

# R&S® DST200

## RF Diagnostic Chamber

### Specifications



**ROHDE & SCHWARZ**

Test & Measurement

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# Definitions

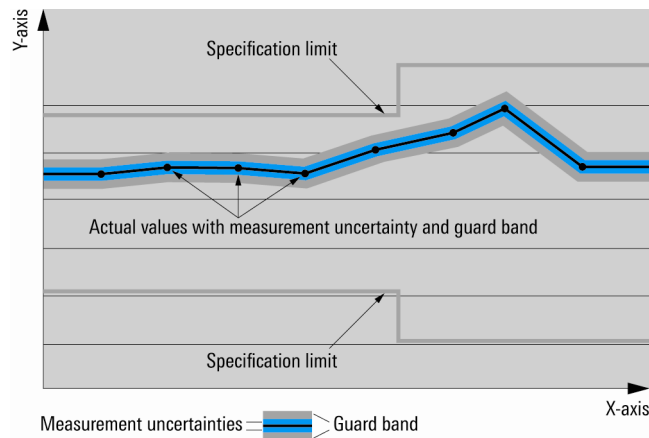
## General

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.

## Base unit

### R&S®DST200 RF diagnostic chamber

RF specifications		
Frequency range		400 MHz to 18 GHz
Shielding effectiveness according to insertion loss method	400 MHz to 700 MHz	> 95 dB (meas.)
	700 MHz to 3 GHz	> 110 dB
	3 GHz to 6 GHz	> 100 dB
	6 GHz to 18 GHz	> 75 dB (meas.)
Power rating	power delivered into test space	< 50 W
Test antenna		
Dual linear polarization		R&S®DST-B215 option
Circular polarization		R&S®DST-B220 option
Door selection		
Left-hand door	door opens to the left	R&S®DST-S100A option
Right-hand door	door opens to the right	R&S®DST-S100B option

## Options

### R&S®DST-B101 filter panel for R&S®DST200, 9-pin D-Sub, fiber-optic

D-Sub pin/socket adapter	number of pins	9
	max. current rating	5 A
	DC operating voltage rating	50 V
	3 dB cut-off frequency	0.8 MHz
Fiber-optic feedthrough		2 × FSMA
Shielding effectiveness	700 MHz to 6 GHz	> 90 dB

### R&S®DST-B102 interface panel for R&S®DST200, 2 × N, 2 × RF cable

Connector inside R&S®DST200		2 × N (f)
Connector outside R&S®DST200		2 × N (f)
RF cable	quantity	2
	length	0.5 m (20 in)
	connectors	1 × N (m), 1 × SMA (m)
Impedance		50 Ω (nom.)
Frequency range		≤ 18 GHz

### R&S®DST-B103 filter panel for R&S®DST200, USB 2.0

Connector inside R&S®DST200		USB-A
Connector outside R&S®DST200		USB-B
Power supply	max. current rating	0.5 A
	voltage rating	5 V
Data rate		low speed
		full speed
		USB 2.0 high speed
Shielding effectiveness	700 MHz to 6 GHz	> 75 dB

### R&S®DST-B104 filter panel for R&S®DST200, 100 V to 240 V, AC

Connector inside R&S®DST200		3-pair luster screw terminal
Connector outside R&S®DST200		C6 plug (IEC 60320)
Power supply		100 V to 240 V ± 10 % (AC), 50 Hz to 60 Hz ± 5 %
	fuse	0.25 A (50 W max.)
Shielding effectiveness	700 MHz to 6 GHz	> 90 dB

**R&S®DST-B120 positioner for calibration antennas for R&S®DST200**

Reference antennas		R&S®TS-RANT3, R&S®TS-RANT18
Test positions	flat EUT table	350 mm
	R&S®DST-B160	270 mm
	R&S®DST-B165	190 mm
Test orientation		FB (front – back), LR (left – right)

**R&S®DST-B130 elevated EUT table for R&S®DST200**

Max. EUT dimensions	W × H × D	200 mm × 45 mm × 200 mm (7.87 in × 1.77 in × 7.87 in)
Max. EUT weight		3 kg (6.6 lb)

**R&S®DST-B150 manual 3D positioner for R&S®DST200**

Rotation axes	manual	2
Scale resolution	elevation, azimuth	15°
Max. EUT dimensions	W × H × D	150 mm × 100 mm × 20 mm (5.90 in × 3.93 in × 0.78 in)
Max. EUT weight		0.2 kg (0.44 lb)
Field perturbation	max. field variation at the EUT center for any orientation of the positioner	
	300 MHz to 2.7 GHz	-0.6 dB to 0.6 dB (meas.)
	2.7 GHz to 6 GHz	-1.5 dB to 1.5 dB (meas.)

