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Data Sheet

August 13, 2026

ROHDE & SCHWARZ

Rohde & Schwarz SMP04 2-40GHz Microwave Signal Generator

Rohde & Schwarz SMP04 Microwave Signal Generator 2 GHz to 40 GHz The R&S SMP04 is the 40 GHz member of the SMP microwave signal generator family. Standard range is 2 GHz to 40 GHz; option SMP-B11 extends the lower limit to 10 MHz. Specified output is greater than +10 dBm at the upper frequency. Frequency resolution is 0.1 Hz. SSB phase noise is less than minus 105 dBc (1 Hz) at 10 GHz, 10 kHz offset. Level accuracy is less than plus/minus 0.9 dB at 0 dBm from 10 MHz to 40 GHz. YIG sources to 20 GHz; multiplication is used above 20 GHz (subharmonics specified above 20 GHz). The R&S SMP04 is the 40 GHz member of the SMP microwave signal generator family. Standard range is 2 GHz to 40 GHz; option SMP-B11 extends the lower limit to 10 MHz. Specified output is greater than +10 dBm at the upper frequency. Frequency resolution is 0.1 Hz. SSB phase noise is less than minus 105 dBc (1 Hz) at 10 GHz, 10 kHz offset. Level accuracy is less than plus/minus 0.9 dB at 0 dBm from 10 MHz to 40 GHz. YIG sources to 20 GHz; multiplication is used above 20 GHz (subharmonics specified above 20 GHz).



MODEL

Rohde & Schwarz SMP04

CALIBRATION

Available on request

CONDITION

Used

STATUS

In stock

RFQ / SKU

SMP04

LISTING

<https://aumictechlabs.com/products/smp04-2/>

NIST-traceable cal

SAM registered

30-day returns

NAICS 423690 · 811210 · 541380

This unit

The Rohde & Schwarz SMP04 is a microwave signal generator delivering precision frequency synthesis across 2 GHz to 40 GHz, with optional extension down to 10 MHz. It combines Direct Digital Synthesis technology with output power ranging from -20 dBm to +12 dBm (depending on frequency band) and exceptional spectral purity SSB phase noise below -105 dBc/Hz at 10 GHz offset by 10 kHz. The instrument supports broadband modulation across AM, FM, Pulse, Phase, FSK, and ASK modes, with optional precision FM/ΦM and pulse generator capabilities. Frequency setting time is <11 ms + 5 ms/GHz, and frequency resolution reaches 0.1 Hz. A built-in crystal reference provides 0.000001/yr timebase stability, with OCXO option available. Sweep functionality includes manual step, linear, and list modes. The instrument stores up to 50 complete setup configurations and operates with 50 Ohm output impedance. Harmonics suppress to <-30 dBc below 1.8 GHz and non-harmonics to <-60 dBc up to 20 GHz. Target applications span microwave component characterization, radar and communication equipment testing, and EMC validation in development and production environments.

Technical Specifications

Frequency Range (Standard): 2 GHz to 40 GHz Frequency Range (with Option SMP-B11): 10 MHz to 40 GHz
Frequency Resolution: 0.1 Hz Frequency Setting Time: <11 ms + 5 ms/GHz Output Power: +12 dBm (10 MHz to <2 GHz), +10 dBm (2 GHz to 18 GHz), +6 dBm (18 GHz to 20 GHz), +11 dBm (20 GHz to 33 GHz), +10 dBm (33 GHz to 40 GHz), +9 dBm (@40 GHz) Minimum Output Power: -20 dBm
Output Level Resolution: 0.1 dB or 0.01 dB Output Impedance: 50 Ohm SSB Phase Noise: <-105 dBc/Hz at 10 GHz (10 kHz offset) Harmonics: <-30 dBc (<+0 dBm) for f <1.8 GHz Non-harmonics: <-60 dBc up to 20 GHz Output Accuracy: <±0.9 dB at 0 dBm (10 MHz to 40 GHz with precision attenuator option)

Key Features

Direct Digital Synthesis frequency synthesis Modulation modes: AM, FM (broadband to 5 MHz), Pulse, Phase (DC to 100 kHz), FSK (up to 1 MHz deviation), ASK Optional precision FM/ΦM modulator (Option SM-B5) for modulation to 1 MHz Optional pulse generator (Option SMP-B14) Built-in crystal reference oscillator; optional OCXO (Option SMP-B1) Timebase stability: 0.000001/yr Memory: 50 stored instrument setups Sweep modes: Step, Linear, List Autorun control for synchronous multi-instrument operation

Typical Applications

Microwave component and subsystem development Radar and communication system testing EMC testing and validation Production test routines

Compatibility & Integration

50 Ohm output interface. Autorun facility enables synchronized operation with complementary test equipment.

Features & description

From manufacturer datasheet

Features

- Highest-frequency SMP (siblings SMP02/22 to 20 GHz, SMP03 to 27 GHz) • AM DC to 100 kHz, FM DC to 5 MHz, optional phase DC to 100 kHz • Optional pulse modulator, on/off greater than 80 dB, rise/fall less than 10 ns • Digital RF, AF and level sweep; list mode up to 2003 frequency/level pairs • 50 stored setups; user frequency-response correction

