narda Safety Test Solutions
an L3 Communications Company

Selective Radiation Meter

SRM-3006

Selective measurement of high frequency electro-magnetic fields

Complete, easy to use test system, consisting of a base unit and measuring antennas, for non-directional detection of fields and their sources in the frequency range from 9 kHz to 6 GHz

- **Measurements conforming to ICNIRP and regional standards with results displayed directly in terms of the permitted limit value**
- **Fast, reliable results using predefined measurement routines, setups, and automatic settings**
- **PC software for customizing tables and measurement routines, and subsequent evaluation and handling of large quantities of measurement data**
- **Suitable for outdoor use: Radiation protected, robust, splash-proof, ergonomically designed; uses exchangeable rechargeable batteries; equipped with integrated GPS and voice recorder**
- **Signals analyzed using application oriented operating modes and special evaluation functions**
- **Direct numerical, graphical or tabular display of results; large resolution bandwidth avoids conversions**
- **Editable tables for automatic correlation of results with telecommunications services (e.g. broadcasting, GSM, WiMAX)**

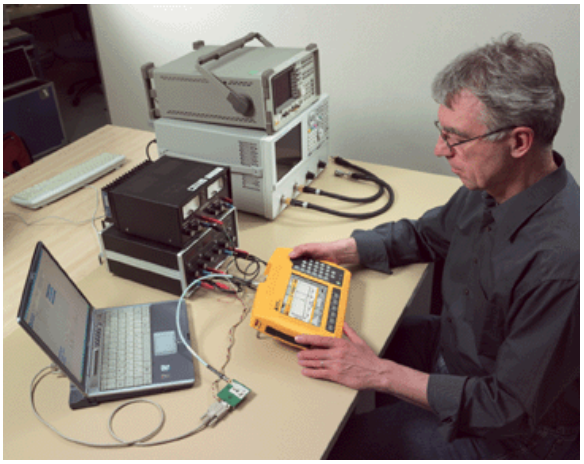
THE SRM AND ITS APPLICATIONS

The Selective Radiation Meter SRM is a compact, frequency-selective measuring system for safety analysis and environmental measurements of high-frequency electromagnetic fields. It covers broadcasting, mobile telephony, and industrial frequencies from the lowest long-wave range up to the latest wireless applications and evaluates the field exposure level in accordance with international or national standards.

Where the field environment is unknown – in offices, factory buildings, public places, or private homes – the SRM provides authorities and measurement service providers with a rapid overview of the field sources that are relevant to human safety.

Where the field situation is known, such as at so-called “shared sites”, where several service providers share a common antenna site, the SRM shows the overall field exposure level as well as the proportions due to each service as an absolute value or as a percentage of the permitted limit value.

Users can resolve services down to individual channel accuracy and measure their contribution to the field emission with the SRM. It is also possible to integrate over the entire frequency range of the service and display the absolute result or the value relative to the permitted limit.



OPERATION AND USE

All functions and parameters can be set directly on the SRM basic unit via menus and the numerical keypad, softkeys, or the rotary control. As well as this, the SRM also provides facilities for saving and recalling measurement settings (setups) and entire measurement sequences (routines). The PC software included with the device, “SRM-3006 Tools”, includes editable tables for antennas and cables from other manufacturers, user-defined evaluation curves, and lists of services and operators.

OPERATING MODES

The SRM is designed for everyday use and has operating modes tailored to the main areas of application: Safety Evaluation, Spectrum Analysis, Level Recorder and Scope. Details about these operating modes and other functions are given in the Specifications.

ANTENNAS

Narda offers a broad range of three-axis and single-axis measuring antennas for electric fields (E-fields) and magnetic fields (H-fields). The three-axis antennas are advantageous in practice because they give isotropic (i.e. non-directional) results automatically.

PRODUCT INFORMATION (BASIC UNIT)