**R&S®DST-B160 automated 3D positioner for R&S®DST200**

Rotation axes	automated, with homing	2 (elevation and azimuth)
Positioning speed	elevation	12°/s to 180°/s
	azimuth	12°/s to 180°/s
Positioning accuracy	elevation, azimuth	< 10°
	50000 cycles	< 5° (typ.)
Max. EUT dimensions	W × H × D	149 mm × 100 mm × 20 mm (5.90 in × 3.93 in × 0.78 in)
Max. EUT weight		0.2 kg (0.44 lb)
Field perturbation	max. field deviation at the EUT center for any orientation of the positioner	
	700 MHz to 2.7 GHz	1 dB (meas.)
	2.7 GHz to 6 GHz	2.3 dB (meas.)
Control interface	RS-232	9-pin D-Sub connector, female
Power supply	AC/DC converter	100 V to 240 V ± 10 % (AC), 50 Hz to 60 Hz ± 5 %, 12 V; max. 2.5 A (DC), 1.0 A (typ.)

**R&S®DST-B165 large automated 3D positioner for R&S®DST200**

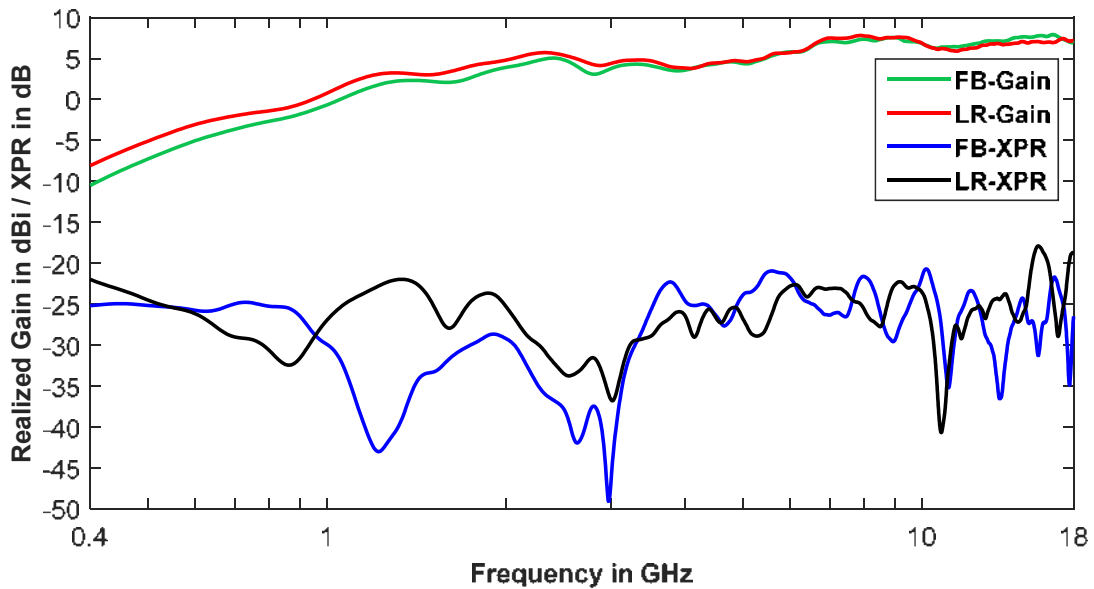
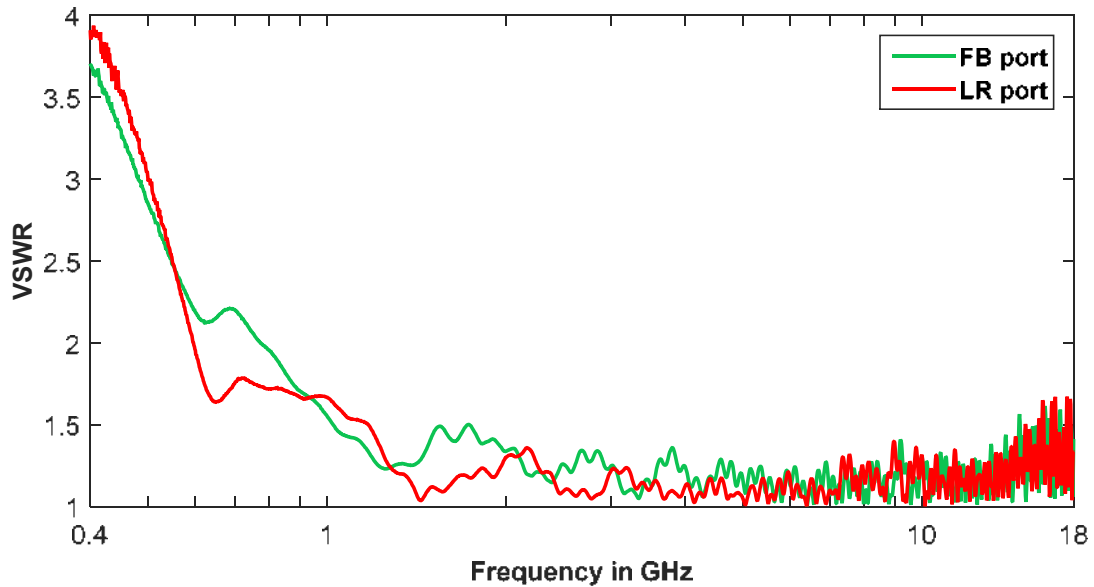
Rotation axes	automated, with homing	2 (elevation and azimuth)
Positioning speed	elevation	10°/s to 100°/s
	azimuth	10°/s to 100°/s
Positioning accuracy	elevation, azimuth	< 10°
	50000 cycles	< 5° (typ.)
Max. EUT dimensions	W × H × D	190 mm × 257 mm × 20 mm (7.5 in × 10.1 in × 0.8 in)
Max. EUT weight		0.8 kg (1.6 lb)
Field perturbation	max. field deviation at the EUT center for any orientation of the positioner	
	700 MHz to 2.7 GHz	0.9 dB (meas.)
	2.7 GHz to 6 GHz	1.8 dB (meas.)
Control interface	RS-232	9-pin D-Sub connector, female
Power supply	AC/DC converter	100 V to 240 V ± 10 % (AC), 50 Hz to 60 Hz ± 5 %, 12 V; max. 2.5 A (DC), 1.0 A (typ.)

