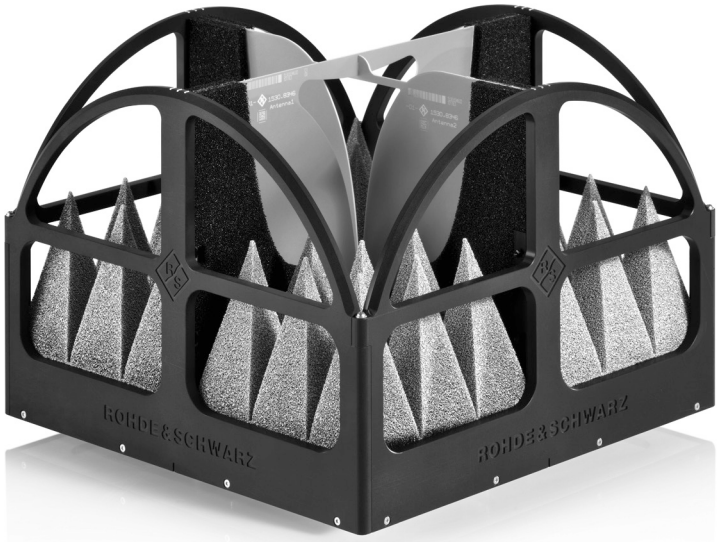
Test and Communications Antennas for the R&S®TS8991 OTA Performance Test System

Specifications

R&S®TC-TA18 cross-polarized Vivaldi test antenna,
R&S®TC-TA85CP cross-polarized Vivaldi test antenna,
R&S®TC-TA85LP linear-polarized Vivaldi test antenna,
R&S®TC-CA6 linear-polarized communications antenna



ROHDE&SCHWARZ

Data Sheet | Version 04.00

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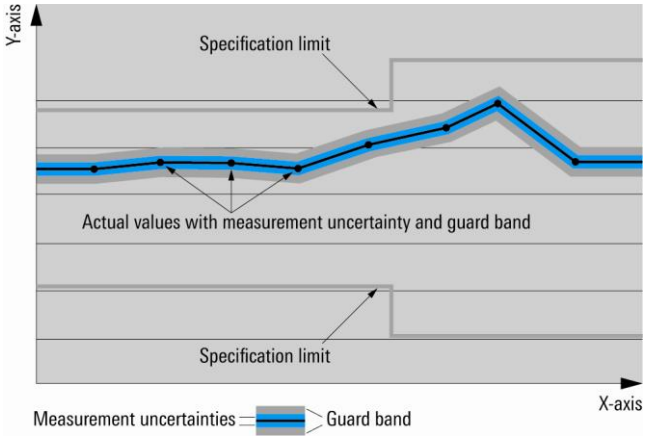
Definitions

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 <, ≤, >, ≥, ±, 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.

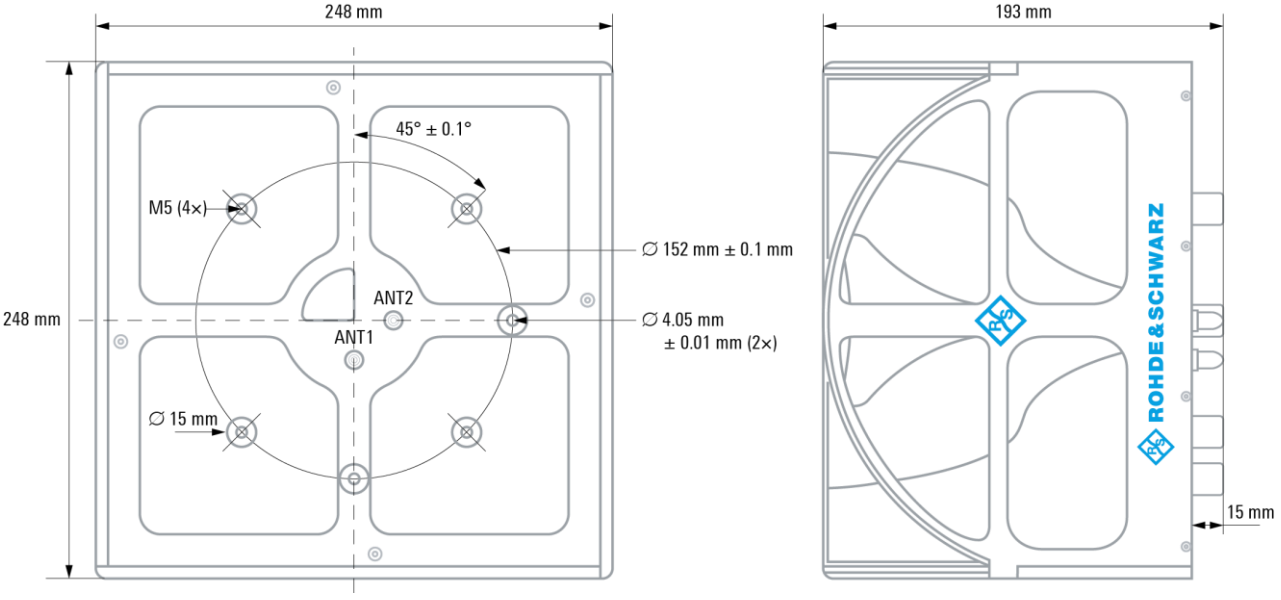
Device settings and GUI parameters are indicated as follows: “parameter: value”.

