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Data Sheet

August 3, 2026

KEYSIGHT

Keysight 81160A Pulse Function Arbitrary Noise Generator

Keysight 81160A Pulse Function Arbitrary Noise Generator The Keysight 81160A isaPulse Function Arbitrary Noise Generator combining precision pulse generation, function/arbitrary waveforms, and controllable noise in one instrument. Available in 1- or 2-channel versions. Pulse generation spans 1 μ Hz–330 MHz with variable rise/fall; sine to 500 MHz; 14-bit arbitrary waveforms at 2.5 GSa/s with up to 256 kSa memory per channel. Optional pattern generator supports up to 330 Mbit/s (Opt 330) or 660 Mbit/s (Opt 660). The Keysight 81160A isaPulse Function Arbitrary Noise Generator combining precision pulse generation, function/arbitrary waveforms, and controllable noise in one instrument. Available in 1- or 2-channel versions. Pulse generation spans 1 μ Hz–330 MHz with variable rise/fall; sine to 500 MHz; 14-bit arbitrary waveforms at 2.5 GSa/s with up to 256 kSa memory per channel. Optional pattern generator supports up to 330 Mbit/s (Opt 330) or 660 Mbit/s (Opt 660). Performance verification and stress testing; serial-bus and mixed-signal pattern stress; noise injection for worst-case scenarios; modulation (AM/FM/PM/PWM/FSK) up to tens of MHz.



MODEL

Keysight 81160A

CALIBRATION

Available on request

CONDITION

Used

STATUS

In stock

RFQ / SKU

81160A

LISTING

<https://aumictechlabs.com/products/81160a-2/>

NIST-traceable cal

SAM registered

30-day returns

NAICS 423690 · 811210 · 541380

This unit

The Keysight 81160A is a pulse function arbitrary noise generator delivering precise signal creation across pulse, function, arbitrary waveform, and noise generation modes. Engineers use it for demanding test scenarios requiring controlled signal parameters and real-world signal simulation. The instrument provides variable pulse widths, adjustable rise and fall times, and configurable duty cycle control. Function generation supports sine, square, triangle, and ramp waveforms with user-definable amplitude control. Arbitrary waveform generation enables creation and playback of custom signal patterns. Noise generation includes adjustable bandwidth and amplitude with Gaussian noise support. Internal, external, and line triggering options ensure precise synchronization in automated test environments.

Technical Specifications

Pulse Generation: Pulse width: variable Rise and fall times: adjustable Amplitude: controllable output level Duty cycle: configurable

Function Generation: Waveform types: sine, square, triangle, ramp

Arbitrary Waveform Generation: User-defined waveforms with playback capability

Noise Generation: Bandwidth: adjustable Amplitude: controllable Noise types: Gaussian support

Triggering: Internal, external, and line trigger modes

Key Features

- Variable pulse width and transition time control for precision signal simulation
- Multiple standard waveform generation with selectable amplitude
- Custom waveform creation and storage
- Adjustable noise bandwidth and amplitude for spectral tailoring
- Multiple trigger modes for test synchronization

Typical Applications

- Circuit validation requiring pulse and function signal sources
- Signal integrity testing with customizable waveforms
- Noise performance characterization and filtering assessment
- Real-world signal simulation with adjustable timing parameters

Compatibility & Integration

- Remote control via standard programming interfaces for test automation
- Waveform and settings transfer capabilities for system integration

Features & description

From manufacturer datasheet

Features

- Pulse: 1 μ Hz–330 MHz, variable rise/fall
- Sine: 1 μ Hz–500 MHz
- Arb: 14-bit, 2.5 GSa/s; up to 256 k samples/channel
- Waveforms: pulse, sine, square, ramp, noise, arbitrary (+ predefined exp/sinx/x/cardiac/DC)
- Noise: deterministic white Gaussian; long repetition ($\approx$ 26 days class); selectable crest factor
- Modulation: AM, FM, PM, PWM, FSK (to 50 MHz class on 81160A)
- Optional pattern: ideal/arbitrary bit shapes to 330 or 660 Mbit/s; PRBS to 2^{31} ; 16 Mbit pattern memory
- 1- or 2-channel; coupled or independent; LXI Class C; SCPI compatible with prior 811xx family

