R&S®ZNBT8
Vector Network Analyzer
Specifications

ROHDE&SCHWARZ

Test & Measurement

Data Sheet | 02.00

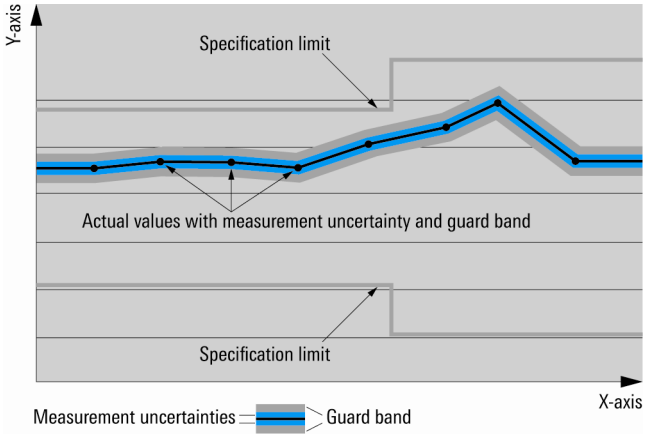
CONTENTS

Definitions

General
Product data applies under the following conditions:

- Three hours storage at ambient temperature followed by 60 minutes warm-up operation
- Specified environmental conditions met
- Recommended calibration interval adhered to
- All internal automatic adjustments performed, if applicable
- Unless stated otherwise, specifications apply to test ports and a nominal source power of –10 dBm

Specifications with limits
Represent warranted product performance by means of a range of values for the specified parameter. These specifications are marked with limiting symbols such as <, ≤, >, ≥, ±, or descriptions such as maximum, limit of, minimum. Compliance is ensured by testing or is derived from the design. Test limits are narrowed by guard bands to take into account measurement uncertainties, drift and aging, if applicable.



Specifications without limits
Represent warranted product performance for the specified parameter. These specifications are not specially marked and represent values with no or negligible deviations from the given value (e.g. dimensions or resolution of a setting parameter). Compliance is ensured by design.

Typical data (typ.)
Characterizes product performance by means of representative information for the given parameter. When marked with <, > or as a range, it represents the performance met by approximately 80 % of the instruments at production time. Otherwise, it represents the mean value.

Nominal values (nom.)
Characterize product performance by means of a representative value for the given parameter (e.g. nominal impedance). In contrast to typical data, a statistical evaluation does not take place and the parameter is not tested during production.

Measured values (meas.)
Characterize expected product performance by means of measurement results gained from individual samples.

Uncertainties
Represent limits of measurement uncertainty for a given measurand. Uncertainty is defined with a coverage factor of 2 and has been calculated in line with the rules of the Guide to the Expression of Uncertainty in Measurement (GUM), taking into account environmental conditions, aging, wear and tear.

Device settings and GUI parameters are indicated as follows: “parameter: value”.

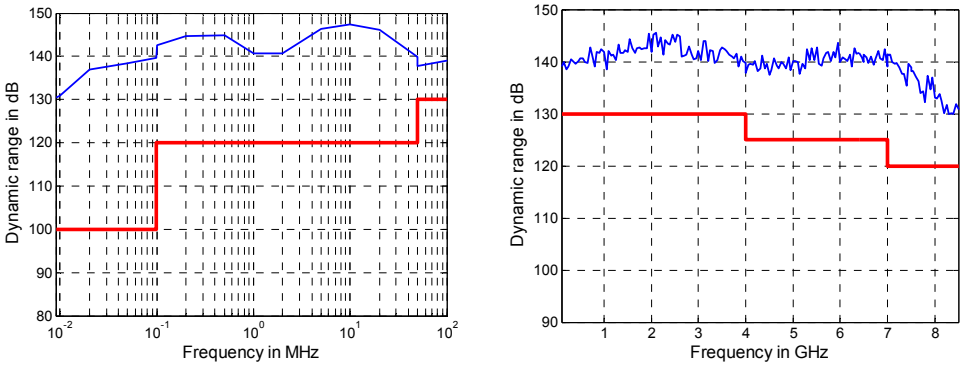
Typical data as well as nominal and measured values are not warranted by Rohde & Schwarz.

Measurement range

Impedance		50 Ω
Test port connector		N female
Number of test ports (the R&S®ZNBT8 supports simultaneous data acquisition at all test ports)	base unit	4
	with R&S®ZNBT8-B108 option (additional ports 5 to 8)	8
	with R&S®ZNBT8-B112 option (additional ports 9 to 12)	12
	with R&S®ZNBT8-B116 option (additional ports 13 to 16)	16
	with R&S®ZNBT8-B120 option (additional ports 17 to 20)	20
	with R&S®ZNBT8-B124 option (additional ports 21 to 24)	24
Frequency range		9 kHz to 8.5 GHz

Static frequency accuracy		(time since last adjustment × aging rate) + temperature drift + calibration accuracy
Aging per year	standard	$\pm 1 \times 10^{-6}$
	with R&S®ZNBT8-B4 precision frequency reference option	$\pm 1 \times 10^{-7}$
Temperature drift (0 °C to +40 °C)	standard	$\pm 1 \times 10^{-6}$
	with R&S®ZNBT8-B4 precision frequency reference option	$\pm 1 \times 10^{-8}$
Achievable initial calibration accuracy	standard	$\pm 5 \times 10^{-7}$
	with R&S®ZNB-B4 precision frequency reference option	$\pm 5 \times 10^{-8}$

Frequency resolution		1 Hz
Number of measurement points [1]	per trace	2 to 100001
Measurement bandwidth	1/1.5/2/3/5/7 steps	
	without optional increased bandwidth	1 Hz to 1 MHz
	with optional increased bandwidth	1 Hz to 10 MHz
Dynamic range at all ports [2] (without optional step attenuators)	9 kHz to 100 kHz	> 100 dB, typ. 122 dB
	100 kHz to 50 MHz	> 120 dB, typ. 138 dB
	50 MHz to 4 GHz	> 130 dB, typ. 140 dB
	4 GHz to 7 GHz	> 125 dB, typ. 138 dB
	7 GHz to 8.5 GHz	> 120 dB, typ. 130 dB



Dynamic range in dB versus frequency.