**R&S®DST-U165 upgrade kit for the R&S®DST-B160**

Rotation axes	automated, with homing	2 (elevation and azimuth)
Positioning speed	elevation	10°/s to 100°/s
	azimuth	10°/s to 100°/s
Positioning accuracy	elevation, azimuth	< 10°
	50000 cycles	< 5° (typ.)
Max. EUT dimensions	W × H × D	190 mm × 257 mm × 20 mm (7.5 in × 10.1 in × 0.8 in)
Max. EUT weight		0.8 kg (1.6 lb)
Field perturbation	max. field deviation at the EUT center for any orientation of the positioner	
	700 MHz to 2.7 GHz	0.9 dB (meas.)
	2.7 GHz to 6 GHz	1.8 dB (meas.)

## R&S®DST-B215 cross-polarized Vivaldi test antenna for R&S®DST200

VSWR	specified at FB and LR connectors on R&S®DST200	
	400 MHz to 600 MHz	< 4.5
	600 MHz to 900 MHz	< 2.5
	900 MHz to 18 GHz	< 2
Impedance		50 $\Omega$ (nom.)
Power rating	400 MHz to 18 GHz	< 4W CW (meas.)
Polarization		dual linear (nom.)
Port-to-port isolation	400 MHz to 18 GHz	< -25 dB
RF connector	FB and LR connectors of R&S®DST200	2 $\times$ N (f)



Gain and VSWR of the R&S®DST-B215 cross-polarized test antenna.

**R&S®DST-B220 circular-polarized test antenna for R&S®DST200**

Frequency range		700 MHz to 6 GHz
VSWR	specified at RF ANT connector on R&S®DST200	
	700 MHz to 3 GHz	< 1.8
	3 GHz to 6 GHz	< 2.2
	6 GHz to 12 GHz	< 3.5 (meas.)
Quiet zone	cylindrical ( $\varnothing \times L$ ) above EUT table	200 mm $\times$ 30 mm (7.87 in $\times$ 1.18 in)
Field uniformity	max. field variation in quiet zone	< 3.2 dB (meas.)
Impedance		50 $\Omega$ (nom.)
Power rating	700 MHz to 6 GHz	< 4 W
Polarization		right-hand circular (nom.)
RF connector	RF ANT connector on R&S®DST200	N (f)

