



VSQ 1000 REFERENCE RADIATION SOURCE 30 MHz - 1 GHz



The VSQ 1000 is a radiation source for the frequency range from 30 MHz to 1 GHz. It consists of a battery operated comb generator RSG 1000 and biconical broadband antennas DPA 4000A. The comb generator is supplied by a high stable temperature compensated crystal oscillator (TCXO) and generates a frequency spectrum with a line spacing of 1 MHz, 5 MHz or 10 MHz. Combined with an antenna the generator represents a precise radiation source.

Comparison measurements

The VSQ 1000 is suitable for various comparison measurements. It provides a radiation reference for comparing different test sites (e.g. OATS, anechoic chambers and GTEM cells) and set-ups. It may be used for the verification purpose as well as for quick checks of antennas and test set-ups.

Attenuation measurement

The VSQ 1000 can be used to measure the attenuation of absorbing material or the shielding effectiveness of screening materials. A simple method, using the RSG 1000, allows the measurement of the attenuation of coaxial cables or attenuators without using a network analyzer.

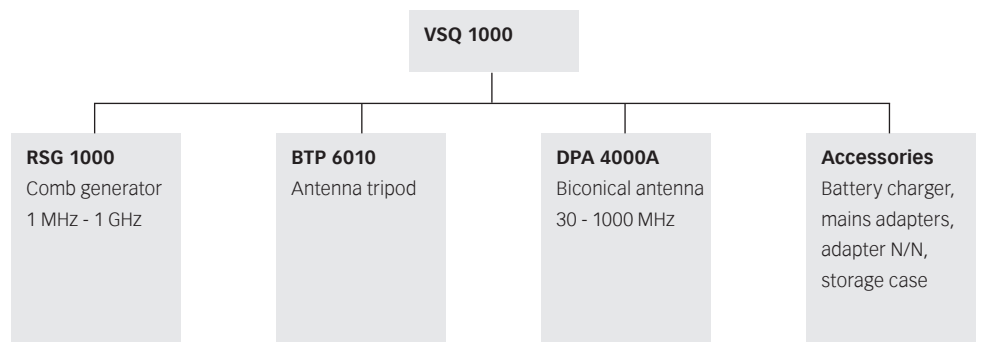
Other applications

All the components of the VSQ 1000, the RSG 1000 and the antenna, can be used independently. The comb generator, being broadband, can give the same effect as a tracking generator when monitored by a test receiver or spectrum analyzer. With its high level stability, the generator is suitable for the fast calibration of measuring receivers level accuracy. The antenna can be used as receiving antennas for emission measurements.

- Radiation source up to 1 GHz
- Comb generator 1 MHz to 1 GHz
- Switch able spectrum with 1, 5 or 10 MHz
- High stability for frequency and level
- Changeable accumulator set
- Earth free operation

Technical specifications of VSQ 1000

Frequency range:	30 MHz to 1 GHz
Field strength at 3 m distance (quasi free space):	>50 dBμV/m
Dimension of the storage case (B x H x T) in cm:	57 x 44 x 18
Weight:	approx. 9 kg



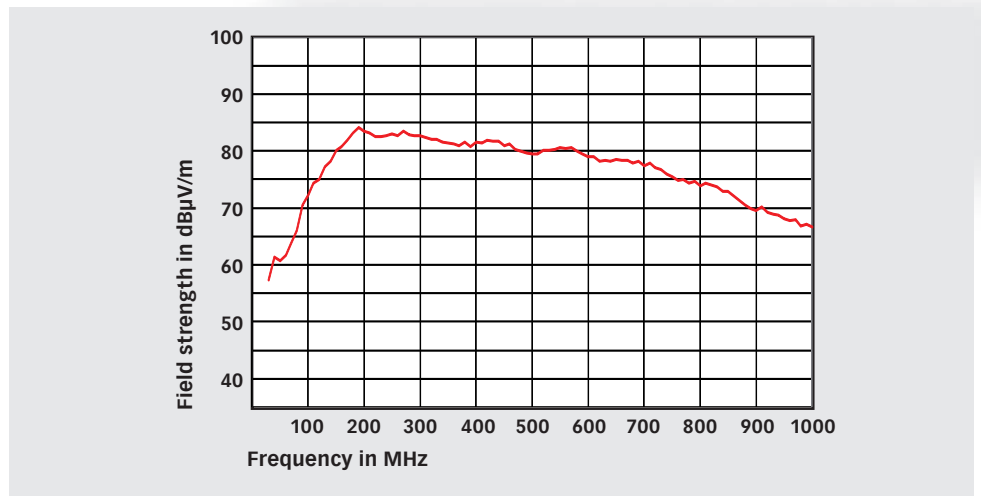
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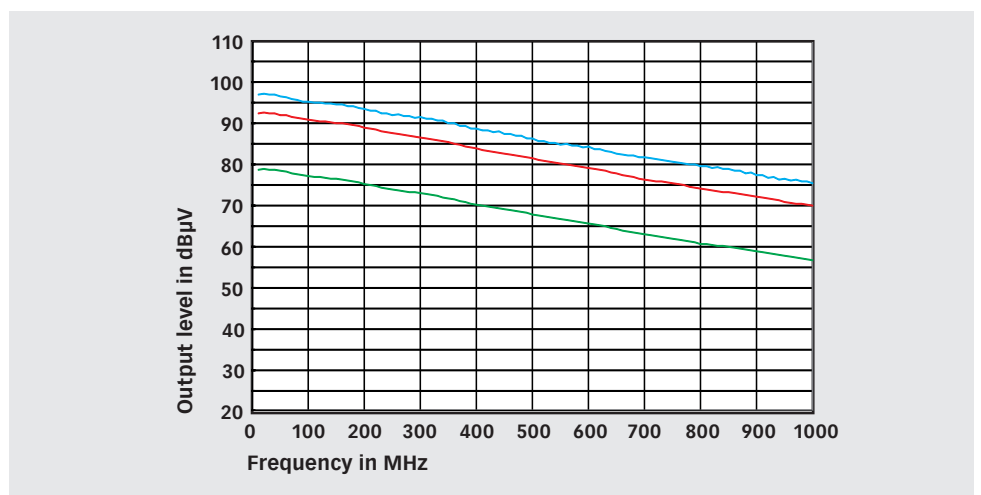
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Typical field strength in 3 m distance, quasi free space, 10 MHz spectrum



