

R&S® ZNA

Vector Network Analyzer

Specifications



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Definitions

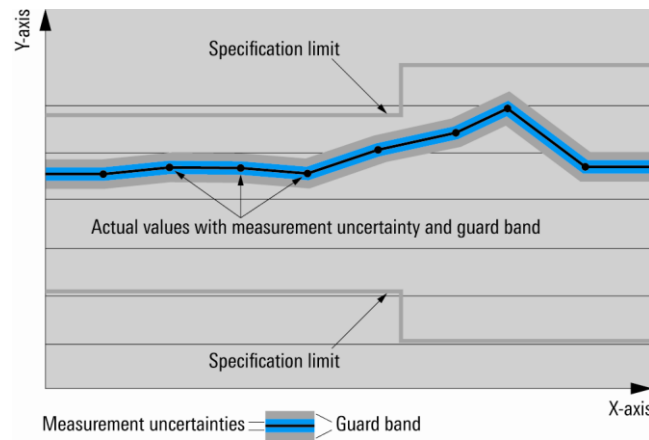
General

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 $<$, \leq , $>$, \geq , \pm , 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	R&S®ZNA26	3.5 mm, male, ruggedized
	R&S®ZNA43, 2.4 mm interface	2.4 mm, male, ruggedized
	R&S®ZNA43, 2.92 mm interface	2.92 mm, male, ruggedized
Number of test ports	R&S®ZNA26	2 or 4
	R&S®ZNA43	2 or 4
Frequency range ¹	R&S®ZNA26	10 MHz to 26.5 GHz
	R&S®ZNA43	10 MHz to 43.5 GHz
DC block	R&S®ZNA26 and R&S®ZNA43	standard

Static frequency accuracy	The static frequency accuracy is determined with the formula <i>(time since last adjustment in years × aging per year) + + temperature drift + achievable initial calibration accuracy</i> using the values specified below. Depending on whether or not the R&S®ZNA-B4 precision frequency reference option is installed, the standard or the improved value have to be taken into account.	
Aging per year	standard	$\pm 1 \times 10^{-6}$
	with R&S®ZNA-B4 precision frequency reference option	$\pm 1 \times 10^{-7}$
Temperature drift (+5 °C to +40 °C)	standard	$\pm 1 \times 10^{-6}$
	with R&S®ZNA-B4 precision frequency reference option	$\pm 1 \times 10^{-8}$
Achievable initial calibration accuracy	standard	$\pm 5 \times 10^{-7}$
	with R&S®ZNA-B4 precision frequency reference option	$\pm 5 \times 10^{-8}$

Frequency resolution		1 Hz
Number of measurement points	per trace	1 to 100001
Measurement bandwidth	1/1.5/2/3/5/7 steps	
	base unit	1 Hz to 1.5 MHz
	with R&S®ZNA-K17 increased IF bandwidth (30 MHz) option	1 Hz to 30 MHz
Analog frontend bandwidth	nominal	2 GHz

¹ Specified and typical data given in this data sheet applies to the R&S®ZNA26 and R&S®ZNA43; please note their respective frequency ranges.

Dynamic range

The receiver noise floor referred to in the following is defined as 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 user correction applied. The dynamic range can be increased by using a measurement bandwidth of 1 Hz. Crosstalk does not limit the dynamic range. Dynamic range performance is specified between port 1 and port 2 as well as between port 3 and port 4 (four-port model). Otherwise, dynamic range performance is typical.

		Base unit			Base unit + R&S®ZNA-B3n ^{2, 3}		
		Specifica- tion	Typical	Measured	Specifica- tion	Typical	Measured
System dynamic range Difference between maximum output power and receiver noise floor (for data with additional step attenuator(s) or direct source and receiver access, refer to "Options")	R&S®ZNA26 and R&S®ZNA43						
	10 MHz to 30 MHz	> 86 dB	96 dB		> 86 dB	96 dB	
	30 MHz to 100 MHz	> 103 dB	113 dB		> 103 dB	113 dB	
	100 MHz to 500 MHz	> 117 dB	127 dB		> 117 dB	127 dB	
	500 MHz to 1 GHz	> 126 dB	136 dB		> 131 dB	141 dB	
	1 GHz to 16 GHz	> 129 dB	139 dB		> 137 dB	147 dB	
	16 GHz to 20 GHz	> 127 dB	137 dB		> 135 dB	145 dB	
	20 GHz to 30 GHz	> 123 dB	133 dB		> 131 dB	141 dB	
	30 GHz to 40 GHz	> 117 dB	127 dB		> 124 dB	134 dB	
	R&S®ZNA43, 2.4 mm interface						
40 GHz to 43.5 GHz	> 106 dB	116 dB		> 112 dB	122 dB		
R&S®ZNA43, 2.92 mm interface							
40 GHz to 43.5 GHz			116 dB			122 dB	

		Base unit + R&S®ZNAxx-B16 ⁴			Base unit + R&S®ZNAxx-B16 + R&S®ZNAxx-B2n + R&S®ZNAxx-B3n ²		
		Specifica- tion	Typical	Measured	Specifica- tion	Typical	Measured
System dynamic range Difference between maximum output power and receiver noise floor (for data with additional step attenuator(s) or direct source and receiver access, refer to "Options")	R&S®ZNA26 and R&S®ZNA43						
	10 MHz to 30 MHz	> 86 dB	96 dB		> 85 dB	95 dB	
	30 MHz to 100 MHz	> 103 dB	113 dB		> 102 dB	112 dB	
	100 MHz to 500 MHz	> 117 dB	127 dB		> 116 dB	126 dB	
	500 MHz to 1 GHz	> 126 dB	136 dB		> 130 dB	140 dB	
	1 GHz to 16 GHz	> 127 dB	137 dB		> 134 dB	144 dB	
	16 GHz to 20 GHz	> 125 dB	135 dB		> 131 dB	141 dB	
	20 GHz to 30 GHz	> 121 dB	131 dB		> 127 dB	137 dB	
	30 GHz to 40 GHz	> 115 dB	125 dB		> 119 dB	129 dB	
	R&S®ZNA43, 2.4 mm interface						
40 GHz to 43.5 GHz	> 103 dB	113 dB		> 105 dB	115 dB		
R&S®ZNA43, 2.92 mm interface							
40 GHz to 43.5 GHz			113 dB			115 dB	

² Receiver step attenuator in 0 dB position.

³ n designates the port number (1/2/3/4).

⁴ xx designates the R&S®ZNA model (R&S®ZNA26/R&S®ZNA43).

	Base unit + R&S®ZNAxx-B16			Base unit + R&S®ZNAxx-B16 + R&S®ZNAxx-B2n + R&S®ZNAxx-B3n ⁵		
	Specifica- tion	Typical	Measured	Specifica- tion	Typical	Measured
Extended dynamic range at direct source and receiver access input Difference between maximum output power and receiver noise floor using the direct receiver access	R&S®ZNA26 and R&S®ZNA43					
	10 MHz to 30 MHz	> 90 dB	100 dB		> 100 dB	105 dB
	30 MHz to 100 MHz	> 105 dB	115 dB		> 115 dB	120 dB
	100 MHz to 500 MHz	> 120 dB	130 dB		> 130 dB	135 dB
	500 MHz to 16 GHz	> 128 dB	136 dB		> 138 dB	146 dB
	16 GHz to 20 GHz	> 124 dB	132 dB		> 132 dB	140 dB
	20 GHz to 26.5 GHz	> 122 dB	130 dB		> 130 dB	135 dB
	26.5 GHz to 30 GHz	> 121 dB	128 dB		> 129 dB	136 dB
	30 GHz to 40 GHz	> 115 dB	120 dB		> 122 dB	127 dB
	R&S®ZNA43, 2.4 mm interface					
	40 GHz to 43.5 GHz	> 101 dB	110 dB		> 107 dB	116 dB
	R&S®ZNA43, 2.92 mm interface					
	40 GHz to 43.5 GHz			110 dB		116 dB

⁵ Receiver step attenuator in 0 dB position.

