Schmid & Partner
Engineering AG

Zeughausstrasse 43, 8004 Zurich, Switzerland, Phone +41 1 245 97 00, Fax +41 1 245 97 79

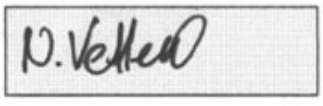
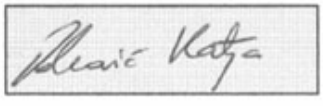
Calibration Certificate

Dosimetric E-Field Probe

Type:	**ET3DV6**
Serial Number:	**1551**
Place of Calibration:	**Zurich**
Date of Calibration:	**May 22, 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:	
Approved by:	

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Probe ET3DV6

SN:1551

Manufactured:	October 16, 2000
Last calibration:	December 19, 2000
Recalibrated:	May 22, 2002

Calibrated for System DASY3

DASY3 - Parameters of Probe: ET3DV6 SN:1551

Sensitivity in Free Space

Diode Compression

NormX	**1.48**	$\mu V/(V/m)^2$	DCP X	**96**	mV
NormY	**1.53**	$\mu V/(V/m)^2$	DCP Y	**96**	mV
NormZ	**1.43**	$\mu V/(V/m)^2$	DCP Z	**96**	mV

Sensitivity in Tissue Simulating Liquid

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

ConvF X	**6.8** ± 8.9% (k=2)	Boundary effect:	
ConvF Y	**6.8** ± 8.9% (k=2)	Alpha	**0.34**
ConvF Z	**6.8** ± 8.9% (k=2)	Depth	**2.43**

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

ConvF X	**5.3** ± 8.9% (k=2)	Boundary effect:	
ConvF Y	**5.3** ± 8.9% (k=2)	Alpha	**0.50**
ConvF Z	**5.3** ± 8.9% (k=2)	Depth	**2.38**

Boundary Effect

Head **835 MHz** **Typical SAR gradient: 5 % per mm**

Probe Tip to Boundary		**1 mm**	**2 mm**
SAR_{be} [%]	Without Correction Algorithm	8.3	4.6
SAR_{be} [%]	With Correction Algorithm	0.3	0.5

