Product Fact Sheet

Keysight 81160A Pulse Function Arbitrary Noise Generator

Quad versatility, optimized signal fidelity up to 660 Mbit/s - signal generation with confidence

1. Couple/uncouple channels/channel add
2. USB 2.0A
3. Channel 1: differential output
4. Channel 2: differential output
5. Sync outputs A and B with selectable trigger or strobe functionality
6. Trigger mode
7. Waveform mode
8. Advanced mode: modulation/sweep/burst

A 4-in-1 device for accelerated and accurate insight into your device

- Create pulse, sine, square, ramp, noise and arbitrary waveforms to test your device—not the source.
- Emulate effects like capacitive load of the channel, asymmetric delay, crossing point deviations, duty cycle distortions, arbitrary transition times, level noise, delays from/to electrical idle by defining the transitions so that the previous bit influences the current bit.
- A 2 Channel version can be used either as 2 independent generators or as time synchronized coupled or added.
- Integrated in one instrument, which increases signal performance, minimizes cabling, space and test time.
- Glitch free change of timing parameters (delay, frequency, transition time, width, delay cycle).
- Programming language compatible with Keysight Technologies, Inc. 81101A, 81104A, 81110A and 81150A pulse pattern generators.

Choose your hardware

Code	Description
#001	81160A with 1 channel
#002	81160A with 2 channels
#DOC	Printed documentation
#1CP	Rack mount kit
#Z54	Z540.3 calibration documents
#1A7	Calibration + Uncertainties + Guardbanding
#330	330 Mbit/s pattern generator license
#660	660 Mbit/s pattern generator license

LXI Class C compliant

www.lxistandard.org
LAN extensions for Instruments puts the power of Ethernet and the Web inside your test systems. Keysight is a founding member of the LXI consortium.

Key specifications	Description
Frequency range	1 µHz to 330 MHz (pulse) 1 µHz to 500 MHz (sine)
Waveforms	Noise, adjustable crest factor, sine, pulse, square, ramp, arbitrary waveform
Channels	1 or 2, differential outputs
Output amplitude – 50 Ω into 50 Ω – 50 Ω into open	 – 50 mV_{PP} to 5 V_{PP} – 100 mV_{PP} to 10 V_{PP}
Modulation types	AM, FM, PM, FSK, PWM external and internal, double pulse
Transition times	1 ns to 1000 s (10% to 90%)
Output impedance	50 Ω
Sample rate	14-bit, 2.5 GSa/s arbitrary waveform
Memory #001	Arbitrary: Up to 256 k samples Pattern: 4 Mbit
Memory #002	Arbitrary: Up to 128 k samples per channel Pattern: 2 Mbit per channel
Noise repetition rate	20 days
Option pattern generator	– Ideal and arbitrary bit shaped pattern – 2-, 3- or 4-level signals – PRBS up to 2^{31}
Display	Color, bright
Programming interfaces	LAN, SCPI-1997, IEEE 488.2 (GPIB), USB
Supported drivers and software applications	Keysight VEE, IVI-COM, Keysight Bench Link Waveform Builder Pro, NI Labview, Matlab

KEYSIGHT TECHNOLOGIES
Unlocking Measurement Insights

Pulse pattern generator selection guide

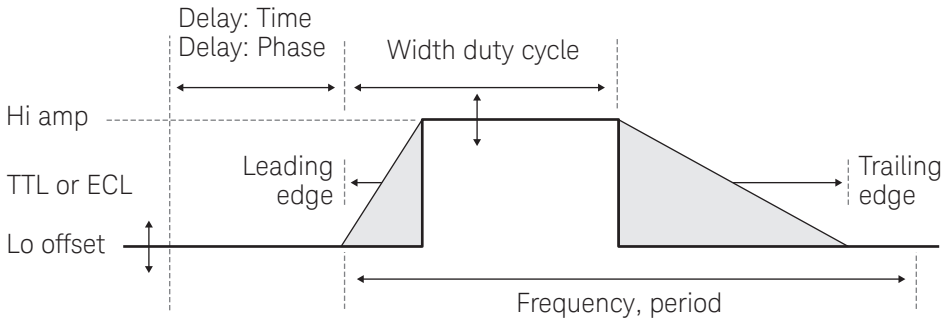
Model	Bandwidth	Channels	Voltage
81110A + 81111A	165 MHz	1 or 2 ch	100 mV to 10 V
81110A + 81112A	330 MHz	1 or 2 ch	100 mV to 3.8 V
81130A + 81131A	400 MHz	1 or 2 ch	100 mV to 3.8 V
81130A + 81132A	660 MHz	1 or 2 ch	100 mV to 2.5 V
81150A	120 MHz	1 or 2 ch	50 mV to 10 V
81160A	330 MHz	1 or 2 ch	50 mV to 5 V

Complementary products

Model	Description
Oscilloscopes	www.keysight.com/find/oscilloscopes
Function Arbitrary Waveform Generators	www.keysight.com/find/trueform
Power Supplies and Electronic Loads	www.keysight.com/find/power
Digital Multimeters	www.keysight.com/find/truevolt

Generate the signal you need

All parameters can be selected and edited with the Keysight Pulse Pattern Generators.



www.keysight.com/find/81160

Just generate the signal you need

Precise signals and distorted signals to stress your device to its limits:

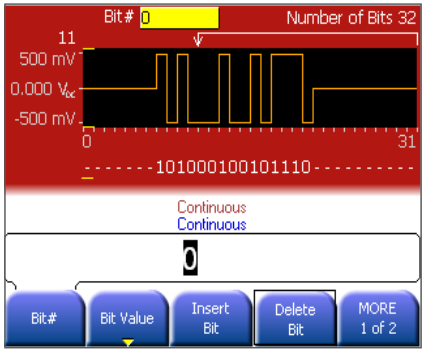


Figure 1. Pattern setup with sequencing.

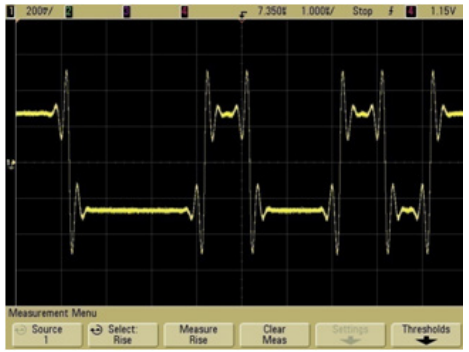


Figure 2. Distorted pattern for real-world conditions.

Typical applications

- Pattern generation
- Digital and mixed signal device testing
- HDMI compliance testing
- Sensor simulation
- Clock signal generation
- Radar distance testing
- Disc drive tests
- Noise and jitter source with selectable crest factor
- Signal source with modulation
- Pulsed IV measurements
- System trigger source
- Capture and reproduce live signals
- Automotive busses physical layer receiver test (CAN, LIN, FlexRay, MOST, BroadR Reach)

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www.keysight.com