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Data Sheet

August 5, 2026

KEYSIGHT / AGILENT

Keysight (Agilent) 81180A 4.2 GSa/s Arbitrary Waveform Generator

Keysight (Agilent) 81180A 4.2 GSa/s Arbitrary Waveform Generator The Keysight/Agilent 81180A is a 4.2 GSa/s arbitrary waveform generator with 12-bit vertical resolution and about 2 GHz IQ modulation bandwidth. Three output paths: DC-coupled direct DAC (~1 GHz BW), DC-coupled 2 V amplifier (>600 MHz), and AC-coupled amplifier (~1.5 GHz, ~5 dBm class). Single- or dual-channel configurations with up to 64 Mpts memory. Succeeded by 81180B (4.6 GSa/s). Wideband IQ/modulation stimulus; radar/EW baseband; high-speed AWG; satellite and wireless HD test setups. The Keysight/Agilent 81180A is a 4.2 GSa/s arbitrary waveform generator with 12-bit vertical resolution and about 2 GHz IQ modulation bandwidth. Three output paths: DC-coupled direct DAC (~1 GHz BW), DC-coupled 2 V amplifier (>600 MHz), and AC-coupled amplifier (~1.5 GHz, ~5 dBm class). Single- or dual-channel configurations with up to 64 Mpts memory. Succeeded by 81180B (4.6 GSa/s). Wideband IQ/modulation stimulus; radar/EW baseband; high-speed AWG; satellite and wireless HD test setups.



MODEL Keysight / Agilent 81180A	CALIBRATION Available on request
CONDITION Used	STATUS In stock
RFQ / SKU 81180A	LISTING https://aumictechlabs.com/products/81180a-2/

NIST-traceable cal

SAM registered

30-day returns

NAICS 423690 · 811210 · 541380

This unit

The Keysight (Agilent) 81180A is a arbitrary waveform generator delivering sample rates from 10 MSa/s to 4.2 GSa/s with 12-bit vertical resolution. Engineered for RF, wireless, and digital signal

generation, it combines dual-channel architecture with advanced sequencing, IQ modulation to 2 GHz bandwidth, and carrier frequencies up to 1.5 GHz. Three software-selectable amplifier options: IQ, Maximum Bandwidth (1.5 GHz, SFDR > 60 dBc), and Time Domain - address diverse test scenarios. The instrument supports up to 64 M points per-channel waveform memory, arbitrary and standard waveform generation, and complex sequencing with stepping, looping, and conditional jumps. Interchannel skew control spans -3 ns to +3 ns with 10 ps resolution. Two 81180A units synchronize for four-channel operation. Gated, self-armed, armed, and triggered run modes provide flexible test control for wireless standards, RF environment simulation, and complex waveform development.

Technical Specifications

- Sample Clock Control: 10 MSa/s to 4.2 GSa/s
- Vertical Resolution: 12-bit
- IQ Modulation Bandwidth: 2 GHz
- Carrier Frequency: Up to 1.5 GHz
- Channels: 1 or 2 (coupled or uncoupled); two units synchronize for 4-channel system
- Waveform Memory: 16 M or 64 M points per channel
- Interchannel Skew Control: -3 ns to +3 ns with 10 ps resolution
- Output Voltage: 2 Vpp into 50 Ω
- Markers: 2 adjustable markers with independent width and level control

Key Features

- Three software-selectable amplifiers: IQ (1 GHz differential DC-coupled), Maximum Bandwidth (1.5 GHz single-ended AC-coupled, SFDR > 60 dBc), and Time Domain (optimized for low overshoot and jitter)
- Advanced sequencing with 8-bit external segment control, stepping, looping, and conditional jumps
- Multiple waveform generation modes: arbitrary, function generator, standard waveforms, modulated, pulse, and sequenced
- Four run modes: Gated, Self-armed, Armed, and Triggered (single-shot or counted burst)

Typical Applications

- Wireless standards testing and protocol validation
- RF environment simulation and stress testing
- Complex digital signal generation
- IQ modulation development and characterization

Compatibility & Integration

Two 81180A units synchronize for synchronized four-channel operation with independent channel control and interchannel skew adjustment.

Features & description

From manufacturer datasheet

Features

- Sample rate: 10 MSa/s to 4.2 GSa/s • Resolution: 12 bits • IQ modulation bandwidth: ~2 GHz • Three output paths: Direct DAC / Amp DC / Amp AC • Memory options: 16 Mpts single (116), 16 Mpts dual (216), 64 Mpts dual (264) • Advanced sequencing; external segment control • 2 markers without reducing DAC resolution • Sync option for two dual-channel units → four channels

81180A Characteristics / Specifications

PARAMETER	VALUE
Model	81180A
Manufacturer	Keysight Technologies (Agilent)
Instrument Type	Arbitrary Waveform Generator
Alias	81180A; Agilent 81180A Sampling / Memory
Max sample rate	4.2 GSa/s
Vertical resolution	12 bits 81180A-116 / 216 / 264 memory configurations as above Output Paths (published)
Direct DAC	DC-coupled, ~1 GHz BW
Amplified DC	>600 MHz, up to ~2 V
Amplified AC	~5 dBm class, ~1.5 GHz BW Operational Notes Replacement is 81180B. Prefer Agilent 81180A datasheet 5990-5697EN.
Sample rate	10 MSa/s to 4.2 GSa/s
Resolution	12 bits
IQ modulation bandwidth	~2 GHz
Three output paths	Direct DAC / Amp DC / Amp AC
Memory options	16 Mpts single (116), 16 Mpts dual (216), 64 Mpts dual (264)
Bandwidth	~2 GHz - Three output paths: Direct DAC / Amp DC / Amp AC - Memory options: 16 Mpts single (116), 16 Mpts dual (216), 64 Mpts dual (264) - Advanced sequencing; external segment control - 2 markers without reducing DAC resolution - Sync option for two

81180A Specifications

PARAMETER	VALUE
Applications	Wideband IQ/modulation stimulus; radar/EW baseband; high-speed AWG; satellite and wireless HD test setups.
Key Features	- Sample rate: 10 MSa/s to 4.2 GSa/s
Technical Specifications	Model: 81180A
Sampling / Memory	Max sample rate: 4.2 GSa/s
Output Paths (published)	Direct DAC: DC-coupled, ~1 GHz BW
Operational Notes	Replacement is 81180B. Prefer Agilent 81180A datasheet 5990-5697EN.

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	81180A
Manufacturer	Keysight Technologies (Agilent)
Instrument Type	Arbitrary Waveform Generator
Alias	81180A; Agilent 81180A

Sampling / Memory

Max sample rate: 4.2 GSa/s

Vertical resolution: 12 bits

81180A-116 / 216 / 264 memory configurations as above

Output Paths (published)

Specifications

PARAMETER	VALUE
Direct DAC	DC-coupled, ~1 GHz BW
Amplified DC	>600 MHz, up to ~2 V
Amplified AC	~5 dBm class, ~1.5 GHz BW

Operational Notes

Replacement is 81180B. Prefer Agilent 81180A datasheet 5990-5697EN.

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

788 S 500 E, Pleasant Grove, UT 84062
sales@aumictech.com · +1 (484) 841-9341
<https://aumictechlabs.com>

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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.