Портативная система измерения ЭМП TS-EMF

Архангельск (8182)63-90-72
Астана (7172)727-132
Астрахань (8512)99-46-04
Барнаул (3852)73-04-60
Белгород (4722)40-23-64
Брянск (4832)59-03-52
Владивосток (423)249-28-31
Волгоград (844)278-03-48
Вологда (8172)26-41-59
Воронеж (473)204-51-73
Екатеринбург (343)384-55-89
Иваново (4932)77-34-06
Ижевск (3412)26-03-58
Иркутск (395)279-98-46
Казань (843)206-01-48
Калининград (4012)72-03-81
Калуга (4842)92-23-67
Кемерово (3842)65-04-62
Киров (8332)68-02-04
Краснодар (861)203-40-90
Красноярск (391)204-63-61
Курск (4712)77-13-04
Липецк (4742)52-20-81
Магнитогорск (3519)55-03-13
Москва (495)268-04-70
Мурманск (8152)59-64-93
Набережные Челны (8552)20-53-41
Нижний Новгород (831)429-08-12
Новокузнецк (3843)20-46-81
Новосибирск (383)227-86-73
Омск (3812)21-46-40
Орел (4862)44-53-42
Оренбург (3532)37-68-04
Пенза (8412)22-31-16
Пермь (342)205-81-47
Ростов-на-Дону (863)308-18-15
Рязань (4912)46-61-64
Самара (846)206-03-16
Санкт-Петербург (812)309-46-40
Саратов (845)249-38-78
Севастополь (8692)22-31-93
Симферополь (3652)67-13-56
Смоленск (4812)29-41-54
Сочи (862)225-72-31
Ставрополь (8652)20-65-13
Сургут (3462)77-98-35
Тверь (4822)63-31-35
Томск (3822)98-41-53
Тула (4872)74-02-29
Тюмень (3452)66-21-18
Ульяновск (8422)24-23-59
Уфа (347)229-48-12
Хабаровск (4212)92-98-04
Челябинск (351)202-03-61
Череповец (8202)49-02-64
Ярославль (4852)69-52-93

Киргизия (996)312-96-26-47
Россия (495)268-04-70
Казахстан (772)734-952-31

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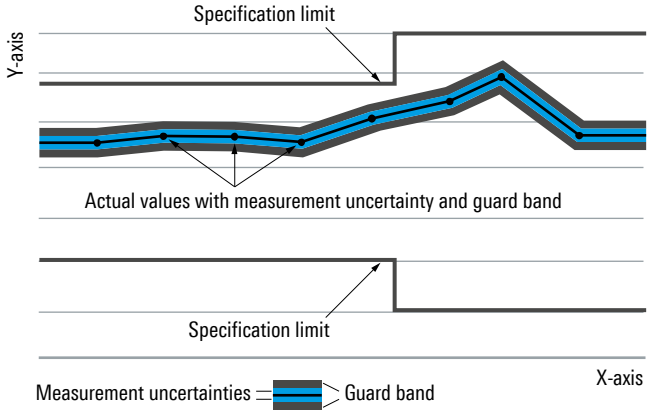
Definitions

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.



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/3GPP2 standard, chip rates are specified in million chips per second (Mcps), whereas bit rates and symbol rates are specified in billion bits per second (Gbps), million bits per second (Mbps), thousand bits 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.

Configurations

The isotropic EMF test antennas measure with dedicated Rohde & Schwarz analyzers the electromagnetic emissions independently from direction and polarization.

The listed configurations are supported.

R&S®TS-EMF with R&S®FSH handheld spectrum analyzer

Application: Automated and manual EMF spectrum measurements, decoding of 3G and 4G signals with the related R&S®FSH options

R&S®FSH spectrum analyzer		all models
R&S®TS-EMF isotropic antenna		
Frequency ranges	30 MHz to 3 GHz	R&S®TSEMF-B1
	700 MHz to 6 GHz	R&S®TSEMF-B2
	9 kHz to 200 MHz	R&S®TSEMF-B3
Recommended option	EMF measurement application	R&S®FSH-K105

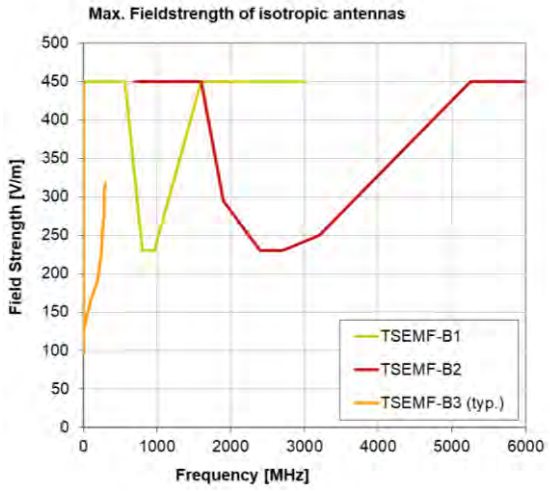
R&S®TS-EMF with R&S®Spectrum Rider FPH handheld spectrum analyzer

