

ROHDE & SCHWARZ

ZVB20

The Rohde & Schwarz ZVB20 is a high-performance vector network analyzer covering the frequency range from 10 MHz to 20 GHz. Designed for universal measurements on both active and passive RF components, the ZVB20 excels in multiport characterization and balanced device testing. Featuring dual internal sources (in 4-port configurations), excellent dynamic range, rapid measurement speeds, and a Windows-based operating system, it is ideally suited for demanding laboratory development and high-throughput production environments.

SPECIFICATIONS

General

Display	10.4-inch TFT color screen (SVGA, 800 × 600 resolution)
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Physical

Operating Temperature	+5 °C to +40 °C (nominal) °C
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Frequency & Stimulus Specifications

Frequency Range	10 MHz to 20 GHz
Frequency Resolution	1 Hz
Frequency Accuracy	$\pm 1.0 \times 10^{-6}$
Number of Test Ports	2 or 4 (hardware dependent)
Test Port Impedance	50 Ω
Number of Internal Sources	1 (for 2-port models) / 2 (for 4-port models)
Electronic Power Sweep Range	> 50 dB
Power Resolution	0.01 dB

Receiver & Dynamic Range Specifications

Measurement Bandwidth Range (IF BW)	1 Hz to 500 kHz (in 1-2-5 steps)
Directivity	> 45 dB (typical system-error corrected)
Source Match	> 40 dB (typical system-error corrected)
Load Match	> 45 dB (typical system-error corrected)

Measurement Speed & Settings

Number of Measurement Points	1 to 20001 per trace
Sweep Types	Linear frequency, Logarithmic frequency, Segmented frequency, Power sweep

Measurement Capabilities & Calibration

Measured Parameters	S-parameters (mixed-mode, single-ended), Impedance (Z), Admittance (Y), Stability factors
Display Formats	Log Magnitude, Phase, Group Delay, Smith Chart, Polar, SWR, Linear Magnitude, Real, Imaginary
Supported Calibration Types	TOSM (SOLT), TRL, LRL, TOM, TRM, TNA, UOSM
Error Correction Levels	Full 1-port, Full 2-port, Full 3-port, Full 4-port, One-path 2-port, Response
Automatic Calibration Support	Supported via optional external Automatic Calibration Units
Balanced Measurements	Supported (mixed-mode S-parameters for differential components)
Time Domain Analysis	Supported as an option (via fast Fourier transform)
Frequency Offset Mode	Supported (for mixer/converter transmission measurements)
Embedding / De-embedding	Supported (virtual matching networks simulation)
Trace Mathematics	Supported (addition, subtraction, multiplication, division with memory traces)
Limit Lines	Supported (upper/lower, segment-by-segment limit testing)

Hardware Interfaces & Connections

Test Port Connector Type	3.5 mm (male), ruggedized
External Reference Input Frequency	10 MHz
External Reference Input Level	-4 dBm to +20 dBm
Internal Reference Output Frequency	10 MHz
Internal Reference Output Level	+10 dBm (typical)
External Trigger Input/Output	BNC (female)
LAN Interface	RJ-45 (10/100/1000 Base-T Gigabit Ethernet)
GPIB Interface	IEEE-488 (24-pin)

System, Controller & Storage

Display Resolution	800 x 600 pixels (SVGA)
Internal Storage Medium	Internal Hard Disk Drive (standard)
Data Storage Formats	Touchstone (.s1p, .s2p, .s3p, .s4p), CSV, PNG, BMP
Remote Control Language	SCPI (Standard Commands for Programmable Instruments)
Internal Operating System	Windows-based operating system

Physical, Environmental & Power

Storage Temperature Range	-40 °C to +70 °C
Safety Certifications	IEC/EN 61010-1 compliance
EMC Compliance	EN 55011 / CISPR 11 Class A, EN 61326-1

Source Performance

Nominal Output Power Range	-40 dBm to +10 dBm (typ. +13 dBm)
Output Level Accuracy	< 1.0 dB (typ. 0.3 dB)
Harmonics	< -30 dBc (at 0 dBm output power)
Non-Harmonic Spurious	< -45 dBc (typ. < -60 dBc, > 100 kHz offset)
SSB Phase Noise	<-110 dBc/Hz (at 1 GHz, 10 kHz offset)

Receiver Performance

Max RF Input Level (Damage Level)	+27 dBm
Max DC Voltage at Test Port	30 V

Measurement Capabilities

Max Number of Channels	> 100
Max Number of Traces	> 100

Receiver Specifications

Number of Receivers	4 (2-port model), 8 (4-port model)
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Display

Display Size	8.4 in
Display Type	Color TFT

Interfaces

USB Interfaces	4 × USB 2.0 (2 front, 2 rear)
External VGA Port	15-pin D-Sub female
User Port	25-pin D-Sub (for auxiliary signals)

Inputs & Outputs

Reference I/O Connectors	BNC female
External Trigger I/O Connectors	BNC female

TECHNOLOGY

Vector Network Analysis

APPLICATIONS

RF component testing, multiport and balanced device measurements, mixer and active device 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.