Basic Unit SRM- 3006		
Frequency Range		9 kHz to 6 GHz
Modes		Spectrum Analysis Safety Evaluation Level Recorder Scope
RF Features		
Frequency	Resolution bandwidth (RBW)	See specifications for each mode
	Phase noise (SSB)	10 kHz carrier spacing < - 70 dBc (RBW =1 Hz) 300 kHz carrier spacing < - 100 dBc (RBW =1 Hz)
	Reference frequency	Initial deviation < 1.0 ppm Aging < 5 ppm over 15 years Thermal drift < 1.5 ppm (within specified operating temperature range)
Amplitude	Measurement range, setting (MR)	-30 dBm to +20 dBm (in 1 dB steps)
	RF attenuation	0 to 50 dB in steps of ≤ 1 dB (coupled with measurement range)
	Display range	1 dB above the measurement range
	Maximum RF power level	27 dBm (destruction limit)
	Maximum DC voltage	50 V
	Intrinsic noise	< MR - 100 dB for RBW = 1 kHz and f ≤ 30 MHz < MR - 96 dB for RBW = 1 kHz and f ≤ 2 GHz < MR – 95 dB for RBW = 1 kHz and f ≤ 4 GHz < MR - 90 dB for RBW = 1 kHz and f ≤ 6 GHz
	2nd order intermodulation products	< -40 dBc for two single signals of level 6 dB below MR and a spectral line spacing of more than 1 MHz
	3rd order intermodulation products	< -60 dBc for two single signals of level 6 dB below MR and a spectral line spacing of more than 1 MHz for frequencies < 4 GHz < -57 dBc for two single signals of level 6 dB below MR and a spectral line spacing of more than 1 MHz for frequencies ≥ 4 GHz
	Extended level measurement uncertainty	< +/- 1.2 dB for the entire frequency band (within the temperature range of 15 °C to 30 °C; valid for Spectrum Analysis and Safety Evaluation modes only)
	Spurious responses (input related)	< -60 dBc or MR -60dB (whichever is worse),
	Spurious responses (residual)	< -90 dBm or MR -60dB, (whichever is worse), Except the following frequency ranges: 1570 to 1630 MHz, 4530 to 4590 MHz, 4610 to 4670 MHz where the value is < -85 dBm or MR -55 dB (whichever is worse)
RF input	Type	N-Connector, 50 Ω
	Return loss	> 12 dB for 1 kHz RBW, f ≤ 4.5 GHz and MR ≥ -28 dBm > 10 dB for 1 kHz RBW, f > 4.5 GHz and MR ≥ -28 dBm

Unless otherwise stated, the quoted specifications apply only within the temperature range 20°C to 26°C and relative humidity between 25 % and 75 %.
The device must be switched on for at least 30 minutes before the specifications can be checked.

SPECTRUM ANALYSIS MODE		
Measurement principle		Spectrum analysis
Resolution bandwidths (RBW) (-3 dB)		10 Hz to 20 MHz (in steps of von 1, 2, 3, 5, 10, 20) List of available RBWs depends on selected sweep SPAN
Video bandwidth (VBW)		0.2 Hz to 2 MHz (depending on the selected RBW)
Measurement range setting (MR)		Set individually from a list or using the “MR Search” function for determining the optimum measurement range at a given time
Filter	Type	Gaussian
	Shape factor (-3 dB / 60 dB)	<3.8 (for RBW ≤ 100 kHz)
Result Type		ACT: Displays current (actual) spectrum MAX: Maximum hold function AVG: Average over a selectable number of spectra (4 to 256) or a selectable time period (1 to 30 minutes) Max AVG: Maximum hold function after averaging over a defined number of spectra Min: Minimum hold function Min AVG: Minimum hold function after averaging over a defined number of spectra Standard: Display of the selected safety standard.
Marker functions		Delta marker on one Result Type or for displaying the difference between two Result Types Highest peak, next peak right, next peak left, next higher peak, next lower peak Marker field (frequency, level, service name according to the selected service table)
Evaluation functions		Peak table (list of 50 highest peaks) Integration over a user-specified frequency range
Axis		Isotropic measurement (isotropic result displayed directly) Measurement of X-, Y- or Z- axis (separate measurement of a single axis using the isotropic / three-axis antenna)
Display functions		Y-scale range 20, 40, 60, 80, 100 or 120 dB Y-scale reference MR -100 dB to MR + 20 dB (-130 dB to 40 dBm) Screen arrangement: Enlarges result display area by hiding other information.
Zoom		Zoom Min: Sets the lower frequency limit of the zoom window Zoom Max: Sets the upper frequency limit of the zoom window Zoom Cent: Moves the zoom window along the frequency axis Zoom Span: Changes the scale of the zoom window Execute Zoom: Sets the zoom window limits to the selected frequency values

SAFETY EVALUATION MODE	
Measurement principle	Spectrum analysis, followed by integration over user-defined frequency bands (“services”)
Resolution bandwidths RBW (-3 dB)	Automatic (Auto), depending on the narrowest user-defined service bandwidth, or user-defined (Manual) for all services, or separately defined for each individual service (Individual)
Measurement range setting (MR)	Set individually from a list or using the “MR Search” function for determining the optimum measurement range at a given time
Detection	Root mean square value (RMS), RMS (integration time = $\approx \frac{1}{RBW}$)
Filter	See Spectrum Analysis mode
Result Type	See Spectrum Analysis mode
Marker functions for bar graph view	Delta marker on one Result Type or for displaying the difference between two Result Types Highest peak, next peak right, next peak left, next higher peak, next lower peak Marker field (frequency, level, service name according to the selected service table)
Evaluation Function	Distribution
Axis	Isotropic measurement (for direct display of the isotropic result) Measurement in the direction of the X, Y, and Z axis (separate measurement in one direction using an isotropic / three-axis measuring antenna)
Display	Table view showing service names, field strengths, RBW and the corresponding frequency band (up to three columns) Individual screen arrangement Sort function according to various criteria
	Bar graph of services showing contribution of different Result Types
Noise suppression	Identifies whether measured values are above the device noise floor by setting a threshold (selectable at 0, 3, 6, 10, 15, or 20 dB relative to device noise floor). Measurement values below the threshold are shown as the absolute threshold value marked with “<” (less than threshold)
Others On / Off	Measurement of services and gaps in the Service Table (Others On) or Measurement of services in the Service Table excluding gaps (Others Off)

