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Data Sheet

August 13, 2026

ROHDE & SCHWARZ

Rohde & Schwarz SMP22 2-20GHz Signal Generator

Rohde & Schwarz SMP22 Microwave Signal Generator 2 GHz to 20 GHz The R&S SMP22 is the high-power 20 GHz member of the SMP microwave signal generator family. Standard range is 2 GHz to 20 GHz; option SMP-B11 extends the lower limit to 10 MHz. Specified output is greater than +20 dBm at the upper frequency, typically +29 dBm at 2 GHz and +23 dBm at 20 GHz. YIG oscillators to 20 GHz (no multiplication) give harmonics typically less than minus 50 dBc above 1.8 GHz and SSB phase noise less than minus 105 dBc (1 Hz) at 10 GHz, 10 kHz offset. The R&S SMP22 is the high-power 20 GHz member of the SMP microwave signal generator family. Standard range is 2 GHz to 20 GHz; option SMP-B11 extends the lower limit to 10 MHz. Specified output is greater than +20 dBm at the upper frequency, typically +29 dBm at 2 GHz and +23 dBm at 20 GHz. YIG oscillators to 20 GHz (no multiplication) give harmonics typically less than minus 50 dBc above 1.8 GHz and SSB phase noise less than minus 105 dBc (1 Hz) at 10 GHz, 10 kHz offset.



MODEL

Rohde & Schwarz SMP22

CALIBRATION

Available on request

CONDITION

Used

STATUS

In stock

RFQ / SKU

SMP22

LISTING

<https://aumictechlabs.com/products/smp22-2/>

NIST-traceable cal

SAM registered

30-day returns

NAICS 423690 • 811210 • 541380

This unit

The Rohde & Schwarz SMP22 is a microwave signal generator delivering 2 GHz to 20 GHz coverage with optional extension down to 10 MHz. Output power reaches +29 dBm typical at 2

GHz and +23 dBm at 20 GHz, supporting demanding RF and microwave test environments. Spectral purity is exceptional: SSB phase noise below -105 dBc (1 Hz) at 10 GHz offset, harmonics typically below -50 dBc, and non-harmonics under -60 dBc to 20 GHz. The instrument resolves frequencies to 0.1 Hz and level adjustments to 0.01 dB, with output level accuracy of ± 0.9 dB at 0 dBm across 10 MHz to 40 GHz when equipped with the precision attenuator option.

Technical Specifications

Frequency Range: 2 GHz to 20 GHz (optional extension to 10 MHz with Option B11)

Output Power: >+20 dBm typical; +29 dBm at 2 GHz; +23 dBm at 20 GHz

Frequency Resolution: 0.1 Hz, 1.0 Hz, or 0.01 Hz

Level Setting Resolution: 0.01 dB

Output Level Accuracy: ± 0.9 dB at 0 dBm (10 MHz to 40 GHz with precision attenuator)

SSB Phase Noise: <-105 dBc (1 Hz) at 10 GHz, 10 kHz offset from carrier

Harmonics: Typically 1.8 GHz

Non-harmonics: <-60 dBc up to 20 GHz; <-54 dBc above 20 GHz

Frequency Switching Time: <400 μ s; 80 dB

Interfaces: GPIB, USB, LAN; SMA(f) or 3.5 mm RF output connectors

OCXO Reference Oscillator option (B1) for enhanced frequency stability

Dimensions: 426 mm $\times$ 177 mm $\times$ 483 mm; Weight: 18 kg

Typical Applications

Production testing and R&D for telecommunications, aerospace, and defense systems

EMC and environmental measurements

Radar and communication equipment characterization

Local oscillator substitution and TWT driving

Nonlinear component testing and material characterization

Compatibility & Integration

Multiple options extend functionality: frequency extension (Option B11), pulse modulators for 2–20 GHz (B12) and 10 MHz–2 GHz (B13), RF attenuator (B15), LF generator (B2), and precision oscillator (B1). Network and USB interfaces enable remote operation and integration into automated test systems.

