

R&S[®]ZN-Z2xx Calibration Kits Specifications



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Definitions

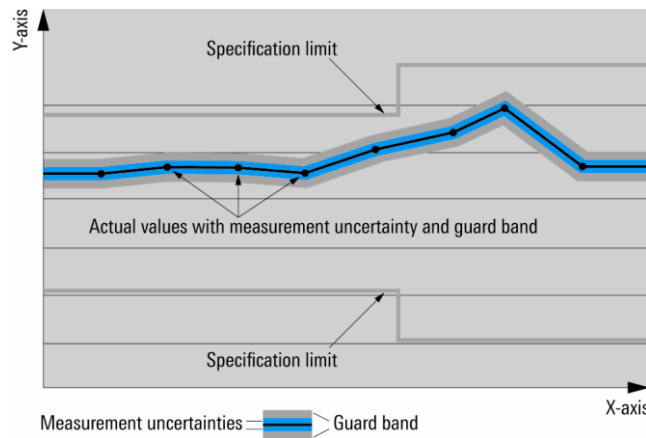
General

Product data applies under the following conditions:

- Three hours storage at ambient temperature followed by 30 minutes warm-up operation
- Specified environmental conditions met
- Recommended calibration interval adhered to
- All internal automatic adjustments performed, if applicable

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.

In line with the 3GPP/3GPP2 standard, chip rates are specified in Mcps (million chips per second), whereas bit rates and symbol rates are specified in Gbps (billion bits per second), Mbps (million bits per second), kbps (thousand bits per second), Msps (million symbols per second) or ksps (thousand symbols per second), and sample rates are specified in Msample/s (million samples per second). Gbps, Mcps, Mbps, Msps, kbps, ksps and Msample/s are not SI units.

Specifications

Measurement range

Impedance		50 Ω
Frequency range	R&S®ZN-Z235	0 Hz to 26.5 GHz
	R&S®ZN-Z229	0 Hz to 43.5 GHz
	R&S®ZN-Z235	3.5 mm female and male
	R&S®ZN-Z229	2.92 mm female and male

Effective system data of R&S®ZN-Z235

The specified effective system data are established after performing a suitable system error calibration, e.g. TOSM, at a R&S®ZNA, R&S®ZVA, R&S®ZNB or R&S®ZVT vector network analyzer, using the characteristic data of the calibration kit, which are stored on a provided USB flash drive. This data is valid between +18 °C and +28 °C, at a measurement bandwidth of 10 Hz and a nominal power of 0 dBm at the calibration ports. The calibration kit is fully functional down to 0 Hz, with effective system data as specified below, although the data is only verified for frequencies as stated. Calibration frequencies: DC; from 50 MHz to 26.5 GHz in 50 MHz steps.

Directivity	0 Hz to 10 GHz	> 46 dB, typ. 49 dB
	10 GHz to 26.5 GHz	> 42 dB, typ. 45 dB
Source match	0 Hz to 10 GHz	> 43 dB, typ. 46 dB
	10 GHz to 26.5 GHz	> 40 dB, typ. 43 dB
Reflection tracking	0 Hz to 10 GHz	< 0.03 dB, typ. 0.02 dB
	10 GHz to 26.5 GHz	< 0.04 dB, typ. 0.03 dB
Load match	0 Hz to 10 GHz	> 45 dB, typ. 48 dB
	10 GHz to 26.5 GHz	> 41 dB, typ. 44 dB
Transmission tracking	0 Hz to 10 GHz	< 0.02 dB, typ. 0.01 dB
	10 GHz to 26.5 GHz	< 0.03 dB, typ. 0.02 dB

Effective system data of R&S®ZN-Z229

The specified effective system data are established after performing a suitable system error calibration, e.g. TOSM, at a R&S®ZNA, R&S®ZVA, R&S®ZVB, or R&S®ZVT vector network analyzer, using the characteristic data of the calibration kit, which are stored on a provided USB flash drive. This data is valid between +18 °C and +28 °C, at a measurement bandwidth of 10 Hz and a nominal power of 0 dBm at the calibration ports. The calibration kit is fully functional down to 0 Hz, with effective system data as specified below, although the data is only verified for frequencies as stated. Calibration frequencies: DC; from 50 MHz to 26.5 GHz in 50 MHz steps.