81160A Key Specifications

PARAMETER	VALUE
Pulse	1 μHz–330 MHz, variable rise/fall
Sine	1 μHz–500 MHz
Arb	14-bit, 2.5 GSa/s; up to 256 k samples/channel
Waveforms	pulse, sine, square, ramp, noise, arbitrary (+ predefined exp/sinx/x/cardiac/DC)
Noise	deterministic white Gaussian; long repetition (≈26 days class); selectable crest factor
Modulation	AM, FM, PM, PWM, FSK (to 50 MHz class on 81160A)
Optional pattern	ideal/arbitrary bit shapes to 330 or 660 Mbit/s; PRBS to 2^31; 16 Mbit pattern memory

81160A Characteristics / Specifications

PARAMETER	VALUE
Type	Deterministic white Gaussian (repeatable + random characteristics)
Crest Factor	VP/VRMS user-controllable definition per datasheet
Repetition	multi-day period ($\approx$ 26 days cited for 81160A) Pattern Options
Opt 3	up to 330 Mbit/s arbitrary bit-shaped pattern
Opt 6	up to 660 Mbit/s
PRBS	up to 2^{31}
Pattern Memory	16 Mbit
Levels	2, 3, or 4 Modulation AM, FM, PM, PWM, FSK; modulation frequencies up to 50 MHz (81160A literature) Channels 1-channel or 2-channel versions; uncoupled independent or coupled with defined delay Operational Notes Do not confuse with 81150A (120 MHz pulse / 240 MHz sine class, 2 GSa/s arb). Prefer Keysight datasheet 5989-6433 for full amplitude, timing, and harmonic 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.

Performance verification and stress testing; serial-bus and mixed-signal pattern stress; noise injection for worst-case scenarios; modulation (AM/FM/PM/PWM/FSK) up to tens of MHz.

Key Features

- Pulse: 1 µHz-330 MHz, variable rise/fall
- Sine: 1 µHz-500 MHz
- Arb: 14-bit, 2.5 GSa/s; up to 256 k samples/channel
- Waveforms: pulse, sine, square, ramp, noise, arbitrary (+ predefined exp/sinx/x/cardiac/DC)
- Noise: deterministic white Gaussian; long repetition (≈26 days class); selectable crest factor
- Modulation: AM, FM, PM, PWM, FSK (to 50 MHz class on 81160A)
- Optional pattern: ideal/arbitrary bit shapes to 330 or 660 Mbit/s; PRBS to 2³¹; 16 Mbit pattern memory
- 1- or 2-channel; coupled or independent; LXI Class C; SCPI compatible with prior 811xx family

Technical Specifications

Technical Specifications

PARAMETER	VALUE
Model	81160A
Manufacturer	Keysight Technologies
Instrument Type	Pulse Function Arbitrary Noise Generator
Alias	81160A; Agilent 81160A

Pulse / Function

Specifications

PARAMETER	VALUE
Pulse Frequency	1 µHz to 330 MHz
Sine Frequency	1 µHz to 500 MHz
Trigger Rate (internal)	1 µHz to 330 MHz
Trigger Rate (external)	DC to 330 MHz

Arbitrary

Specifications

PARAMETER	VALUE
Resolution	14-bit
Sample Rate	2.5 GSa/s
Memory	up to 256 k samples per channel

Noise

Specifications

PARAMETER	VALUE
Type	Deterministic white Gaussian (repeatable + random characteristics)
Crest Factor	VP/VRMS user-controllable definition per datasheet
Repetition	multi-day period (≈26 days cited for 81160A)

Pattern Options

Specifications

PARAMETER	VALUE
Opt 330	up to 330 Mbit/s arbitrary bit-shaped pattern
Opt 660	up to 660 Mbit/s
PRBS	up to 2^31
Pattern Memory	16 Mbit
Levels	2, 3, or 4

Modulation
AM, FM, PM, PWM, FSK; modulation frequencies up to 50 MHz (81160A literature)

Channels
1-channel or 2-channel versions; uncoupled independent or coupled with defined delay

Operational Notes
Do not confuse with 81150A (120 MHz pulse / 240 MHz sine class, 2 GSa/s arb). Prefer Keysight datasheet 5989-6433 for full amplitude, timing, and harmonic 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

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.