Features & description

From manufacturer datasheet

Features

- High-power 20 GHz YIG source; sibling SMP02 is the standard-power 20 GHz model
- AM DC to 100 kHz, FM DC to 5 MHz, optional phase DC to 100 kHz
- Optional pulse modulator with on/off ratio greater than 80 dB
- Digital RF, AF and level sweep; 50 stored setups
- ASK/FSK and 1 degree phase-offset steps
- Frequency setting less than 11 ms + 5 ms/GHz

Applications

- High-level microwave stimulus without an external amplifier
- Radar receiver and pulse-modulation tests (optional pulse modulator)
- Scalar network / spectrum analyzer tracking source
- LO substitution, mixer and TWT drive
- EMC and EMS work when B11 extends coverage to 10 MHz

SMP22 Characteristics / Specifications

PARAMETER	VALUE
Model	SMP22
Manufacturer	Rohde & Schwarz
Instrument Type	Microwave signal generator
Alias	SMP 22; R&S SMP22
Frequency Range Standard	2 GHz to 20 GHz
Frequency Range with SMP B	10 MHz to 20 GHz
Frequency Resolution	0.1 Hz
Frequency Setting Time	less than 11 ms + 5 ms/GHz (to within 1e-6)
Maximum Level Specified	greater than +20 dBm at 20 GHz
Typical Level at 2 GHz	+29 dBm
Typical Level at 20 GHz	+23 dBm
Level Accuracy at 0 dBm	less than plus/minus 0.9 dB, 10 MHz to 40 GHz family
Level Resolution	0.1 dB class
SSB Phase Noise at 10 GHz	less than minus 105 dBc (1 Hz) at 10 kHz offset
Harmonics above 1.8 GHz	typically less than minus 50 dBc
Nonharmonics to 20 GHz	less than minus 60 dBc
AM Bandwidth	DC to 100 kHz
FM Bandwidth	DC to 5 MHz
Phase Modulation Bandwidth	DC to 100 kHz (option)
Pulse On Off Ratio	greater than 80 dB (option SMP-B12)
Reference Aging Standard	1e-6 per year
Reference Aging OCXO SMP B	less than 1e-7 per year
Reference Output	10 MHz, 1 V rms EMF, 50 ohm
Stored Setups	50
RF Connector Class	precision 3.5 mm family (confirm on unit)

PARAMETER	VALUE
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	
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PARAMETER	VALUE
Model	SMP22
Manufacturer	Rohde & Schwarz
Instrument Type	Microwave signal generator
Alias	SMP 22; R&S SMP22
Frequency Range Standard	2 GHz to 20 GHz
Frequency Range with SMP B11	10 MHz to 20 GHz
Frequency Resolution	0.1 Hz
Frequency Setting Time	less than 11 ms + 5 ms/GHz (to within 1e-6)
Maximum Level Specified	greater than +20 dBm at 20 GHz
Typical Level at 2 GHz	+29 dBm
Typical Level at 20 GHz	+23 dBm
Level Accuracy at 0 dBm	less than plus/minus 0.9 dB, 10 MHz to 40 GHz family
Level Resolution	0.1 dB class
SSB Phase Noise at 10 GHz	less than minus 105 dBc (1 Hz) at 10 kHz offset
Harmonics above 1.8 GHz	typically less than minus 50 dBc
Nonharmonics to 20 GHz	less than minus 60 dBc
AM Bandwidth	DC to 100 kHz
FM Bandwidth	DC to 5 MHz
Phase Modulation Bandwidth	DC to 100 kHz (option)
Pulse On Off Ratio	greater than 80 dB (option SMP-B12)
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
Stored Setups	50
RF Connector Class	precision 3.5 mm family (confirm on unit)

Options Pulse Path: SMP-B12 2 to 20 GHz; SMP-B13 0.01 to 2 GHz; SMP-B14 pulse generator
Options Other: SMP-B1 OCXO; SMP-B2 LF generator; SMP-B5 FM/phase; SMP-B15 RF attenuator

Notes

Specs from the R&S SMP Microwave Signal Generator data sheet (SMP02/22/03/04 family). This file is the high-power SMP22, not SMP02. Confirm SMP-B11 low-band extension, attenuator, and pulse options on the configuration label.

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 ·
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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.