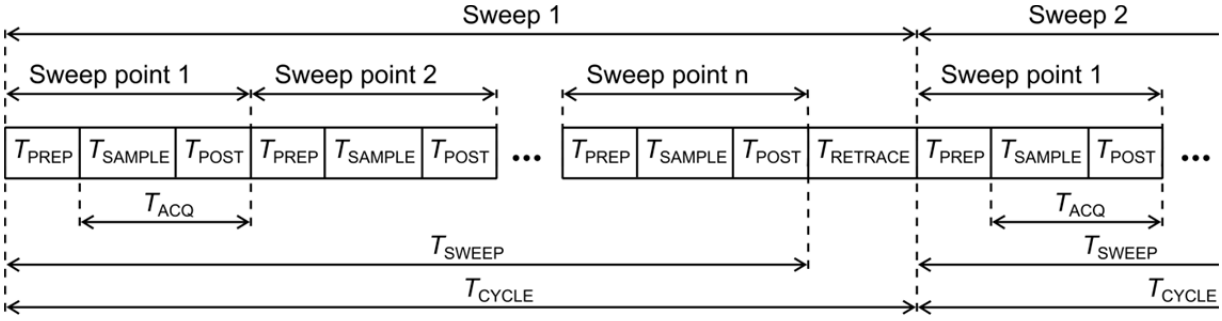
[1] The maximum number of sweep points may vary depending on the number of ports involved in the measurement.

[2] The dynamic range is defined as the difference between the actual maximum source power and the RMS value of the data trace of the transmission magnitude, which is produced by noise and crosstalk with the test ports short-circuited. The specification applies at 10 Hz measurement bandwidth, without system error correction. The dynamic range can be increased by using a measurement bandwidth of 1 Hz. Crosstalk does not limit the dynamic range.

Measurement speed

Measured with firmware version 2.10 and Windows 7/64 bit.

Measurement time	for 201 measurements points, with 200 MHz span, 1 MHz measurement bandwidth			
		T_{SWEEP}		T_{CYCLE}
	with 900 MHz center frequency	< 2.5 ms		< 5.5 ms
	with 5.1 GHz center frequency	< 2.0 ms		< 5.5 ms
Acquisition time per point (T_{ACQ})	1 MHz measurement bandwidth, CW mode	7.5 µs		
Sampling time per point (T_{SAMPLE}) IF filter: normal	at 1 MHz measurement bandwidth	860 ns		
	at 10 MHz measurement bandwidth	312 ns		
Time for measurement and data transfer	for 201 measurements points, with 800 MHz start frequency, 1 GHz stop frequency, 1 MHz measurement bandwidth [3]	IEC/IEEE	VXI11	RSIB
			over 1 Gbit/s LAN	
		typ. 3.8 ms	typ. 2.9 ms	typ. 2.8 ms
Data transfer time	for 201 measurements points (magnitude)	typ. 1.3 ms	typ. 0.38 ms	typ. 0.3 ms
Switching time between channels	with a maximum of 2001 points	< 8 ms		
Switching time between two preloaded instrument settings	with a maximum of 2001 points	< 8 ms		



T_{PREP}	Preparation time required to set up the internal hardware components
T_{SAMPLE}	Sampling time (approximately equal to the settling time of the digital filters)
T_{POST}	Time required for hardware postprocessing
T_{ACQ}	Aquisition time (T_{SAMPLE} + T_{POST})
T_{SWEEP}	Time required for one sweep
$T_{RETRACE}$	Time between two sweeps
T_{CYCLE}	Sweep cycle time (T_{SWEEP} + $T_{RETRACE}$)

Internal measuring process.

[3] In continuous mode, no additional time for data transfer is needed, as this occurs simultaneously during the measurement.