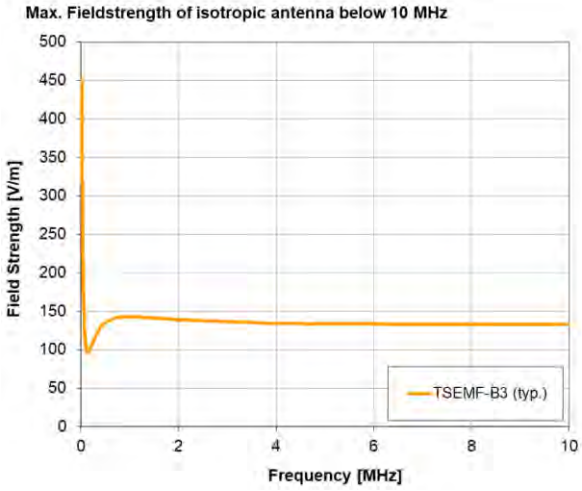
Application: EMF spectrum measurements

R&S®Spectrum Rider FPH		all models
R&S®TS-EMF isotropic antennas		
Frequency ranges	30 MHz to 3 GHz	R&S®TSEMF-B1
	700 MHz to 6 GHz	R&S®TSEMF-B2
	9 kHz to 200 MHz	R&S®TSEMF-B3
Converter cable		R&S®TSEMF-CV

Specifications

Isotropic antennas	R&S®TSEMF-B3	R&S®TSEMF-B1	R&S®TSEMF-B2
Measurement principle	isotropic reception due to orthogonally arranged antenna elements that are electronically switched		
Frequency range	9 kHz to 200 MHz	30 MHz to 3 GHz	700 MHz to 6 GHz
Minimum detectable field strength	approx. 1 mV/m		
Maximum field strength	see figures below		
Isotropy	≤ ±1.37 dB	• ≤ ±2.1 dB • ±1.0 dB (f = 900 MHz) • ±1.7 dB (f = 1800 MHz)	• ≤ ±2.5 dB (0.6 GHz to 2 GHz) • ≤ ±2.2 dB (2 GHz to 3.6 GHz) • ≤ ±3.0 dB (3.6 GHz to 6 GHz)
Mechanical design	mechanical design radome protection against mechanical damage and environmental hazards		
Antenna factor	typ. calibration data, saved on CD	individual calibration data, saved on CD	
Axis switching	RF solid state switch		
Connecting cables	direct connection to analyzer extension cable (length: 8 m); see accessories	integrated cable (length: 2 m) ferrite-beaded extension cable (length: 8 m); see accessories	integrated cable (length: 2 m), extension cable (length: 8 m); see accessories
RF connector	N male		
Connector, control line	7-pin connector (binder) for direct connection to R&S®FSH power sensor port, adapter cable for connection to R&S®FPH or QualiPoc via USB port		
Tripod adapter	¼" thread, quick connector for antenna		
Expanded measurement uncertainty R&S®TS-EMF with R&S®FSH (95 % confidence level (k = 2))	≤ ±2.5 dB	• ≤ ±3.3 dB • ±2.3 dB at 0.9 GHz • ±2.9 dB at 1.8 GHz	• ≤ ±3.1 dB (0.7 GHz to 1 GHz) • ≤ ±3.3 dB (1 GHz to 3.6 GHz) • ≤ ±3.7 dB (3.6 GHz to 6 GHz)
Ambient conditions	–10 °C to +50 °C, protection class: IP54		
Dimensions (L × Ø)	550 mm × 146 mm (21.7 in × 5.75 in)	475 mm × 170 mm (18.7 in × 6.69 in)	415 mm × 87 mm (16.3 in × 3.43 in)
Weight (incl. cable)	0.85 kg (1.87 lb)	1.3 kg (2.87 lb)	0.95 kg (2.09 lb)





Maximum field strength for R&S®TS-EMF isotropic antennas

Ordering information

Designation	Type	Order No.
Portable EMF measurement system, hard case	R&S®TS-EMF	1158.9295.05
Options		
Isotropic antenna, 30 MHz to 3 GHz	R&S®TSEMF-B1	1074.5719.02
Isotropic antenna, 700 MHz to 6 GHz	R&S®TSEMF-B2	1074.5702.02
Isotropic antenna, 9 kHz to 200 MHz	R&S®TSEMF-B3	1074.5690.02
Accredited calibration, for R&S®TSEMF-B1	R&S®ACATSEMF-B1	3598.7183.03
Accredited calibration, for R&S®TSEMF-B2	R&S®ACATSEMF-B2	3598.7190.03
Accredited calibration, for R&S®TSEMF-B3	R&S®ACATSEMF-B3	3598.8680.03
External accessories		
Cable set, for R&S®TS-EMF (length: 8 m), up to 6 GHz	R&S®TS-EMFZ2	1166.5708.04
Cable set, for R&S®TS-EMF (length: 8 m), up to 6 GHz, with DAkkS calibration	R&S®TS-EMFZ2	1166.5708.05
EMC tripod, for R&S®TS-EMF	R&S®TSEMF-O3	1101.8477.03