LEVEL RECORDER MODE	
Measurement principle	Selective level measurement at a fixed frequency setting.
Detection	Peak
	Root mean square value (RMS), RMS (integration time = 480 ms, observation time selectable from 480 ms up to 30 min)
Filter Type	Steep cutoff channel filter
Resolution bandwidth RBW (-6 dB)	40 kHz to 32 MHz (10 steps per decade)
Video bandwidth (VBW)	4 Hz to 32 MHz (depending on the selected RBW)
Measurement range setting (MR)	Set individually from a list or using the “MR Search” function for determining the optimum measurement range at a given time
Result Type	Peak ACT: Displays the current (actual) value Peak MAX: Max hold function RMS ACT: Averaging over a defined time period (0.48 seconds to 30 min) RMS MAX: Max hold function over the averaged values – with RMS detector only.
Axis	Measurement in the direction of the X, Y, and Z axis (separate measurement in one direction using an isotropic / three-axis measuring antenna)
Time Averaging	Selectable from 0.96 seconds up to 30 minutes (0.96 s; 1.2 s; 2.4 s; 3.6 s; 6 s;12 s; 18 s; 30 s; 1 min; 2 min; 3 min; 5 min; 6 min; 10 min;15 min; 20 min; 30 min)
Noise suppression	Identifies whether measured values are above the device noise floor by setting a threshold (selectable at 0, 3, 6, 10, 15, or 20 dB relative to device noise floor). Measurement values below the threshold are shown as the absolute threshold value marked with “<” (less than threshold). Only applies to the numerical result display (Value)
SCOPE MODE (OPTION)	
Measurement principle	Selective level measurement at a fixed frequency
Filter Type	Steep cutoff channel filter
Time Span	500 ns to 24 h
Time Resolution	Selectable from31,25 ns up to 90 min (0.96 s; 1.2 s; 2.4 s; 3.6 s; 6 s;12 s; 18 s; 30 s; 1 min; 2 min; 3 min; 5 min; 6 min; 10 min;15 min; 20 min; 30 min)
Resolution bandwidth RBW (-6 dB)	40 kHz to 32 MHz (10 steps per decade)
Measurement range setting (MR Range)	Set individually from a list or using the “MR Search” function for determining the optimum measurement range at a given time
Video bandwidth (VBW)	4 Hz to 32 MHz (depending on the selected RBW)
Result Type Depends on detector	ACT: Displays the current (actual) value. Standard: Displays the selected safety standard. or
	MAX: Maximum value within the time resolution interval (corresponds to peak detector). AVG: Average value within the time resolution interval (corresponds to RMS detector). MIN: Minimum value within the time resolution interval. Standard: Displays the selected safety standard.

MEASUREMENT FUNCTIONS		
Detection of Narda measurement antennas		Automatic consideration of antenna parameters after antenna is plugged in: antenna type, serial number, calibration date and antenna factors (see below) Automatic limitation of the frequency range according to the frequency range of the connected antenna
Antenna factors		Used for display in field strength units Saved in all Narda antennas during calibration Antenna factor lists for antennas from other manufacturers can be saved (these lists defined using the PC configuration software SRM Tools or SRM TS)
Detection of Narda Cables		Automatic consideration of cable parameters after cable is plugged in: Cable type, serial number, calibration date and loss factors (see below) Automatic limitation of the frequency range according to the frequency range of the connected cable
Cable loss factors		Used for compensation of the power level display Saved in all Narda cables during calibration Cable loss lists for cables from other manufacturers can be saved (these lists defined using the PC configuration software “SRM tools” included in delivery)
Units	With Antenna	% of the standard, V/m, A/m, W/m², mW/cm², dBV/m, dBmV/m, dBA/m, dBµV/m,
	Without Antenna	dBV/m, dBmV/m, dBA/m, dBµV/m
Isotropic Measurements		Automatic switching of the antenna axes when using Narda’s three axis measurement antenna followed by computation of the isotropic result Sequential measurements using single-axis antennas with subsequent computation of the isotropic result are supported. Both results are directly displayed as a spectrum curve or as numerical values
Weighted Display		In % of the standard for the following human safety standards: ICNIRP, IEEE, FCC, BGV B11, BImSchV, Safety Code 6 Updating for new human safety standards can be made using the PC configuration software SRM Tools included in delivery or SRM TS)
Correlation of results with telecom service		Definition and editing of service tables with the PC configuration software SRM Tools or SRM TS, i.e. lists of frequency bands (upper and lower limit frequency, name for defined frequency band) Storage of service tables in the basic unit Use of the service tables for automatic correlation of measurement results with defined services based on frequency (marker functions, peak table evaluation function, Safety Evaluation mode)
Setups		Complete device configurations can be saved in the basic unit; up- and downloadable using SRM Tools or SRM TS software.
Measurement Routines		Programmable sequences of setups
Memory	Memory modes	Result stored as: Spectrum in Spectrum Analysis mode(SPECTRUM), Table in Safety Evaluation mode (SAFETY), Values for Level Recorder (LEVEL) and Scope (SCOPE)
	Memory capacity	128 MB
Hold		“Freezes” the display; the measurement continues in the background.