Directivity	0 Hz to 10 GHz	> 45 dB, typ. 48 dB
	10 GHz to 26.5 GHz	> 42 dB, typ. 45 dB
	26.5 GHz to 40 GHz	> 38 dB, typ. 41 dB
	40 GHz to 43.5 GHz	> 38 dB (meas.)
Source match	0 Hz to 10 GHz	> 41 dB, typ. 44 dB
	10 GHz to 26.5 GHz	> 40 dB, typ. 43 dB
	26.5 GHz to 40 GHz	> 36 dB, typ. 39 dB
	40 GHz to 43.5 GHz	> 36 dB (meas.)
Reflection tracking	0 Hz to 10 GHz	< 0.03 dB, typ. 0.02 dB
	10 GHz to 26.5 GHz	< 0.04 dB, typ. 0.03 dB
	26.5 GHz to 40 GHz	< 0.04 dB, typ. 0.03 dB
	40 GHz to 43.5 GHz	< 0.06 dB (meas.)
Load match	0 Hz to 10 GHz	> 44 dB, typ. 47 dB
	10 GHz to 26.5 GHz	> 41 dB, typ. 44 dB
	26.5 GHz to 40 GHz	> 37 dB, typ. 40 dB
	40 GHz to 43.5 GHz	> 37 dB (meas.)
Transmission tracking	0 Hz to 10 GHz	< 0.02 dB, typ. 0.01 dB
	10 GHz to 26.5 GHz	< 0.03 dB, typ. 0.02 dB
	26.5 GHz to 40 GHz	< 0.04 dB, typ. 0.03 dB
	40 GHz to 43.5 GHz	< 0.05 dB (meas.)

General data

Temperature loading	operating temperature range	+18 °C to +28 °C
	permissible temperature range	0 °C to +50 °C
	storage temperature range	-40 °C to +70 °C in line with IEC 60068-2-1 and IEC 60068-2-2
Calibration interval		1 year
Dimensions	W x H x D	400 mm x 70 mm x 260 mm (15.8 in x 2.8 in x 10.2 in)
Weight	R&S®ZN-Z235	1.4 kg (3 lb)
	R&S®ZN-Z229	1.4 kg (3 lb)
	shipping weight	4 kg (9 lb)

Ordering information

Designation	Type	Order No.
Calibration Kit, 3.5 mm, 0 Hz to 26.5 GHz	R&S®ZN-Z235	1336.8500.02
Calibration Kit, 2.92 mm, 0 Hz to 43.5 GHz	R&S®ZN-Z229	1336.7004.02

Service options		
Extended Warranty, one year	R&S®WE1ZV-Z2xx	Please contact your local Rohde & Schwarz sales office.
Extended Warranty, two years	R&S®WE2ZV-Z2xx	
Extended Warranty, three years	R&S®WE3ZV-Z2xx	
Extended Warranty, four years	R&S®WE4ZV-Z2xx	
Extended Warranty with Calibration Coverage, one year	R&S®CW1ZV-Z2xx	
Extended Warranty with Calibration Coverage, two years	R&S®CW2ZV-Z2xx	
Extended Warranty with Calibration Coverage, three years	R&S®CW3ZV-Z2xx	
Extended Warranty with Calibration Coverage, four years	R&S®CW4ZV-Z2xx	

Extended warranty with a term of one to four years (WE1 to WE4)

Repairs carried out during the contract term are free of charge ¹. 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 ¹ and calibration at the recommended intervals as well as any calibration carried out during repairs or option upgrades.

¹ Excluding defects caused by incorrect operation or handling and force majeure. Wear-and-tear parts are not included.