

ROHDE & SCHWARZ

AMIQ

The Rohde & Schwarz AMIQ is a high-performance, 2-channel arbitrary waveform and I/Q modulation generator designed to provide high-purity, high-resolution baseband signals for modern digital modulation systems. It is typically controlled via PC software such as WinIQSIM, serving as a "blind" modulation source with high-precision 14-bit D/A converters, deep memory options, and versatile triggering/clocking capabilities.

SPECIFICATIONS

Frequency

Minimum Frequency	0 Hz Hz
Maximum Frequency	25 MHz Hz
Frequency Resolution	0.1 mHz (sampling clock resolution)

Modulation

Modulation	Digital I/Q
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General

Reference Oscillator	Internal TCXO (standard) / Option AMIQ-B1 OCXO
Interfaces	GPIO (IEEE-488.2), RS-232-C, I/Q Analog Out (BNC / Sub-D)
Display	None (LED status indicators only; blind instrument)
Warm-Up Time	30 min

Physical

Power Supply	100 V to 240 V AC ($\pm 10\%$), 50 Hz to 60 Hz / 400 Hz
Dimensions (W×H×D)	435 mm × 103 mm × 460 mm mm
Weight	7 kg kg

Generation & Signal Performance

Number of Channels	2 (I and Q)
Maximum Sampling Rate	100 MHz
Minimum Sampling Rate	10 kHz
Vertical Resolution	14 bits
Memory Depth	2 Msample (AMIQ02) / 8 Msample (AMIQ03) / 16 Msample (AMIQ04) per channel
Maximum Output Bandwidth	25 MHz
Frequency Flatness	< 0.1 dB (up to 10 MHz), < 0.2 dB (up to 25 MHz)

Spectral Purity & Signal Quality

Wideband Noise	< -140 dBm/Hz (at 5 MHz offset)
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Analog Outputs & Signal Conditioning

Output Configuration	Single-ended (BNC on front panel) or Differential (Sub-D on rear panel)
Output Impedance	50 Ω
Output Voltage Range (Single-Ended)	10 mV to 2 V (Vpp) into 50 Ω
Output Voltage Range (Differential)	20 mV to 4 V (Vpp) into 50 Ω

Trigger & Synchronization

Trigger Modes	Auto, Single, Armed, Gated
Trigger Sources	Internal, External, Software (GPIO / RS-232)
Marker Outputs	4 (user-assignable function channels)

Clocking & Reference

Internal Clock Frequency Accuracy	$< 1 \times 10^{-6}$ (standard) / $< 1 \times 10^{-7}$ (with Option AMIQ-B1 OCXO)
External Clock Input Frequency	10 kHz to 100 MHz
External Reference Input Frequency	10 MHz

Interfaces & Software Control

GPIO Interface	IEEE-488.2 SCPI compliant
RS-232-C Interface	D-Sub 9-pin, up to 115.2 kbps
Simulation Software Support	WinIQSIM (PC simulation software)

Power & Electrical Specifications

Power Consumption	approx. 60 W
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Physical & Environmental Characteristics

Form Factor	19-inch rackmount compatible, 2 HU
Relative Humidity Range	Up to 95% (non-condensing)

Inputs & Outputs

Output Connector Type	BNC female
Number of Marker Outputs	4
Marker Output Level	TTL into 50 Ω
External Trigger Input Level	TTL
External Trigger Input Impedance	10 k Ω
External Clock Input Level	TTL
External Clock Input Impedance	50 Ω
Reference Output Frequency	10 MHz
Reference Output Level	typ. 1 V (rms) into 50 Ω

Signal Generation

Reconstruction Filter Cutoff Frequencies	2.5 MHz, 5 MHz, 10 MHz, 20 MHz, and bypassed
I/Q Delay Fine Adjustment Range	±1 ns
I/Q Delay Fine Adjustment Resolution	10 ps
Residual DC Offset	< 1 mV (after self-calibration)

Options

Differential Outputs Option	AMIQ-B2
Digital I/Q Output Option	AMIQ-B11
Memory Extension Option	AMIQ-B1 (extends to 16 MSamples for AMIQ02/AMIQ03)

Reference Oscillator

Reference Oscillator Aging	< 1 x 10 ⁻⁶ / year
Reference Oscillator Temperature Stability	< 2 x 10 ⁻⁶ (0 °C to 50 °C)

Control & Software

Command Set	SCPI
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Compliance & Standards

Safety Standards	IEC 61010-1, EN 61010-1
EMC Standards	EN 55011 Class B, EN 50082-2

TECHNOLOGY

Arbitrary Waveform & Baseband I/Q Generation

APPLICATIONS

Digital modulation simulation, baseband I/Q signal generation, RF modulator testing

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