

# R&S® ZN-Z85 model .03

## Switch Matrix

### Specifications



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# Definitions

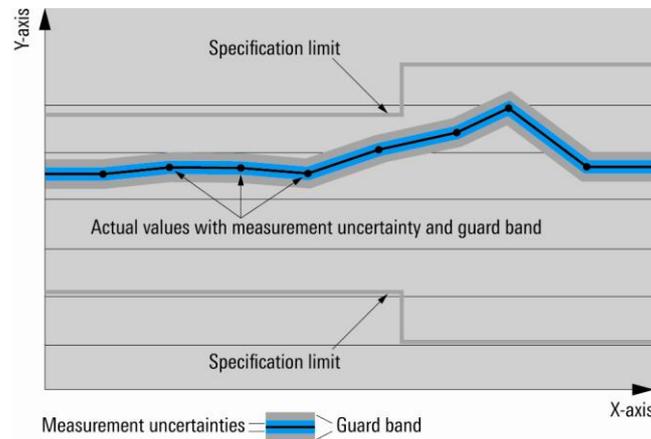
## General

Product data applies under the following conditions:

- Three hours storage at ambient temperature followed by 15 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.

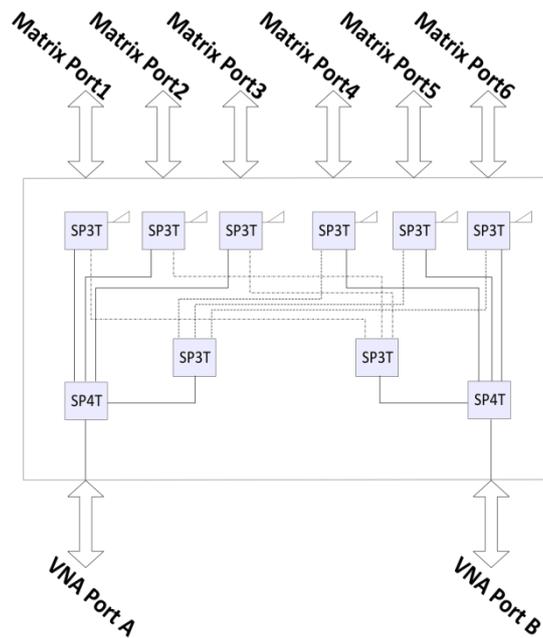
## Uncertainties

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.

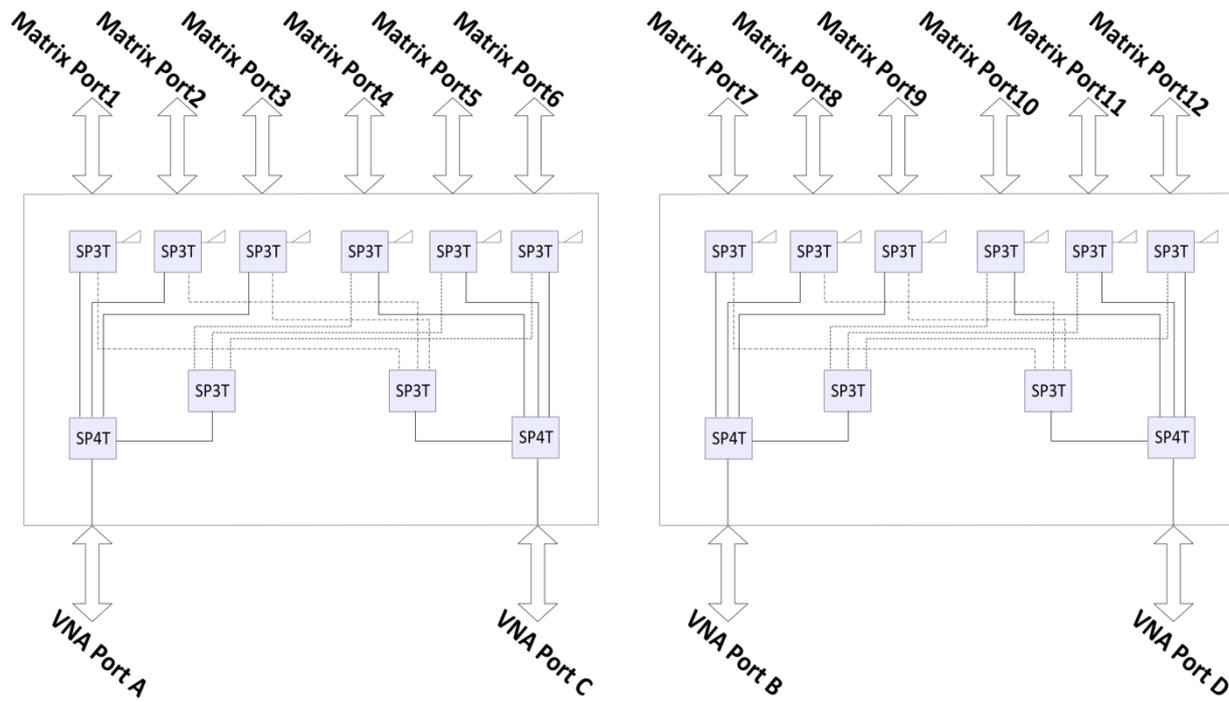
Device settings and GUI parameters are indicated as follows: "parameter: value".