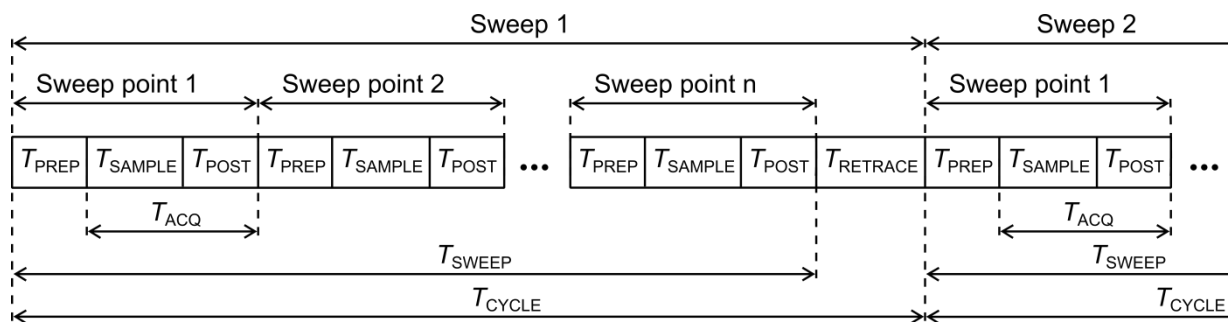
Measurement speed

Measured with firmware version 1.70 and Windows 10 (64 bit).

Measurement time	for 201 measurements points, with 200 MHz span, 1 MHz measurement bandwidth, phase mode coherence off	
T_{SWEEP}	with 900 MHz center frequency	< 2 ms
	with 5.1 GHz center frequency	< 3 ms
T_{CYCLE}	with 900 MHz center frequency	< 4 ms
	with 5.1 GHz center frequency	< 4 ms
Acquisition time per point (T_{ACQ})	1 MHz measurement bandwidth, IF filter (analog) normal, CW mode	3.1 μ s
Acquisition time per point (T_{ACQ})	1 MHz measurement bandwidth, IF filter (analog) wideband, CW mode	2.2 μ s
Sampling time per point (T_{SAMPLE}) IF filter: normal	at 1 MHz measurement bandwidth	860 ns
	at 30 MHz measurement bandwidth	32 ns

		IEC/IEEE	VXI11 over 1 Gbit/s LAN	RSIB	USB 3.0
Time for measurement and data transfer (typical)	for 201 measurements points, 800 MHz start frequency, 1 GHz stop frequency, 1 MHz measurement bandwidth ⁶	14 ms	13 ms	13 ms	14 ms
Data transfer time (typical)	for 201 measurements points (magnitude)	1.7 ms	0.9 ms	0.6 ms	0.7 ms

Switching time between channels	with a maximum of 2001 points	< 2 ms
Switching time between two preloaded instrument settings	with a maximum of 2001 points	< 2 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} Acquisition time ($T_{SAMPLE} + T_{POST}$)
- T_{SWEEP} Time required for one sweep
- $T_{RETRACE}$ Time between two sweeps
- T_{CYCLE} Sweep cycle time ($T_{SWEEP} + T_{RETRACE}$)

Measurement sequence

⁶ In continuous mode, no additional time for data transfer is needed, as data transfer takes place simultaneously with the measurement.

Nominal sweep times in ms versus number of measurement points ⁷					
Number of measurement points	51	201	401	1601	5001
9 GHz start frequency, 10 GHz stop frequency, 500 kHz measurement bandwidth, phase mode coherence off					
With correction switched off	2.3	5.1	9.0	14.1	29.7
With two-port TOSM calibration	4.2	10.1	17.9	30.5	67.2
With four-port TOSM calibration	7.9	20.8	38.5	67.1	146
9 GHz start frequency, 10 GHz stop frequency, 1 kHz measurement bandwidth					
With correction switched off	58.1	222	443	1773	5658
With two-port TOSM calibration	117	451	910	3775	11621
With four-port TOSM calibration	238	941	1970	7704	23768
10 MHz start frequency, 26.5 GHz stop frequency, 500 kHz measurement bandwidth, phase mode coherence off					
With correction switched off	8.5	14.4	19.6	44.8	112
With two-port TOSM calibration	16.7	29.0	39.9	91.4	228
With four-port TOSM calibration	33.6	59.4	81.2	186	465
10 MHz start frequency, 26.5 GHz stop frequency, 1 kHz measurement bandwidth					
With correction switched off	71.2	241	463	1806	5728
With two-port TOSM calibration	142	488	949	3820	11714
With four-port TOSM calibration	287	1000	2002	7700	23740
10 MHz start frequency, 43.5 GHz stop frequency, 500 kHz measurement bandwidth, phase mode coherence off					
With correction switched off	10.5	18.1	23.6	49	117
With two-port TOSM calibration	20.7	36.5	48.1	100	240
With four-port TOSM calibration	41.5	73.5	97.4	204	493
10 MHz start frequency, 43.5 GHz stop frequency, 1 kHz measurement bandwidth					
With correction switched off	74.3	246	469	1815	5765
With two-port TOSM calibration	148	496	960	3866	11859
With four-port TOSM calibration	300	1032	2050	7885	24247

⁷ Sweep time is understood to be the cycle time; static frequency accuracy of the instrument applies; measured with firmware version 1.70, Windows 10 (64 bit).

Measurement accuracy of the R&S®ZNA26

The data below 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 using an R&S®ZN-Z235 calibration kit in order 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 of the calibration). Specifications are based on a matched DUT for transmission measurements and on an isolated DUT for reflection measurements. In both cases, a measurement bandwidth of 10 Hz and a nominal source power of 0 dBm apply.

Accuracy of transmission measurements		Magnitude in dB	Phase in °
10 MHz to 40 MHz	0 dB to -20 dB	0.04	0.5
	< -20 dB to -30 dB	0.23	1.0
	< -30 dB to -40 dB	0.60	3.0
	< -40 dB to -50 dB	1.50	5.0
	< -50 dB to -60 dB	4.50	25
> 40 MHz to 200 MHz	0 dB to -30 dB	0.04	0.5
	< -30 dB to -40 dB	0.05	0.6
	< -40 dB to -50 dB	0.15	0.7
	< -50 dB to -60 dB	0.45	3.0
> 200 MHz to 10 GHz	0 dB to -30 dB	0.04	0.7
	< -30 dB to -40 dB	0.05	0.8
	< -40 dB to -50 dB	0.05	0.8
	< -50 dB to -60 dB	0.09	1.0
> 10 GHz to 26.5 GHz	0 dB to -30 dB	0.05	1.3
	< -30 dB to -40 dB	0.06	1.4
	< -40 dB to -50 dB	0.06	1.4
	< -50 dB to -60 dB	0.13	1.5

Accuracy of reflection measurements	Logarithmic			Linear	
	Reflection level	Magnitude in dB	Phase in °	Reflection range	Magnitude (lin)
10 MHz to 40 MHz	0 dB	0.14	0.9	0 dB to -3 dB	0.016
	-3 dB	0.14	0.9	< -3 dB to -6 dB	0.011
	-6 dB	0.17	1.1	< -6 dB to -15 dB	0.009
	-15 dB	0.39	2.6	< -15 dB to -25 dB	0.008
	-25 dB	1.15	8.1	< -25 dB to -35 dB	0.008
	-35 dB	3.21	26	< -35 dB	0.008
> 40 MHz to 10 GHz	0 dB	0.12	0.6	0 dB to -3 dB	0.011
	-3 dB	0.12	0.6	< -3 dB to -6 dB	0.008
	-6 dB	0.14	0.7	< -6 dB to -15 dB	0.006
	-15 dB	0.27	1.6	< -15 dB to -25 dB	0.005
	-25 dB	0.76	5.1	< -25 dB to -35 dB	0.005
	-35 dB	2.17	16	< -35 dB	0.005
> 10 GHz to 26.5 GHz	0 dB	0.19	0.9	0 dB to -3 dB	0.015
	-3 dB	0.20	0.9	< -3 dB to -6 dB	0.011
	-6 dB	0.22	1.0	< -6 dB to -15 dB	0.009
	-15 dB	0.43	2.6	< -15 dB to -25 dB	0.008
	-25 dB	1.19	8.1	< -25 dB to -35 dB	0.008
	-35 dB	3.24	26	< -35 dB	0.008