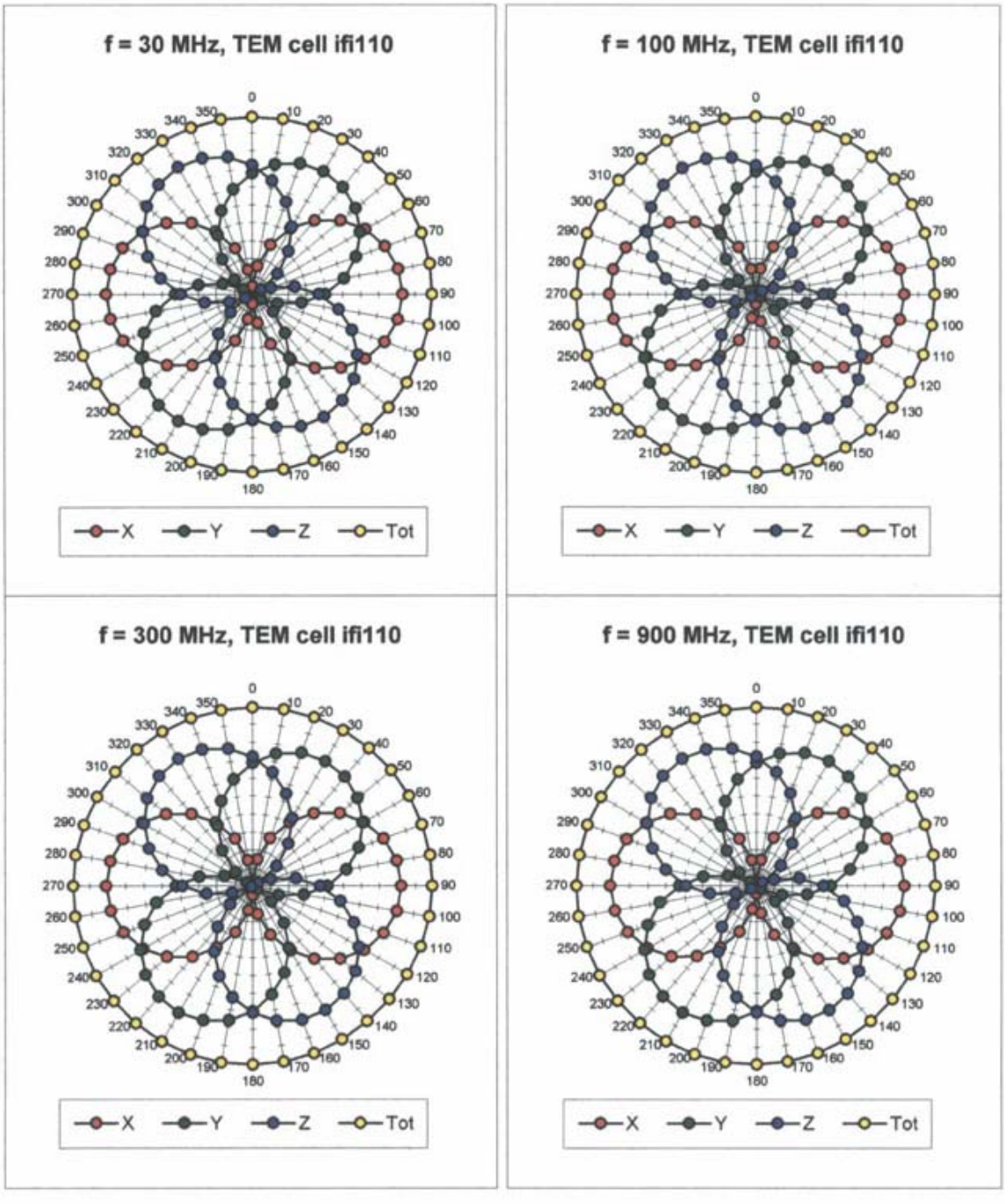
Head **1900 MHz** **Typical SAR gradient: 10 % per mm**

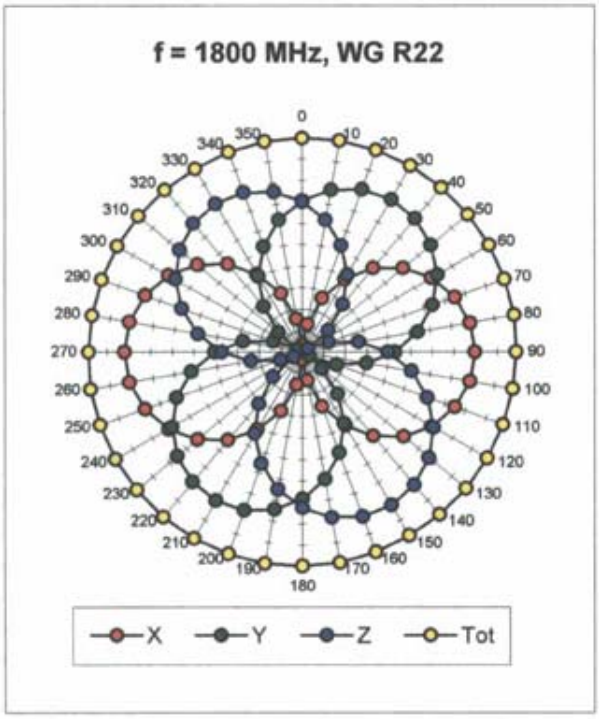
Probe Tip to Boundary		**1 mm**	**2 mm**
SAR_{be} [%]	Without Correction Algorithm	11.6	7.9
SAR_{be} [%]	With Correction Algorithm	0.2	0.4

