Schmid & Partner
Engineering AG

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Calibration Certificate

Dosimetric E-Field Probe

Type:	**ET3DV6**
Serial Number:	**1569**
Place of Calibration:	**Zurich**
Date of Calibration:	**April 25, 2002**
Calibration Interval:	**12 months**

Schmid & Partner Engineering AG hereby certifies, that this device has been calibrated on the date indicated above. The calibration was performed in accordance with specifications and procedures of Schmid & Partner Engineering AG.

Wherever applicable, the standards used in the calibration process are traceable to international standards. In all other cases the standards of the Laboratory for EMF and Microwave Electronics at the Swiss Federal Institute of Technology (ETH) in Zurich, Switzerland have been applied.

Calibrated by:	D. Veltd
Approved by:	Katya

Schmid & Partner
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Probe ET3DV6

SN:1569

Manufactured:	March 19, 2001
Last calibration:	March 22, 2001
Recalibrated:	April 25, 2002

Calibrated for System DASY3

DASY3 - Parameters of Probe: ET3DV6 SN:1569

Sensitivity in Free Space

NormX	**1.76** $\mu V/(V/m)^2$
NormY	**1.99** $\mu V/(V/m)^2$
NormZ	**1.89** $\mu V/(V/m)^2$

Diode Compression

DCP X	**96**	mV
DCP Y	**96**	mV
DCP Z	**96**	mV

Sensitivity in Tissue Simulating Liquid

Head **900 MHz** ε_r **= 41.5 ± 5%** σ **= 0.97 ± 5% mho/m**
Head **835 MHz** ε_r **= 41.5 ± 5%** σ **= 0.90 ± 5% mho/m**

ConvF X	**6.9** ± 9.5% (k=2)	Boundary effect:	
ConvF Y	**6.9** ± 9.5% (k=2)	Alpha	**0.60**
ConvF Z	**6.9** ± 9.5% (k=2)	Depth	**1.66**

Head **1800 MHz** ε_r **= 40.0 ± 5%** σ **= 1.40 ± 5% mho/m**

ConvF X	**5.6** ± 8.9% (k=2)	Boundary effect:	
ConvF Y	**5.6** ± 8.9% (k=2)	Alpha	**0.43**
ConvF Z	**5.6** ± 8.9% (k=2)	Depth	**2.54**

Boundary Effect

Head **900 MHz** **Typical SAR gradient: 5 % per mm**

Probe Tip to Boundary		**1 mm**	**2 mm**
SAR_{be} [%]	Without Correction Algorithm	7.0	3.6
SAR_{be} [%]	With Correction Algorithm	0.0	0.1

Head **1800 MHz** **Typical SAR gradient: 10 % per mm**

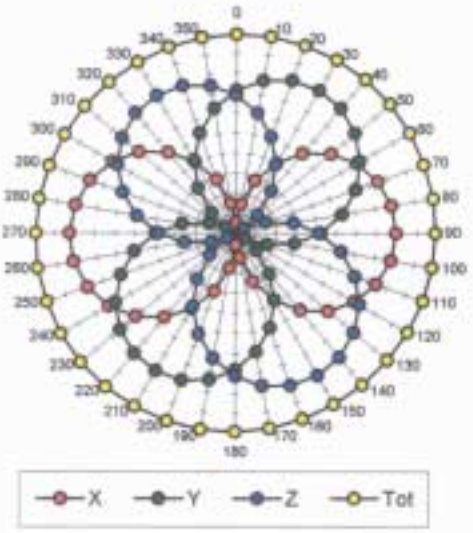
Probe Tip to Boundary		**1 mm**	**2 mm**
SAR_{be} [%]	Without Correction Algorithm	10.8	7.4
SAR_{be} [%]	With Correction Algorithm	0.2	0.2

