

ROHDE & SCHWARZ

SMB100A

The Rohde & Schwarz SMB100A is a versatile RF and microwave analog signal generator known for its excellent signal quality, high output power, and compact form factor. Depending on the installed frequency option, it covers ranges from 9 kHz up to 40 GHz, making it an ideal choice for testing receivers, components, and radar systems across a wide variety of RF and microwave applications.

SPECIFICATIONS

Frequency

Minimum Frequency	9 kHz / 100 kHz (configuration dependent) Hz
Frequency Resolution	0.001 Hz
Frequency Range Options (RF)	9 kHz to 1.1 / 2.2 / 3.2 / 6 GHz (options B101/B102/B103/B106)
Frequency Setting Time	< 3 ms (typ. 1.5 ms) via remote control
Reference Frequency Standard	10 MHz

Output

Phase Noise	Typ. -128 dBc/Hz (1 GHz carrier, 20 kHz offset)
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Modulation

Internal LF Generator Frequency Range	0.1 Hz to 1 MHz
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General

Reference Oscillator	10 MHz (internal), OCXO (optional)
Interfaces	LAN (LXI Class C), USB, GPIB (IEEE 488.2)
Recommended Calibration Interval	3 years
Warm-up Time	30 minutes

Physical

Power Supply	100 V to 240 V AC, 50 Hz to 60 Hz; 100 V to 120 V AC, 400 Hz
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Level (Amplitude)

Level Resolution	0.01 dB
Level Setting Time	< 2.5 ms (typ. 1.5 ms)
Output Impedance	50 Ω
Output VSWR	< 1.8 ($f \leq 6$ GHz)
Reverse Power Protection (DC voltage)	50 V

Spectral Purity

Harmonics	< -30 dBc (CW, level $\leq$ 10 dBm, $f > 1$ MHz)
Non-harmonics (Spurious)	< -70 dBc (> 10 kHz offset, $f \leq 1.5$ GHz)
SSB Phase Noise (1 GHz, 20 kHz offset)	typ. -128 dBc/Hz

Amplitude Modulation (AM)

Modulation Depth Range	0 to 100 %
Modulation Resolution	0.1 %

Pulse Modulation

On/Off Ratio	> 80 dB
Minimum Pulse Width	20 ns

Internal Modulation / LF Generator

Frequency Range	0.1 Hz to 1 MHz
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Front / Rear Panel Connectors

RF Output Connector (< 6 GHz)	N female
Reference Input (REF IN)	BNC female
Reference Output (REF OUT)	BNC female

Connectivity and Remote Control

GPIO Interface	IEEE 488.2
USB Ports	USB 2.0 (Host and Device)
Remote Control Command Set	SCPI 1999.5

Environmental and Regulatory

Operating Temperature Range	0 °C to +50 °C
Storage Temperature Range	-40 °C to +71 °C

Environmental

Maximum Operating Altitude	4600 m (15000 ft)
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Compliance

Safety Compliance	EN 61010-1
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Connectivity & Standards

Reference Input Impedance	50 Ω
LXI Compliance	LXI Class C

TECHNOLOGY

Analog Signal Generation

APPLICATIONS

RF and microwave testing, receiver testing, LO substitution, radar and aerospace test, component characterization

