Network analyzers

Type/designation	Frequency range	Dynamic range	SPA functionality	Portability
R&S®ZVH cable and antenna analyzer 	100 kHz to 3.6 GHz/8 GHz (depending on model)	▪ 100 kHz ≤ f < 300 kHz > 50 dB (nom.) ▪ 300 kHz ≤ f < 2.5 GHz > 80 dB, 100 dB (typ.) ▪ 2.5 GHz ≤ f < 6 GHz > 70 dB, 90 dB (typ.) ▪ 6 GHz ≤ f < 8 GHz > 50 dB (nom.) ▪ Transmission measurement S_{21}, S_{12} (with R&S®ZVH-K39 option) ▪ RF attenuation: 5 dB, tracking generator level: –10 dBm, RBW: 1 kHz	channel power, occupied bandwidth, TDMA power, ACLR, spectrum emission mask, 3GPP BTS spurious emission, harmonic distortion, AM modulation depth, spectrogram	▪ Handheld ▪ Ruggedized ▪ Low weight: 3 kg (6.6 lb) with battery ▪ Up to 4.5 h battery-powered operation ▪ Ideal for field applications
R&S®ZVL vector network analyzer 	9 kHz to 3 GHz/6 GHz (depending on model)	▪ > 115 dB, 123 dB (typ.) [1] ▪ Receiver step attenuators 0 dB to 30 dB (5 dB steps)	▪ AM/FM/φM demodulation ▪ Noise measurements ▪ Spectrogram ▪ Cable TV ▪ 3GPP, WLAN, WiMAX™	▪ Portable ▪ Battery pack ▪ 12 V to 28 V power supply ▪ Low weight: < 7 kg (15.4 lb) ▪ Small and compact: 37 cm (14.6 in) depth ▪ Optional internal battery or 12 V car supply system ▪ Shock-resistant housing and ergonomic carrying handle
Other instruments with network analysis capability				
R&S®FSH handheld spectrum analyzer, models .24/.28, with R&S®FSH-K42 option ▷ page 9 				

[1] In selected frequency subrange, depending on model.

R&S®ZVH Cable and Antenna Analyzer

The new benchmark for efficiency in the field

The R&S®ZVH cable and antenna analyzer is rugged, handy and designed for use in the field. Its low weight and simple operation make it indispensable for anyone who needs an efficient measuring instrument outdoors for the installation and maintenance of antenna systems.

Key facts

- Perfect tool for cable and antenna installation
- Frequency range: 100 kHz to 3.6 GHz or 8 GHz
- Easy operation with user-configurable test sequences (wizard), one-click customizable report
- 100 dB (typ.) dynamic range for filter and antenna isolation measurements
- Built-in DC voltage supply (bias) for active components such as amplifiers
- Distance-to-fault, reflection and cable loss measurements
- Vector network analyzer, vector voltmeter, transmission measurement, spectrum analyzer, spectrogram and power meter option
- Saving of measurement results on SD memory card or USB flash drive
- Remote control via LAN or USB
- Easy-to-replace lithium-ion battery for up to 4.5 h of operation
- Rugged, splashproof housing for rough work in the field
- Easy handling due to low weight (3 kg (6.6 lb) with battery) and easy-to-reach function keys

Models

Designation	Type
Cable and Antenna Analyzer, 100 kHz to 3.6 GHz	R&S®ZVH4
Cable and Antenna Analyzer, 100 kHz to 8 GHz	R&S®ZVH8

Application	How the R&S®ZVH meets your needs
Installation of transmit systems (for mobile radio, broadcasting or radiocommunications)	▪ Cable and antenna testing ▪ Wizard and reporting tool for optimized workflow ▪ Return loss and distance-to-fault measurements ▪ Two-port transmission test capability (S_{21}) for testing cables, filters and amplifiers ▪ Built-in DC voltage supply for measuring active components such as tower mounted amplifiers (TMA) ▪ Position finding using GPS receiver
Maintenance of transmit systems	▪ Cable and antenna testing ▪ Full two-port network analysis ▪ Power measurements with R&S®NRP-Zxx power sensors ▪ Support of directional power sensors to measure transmitter output power and antenna matching simultaneously ▪ RF spectrum measurements (channel power, OBW, harmonics, AM modulation depth, ACLR, etc.) ▪ Spectrogram function for interference analysis ▪ Position finding using GPS receiver ▪ R&S®ZVHView software for easy documentation
Field use	▪ Rugged housing, compact size and low weight ▪ Fast and easy to use ▪ SD memory card or USB flash drive for storing thousands of measurement results ▪ Portrait form factor for excellent handling in the field ▪ Battery-operated with long battery operating time and easy-to-replace battery

R&S®ZVL Vector Network Analyzer

Key facts

- Network analyzer and spectrum analyzer in a single box
- Digital communications standards
- Bidirectional test set for displaying all four S-parameters
- R&S®ZVL3-75: 75 Ω vector network analyzer for TV and CATV measurements
- Multitrace display for displaying all relevant parameters
- Distance-to-fault measurement for detecting cable faults
- Time domain analysis
- Operation with mouse and keyboard or hardkeys/softkeys; convenient user interface with wizards and context menus
- Undo/redo softkey for reversing up to six preceding operating steps
- USB connector for R&S®NRP-Zxx power sensors for precise power measurements
- Connector for external monitor

The cost-efficient compact class in network analysis

The R&S®ZVL is a compact, powerful network analyzer that also meets future needs and is therefore ideal for use in development, production and service.

Models/options

Designation	Type
Vector Network Analyzer	
3 GHz, 2 ports, 50 Ω	R&S®ZVL3
6 GHz, 2 ports, 50 Ω	R&S®ZVL6
3 GHz 2 ports, 75 Ω	R&S®ZVL3-75
For higher frequencies, please contact your local Rohde&Schwarz partner.	
OCXO Reference Frequency	R&S®FSL-B4
Additional Interfaces	R&S®FSL-B5
GPIB Interface	R&S®FSL-B10
Spectrum Analysis	R&S®ZVL-K1
Power Sensor Support	R&S®FSL-K9

Application	How the R&S®ZVL meets your needs
Measurements on filters, cables and amplifiers	▪ Full two-port bidirectional test set to display all four S-parameters of a two-port DUT for complete device characterization ▪ Power range from –60 dBm to +10 dBm (typ.) ▪ Dynamic range: 123 dB (typ.) ▪ Noise figure measurement option (requires R&S®ZVL-K1) ▪ Time domain and distance-to-fault option ▪ Spectrum analysis function to measure output spectrum, TOI and ACP
EMC, wireless communications and satellite applications	With its frequency range from 9 kHz to 6 GHz (5 kHz to 6 GHz (typ.)), the R&S®ZVL covers the frequency range for EMC, wireless communications and satellite applications
Power measurement	The R&S®FSL-K9 option expands the R&S®ZVL to a high-precision RF power meter when used with R&S®NRP-Zxx power sensors
Full spectrum analysis	Spectrum analyzer option with a wide scope of functions
Field use	▪ Operation independent of AC supply due to optional internal battery or 12 V car supply system ▪ Shock-resistant housing and ergonomic carrying handle ▪ Compact size, low weight