Typical sweep times versus number of measurement points [4]					
Number of measurement points	**51**	**201**	**401**	**1601**	**5001**
800 MHz start frequency, 1 GHz stop frequency, AGC LOW DIST, 1 kHz measurement bandwidth					
With correction switched off	54 ms	202 ms	339 ms	1525 ms	4758 ms
With 4-port TOSM calibration	206 ms	798 ms	1586 ms	6093 ms	19022 ms
With 24-port TOSM calibration	1241 ms	4803 ms	9544 ms	36607 ms [5]	114386 ms [5]
800 MHz start frequency, 1 GHz stop frequency, AGC AUTO, 100 kHz measurement bandwidth					
With correction switched off	5 ms	9 ms	13 ms	36 ms	105 ms
With 4-port TOSM calibration	10 ms	28 ms	43 ms	136 ms	412 ms
With 24-port TOSM calibration	102 ms	337 ms	603 ms	1683 ms [5]	5479 ms [5]
800 MHz start frequency, 1 GHz stop frequency, AGC AUTO, 1 MHz measurement bandwidth					
With correction switched off	4 ms	6 ms	7 ms	17 ms	43 ms
With 4-port TOSM calibration	8 ms	15 ms	20 ms	60 ms	165 ms
With 24-port TOSM calibration	86 ms	252 ms	473 ms	1469 ms [5]	4587 ms [5]
100 kHz start frequency, 4.5 GHz stop frequency, AGC LOW DIST, 1 kHz measurement bandwidth					
With correction switched off	57 ms	205 ms	398 ms	1565 ms	4870 ms
With 4-port TOSM calibration	219 ms	804 ms	1583 ms	6250 ms	19467 ms
With 24-port TOSM calibration	1319 ms	4845 ms	9527 ms	37565 ms [5]	117262 ms [5]
100 kHz start frequency, 4.5 GHz stop frequency, AGC AUTO, 100 kHz measurement bandwidth					
With correction switched off	7 ms	12 ms	18 ms	51 ms	151 ms
With 4-port TOSM calibration	20 ms	41 ms	63 ms	196 ms	597 ms
With 24-port TOSM calibration	156 ms	400 ms	724 ms	1998 ms [5]	6510 ms [5]
100 kHz start frequency, 4.5 GHz stop frequency, AGC AUTO, 1 MHz measurement bandwidth					
With correction switched off	6 ms	9 ms	12 ms	30 ms	66 ms
With 4-port TOSM calibration	17 ms	28 ms	41 ms	114 ms	254 ms
With 24-port TOSM calibration	137 ms	339 ms	605 ms	1542 ms [5]	4727 ms [5]
100 kHz start frequency, 8.5 GHz stop frequency, AGC LOW DIST, 1 kHz measurement bandwidth					
With correction switched off	59 ms	206 ms	400 ms	1564 ms	4860 ms
With 4-port TOSM calibration	225 ms	812 ms	1590 ms	6249 ms	19433 ms
With 24-port TOSM calibration	1351 ms	4892 ms	9570 ms	37554 ms [5]	117053 ms [5]
100 kHz start frequency, 8.5 GHz stop frequency, AGC AUTO, 100 kHz measurement bandwidth					
With correction switched off	8 ms	13 ms	20 ms	53 ms	142 ms
With 4-port TOSM calibration	23 ms	47 ms	70 ms	202 ms	561 ms
With 24-port TOSM calibration	173 ms	436 ms	762 ms	2039 ms [5]	6307 ms [5]
100 kHz start frequency, 8.5 GHz stop frequency, AGC AUTO, 1 MHz measurement bandwidth					
With correction switched off	7 ms	10 ms	14 ms	32 ms	76 ms
With 4-port TOSM calibration	20 ms	34 ms	47 ms	118 ms	296 ms
With 24-port TOSM calibration	157 ms	369 ms	639 ms	1541 ms [5]	5113 ms [5]

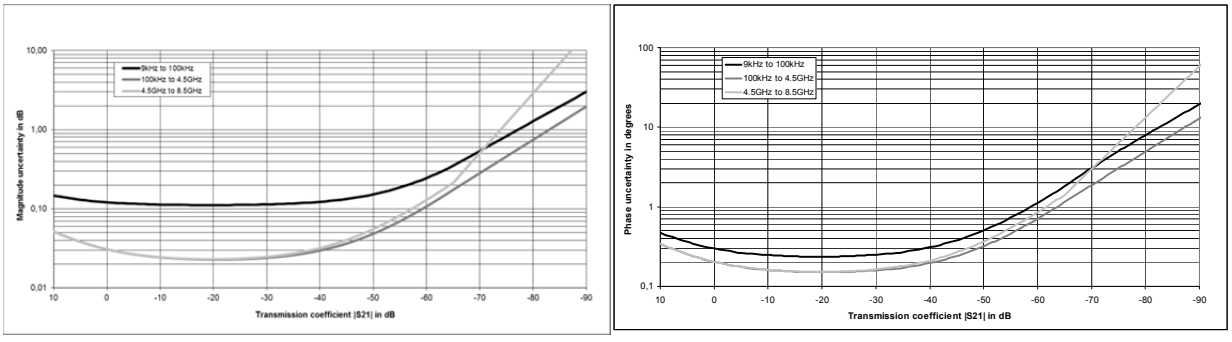
[4] Sweep time is to be understood as cycle time; static frequency accuracy of the instrument applies; measured with firmware version 2.00 and Windows 7/64 bit.

[5] 64-bit firmware required.

Measurement accuracy

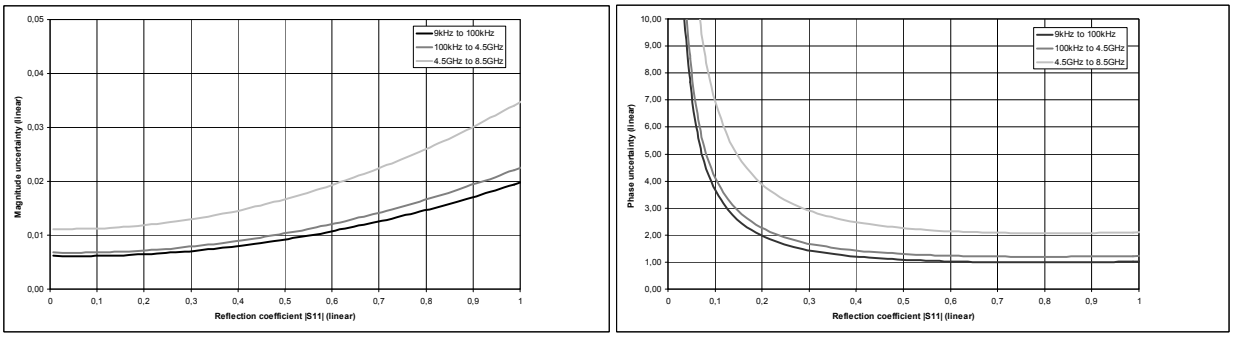
This data is valid between +18 °C and +28 °C, provided the temperature has not varied by more than 1 °C after calibration. Validity of the data is conditional on the use of an R&S®ZV-Z270 calibration kit. This calibration kit is used to achieve the effective system data specified below. Frequency points, measurement bandwidth and sweep time have to be identical for measurement and calibration (no interpolation allowed).