Applications

- 40 GHz CW, sweep, and pulse stimulus • Radar and satcom receiver tests • Scalar network / spectrum analyzer tracking source • LO substitution and high-level mixer drive • EMC work when B11 opens 10 MHz to 2 GHz

SMP04 Characteristics / Specifications

PARAMETER	VALUE
Model	SMP04
Manufacturer	Rohde & Schwarz
Instrument Type	Microwave signal generator
Alias	SMP 04; R&S SMP04
Frequency Range Standard	2 GHz to 40 GHz
Frequency Range with SMP B	10 MHz to 40 GHz
Frequency Resolution	0.1 Hz
Frequency Setting Time	less than 11 ms + 5 ms/GHz
Maximum Level Specified	greater than +10 dBm at 40 GHz
Level Accuracy at 0 dBm	less than plus/minus 0.9 dB, 10 MHz to 40 GHz
SSB Phase Noise at 10 GHz	less than minus 105 dBc (1 Hz) at 10 kHz offset
Harmonics below 1.8 GHz	less than minus 30 dBc (at less than +0 dBm)
Harmonics above 1.8 GHz	less than minus 40 dBc (at less than +0 dBm)
Subharmonics above 20 GHz	less than minus 30 dBc class
Nonharmonics 2 to 20 GHz	less than minus 60 dBc
Nonharmonics above 20 GHz	less than minus 54 dBc
AM Bandwidth	DC to 100 kHz
FM Bandwidth	DC to 5 MHz
FM Deviation above 20 GHz	up to 20 MHz class (standard FM)
Phase Modulation Bandwidth	DC to 100 kHz (option)
Pulse On Off Ratio	greater than 80 dB
Pulse Rise Fall	less than 10 ns
Minimum Pulse Width	less than 20 ns
Reference Aging Standard	1e-6 per year
Reference Aging OCXO SMP B	less than 1e-7 per year

PARAMETER	VALUE
Reference Output	10 MHz, 1 V rms EMF, 50 ohm
Stored Setups	50
List Mode Pairs	up to 2003
Pulse Modulator Option	SMP-B12 (2 to 40 GHz class for SMP04)
Attenuator Option	SMP-B15 / SMP-B17
RF Connector Class	2.92 mm / K family (confirm on unit) Notes Specs from the R&S SMP Microwave Signal Generator data sheet. This file is the 40 GHz SMP04, not SMP02/22. Confirm SMP-B11, attenuator, and pulse options. Subharmonics apply above 20 GHz because of multiplication.
Bandwidth	DC to 100 kHz

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	
Specifications	
PARAMETER	VALUE
Model	SMP04
Manufacturer	Rohde & Schwarz
Instrument Type	Microwave signal generator
Alias	SMP 04; R&S SMP04
Frequency Range Standard	2 GHz to 40 GHz
Frequency Range with SMP B11	10 MHz to 40 GHz
Frequency Resolution	0.1 Hz
Frequency Setting Time	less than 11 ms + 5 ms/GHz
Maximum Level Specified	greater than +10 dBm at 40 GHz
Level Accuracy at 0 dBm	less than plus/minus 0.9 dB, 10 MHz to 40 GHz
SSB Phase Noise at 10 GHz	less than minus 105 dBc (1 Hz) at 10 kHz offset
Harmonics below 1.8 GHz	less than minus 30 dBc (at less than +0 dBm)
Harmonics above 1.8 GHz	less than minus 40 dBc (at less than +0 dBm)
Subharmonics above 20 GHz	less than minus 30 dBc class
Nonharmonics 2 to 20 GHz	less than minus 60 dBc
Nonharmonics above 20 GHz	less than minus 54 dBc
AM Bandwidth	DC to 100 kHz
FM Bandwidth	DC to 5 MHz
FM Deviation above 20 GHz	up to 20 MHz class (standard FM)
Phase Modulation Bandwidth	DC to 100 kHz (option)
Pulse On Off Ratio	greater than 80 dB
Pulse Rise Fall	less than 10 ns
Minimum Pulse Width	less than 20 ns
Reference Aging Standard	1e-6 per year
Reference Aging OCXO SMP B1	less than 1e-7 per year
Reference Output	10 MHz, 1 V rms EMF, 50 ohm

PARAMETER	VALUE
Stored Setups	50
List Mode Pairs	up to 2003
Pulse Modulator Option	SMP-B12 (2 to 40 GHz class for SMP04)
Attenuator Option	SMP-B15 / SMP-B17
RF Connector Class	2.92 mm / K family (confirm on unit)

Notes
Specs from the R&S SMP Microwave Signal Generator data sheet. This file is the 40 GHz SMP04, not SMP02/22.
Confirm SMP-B11, attenuator, and pulse options. Subharmonics apply above 20 GHz because of multiplication.

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