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Data Sheet

August 13, 2026

ROHDE & SCHWARZ

Rohde & Schwarz SMG 100KHz-1GHz Signal Generator with Pulse Modulation

Rohde & Schwarz SMG Signal Generator 100 kHz to 1000 MHz The R&S SMG is a synthesized RF signal generator covering 100 kHz to 1000 MHz (settable 10 kHz to 1040 MHz). Frequency resolution is 1 Hz with settling less than 15 ms. Level is minus 140 dBm to +13 dBm (underrange/overrange minus 140 dBm to +16 dBm without guarantee). Standard OCXO reference ages 2e-6 per year or less than 1e-9 per day after 30 days. Modulation includes AM, FM, phase, and pulse, including two-tone and simultaneous AM plus FM/phiM. Optional SMG-B1 10 MHz reference and SMG-B2 AF synthesizer (10 Hz to 100 kHz, 1 Hz) extend lab use. Sibling SMH reaches 2000 MHz; SMGL is the 9 kHz high-power variant. The R&S SMG is a synthesized RF signal generator covering 100 kHz to 1000 MHz (settable 10 kHz to 1040 MHz). Frequency resolution is 1 Hz with settling less than 15 ms. Level is minus 140 dBm to +13 dBm (underrange/overrange minus 140 dBm to +16 dBm without guarantee). Standard OCXO reference ages 2e-6 per year or less than 1e-9 per day after 30 days. Modulation includes AM, FM, phase, and pulse, including two-tone and simultaneous AM plus FM/phiM. Optional SMG-B1 10 MHz reference and SMG-B2 AF synthesizer (10 Hz to 100 kHz, 1 Hz) extend lab use. Sibling SMH reaches 2000 MHz; SMGL is the 9 kHz high-power variant. AM/FM/phiM/pulse modulation and two-tone tests



MODEL

Rohde & Schwarz SMG

CALIBRATION

Available on request

CONDITION

Used

STATUS

In stock

RFQ / SKU

SMG

LISTING

<https://aumictechlabs.com/products/smg-2/>

NIST-traceable cal

SAM registered

30-day returns

NAICS 423690 • 811210 • 541380

This unit

The Rohde & Schwarz SMG is a compact signal generator spanning 100 kHz to 1 GHz, engineered for component testing, receiver validation, and signal simulation. It delivers pulse modulation with exceptional on/off ratios exceeding 70 dB, standard AM/FM/phase and FSK capabilities, and phase noise of typically -124 dBc at 1 GHz with 20 kHz offset. The instrument combines high spectral purity, fast frequency switching, and output control from -140 dBm to $+13$ dBm, making it suitable for demanding RF/microwave labs and production environments.

Technical Specifications
Frequency Range: 100 kHz to 1 GHz Resolution: 1 Hz Switching time: 15 ms Time base stability: 0.000002 /yr Reference: Internal 10 MHz or 5 MHz crystal oscillator; optional OCXO (SMG-B1) available External reference input: 10 MHz or 5 MHz Output Power range: -140 dBm to $+13$ dBm Accuracy: ± 1.5 dB Impedance: 50 Ohm Level switching time: 25 ms Overload protection: 50 W maximum permissible RF power Modulation Pulse modulation: External TTL-compatible input; on/off ratio >70 dB (typically >80 dB); rise/fall times 10–90% typically 20 ns above 200 MHz; PRF 0–10 MHz Standard modes: AM, FM, phase, FSK, two-tone Internal modulation source (option SMG-B2): AF Synthesizer, 10 Hz to 100 kHz Spectral Performance Spurious signals: <-30 dBc (SMGL, level ≤ 27 dBm) Harmonics: <-30 dBc (SMGL, level ≤ 27 dBm) Phase noise: -124 dBc @ 1 GHz, 20 kHz offset

Key Features TTL pulse modulation with 70+ dB blanking ratio and 20 ns edge speeds N-type 50 Ohm RF output with integrated overload protection Frequency resolution to 1 Hz; 15 ms carrier switching Low phase noise and spurious content for precision measurement Programmable sweep modes: auto, linear, manual, single Test pattern storage for up to 5 configurations

Typical Applications RF component and subsystem characterization Receiver sensitivity and selectivity testing Signal simulation for system validation Pulse modulation studies and radar signal generation

Compatibility & Integration IEC bus remote control interface Modulation inputs: BNC connectors (100 k Ω or 600 Ω input impedance) AF output available with SMG-B2 option 19" rack-mount adapter option Optional OCXO (SMG-B1) for improved frequency accuracy

