R&S®ZV-ZCAN
Calibration Kits
Specifications

ROHDE&SCHWARZ

Test & Measurement

Data Sheet | 05.01

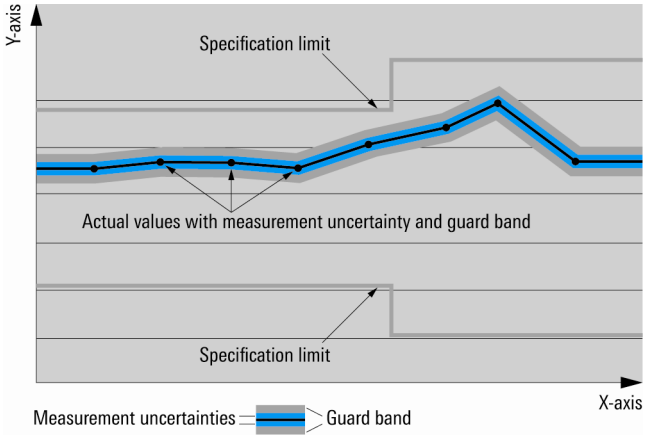
CONTENTS

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 <, ≤, >, ≥, ±, 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 designated with the format “parameter: value”.

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

Specifications

Mechanical data

Connector type	R&S®ZV-ZCAN model.52	type N, 50 Ω, female and male
	R&S®ZV-ZCAN model.72	type N, 75 Ω, female and male
Inner conductor material		Au-plated age-hardened CuBe alloy
Outer conductor material		stainless steel

Electrical data of R&S®ZV-ZCAN (Type N, 50 Ω, female and male)

The specified effective system data is established after performing a TOSM system error calibration on an R&S®ZVL3 vector network analyzer using the calibration kit's characteristic data. This data is valid between +18 °C and +28 °C at a measurement bandwidth of 10 Hz and a nominal power of –10 dBm at the calibration ports.

Frequency range		0 Hz to 3 GHz
Through standard (male – male)		
Return loss		typ. 34 dB
Insertion loss		nom. 0.012 dB $\sqrt{f/GHz}$
Electrical length		nom. 48.97 mm
Through standard (**female** – **female**)		
Return loss		typ. 34 dB
Insertion loss		nom. 0.008 dB $\sqrt{f/GHz}$
Electrical length		nom. 29.04 mm
Open standard (**male**)		
Fringing capacitance	C_0	24 fF
	C_1	1.8 fF/GHz
	C_2	0.1 fF/GHz^2
	C_3	0 fF/GHz^3
Offset length		5.26 mm
Loss		nom. 0.002 dB $\sqrt{f/GHz}$
Short standard (**male**)		
Inductance	L_0	0 pH
	L_1	0 pH/GHz
	L_2	0 pH/GHz^2
	L_3	0 pH/GHz^3
Offset length		5.27 mm
Loss		nom. 0.002 dB $\sqrt{f/GHz}$
Match standard (male)		
DC resistance		50.0 Ω ± 0.5 Ω
Return loss		typ. 46 dB
Maximum average input power		1 W
Open standard (female)		
Fringing capacitance	C_0	99 fF
	C_1	–2.3 fF/GHz
	C_2	0.22 fF/GHz^2
	C_3	0 fF/GHz^3
Offset length		0 mm
Loss		nom. 0.0 dB $\sqrt{f/GHz}$
Short standard (**female**)		
Inductance	L_0	0 pH
	L_1	0 pH/GHz
	L_2	0 pH/GHz^2
	L_3	0 pH/GHz^3
Offset length		0 mm
Loss		nom. 0.0 dB $\sqrt{f/GHz}$
Match standard (**female**)		
DC Resistance		50.0 Ω ± 0.5 Ω
Return loss		typ. 46 dB
Maximum average input power		1 W
Effective system data		
Directivity		> 42 dB
Source match		> 25 dB
Reflection tracking		< 0.05 dB
Load match		> 41 dB
Transmission tracking		< 0.2 dB

Electrical data of R&S®ZV-ZCAN (Type N, 75 Ω, female and male)

The specified effective system data is established after performing a TOSM system error calibration on an R&S®ZVL3-75 vector network analyzer using the calibration kit's characteristic data. This data is valid between +18 °C and +28 °C at a measurement bandwidth of 10 Hz and a nominal power of –10 dBm at the calibration ports.

Frequency range		0 Hz to 3 GHz
Through standard (male – male)		
Return loss		typ. 34 dB
Insertion loss		nom. 0.012 dB $\sqrt{f/GHz}$
Electrical length		nom. 49.07 mm
Through standard (**female** – **female**)		
Return loss		typ. 34 dB
Insertion loss		nom. 0.008 dB $\sqrt{f/GHz}$
Electrical length		nom. 29.47 mm
Open standard (**male**)		
Fringing capacitance	C_0	58 fF
	C_1	–2.7 fF/GHz
	C_2	–1.0 fF/GHz^2
	C_3	0 fF/GHz^3
Offset length		5.26 mm
Loss		nom. 0.002 dB $\sqrt{f/GHz}$
Short standard (**male**)		
Inductance	L_0	0 pH
	L_1	0 pH/GHz
	L_2	0 pH/GHz^2
	L_3	0 pH/GHz^3
Offset length		5.27 mm
Loss		nom. 0.002 dB $\sqrt{f/GHz}$
Match standard (male)		
DC resistance		75.0 Ω ± 1.0 Ω
Return loss		typ. 40 dB
Maximum average input power		1 W
Open standard (female)		
Fringing capacitance	C_0	75 fF
	C_1	–9.0 fF/GHz
	C_2	1.9 fF/GHz^2
	C_3	0 fF/GHz^3
Offset length		0 mm
Loss		nom. 0.0 dB $\sqrt{f/GHz}$
Short standard (**female**)		
Inductance	L_0	0 pH
	L_1	0 pH/GHz
	L_2	0 pH/GHz^2
	L_3	0 pH/GHz^3
Offset length		0 mm
Loss		nom. 0.0 dB $\sqrt{f/GHz}$
Match standard (**female**)		
DC resistance		75.0 Ω ± 1.0 Ω
Return loss		typ. 40 dB
Maximum average input power		1 W
Effective system data		
Directivity		> 40 dB
Source match		> 25 dB
Reflection tracking		< 0.05 dB
Load match		> 40 dB
Transmission tracking		< 0.2 dB

General data

Temperature loading	operating temperature range	+18 °C to +28 °C
	permissible temperature range	+5 °C to +40 °C
	storage temperature range	–40 °C to +70 °C, in line with EN 60068-2-1 and EN 60068-2-2
Recommended calibration interval		1 year
Dimensions (W × H × D)	R&S®ZV-ZCAN model.52 and/or model.72	266 mm × 179 mm × 49 mm, (10.5 in × 7.1 in × 1.93 in)
Weight	R&S®ZV-ZCAN	820 g (1.8 lb)
Shipping weight		1.5 kg (3.3 lb)

Ordering information

Designation	Type	Order No.
Calibration Kit, Type N, 50 Ω, 0 Hz to 3 GHz	R&S®ZV-ZCAN model.52	0800.8515.52
Calibration Kit, Type N, 75 Ω, 0 Hz to 3 GHz	R&S®ZV-ZCAN model.72	0800.8515.72

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 [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.

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, broadcast and media, secure communications, cybersecurity, 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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