

ROHDE & SCHWARZ

ZNB40

The Rohde & Schwarz ZNB40 is a high-performance Vector Network Analyzer operating from 100 kHz to 40 GHz. Designed for demanding RF development and production environments, it features wide dynamic range, fast sweep speeds, outstanding temperature stability, and a modern 12.1" multi-touch touchscreen user interface.

SPECIFICATIONS

General

Interfaces	USB (Host & Device), LAN (Gigabit Ethernet), GPIB (optional), External Monitor (DVI-D / DisplayPort depending on HW), Trigger I/O, Reference I/O
Display	12.1" WXGA color TFT touchscreen, 1280 × 800 resolution

Physical

Power Supply	100 V to 240 V AC (±10%), 50 Hz to 60 Hz / 400 Hz, Max. 350 W (2-port) / 450 W (4-port)
Operating Temperature	+5 °C to +40 °C °C
Dimensions (W×H×D)	461 mm × 240 mm × 351 mm mm
Weight	16.2 kg (2-port configuration) kg

Frequency & Stimulus

Frequency range	10 MHz to 40 GHz
Frequency resolution	1 Hz
Frequency aging rate	< 1 × 10 ⁻⁶ per year (standard); < 1 × 10 ⁻⁷ per year (with precision OCXO R&S ZNB-B4)
Number of test ports	2 or 4 (hardware option dependent)
Test port impedance	50 Ω
Power resolution	0.01 dB

Receiver & Dynamic Range

Maximum RF input level (damage level)	+27 dBm
Maximum DC input voltage	30 V
Trace noise magnitude	< 0.005 dB RMS (at 10 kHz IF bandwidth)
Trace noise phase	< 0.05° RMS (at 10 kHz IF bandwidth)

Measurement Speed & Settings

Number of measurement points per sweep	1 to 100,001
IF bandwidth range	1 Hz to 10 MHz
Averaging factors	1 to 1,000,000
Sweep types	Linear, logarithmic, segmented, power

Measurement Capabilities & Calibration

Measured parameters	S-parameters, wave quantities, ratios, impedance, admittance
Display formats	dB Mag, Phase, Group Delay, Smith Chart, Polar, SWR, Linear Mag, Real, Imaginary
Supported calibration types	TOSM (SOLT), TRL, LRL, TRM, TNA, UOSM
Electronic calibration (ECal) support	Yes (compatible with R&S ZN-Zxx calibration units)
Time domain analysis capability	Yes (with option R&S ZNB-K2)
Frequency offset measurements	Yes (with option R&S ZNB-K4)

Hardware Interfaces & Connections

Test port connector type	2.92 mm, male (ruggedized)
External reference input frequency	10 MHz
External reference input level	-3 dBm to +20 dBm (at 50 Ω)
Internal reference output frequency	10 MHz
Internal reference output level	+9 dBm $\pm$ 4 dB (into 50 Ω)
External trigger input level	TTL compatible (BNC female)
GPIB interface	Optional (R&S ZNB-B10)
LAN interface	RJ-45 (10/100/1000 Base-T)
USB ports	4 $\times$ USB 2.0 (front), 4 $\times$ USB (rear, hardware version dependent)
External monitor output	DVI-D, DisplayPort (hardware version dependent)

System & Storage

Display type	12.1" WXGA color TFT touchscreen
Display resolution	1280 $\times$ 800 pixels
Internal data storage	SSD (Solid State Drive)
Data storage formats	.s1p, .s2p, .s3p, .s4p, .csv, .dat, .png, .bmp
Remote control command language	SCPI
Internal operating system	Windows (hardware version dependent)

Physical, Environmental & Power

Storage temperature range	-40 $^{\circ}$ C to +70 $^{\circ}$ C
Operating humidity range	Non-condensing, compliant with EN 60068-2-30
Line voltage frequency	50 Hz to 60 Hz / 400 Hz
Line voltage range	100 V to 240 V AC ($\pm$ 10%)
Maximum power consumption	450 W (2-port), 550 W (4-port)

Display & User Interface

Display size	12.1 in (30.7 cm)
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Source Characteristics

Harmonics	< -30 dBc (10 MHz to 100 MHz); < -35 dBc (100 MHz to 40 GHz) at -10 dBm
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Receiver Characteristics

Receiver 1 dB compression point	> +10 dBm (typ. +13 dBm) at test port
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Measurement Capabilities

Max. number of channels	100
Max. number of traces per channel	100
Max. number of diagrams	100

Hardware Options

Integrated bias tees (Option R&S ZNB-B1)	Max. 30 V, max. 250 mA (integrated as standard)
Precision frequency reference (Option R&S ZNB-B4)	Aging < 1×10^{-9} per day, temperature drift < 1×10^{-8} (option-dependent)
Direct generator/receiver access (Option R&S ZNB-B16)	Provides direct access to generator outputs and receiver inputs (option-dependent)

Rear Panel Interfaces

User port (Handler I/O)	25-pin D-Sub female connector
External trigger output	BNC female, TTL-compatible

Integrated Bias Tees

Bias tee maximum voltage (Option R&S ZNB-B1)	30 V (integrated as standard)
Bias tee maximum current (Option R&S ZNB-B1)	250 mA (integrated as standard)

Compliance

LXI compliance	LXI Version 1.4 Class C
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Calibration

Automatic calibration unit support	Supported (R&S ZN-Zxx series)
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Display

Multi-touch touchscreen	Supported
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Options

Removable hard disk option	Supported (Option R&S ZNB-B19)
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Software Options

Distance-to-fault measurements	Supported (Option R&S ZNB-K3)
Frequency conversion measurements	Supported (Option R&S ZNB-K4)
Intermodulation measurements	Supported (Option R&S ZNB-K14)
Noise figure measurements	Supported (Option R&S ZNB-K30)
In-situ calibration	Supported (Option R&S ZNB-K210)

TECHNOLOGY

Vector Network Analysis

APPLICATIONS

RF and Microwave Component Characterization

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