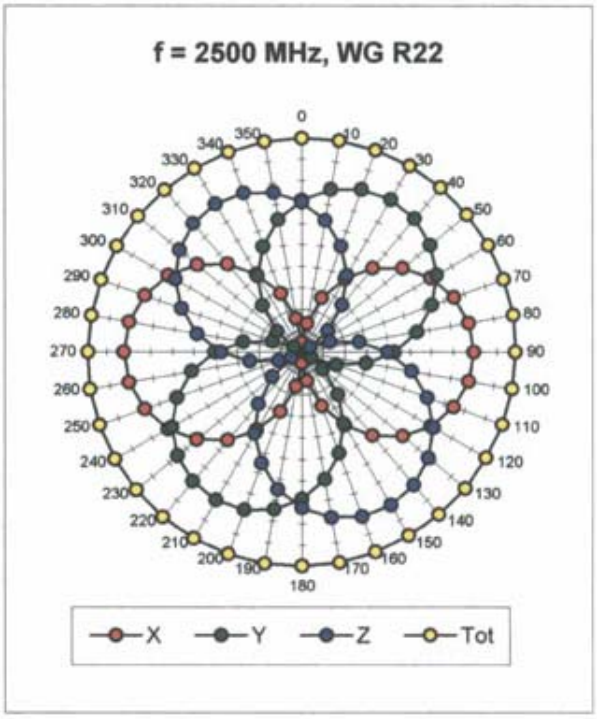
Sensor Offset

Probe Tip to Sensor Center	**2.7**	mm
Optical Surface Detection	**1.3 ± 0.2**	mm

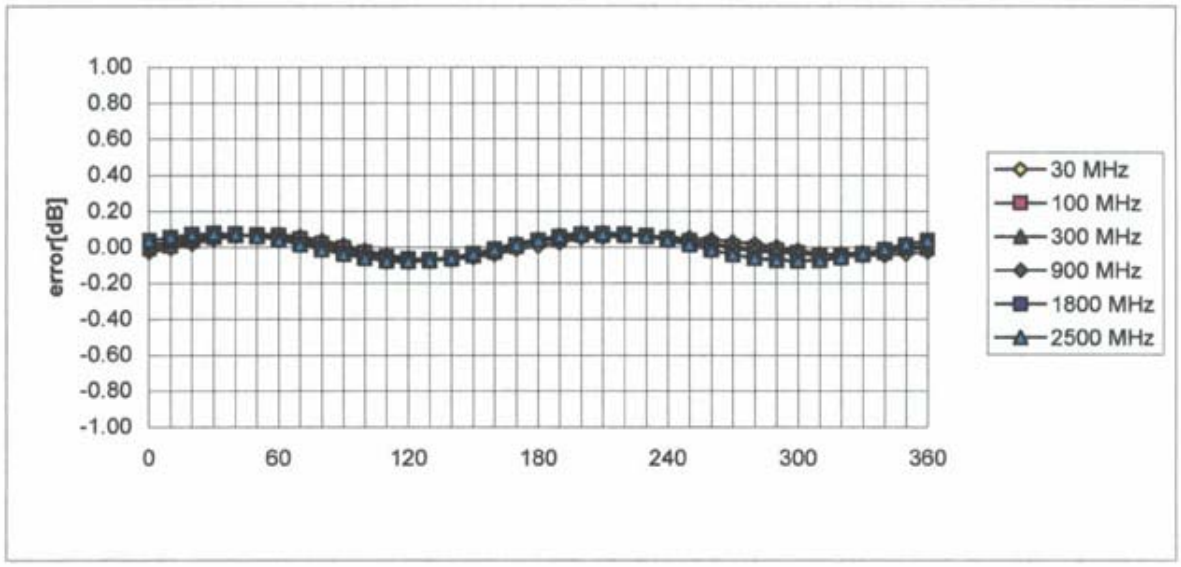
