

R&S® DST200 RF DIAGNOSTIC CHAMBER

Specifications



Specifications
Version 06.00

ROHDE & SCHWARZ

Make ideas real



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Definitions

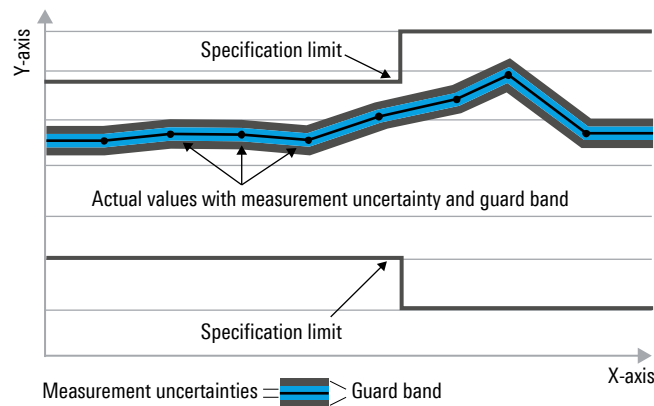
General

Product data applies under the following conditions:

- Three hours of storage at ambient temperature followed by 30 minutes of 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.



Non-traceable specifications with limits (n. trc.)

Represent product performance that is specified and tested as described under “Specifications with limits” above. However, product performance in this case cannot be warranted due to the lack of measuring equipment traceable to national metrology standards. In this case, measurements are referenced to standards used in the Rohde & Schwarz laboratories.

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”.

Non-traceable specifications with limits, typical data as well as nominal and measured values are not warranted by Rohde & Schwarz.

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

Base unit

R&S®DST200 RF diagnostic chamber

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
	maximum 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

Connectors inside of the R&S®DST200		2 × N (f)
Connectors outside of the 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 of the R&S®DST200		USB-A
Connector outside of the R&S®DST200		USB-B
Power supply	maximum 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 of the R&S®DST200		3-pair luster screw terminal
Connector outside of the R&S®DST200		C6 plug (IEC 60320)
Power supply		100 V to 240 V AC ± 10 %, 50 Hz to 60 Hz ± 5 %
	fuse	0.25 A (max. 50 W)
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 to back), LR (left to right)

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

Maximum EUT dimensions	W x H x D	200 mm x 45 mm x 200 mm (7.87 in x 1.77 in x 7.87 in)
Maximum EUT weight		3 kg (6.6 lb)

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

Rotation axes	manual	2 (elevation and azimuth)
Scale resolution	elevation, azimuth	15°
Maximum EUT dimensions	W x H x D	150 mm x 100 mm x 20 mm (5.90 in x 3.93 in x 0.78 in)
Maximum EUT weight		0.2 kg (0.44 lb)
Field perturbation	maximum 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

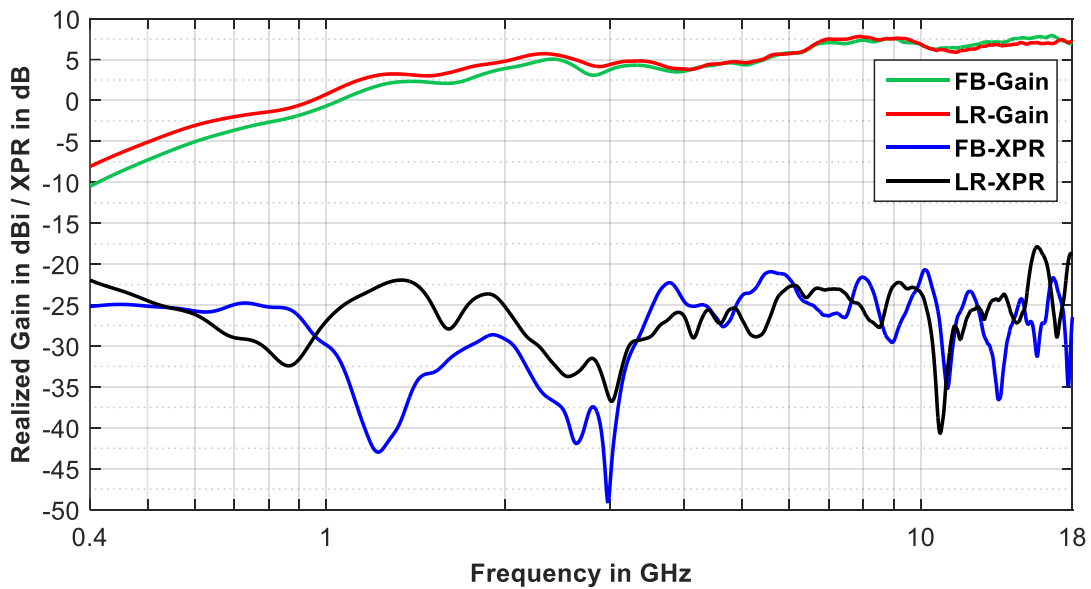
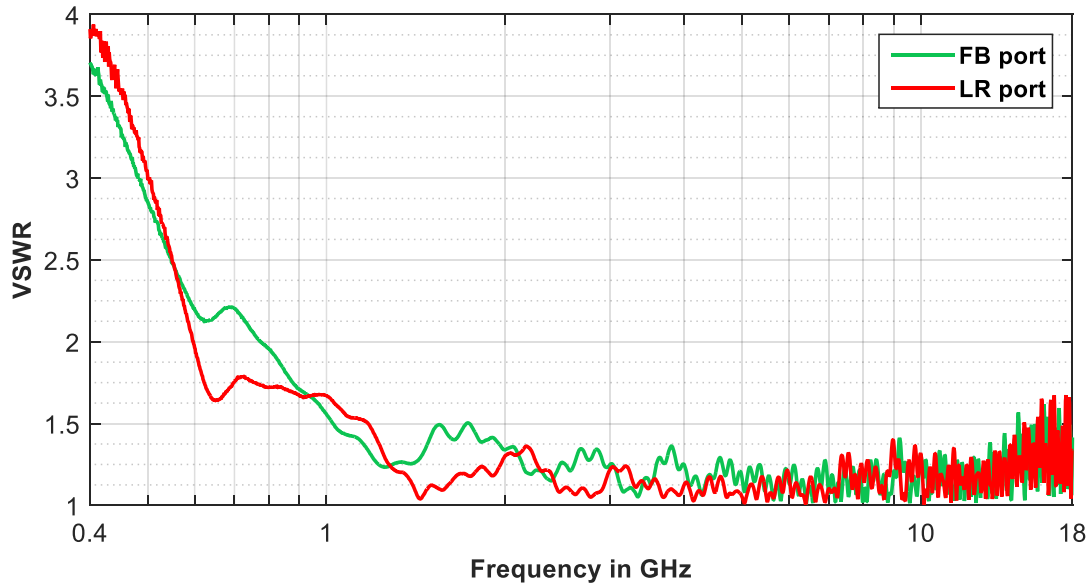
Rotation axes	automated, with homing	2 (elevation and azimuth)
Positioning speed	elevation	12°/s to 180°/s
	azimuth	12°/s to 180°/s
Positioning accuracy	elevation, azimuth	< 10°
	50000 cycles	< 5° (typ.)
Maximum EUT dimensions	W x H x D	149 mm x 100 mm x 20 mm (5.90 in x 3.93 in x 0.78 in)
Maximum EUT weight		0.2 kg (0.44 lb)
Field perturbation	maximum 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 AC ± 10 %, 50 Hz to 60 Hz ± 5 %, 12 V DC; max. 2.5 A, 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.)
Maximum EUT dimensions	W x H x D	190 mm x 257 mm x 20 mm (7.5 in x 10.1 in x 0.8 in)
Maximum EUT weight		0.8 kg (1.6 lb)
Field perturbation	maximum 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 AC ± 10 %, 50 Hz to 60 Hz ± 5 %, 12 V DC; max. 2.5 A, 1.0 A (typ.)

