

ROHDE & SCHWARZ

AFQ100A

The Rohde & Schwarz AFQ100A is a high-speed, state-of-the-art I/Q modulation generator designed for generating high-bandwidth vector signals. Equipped with a 14-bit DAC, a variable sampling rate up to 300 MHz, and a generous 256 MSamples memory standard, it is optimized for demanding applications in broadband digital communications, wireless standards simulation, and component testing.

SPECIFICATIONS

General

Interfaces	LAN (10/100 Base-T), USB 2.0, GPIB (IEEE 488.2), VGA, PS/2
Display	6.4" TFT color LCD, VGA (640 × 480)

Physical

Power Supply	100 V to 240 V AC (±10%), 50 Hz to 60 Hz / 400 Hz, max. 160 W
Operating Temperature	+5 °C to +45 °C °C
Dimensions (W×H×D)	427 mm × 88 mm × 450 mm mm
Weight	8.5 kg

Channel Characteristics

Number of Channels	2 (I and Q)
Output Configuration	Differential or Single-ended (I, Q, I-bar, Q-bar)

Waveform Generation

Sampling Rate	1 kHz to 300 MHz
Vertical Resolution	14 bit
Standard Waveform Memory	32 MSamples
Max Waveform Memory	1 GSample (with AFQ-B12 option)
Segment Length Resolution	1 Sample
Max. Number of Waveform Segments	32,768

Frequency & Bandwidth

Analog I/Q Bandwidth	100 MHz
RF Bandwidth (Equivalent)	200 MHz
Frequency Response Ripple	< 0.1 dB (up to 50 MHz)
Group Delay Distortion	< 500 ps (over 100 MHz bandwidth)

Spectral Purity

Spurious Free Dynamic Range (SFDR)	> 70 dBc (at 10 MHz signal frequency, 100 MHz clock)
Harmonic Distortion	< -65 dBc

Output Characteristics

Output Impedance	50 Ω (single-ended), 100 Ω (differential)
Max Output Level (Differential)	2 V _{pp} (into 100 Ω)
Max Output Level (Single-Ended)	1 V _{pp} (into 50 Ω)
Amplitude Resolution	0.1 dB
Common Mode DC Offset Range	-0.2 V to +2.0 V
Connector Type	BNC (front panel)

Clock & Reference

Internal Reference Frequency	10 MHz
Internal Reference Accuracy	$\pm 1 \times 10^{-6}$
External Reference Input Range	1 MHz to 100 MHz
Clock Frequency Resolution	0.1 mHz
External Clock Input Frequency Range	1 MHz to 300 MHz

Trigger & Synchronization

Trigger Modes	Auto, Armed Auto, Single, Armed Single, Gated
Marker Outputs	4 channels

Environmental & Standards

Storage Temperature Range	-40 °C to +70 °C
EMC Compliance	EN 55011 Class B, EN 61326
Safety Standards	EN 61010-1, UL 61010-1

Signal Processing

Hardware Interpolation Factors	2, 4, 8
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Digital Interfaces

Digital I/Q Interface Logic Level	LVDS (with Option R&S AFQ-B18)
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System & Controller

Operating System	Windows XP Embedded
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Operating Conditions

Warm-Up Time	approx. 20 min
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Triggering

Trigger Delay Range	0 to 4,294,967,295 samples
Trigger Delay Resolution	1 sample
Trigger Inhibit Range	0 to 4,294,967,295 samples

Markers

Marker Delay Range	0 to 4,294,967,295 samples
Marker Delay Resolution	1 sample

Digital I/Q Output

Digital I/Q Output Word Rate	Up to 100 MHz (with option AFQ-B18)
Digital I/Q Output Resolution	16-bit I and 16-bit Q (with option AFQ-B18)

TECHNOLOGY

Arbitrary Waveform Generation

APPLICATIONS

I/Q Modulation and Vector Signal Generation

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