



Accreditation number **SCS 108**
Numero d'accreditamento

SCS Directory Registro SCS

Accreditation Standard ISO/IEC 17025:2005
Norma d'accreditamento ISO/IEC

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Calibration Laboratory for Specific Electric and Magnetic RF Fields and SAR measurements

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First accreditation (d,m,y) : 17.09.2004
Last accreditation (d,m,y) : 17.09.2009
Actual version : <http://www.sas.ch/>

Measured Quantities:

Electric field
Magnetic field
Specific Absorption Rate (SAR)
Temperature
DC Voltage

Change:

Staff :
Scope extension : 01.10.05, 01.04.08
Address :
Edition : **SCS108/H**

The given extended measurement uncertainty is the standard uncertainty of the measurement multiplied by an extension factor k = 2, which corresponds to a confidence level of about 95% for a normal distribution.

Measured Quantity Instrument	Range	Condition of measurement	Best Measurement Capability CMC at (22 ± 3) °C	Remarks
Electric field Calibration of E-field probes	0.8 V/m ... 800 V/m	10 MHz ... 3 GHz	4,6 %	e.g. ER3DV6x, EF3DVx, EU2DVx, EE3DVx
Magnetic field Calibration of H-field probes	2 mA/m ... 2 A/m	10 MHz ... 3 GHz	4,6 %	e.g. H2DVx, H3DVx
Calibration of sensitivity for magnetic field probes in the audio range	0,001 ... 0,1 V/(A/m)	1 kHz 0,1 ... 1 A/m	2,2 %	e.g. AM1DVx
Calibration of magnetic field simulator	-30 ... +40 dB A/m	1 kHz	4,1 %	e.g. TMFS (Telephone Magnetic Field Simulator)



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Measured Quantity Instrument	Range	Condition of measurement	Best Measurement Capability CMC at (22 ± 3) °C	Remarks
Specific absorption rate (SAR)				e.g. ET3DVx, ES3DVx, EX3DVx, ET1DVx, EU2DVx
Calibration of dosimetric E-field probes	E* field (typical ¹) 0,5 V/m ... 500 V/m	300 MHz ... 450 MHz	6,7 % (13,3 % for SAR)	Temperature transfer calibration *) As example, the indicated range corresponds to 0,2 mW/kg ... 200 W/kg for head tissue simulating liquid and f = 450 MHz
Calibration of dosimetric E-field probes	E* field (typical ¹) 0,45 V/m ... 450 V/m	800 MHz ... 3 GHz	5,5 % (11 % for SAR)	e.g. ET3DVx, ES3DVx, EX3DVx, ET1DVx, EU2DVx Waveguide analytical calibration *) As example, the indicated range corresponds to 0,2 mW/kg ... 200 W/kg for head tissue simulating liquid and f = 1800 MHz
	E* field (typical ¹) 0,4 V/m ... 450 V/m	3 GHz ... 6 GHz	6,5 % (13,1 % for SAR)	e.g. EX3DVx, ET1DVx Waveguide analytical calibration *) As example, the indicated range corresponds to 0,2 mW/kg ... 200 W/kg for head tissue simulating liquid and f = 5200 MHz
Calibration of temperature SAR probes	0 °C ... + 60 °C	Tissue simulating Liquids	0,15 K (5 % temperature gradient for SAR)	As example, the temperature gradient of T1Vx and T1V3LAB probes can be determined to 5 %, which is also contribution to SAR accuracy. (Noise is dominating the lower SAR threshold to typically 0,2 W/kg)



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Measured Quantity Instrument	Range	Condition of measurement	Best Measurement Capability CMC at (22 ± 3) °C	Remarks
Calibration of test system validation dipoles	SAR* 1 g and 10 g per 1 W input power	300 MHz ... 450 MHz	18,1 % for SAR 1 g 17,6 % for SAR 10 g	e.g. D835V2 ... D3000V2 according to IEEE 1528-2003, for 1 g and 10 g SAR *) SAR given (as example) for head tissue simulating liquid
		835 MHz ... 3 GHz	17,0 % for SAR 1 g 16,5 % for SAR 10 g	
	SAR* 1 g and 10 g per 1 W input power	3 GHz ... 6 GHz	19,9 % for SAR 1 g 19,5 % for SAR 10 g	e.g. D3500V2 ... D5GHzV2 according to IEC 62209-2, for 1 g and 10 g SAR *) SAR given (as example) for head tissue simulating liquid
Calibration of dipoles in air	E* field per 0,1 W input power 30 V/m ... 300 V/m	800 MHz ... 3 GHz	12,8 % for E field	e.g. CD835V3 ... CD2450V3 according to ANSI PC 63,19 2001, for E field and H field
	H* field per 0,1 W input power 0,07 A/m ... 0,7 A/m		8,2 % for H field	
DC Voltage				
Calibration of readout units for field and SAR probes	2 mV		1,5 %	e.g. DAE3Vx, DAE4Vx, DAEasyVx
	200 mV		1 %	
Calibration of iSAR	SAR* peak per 1 W input power	800 MHz ... 3 GHz	24,5 % for iSAR - Flat 28,1 % for iSAR - Head	*) e.g. iSAR-Flat, iSAR-Head
Calibration of iSAR dipole antenna	SAR* peak per 1 W input power	800 MHz ... 3 GHz	18,1 % for SAR peak	*) e.g., SA AAE 083BA, SA AAE 190 AA, etc.

¹ Slightly depending on the frequency and probe type