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

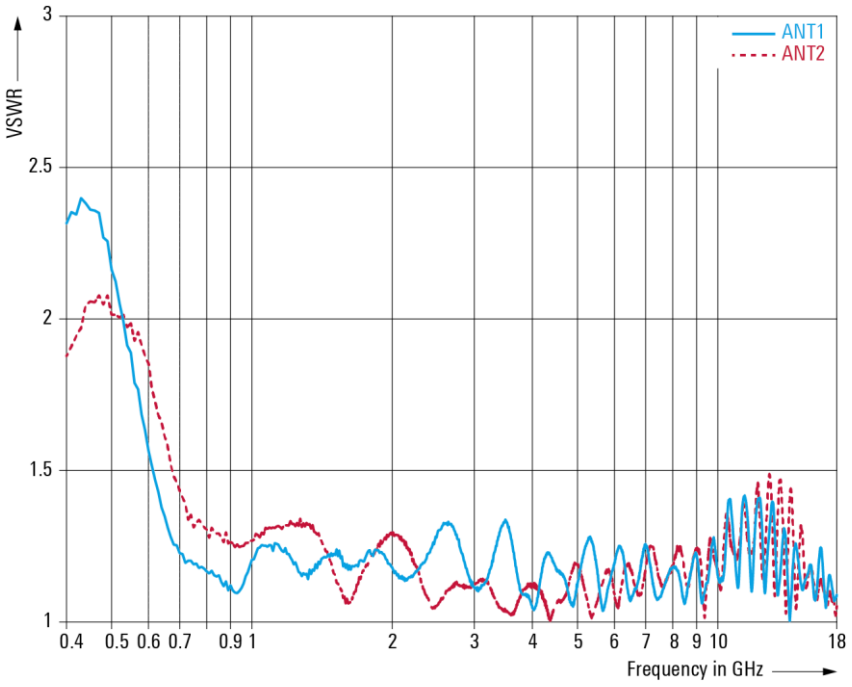
Test antennas

R&S®TC-TA18 cross-polarized Vivaldi test antenna

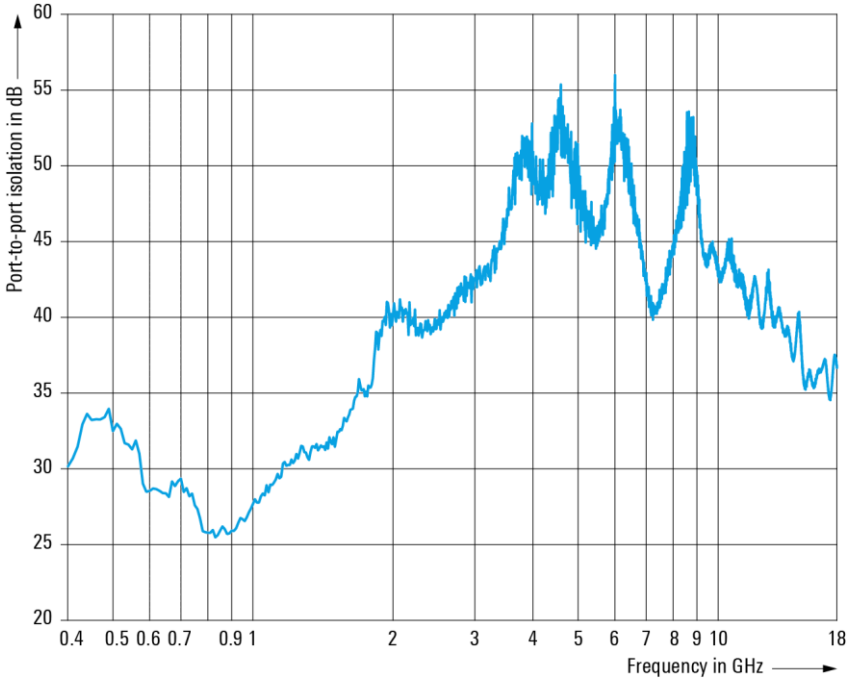
VSWR	specified at the SMA connectors of the R&S®TC-TA18	
	400 MHz to 700 MHz	< 3
	700 MHz to 18 GHz	< 2
Impedance		50 Ω (nom.)
Power rating	400 MHz to 18 GHz	< 4 W CW (meas.)
Polarization		dual linear (nom.)
Port-to-port isolation	400 MHz to 18 GHz	> 20 dB
RF connector	ANT1, ANT2	2 × SMA (f)
Outer dimensions (W × H × D)	without transport case	248 mm × 248 mm × 193 mm (9.76 in × 9.76 in × 7.60 in)
	with transport case	400 mm × 365 mm × 380 mm (15.75 in × 14.37 in × 14.96 in)
Weight	without transport case	approx. 1.6 kg (3.5 lb)
	with transport case	approx. 6.1 kg (13.4 lb)



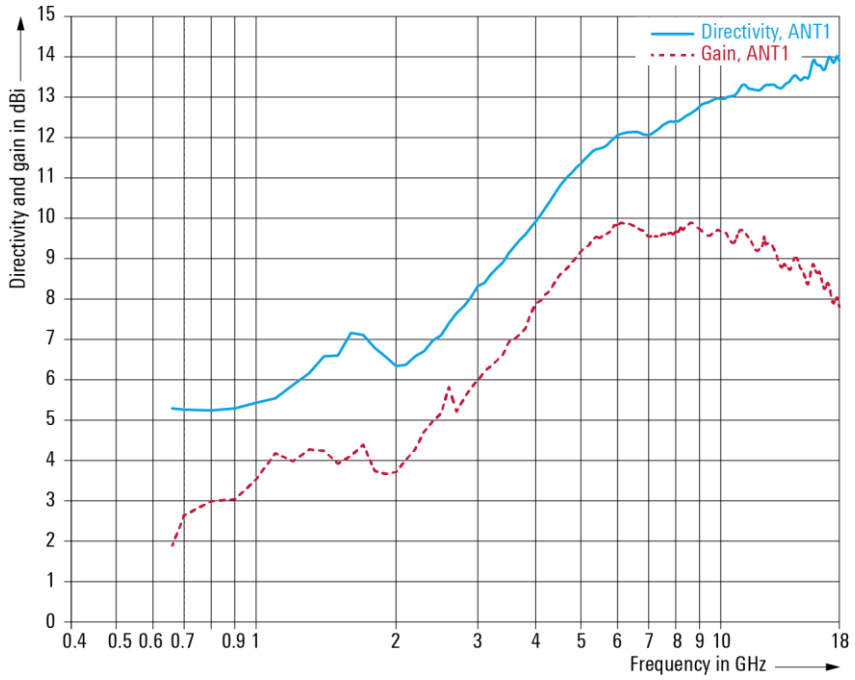
Mounting interface of the R&S®TC-TA18 cross-polarized Vivaldi test antenna.