GENERAL SPECIFICATIONS			
Operating temperature range		-10 °C to +50 °C during normal operation	
		0 °C to +40 °C when charging	
Compliance	Climatic	Storage	1K3 (IEC 60721-3) extended to -10 °C to +50 °C
		Transport	2K4 (IEC 60721-3) restricted -30°C to+ 70°C due to display
		Operating	7K2 (IEC 60721-3) extended to -10 °C to +50 °C
	Mechanical	Storage	1M3 (IEC 60721-3)
		Transport	2M3 (IEC 60721-3)
		Operating	7M3 (IEC 60721-3)
	ESD and EMC	EN 61326 -1 : 2006	
	Dust and water resistance	IP 52 (with antenna attached and interface protector closed)	
	Safety	EN 61010-1:2004	
	EU Guidelines	2003/11/EG 06.02.2003 (PBDE and OBDE) 2002/95/EG 27.01.2003 (RoHS) 2002/96/EG 27.01.2003 (WEEE)	
CE (European Community)		Yes	
Air humidity (operating range) RF		< 29 g/m³ (< 93 % at +30 °C)	
Weight		2,8 kg (including rechargeable cell)	
Dimensions		297 x 213 x 77 mm	
Display	Type	Color display TFT-LCD With backlight, for indoor and outdoor use	
	Size, resolution	152 x 91 mm (7 Inch) , 800 x 480 pixels	
Interface		USB mini B (USB 2.0)	
		Optical RS 232 (Baud rate 115 200)	
		Earphone 3.5 mm TRS	
Power supply	Rechargeable cell	Lithium-Ion rechargeable battery – typical 2.5 hour operating time Charged using external power supply	
	External power supply (12 V DC / 2,5 A)	AC/DC-Adapter (DIN 45323) Input: 9 to 15 V	
Recommended calibration interval		24 months	
Country of origin		Germany	

PRODUCT INFORMATION ISOTROPIC ANTENNAS

Three axis antenna (E-Field) 3501/03

Frequency range		27 MHz to 3 GHz The correction factors determined individually during calibration are stored in an EEPROM and are applied automatically when used in conjunction with the SRM basic unit.		
Antenna type		E-field		
Sensor type		Three axis design with scanned axes		
Dynamic range [a]		0.2 mV/m to 200 V/m		
CW damage level		435 V/m or 50 mW/cm²		
Intrinsic noise display in conjunction with the SRM basic unit (separate measurement of a single axis) [b]		25 µV/m at 900 MHz with 1 kHz resolution bandwidth (RBW) 40 µV/m at 2.1 GHz with 1 kHz resolution bandwidth (RBW)		
Intrinsic noise display in conjunction with the SRM basic unit (for isotropic result) [b]		40 µV/m at 900 MHz with 1 kHz resolution bandwidth (RBW) 70 µV/m at 2.1 GHz with 1 kHz resolution bandwidth (RBW)		
Measurement range limit (for single CW signal)		300 V/m 1000 V/m for f ≤ 110 MHz		
Max. measurement range (in conjunction with the SRM basic unit) [b]		200 V/m (without restrictions for total span of 27 MHz to 3 GHz)		
RF connector		N connector, 50 Ω		
MEASUREMENT UNCERTAINTY				
Extended measurement uncertainty [c] (in conjunction with SRM basic unit and 1.5 m RF cable)		Frequency range	Single axis measurement with isotropic antenna	Isotropic measurement
		27 – 85 MHz	+2.4 / -3.3 dB	+ 3.2 / -4.7 dB
		> 85–900 MHz	+2.4 / -3.4 dB	+2.5 / -3.6 dB
		> 900-1400 MHz	+2.3 / -3.1 dB	+2.5 / -3.4 dB
		> 1400-1600 MHz	+2.3 / -3.1 dB	+2.6 / -3.8 dB
		> 1600-1800 MHz	+1.8 / -2.3 dB	+2.2 / -3.0 dB
		> 1800-2200 MHz	+1.8 / -2.3 dB	+2.4 / -3.3 dB
		> 2200-2700 MHz	+1.9 / -2.4 dB	+2.7 / -3.8 dB
		> 2700-3000 MHz	+1.9 / -2.4 dB	+3.3 / -5.3 dB
Calibration uncertainty		< 1.5 dB		
GENERAL SPECIFICATIONS				
Operating temperature range		-10 °C to +50 °C same as SRM basic unit		
RF immunity		200 V/m between 27 MHz and 3 GHz		
Compliance	Climatic	Storage	1K3 (IEC 60721-3) extended to -10 °C to +50 °C	
		Transport	2K4 (IEC 60721-3)	
		Operating	7K2 (IEC 60721-3)	
	Mechanical	Storage	1M3 (IEC 60721-3)	
		Transport	2M3 (IEC 60721-3)	
		Operating	7M3 (IEC 60721-3)	
	ESD and EMC	EN 61326:2006		
	Safety	EN 61010-1:2004		
	EU Guidelines	2003/11/EG 06.02.2003 (PBDE and OBDE) 2002/95/EG 27.01.2003 (RoHS), 2002/96/EG 27.01.2003 (WEEE)		
CE (European Community)		Yes		
Air humidity		< 29 g/m³ (< 93 % at +30 °C)		
Weight		450 g		
Dimensions		450 mm length; 120 mm antenna head diameter		
Calibration		20 reference points: 26; 45; 75; 100; 200; 300; 433; 600; 750; 900 MHz 1; 1,2; 1,4; 1,6; 1,8; 2; 2,2; 2,45; 2,7; 3 GHz The SRM basic unit applies linear interpolation between reference points		
Recommended calibration interval		24 months		
Country of origin		Germany		