**R&S®DST-B231 test antenna kit for R&S®DST200**

RF connector	RF ANT connector on R&S®DST200	N (f)
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**R&S®DST-B270 linear-polarized communications antenna for R&S®DST200**

VSWR	specified for RF connector on R&S®DST-B270	
	700 MHz to 18 GHz	< 2
Impedance		50 $\Omega$ (nom.)
Power rating	700 MHz to 6 GHz	< 10 W
Polarization		linear (nom.)
RF connector		SMA (f)
RF cable	length	1 m (39.37 in)
	connectors	1 $\times$ N (m), 1 $\times$ SMA (m)
Outer dimensions	W $\times$ H $\times$ D (without RF cable)	130 mm $\times$ 210 mm $\times$ 8 mm (5.11 in $\times$ 8.26 in $\times$ 0.31 in)

**R&S®DST-B272 2  $\times$  communications antenna, power splitter for R&S®DST200**

Antenna with RF cable	R&S®DST-B270	2 pcs
Two-way 0 degree power splitter	frequency range	350 MHz to 6 GHz
	insertion loss	< 4.6 dB, < 3.6 dB (typ.)
	VSWR	< 1.3 (typ.)
RF cable	length	1 m (39.37 in)
	connectors	1 $\times$ SMA (m), 1 $\times$ SMA (m)
	quantity	2

**R&S®DST-Z5 shipping container**

Outer dimensions	W $\times$ H $\times$ D	840 mm $\times$ 1010 mm $\times$ 820 mm (33.07 in $\times$ 39.76 in $\times$ 32.28 in)
Weight		approx. 35 kg (77 lb)
Casters	2 $\times$ lockable	4

**R&S®DST-Z18 RF cable**

Frequency range		$\leq$ 18 GHz
RF connectors		1 $\times$ N (m) straight, 1 $\times$ N (m) right angle
Length		1.5 m (59 in)
Impedance		50 $\Omega$ (nom.)
Characteristics		high shielding effectiveness, armored, flexible, long life

## General data

Environmental conditions		
Temperature	operating temperature range	0 °C to +50 °C
	storage temperature range	-25 °C to +70 °C
Damp heat		in line with EN 60068-2-30 +25 °C/+40 °C, 95 % rel. humidity, cyclic

Mechanical resistance		
Vibration	sinusoidal	in line with EN 60068-2-6, 5 Hz to 55 Hz, 0.15 mm amplitude const., 55 Hz to 150 Hz, 0.5 g const.
	random	in line with EN 60068-2-64, 10 Hz to 300 Hz, acceleration 1.2 g RMS
Operating cycles	door opening and closing; shielding effectiveness does not deteriorate below specifications	< 66 000 (meas.)

Power rating		
Rated voltage		with option R&S®DST-B104 installed 100 V to 240 V AC (± 10 %)
Rated frequency		50 Hz to 60 Hz
Rated power		50 W

Product conformity		
Electromagnetic compatibility	EU: in line with EMC Directive 2004/108/EC	EN 61326-1 (industrial environment), EN 61326-2-1, EN 55011 (class B), EN 61000-3-2, EN 61000-3-3
Electrical safety	EU: in line with Low Voltage Directive 2006/95/EC	EN 61010-1
	USA	UL 61010-1
	Canada	CAN/CSA-C22.2 No. 61010-1

Mechanical specifications		
R&S®DST200 outer dimensions	W × H × D	770 mm × 760 mm × 695 mm (30.31 in × 29.92 in × 27.36 in)
Weight		approx. 55 kg (121 lb)
EUT table dimensions	W × D supplied with R&S®DST200 base unit	200 mm × 200 mm (7.87 in × 7.87 in)
Max. EUT dimension	W × H × D	400 mm × 330 mm × 400 mm (15.74 in × 12.99 in × 15.74 in)
Max. EUT weight	allowed on EUT table supplied with R&S®DST200 base unit	3 kg (6.6 lb)