Sensor Offset

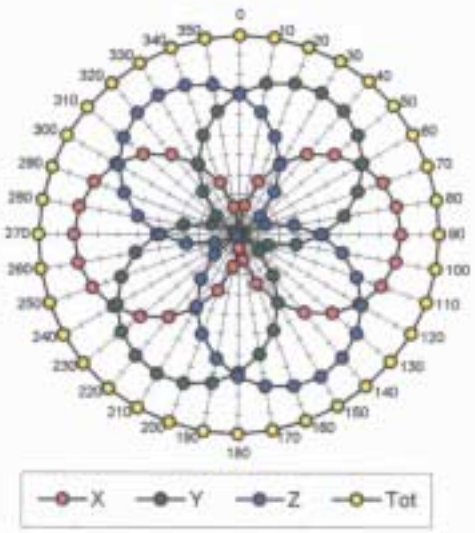
Probe Tip to Sensor Center	**2.7**	mm
Optical Surface Detection	**1.5 ± 0.2**	mm

Receiving Pattern (ϕ), θ = 0°

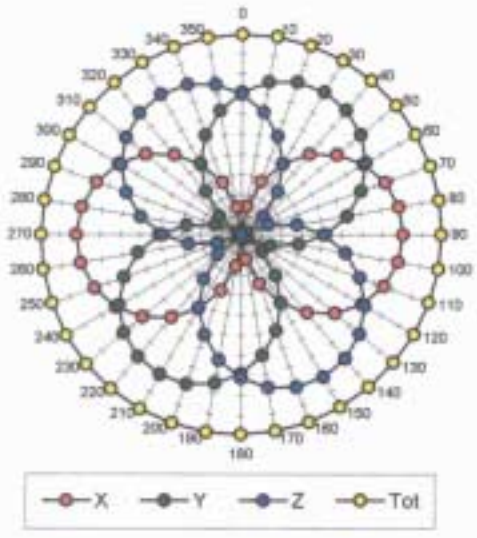