a Typical measurement dynamic range for 10 dB signal to noise ratio (RBW = 1 kHz); 800 MHz to 1.8 GHz b Typical values
c Typical value k = 2 (k = extrapolation or correction factor for calculating the assessment value); +15 °C to +30 °C

Three axis antenna (E-Field) 3502/01				
Frequency range	750 MHz to 6 GHz The correction factors determined individually during calibration are stored in an EEPROM and are applied automatically when used in conjunction with the SRM basic unit.			
Antenna type	E-field			
Sensor type	Three axis design with scanned axes			
Dynamic range [a]	0.14 mV/m to 160 V/m			
CW damage level	435 V/m or 50 mW/cm²			
Intrinsic noise display in conjunction with the SRM basic unit (separate measurement of a single axis) [b]	33 µV/m at 900 MHz with 1 kHz resolution bandwidth (RBW) 25 µV/m at 2.1 GHz with 1 kHz resolution bandwidth (RBW)			
Intrinsic noise display in conjunction with the SRM basic unit (for isotropic result) [b]	60 µV/m at 900 MHz with 1 kHz resolution bandwidth (RBW) 43 µV/m at 2.1 GHz with 1 kHz resolution bandwidth (RBW)			
Measurement range limit (for single CW signal)	200 V/m			
Max. measurement range (in conjunction with the SRM basic unit) [b]	160 V/m (without restrictions for total span of 750 MHz to 6 GHz)			
RF connector	N-Connector, 50 Ω			
MEASUREMENT UNCERTAINTY				
Extended measurement uncertainty [c] (in conjunction with SRM basic unit and 1.5 m RF cable)	Frequency range		Single axis measurement with isotropic antenna	Isotropic measurement
	750-900 MHz		+2.2 / -3.0 dB	+2.4 / -3.3 dB
	> 900-1600 MHz		+2.1 / -2.8 dB	+2.3 / -3.0 dB
	> 1600-2000 MHz		+1.8 / -2.3 dB	+2.0 / -2.6 dB
	> 2000-2100 MHz		+1.8 / -2.3 dB	+2.1 / -2.8 dB
	> 2100-4000 MHz		+1.7 / -2.1 dB	+2.0 / -2.6 dB
	> 4000-4500 MHz		+1.7 / -2.1 dB	+2.1 / -2.8 dB
	> 4500-5000 MHz		+1.7 / -2.2 dB	+2.4 / -3.2 dB
	> 5000-6000 MHz		+1.7 / -2.2 dB	+2.8 / -4.0 dB
Calibration uncertainty	< 1.5 dB			
GENERAL SPECIFICATIONS				
Operating temperature range	-10 °C to +50 °C same as SRM basic unit			
RF immunity	200 V/m			
Compliance	Climatic	Storage	1K3 (IEC 60721-3) extended to -10 °C to +50 °C	
		Transport	2K4 (IEC 60721-3)	
		Operation	7K2 (IEC 60721-3)	
	Mechanical	Storage	1M3 (IEC 60721-3)	
		Transport	2M3 (IEC 60721-3)	
		Operation	7M3 (IEC 60721-3)	
	ESD and EMC	EN 61326:2006		
	Safety	EN 61010-1:2004		
	EU Guidelines	2003/11/EG 06.02.2003 (PBDE and OBDE) 2002/95/EG 27.01.2003 (RoHS), 2002/96/EG 27.01.2003 (WEEE)		
CE (European Community)	Yes			
Air humidity	< 29 g/m³ (< 93 % at +30 °C)			
Weight	400 g			
Dimensions	450 mm length; 120 mm antenna head diameter			
Calibration	19 reference points: 750 MHz; 900 MHz 1; 1.2; 1.4; 1.6; 1.8; 2; 2.2; 2.45; 2.7; 3; 3.5; 4; 4.5; 5; 5.5; 5.8; 6 GHz The SRM basic unit applies linear interpolation between reference points.			
Recommended calibration interval	24 months			
Country of origin	Germany			

