

TEKTRONIX

AWG7101

The Tektronix AWG7101 is a high-performance arbitrary waveform generator (AWG) in the AWG7000 Series, delivering high-speed signal generation up to 10 GS/s (and up to 20 GS/s in interleaved mode). Running on an open Windows XP platform, it combines exceptional DAC resolution, low jitter, and deep waveform memory to tackle advanced digital, RF, and serial data generation challenges. It offers up to 64 Mpoint record length and real-time sequencing to create complex, infinite waveform loops and branches.

SPECIFICATIONS

General

Interfaces	LAN (10/100/1000Base-T), GPIB, USB 2.0, VGA, DVI-D, PS/2
Display	10.4-inch TFT color touchscreen LCD, 1024 × 768 XGA

Physical

Power Supply	100 to 240 V AC, 47 to 63 Hz, max 450 W
Operating Temperature	10 °C to 40 °C °C
Dimensions (W×H×D)	429 mm × 245 mm × 462 mm mm

Channel Configuration & Core Architecture

Number of Channels	1
DAC Resolution	10-bit (no markers) or 8-bit (with 2 markers)
Maximum Sample Rate	10 GS/s (up to 20 GS/s interleaved with Option 06)
Minimum Sample Rate	10 MS/s

Arbitrary Waveform Performance

Standard Waveform Memory Depth	32 Mpoints
Maximum Waveform Memory Depth	64 Mpoints (with Option 01)
Minimum Waveform Segment Length	240 points
Waveform Granularity	1 point
Total Jitter	20 ps p-p (typical, at 10-12 BER)

Output Characteristics

Output Impedance	50 Ω
Output Configuration	Differential or Single-ended
Number of Marker Outputs	2 (variable level)

Sequencing & Modulation

Real-time Sequencing	Supported (loops, jumps, and conditional branches)
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System Connectivity & Control

Operating System	Windows XP Professional
Built-in Storage	Removable Hard Disk Drive
Optical Drive	Built-in DVD-RW

Power & Environmental Specifications

Storage Temperature Range	-20 °C to +60 °C
Operating Humidity Range	5% to 80% RH (non-condensing)
Operating Altitude	Up to 3,000 m (10,000 ft)

Physical Characteristics & Compliance

Form Factor	Benchtop
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Analog Output

Analog Bandwidth (Normal Mode)	3.5 GHz (-3 dB)
Analog Bandwidth (Direct Mode)	5.0 GHz (-3 dB)
Output Amplitude Range (Normal Mode)	50 mVp-p to 1.0 Vp-p (single-ended), 50 mVp-p to 2.0 Vp-p (differential) into 50 Ω
Output Amplitude Range (Direct Mode)	50 mVp-p to 500 mVp-p (single-ended), 50 mVp-p to 1.0 Vp-p (differential) into 50 Ω
DC Offset Range (Normal Mode)	-0.5 V to +0.5 V (into 50 Ω)
Spurious Free Dynamic Range (SFDR)	-54 dBc @ 10 MHz, -45 dBc @ 1 GHz (10 GS/s, typical)
Effective Number of Bits (ENOB)	5.4 bits @ 1 GHz (10 GS/s, typical)

Clock & Reference

Internal Clock Accuracy	± 1 ppm
External Clock Input Frequency	5.0 GHz to 10.0 GHz
External Clock Input Amplitude	0.4 Vp-p to 1.0 Vp-p (50 Ω)
Reference Input Frequency	10 MHz, 20 MHz, 100 MHz (within ± 10 ppm)
Reference Input Amplitude	0.2 Vp-p to 3.0 Vp-p (50 Ω)
Internal Clock Resolution	8 digits
Reference Output Frequency	10 MHz
Reference Output Amplitude	1.2 Vp-p into 50 Ω
External Clock Input Impedance	50 Ω , AC coupled

Trigger & Markers

Trigger Input Impedance	50 Ω or 1 k Ω
Trigger Input Threshold Range	-2.0 V to +2.0 V (50 Ω), -5.0 V to +5.0 V (1 k Ω)
Trigger Delay to Analog Output	55 ns (typical)
Marker Output Amplitude	High: -1.0 V to 2.4 V, Low: -2.2 V to 1.3 V (into 50 Ω)
Marker Output Rise/Fall Time	<150 ps (20% to 80%)

Trigger

Trigger Modes	Continuous, Triggered, Gated, Sequence
Trigger Input Minimum Pulse Width	2 ns

Marker Outputs

Marker Output Impedance	50 Ω
Marker Delay Resolution	1 ps

Sequencer

Maximum Sequence Steps	16,000 steps
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APPLICATIONS

High-speed digital design verification, RF signal synthesis, semiconductor testing, and disk drive validation

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