

TEKTRONIX

AWG420

The Tektronix AWG420 is a high-performance 200 MS/s Arbitrary Waveform Generator belonging to the AWG400 Series. It features 2 independent channels with outstanding 16-bit vertical resolution, extensive waveform memory up to 16 Mpoints per channel, and integrated features like noise generation and independent channel skew control.

SPECIFICATIONS

General

Interfaces	GPIO, RS-232, LAN (10BASE-T), Keyboard (Mini-DIN)
Display	10.4-inch Color TFT LCD, 640 × 480 pixels
Warm-up Time	20 minutes

Physical

Power Supply	100 to 240 V AC, 47 to 63 Hz, 260 W max
Operating Temperature	+10 °C to +40 °C °C
Dimensions (W×H×D)	362 mm × 178 mm × 492 mm mm
Weight	11.2 kg

Channel and Waveform Capabilities

Number of Channels	2 analog channels
DAC Resolution	16-bit
Run Modes	Continuous, Triggered, Gated, Sequence
Arbitrary Waveform Length	64 points to 4 Mpoints per channel (16 Mpoints with Option 01)
Minimum Waveform Length	64 points
Waveform Segment Length Granularity	1 point

Sample Rate and Timing

Sampling Rate Range	100 S/s to 200 MS/s
Sampling Rate Resolution	4 digits
Internal Frequency Accuracy	±2 ppm (+15 °C to +30 °C)
Internal Frequency Stability	±1 ppm/year
Interchannel Skew Control Range	-2.5 ns to +2.5 ns
Interchannel Skew Control Resolution	0.1 ns

Amplitude and Output Characteristics

Output Connector Type	BNC
Output Impedance	50 Ω
Amplitude Range (Single-ended)	20 mV p-p to 5.0 V p-p (into 50 Ω)
Amplitude Range (Differential)	40 mV p-p to 10 V p-p (into 50 Ω)
Amplitude Resolution	1 mV
Amplitude Accuracy	$\pm(1.5\%$ of setting + 2 mV) at 1 kHz
DC Offset Range (Single-ended)	-2.5 V to +2.5 V (into 50 Ω)
DC Offset Resolution	1 mV
DC Offset Accuracy	$\pm(1\%$ of offset + 10 mV)
Rise/Fall Time	≤ 5.5 ns (5 Vp-p single-ended)
Aberrations	$\leq 7\%$ (at 5 Vp-p, single-ended, filter through)
Analog Bandwidth	30 MHz (-3 dB, typical)
Low-pass Filters	Through, 1 MHz, 5 MHz, 20 MHz, 50 MHz (Bessel type)
Harmonic Distortion	≤ -55 dBc (1 MHz, 5 Vp-p, filter 50 MHz)
Spurious Free Dynamic Range (SFDR)	≤ -55 dBc (1 MHz, 5 Vp-p, filter 50 MHz, DC to 100 MHz)
Random Jitter	≤ 25 ps RMS
Noise Generator	Additive White Noise (independent per channel)

Waveform Memory and Sequencing

Standard Memory Size	4 Mpoints/channel
Optional Memory Size (Option 01)	16 Mpoints/channel
Sequence Length	1 to 8,000 steps
Maximum Loop Count	1 to 65,536
Sequence Jump Modes	Event jump, Software force jump

Trigger and Clock Characteristics

External Trigger Input Connector	BNC (Front panel)
External Trigger Input Impedance	50 Ω or 10 k Ω (selectable)
External Trigger Threshold Range (10 k Ω)	-5.0 V to +5.0 V
External Trigger Threshold Range (50 Ω)	-2.0 V to +2.0 V
External Trigger Threshold Resolution	0.1 V
External Trigger Minimum Pulse Width	10 ns
Reference Clock Input Amplitude	0.2 V p-p to 3.0 V p-p (into 50 Ω)
Reference Clock Output Frequency	10 MHz
Reference Clock Output Amplitude	1.2 V p-p (into 50 Ω)

Auxiliary Inputs and Outputs

Marker Outputs	4 (2 per channel, standard)
Marker Output Level (High)	-1.0 V to +2.6 V (into 50 Ω)
Marker Output Level (Low)	-2.0 V to +1.6 V (into 50 Ω)
Marker Output Level Resolution	10 mV
Marker Rise/Fall Time	≤ 3.0 ns
Add Input Connector	BNC (Front panel)
Add Input Impedance	50 Ω
Add Input Bandwidth	DC to 30 MHz (-3 dB)
Add Input Range	-1.0 V to +1.0 V

System, Connectivity, and Storage

External Storage Medium Support	3.5-inch Floppy Drive (1.44 MB)
Internal Storage Capacity	≥ 10 GB (Internal HDD)

Physical and Environmental

Non-Operating Temperature Range	-20 °C to +60 °C
Operating Humidity Range	20% to 80% RH (non-condensing)
Operating Altitude	Up to 3,000 m (9,843 ft)
Cooling Method	Forced-air cooling

Power and Compliance

Safety Standards Certifications	UL 3111-1, CAN/CSA-C22.2 No. 1010.1, EN 61010-1
Electromagnetic Compatibility (EMC) Compliance	EN 55011, EN 50082-1, FCC Part 15
Recommended Calibration Interval	1 year

Power

Power Consumption	340 VA max.
Input Voltage Range	90 to 250 VAC
Input Frequency Range	48 to 63 Hz

Connectivity

GPIB Port	IEEE-488.2 interface
LAN Port	10Base-T Ethernet (RJ-45)
Keyboard Connector	6-pin mini-DIN (PS/2)
Mouse Connector	6-pin mini-DIN (PS/2)
VGA Video Output	15-pin D-sub connector (rear panel)
Parallel Printer Port	25-pin D-sub connector, Centronics compatible (rear panel)

Environmental

Operating Vibration	0.27 G_RMS (5 Hz to 500 Hz)
Non-operating Vibration	2.28 G_RMS (5 Hz to 500 Hz)
Non-operating Shock	294 m/s² (30 G), half-sine, 11 ms duration
Operating Shock	294 m/s² (30 G) half-sine, 11 ms duration

Storage & Interface

PC Card Slot	Type II PC Card (PCMCIA) slot, rear panel
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Trigger

Internal Trigger Interval Range	1.0 µs to 10.0 s
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Performance

AC Flatness	Within ±0.5 dB (to 10 MHz), ±2.0 dB (to 80 MHz) relative to 100 kHz
Phase Noise	-100 dBc/Hz at 10 kHz offset (typical, 10 MHz output)
Interchannel Crosstalk	-50 dB or less at 10 MHz

TECHNOLOGY

Arbitrary Waveform Generator

APPLICATIONS

Electronic Test and Measurement

Generated by SpecAtlasHub (specatlashub.com). Specifications are compiled from available sources and are subject to change — verify critical values against the manufacturer before purchase.