Receiving Pattern (ϕ), θ = 0°





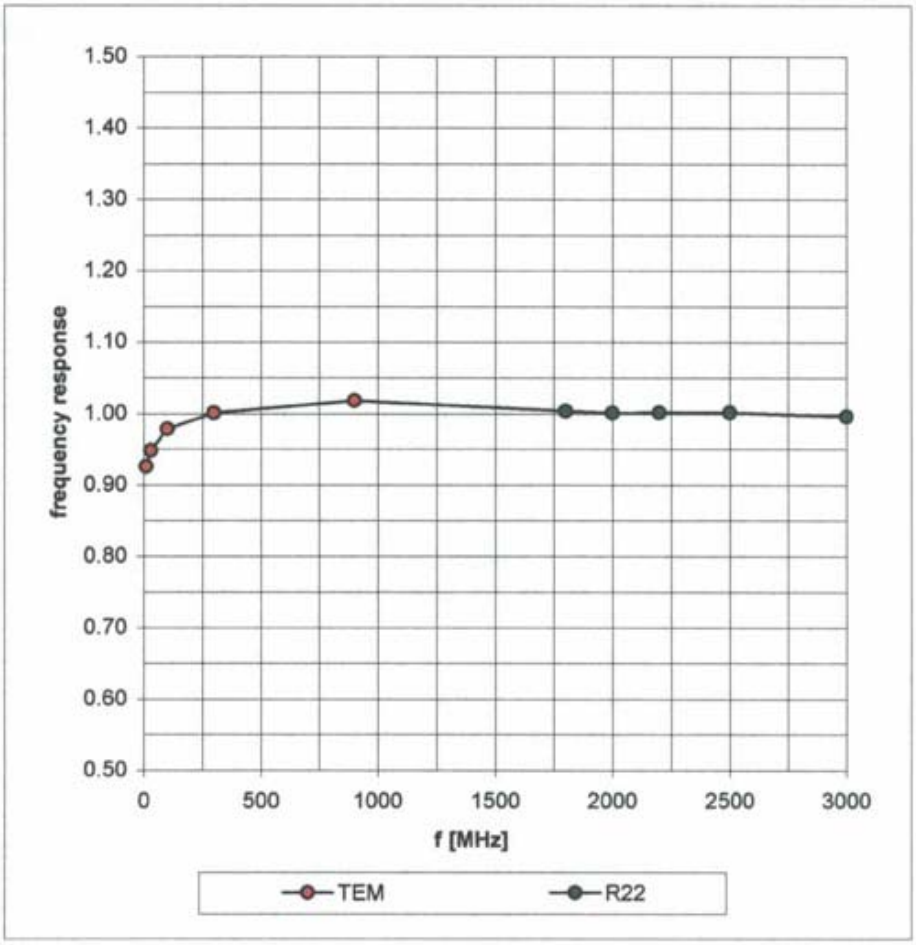


Isotropy Error (ϕ), θ = 0°



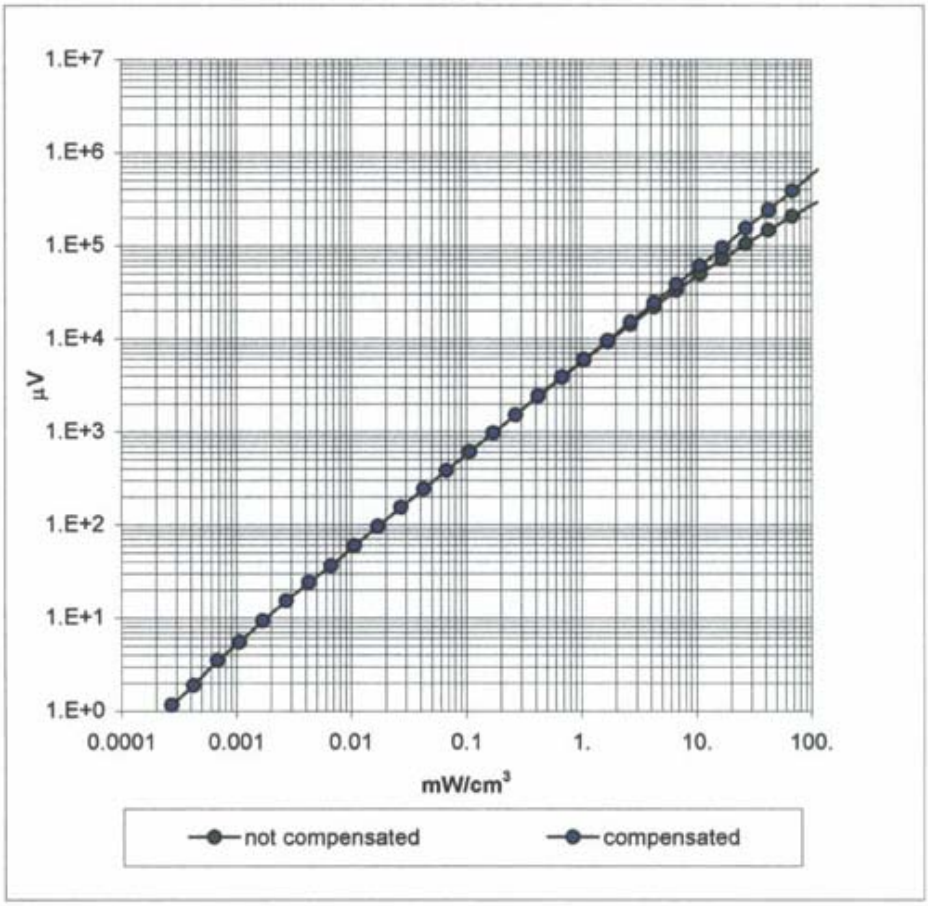