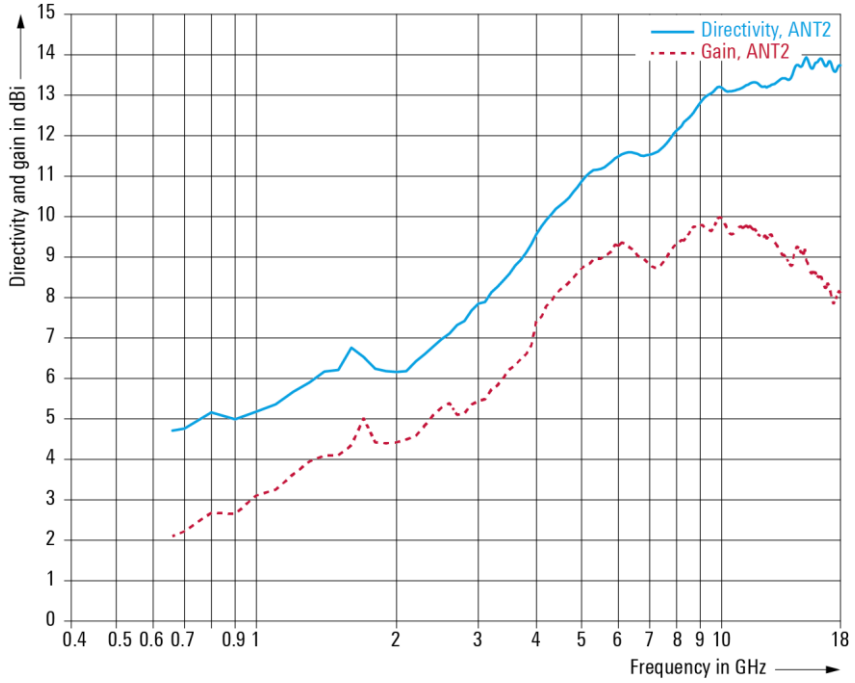
VSWR of the R&S®TC-TA18 cross-polarized Vivaldi test antenna (meas.).



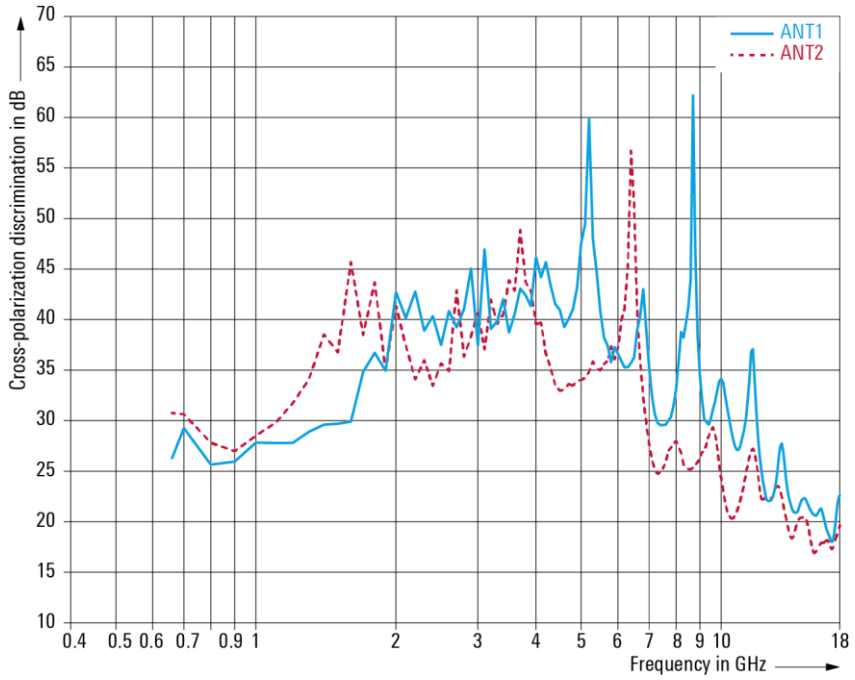
Port-to-port isolation of the R&S®TC-TA18 cross-polarized Vivaldi test antenna (meas.).



