

ROHDE & SCHWARZ

NRP-Z11

The Rohde & Schwarz NRP-Z11 is a high-precision three-path diode power sensor designed for continuous average, burst average, and timeslot average power measurements. Operating across a frequency range of 10 MHz to 8 GHz and a 90 dB dynamic range from -67 dBm to +23 dBm, it provides exceptionally low measurement uncertainty and excellent SWR for RF and microwave applications.

SPECIFICATIONS

General

Interfaces	Proprietary R&S 12-pin host interface (supports USB connection via NRP-Z3 or NRP-Z4 adapter)
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Physical

Power Supply	5 V DC (supplied via host instrument or USB adapter), typical current 120 mA
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Operating Temperature	0 °C to +50 °C °C
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Dimensions (W×H×D)	48 mm × 30 mm × 137 mm mm
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Measurement Ranges & Power Specifications

Frequency Range Minimum	10 MHz
Frequency Range Maximum	8 GHz
Power Measurement Range Minimum	-67 dBm
Power Measurement Range Maximum	+23 dBm
Maximum Continuous Input Power	+26 dBm (400 mW)
Maximum Peak Input Power	+40 dBm (10 W)
Maximum Peak Input Power Duration	< 10 μs
Maximum DC Input Voltage	20 V
Dynamic Range	90 dB

Sensor Technology & Architecture

Sensor Detection Type	Three-path diode sensor
Measurement Modes Supported	Continuous Average, Burst Average, Timeslot Average

RF Port Characteristics

Input Impedance	50 Ω
RF Connector Type	N
Connector Sex	Male
Maximum SWR (10 MHz to 2.4 GHz)	≤ 1.11
Maximum SWR (2.4 GHz to 8 GHz)	≤ 1.16

Accuracy, Calibration & Noise

Zero Set	50 pW
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Meter Compatibility & System Integration

Recommended Calibration Cycle	1 year
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Physical Dimensions & Weight

Cable Length	1.5 m (integrated)
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Environmental Parameters

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

Measurement Speed	Up to 1500 measurements/s (buffered mode)
Rise Time	< 13 μs
Video Bandwidth	> 20 kHz
Zero Drift	< 15 pW (within 1 hour after zeroing at constant temperature)
Measurement Noise	< 25 pW (aperture time 100 ms, 2 sigma)
Calibration Uncertainty	1.3% to 2.0% (frequency dependent)
Calibration Data Storage	Internal EEPROM
Path Crossover Levels	-20 dBm, 0 dBm
Maximum Measurement Rate	up to 1500 measurements/s (buffered average mode)

Power

Current Consumption	120 mA (typical at 5 V)
Power Consumption	0.6 W

Functionality

Trigger Sources	Internal, External (via Host or Adapter)
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Environmental

Relative Humidity (Operating)	Up to 95% at +30 °C (non-condensing)
Operating Altitude	up to 4600 m
Shock Resistance	45 g shock spectrum, compliant with MIL-STD-810F (Method 516.5, Proc. I)
Sinusoidal Vibration	5 Hz to 55 Hz, 0.15 mm amplitude; 55 Hz to 150 Hz, 0.5 g, compliant with EN 60068-2-6
Random Vibration	10 Hz to 500 Hz, 1.9 g (rms), compliant with EN 60068-2-64

Standards & Compliance

Electrical Safety	Compliant with EN 61010-1
EMC Compliance	Compliant with EN 61326-1 (Class B), EN 61326-2-1, EN 55011 (Group 1, Class B)

TECHNOLOGY

Three-path diode

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.