ROHDE&SCHWARZ
Make ideas real

R&S®ZNB3000 VECTOR NETWORK ANALYZER

Fast forward to results

Ideal for	
Production	Verification
RF component tests	Digital design tests

Key specifications		
Frequency range		9 kHz up to 26.5 GHz
Number of ports		2 or 4
Port extension	with additional switch matrix	up to 48 test ports
Sweep cycle time for 1601 points	500 kHz IF bandwidth, with correction switched off, full span	
	R&S®ZNB3004	7.7 ms
	R&S®ZNB3020	11.8 ms
Dynamic range	at 26.5 GHz	145 dB (typ.)
Output power	at 26.5 GHz	+11 dBm (typ.)

Formidable 3S metrics: speed, scalability and stability

Instrument metrics are essential for evaluating performance, making informed decisions and driving improvements for various testing requirements.

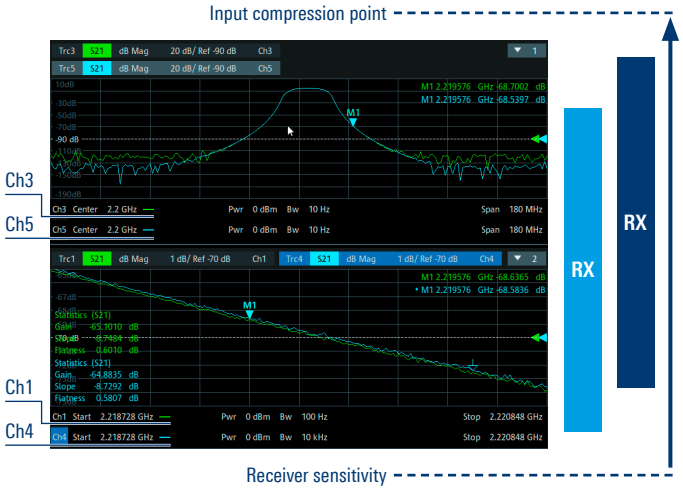
Through speed, scalability and stability, the R&S®ZNB3000 vector network analyzer (VNA) delivers in terms of measurement throughput, cost of ownership and reliability. These metrics make the instrument ideal for high-volume production that requires short ramp-up times.

Another highlight is the eco-friendly design. The quiet operation and low power consumption of the R&S®ZNB3000 enhance user comfort, promote sustainability and reduce operating costs.

Your benefit	Features of the R&S®ZNB3000
Maximum throughput and increased profitability	▶ Extremely fast measurement speed for maximum throughput ▶ Innovative built-in enhanced dynamic range mode
Future-proof investment	Scalable design: ▶ Frequency upgrade (example: 20 GHz model can be upgraded to 26.5 GHz with option) ▶ Numerous software and hardware options available to support a wide range of applications ▶ Port extension with external matrix
Reliable measurement	▶ Port-to-PCB technology for optimal user port stability ▶ State-of-the-art hardware architecture to minimize thermal drift over time

Speed – enhanced dynamic range (EDR) mode

Application example: measurement of RF filter skirt. Measurement settings: **channel 3 (Ch3):** EDR off; **channel 5 (Ch5):** EDR on; **channel 1 (Ch1):** EDR off, sweep cycle time: 1.686 s, trace flatness: 0.6029 dB; **channel 4 (Ch4):** EDR on, sweep cycle time: 19.327 ms, trace flatness: 0.5796 dB



EDR highlights

Multiple receiver architecture

- Receivers operating on same samples
- Receivers have different sensitivity levels
- Receivers have different input compression point levels

EDR technology benefits

- Maximized measurement speed
- Improved trace noise
- Enhanced dynamic range
- Built-in feature

Stability – low thermal drift

Excellent measurement reliability with negligible thermal drift. Measurement settings in this example: 20 dB attenuator, 24 hours, full span, normal lab conditions

Highlights of the R&S®ZNB3000

- Achieve maximum throughput with ultrafast measurement cycles
- Best-in-class RF performance (highest dynamic range and highest output power)
- High flexibility through frequency upgrade option and test port extension with switch matrix (up to 48 ports)
- 100 % backward compatibility with the R&S®ZNB vector network analyzer: SCPI commands, form factor, calibration kits and calibration units support
- Excellent energy efficiency thanks to low power consumption

Scalability – port and frequency extension

The R&S®ZNB3000 is compatible with the R&S®ZN-Z8x switch matrix and the R&S®OSP open switch and control platform.

Wide frequency range

- R&S®ZN-Z86: 100 MHz to 26.5 GHz
- R&S®ZN-Z86X: 100 MHz to 26.5 GHz
- R&S®OSP220/R&S®OSP230/R&S®OSP320: 0 Hz to 67 GHz

Modular port expansion

- R&S®ZN-Z8x: full crossbar with VNA
- Single unit: up to 12 or 24 test ports
- 48 test ports with two R&S®ZN-Z8x switch matrixes

Simple to extend

- R&S®ZN-Z8x works on 2-port and 4-port VNAs
- Remote: LAN, USB, direct control
- External trigger via BNC

User-friendly

- Seamless operation with VNAs
- R&S®ZN-Z8x: configurable paths
- Software: R&S®ZNrun, R&S®ZN-Z8X Toolbox

Robust and reliable design

- Easy to set up (plug&play) with R&S®ZN-Z86 and R&S®ZN-Z86X
- Durable
- Configurable and flexible thanks to the R&S®OSP

Recommended instruments and options

Designation	Type
Base units	
Vector network analyzer, 2 ports, N, 9 kHz to 4.5 GHz	R&S®ZNB3004
Vector network analyzer, 4 ports, N, 9 kHz to 4.5 GHz	R&S®ZNB3004
Vector network analyzer, 2 ports, PC 3.5, 9 kHz to 20 GHz	R&S®ZNB3020
Vector network analyzer, 4 ports, PC 3.5, 9 kHz to 20 GHz	R&S®ZNB3020

Designation	Type
Options	
Frequency upgrade of 2-port R&S®ZNB3004 to 9 GHz	R&S®ZNB3-B082
Frequency upgrade of 4-port R&S®ZNB3004 to 9 GHz	R&S®ZNB3-B084
Frequency upgrade of 2-port R&S®ZNB3020 to 26.5 GHz	R&S®ZNB3-B262
Frequency upgrade of 4-port R&S®ZNB3020 to 26.5 GHz	R&S®ZNB3-B264