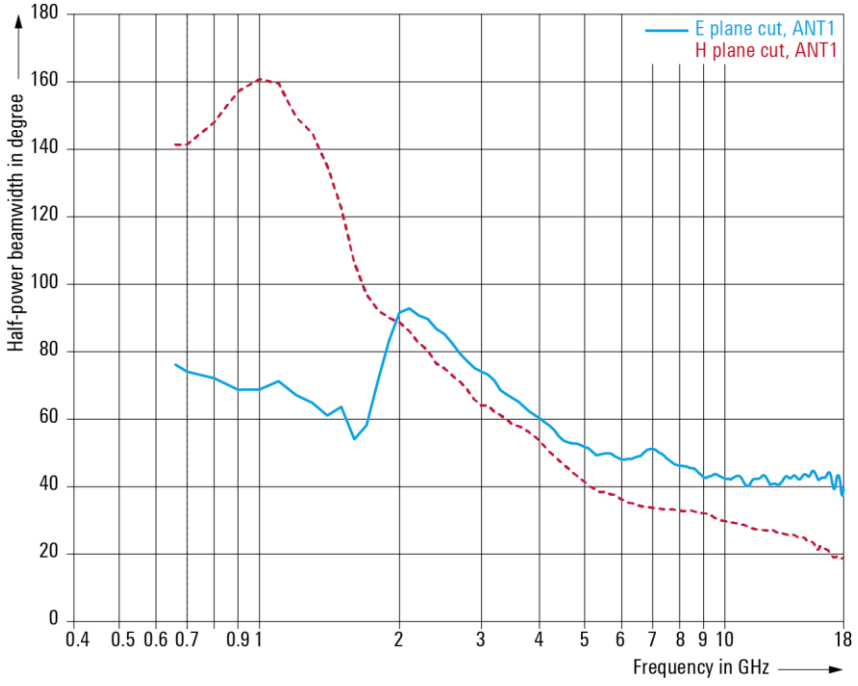
Directivity and gain of the R&S®TC-TA18 cross-polarized Vivaldi test antenna; port ANT1 (meas.).



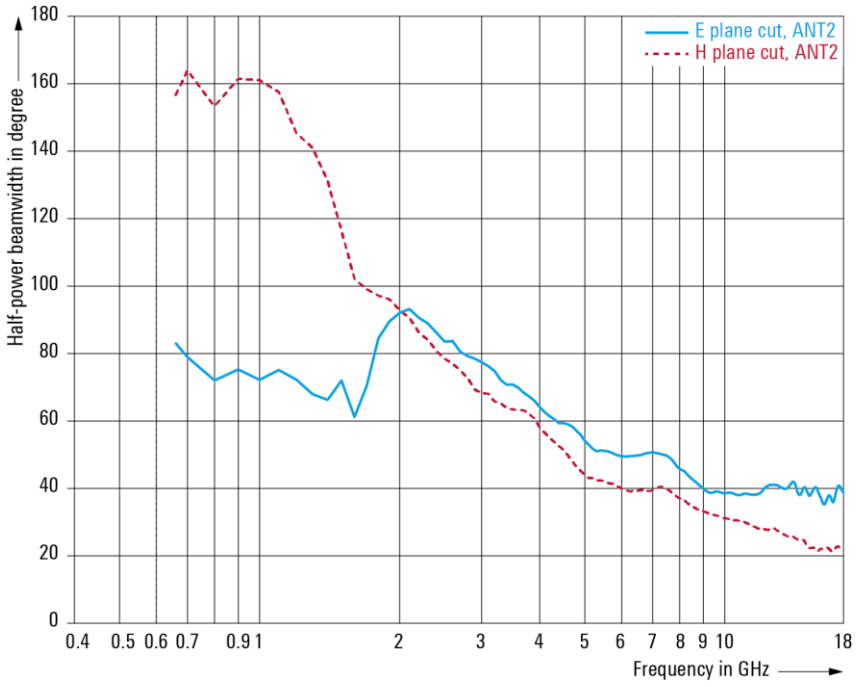
Directivity and gain of the R&S®TC-TA18 cross-polarized Vivaldi test antenna; port ANT2 (meas.).



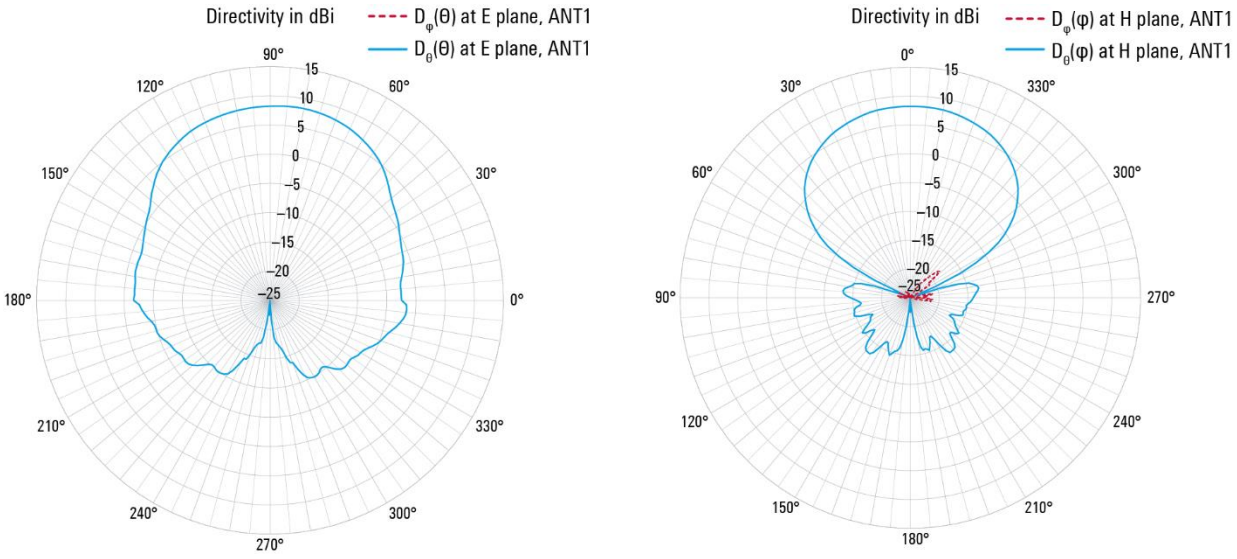
Cross-polarization discrimination of the R&S®TC-TA18 cross-polarized Vivaldi test antenna (meas.).