Frequency Response of E-Field

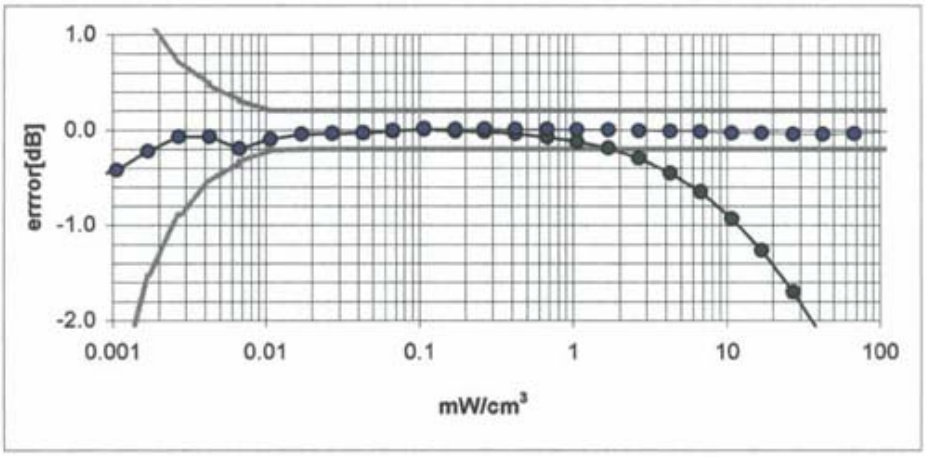
(TEM-Cell:ifi110, Waveguide R22)



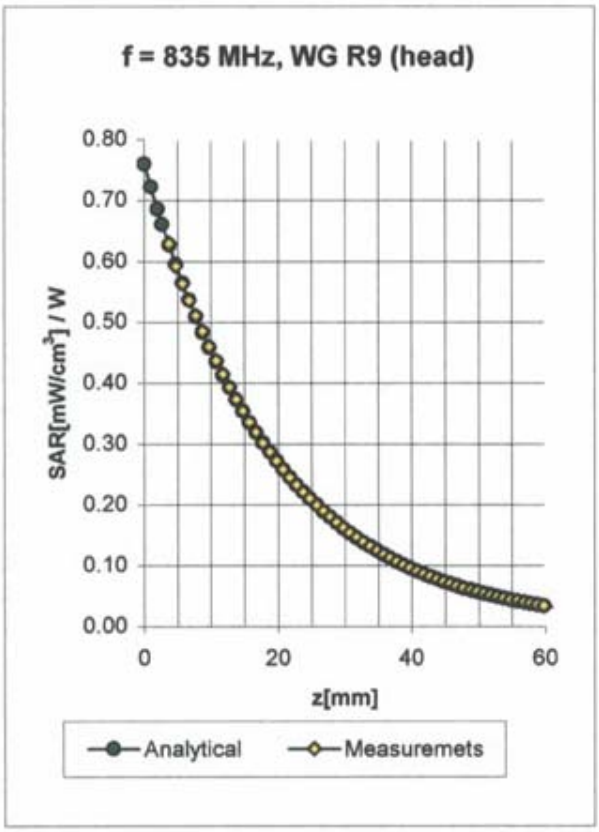
Dynamic Range f(SAR_{brain})