Accuracy of transmission measurements		
Above 9 kHz	+5 dB to –35 dB	< 0.05 dB or < 0.5°
	–35 dB to –50 dB	< 0.1 dB or < 1°
	–50 dB to –65 dB	< 0.2 dB or < 2°
Specifications are based on a matched DUT, a measurement bandwidth of 10 Hz and a nominal source power of –10 dBm.		



Typical accuracy of transmission magnitude and transmission phase measurements for the R&S®ZNBT8 in the frequency range from 9 kHz to 8.5 GHz.
Analysis conditions: $S_{11} = S_{22} = 0$, cal. power –10 dBm, meas. power –10 dBm.

Accuracy of reflection measurements		
9 kHz to 50 MHz	0 dB to –15 dB	< 0.3 dB or < 2°
	–15 dB to –25 dB	< 0.8 dB or < 6°
	–25 dB to –35 dB	< 3.0 dB or < 17°
50 MHz to 4 GHz	0 dB to –15 dB	< 0.2 dB or < 2°
	–15 dB to –25 dB	< 0.6 dB or < 4°
	–25 dB to –35 dB	< 2.0 dB or < 12°
4 GHz to 8.5 GHz	0 dB to –15 dB	< 0.3 dB or < 2°
	–15 dB to –25 dB	< 0.8 dB or < 6°
	–25 dB to –35 dB	< 3.0 dB or < 17°
Specifications are based on an isolating DUT, a measurement bandwidth of 10 Hz and a nominal source power of –10 dBm.		



Typical accuracy of reflection magnitude and reflection phase measurements for the R&S®ZNBT8 in the frequency range from 9 kHz to 8.5 GHz.
Analysis conditions: $S_{12} = S_{21} = 0$, cal. power –10 dBm, meas. power –10 dBm.

Effective system data

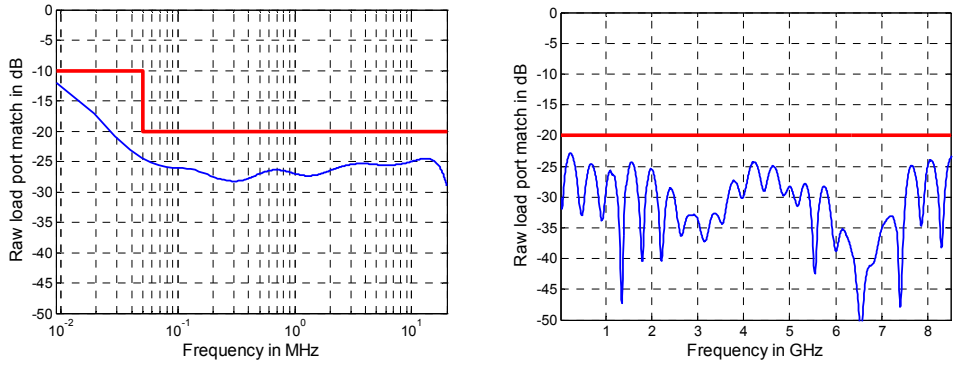
This data is valid between +18 °C and +28 °C, provided the temperature has not varied by more than 1 °C after calibration. Frequency points, measurement bandwidth and sweep time have to be identical for measurement and calibration (no interpolation allowed).The data is based on a measurement bandwidth of 10 Hz and system error calibration with an R&S®ZV-Z270 calibration kit.

	9 kHz to 100 kHz	**100 kHz to 4.5 GHz**	**4.5 GHz to 8.5 GHz**
Directivity	≥ 46 dB	≥ 45 dB	≥ 40 dB
Source match	≥ 41 dB	≥ 40 dB	≥ 36 dB
Load match	≥ 44 dB	≥ 45 dB	≥ 40 dB
Reflection tracking	≤ 0.02 dB	≤ 0.02 dB	≤ 0.05 dB
Transmission tracking	≤ 0.028 dB	≤ 0.018 dB	≤ 0.09 dB

Factory-calibrated system data

This data is valid between +18 °C and +28 °C. The data is based on a source power of –10 dBm and a measurement bandwidth of 1 kHz.

Directivity	9 kHz to 50 kHz	> 20 dB, typ. 35 dB
	50 kHz to 4.5 GHz	> 30 dB, typ. 50 dB
	4.5 GHz to 8.5 GHz	> 30 dB, typ. 50 dB
Source match	9 kHz to 50 kHz	> 20 dB, typ. 35 dB
	50 kHz to 4.5 GHz	> 30 dB, typ. 50 dB
	4.5 GHz to 8.5 GHz	> 30 dB, typ. 50 dB
Reflection tracking	9 kHz to 8.5 GHz	< 0.5 dB, typ. 0.1 dB
Transmission tracking	9 kHz to 8.5 GHz	< 0.5 dB, typ. 0.1 dB
Load match	9 kHz to 50 kHz	> 10 dB, typ. 15 dB
	50 kHz to 8.5 GHz	> 20 dB, typ. 25 dB