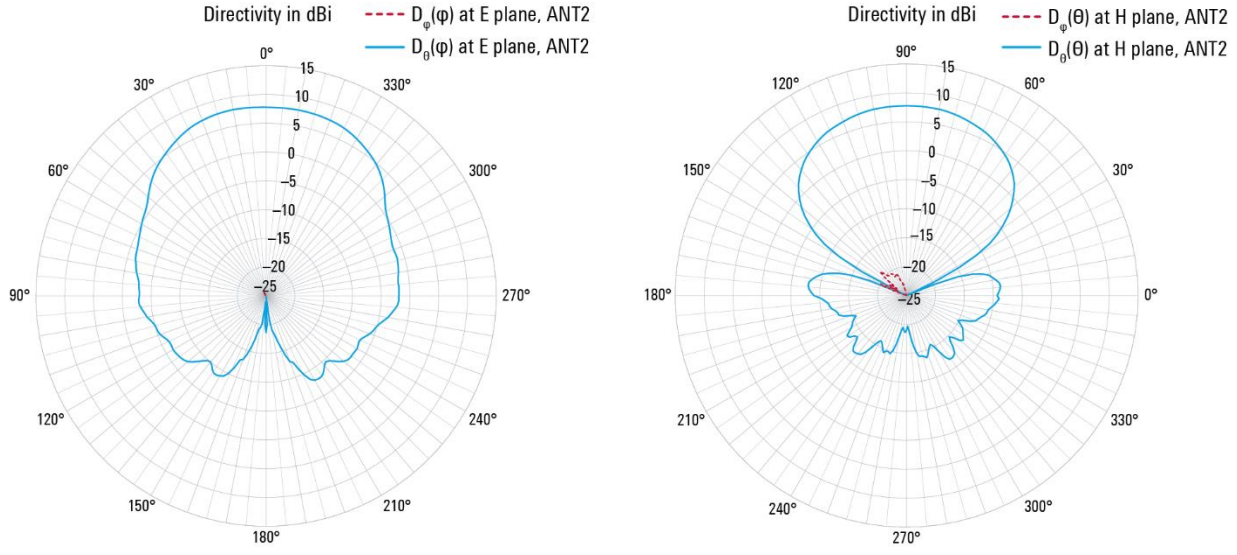
Half-power beamwidth of the R&S®TC-TA18 cross-polarized Vivaldi test antenna; port ANT1 (meas.).



Half-power beamwidth of the R&S®TC-TA18 cross-polarized Vivaldi test antenna; port ANT2 (meas.).



Partial directivity of the R&S®TC-TA18 cross-polarized Vivaldi test antenna at 3 GHz; port ANT1 (meas.).



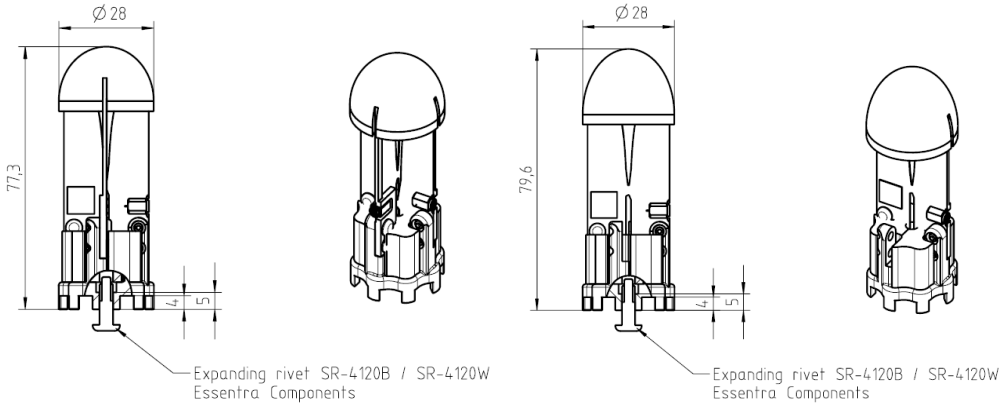
Partial directivity of the R&S®TC-TA18 cross-polarized Vivaldi test antenna at 3 GHz; port ANT2 (meas.).

R&S®TC-TA85CP cross-polarized Vivaldi test antenna

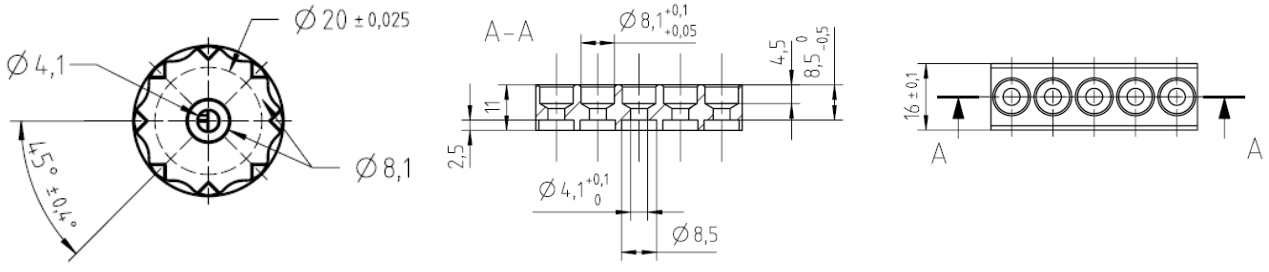
VSWR	specified at the R&S®TC-MMPX-A2 RF adapter connected to the MMPX connector of the R&S®TC-TA85CP	
	4 GHz to 7 GHz	< 2.5
	7 GHz to 67 GHz	< 2.2
	67 to 85 GHz	< 2.2 (meas.) [1]
Impedance		50 Ω (nom.)
Polarization		dual linear (nom.)
Port-to-port isolation		> 25 dB
RF connector	ANT1, ANT2	2 × MMPX (f)
Durability (matings)		100
Outer dimensions (H × D)		77.3 mm × 28 mm (3.04 in × 1.10 in)
Weight		approx. 14 g (0.031 lb)

