

ROHDE & SCHWARZ

SMH

The Rohde & Schwarz SMH is a classic, high-performance RF signal generator covering a frequency range from 100 kHz to 2.0 GHz. It is designed for versatile laboratory testing, receiver measurements, and calibration, featuring comprehensive analog and pulse modulation capabilities.

SPECIFICATIONS

Frequency

Minimum Frequency	100 kHz Hz
Maximum Frequency	2 GHz Hz
Frequency Resolution	1 Hz

Output

Maximum Output Power	+13 dBm dBm
Output Power Range	-137 dBm to +13 dBm
Phase Noise	-124 dBc/Hz (at 20 kHz offset, 1 GHz carrier)

Modulation

Modulation	AM, FM, Phase Modulation (ϕ M), Pulse Modulation
Sweep Modes	Frequency, Level (digital step sweep)
FM Distortion	< 0.5% (at 40 kHz deviation, 1 kHz modulation frequency)
AM Distortion	< 1% (at 30% depth), < 2% (at 80% depth) at 1 kHz modulation frequency

General

Reference Oscillator	10 MHz
Interfaces	GPIB (IEEE-488)
Display	LCD

Physical

Power Supply	100 V / 120 V / 220 V / 240 V AC ($\pm$ 10%), 47 Hz to 440 Hz
Dimensions (W×H×D)	435 mm x 147 mm x 460 mm mm
Weight	16 kg kg

System Connectivity and Interfaces

RF Output Connector Type	N female (front panel)
RF Output Impedance	50 Ω
External Reference Input Connector	BNC female (rear panel)
Reference Output Connector	BNC female (rear panel)

Frequency Specifications

Frequency Switching Speed	<15 ms
External Reference Input Frequency	10 MHz

Amplitude Specifications

Amplitude Resolution	0.1 dB
----------------------	--------

Analog Modulation

AM Depth Range	0% to 99%
AM Resolution	0.5%
Pulse Modulation On/Off Ratio	>80 dB
Pulse Modulation Rise/Fall Time	<20 ns

Spectral Purity

Harmonics	<-30 dBc (for output levels ≤ 10 dBm)
Non-Harmonics (Spurious)	<-74 dBc (1000 to 2000 MHz), <-80 dBc (<1000 MHz)
Wideband Noise	<-140 dBc/Hz (at >2 MHz offset, carrier <1 GHz)
Subharmonics	< -50 dBc (for carrier frequencies > 1000 MHz)
Residual FM	< 2 Hz (at 500 MHz carrier, 0.3 kHz to 3 kHz bandwidth)
Residual AM	< 0.02% (0.3 kHz to 3 kHz bandwidth)

Physical and Environmental Specifications

Operating Temperature Range	0 °C to +55 °C
-----------------------------	----------------

Power Requirements

Power Consumption	120 VA
-------------------	--------

AF Generator

AF Generator Frequency Range	10 Hz to 100 kHz
AF Generator Frequency Resolution	1 Hz
AF Output Level Range	1 mV to 1 V
AF Output Level Resolution	1 mV

Modulation (FM)

External FM Modulation Frequency Range	DC to 100 kHz (DC-coupled), 10 Hz to 100 kHz (AC-coupled)
--	---

Modulation (Phase)

External Phase Modulation Frequency Range	20 Hz to 20 kHz
---	-----------------

RF Output

Output VSWR	< 1.5 (for level < 0 dBm)
-------------	---------------------------

Options

OCXO Reference Option (SMH-B1) Aging	< 1 x 10 ⁻⁹ / day (after 30 days of operation)
--------------------------------------	---

Protection

Overload Protection Max RF Power	50 W
Overload Protection Max DC Voltage	35 V

Memory

Save/Recall Memory Locations	50 complete instrument setups
------------------------------	-------------------------------

TECHNOLOGY

RF Signal Generation

APPLICATIONS

Receiver testing, analog modulation measurements, laboratory RF 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.