## Ordering information

Designation	Type	Order No.
<b>Base unit</b>		
RF Diagnostic Chamber	R&S®DST200	1510.9047.02
<b>Base unit configuration options, mandatory</b>		
R&S®DST200 Selection: Left-Hand Door Mounting	R&S®DST-S100A	1515.1396.02
R&S®DST200 Selection: Right-Hand Door Mounting	R&S®DST-S100B	1515.1396.03
Cross-Polarized Vivaldi Test Antenna, for R&S®DST200 <sup>1</sup>	R&S®DST-B215	1516.8207.02
Circular-Polarized Test Antenna for R&S®DST200 <sup>1</sup>	R&S®DST-B220	1518.4509.02
Test Antenna Kit for R&S®DST200 <sup>1</sup>	R&S®DST-B231	1518.5328.02
<b>Hardware options</b>		
Filter Panel for R&S®DST200, 9-pin D-Sub, fiber-optic	R&S®DST-B101	1514.7778.02
Interface Panel for R&S®DST200, 2 × N, 2 × RF cable	R&S®DST-B102	1514.7784.02
Filter Panel for R&S®DST200, USB 2.0	R&S®DST-B103	1514.7790.02
Filter Panel for R&S®DST200, 100 V to 240 V AC	R&S®DST-B104	1516.8407.02
Positioner for Calibration Antennas	R&S®DST-B120	1516.8659.02
Elevated EUT Table for R&S®DST200	R&S®DST-B130	1515.1467.02
Manual 3D Positioner for R&S®DST200	R&S®DST-B150	1515.1480.02
Automated 3D Positioner for R&S®DST200	R&S®DST-B160	1516.8007.02
Large Automated 3D Positioner for R&S®DST200	R&S®DST-B165	1519.3506.02
Upgrade Kit for the R&S®DST-B160	R&S®DST-U165	1519.3935.02
Cross-Polarized Vivaldi Test Antenna for R&S®DST200 <sup>1</sup>	R&S®DST-B215	1527.3576.02
Circular-Polarized Test Antenna for R&S®DST200	R&S®DST-B220	1518.4509.02
Test Antenna Kit for R&S®DST200 <sup>1</sup>	R&S®DST-B231	1518.5328.02
Linear-Polarized Communications Antenna for R&S®DST200	R&S®DST-B270	1518.4515.02
Linear-Polarized Communications Antenna, 2 pcs., power splitter	R&S®DST-B272	1518.4609.02
<b>Software options</b>		
Over-the-Air (OTA) Performance Measurement Software <sup>2</sup>	R&S®AMS32	1508.6650.02
OTA Measurement Software Basic Package for R&S®DST200 <sup>2</sup>	R&S®AMS32-DST	1518.5270.02
Software License Package for R&S®AMS32-DST, basic license, includes GSM, CDMA, WCDMA and LTE <sup>3</sup>	R&S®AMS32-PK20	1518.5286.02
Software License Package for R&S®AMS32-DST, basic license, includes GSM, CDMA, TD-SCDMA, WCDMA, LTE, WLAN and Bluetooth <sup>3</sup>	R&S®AMS32-PK25	1518.5286.25
EMC Measurement Software <sup>2</sup>	R&S®EMC32-EB	1300.7010.02
<b>Recommended extras</b>		
Shipping Container for R&S®DST200	R&S®DST-Z5	1518.9530.02
RF Cable, 18 GHz, 1.5 m, 2 × N, high shielding effectiveness	R&S®DST-Z18	1515.1473.02
EUT Holder, for R&S®DST-B160	R&S®DST-Z160	1518.5205.02
EUT Holder, for R&S®DST-B165	R&S®DST-Z165	1519.3941.02
Linear-Polarized Calibration Antenna, 400 MHz to 3 GHz	R&S®TS-RANT3	1516.4224.02
Antenna Calibration Data for R&S®TS-RANT3C: gain, AF, VSWR	R&S®TS-RANT3C	1516.4224.05
Linear-Polarized Calibration Antenna, 3 GHz to 18 GHz	R&S®TS-RANT18	1516.4218.02
Antenna Calibration Data for R&S®TS-RANT18C: gain, AF, VSWR	R&S®TS-RANT18C	1516.4218.05

For product brochure, see PD 5214.3600.12 and [www.rohde-schwarz.com](http://www.rohde-schwarz.com)

<sup>1</sup> Selection of R&S®DST-B215, R&S®DST-B220 or R&S®DST-B231 is mandatory (factory-installed).

<sup>2</sup> Selection of option as required for your application. Please contact your local Rohde & Schwarz expert.

<sup>3</sup> Requires R&S®AMS32-DST.



## 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**

## Rohde & Schwarz GmbH & Co. KG

[www.rohde-schwarz.com](http://www.rohde-schwarz.com)

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