Measurement accuracy of the R&S®ZNA43

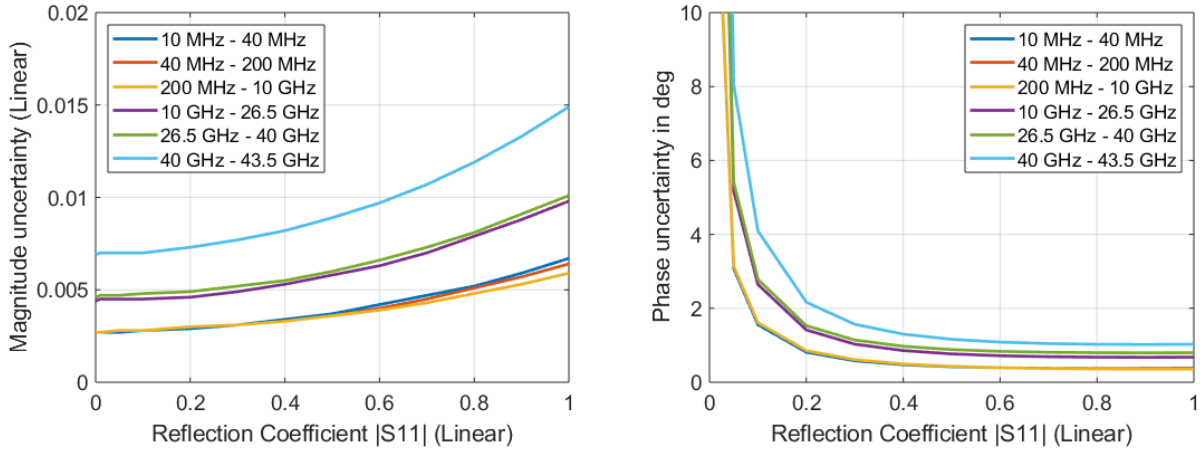
The data below is valid between +18 °C and +28 °C, provided the temperature has not varied by more than 1 °C after calibration. Validity of the data is conditional on using an R&S®ZN-Z229 calibration kit in order which to achieve the effective system data specified below. Frequency points, measurement bandwidth and sweep time have to be identical for measurement and calibration (no interpolation of the calibration). Specifications are based on a matched DUT for transmission measurements and on an isolated DUT for reflection measurements. In both cases, a measurement bandwidth of 10 Hz and a nominal source power of 0 dBm apply.

Accuracy of transmission measurements		Magnitude in dB	Phase in °
10 MHz to 40 MHz	0 dB to -20 dB	0.04	0.5
	< -20 dB to -30 dB	0.23	1.0
	< -30 dB to -40 dB	0.60	3.0
	< -40 dB to -50 dB	1.50	5.0
	< -50 dB to -60 dB	4.50	25
> 40 MHz to 200 MHz	0 dB to -30 dB	0.04	0.5
	< -30 dB to -40 dB	0.05	0.6
	< -40 dB to -50 dB	0.15	0.7
	< -50 dB to -60 dB	0.45	3.0
> 200 MHz to 10 GHz	0 dB to -30 dB	0.04	0.7
	< -30 dB to -40 dB	0.05	0.8
	< -40 dB to -50 dB	0.05	0.8
	< -50 dB to -60 dB	0.09	1.0
> 10 GHz to 26.5 GHz	0 dB to -30 dB	0.05	1.3
	< -30 dB to -40 dB	0.06	1.4
	< -40 dB to -50 dB	0.06	1.4
	< -50 dB to -60 dB	0.13	1.5
> 26.5 GHz to 40 GHz	0 dB to -30 dB	0.06	1.8
	< -30 dB to -40 dB	0.07	2.0
	< -40 dB to -50 dB	0.07	2.0
	< -50 dB to -60 dB	0.19	2.0
> 40 GHz to 43.5 GHz (meas.)	0 dB to -30 dB	0.07	2.0
	< -30 dB to -40 dB	0.08	2.2
	< -40 dB to -50 dB	0.15	2.2
	< -50 dB to -60 dB	0.47	3.9

Accuracy of reflection measurements	Logarithmic			Linear	
	Reflection level	Magnitude in dB	Phase in °	Reflection range	Magnitude (lin)
10 MHz to 40 MHz	0 dB	0.14	0.9	0 dB to -3 dB	0.016
	-3 dB	0.14	0.9	< -3 dB to -6 dB	0.011
	-6 dB	0.17	1.1	< -6 dB to -15 dB	0.009
	-15 dB	0.38	2.6	< -15 dB to -25 dB	0.008
	-25 dB	1.15	8.1	< -25 dB to -35 dB	0.008
	-35 dB	3.21	26	< -35 dB	0.008
> 40 MHz to 10 GHz	0 dB	0.11	0.8	0 dB to -3 dB	0.013
	-3 dB	0.11	0.8	< -3 dB to -6 dB	0.009
	-6 dB	0.12	0.8	< -6 dB to -15 dB	0.007
	-15 dB	0.27	1.8	< -15 dB to -25 dB	0.006
	-25 dB	0.83	5.7	< -25 dB to -35 dB	0.006
	-35 dB	2.39	18	< -35 dB	0.006
> 10 GHz to 26.5 GHz	0 dB	0.14	0.9	0 dB to -3 dB	0.016
	-3 dB	0.14	0.9	< -3 dB to -6 dB	0.011
	-6 dB	0.16	1.1	< -6 dB to -15 dB	0.009
	-15 dB	0.38	2.6	< -15 dB to -25 dB	0.008
	-25 dB	1.15	8.1	< -25 dB to -35 dB	0.008
	-35 dB	3.21	26	< -35 dB	0.008
> 26.5 GHz to 40 GHz	0 dB	0.22	1.4	0 dB to -3 dB	0.025
	-3 dB	0.22	1.4	< -3 dB to -6 dB	0.017
	-6 dB	0.24	1.6	< -6 dB to -15 dB	0.014
	-15 dB	0.60	4.1	< -15 dB to -25 dB	0.013
	-25 dB	1.76	13	< -25 dB to -35 dB	0.013
	-35 dB	4.65	41	< -35 dB	0.013
> 40 GHz to 43.5 GHz (meas.)	0 dB	0.22	1.5	0 dB to -3 dB	0.026
	-3 dB	0.22	1.5	< -3 dB to -6 dB	0.018
	-6 dB	0.25	1.7	< -6 dB to -15 dB	0.015
	-15 dB	0.60	4.1	< -15 dB to -25 dB	0.013
	-25 dB	1.76	13	< -25 dB to -35 dB	0.013
	-35 dB	4.65	41	< -35 dB	0.013

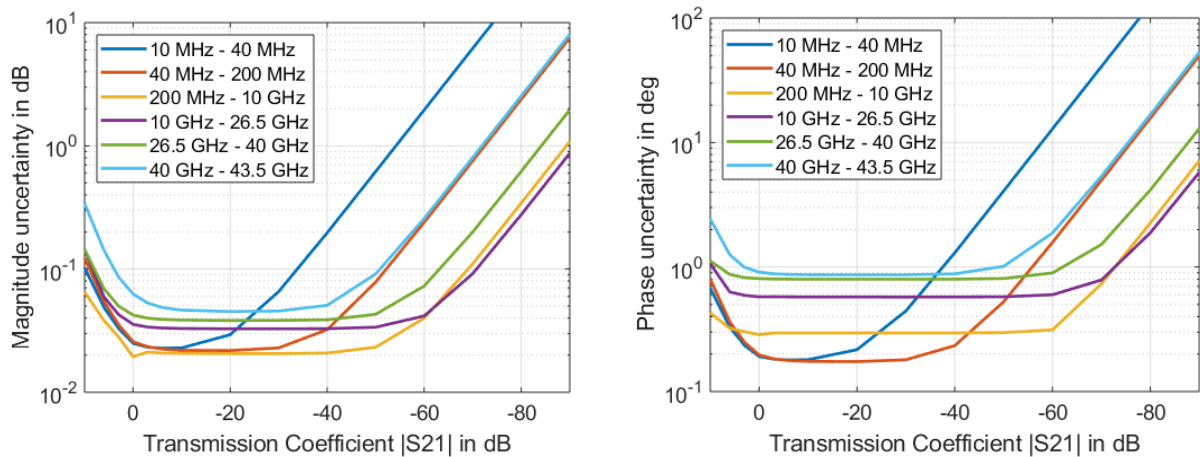
Reflection measurement accuracy of the R&S®ZNA26 and R&S®ZNA43

The diagrams below show the typical accuracy of the reflection magnitude and reflection phase measurements for the R&S®ZNA26 in the frequency range from 10 MHz to 26.5 GHz and for the R&S®ZNA43 in the frequency range from 10 MHz to 43.5 GHz. Analysis conditions: $S_{12} = S_{21} = 0$, calibration power 0 dBm, measurement power 0 dBm. Drift effects were not considered.



Transmission measurement accuracy of the R&S®ZNA26 and R&S®ZNA43

The diagrams below show the typical accuracy of the transmission magnitude and transmission phase measurements for the R&S®ZNA26 in the frequency range from 10 MHz to 26.5 GHz and for the R&S®ZNA43 in the frequency range from 10 MHz to 43.5 GHz. Analysis conditions: $S_{11} = S_{22} = 0$, calibration power 0 dBm, measurement power 0 dBm, high-quality semi-rigid cable. Drift effects were not considered.



Effective system data

The data below 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 of the calibration). The data is based on a measurement bandwidth of 10 Hz.

