

ROHDE & SCHWARZ

SM300

The Rohde & Schwarz SM300 is a high-performance vector signal generator covering a frequency range from 9 kHz to 3 GHz. Designed for lab, service, and automatic production applications, it offers AM, FM, M, pulse, and IQ modulation. With a compact form factor, 0.1 Hz frequency resolution, and an integrated baseband I/Q modulator, the SM300 delivers versatile signal generation capabilities at an accessible price point.

SPECIFICATIONS

Frequency

Minimum Frequency	9 kHz Hz
Maximum Frequency	3 GHz Hz
Frequency Resolution	0.1 Hz

Output

Maximum Output Power	+13 dBm dBm
Output Power Range	-127 dBm to +13 dBm
Phase Noise	<-95 dBc (1 Hz) at 20 kHz offset, 1 GHz carrier

Modulation

Modulation	AM, FM, ϕ M, pulse, IQ
Sweep Modes	Frequency and level sweep (automatic, single, manual, step)
Pulse Modulation On/Off Ratio	> 80 dB
Pulse Modulation Rise/Fall Time	< 20 ns
I/Q Modulator Bandwidth	50 MHz (RF bandwidth)

General

Reference Oscillator	10 MHz, aging < 1 ppm/year, temperature effect < 1.5 ppm (0 °C to 50 °C)
Interfaces	USB
Display	Color TFT LCD (320 x 240 pixels)
Warm-up Time	20 min

Physical

Power Supply	100 V to 240 V AC, 50 Hz to 60 Hz
Dimensions (W×H×D)	320 mm × 102 mm × 356 mm mm
Weight	5 kg kg

Frequency Specifications

LF Frequency Range	20 Hz to 80 kHz
Frequency Switching Speed	<15 ms

Amplitude Specifications

Level Resolution	0.1 dB
Level Uncertainty	<1 dB (for levels >-120 dBm)

Spectral Purity

SSB Phase Noise	<-95 dBc (1 Hz) (at f = 1 GHz, Δf = 20 kHz)
Harmonics	< -30 dBc (for level ≤ 10 dBm, f > 1 MHz)
Non-harmonics	< -60 dBc (at > 10 kHz offset, carrier ≤ 1.5 GHz)

Analog Modulation

Internal Modulation Generator	20 Hz to 80 kHz
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System Connectivity and Interfaces

RF Output Impedance	50 Ω
RF Output Connector Type	N-type female

RF Output

Output VSWR	< 1.5 (f > 1 MHz, level ≤ 0 dBm)
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Environmental

Operating Temperature Range	0 °C to +50 °C
Storage Temperature Range	-40 °C to +70 °C

Inputs & Outputs

I/Q Inputs	I, Q (BNC female, 50 Ω)
External Reference Input	10 MHz (BNC female, 50 Ω)
Reference Output	10 MHz (BNC female)

Internal Modulation Generator

LF Generator Waveform	Sine
LF Generator Frequency Resolution	0.1 Hz
LF Generator Output Voltage Range	1 mV to 1 V (Vp)

Reference Oscillator

Reference Oscillator Aging	< 1 × 10 ⁻⁶ per year
Reference Oscillator Temperature Stability	< 1.5 × 10 ⁻⁶ (0 °C to 50 °C)

Power Supply

Power Consumption	max. 40 VA
Mains Frequency Range	50 Hz to 400 Hz

Compliance

EMC Standard	Meets EN 55011 Class B, EN 61326
Safety Standard	Meets EN 61010-1

TECHNOLOGY

RF Vector Signal Generation

APPLICATIONS

Laboratory testing, RF device service, automatic production 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.