

ROHDE & SCHWARZ

ZNB4

The Rohde & Schwarz ZNB4 is a high-performance vector network analyzer with a frequency range of 9 kHz to 4.5 GHz. Designed for demanding RF component development, production, and servicing, the ZNB4 offers an exceptional dynamic range of up to 140 dB, superb trace noise performance, and highly stable, fast sweeps. It features a convenient 12.1-inch high-resolution touchscreen display, intuitive menu structures, and a short-depth benchtop footprint.

SPECIFICATIONS

General

Interfaces	USB, LAN, GPIB (optional)
Display	12.1" high-resolution touchscreen
Operating System	Windows 10

Physical

Power Supply	100 V to 240 V AC ($\pm 10\%$), 50 Hz to 60 Hz ($\pm 10\%$), max. 350 W
Operating Temperature	+5 °C to +40 °C °C
Dimensions (W×H×D)	461 mm × 240 mm × 351 mm (with handles and feet) mm
Weight	13.5 kg (2-port), 16.3 kg (4-port) kg

Frequency & Stimulus Specifications

Frequency Range	9 kHz to 4.5 GHz
Frequency Resolution	1 Hz
Number of Test Ports	2 or 4
Test Port Impedance	50 Ω
Output Power Range (Standard, 9 kHz to 100 MHz)	-55 dBm to +10 dBm, typically +12 dBm
Output Power Range (Standard, 100 MHz to 2.5 GHz)	-55 dBm to +13 dBm, typically +15 dBm
Output Power Range (Standard, at or above 2.5 GHz)	-55 dBm to +10 dBm, typically +13 dBm
Output Power Range (with Option B22, 9 kHz to 100 MHz)	-85 dBm to +10 dBm, typically +12 dBm
Output Power Range (with Option B22, 100 MHz to 2.5 GHz)	-85 dBm to +13 dBm, typically +15 dBm
Output Power Range (with Option B22, at or above 2.5 GHz)	-85 dBm to +10 dBm, typically +13 dBm

Hardware Interfaces & Connections

Test Port Connector Type	N female
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Measurement Speed & Settings

Number of Measurement Points per Trace	2 to 100001
Measurement Bandwidth (Standard)	1 Hz to 1 MHz
Measurement Bandwidth (with Option)	1 Hz to 10 MHz
Sample Time per Point (1 MHz BW)	860 ns
Sample Time per Point (10 MHz BW)	312 ns
Switching Time between Channels	<5 ms (with no more than 2001 points)
Switching Time between Preloaded Settings	<5 ms (with no more than 2001 points)

Receiver & Dynamic Range Specifications

Test Port Input Match (9 kHz to 20 kHz)	>10 dB (without system error correction)
Test Port Input Match (20 kHz to 4.5 GHz)	>20 dB (without system error correction)
Maximum Nominal Input Level	+13 dBm
Test Port Damage Level	+27 dBm
Test Port Damage DC Voltage	30 V
Input Noise Level (at or above 4 GHz)	<-125 dBm (at 1 kHz measurement bandwidth, normalized to 1 Hz)
Trace Noise Magnitude	<0.004 dB RMS (at 10 kHz IF bandwidth)
Temperature Stability	typically 0.01 dB/°C

Measurement Capabilities & Calibration

Measurement Capabilities	Mixed-mode S-parameters, Virtual networks (embedding/de-embedding), Time-domain analysis (DTF)
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Reference Frequency

Internal Reference Frequency Accuracy	$\pm 1 \times 10^{-6}$ per year (standard), $\pm 1 \times 10^{-7}$ per year (with Option B4)
External Reference Input Frequency	10 MHz (standard), 1 MHz to 20 MHz (with Option B4)
External Reference Output Frequency	10 MHz

Display & User Interface

Display Size	12.1 in
Display Resolution	1280 × 800 pixels

RF Performance

Phase Noise	<-110 dBc/Hz @ 10 kHz offset (1 GHz carrier, typ.)
Number of Receivers	4 (2-port configuration), 8 (4-port configuration)

Power

Power Consumption	typ. 120 W (2-port), typ. 180 W (4-port), max. 350 W
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Environmental

Storage Temperature Range	-20 °C to +70 °C
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Corrected Performance

Corrected Directivity (100 kHz to 4.5 GHz)	46 dB
Corrected Source Match (100 kHz to 4.5 GHz)	40 dB
Corrected Load Match (100 kHz to 4.5 GHz)	46 dB

Receiver

Receiver 1 dB Compression Point	+13 dBm (10 MHz to 4.5 GHz, nominal)
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Source

Harmonics	<-30 dBc (at -15 dBm source power, typical)
Spurious Emissions	<-45 dBc (at -10 dBm source power, > 10 kHz offset)

Hardware Options

Bias Tees (Option R&S ZNB-B1) Max Voltage	30 V
Bias Tees (Option R&S ZNB-B1) Max Current	250 mA
Bias Tees (Option R&S ZNB-B1) Frequency Range	100 kHz to 4.5 GHz
DC Inputs (Option R&S ZNB-B15) Number of Ports	4
DC Inputs (Option R&S ZNB-B15) Voltage Range	± 3 V / ± 10 V (auto-ranging)

Performance

Maximum Number of Channels	100
Maximum Number of Diagrams	100

Calibration

Calibration Methods	TOSM, TRL, TRM, TNA, UOSM, TOM, LRL, LRM
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TECHNOLOGY

Vector Network Analysis

APPLICATIONS

RF component development, production, and servicing

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