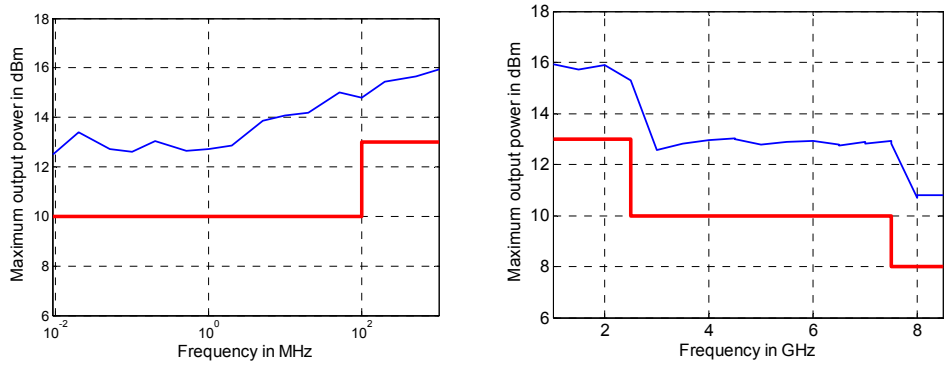
Raw load port match versus frequency.

Trace stability			
Trace noise magnitude (RMS)	at 0 dBm source power, 0 dB reflection	IF bandwidth	
	100 kHz to 100 MHz	10 kHz	< 0.004 dB, typ. 0.001 dB
	100 MHz to 8.5 GHz	10 kHz	< 0.004 dB, typ. 0.002 dB
Trace noise phase (RMS)	at 0 dBm source power, 0 dB reflection	IF bandwidth	
	100 kHz to 100 MHz	10 kHz	< 0.035°, typ. 0.005°
	100 MHz to 8.5 GHz	10 kHz	< 0.035°, typ. 0.02°
Temperature dependence	at 0 dB transmission or reflection		
	9 kHz to 4.5 GHz	magnitude	typ. 0.01 dB/K
		phase	typ. 0.15°/K
	4.5 GHz to 8.5 GHz	magnitude	typ. 0.04 dB/K
		phase	typ. 0.8°/K

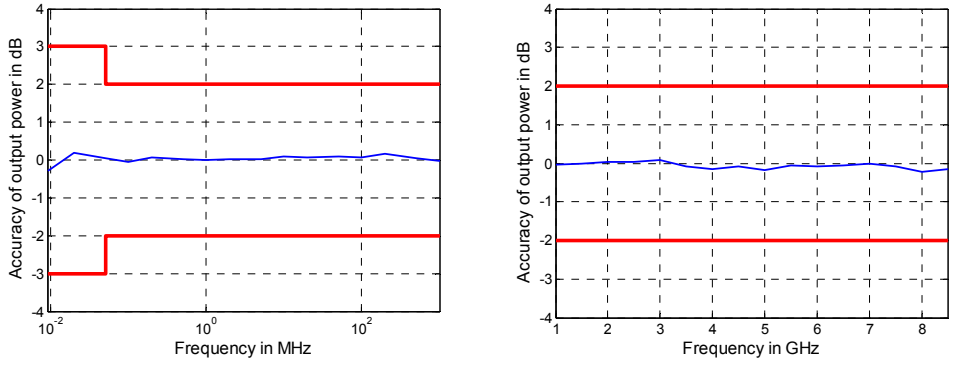
Test port output

This data is valid from +18 °C to +28 °C.

Power range	without R&S®ZNBT8-B21/-B22/-B23/-B24/-B25/-B26 extended power range option	
	9 kHz to 100 MHz	–55 dBm to +10 dBm, typ. +12 dBm
	100 MHz to 2.5 GHz	–55 dBm to +13 dBm, typ. +15 dBm
	2.5 GHz to 7.5 GHz	–55 dBm to +10 dBm, typ. +13 dBm
	7.5 GHz to 8.5 GHz	–55 dBm to +8 dBm, typ. +12 dBm
	with R&S®ZNBT8-B21/-B22/-B23/-B24/-B25/-B26 extended power range option	
	9 kHz to 100 MHz	–85 dBm to +10 dBm, typ. +12 dBm
	100 MHz to 2.5 GHz	–85 dBm to +13 dBm, typ. +15 dBm
	2.5 GHz to 7.5 GHz	–85 dBm to +10 dBm, typ. +13 dBm
	7.5 GHz to 8.5 GHz	–85 dBm to +8 dBm, typ. +12 dBm
Power accuracy	source power –10 dBm	
	9 kHz to 50 kHz	< 3 dB
	50 kHz to 8.5 GHz	< 2 dB, typ. 0.5 dB
Power linearity	referenced to –10 dBm	
	100 kHz to 8.5 GHz	
	source power ≥ –55 dBm	< 1 dB
	source power < –55 dBm	< 2 dB
Power resolution		0.01 dB
Harmonics	at 0 dBm	
	20 kHz to 100 MHz	< –20 dBc, typ. < –30 dBc
	100 MHz to 8.5 GHz	< –25 dBc, typ. < –35 dBc



Maximum output power in dBm versus frequency.



Output power accuracy in dB versus frequency.