f = 30 MHz, TEM cell ifi110



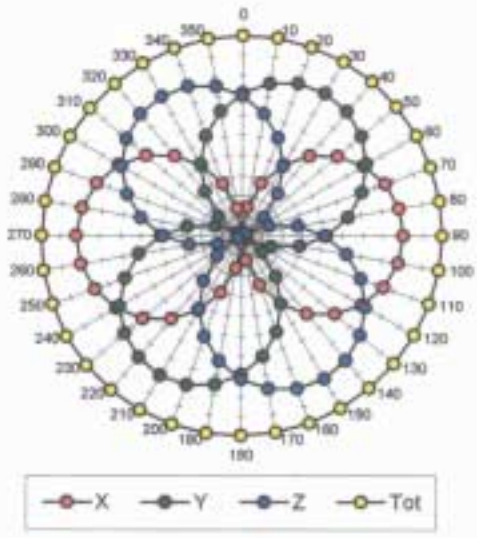
f = 100 MHz, TEM cell ifi110

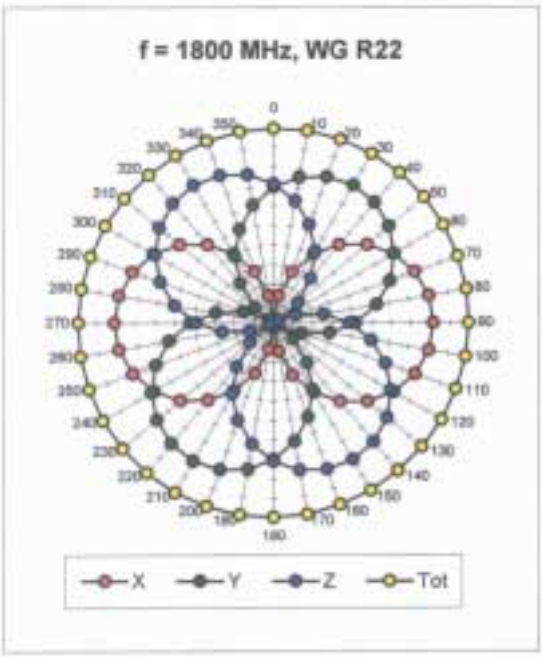


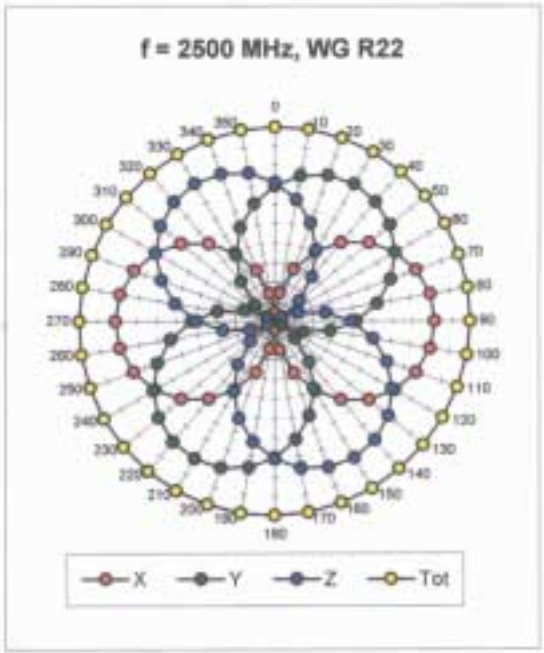
f = 300 MHz, TEM cell ifi110



