

ROHDE & SCHWARZ

SML02

The Rohde & Schwarz SML02 is a highly reliable, state-of-the-art RF signal generator designed for general-purpose applications across development, production, and service environments. Operating over a wide frequency range of 9 kHz to 2.2 GHz with outstanding spectral purity and high level accuracy, it delivers versatile analog modulation capabilities, including AM, FM, and ϕ M, alongside options for high-performance pulse modulation and stereo/RDS coding.

SPECIFICATIONS

Frequency

Minimum Frequency	9 kHz Hz
Maximum Frequency	2.2 GHz Hz
Frequency Resolution	0.1 Hz

Output

Maximum Output Power	+13 dBm dBm
Output Power Range	-140 dBm to +13 dBm (overrange to +19 dBm)
Phase Noise	-128 dBc/Hz (typical at 1 GHz carrier, 20 kHz offset)

Modulation

Modulation	AM, FM, Phase (ϕ M), Pulse (optional)
Sweep Modes	Digital frequency and level sweep (RF, LF, Level)
External Modulation Input Impedance	100 kOhm
External Modulation Input Level	1 Vp for nominal deviation
Pulse Modulation External Input Level	TTL (H > 2 V, L < 0.8 V)

General

Reference Oscillator	Internal TCXO standard; OCXO optional (SML-B1)
Interfaces	GPIB (IEEE-488.2), RS-232
Display	LCD

Physical

Dimensions (W×H×D)	427 mm × 88 mm × 450 mm mm
Weight	8.5 kg kg

Frequency Characteristics

Frequency Setting Time	< 10 ms
Reference Frequency Input	10 MHz
Reference Frequency Output	10 MHz

Level (Output) Characteristics

Level Setting Time	< 10 ms
Level Resolution	0.1 dB
Level Accuracy	< 0.5 dB (at levels > -120 dBm)
Output Impedance	50 Ω
Maximum Safe Reverse Power	50 W (1 MHz to 2.2 GHz), 50 V DC
Attenuator Type	Electronic

Spectral Purity

Harmonics	<-30 dBc (for levels <= +10 dBm, f > 1 MHz)
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Analog Modulation (AM, FM, Phase)

AM Modulation Depth Range	0% to 100%
AM Resolution	0.1%
AM Modulation Frequency Range	DC to 50 kHz

Internal Modulation Source (LF Generator)

LF Frequency Range	0.1 Hz to 1 MHz
LF Frequency Resolution	0.1 Hz

Interfaces and Connectivity

RF Output Connector Type	N female (front panel)
LF Output Connector Type	BNC female
Command Set / Programming Languages	SCPI

Environmental and Compliance

Operating Temperature Range	0°C to +55°C
Storage Temperature Range	-40°C to +70°C
Recommended Calibration Interval	3 years

Ordering Information and Hardware Options

High Stability OCXO Reference Option	SML-B1
Pulse Modulator Option	SML-B3
Stereo/RDS Coder Option	SML-B5

Protection

Overvoltage Protection Maximum DC Voltage	50 V
Overvoltage Protection Maximum RF Power	50 W

Options

OCXO Reference Oscillator Option Model	R&S SML-B1
Pulse Modulator Option Model	R&S SML-B3
Stereo/RDS Coder Option Model	R&S SML-B5
Rear Connectors for RF and LF Option Model	R&S SML-B19

Internal LF Generator

LF Distortion	< 0.1% (at 1 kHz, U = 1 V, RL > 250 Ohm)
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Frequency Modulation (FM)

FM Deviation Error	< 3% of reading + 20 Hz (at 1 kHz)
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Pulse Modulation

Pulse Delay (Option SML-B3)	approx. 50 ns
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Stereo / RDS Coder Option

RDS Carrier Frequency (Option SML-B5)	57 kHz
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Storage and Memory

Save/Recall Registers	50 complete instrument setups
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Standards and Compliance

Safety Standards	Complies with EN 61010-1
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TECHNOLOGY

RF Signal Generator

APPLICATIONS

General-purpose RF testing, receiver characterization, automated test systems (ATE), service and production environments

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