Test port input

Match	without system error correction	
	9 kHz to 50 kHz	> 10 dB
	50 kHz to 8.5 GHz	> 20 dB
Maximum nominal input level		+13 dBm
Power measurement accuracy at –10 dBm without power calibration	9 kHz to 100 kHz	< 2 dB
	100 kHz to 8.5 GHz	< 1 dB
Receiver linearity referenced to –10 dBm	for +20 dB to +10 dB	
	9 kHz to 7.5 GHz	< 0.2 dB
	for +18 dB to +10 dB	
	7.5 GHz to 8.5 GHz	< 0.2 dB
	for +10 dB to –40 dB	
	9 kHz to 8.5 GHz	< 0.1 dB
Damage level		+27 dBm
Damage DC voltage		30 V
Noise level at 1 kHz measurement bandwidth, normalized to 1 Hz	9 kHz to 50 kHz	< –115 dBm (1 Hz)
	50 kHz to 50 MHz	< –120 dBm (1 Hz)
	50 MHz to 4 GHz	< –130 dBm (1 Hz)
	4 GHz to 6.5 GHz	< –125 dBm (1 Hz)
	6.5 GHz to 8.5 GHz	< –120 dBm (1 Hz)
The noise level is defined as the RMS value of the specified noise floor.		

Additional front panel connectors

USB	(two) universal serial bus connectors for connecting USB devices (USB 2.0); two additional USB connectors on rear panel

Display

Screen	3.91 cm (1.54") diagonal amber OLED display
Resolution	128 × 64

Rear panel connectors

LAN	local area network connector, 8-pin, RJ-45

USB	(two) universal serial bus connectors for connecting USB devices (USB 2.0); two additional USB connectors on front panel

REF IN	input for external frequency reference signal	
Connector type		BNC, female
Input frequency range		1 MHz to 20 MHz in steps of 1 MHz
Maximum permissible deviation		1 kHz
Input power		–10 dBm to +15 dBm
Input impedance		50 Ω

REF OUT	output for external frequency reference signal	
Connector type		BNC, female
Output frequency		10 MHz
Output frequency accuracy		80 Hz
Output power		+9 dBm ± 4 dB at 50 Ω

MONITOR	DVI connector (for external monitor)

USER CONTROL	several control and trigger signals, 25-pin D-Sub, 3.3 V TTL, for controlling external generators, for limit checks, sweep signals, etc.	
CHANNEL BIT 0 to CHANNEL BIT 3	pin 8 to pin 11 (outputs)	channel-specific, user-configurable bits
CHANNEL BIT 4 to CHANNEL BIT 7	pin 16 to pin 19 (outputs)	channel-specific, user-configurable bits
DRIVE PORT 1 to DRIVE PORT 4	pin 16 to pin 19 (outputs)	indicates drive ports (can alternatively be used for channel bits 4 to 7)
PASS 1 and PASS 2	pin 13 and pin 14 (outputs)	pass/fail results of limit checks
BUSY	pin 4 (output)	measurements running
READY FOR TRIGGER	pin 6 (output)	ready for trigger
EXT GEN TRIGGER	pin 21 (output)	control signal for external generator
EXT GEN BLANK	pin 22 (input)	handshake signal from external generator
EXTERNAL TRIGGER	pin 2 (input)	first trigger input for analyzer, 5 V tolerant
EXTERNAL TRIGGER 2	pin 25 (input)	second trigger input for analyzer, 5 V tolerant

EXT TRIG IN	trigger input for analyzer	
Connector type		BNC, female
TTL signal (edge-triggered or level-triggered)		3 V, 5 V tolerant
Polarity (selectable)		positive or negative
Minimum pulse width		1 µs
Input impedance		> 10 kΩ

EXT TRIG OUT	trigger output of analyzer	
Connector type		BNC, female
Logic high		typ. 3.3 V

Options

R&S®ZNBT8-B4

Precision reference frequency		
Static frequency accuracy		(time since last adjustment × aging rate) + temperature drift + calibration accuracy
Aging per year	with R&S®ZNBT8-B4 precision frequency reference option	$\pm 1 \times 10^{-7}$
Temperature drift (0 °C to +50 °C)	with R&S®ZNBT8-B4 precision frequency reference option	$\pm 1 \times 10^{-8}$
Achievable initial calibration accuracy	with R&S®ZNBT8-B4 precision frequency reference option	$\pm 5 \times 10^{-8}$

R&S®ZNBT8-B10

GPIB interface	remote control interface in line with IEEE 488, IEC 60625; 24-pin

R&S®ZNBT8-B12

Device control	
DIRECT CTRL interface	direct control bus output

R&S®ZNBT8-B21/-B22/-B23/-B24/-B25/-B26

Extended power range		
Frequency range		9 kHz to 8.5 GHz
Power range	9 kHz to 100 MHz	–85 dBm to +10 dBm, typ. +12 dBm
	100 MHz to 2.5 GHz	–85 dBm to +13 dBm, typ. +15 dBm
	2.5 GHz to 7.5 GHz	–85 dBm to +10 dBm, typ. +13 dBm
	7.5 GHz to 8.5 GHz	–85 dBm to +8 dBm, typ. +12 dBm

R&S®ZNBT8-B361/-B362/-B363/-B364/-B365/-B366

Receiver step attenuators		
Frequency range		9 kHz to 8.5 GHz
Attenuation		0 dB to 30 dB in 10 dB steps

R&S®ZNBT8-B81

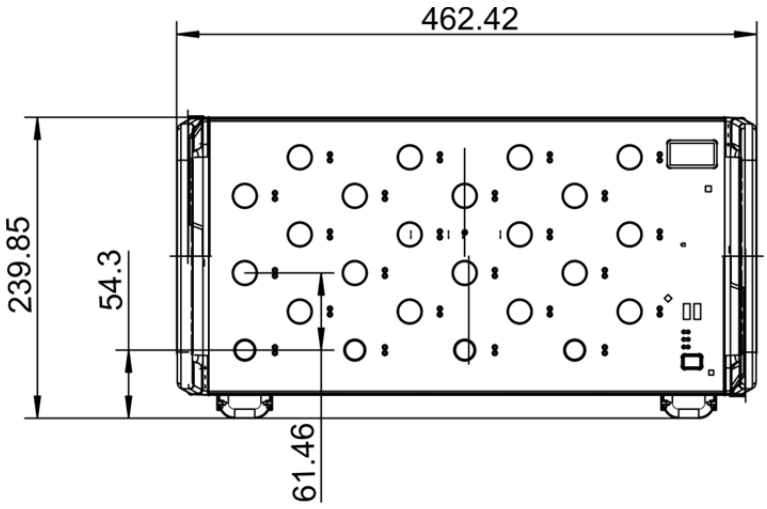
This data is valid from +18 °C to +28 °C and at a maximum measurement bandwidth of 10 kHz.