R&S®ZNA26 calibrated with R&S®ZV-Z235 calibration kit	10 MHz to 40 MHz		> 40 MHz to 10 GHz	
	Specification	Typical	Specification	Typical
Directivity in dB	42	46	46	49
Source match in dB	40	43	43	46
Load match in dB	41	45	45	48
Reflection tracking in dB	0.04	0.02	0.03	0.02
Transmission tracking in dB	0.04	0.02	0.02	0.01

R&S®ZNA26 calibrated with R&S®ZV-Z235 calibration kit	10 GHz to 26.5 GHz	
	Specification	Typical
Directivity in dB	42	45
Source match in dB	40	43
Load match in dB	41	44
Reflection tracking in dB	0.04	0.03
Transmission tracking in dB	0.03	0.02

R&S®ZNA43 calibrated with R&S®ZN-Z229 calibration kit	10 MHz to 40 MHz		> 40 MHz to 10 GHz		> 10 GHz to 26.5 GHz	
	Specification	Typical	Specification	Typical	Specification	Typical
Directivity in dB	42	45	45	48	42	45
Source match in dB	40	41	41	44	40	43
Load match in dB	41	44	44	47	41	44
Reflection tracking in dB	0.04	0.03	0.03	0.02	0.04	0.03
Transmission tracking in dB	0.04	0.03	0.02	0.01	0.03	0.02

R&S®ZNA43 calibrated with R&S®ZN-Z229 calibration kit	> 26.5 GHz to 40 GHz		> 40 GHz to 43.5 GHz
	Specification	Typical	Measured
Directivity in dB	38	41	38
Source match in dB	36	39	36
Load match in dB	37	40	37
Reflection tracking in dB	0.04	0.03	0.06
Transmission tracking in dB	0.04	0.03	0.05

Uncorrected system data

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

		Specification	Typical	Measured
Directivity in dB	R&S®ZNA26 and R&S®ZNA43			
	10 MHz to 20 MHz	> 8 dB	12 dB	
	20 MHz to 20 GHz	> 10 dB	18 dB	
	20 GHz to 35 GHz	> 8 dB	15 dB	
	35 GHz to 40 GHz	> 6 dB	10 dB	
	R&S®ZNA43, 2.4 mm interface			
	40 GHz to 43.5 GHz	> 6 dB	10 dB	
	R&S®ZNA43, 2.92 mm interface			
	40 GHz to 43.5 GHz			10 dB
Source match in dB	R&S®ZNA26 and R&S®ZNA43			
	10 MHz to 20 MHz	> 8 dB	12 dB	
	20 MHz to 20 GHz	> 10 dB	18 dB	
	20 GHz to 35 GHz	> 8 dB	15 dB	
	35 GHz to 40 GHz	> 6 dB	10 dB	
	R&S®ZNA43, 2.4 mm interface			
	40 GHz to 43.5 GHz	> 6 dB	10 dB	
	R&S®ZNA43, 2.92 mm interface			
	40 GHz to 43.5 GHz			10 dB
Reflection tracking in dB	R&S®ZNA26 and R&S®ZNA43			
	10 MHz to 10 GHz	< 1.5 dB	0.5 dB	
	10 GHz to 26.5 GHz	< 2 dB	0.5 dB	
	26.5 GHz to 40 GHz	< 2.5 dB	0.5 dB	
	R&S®ZNA43, 2.4 mm interface			
	40 GHz to 43.5 GHz	< 3 dB	1 dB	
	R&S®ZNA43, 2.92 mm interface			
	40 GHz to 43.5 GHz			1 dB
Transmission tracking in dB	R&S®ZNA26 and R&S®ZNA43			
	10 MHz to 10 GHz	< 1.5 dB	0.5 dB	
	10 GHz to 26.5 GHz	< 2 dB	0.5 dB	
	26.5 GHz to 40 GHz	< 2.5 dB	0.5 dB	
	R&S®ZNA43, 2.4 mm interface			
	40 GHz to 43.5 GHz	< 3 dB	1 dB	
	R&S®ZNA43, 2.92 mm interface			
	40 GHz to 43.5 GHz			1 dB
Load match in dB	R&S®ZNA26 and R&S®ZNA43			
	10 MHz to 20 GHz	> 10 dB	18 dB	
	20 GHz to 40 GHz	> 8 dB	15 dB	
	R&S®ZNA43, 2.4 mm interface			
	40 GHz to 43.5 GHz	> 6 dB	10 dB	
	R&S®ZNA43, 2.92 mm interface			
	40 GHz to 43.5 GHz			10 dB

Trace stability		1 kHz IF bandwidth	100 kHz IF bandwidth		
		Measured	Specification	Typical	Measured
Trace noise magnitude (RMS) at 0 dBm source power, 0 dB reflection	R&S®ZNA26 and R&S®ZNA43				
	10 MHz to 20 MHz	0.010 dB	< 0.500 dB	0.100 dB	
	20 MHz to 50 MHz	0.005 dB	< 0.200 dB	0.050 dB	
	50 MHz to 100 MHz	0.001 dB	< 0.050 dB	0.010 dB	
	100 MHz to 500 MHz	0.001 dB	< 0.020 dB	0.002 dB	
	500 MHz to 20 GHz	0.001 dB	< 0.005 dB	0.002 dB	
	20 GHz to 40 GHz	0.001 dB	< 0.008 dB	0.003 dB	
	R&S®ZNA43, 2.4 mm interface				
	40 GHz to 43.5 GHz		< 0.030 dB	0.007 dB	
	R&S®ZNA43, 2.92 mm interface				
40 GHz to 43.5 GHz	0.001 dB			0.007 dB	
Trace noise phase (RMS) at 0 dBm source power, 0 dB reflection	R&S®ZNA26 and R&S®ZNA43				
	10 MHz to 20 MHz	0.05°	< 3.00°	0.5°	
	20 MHz to 50 MHz	0.020°	< 1.00°	0.20°	
	50 MHz to 100 MHz	0.005°	< 0.30°	0.05°	
	100 MHz to 500 MHz	0.002°	< 0.10°	0.02°	
	500 MHz to 20 GHz	0.001°	< 0.04°	0.01°	
	20 GHz to 40 GHz	0.002°	< 0.06°	0.02°	
	R&S®ZNA43, 2.4 mm interface				
	40 GHz to 43.5 GHz	0.006°	< 0.20°	0.06°	
	R&S®ZNA43, 2.92 mm interface				
40 GHz to 43.5 GHz				0.06°	
Temperature dependence	10 MHz to 5 GHz			0.01 dB/K, 0.1°/K	
	5 GHz to 43.5 GHz			0.02 dB/K, 0.4°/K	

Test port output

The data below is valid from +18 °C to +28 °C.

		Specification	Typical	Measured
Power range without optional source step attenuator (for data with additional source step attenuator(s) refer to "Options")	R&S®ZNA26			
	10 MHz to 16 GHz	-80 dBm to +15 dBm	up to +20 dBm	
	16 GHz to 20 GHz	-80 dBm to +13 dBm	up to +18 dBm	
	20 GHz to 25 GHz	-80 dBm to +11 dBm	up to +15 dBm	
	25 GHz to 26.5 GHz	-80 dBm to +8 dBm	up to +11 dBm	
	R&S®ZNA43			
	10 MHz to 16 GHz	-80 dBm to +15 dBm	up to +20 dBm	
	16 GHz to 20 GHz	-80 dBm to +14 dBm	up to +18 dBm	
	20 GHz to 25 GHz	-80 dBm to +12 dBm	up to +15 dBm	
	25 GHz to 30 GHz	-80 dBm to +9 dBm	up to +12 dBm	
	30 GHz to 40 GHz	-80 dBm to +6 dBm	up to +9 dBm	
	R&S®ZNA43, 2.4 mm interface			
	40 GHz to 43.5 GHz	-80 dBm to +4 dBm	up to +8 dBm	
R&S®ZNA43, 2.92 mm interface				
40 GHz to 43.5 GHz			+8 dBm	
Minimum power level using optional source step attenuator (see "Options")	R&S®ZNA26 and R&S®ZNA43	-120 dBm		
Power accuracy, source power -10 dBm	R&S®ZNA26 and R&S®ZNA43			
	10 MHz to 26.5 GHz	< 2.0 dB	0.5 dB	
	R&S®ZNA43			
	26.5 GHz to 40 GHz	< 3.0 dB	0.5 dB	
	R&S®ZNA43, 2.4 mm interface			
	40 GHz to 43.5 GHz	< 3.0 dB	0.5 dB	
R&S®ZNA43, 2.92 mm interface				
40 GHz to 43.5 GHz			0.5 dB	
Power linearity referenced to -10 dBm, no power calibration	source power -40 dBm to +10 dBm ⁸ , R&S®ZNA26 and R&S®ZNA43			
	10 MHz to 20 GHz	< 1.5 dB	0.2 dB	
	20 GHz to 40 GHz	< 2 dB	0.2 dB	
	R&S®ZNA43, 2.4 mm interface			
	40 GHz to 43.5 GHz	< 2 dB	0.2 dB	
	R&S®ZNA43, 2.92 mm interface			
	40 GHz to 43.5 GHz			0.2 dB
	source power < -40 dBm, R&S®ZNA26 and R&S®ZNA43			
	10 MHz to 20 GHz	< 2 dB	0.2 dB	
	20 GHz to 40 GHz	< 3 dB	0.2 dB	
	R&S®ZNA43, 2.4 mm interface			
	40 GHz to 43.5 GHz	< 3 dB	0.2 dB	
	R&S®ZNA43, 2.92 mm interface			
40 GHz to 43.5 GHz			0.2 dB	
Power resolution		0.01 dB		

⁸ Maximum power level is limited to +10 dBm or the maximum specified output power, whichever is smaller.