a Typical measurement dynamic range for 10 dB signal to noise ratio (RBW = 1 kHz); 1.8 to 2.2 GHz b Typical values
c Typical value k = 2 (k = extrapolation or correction factor for calculating the assessment value); +15 °C to +30 °C

Three axis antenna (H-Field) 3581/02				
Frequency range	9 kHz to 250 MHz The correction factors determined individually during calibration are stored in an EEPROM and are applied automatically when used in conjunction with the SRM basic unit.			
Antenna type	H-Field			
Sensor type	Triaxial active magnetic loop design with scanned axes			
Dynamic range [a]	to 560 mA/m			
CW damage level	250 A/m / f [MHz]			
Max. measurement range (in conjunction with the SRM basic unit) [b]	560 mA/m			
RF connector [c]	N-Connector, 50 Ω			
Measurement uncertainty				
Extended measurement uncertainty [c] (in conjunction with SRM basic unit and 1.5 m RF cable)	Frequency range		Single axis measurement with isotropic antenna	Isotropic measurement
	0.3 - 30 MHz		2.1 dB	2.4 dB
	> 30 – 60 MHz		2.2 dB	2.5 dB
	> 60 - 250 MHz		2.3 dB	3.2 dB
Calibration uncertainty	< 1.5 dB			
GENERAL SPECIFICATIONS				
Operating temperature range	-10 °C to +50 °C same as SRM basic unit			
Immunity	200 V/m between 9 kHz and 250 MHz			
Compliance	Climatic	Storage	1K3 (IEC 60721-3) extended to -10 °C to +50 °C	
		Transport	2K4 (IEC 60721-3)	
		Operating	7K2 (IEC 60721-3)	
	Mechanical	Storage	1M3 (IEC 60721-3)	
		Transport	2M3 (IEC 60721-3)	
		Operating	7M3 (IEC 60721-3)	
	ESD and EMC	EN 61326:2006		
	Safety	EN 61010-1:2004		
	EU Guidelines	2003/11/EG 06.02.2003 (PBDE and OBDE) 2002/95/EG 27.01.2003 (RoHS) 2002/96/EG 27.01.2003 (WEEE)		
CE (European Community)	Yes			
Air humidity	< 29 g/m³ (< 93 % at +30 °C)			
Weight	470 g			
Dimensions	450 mm length; 120 mm antenna head diameter			
Calibration	178 reference points The SRM basic unit applies linear interpolation between reference points			
Recommended calibration interval	24 months			
Country of origin	Germany			

a Typical measurement dynamic range for 10 dB signal to noise ratio (RBW = 1 kHz)
b Typical values
c Typical value k = 2 (k = extrapolation or correction factor for calculating the assessment value); +15 °C to +30 °C

PRODUCT INFORMATION SINGLE-AXIS ANTENNAS

Single-axis antenna (E-field) 3531 / 01				
Frequency range			27 MHz to 3 GHz	
Antenna type			E-Field	
Sensor type			Single axis passive wide band dipole	
Dynamic range [a]			60 µV/m to 160 V/m	
CW damage level			> 300 V/m or 25 m/Wcm²	
Intrinsic noise display in conjunction with the SRM basic unit [b]			20 µV/m from 100 MHz to 2.2 GHz with 1 kHz RBW	
Measurement range limit			160 V/m	
RF connector			N connector, 50 Ω	
UNCERTAINTY				
Extended measurement uncertainty [d] (in conjunction with SRM basic unit and 1.5 m RF cable)		Frequency range		Single-axis measurement
		26 - 300 MHz		2.1 dB
		> 301 - 433 MHz		2.4 dB
		> 434 - 1600 MHz		2.2 dB
		> 1601 - 3000 MHz		1.9 dB
Calibration uncertainty			< 1.5 dB	
GENERAL SPECIFICATIONS				
Operating temperature range			-10 °C to 50 °C (same as SRM basic unit)	
Compliance	Climatic	Storage	1K3 (IEC 60721-3) extended to -10°C to +50°C	
		Transport	2K4 (IEC 60721-3)	
		Operating	7K2 (IEC 60721-3)	
	Mechanical	Storage	1M3 (IEC 60721-3)	
		Transport	2M3 (IEC 60721-3)	
		Operating	7M3 (IEC 60721-3)	
	ESD and EMC		EN 61326:2006	
	Safety		EN 61010-1:2004	
	EU Guidelines		2003/11/EG 06.02.2003 (PBDE and OBDE) 2002/95/EG 27.01.2003 (RoHS) 2002/96/EG 27.01.2003 (WEEE)	
CE (European Community)			Yes	
Air humidity			< 29 g/m³ (< 93 % to +30 °C)	
Weight			450 g	
Dimensions			460 mm length; 135 x 90 mm antenna head dimensions	
Calibration			24 reference points	
Recommended calibration interval			24 months	
Country of origin			Germany	

a Typical measurement dynamic range for 10 dB signal to noise ratio (RBW = 1 kHz); 100 MHz – 2.2 GHz
b Typical values
c Typical value k = 2 (K= extrapolation or correction factor for determining the assessment value); +15 °C to +30 °C