SMG Characteristics / Specifications

PARAMETER	VALUE
Model	SMG
Manufacturer	Rohde & Schwarz
Instrument Type	Synthesized RF signal generator
Alias	R&S SMG
Frequency Range	100 kHz to 1000 MHz
Frequency Settable	10 kHz to 1040 MHz
Frequency Resolution	1 Hz
Frequency Settling	less than 15 ms
Frequency Drift at or above 31.25 MHz	less than 0.5e-9 plus reference error
Reference Aging Standard	2e-6 per year after 30 days
Reference Aging OCXO Option	less than 1e-9 per day
Reference Temperature Effect Standard	2.5e-6 from 0 C to 50 C
Reference In Out	5 MHz or 10 MHz selectable
Level Range	minus 140 dBm to +13 dBm
Level Underrange Overrange	minus 140 dBm to +16 dBm without guarantee
Level Accuracy Class	1.5 dB
Level Settling	25 ms class
Output Impedance	50 ohm
Harmonics	less than minus 30 dBc
Nonharmonics	less than minus 70 dBc
SSB Phase Noise Class	minus 148 dBc/Hz to minus 124 dBc/Hz (offset dependent)
Modulation Analog	AM, FM, phiM, pulse
AM Modes	INT, EXT AC, EXT DC, two-tone
Pulse On Off Ratio	greater than 80 dB typical
Pulse Rise Fall	tens of ns class (fc dependent)

PARAMETER	VALUE
AF Synthesizer Option B	10 Hz to 100 kHz, 1 Hz resolution, 1 mV to 1 V rms
AF Output with B	10 Hz to 100 kHz
Sweep Modes	auto, linear, log, single, manual
Remote Interface	IEC 625-1 (IEEE 488)
Mains	100/120/220/240 V plus/minus 10 percent, 47 to 440 Hz
Power Consumption	max 130 VA (SMG, SMH)
Form Factor	benchtop; 19 inch with ZZA-93
Sibling SMH Range	100 kHz to 2000 MHz
Sibling SMGL Range	9 kHz to 1000 MHz, minus 118 dBm to +30 dBm
Lifecycle	out of production (Nov 2000 class listing) Notes Specs from R&S SMG/SMH/SMGL short-form data and SMG operating manual. Confirm SMG-B1 OCXO and SMG-B2 AF synthesizer. Do not confuse with later SMGL high-power or SMH 2 GHz siblings.

Full OEM specifications

Complete technical content extracted from the manufacturer datasheet. Sparse OEM tables are reconstructed as tables below; other text is preserved as paragraphs.

Specifications	
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Manufacturer	Rohde & Schwarz
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Specifications	
PARAMETER	VALUE
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Reference Aging Standard	2e-6 per year after 30 days
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Reference Temperature Effect Standard	2.5e-6 from 0 C to 50 C
Specifications	
PARAMETER	VALUE
Reference In Out	5 MHz or 10 MHz selectable
Level Range	minus 140 dBm to +13 dBm
Level Underrange Overrange	minus 140 dBm to +16 dBm without guarantee

Specifications

PARAMETER	VALUE
Level Accuracy Class	1.5 dB
Level Settling	25 ms class
Output Impedance	50 ohm

Specifications

PARAMETER	VALUE
Harmonics	less than minus 30 dBc
Nonharmonics	less than minus 70 dBc
SSB Phase Noise Class	minus 148 dBc/Hz to minus 124 dBc/Hz (offset dependent)

Specifications

PARAMETER	VALUE
Modulation Analog	AM, FM, phiM, pulse
AM Modes	INT, EXT AC, EXT DC, two-tone
Pulse On Off Ratio	greater than 80 dB typical

Specifications

PARAMETER	VALUE
Pulse Rise Fall	tens of ns class (fc dependent)
AF Synthesizer Option B2	10 Hz to 100 kHz, 1 Hz resolution, 1 mV to 1 V rms
AF Output with B2	10 Hz to 100 kHz

Specifications

PARAMETER	VALUE
Sweep Modes	auto, linear, log, single, manual
Remote Interface	IEC 625-1 (IEEE 488)
Mains	100/120/220/240 V plus/minus 10 percent, 47 to 440 Hz

Specifications

PARAMETER	VALUE
Power Consumption	max 130 VA (SMG, SMH)
Form Factor	benchtop; 19 inch with ZZA-93
Sibling SMH Range	100 kHz to 2000 MHz

Sibling SMGL Range: 9 kHz to 1000 MHz, minus 118 dBm to +30 dBm

Lifecycle: out of production (Nov 2000 class listing)

Notes

Specs from R&S SMG/SMH/SMGL short-form data and SMG operating manual. Confirm SMG-B1 OCXO and SMG-B2 AF synthesizer. Do not confuse with later SMGL high-power or SMH 2 GHz siblings.

Available from Aumictech

Used and refurbished unit evaluated in-house. Calibration: Available on request. Used · In stock.

Request a quote: sales@aumictech.com · +1 (484) 841-9341

Aumictech

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NIST-traceable calibration · SAM registered ·
30-day returns
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Generated August 13, 2026

Technical content from manufacturer specifications. Unit photo/stock from Aumictech listing when available. Specifications subject to OEM documentation and unit condition.