		Specification	Typical	Measured	Nominal
Second harmonics at -10 dBm	R&S®ZNA26 and R&S®ZNA43				
	10 MHz to 20 MHz	< -23 dBc	-30 dBc		
	20 MHz to 20 GHz	< -25 dBc	-40 dBc		
Third harmonics at -10 dBm	R&S®ZNA26 and R&S®ZNA43				
	10 MHz to 20 MHz	< -23 dBc	-30 dBc		
	20 MHz to 50 MHz	< -25 dBc	-50 dBc		
	50 MHz to 13 GHz	< -40 dBc	-60 dBc		
	13 GHz to 43.5 GHz			-60 dBc	
Nonharmonic spurious (nom.), low phase noise mode					-70 dBc

	Offset	10 kHz	100 kHz	200 kHz	1 MHz	5 MHz
Phase noise (nom.) in dBc (1 Hz)	R&S®ZNA26 and R&S®ZNA43					
	10 MHz to 100 MHz	-117	-117	-123	-128	-128
	100 MHz to 1.25 GHz	-108	-108	-108	-120	-125
	1.25 GHz to 2.5 GHz	-102	-102	-102	-112	-125
	2.5 GHz to 5 GHz	-95	-95	-100	-105	-120
	5 GHz to 10 GHz	-87	-87	-90	-100	-120
	10 GHz to 20 GHz	-80	-80	-85	-95	-120
	20 GHz to 26.5 GHz	-79	-79	-80	-90	-112
	26.5 GHz to 40 GHz	-72	-72	-77	-90	-110

Test port input

		Specification	Typical	Measured	Nominal
Match without system error correction, equivalent to raw test port match	R&S®ZNA26 and R&S®ZNA43				
	10 MHz to 20 GHz	> 10 dB			
	20 GHz to 40 GHz	> 8 dB			
	R&S®ZNA43, 2.4 mm interface				
	40 GHz to 43.5 GHz	> 6 dB			
	R&S®ZNA43, 2.92 mm interface				
	40 GHz to 43.5 GHz			6 dB	
Maximum nominal input level					+15 dBm
Power measurement accuracy at –10 dBm with power calibration using SMARTerCAL (UOSM)	R&S®ZNA26 and R&S®ZNA43				
	10 MHz to 26.5 GHz	< 0.1 dB			
	26.5 GHz to 40 GHz	< 0.2 dB			
	R&S®ZNA43, 2.4 mm interface				
	40 GHz to 43.5 GHz	< 0.2 dB			
	R&S®ZNA43, 2.92 mm interface				
	40 GHz to 43.5 GHz		0.2 dB		
Power measurement accuracy at –10 dBm without power calibration	R&S®ZNA26 and R&S®ZNA43				
	10 MHz to 30 GHz	< 1.5 dB	0.5 dB		
	30 GHz to 40 GHz	< 2.0 dB	0.5 dB		
	R&S®ZNA43, 2.4 mm interface				
	40 GHz to 43.5 GHz	< 2.5 dB	0.5 dB		
	R&S®ZNA43, 2.92 mm interface				
	40 GHz to 43.5 GHz			0.5 dB	

		Specification	Typical	Measured
Compression at test port input referenced to –10 dBm	R&S®ZNA26 and R&S®ZNA43			
	for +10 dB to +20 dB			
	10 MHz to 25 GHz	< 0.2 dB	–0.1 dB	
	for +10 dB to +18 dB			
	25 GHz to 40 GHz	< 0.2 dB	–0.1 dB	
	for –40 dB to +10 dB			
	10 MHz to 40 GHz	< 0.1 dB		
	R&S®ZNA43, 2.4 mm interface			
	for +10 dB to +18 dB			
	40 GHz to 43.5 GHz	< 0.2 dB	–0.1 dB	
	for –40 dB to +10 dB			
	40 GHz to 43.5 GHz	< 0.1 dB		
	R&S®ZNA43, 2.92 mm interface			
	for +10 dB to +18 dB			
40 GHz to 43.5 GHz			–0.1 dB	
for –40 dB to +10 dB				
	40 GHz to 43.5 GHz			0.1 dB
Damage level		+27 dBm		
Damage DC voltage		30 V		

Standard configuration		Base unit			Base unit + R&S®ZNAxx-B16 + R&S®ZNAxx-B3n ⁹		
		Specifica- tion	Typical	Measured	Specifica- tion	Typical	Measured
Noise level ¹⁰ at 1 kHz measurement bandwidth, normalized to 1 Hz	R&S®ZNA26 and R&S®ZNA43						
	10 MHz to 30 MHz	< -77 dBm	-100 dBm		< -87 dBm	-110 dBm	
	30 MHz to 100 MHz	< -97 dBm	-110 dBm		< -107 dBm	-120 dBm	
	100 MHz to 500 MHz	< -107 dBm	-125 dBm		< -117 dBm	-130 dBm	
	500 MHz to 30 GHz	< -120 dBm	-132 dBm		< -130 dBm	-142 dBm	
	30 GHz to 40 GHz	< -115 dBm	-130 dBm		< -122 dBm	-139 dBm	
	R&S®ZNA43, 2.4 mm interface						
	40 GHz to 43.5 GHz	< -105 dBm	-120 dBm		< -111 dBm	-126 dBm	
R&S®ZNA43, 2.92 mm interface							
	40 GHz to 43.5 GHz			-120 dBm			-126 dBm

Reversed coupler configuration ¹¹		Base unit + R&S®ZNAxx-B16			Base unit + R&S®ZNAxx-B16 + R&S®ZNAxx-B3n ⁹		
		Specifica- tion	Typical	Measured	Specifica- tion	Typical	Measured
Noise level at 1 kHz measurement bandwidth, normalized to 1 Hz	R&S®ZNA26 and R&S®ZNA43						
	10 MHz to 30 MHz	< -107 dBm	-122 dBm		< -117 dBm	-132 dBm	
	30 MHz to 100 MHz	< -122 dBm	-139 dBm		< -132 dBm	-149 dBm	
	100 MHz to 500 MHz	< -127 dBm	-141 dBm		< -137 dBm	-151 dBm	
	500 MHz to 30 GHz	< -127 dBm	-141 dBm		< -137 dBm	-151 dBm	
	30 GHz to 40 GHz	< -122 dBm	-137 dBm		< -129 dBm	-145 dBm	
	R&S®ZNA43, 2.4 mm interface						
	40 GHz to 43.5 GHz	< -112 dBm	-132 dBm		< -118 dBm	-138 dBm	
R&S®ZNA43, 2.92 mm interface							
	40 GHz to 43.5 GHz			-132 dBm			-138 dBm

Direct source and receiver access ¹²		Base unit + R&S®ZNAxx-B16		
		Specifica- tion	Typical	Measured
Noise level at 1 kHz measurement bandwidth, normalized to 1 Hz	R&S®ZNA26 and R&S®ZNA43			
	10 MHz to 30 MHz	< -117 dBm	-132 dBm	
	30 MHz to 100 MHz	< -132 dBm	-149 dBm	
	100 MHz to 500 MHz	< -137 dBm	-151 dBm	
	500 MHz to 30 GHz	< -137 dBm	-151 dBm	
	30 GHz to 40 GHz	< -129 dBm	-145 dBm	
	R&S®ZNA43, 2.4 mm interface			
	40 GHz to 43.5 GHz	< -118 dBm	-138 dBm	
R&S®ZNA43, 2.92 mm interface				
	40 GHz to 43.5 GHz			-138 dBm

⁹ Receiver step attenuator in 0 dB position.

¹⁰ The noise level is defined as the RMS value of the specified noise floor.

¹¹ With R&S®ZNAxx-B16 option installed, the jumpers of the direct source and receiver access connectors Source and Meas are swapped to horizontal position to enable the reverse coupler operation.

