

ROHDE & SCHWARZ

NRP-Z21

The Rohde & Schwarz NRP-Z21 is a high-precision, three-path diode power sensor designed for continuous average power measurements. Operating across a wide frequency range of 10 MHz to 18 GHz with a 90 dB dynamic range, it delivers fast, reliable, and highly accurate RF power measurements. With its integrated USB-capable interface, it can be connected directly to a PC, laptop, or various R&S host instruments, offering exceptional versatility for both laboratory and field applications.

SPECIFICATIONS

General

Interfaces	Rohde & Schwarz NRP-Z host interface (compatible with PC via NRP-Z3/Z4 USB adapters, or directly with NRP/NRP2 power meters)
Calibration Interval	2 years

Physical

Power Supply	5 V DC via host interface
Operating Temperature	0 °C to +50 °C °C
Dimensions (W×H×D)	48 mm × 30 mm × 137 mm mm
Weight	0.14 kg
Integrated Cable Length	1.5 m

Measurement Ranges & Power Specifications

Frequency Range Minimum	10 MHz
Frequency Range Maximum	18 GHz
Power Measurement Range Minimum	-67 dBm (200 pW)
Power Measurement Range Maximum	+23 dBm (200 mW)
Maximum Continuous Input Power	400 mW (+26 dBm)
Maximum Peak Input Power	10 W (for duration < 10 μs)
Maximum DC Input Voltage	20 V

Sensor Technology & Architecture

Sensor Detection Type	Three-path diode power sensor
Measurement Modes Supported	Continuous Average
Dynamic Range	90 dB

RF Port Characteristics

Input Impedance	50 Ω
RF Connector Type	N-type
Connector Sex	Male
Maximum SWR (10 MHz to 2.4 GHz)	< 1.11
Maximum SWR (2.4 GHz to 8.0 GHz)	< 1.16
Maximum SWR (8.0 GHz to 12.4 GHz)	< 1.20
Maximum SWR (12.4 GHz to 18.0 GHz)	< 1.23

Meter Compatibility & System Integration

Compatible Power Meter Models	R&S NRP, NRP2, NRX, and various R&S signal generators/analyzers
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Environmental Parameters

Storage Temperature Range	-40 °C to +70 °C
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Performance

Measurement Speed	Up to 1500 readings/s (continuous average)
Zero Set	115 pW
Zero Drift	15 pW (over 1 hour at constant temperature)

Accuracy

Linearity	1.5% (15 °C to 35 °C)
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Inputs & Outputs

Host Connector Type	8-pole Rohde & Schwarz power sensor connector
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Measurement Uncertainty

Calibration Uncertainty (10 MHz to 100 MHz)	1.4% (0.06 dB)
Calibration Uncertainty (100 MHz to 8 GHz)	1.5% (0.07 dB)
Calibration Uncertainty (8 GHz to 12.4 GHz)	1.8% (0.08 dB)
Calibration Uncertainty (12.4 GHz to 18 GHz)	2.0% (0.09 dB)

Environmental

Operating Altitude	4600 m
Storage Altitude	15000 m
Vibration Resistance (Random)	10 Hz to 500 Hz, 1.9 g (RMS)
Shock Resistance	40 g shock spectrum

Standards & Compliance

EMC Standards	EN 61326-1, EN 55011 (Class B)
Safety Standards	EN 61010-1

Triggering

Trigger Sources	Internal, External, Software (Bus)
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TECHNOLOGY

Three-path diode sensor technology

APPLICATIONS

RF and Microwave Power Measurement

Generated by SpecAtlasHub (specatlashub.com). Specifications are compiled from available sources and are subject to change — verify critical values against the manufacturer before purchase.