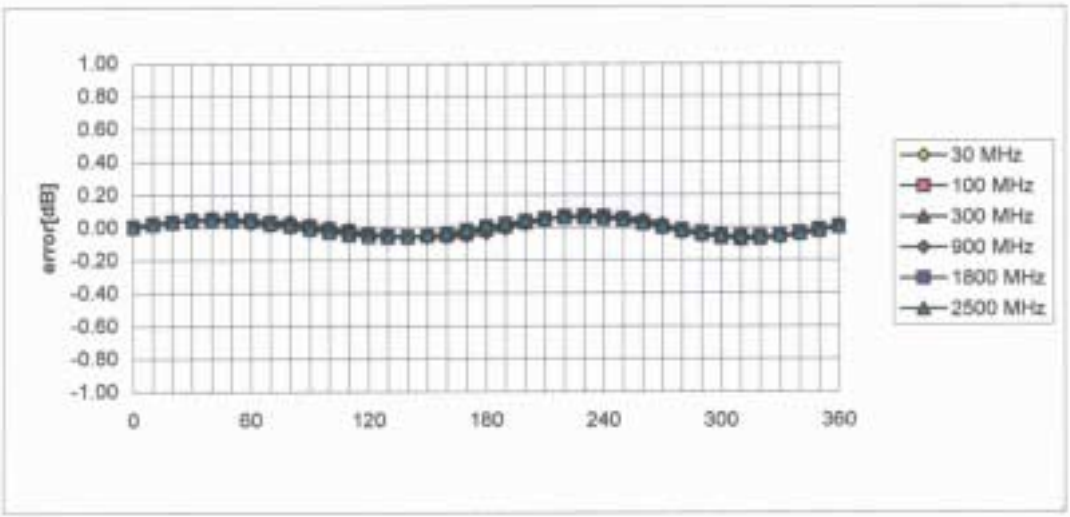
f = 900 MHz, TEM cell ifi110





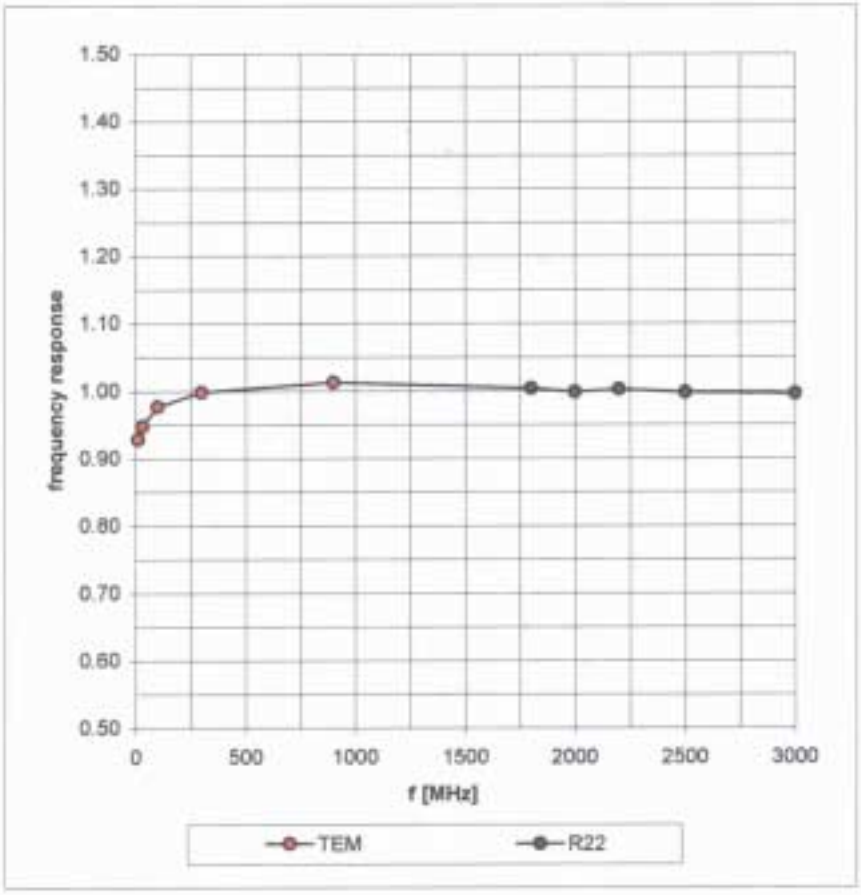


Isotropy Error (ϕ), θ = 0°



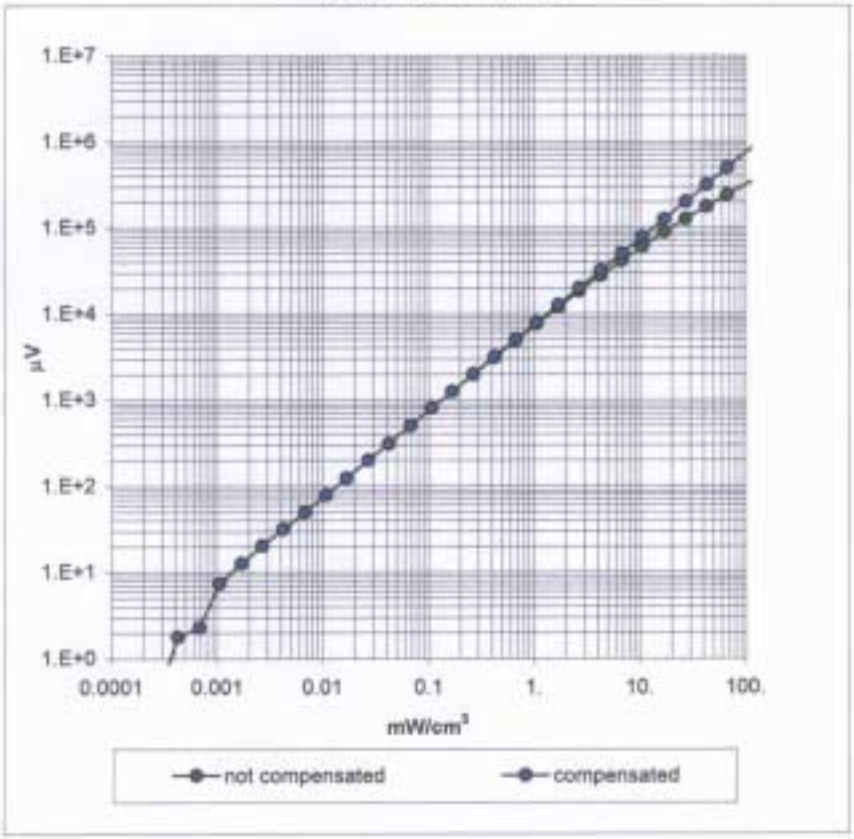
Frequency Response of E-Field