¹² Using the direct source and receiver access connectors Meas In and Ref In (jumpers removed) and no receiver attenuator installed or in 0 dB position.

Display

Main screen		touchscreen, 30.7 cm (12.1") diagonal WXGA 18-bit color LCD
Main screen resolution		1280 × 800; 125 dpi
Pixel failure rate		$\leq 1 \times 10^{-5}$
Auxiliary screen		touchscreen, 17.8 cm (7") diagonal WVGA 18-bit color LCD
Auxiliary screen resolution		480 × 800; 125 dpi
Pixel failure rate		$\leq 1.5 \times 10^{-5}$

Internal PC

Removable PC ¹³	IPC 11/4	
	CPU	Intel Core i7, x64
	clock rate	2.3 GHz
	RAM	16 Gbyte DDR3
	operating system	Windows 10 IoT Enterprise LTSB 2016
	solid state drive	≥ 128 Gbyte

Front panel connectors

USB	2.0 device connector	3
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Rear panel connectors

LAN	local area network connector, 8-pin, RJ-45, 1 Gbit/s	
USB	2.0 device connector	2
	3.0 device connector	2
USB device	3.0 slave connector (type B)	1
External monitor	DVI-D digital-only connector	1
	DisplayPort	1

REF IN	input for external reference frequency signal	
Connector type		
BNC, female	input frequency range	1 MHz to 50 MHz
	step size	1 Hz
	input impedance	100 Ω
SMA, female	input frequency range	100 MHz or 1 GHz
	step size	fixed frequency
	input impedance	50 Ω
Maximum permissible deviation		1 kHz
Input power		-10 dBm to +15 dBm

REF OUT	output for external reference frequency signal	
Connector type		
BNC, female	output impedance	50 Ω
	output frequency	10 MHz
	output frequency accuracy	1 Hz
	output power	+9 dBm \pm 4 dB

¹³ Internal PC is subject to change without notice.

USER CONTROL	diverse 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 μ s
Input impedance		> 10 k Ω

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

Options

R&S®ZNA26-B16 and R&S®ZNA43-B16

Direct source and receiver access		
Frequency range	R&S®ZNA26-B16	
	specified	10 MHz to 26.5 GHz
	nominal	100 kHz to 26.5 GHz
	R&S®ZNA43-B16 2.4 mm interface	
	specified	10 MHz to 43.5 GHz
	nominal	100 kHz to 43.5 GHz
	R&S®ZNA43-B16 2.92,mm interface	
	specified	10 MHz to 40 GHz
	measured	40 GHz to 43.5 GHz
	nominal	100 kHz to 43.5 GHz
Damage level		+20 dBm, 0 V DC
Dynamic range is reduced by	10 MHz to 1 GHz	0 dB
	1 GHz to 40 GHz	2 dB
	40 GHz to 43.5 GHz	3 dB

R&S®ZNA26-B26 and R&S®ZNA43-B26

Direct IF access		
Frequency range	R&S®ZNA26	100 kHz to 2 GHz
	R&S®ZNA43	100 kHz to 2 GHz

R&S®ZNA26-B21/-B22/-B23/-B24 and R&S®ZNA43-B21/-B22/-B23/-B24

Source step attenuators		
Frequency range	R&S®ZNA26-B21/-B22/-B23/-B24	10 MHz to 26.5 GHz
	R&S®ZNA43-B21/-B22/-B23/-B24	10 MHz to 43.5 GHz
Attenuation (nominal)		0 dB to 70 dB in 10 dB steps
Minimum output power is reduced to		-120 dBm
Maximum output power and dynamic range are reduced by	10 MHz to 16 GHz	1 dB
	16 GHz to 30 GHz	2 dB
	30 GHz to 40 GHz	3 dB
	40 GHz to 43.5 GHz	4 dB

R&S®ZNA26-B31/-B32/-B33/-B34 and R&S®ZNA43-B31/-B32/-B33/-B34

Receiver step attenuators		
Frequency range	R&S®ZNA26-B31/-B32/-B33/-B34	10 MHz to 26.5 GHz
	R&S®ZNA33-B21/-B32/-B33/-B34	10 MHz to 43.5 GHz
Attenuation	preset setting 10 dB	0 dB to 35 dB in 5 dB steps
Step attenuator accuracy; attenuation > 0 dB, referenced to attenuation = 10 dB	10 MHz to 20 GHz	≤ 1 dB
	20 GHz to 40 GHz	≤ 1.5 dB
	40 GHz to 43.5 GHz	≤ 2 dB
Dynamic range is increased by	10 MHz to 500 MHz	0 dB
	500 MHz to 1 GHz	5 dB
	1 GHz to 30 GHz	8 dB
	30 GHz to 40 GHz	7 dB
	40 GHz to 43.5 GHz	6 dB

R&S®ZNA26-B41/-B42/-B43/-B44 and R&S®ZNA43-B41/-B42/-B43/-B44

Internal pulse modulators		
Frequency range	R&S®ZNA26-B41/-B42/-B43/-B44	10 MHz to 26.5 GHz
	R&S®ZNA43-B41/-B42/-B43/-B44	10 MHz to 43.5 GHz
Pulse period	pulse generator	8 ns to 34 s (nom.)
	pulse modulator	500 ns to 34 s (nom.)
On/off ratio	10 MHz to 10 GHz	80 dB (nom.)
	10 GHz to 18 GHz	80 dB (nom.)
	18 GHz to 43.5 GHz	100 dB (nom.)
Rise/fall time		20 ns (nom.)
Dynamic range, R&S®ZNA26		no impact
Dynamic range, R&S®ZNA43		no impact

R&S®ZNA-K1

Spectrum analyzer mode (based on fast Fourier transformation)		
Impedance		50 Ω
Test port connector	R&S®ZNA26	3.5 mm, male, ruggedized
	R&S®ZNA43	2.92 mm, male, ruggedized
Frequency range	R&S®ZNA26	10 MHz to 26.5 GHz
	R&S®ZNA43	10 MHz to 43.5 GHz
Test port		selectable
DC block		standard
Number of points		2 to 100001
Resolution bandwidth (–3 dB)	1/1.5/2/3/5/7 steps	1 Hz to 1.5 MHz

Standard configuration	Base unit	Base unit + R&S®ZNAxx-B16 + R&S®ZNAxx-B2n	
		Nominal	Nominal
Noise level ¹⁴ at 1 kHz measurement bandwidth, normalized to 1 Hz	R&S®ZNA26 and R&S®ZNA43		
	10 MHz to 30 MHz	–100 dBm	–110 dBm
	30 MHz to 100 MHz	–110 dBm	–120 dBm
	100 MHz to 500 MHz	–125 dBm	–130 dBm
	500 MHz to 30 GHz	–132 dBm	–142 dBm
	30 GHz to 40 GHz	–130 dBm	–139 dBm
	40 GHz to 43.5 GHz	–120 dBm	–126 dBm

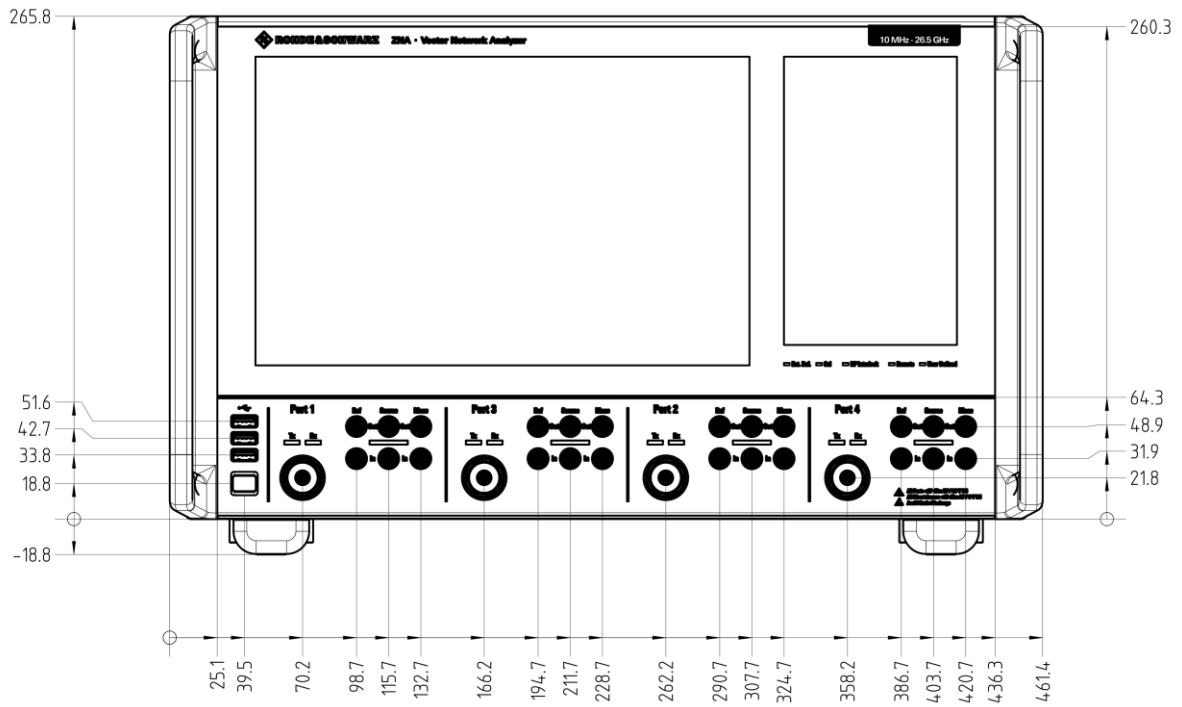
¹⁴ The noise level is defined as the RMS value of the specified noise floor.