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 Ω (nom.)
Power rating	400 MHz to 18 GHz	< 4 W 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 × N (f)



VSWR, gain and XPR ratio 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 x 30 mm (7.87 in x 1.18 in)
Field uniformity	maximum field variation in quiet zone	< 3.2 dB (meas.)
Impedance		50 Ω (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 Ω (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 x N (m), 1 x SMA (m)
Outer dimensions	W x H x D (without RF cable)	130 mm x 210 mm x 8 mm (5.11 in x 8.26 in x 0.31 in)

R&S®DST-B272 2 x 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 x SMA (m), 1 x SMA (m)
	quantity	2

R&S®DST-Z5 shipping container

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

R&S®DST-Z18 RF cable

Frequency range		\leq 18 GHz
RF connectors		1 x N (m) straight, 1 x N (m) right angle
Length		1.5 m (59 in)
Impedance		50 Ω (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		+25 °C/+40 °C, 95 % rel. humidity, cyclic, in line with EN 60068-2-30

Mechanical resistance		
Vibration	sinusoidal	5 Hz to 55 Hz, 0.15 mm amplitude const., 55 Hz to 150 Hz, 0.5 g const., in line with EN 60068-2-6
	random	8 Hz to 500 Hz, acceleration: 1.2 g (RMS), in line with EN 60068-2-64
Operating cycles	door opening and closing; shielding effectiveness does not deteriorate below specifications	< 66 000 (meas.)

Power rating		with R&S®DST-B104 option installed
Rated voltage		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	in line with 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	in line with EN 61010-1
	USA	in line with UL 61010-1
	Canada	in line with CAN/CSA-C22.2 No. 61010-1

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

Ordering information

Designation	Type	Order No.
Base unit		
RF diagnostic chamber	R&S®DST200	1510.9047.02
Base unit configuration options, mandatory		
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
Hardware options		
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 x N, 2 x 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
Cross-polarized Vivaldi test antenna for R&S®DST200 ¹	R&S®DST-B215	1527.3576.02
Circular-polarized test antenna for R&S®DST200 ¹	R&S®DST-B220	1518.4509.02
Test antenna kit for R&S®DST200 ¹	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
Software options		
Over-the-air (OTA) performance measurement software ²	R&S®AMS32	1508.6650.02
OTA measurement software basic package for R&S®DST200 ²	R&S®AMS32-DST	1518.5270.02
Software license package for R&S®AMS32-DST, basic license, includes GSM, CDMA, WCDMA and LTE ³	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® ³	R&S®AMS32-PK25	1518.5286.25
Recommended extras		
Shipping container for R&S®DST200	R&S®DST-Z5	1518.9530.02
RF cable, 18 GHz, 1.5 m, 2 x 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
Biconical calibration antenna, 80 MHz to 3 GHz	R&S®SBA9113BMV	1543.4050.02
Calibration of R&S®SBA9113BMV	R&S®CAL-9113BM	3695.7783.02
Biconical calibration antenna, 3 GHz to 18 GHz	R&S®SBA9112MV	1543.4067.02
Calibration of R&S®SBA9112MV	R&S®CAL-9112M	3695.7902.02

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

² Selection of option as required for your application. Contact your local Rohde & Schwarz sales partner.

³ Requires R&S®AMS32-DST.

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- ▶ 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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