DC inputs		
Number of ports		4
Connector type		BNC, female
Voltage range		±20 V, ±3 V, ±0.3 V
Measurement accuracy	±20 V	1 % of reading + 0.01 V
	±3 V	1 % of reading + 0.001 V
	±0.3 V	1 % of reading ± 0.001 V
Input impedance		≥ 1 MΩ
Damage voltage		30 V

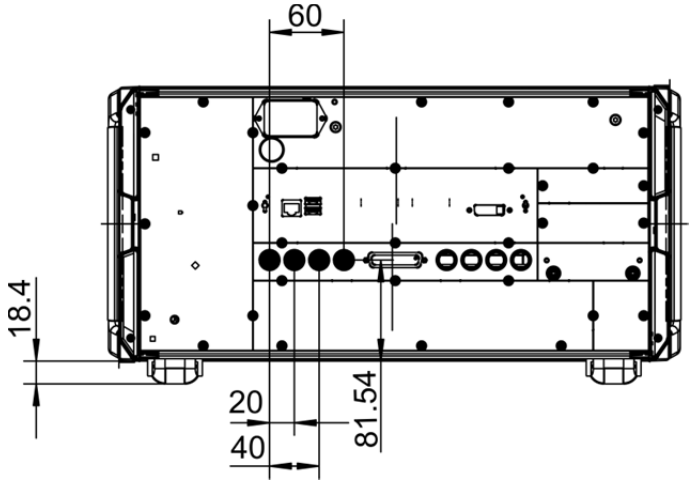
General data

Temperature loading		in line with IEC 60068-2-1 and IEC 60068-2-2
	operating temperature range	+5 °C to +40 °C
	storage temperature range	–20 °C to +60 °C
Damp heat		+40 °C at 85 % rel. humidity, in line with IEC 60068-2-30
Altitude	operating environment	max. 2000 m
	storage environment	max. 4500 m
Mechanical resistance	vibration, sinusoidal	5 Hz to 55 Hz, 0.15 mm amplitude constant, 55 Hz to 150 Hz, 0.5 g constant, in line with IEC 60068-2-6
	vibration, random	10 Hz to 300 Hz, acceleration 1.2 g (RMS) in line with IEC 60068-2-64
	shock	40 g shock spectrum, in line with MIL-STD-810E, method 516.4, procedure I
Calibration interval		1 year
EMC	RF emission	in line with CISPR 11/EN 55011 group 1 class A (for a shielded test setup); instrument complies with the emission requirements stipulated by EN 55011 and EN 61326-1 class A; this means that the instrument is suitable for use in industrial environments
	immunity	in line with EMC Directive 2004/108/EC including: EN 61326-1 (immunity test requirement for industrial environment, EN 61326 table 2), EN 61326-2-1, EN 61000-3-2, EN 61000-3-3
Safety		in line with IEC 61010-1, EN 61010-1 and UL 61010-1
Power supply		100 V to 240 V at 50 Hz to 60 Hz and 400 Hz, max. 10 A to 4.2 A, respectively
Power consumption	with 4 ports	max. 1000 W, typ. 199 W
	with 8 ports	max. 1000 W, typ. 267 W
	with 12 ports	max. 1000 W, typ. 357 W
	with 16 ports	max. 1000 W, typ. 432 W
	with 20 ports	max. 1000 W, typ. 517 W
	with 24 ports	max. 1000 W, typ. 586 W
Test mark		VDE, GS, $_{c}$CSA$_{US}$, CE conformity mark
Dimensions	W × H × D	462 mm × 238 mm × 611 mm (18.2 in × 9.4 in × 24.1 in)
Weight	with 4 ports	typ. 22 kg (48.5 lb)
	with 8 ports	typ. 24 kg (52.9 lb)
	with 12 ports	typ. 29 kg (63.9 lb)
	with 16 ports	typ. 31 kg (68.3 lb)
	with 20 ports	typ. 36 kg (79.4 lb)
	with 24 ports	typ. 38 kg (83.8 lb)
Shipping weight	with 4 ports	typ. 28 kg (61.7 lb)
	with 8 ports	typ. 30 kg (66.1 lb)
	with 12 ports	typ. 35 kg (77.2 lb)
	with 16 ports	typ. 37 kg (81.6 lb)
	with 20 ports	typ. 42 kg (92.6 lb)
	with 24 ports	typ. 44 kg (97.0 lb)

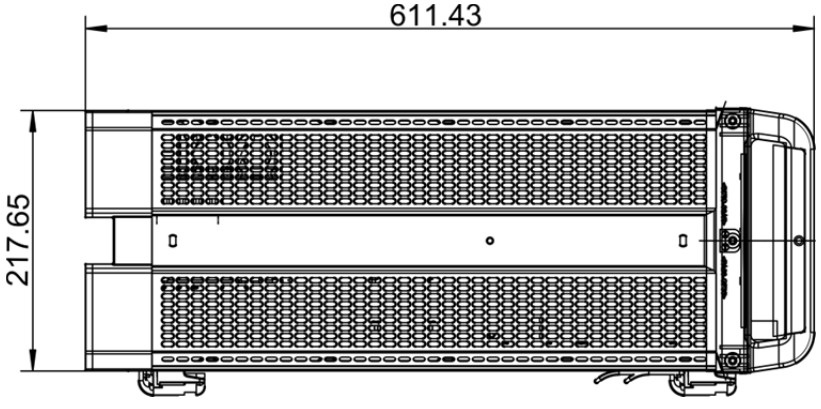
Dimensions (in mm)



Front view of the R&S®ZNBT8.