Single axis antenna (E-field) 3531/03			
Frequency range	9 kHz to 300 MHz The correction factors determined individually during calibration are stored in an EEPROM and are applied automatically when used in conjunction with the SRM basic unit.		
Antenna type	E-field		
Sensor type	Single axis active broadband dipole		
Dynamic range [a]	70 µV/m to 16 V/m for 300 kHz to 10 MHz 70 µV/m to 36 V/m for > 10 MHz to 300 MHz		
CW damage level	> 1000 V/m		
Intrinsic noise display in conjunction with the SRM basic unit [b]	20 µV/m in the range from 1 MHz to 300 MHz with 1 kHz resolution bandwidth (RBW)		
Measurement range limit (for single CW signal) [b]	50 V/m		
RF connector	N connector, 50 Ω		
UNCERTAINTY			
Extended measurement uncertainty [c,] (in conjunction with SRM basic unit and 1.5 m cable)	Frequency range	Single-axis measurement	
	0.1 - 300 MHz	2.0 dB	
Calibration uncertainty	< 1.2 dB		
GENERAL SPECIFICATIONS			
Operating temperature range	-10 °C to 50 °C (same as SRM basic unit)		
Compliance	Climatic	Storage	1K3 (IEC 60721-3) extended to -10 °C to +50 °C
		Transport	2K4 (IEC 60721-3)
		Operating	7K2 (IEC 60721-3)
	Mechanical	Storage	1M3 (IEC 60721-3)
		Transport	2M3 (IEC 60721-3)
		Operating	7M3 (IEC 60721-3)
	ESD and EMC	EN 61326:2006	
	Safety	EN 61010-1:2004	
	EU Guidelines	2003/11/EG 06.02.2003 (PBDE and OBDE) 2002/95/EG 27.01.2003 (RoHS) 2002/96/EG 27.01.2003 (WEEE)	
CE (European Community)	Yes		
Air humidity	< 29 g/m³ (< 93 % to +30 °C)		
Weight	550 g		
Dimensions	460 mm length; 135 x 90 mm antenna head dimension		
Calibration	183 reference points The SRM applies linear interpolation between reference points.		
Recommended calibration interval	24 months		
Country of origin	Germany		

a Typical measurement dynamic range for 10 dB signal to noise radio (RBW = 1 kHz)
b Typical values
c Typical value k = 2 (K= extrapolation or correction factor for determining the assessment value); +15 °C to +30 °C

Single-axis antenna (H-field) 3551/02			
Frequency range	9 kHz to 300 MHz The correction factors determined individually during calibration are stored in an EEPROM and are applied automatically when used in conjunction with the SRM basic unit.		
Antenna type	H-field		
Sensor type	Single axis active magnetic loop		
Dynamic range [a]	0.4 µA/m to 71 mA/m		
CW damage level	> 2.65 A/m above 1 MHz		
Intrinsic noise display in conjunction with the SRM basic unit [b]	0.12 µA/m for each frequency > 10 MHz with 1 kHz resolution bandwidth RBW		
Measurement range limit (for single CW signal) [b]	100 mA/m		
RF connector	N connector, 50 Ω		
UNCERTAINTY			
Extended measurement uncertainty [c] (in conjunction with SRM basic unit and 1.5 m cable)	Frequency range	Single-axis measurement	
	0.1 - 300 MHz	2.0 dB	
Calibration uncertainty	< 1.2 dB		
GENERAL SPECIFICATION			
Operating temperature range	-10 °C to 50 °C (same as SRM basic unit)		
Compliance	Climatic	Storage	1K3 (IEC 60721-3) extended to -10 °C to +50 °C
		Transport	2K4 (IEC 60721-3)
		Operating	7K2 (IEC 60721-3)
	Mechanical	Storage	1M3 (IEC 60721-3)
		Transport	2M3 (IEC 60721-3)
		Operating	7M3 (IEC 60721-3)
	ESD and EMC	EN 61326:2006	
	Safety	EN 61010-1:2004	
	EU Guidelines	2003/11/EG 06.02.2003 (PBDE and OBDE) 2002/95/EG 27.01.2003 (RoHS) 2002/96/EG 27.01.2003 (WEEE)	
CE (European Community)	Yes		
Air humidity	< 29 g/m³ (< 93 % at +30 °C)		
Weight	450 g		
Dimensions	460 mm length; 43 x 100 mm antenna head dimension		
Calibration	183 reference points The SRM interpolates between reference points		
Recommended calibration interval	24 months		
Country of origin	Germany		

a Typical measurement dynamic range for 10 dB signal to noise radio (RBW = 1 kHz); for frequencies > 10 MHz
b Typical values
c Typical value k = 2 (K= extrapolation or correction factor for determining the assessment value); +15 °C to +30 °C

