

KEYSIGHT TECHNOLOGIES (AGILENT HP)

M8190A

The Keysight (Agilent) M8190A is a high-performance modular arbitrary waveform generator (AWG) in a 2-slot AXIe form factor. It delivers up to 12 GSa/s with 12-bit resolution or up to 8 GSa/s with 14-bit resolution. With up to 2 GSa of arbitrary waveform memory per channel and advanced sequencing capabilities, it is designed for demanding applications including I/Q signal generation, serial data testing, time domain applications, and direct IF/RF signal generation.

SPECIFICATIONS

General Characteristics

Sample Rate Range	125 MSa/s to 8 GSa/s (14-bit) / 12 GSa/s (12-bit)
Vertical Resolution	14-bit (up to 8 GSa/s) / 12-bit (up to 12 GSa/s)
Form Factor	2-slot AXIe
Module/Chassis Compatibility	2-slot or 5-slot AXIe chassis
System Control	Via external PC or AXIe system controller

Output Characteristics

Analog Bandwidth (Direct DAC)	DC to 5 GHz
Output Impedance	50 Ω nominal
Output Type	Single-ended or differential, DC-coupled (Direct/DC Amp)
Amplitude Range (Direct DAC)	350 mVp-p to 700 mVp-p (single-ended)

Waveform Memory and Sequencing

Maximum Memory Depth per Channel	Up to 2 GSa
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Clocking and Timing

Sample Clock Output Connector	SMA
Marker Outputs per Channel	2 (Sample Marker and Sync Marker)
Marker Output Type	Single-ended
Marker Output Impedance	50 Ω nominal
Sync Marker Width	User-defined multiples of N (N=64 in 12-bit, N=48 in 14-bit)
Marker Output Connector	SMA

Triggering

Trigger / Gate Input Range	-5 V to +5 V
Trigger / Gate Threshold Range	-5 V to +5 V
Trigger / Gate Input Polarity	Selectable positive or negative
Trigger / Gate Input Impedance	1 kΩ or 50 Ω nominal, DC coupled
Trigger / Gate Max Toggle Frequency	187.5 MHz (12-bit mode) / 166.6 MHz (14-bit mode)
Trigger Connector	SMA
Event Input Range	-5 V to +5 V
Event Input Threshold Range	-5 V to +5 V
Event Input Impedance	Selectable 1 kΩ or 50 Ω nominal, DC coupled
Event Input Max Toggle Frequency	187.5 MHz (12-bit mode) / 166.6 MHz (14-bit mode)
Event Input Connector	SMA

General

Number of Channels	1 or 2 (configuration dependent)
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Performance

Maximum Sample Rate (12-bit Mode)	12 GSa/s
Maximum Sample Rate (14-bit Mode)	8 GSa/s

Inputs & Outputs

Analog Output Connectors	SMA (female)
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System Capabilities

Multi-Module Synchronization	Up to 6 modules (12 channels) via M8192A sync module
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Software & Control

Supported Software	MATLAB, LabVIEW, C/C++, Keysight BenchLink Waveform Builder Pro, IVI-COM, IVI-C
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Physical

Module Size	2-slot AXIe module
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System & Control

Backplane Interface	PCIe Gen2 x4 (via AXIe backplane)
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TECHNOLOGY

Arbitrary Waveform Generation (AWG)

APPLICATIONS

I/Q Signal Generation, Serial Data, Time Domain, Direct IF/RF

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