R&S®TC-TA85LP linear-polarized Vivaldi test antenna

VSWR	specified at the R&S®TC-MMPX-A2 RF adapter connected to the MMPX connector of the R&S®TC-TA85LP	
	4 GHz to 67 GHz	< 2.2
	67 to 85 GHz	< 2.2 (meas.) [1]
Impedance		50 Ω (nom.)
Polarization		linear (nom.)
RF connector		MMPX (f)
Durability (matings)		100
Outer dimensions (H × D)		79.6 mm × 28 mm (3.13 in × 1.10 in)
Weight		approx. 12 g (0.027 lb)

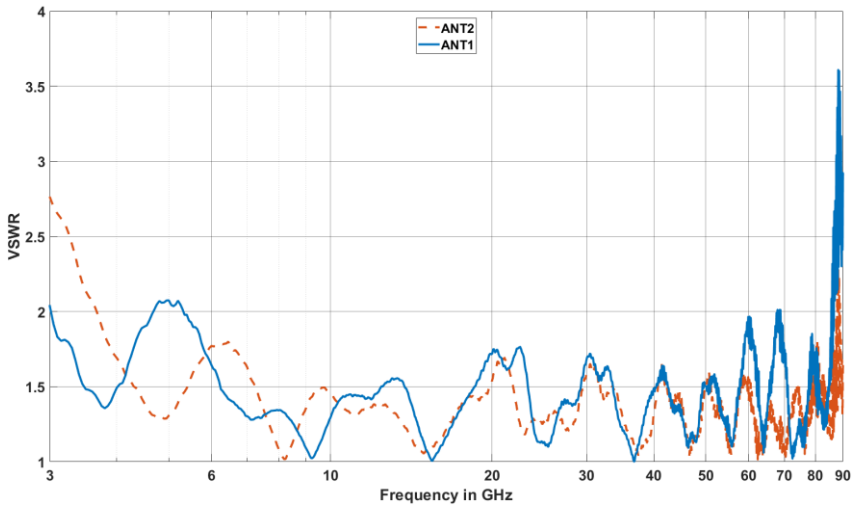


Dimensions of the R&S®TC-TA85CP cross-polarized (left) and the R&S®TC-TA85LP linear-polarized (right) Vivaldi test antennas.

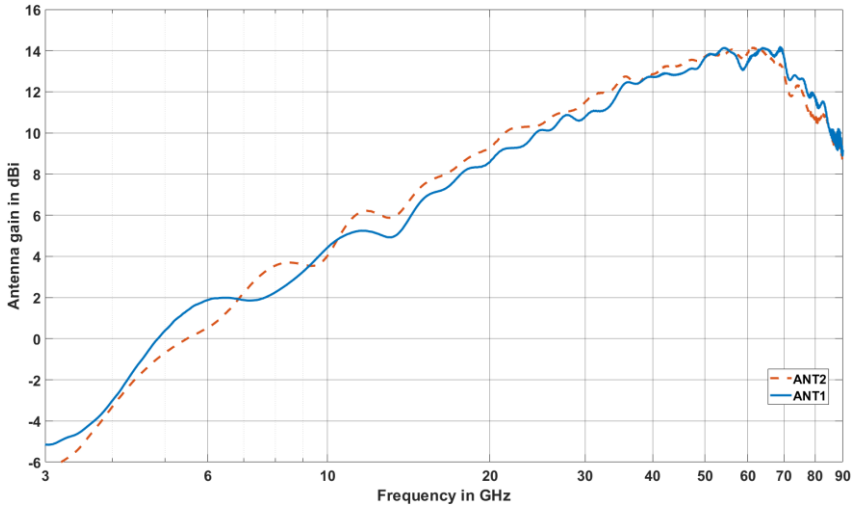


[1] Measurements above 67 GHz were performed using R&S®TC-MMPX-A1 RF adapter.

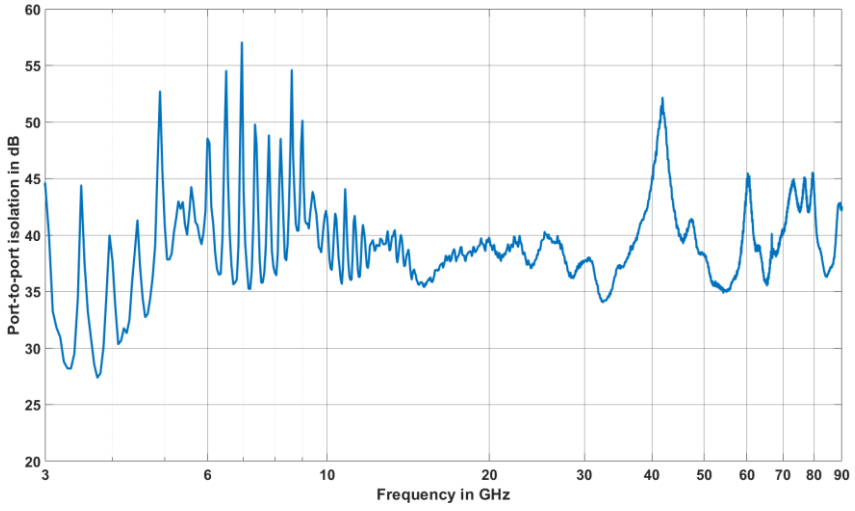
Mounting interface of the R&S®TC-TA85CP and the R&S®TC-TA85LP Vivaldi test antennas.