ORDERING INFORMATION

SRM – Set Overview	
SRM-3006, Selective Radiation Meter, Set 1/2, Basic Units, no Antenna Set comprising: - Selective Radiation Meter, Basic Unit, SRM-3006 - RF-Cable SRM, 9kHz-6GHz, N 50 Ohm, 1,5m (3602/01) - Carrying Strap for SRM (Basic Unit) (3001/90.02) - Holding Strap for SRM-3006 Basic Unit (3001/90.12) - Operating Manual SRM, German / English (please select) - Power Supply 12VDC, 100V-240VAC, all Plugs (2259/92.04) - Software, SRM-3006 Tools (3006/93.01) - Cable, USB 2.0, Master/Slave - A/B mini (2260/90.55)	**Choice of set container:** **Hardcase3006/101** **Softcase 3006/102**
SRM-3006, Selective Radiation Meter, Set 3/4, Basic Unit plus one Isotropic Antenna (800MHz-6GHz) Set comprising: - Selective Radiation Meter, Basic Unit, SRM-3006 - Antenna, Three-Axis, E-Field, 750 MHz-6GHz (3502/01) - RF-Cable SRM, 9kHz-6GHz, N 50 Ohm, 1,5m (3602/01) - Carrying Strap for SRM (Basic Unit) (3001/90.02) - Holding Strap for SRM-3006 Basic Unit (3001/90.12) - Operating Manual SRM, German / English (please select) - Power Supply 12VDC, 100V-240VAC, all Plugs (2259/92.04) - Software, SRM-3006 Tools (3006/93.01) - Cable, USB 2.0, Master/Slave - A/B mini (2260/90.55)	**Choice of set container:** **Hardcase 3006/103** **Softcase 3006/104**
SRM-3006, Selective Radiation Meter, Set 5/6, Basic Unit plus two Isotropic Antenna Set comprising: - Selective Radiation Meter, Basic Unit, SRM-3006 - Antenna, Three-Axis, E-Field, 750 MHz-6GHz (3502/01) - Antenna, Three-Axis, E-Field, 27 MHz-3GHz (3501/03) - RF-Cable SRM, 9kHz-6GHz, N 50 Ohm, 1,5m (3602/01) - Carrying Strap for SRM (Basic Unit) (3001/90.02) - Holding Strap for SRM-3006 Basic Unit (3001/90.12) - Operating Manual SRM, German / English (please select) - Power Supply 12VDC, 100V-240VAC, all Plugs (2259/92.04) - Software, SRM-3006 Tools (3006/93.01) - Cable, USB 2.0, Master/Slave - A/B mini (2260/90.55)	**Choice of set container:** **Hardcase 3006/105** **Softcase 3006/106**

ORDERING INFORMATION

OPTIONAL ANTENNAS	
Antenna, Three-Axis, E-Field, 27 MHz-3GHz	**3501/03**
Antenna, Three-Axis, E-Field, 750MHz-6GHz	**3502/01**
Antenna, Three-Axis, H-Field, 9 kHz -200 MHz	**3581/02**
Antenna, Single-Axis, E-Field, 27MHz – 3 GHz	**3531/01**
Antenna, Single-Axis, E-Field, 9 kHz – 300 MHz	**3531/04**
Antenna, Single-Axis, H-Field, 9 kHz – 300 MHz	**3551/02**
OPTIONS	
Option, UMTS P-CPICH Demodulation SRM-3006	**3701/04**
Option, Scope	**3701/05**
ACCESSORIES	
Software, SRM-3006 TS	**3006/93.10**
RF-Cable SRM, 9kHz-6GHz, N 50 Ohm, 5m	**3602/02**
Antenna Holder for Uniaxial/Triaxial Antenna	**3501/90.01**
Antenna Holder for Triaxial Antenna	**3501/90.02**
Battery Pack, Rechargeable, SRM, 7V4 / 4000mAh	**3001/90.01**
Tripod, Non conductive, 1,65 m, with carrying bag	**2244/90.31**
Charger Set for SRM Battery Pack, External	**3001/90.07**
Softcase for SRM	**3001/90.05**
Hardcase for SRM	**3001/90.03**
Protective Soft Carrying Bag for SRM-3006 Basic Unit	**3001/90.13**
Earphone, 3.5mm Plug	**2400/90.03**
O/E Converter USB, RP-02/USB	**2260/90.07**

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