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Data Sheet

August 13, 2026

AGILENT / HP / KEYSIGHT

Agilent HP Keysight M8196A 92 GSa/s Arbitrary Waveform Generator

Keysight M8196A 92 GSa/s Arbitrary Waveform Generator The Keysight M8196A is a high-speed AXIe arbitrary waveform generator with sample rates to 92 GSa/s, up to 4 differential channels per 1-slot module, 32 GHz analog bandwidth, and 512 kSa waveform memory per channel. Built-in frequency and phase response calibration supports multi-level and multi-channel high-speed digital and coherent optical stimulus to 64 GBaud and beyond. The Keysight M8196A is a high-speed AXIe arbitrary waveform generator with sample rates to 92 GSa/s, up to 4 differential channels per 1-slot module, 32 GHz analog bandwidth, and 512 kSa waveform memory per channel. Built-in frequency and phase response calibration supports multi-level and multi-channel high-speed digital and coherent optical stimulus to 64 GBaud and beyond.



MODEL

**Agilent / HP /
Keysight M8196A**

CALIBRATION

**Available on
request**

CONDITION

Used

STATUS

In stock

RFQ / SKU

M8196A

LISTING

[https://aumictechlabs.c
om/products/m8196a-
2/](https://aumictechlabs.com/products/m8196a-2/)

NIST-traceable cal

SAM registered

30-day returns

NAICS 423690 • 811210 • 541380

This unit

The Keysight M8196A is a arbitrary waveform generator delivering 92 GSa/s sample rates across up to four synchronized differential channels. Purpose-built for optical, RF, and high-speed digital signal generation, it produces complex waveforms with 32 GHz analog bandwidth, 8-bit vertical

resolution, and ultra-low intrinsic jitter. The instrument supports advanced modulation schemes including PAM-4, PAM-8, QPSK, and nQAM at baud rates exceeding 64 GBaud, making it essential for communication system development and validation.

Technical Specifications

Signal Generation Performance

Sample rate: up to 92 GSa/s (DAC range 82.24–93.4 GSa/s) Analog bandwidth: 32 GHz typical Vertical resolution: 8 bits Waveform memory: 512 kSa per channel (128-sample granularity) Output amplitude: 1 Vpp single-ended or 2 Vpp differential; -1.0 V to +2.5 V window; $\pm$ (5% +10 mV) accuracy Rise/fall times: <9 ps typical (20%–80%) Output impedance: 50 Ohms Minimum pulse width: 20 ps Phase noise: -115 to -95 dBc/Hz

Modulation and Signaling

Supported schemes: PAM-4, PAM-8, QPSK, nQAM Baud rate capability: 64 GBaud and beyond Pattern length: PRBS $2^{15}-1$ maximum

Channel Configuration

Channel options: 1, 2, or 4 differential channels per module (software-upgradeable) Up to four synchronized channels on single module

Markers: Two independent digital markers (available in single and dual-channel modes; not available in 4-channel mode)

Calibration and Response

Built-in frequency and phase response calibration Digital pre-distortion for output and external circuit compensation Frequency response measured DC to 45 GHz

Interfaces

Connectors: 2.4 mm External clock input/output Front-panel trigger input

Key Features

Four-channel coherent operation with simultaneous output Sub-9 ps transition times enable high-fidelity edge definition 512 kSa memory supports long pattern sequences Software-selectable channel density optimizes slot utilization Integrated frequency response compensation ensures clean output to 45 GHz

Typical Applications

400G+ coherent optical transceiver validation PAM-4/PAM-8 signal generation for serial link testing RF and microwave component characterization High-speed digital signal simulation

Compatibility & Integration

AXIe module format. Supports external clock synchronization and trigger control for multi-instrument systems.

Features & description

From manufacturer datasheet

Features

- Sample rate up to 92 GSa/s on up to 4 channels
- Analog bandwidth 32 GHz typical
- 8 bit vertical DAC resolution
- 512 kSa waveform memory per channel
- 1 2 or 4 differential channels software upgradeable
- Built-in frequency and phase response calibration

Applications

- Multi-level SERDES and optical transceiver stimulus
- Coherent optical dual-polarization I/Q generation
- Multi-channel MIMO and phased-array baseband/RF
- High-speed ATE and R&D waveform playback

M8196A Characteristics / Specifications

PARAMETER	VALUE
Model	M8196A
Manufacturer	Keysight
Instrument Type	Arbitrary Waveform Generator
Alias	M8196A; Keysight M8196A AWG
Maximum sample rate	92 GSa/s
Sample rate range	82.24 to 92 GSa/s
DAC resolution	8 bits
Channels per module	1 2 or 4 Opt 001 002 004
Analog bandwidth typical 3 dB	32 GHz
Maximum waveform memory	512 kSa per channel
Amplitude single ended	up to 1 Vpp se into 50 ohm
Amplitude differential	up to 2 Vpp diff into 50 ohm
Amplitude minimum se	75 mVpp se
Amplitude minimum diff	150 mVpp diff
Voltage window	-1.0 to +2.5 V
Rise fall 20 to 80 percent corrected typical	9 ps
Rise fall 20 to 80 percent uncorrected typical	14 ps
Amplitude resolution	400 uV nominal
DC amplitude accuracy typical	plus or minus (2.5 percent + 10 mV)
Impedance	50 ohm nominal
Maximum baud rate class	64 GBaud and beyond
Pattern length support	up to PRBS 2 ¹⁵ -1 class
Waveform granularity	128 samples
Minimum waveform length	128 samples

PARAMETER	VALUE
Form factor	1 slot AXIe
Publication	Keysight 5992-0971 M8196A datasheet
Embedded calibration	frequency and phase response
Output type	differential channels
Related sync module	M8197A Multi Channel Synchronization Notes Specs from Keysight M8196A 92 GSa/s AWG datasheet 5992-0971. Confirm channel option (001/002/004), firmware, and M8197A sync presence on the system.
Bandwidth	32 GHz typical - 8 bit vertical DAC resolution - 512 kSa waveform memory per channel - 1 2 or 4 differential channels software upgradeable - Built-in frequency and phase response calibration

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	
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Embedded calibration	frequency and phase response
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Notes
Specs from Keysight M8196A 92 GSa/s AWG datasheet 5992-0971. Confirm channel option (001/002/004), firmware, and M8197A sync presence on the system.

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.