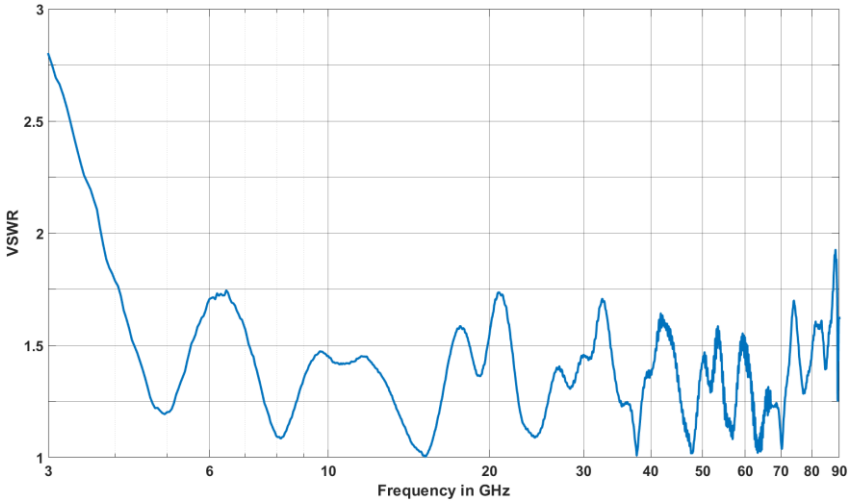
VSWR of the R&S®TC-TA85CP cross-polarized Vivaldi test antenna (meas.).



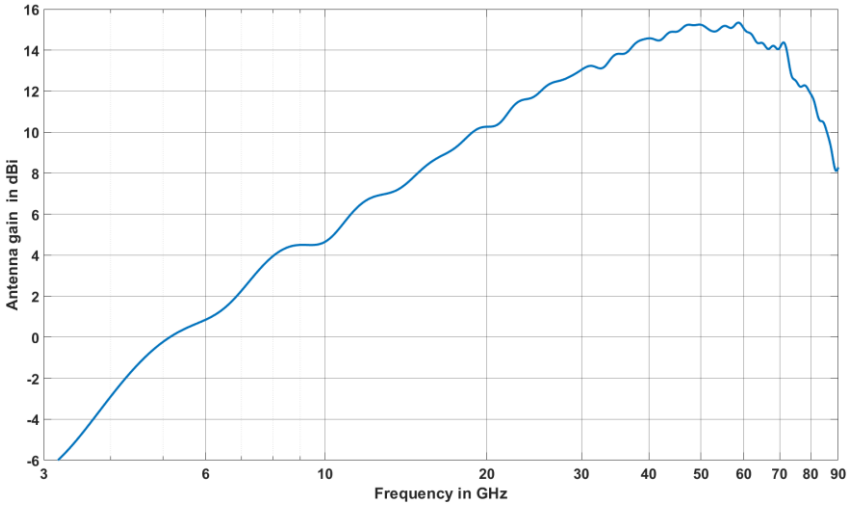
Antenna gain of the R&S®TC-TA85CP cross-polarized Vivaldi test antenna (meas.).



Port-to-port isolation of the R&S®TC-TA85CP cross-polarized Vivaldi test antenna (meas.).



VSWR of the R&S®TC-TA85LP linear-polarized Vivaldi test antenna (meas.).

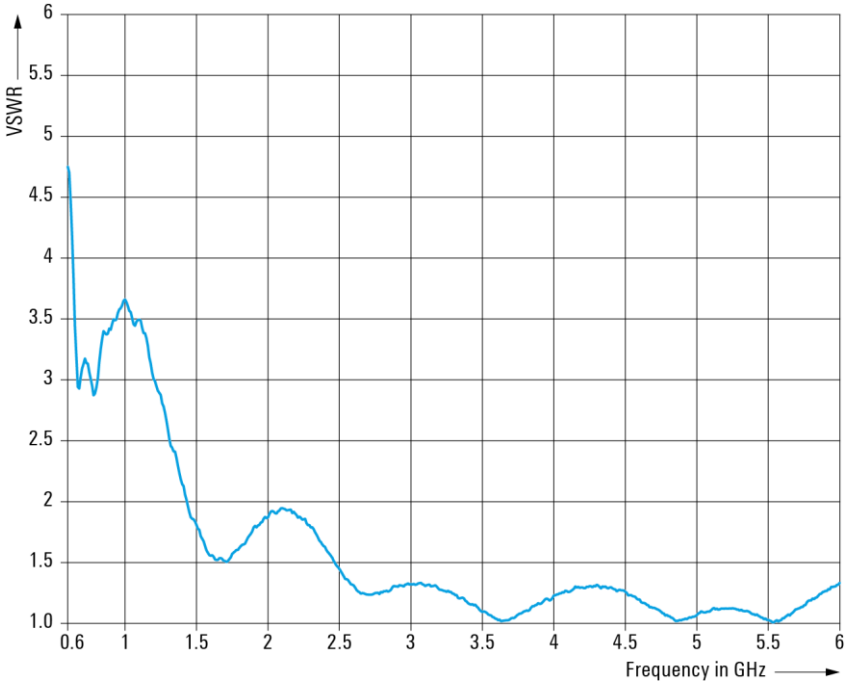


Antenna gain of the R&S®TC-TA85LP linear-polarized Vivaldi test antenna (meas.).

