals at speeds up to 4 Gb/s across up to 136 channels per module, expandable to 408 channels when three U4154B modules are combined on a single time base. The module delivers reliable measurements on eye openings as small as 100 ps by 100 mV and includes a 12.5 GHz TimingZoom with 256 K sample memory for simultaneous state and high-resolution timing measurements. Deep memory up to 200 M samples supports extended capture windows for complex system troubleshooting.

Technical Specifications

State Analysis (Synchronous Sampling)

Maximum state acquisition speed: 4 Gb/s on 68 channels; 2.5 Gb/s on 132 channels; 1.4 Gb/s on 136 channels

Memory depth: 2 M to 200 M samples (configuration-dependent)

Channel capacity: 136 channels per module; 272 channels (2-card set); 408 channels (3-module configuration on single time base)

Trigger sequencer: operates up to 2.5 GHz with four clock qualifiers plus RESET clock qualifier

Data rate options: Option U4154B-01G (1.4 GHz state), Option U4154B-02G (2.5 GHz state)

Timing Analysis (Asynchronous Sampling)

Maximum timing acquisition speed: up to 5 GHz (half-channel); 2.5 GHz (full-channel)

TimingZoom: 12.5 GHz (80 ps resolution) with 256 K sample memory; simultaneous state and timing over 20 μ s span (approximately 43,680 clock cycles at 2133 MHz)

Memory depth: 400 M samples for conventional and transitional timing analysis

Signal Integrity Eye opening measurements: reliable on apertures as small as 100 ps by 100 mV

Eye Scan feature provides signal integrity overview across all channels

Key Features

Configurable dual-sample mode on per-pod-pair basis for optimized channel count and acquisition speed

Simultaneous state and high-resolution timing measurements

Deep memory support for extended capture of complex system behavior

Typical Applications

Validation and troubleshooting of high-speed digital designs, signal integrity analysis, and complex system debug at data rates up to 4 Gb/s.

Compatibility & Integration

Requires Keysight Logic Analyzer software version 06.00 or higher and an AXIe chassis such as the M9502A or M9505A.

Features & description

From manufacturer datasheet

Features

- 136 channels per module; 272 (2-card); 408 (3-card)

U4154B Characteristics / Specifications

PARAMETER	VALUE
Model	U4154B
Manufacturer	Keysight / Agilent
Instrument Type	AXIe logic analyzer module
Alias	U4154B; Agilent U4154B; Keysight U4154B
Channels per Module	136
State Rate Option 02G Full Channel	2.5 Gb/s on 136 channels
State Rate Option 01G Full Channel	1.4 Gb/s on 136 channels
Minimum Eye Opening Typical	100 ps by 100 mV
Timing Full Channel	2.5 GHz (400 ps sample)
Timing Half Channel	5.0 GHz (200 ps sample)
Timing Zoom	12.5 GHz / 256 K samples (about 20 us span)
Memory Depth Options	4 M to 200 M samples
Pods	4 probe cables x 2 pods = 8 pods; 17 channels/pod (16 data + 1 clock/bonus)
Trigger Sequence Levels	8
Trigger Branching	Arbitrary 4-way if/then/else
Threshold Range	-5 V to +5 V
Signal Types	Single-ended and differential
Input Amplitude Typical Minimum	>=350 mV
Chassis Compatibility	M9502A / M9505A AXIe
Form Factor	1-slot AXIe module Notes Specs from Keysight U4154B data sheet 5992-0108 and service guide. Confirm Option 01G vs 02G and memory option on the module; probing (BGA/interposer/flying leads) sold separately.
State	4 Gb/s on 68 ch / 2.5 Gb/s on 136 ch (Option 02G)
Option 01G	2.8 Gb/s on 68 ch / 1.4 Gb/s on 136 ch
Timing	2.5 GHz full / 5.0 GHz half channel

PARAMETER	VALUE
Chassis	M9502A 2-slot / M9505A 5-slot AXIe

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
Model	U4154B
Manufacturer	Keysight / Agilent
Instrument Type	AXIe logic analyzer module

Alias: U4154B; Agilent U4154B; Keysight U4154B

Channels per Module: 136

Channels 2-Module Combined: 272

Channels 3-Module Combined: 408

State Rate Option 02G Full Channel: 2.5 Gb/s on 136 channels

State Rate Option 02G Dual-Sample: 4 Gb/s on 68 channels

State Rate Option 01G Full Channel: 1.4 Gb/s on 136 channels

State Rate Option 01G Dual-Sample: 2.8 Gb/s on 68 channels

Specifications

PARAMETER	VALUE
Minimum Eye Opening Typical	100 ps by 100 mV
Timing Full Channel	2.5 GHz (400 ps sample)
Timing Half Channel	5.0 GHz (200 ps sample)

Specifications

PARAMETER	VALUE
Timing Zoom	12.5 GHz / 256 K samples (about 20 us span)
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Specifications

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Signal Types	Single-ended and differential
Input Amplitude Typical Minimum	>=350 mV
Chassis Compatibility	M9502A / M9505A AXIe

Form Factor: 1-slot AXIe module

Notes

Specs from Keysight U4154B data sheet 5992-0108 and service guide. Confirm Option 01G vs 02G and memory option on the module; probing (BGA/interposer/flying leads) sold 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

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NIST-traceable calibration · SAM registered ·
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.