General data

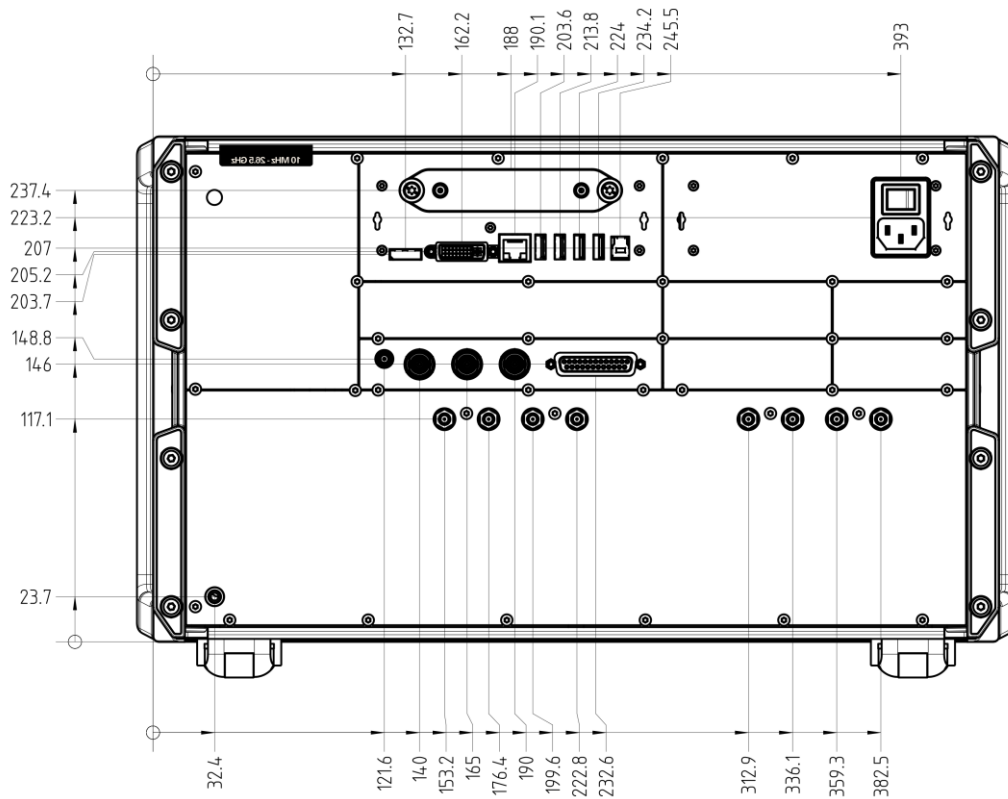
Temperature loading		in line with IEC 60068-2-1 and IEC 60068-2-2
	operating temperature range	+5 °C to +40 °C
	storage temperature range	-20 °C to +60 °C
Damp heat		+40 °C at 85 % rel. humidity, in line with IEC 60068-2-30
Max. operating altitude	above sea level	4600 m (approx. 15100 feet)
Mechanical resistance	vibration, sinusoidal	5 Hz to 55 Hz, 0.15 mm constant amplitude, 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 no. 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: IEC/EN 61326-1 (immunity test requirements for industrial environments, EN 61326 table 2), IEC/EN 61326-2-1, IEC/EN 61000-3-2, IEC/EN 61000-3-3
Safety		in line with IEC 61010-1, EN 61010-1 and UL 61010-1, CSA C22.2 61010-1
Power supply		100 V to 240 V at 50 Hz to 60 Hz and 400 Hz, max. 7.3 A to 4.6 A, respectively
Power consumption	2-port model	<ul style="list-style-type: none"> • ≤ 450 W (specification) • 300 W (typical)
	4-port model	<ul style="list-style-type: none"> • ≤ 550 W (specification) • 350 W (typical)
Conformity marking		VDE, GS, cCSA _{US} , CE, KCC conformity mark
Dimensions (W × H × D)		EIA RU1 = 6 ¹⁵ , 461.4 mm × 284.6 mm × 462.1 mm (18.2 in × 11.2 in × 18.2 in)
Weight	2-port model	24 kg (52.9 lb)
	4-port model	29 kg (63.9 lb)
Shipping weight	2-port model	30 kg (66.2 lb)
	4-port model	35 kg (77.2 lb)

¹⁵ Electronics Industry Association rack units. 1 RU = 1.75 in.

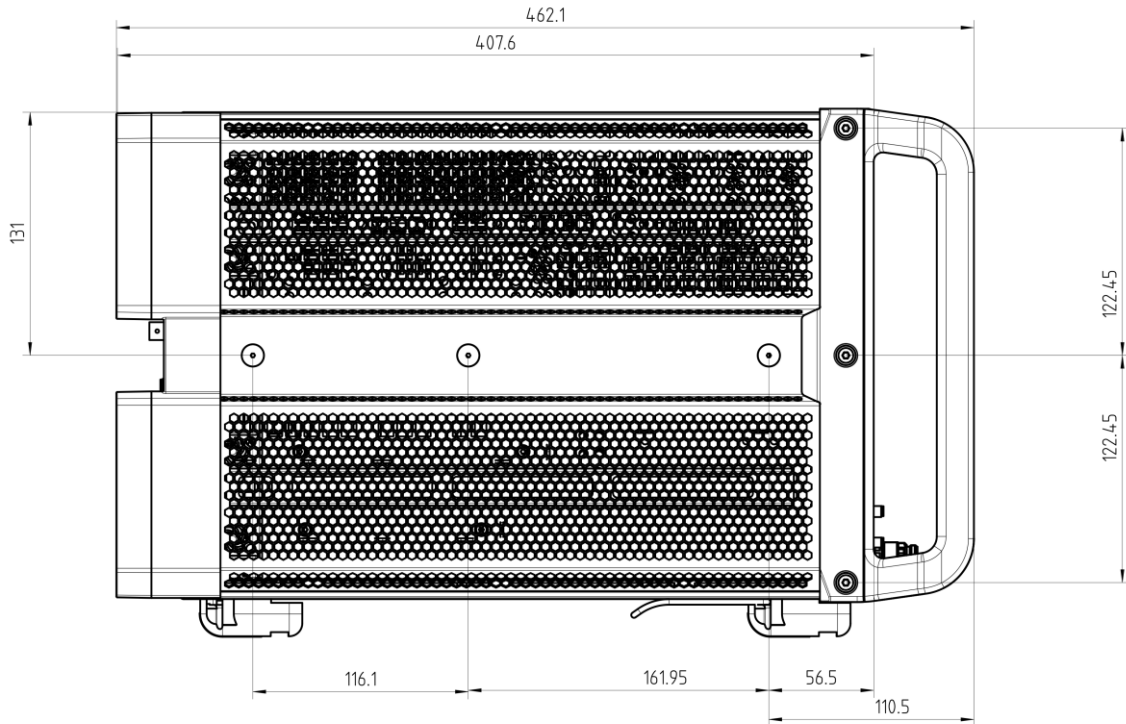
Dimensions (in mm)