Rear view of the R&S®ZNBT8.



Side view of the R&S®ZNBT8.

Ordering information

Designation	Type	Order No.
Base unit		
Vector Network Analyzer, 4 ports, 8.5 GHz, N	R&S®ZNBT8	1318.7006.24
Options		
Additional Ports		
Additional Ports 5 to 8	R&S®ZNBT8-B108	1319.4200.02
Additional Ports 9 to 12	R&S®ZNBT8-B112	1319.4217.02
Additional Ports 13 to 16	R&S®ZNBT8-B116	1319.4223.02
Additional Ports 17 to 20	R&S®ZNBT8-B120	1319.4230.02
Additional Ports 21 to 24	R&S®ZNBT8-B124	1319.4246.02
Extended Power Range		
Extended Power Range for Ports 1 to 4	R&S®ZNBT8-B21	1319.4252.02
Extended Power Range for Ports 5 to 8	R&S®ZNBT8-B22	1319.4269.02
Extended Power Range for Ports 9 to 12	R&S®ZNBT8-B23	1319.4275.02
Extended Power Range for Ports 13 to 16	R&S®ZNBT8-B24	1319.4281.02
Extended Power Range for Ports 17 to 20	R&S®ZNBT8-B25	1319.4298.02
Extended Power Range for Ports 20 to 24	R&S®ZNBT8-B26	1319.4300.02
Receiver Step Attenuators		
Receiver Step Attenuators for Ports 1 to 4	R&S®ZNBT8-B361	1319.4317.02
Receiver Step Attenuators for Ports 5 to 8	R&S®ZNBT8-B362	1319.4323.02
Receiver Step Attenuators for Ports 9 to 12	R&S®ZNBT8-B363	1319.4330.02
Receiver Step Attenuators for Ports 13 to 16	R&S®ZNBT8-B364	1319.4346.02
Receiver Step Attenuators for Ports 17 to 20	R&S®ZNBT8-B365	1319.4352.02
Receiver Step Attenuators for Ports 21 to 24	R&S®ZNBT8-B366	1319.4369.02
Precision Reference Frequency	R&S®ZNBT8-B4	1319.4023.02
GPIB Interface	R&S®ZNBT8-B10	1319.4030.02
Device Control	R&S®ZNBT8-B12	1319.3956.02
DC Inputs	R&S®ZNBT8-B81	1319.4046.02
Time Domain Analysis	R&S®ZNBT-K2	1318.8425.02
Frequency Conversion	R&S®ZNBT-K4	1318.8431.02
Intermodulation Measurements	R&S®ZNBT-K14	1318.8448.02
10 MHz Receiver Bandwidth	R&S®ZNBT-K17	1318.8454.02
1 mHz Frequency Resolution	R&S®ZNBT-K19	1319.4000.02
Rackmount Kit	R&S®ZZA-KN5	1175.3040.00

Service options		
Extended Warranty, one year	R&S®WE1	Please contact your local Rohde & Schwarz sales office.
Extended Warranty, two years	R&S®WE2	
Extended Warranty, three years	R&S®WE3	
Extended Warranty, four years	R&S®WE4	
Extended Warranty with Calibration Coverage, one year	R&S®CW1	
Extended Warranty with Calibration Coverage, two years	R&S®CW2	
Extended Warranty with Calibration Coverage, three years	R&S®CW3	
Extended Warranty with Calibration Coverage, four years	R&S®CW4	

Extended warranty with a term of one to four years (WE1 to WE4)
Repairs carried out during the contract term are free of charge [6]. Necessary calibration and adjustments carried out during repairs are also covered. Simply contact the forwarding agent we name; your product will be picked up free of charge and returned to you in top condition a couple of days later.

Extended warranty with calibration (CW1 to CW4)
Enhance your extended warranty by adding calibration coverage at a package price. This package ensures that your Rohde & Schwarz product is regularly calibrated, inspected and maintained during the term of the contract. It includes all repairs [6] and calibration at the recommended intervals as well as any calibration carried out during repairs or option upgrades.

For product brochure, see PD 3606.9727.12 and www.rohde-schwarz.com

[6] Excluding defects caused by incorrect operation or handling and force majeure. Wear-and-tear parts are not included.

Service that adds value

- Worldwide
- Local and personalized
- Customized and flexible
- Uncompromising quality
- Long-term dependability

About Rohde&Schwarz

The Rohde&Schwarz electronics group is a leading supplier of solutions in the fields of test and measurement, broadcasting, secure communications, and radiomonitoring and radiolocation. Founded more than 80 years ago, this independent global company has an extensive sales network and is present in more than 70 countries.
The company is headquartered in Munich, Germany.

Sustainable product design

- Environmental compatibility and eco-footprint
- Energy efficiency and low emissions
- Longevity and optimized total cost of ownership

Certified Quality Management
ISO 9001

Certified Environmental Management
ISO 14001

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R&S®ZNBT8 Vector Network Analyzer
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