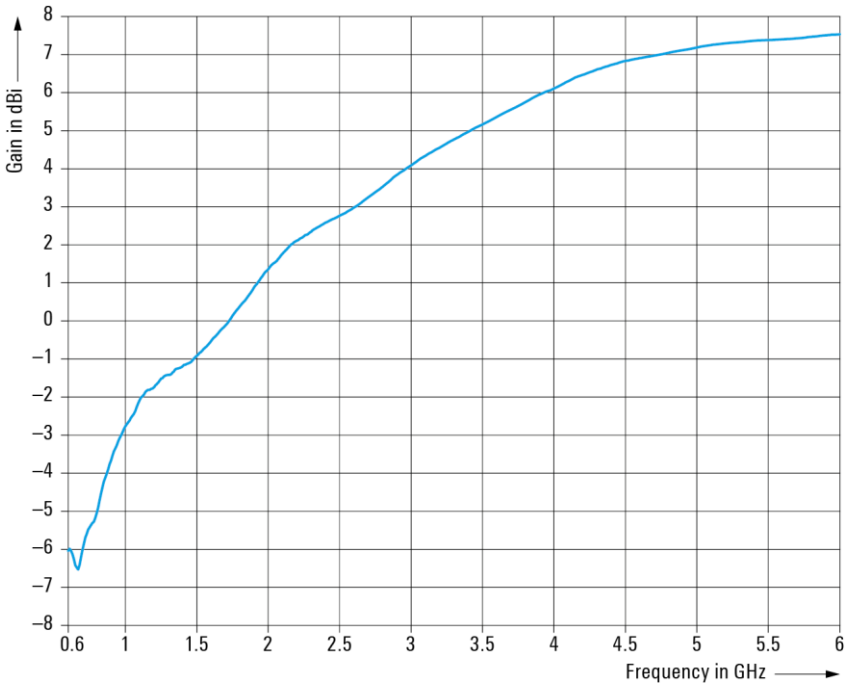
Communications antenna

R&S®TC-CA6 linear-polarized communications antenna

VSWR	specified at the SMP connector of the R&S®TC-CA6 antenna	
	600 MHz to 700 MHz	< 6 (meas.)
	700 MHz to 2.4 GHz	< 4 (meas.)
	2.4 GHz to 6 GHz	< 2
Impedance		50 Ω (nom.)
Polarization		linear (nom.)
RF connector		SMP (m)
Outer dimensions (W × H × D)	without RF cable	80 mm × 70 mm × 8 mm (3.15 in × 2.76 in × 0.31 in)
Weight	without RF cable	approx. 24 g (0.05 lb)
Antenna mounting	self-adhesive hook and loop tape	20 mm × 60 mm (0.79 in × 2.36 in)
RF cable	length	1 m (39.37 in)
	connectors	1 × SMP (f), 1 × SMA (m)



VSWR of the R&S®TC-CA6 linear-polarized communications antenna (meas.).



Gain of the R&S®TC-CA6 linear-polarized communications antenna (meas.).

General data

Environmental conditions		
Temperature	operating temperature range	+5 °C to +35 °C
	storage temperature range	–25 °C to +70 °C
Damp heat		+30 °C/70 % rel. humidity/constant, in line with EN 60068-2-78

Mechanical resistance		
Vibration	sinusoidal	5 Hz to 55 Hz, 0.3 mm double amplitude, 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
	shock	45 Hz to 2000 Hz: max 40 g, in line with MIL-STD-810, method 516, procedure I

Ordering information

Designation	Type	Order No.
Cross-Polarized Vivaldi Test Antenna for the R&S®TS8991	R&S®TC-TA18	1530.8075.02
Linear-Polarized Communications Antenna for the R&S®TS8991	R&S®TC-CA6	1530.8069.02
Cross-Polarized Vivaldi Test Antenna, 4 GHz to 85 GHz	R&S®TC-TA85CP	1531.8627.02
Linear-Polarized Vivaldi Test Antenna, 4 GHz to 85 GHz	R&S®TC-TA85LP	1531.8610.02
Recommended extras for R&S®TC-TA85CP and R&S®TC-TA85LP		
RF Adapter, MMPX (m) to 1.00 mm (f)	R&S®TC-MMPX-A1	3652.0435.02
RF Adapter, MMPX (m) to 1.85 mm (f)	R&S®TC-MMPX-A2	3652.0441.02
RF Cable, MMPX (m) to 1.85 mm (f), length 180 mm	R&S®TC-MMPX-C1	3652.0387.02
RF Cable, MMPX (m) to 1.85 mm (m), length 230 mm	R&S®TC-MMPX-C2	3652.0406.02
RF Cable, MMPX (m) to 2.92 mm (f), length 180 mm	R&S®TC-MMPX-C3	3652.0412.02
RF Cable, MMPX (m) to 2.92 mm (m), length 230 mm	R&S®TC-MMPX-C4	3652.0429.02

For R&S®TS8991 product brochure, see PD 5213.8796.12 and www.rohde-schwarz.com

Service that adds value

- Worldwide
- Local and personalized
- Customized and flexible
- Uncompromising quality
- Long-term dependability

Rohde&Schwarz

The Rohde&Schwarz electronics group offers innovative solutions in the following business fields: test and measurement, broadcast and media, secure communications, cybersecurity, monitoring and network testing. Founded more than 80 years ago, the independent company which is headquartered in Munich, Germany, has an extensive sales and service network with locations in more than 70 countries.

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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Data without tolerance limits is not binding | Subject to change

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