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

# Block diagrams



R&S®ZN-Z85 base model.



R&S®ZN-Z85 (4 x 12) base model + B24.

# Specifications

## General features

Frequency range		10 MHz to 20 GHz
Impedance		50 $\Omega$
VNA port connector type		2.92 mm, female
Number of VNA ports	base model	2
	with B24 option	4
Test port connector type		SMA, female
Number of test ports	base model; with B24 option	6; 12
Switching configuration	base model and with B24 option	VNA ports A, C to test ports 1 to 6, full crossbar
	with B24 option	VNA ports B, D to test ports 7 to 12, full crossbar
Damage level		+23 dBm
Damage DC voltage		12 V
0.1 dB compression	at 2 GHz	20 dBm

## Performance data

		10 MHz to 100 MHz (dB)	100 MHz to 5 GHz (dB)	5 GHz to 10 GHz (dB)	10 GHz to 15 GHz (dB)	15 GHz to 20 GHz (dB)
Insertion loss	any VNA port to any test port	< 6	< 5	< 8	< 10	< 13
	VNA port A, B to test ports 1 to 3, 7 to 9	< 6	< 5	< 8	< 10	< 13
	VNA port A, B to test ports 4 to 6, 10 to 12	< 6	< 8	< 12	< 16	< 20
	VNA port C, D to test ports 1 to 3, 7 to 9	< 6	< 8	< 12	< 16	< 20
	VNA port C, D to test ports 4 to 6, 10 to 12	< 6	< 5	< 8	< 10	< 13
Raw load match	any selected test port (active)	> 8, 10 (typ.)	> 12, 15 (typ.)	> 10, 14 (typ.)	> 8, 10 (typ.)	> 7, 10 (typ.)
	any unselected test port (passive)	> 15, 17 (typ.)	> 17, 23 (typ.)	> 13, 17 (typ.)	> 8, 12 (typ.)	> 7, 10 (typ.)
Isolation	any unselected test port to any VNA port	> 85	> 85	> 70	> 65	> 60

## Remote control

USB	universal serial bus connector (type B)
LAN	local area network connector 10/100BaseT, RJ-45
Direct connect	direct connection to internal VNA measurement bus (R&S®ZNB/ZNBT-B12 option required)

## Switching times

USB	with software handshake turned on	< 1 ms (nom.)
LAN	with software handshake turned on	< 2 ms (nom.)
Direct control		< 100 $\mu$ s (nom.)

## 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 +60 °C
Damp heat		in line with IEC 60068-2-1 and IEC 60068-2-2 +40 °C at 85 % rel. humidity, in line with IEC 60068-2-30
Mechanical resistance	vibration, sinusoidal	5 Hz to 150 Hz, in line with IEC 60068-2-6
	vibration, random	10 Hz to 300 Hz, 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)
EMC, other emissions and immunity		in line with IEC/EN 61326
	emission	class A
	immunity	industrial environment (excluding operating frequency)
Safety		in line with IEC 61010-1 and EN61010-1 C22.2 No. 61010-1 and UL61010-1
Power supply		100 V to 240 V, 50 Hz to 60 Hz/400 Hz, safety class I
Power consumption		≤ 130 VA
Certification mark		VDE, <sub>c</sub> CSA <sub>US</sub> , CE conformity mark
Dimensions	W × H × D	445 mm × 88 mm × 300 mm (17.52 in × 3.46 in × 11.81 in)
Weight	depends on options	5 kg to 6 kg (11 lb to 13.2 lb)

## Ordering information

Designation	Type	Order No.
<b>Base model</b>		
Switch Matrix, 20 GHz, 2 VNA ports to 6 test ports	R&S®ZN-Z85	1326.4777.03
<b>Options</b>		
Additional Test Ports 7 to 12, 4 VNA ports to 12 test ports	R&S®ZN-Z85 B24	1326.4831.26

<b>Service options</b>		
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 <sup>1</sup>. 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 <sup>1</sup> and calibration at the recommended intervals as well as any calibration carried out during repairs or option upgrades.

<sup>1</sup> 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 offers innovative solutions in the following business fields: test and measurement, broadcast and media, secure communications, cybersecurity, radiomonitoring and radiolocation. Founded more than 80 years ago, this independent company has an extensive sales and service network and is present in more than 70 countries. The electronics group is among the world market leaders in its established business fields. The company is headquartered in Munich, Germany. It also has regional headquarters in Singapore and Columbia, Maryland, USA, to manage its operations in these regions.

## 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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