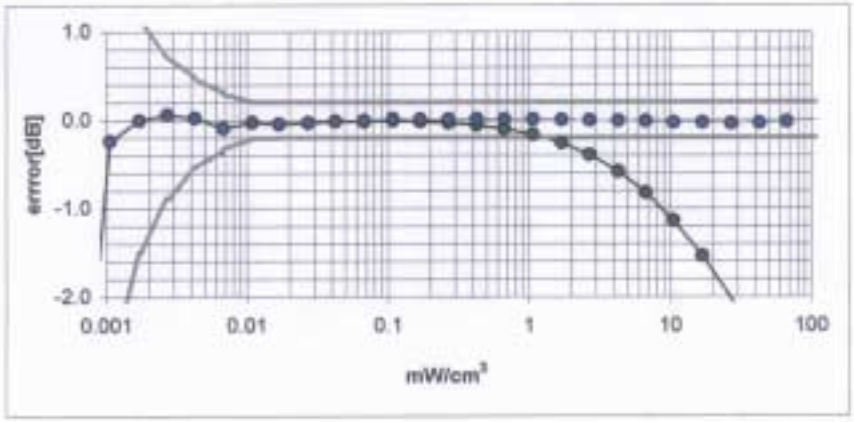
(TEM-Cell:ifi110, Waveguide R22)



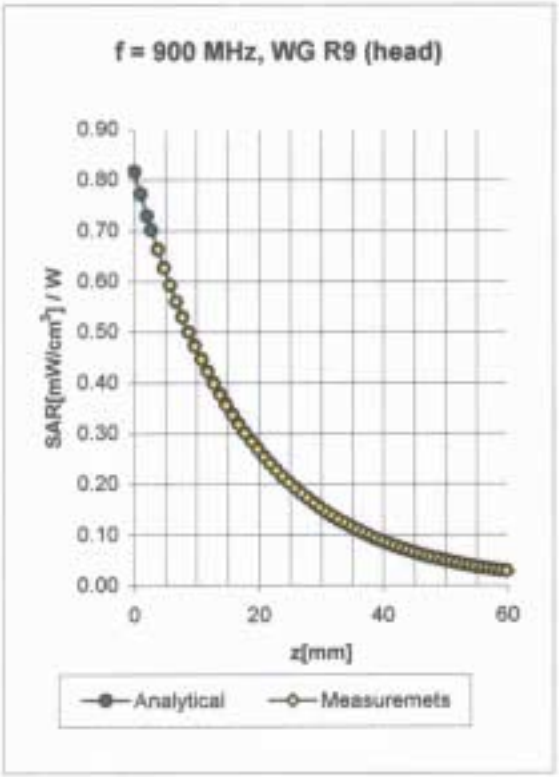
Dynamic Range f(SAR_{brain})

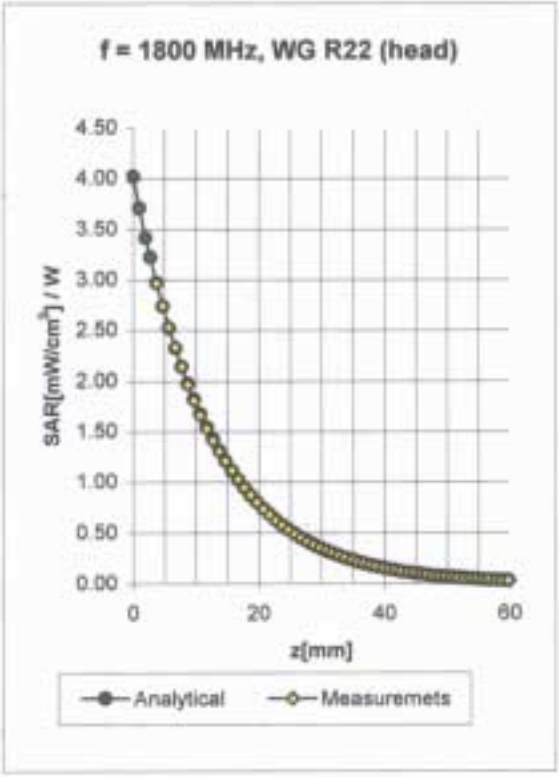
(Waveguide R22)