RSG 1000, typical output level at 50 Ω, — 10 MHz, — 5 MHz and — 1 MHz





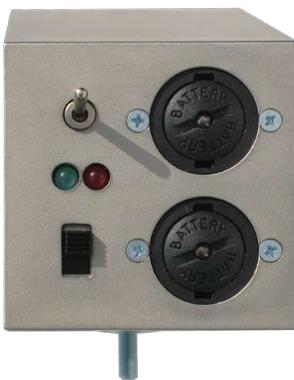
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RSG 1000



RSG 1000, view to the N connector



RSG 1000, view to the on/off switch, battery slots, comb spacing switch and LEDs

Technical specifications of RSG 1000

Frequency range:	1 MHz – 1 GHz
Comb spacing:	10 MHz, 5 MHz, 1 MHz
Frequency stability (TCXO, 10 MHz):	< 1 ppm (0°C to +50°C)
Aging:	< 1 ppm / year
Frequency correction (internal):	< 5 ppm
Signal stability:	< ±0.2 dB (20°C const.) < ±0.5 dB (+10°C to +30°C) < ±0.8 dB (+0°C to +40°C)
Output level, 50 Ω, typical (10 MHz spacing):	≥93 dBμV @ 30 MHz, ≥65 dBμV @ 1 GHz
Connector (RF- output):	N, female, 50 Ohm
Power supply (rechargeable batteries, changeable):	4 x 1.2 V, NiMH, Mignon, type AA, condition controlled, LowBat- LED, automatic switch-off, working time approx. 16 h with 2100 mAh
Operating temperature:	+10° C to +30° C
Storage and transport temperature (with batteries):	-20° C to +35° C
(without batteries):	-40° C to +70° C
Class of protection:	IP X0
Relative humidity:	0% to 80% without condensation
Condensation:	Not permissible during use
Altitude:	< 2000 m above sea level
Storage and transport:	< 12000 m above sea level
Dimensions (W x H x D) in mm:	60 x 60 x 175
Weight:	approx. 580 g

Technical specifications of DPA 4000A

Antenna type:	biconical dipole antenna
Polarisation:	linear
Frequency range:	(30 MHz)* 200 MHz to 1000 MHz
Antenna factor, typ.:	20 dB/m to 32 dB/m
Isotropic gain, typ.:	-3.5 dB to +1.5 dB
VSWR, typ.:	≤ 2.0 (350 MHz to 1000 MHz)
Symmetry, typ.:	≤ 0.2 dB
Cross-polar response:	> 20 dB
Output impedance:	50 Ω, nominal
Connector:	N female
Max. power (cw):	5 W
Size (L x W x H):	185 mm x 400 mm x 155 mm
Support length:	155 mm
Weight:	690 g
*) with VSQ 1000 / 3002	



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BTP 6010, antenna tripod

Technical specifications of antenna tripod BTP 6010

Antenna height range in cm:	53 to 112
Floor space:	typ. Ø 60 cm, max. Ø 105 cm
Thread:	M6 female
Dimensions for transport in cm:	50 x 16 x 16
Weight in kg:	2.2



DPA 4000A

Model No. and options

Part number	Description
234301	VSQ 1000 Reference radiation source 30 MHz - 1 GHz (RSG 1000 + DPA 4000A + Tripod + storage case)
97-234301	VSQ 1000-GTEM-TC Traceable calibration (ISO17025) of VSQ 1000 in a GTEM cell, order only with the device
97-234302	VSQ 1000-SAC-TC Traceable calibration (ISO17025) of VSQ 1000 or VSQ 3002 up to 1 GHz in a SAC, 3 m distance, 10 MHz step, order only with the device
234361	RSG 1000 Reference generator 1 MHz - 1 GHz
97-234361	RSG 1000-TC Traceable calibration (ISO 17025) of RSG 1000, order only with the device
234350	DPA 4000A Biconical antenna 200 MHz - 1 GHz
97-244570	Ant Cert-TC Traceable calibration (ISO17025), order only with the antenna, free space calibration (horizontal), other calibrations on request
234304	BTP 6010 Antenna tripod

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