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Data Sheet

August 5, 2026

KEYSIGHT / AGILENT

Keysight (Agilent) M8190A 12 GSa/s Arbitrary Waveform Generator

Keysight (Agilent) M8190A 12 GSa/s Arbitrary Waveform Generator The Keysight M8190A is a high-fidelity AXIe arbitrary waveform generator with two DAC modes: 14-bit resolution up to 8 GSa/s (Option -14B) or 12-bit resolution up to 12 GSa/s (Option -12G). Variable sample rate from 125 MSa/s. Up to 2 GSa memory per channel with advanced sequencing; SFDR up to ~90 dBc typical; analog bandwidth to ~5 GHz (with amp option). Three optimized amplifier paths for I/Q, IF/RF, or clean time-domain signals. Optional real-time DSP/DUC ASIC. Form factor: 2-slot AXIe module. The Keysight M8190A is a high-fidelity AXIe arbitrary waveform generator with two DAC modes: 14-bit resolution up to 8 GSa/s (Option -14B) or 12-bit resolution up to 12 GSa/s (Option -12G). Variable sample rate from 125 MSa/s. Up to 2 GSa memory per channel with advanced sequencing; SFDR up to ~90 dBc typical; analog bandwidth to ~5 GHz (with amp option). Three optimized amplifier paths for I/Q, IF/RF, or clean time-domain signals. Optional real-time DSP/DUC ASIC. Form factor: 2-slot AXIe module. Radar/EW stimulus; wideband communications; multi-standard RF/IF generation; high-dynamic-range AWG testing.



MODEL

**Keysight / Agilent
M8190A**

CALIBRATION

**Available on
request**

CONDITION

Used

STATUS

In stock

RFQ / SKU

M8190A

LISTING

<https://aumictechlabs.com/products/m8190a-2/>

NIST-traceable cal

SAM registered

30-day returns

NAICS 423690 • 811210 • 541380

This unit

The Keysight M8190A is an arbitrary waveform generator delivering 12 GSa/s sampling at 12-bit resolution or 8 GSa/s at 14-bit resolution. This dual-DAC architecture generates complex analog signals with up to 2 GSa of waveform memory per channel, making it suitable for communications, aerospace, defense, and radar system testing. The instrument provides three selectable output amplifiers optimized for different signal requirements, from direct DAC outputs with superior spectral purity to AC-coupled high-voltage configurations spanning 50 MHz to 5 GHz bandwidth.

Technical Specifications

Waveform Generation Sampling rate: 12 GSa/s (12-bit) or 8 GSa/s (14-bit) Variable sample rate: 125 MSa/s to 12 GSa/s Arbitrary waveform memory: Up to 2 GSa per channel Effective number of bits (ENOB): Up to 12.25 bits Advanced sequencing for complex waveform playback Signal Performance Spurious-free dynamic range (SFDR): Up to 90 dBc (typical) Harmonic distortion (HD): Up to -72 dBc (typical) Analog bandwidth: 5 GHz Transition times (20%-80%): < 60 ps

Output Amplifiers Direct DAC: 350 mVpp to 700 mVpp differential output; SFDR up to 90 dBc; offset ± 20 mV DC Amplifier: 500 mVpp to 1.0 Vpp differential output; voltage window -1.0 V to +3.3 V AC Amplifier: 200 mVpp to 2.0 Vpp single-ended AC-coupled; 50 MHz to 5 GHz bandwidth

Key Features Three selectable output amplifiers for application-specific optimization Digital upconversion option for IF translation with real-time DSP capability Multi-channel synchronization module (M8192A) supports phase-coherent operation of up to 6 modules (12 channels total) 2 ps skew repeatability between channels; 50 fs skew calibration resolution Deterministic latency: single trigger input controls up to 6 modules

Typical Applications Advanced signal generation for high-speed communications, pulsed radar, aerospace subsystem validation, and defense electronics testing requiring high spectral purity and precise waveform control.

Compatibility & Integration Form factor: 2U AXIe module Interfaces: GPIB, LAN, USB Control software: Keysight BenchLin

Features & description

From manufacturer datasheet

Features

- 14-bit to 8 GSa/s (~14B) or 12-bit to 12 GSa/s (~12G) • Sample rate: 125 MSa/s to 8/12 GSa/s • SFDR up to ~90 dBc typical; HD to about -72 dBc typical • Memory: standard 128 MSa/ch; Option -02G up to 2 GSa/ch (12-bit) • Analog BW ~5 GHz class (with Option -AMP) • Differential outputs; 2-slot AXIe • Optional DUC for digital up-conversion to IF • Multi-module sync via M8192A for up to 12 channels

M8190A Characteristics / Specifications

PARAMETER	VALUE
Model	M8190A
Manufacturer	Keysight Technologies (Agilent)
Instrument Type	Arbitrary Waveform Generator (AXIe)
Alias	M8190A DAC / Sample Rate
Standard	128 MSa per channel (-14B/-12G)
SFDR	up to 90 dBc; ENOB: up to ~12.25 bits
Sample rate	125 MSa/s to 8/12 GSa/s
Memory	standard 128 MSa/ch; Option -02G up to 2 GSa/ch (12-bit)
Bandwidth	to ~5 GHz (with amp option). Three optimized amplifier paths for I/Q, IF/RF, or clean time-domain signals. Optional real-time DSP/DUC ASIC. Form factor: 2-slot AXIe module.

M8190A Specifications

PARAMETER	VALUE
Applications	Radar/EW stimulus; wideband communications; multi-standard RF/IF generation; high-dynamic-range AWG testing.
Key Features	- 14-bit to 8 GSa/s (-14B) or 12-bit to 12 GSa/s (-12G)
Technical Specifications	Model: M8190A
DAC / Sample Rate	Option -14B: 14-bit; 125 MSa/s to 8 GSa/s
Signal Quality (typical published class)	SFDR: up to 90 dBc; ENOB: up to ~12.25 bits
Form Factor	2-slot AXIe module; external PC or AXIe embedded controller
Operational Notes	Prefer Keysight M8190A datasheet 5990-7516 for full SFDR/amp path tables.

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	M8190A
Manufacturer	Keysight Technologies (Agilent)
Instrument Type	Arbitrary Waveform Generator (AXIe)
Alias	M8190A

DAC / Sample Rate

Option -14B: 14-bit; 125 MSa/s to 8 GSa/s

Option -12G: 12-bit; 125 MSa/s to 12 GSa/s

Option -DUC: 14-bit to 7.2 GSa/s class with digital up-conversion

Memory

Standard: 128 MSa per channel (-14B/-12G)

Option -02G: up to 2 GSa/ch (12-bit) / 1.5 GSa/ch (14-bit)

Signal Quality (typical published class)

SFDR: up to 90 dBc; ENOB: up to ~12.25 bits

Sin(x)/x (-3 dB): ~3.5 GHz at 8 GSa/s (-14B); ~5.3 GHz at 12 GSa/s (-12G)

Form Factor

2-slot AXIe module; external PC or AXIe embedded controller

Operational Notes

Prefer Keysight M8190A datasheet 5990-7516 for full SFDR/amp path tables.

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

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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.