Front view of the R&S®ZNA



Rear view of the R&S®ZNA



Side view of the R&S®ZNA

Ordering information

Designation	Type	Requires	Service center upgrade ¹⁶	On-site upgrade ¹⁷	Order No.
Base unit					
Vector network analyzer, 2 ports, 26.5 GHz, 3.5 mm connectors	R&S®ZNA26				1332.4500K22
Vector network analyzer, 4 ports, 26.5 GHz, 3.5 mm connectors	R&S®ZNA26				1332.4500K24
Vector network analyzer, 2 ports, 43.5 GHz, 2.92 mm connectors	R&S®ZNA43				1332.4500K42
Vector network analyzer, 4 ports, 43.5 GHz, 2.92 mm connectors	R&S®ZNA43				1332.4500K44
Vector network analyzer, 2 ports, 43.5 GHz, 2.4 mm connectors	R&S®ZNA43				1332.4500K43
Vector network analyzer, 4 ports, 43.5 GHz, 2.4 mm connectors	R&S®ZNA43				1332.4500K45
Options					
3rd and 4th internal source for R&S®ZNA26	R&S®ZNA26-B3	4-port model	yes		1332.4523.02
3rd and 4th internal source for R&S®ZNA43	R&S®ZNA43-B3	4-port model	yes		1332.4617.02
Precision frequency reference (OCXO)	R&S®ZNA-B4		yes		1332.4530.02
2nd internal LO source	R&S®ZNA-B5	4-port model	yes		1332.4675.02
Direct source and receiver access for R&S®ZNA26	R&S®ZNA26-B16	2-port model	yes (U)		1332.4581.22
	R&S®ZNA26-B16	4-port model	yes (U)		1332.4581.24
Direct source and receiver access for R&S®ZNA43	R&S®ZNA43-B16	2-port model	yes (U)		1332.4581.42
	R&S®ZNA43-B16	4-port model	yes (U)		1332.4581.44
Additional removable hard disk (includes image and HDD module)	R&S®ZNA-B19		yes	yes	1332.4600.02
Direct IF access	R&S®ZNA-B26		yes		1332.4598.02
Trigger and control I/O board	R&S®ZNA-B91		yes		1332.4800.02
Source step attenuator for R&S®ZNA26					
Port 1	R&S®ZNA26-B21		yes (U)		1332.4630.21
Port 2	R&S®ZNA26-B22		yes (U)		1332.4630.22
Port 3	R&S®ZNA26-B23		yes (U)		1332.4630.23
Port 4	R&S®ZNA26-B24		yes (U)		1332.4630.24
Source step attenuator for R&S®ZNA43					
Port 1	R&S®ZNA43-B21		yes (U)		1332.4646.21
Port 2	R&S®ZNA43-B22		yes (U)		1332.4646.22
Port 3	R&S®ZNA43-B23		yes (U)		1332.4646.23
Port 4	R&S®ZNA43-B24		yes (U)		1332.4646.24
Receiver step attenuator for R&S®ZNA26					
Port 1	R&S®ZNA26-B31		yes (U)		1332.4700.31
Port 2	R&S®ZNA26-B32		yes (U)		1332.4700.32
Port 3	R&S®ZNA26-B33		yes (U)		1332.4700.33
Port 4	R&S®ZNA26-B34		yes (U)		1332.4700.34
Receiver step attenuator for R&S®ZNA43					
Port 1	R&S®ZNA43-B31		yes (U)		1332.4717.31
Port 2	R&S®ZNA43-B32		yes (U)		1332.4717.32
Port 3	R&S®ZNA43-B33		yes (U)		1332.4717.33
Port 4	R&S®ZNA43-B34		yes (U)		1332.4717.34
Internal pulse modulator for R&S®ZNA26					
Port 1	R&S®ZNA26-B41		yes		1332.4775.41
Port 2	R&S®ZNA26-B42		yes		1332.4775.42
Port 3	R&S®ZNA26-B43		yes		1332.4775.43
Port 4	R&S®ZNA26-B44		yes		1332.4775.44
Internal pulse modulator for R&S®ZNA43					
Port 1	R&S®ZNA43-B41		yes		1332.4781.41
Port 2	R&S®ZNA43-B42		yes		1332.4781.42
Port 3	R&S®ZNA43-B43		yes		1332.4781.43
Port 4	R&S®ZNA43-B44		yes		1332.4781.44

¹⁶ Option may also be ordered at a later date; upgrade by Rohde & Schwarz service center. For upgrades, please order the designated U option instead of the B option.

¹⁷ Option may be installed by the user on site.

Designation	Type	Requires	Service center upgrade ¹⁶	On-site upgrade ¹⁷	Order No.
Spectrum analyzer mode	R&S®ZNA-K1		yes		1332.5320.02
Time domain analysis (TDR)	R&S®ZNA-K2		yes	yes	1332.5336.02
Extended time domain analysis (incl. eye diagram)	R&S®ZNA-K20	R&S®ZNA-K2	yes	yes	1332.4746.02
Scalar mixer and arbitrary frequency-converting measurements	R&S®ZNA-K4		yes	yes	1332.5342.02
Vector corrected converter measurements (without reference mixer and phase reference)	R&S®ZNA-K5	R&S®ZNA-K4	yes	yes	1332.5359.02
Measurements on pulsed signals	R&S®ZNA-K7	R&S®ZNA-K17	yes	yes	1332.5371.02
Group delay measurements on frequency converters without LO access	R&S®ZNA-K9	R&S®ZNA-K4	yes	yes	1332.5394.02
Increased IF bandwidth 30 MHz	R&S®ZNA-K17		yes	yes	1332.5459.02
1 mHz frequency resolution	R&S®ZNA-K19		yes	yes	1332.5513.02

Designation	Type	Order No.
Recommended calibration and verification accessories		
Calibration kits (manual calibration)		
Calibration kit, 0 Hz to 26.5 GHz, 3.5 mm	R&S®ZN-Z235	1336.8500.02
Calibration kit, 0 Hz to 43.5 GHz, 2.92 mm	R&S®ZN-Z229	1336.7004.02
Calibration kit, 0 Hz to 50.0 GHz, 2.4 mm	R&S®ZN-Z240	1339.5002.02
Calibration units (automatic calibration)		
Calibration unit, 100 kHz to 8.5 GHz, 2 ports, 3.5 mm (f)	R&S®ZN-Z51	1319.5507.32
Calibration unit, 100 kHz to 8.5 GHz, 4 ports, 3.5 mm (f)	R&S®ZN-Z51	1319.5507.34
Calibration unit, 100 kHz to 26.5 GHz, 2 ports, 3.5 mm (f)	R&S®ZN-Z53	1335.7046.32
Calibration unit, 9 kHz to 40 GHz, 2 ports, 2.92 mm (f)	R&S®ZN-Z54	1335.7181.42
Verification kits		
T-check verification device, 45 MHz to 26.5 GHz, 3.5 mm (f to m)	R&S®ZV-Z335	1319.1018.02
T-check verification device, 45 MHz to 40 GHz, 2.92 mm (f to m)	R&S®ZV-Z329	1319.1024.02
T-check verification device, 45 MHz to 50 GHz, 2.4 mm (f to m)	R&S®ZV-Z324	1319.1030.02
Verification kit, 45 MHz to 26.5 GHz, 3.5 mm	R&S®ZV-Z435	1319.1060.02
Verification kit, 45 MHz to 40.0 GHz, 2.92 mm	R&S®ZV-Z429	1319.1076.02
Verification kit, 45 MHz to 50.0 GHz, 2.4 mm	R&S®ZV-Z424	1319.1082.02
Hardware add-ons		
19" rack adapter	R&S®ZZA-KN6	1332.4498.02
Cable set for R&S®ZNA-K9 (3.5 mm for R&S®ZNA26)	R&S®ZNA26-Z9	1332.4730.26
Cable set for R&S®ZNA-K9 (2.92 mm for R&S®ZNA43)	R&S®ZNA43-Z9	1332.4730.43
Cable set for R&S®ZNA-K9 (2.4 mm for R&S®ZNA43)	R&S®ZNA43-Z9	1332.4730.44
Torque wrench for 3.5/2.92/2.4/1.85 mm connector, 8 mm width, 0.9 Nm torque	R&S®ZTW	1328.8534.35
Torque wrench for R&S®ZNA test port connector, 19 mm width, 0.9 Nm torque	R&S®ZTW	1328.8534.19

Warranty		
Base unit		3 years
All other items ¹⁸		1 year
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 with calibration coverage, one year	R&S [®] CW1	
Extended warranty with calibration coverage, two years	R&S [®] CW2	
Extended warranty with accredited calibration coverage, one year	R&S [®] AW1	
Extended warranty with accredited calibration coverage, two years	R&S [®] AW2	

Extended warranty with a term of one and two years (WE1 and WE2)

Repairs carried out during the contract term are free of charge ¹⁹. Necessary calibration and adjustments carried out during repairs are also covered.

Extended warranty with calibration coverage (CW1 and CW2)

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 ¹⁹ and calibration at the recommended intervals as well as any calibration carried out during repairs or option upgrades.

¹⁸ For options that are installed, the remaining base unit warranty applies if longer than 1 year. Exception: all batteries have a 1 year warranty.

¹⁹ Excluding defects caused by incorrect operation or handling and force majeure. Wear-and-tear parts are not included.

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R&S®ZNA Vector Network Analyzer

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