Conversion Factor Assessment





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Head	**1800 MHz**	ε_r = **40.0 ± 5%**	σ = **1.40 ± 5% mho/m**	
	ConvF X	**5.6** ± 8.9% (k=2)	Boundary effect:	
	ConvF Y	**5.6** ± 8.9% (k=2)	Alpha	**0.43**
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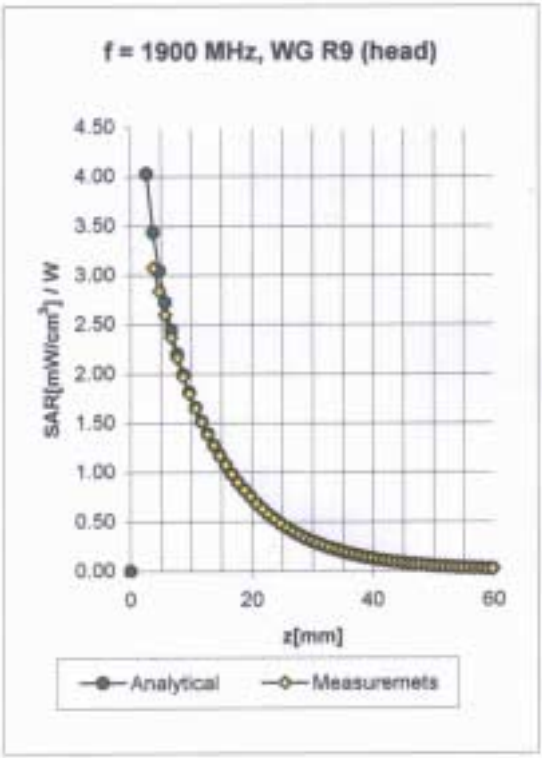
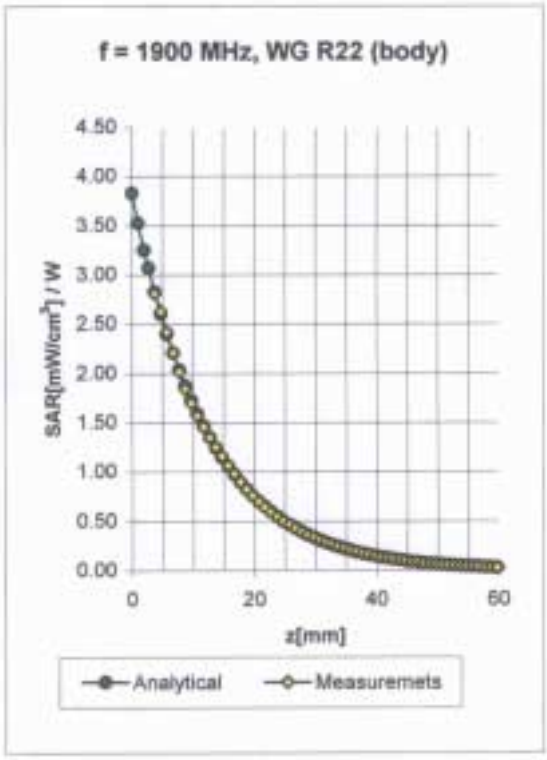
Conversion Factor Assessment





Head **1900 MHz** ε_r **= 40.0 ± 5%** σ **= 1.40 ± 5% mho/m**

ConvF X	**5.4** ± 8.9% (k=2)	Boundary effect:	
ConvF Y	**5.4** ± 8.9% (k=2)	Alpha	**0.47**
ConvF Z	**5.4** ± 8.9% (k=2)	Depth	**2.44**

Body **1900 MHz** ε_r **= 53.3 ± 5%** σ **= 1.52 ± 5% mho/m**

ConvF X	**5.0** ± 8.9% (k=2)	Boundary effect:	
ConvF Y	**5.0** ± 8.9% (k=2)	Alpha	**0.65**
ConvF Z	**5.0** ± 8.9% (k=2)	Depth	**2.16**

Deviation from Isotropy in HSL

Error (θ,ϕ), f = 900 MHz