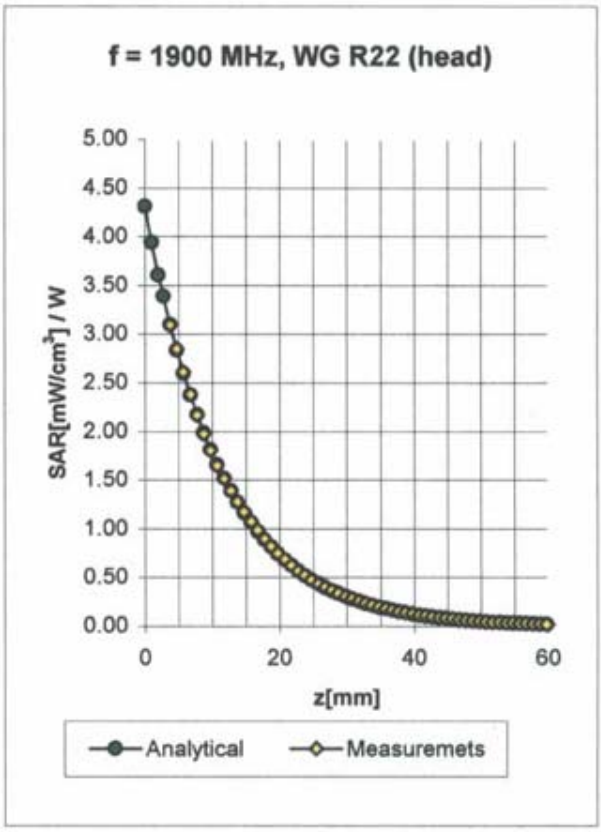
(Waveguide R22)





Conversion Factor Assessment





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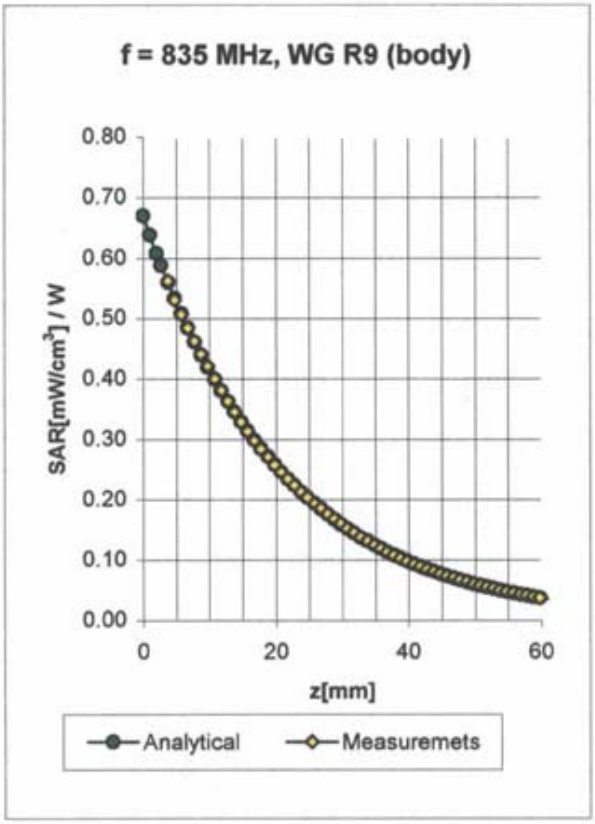

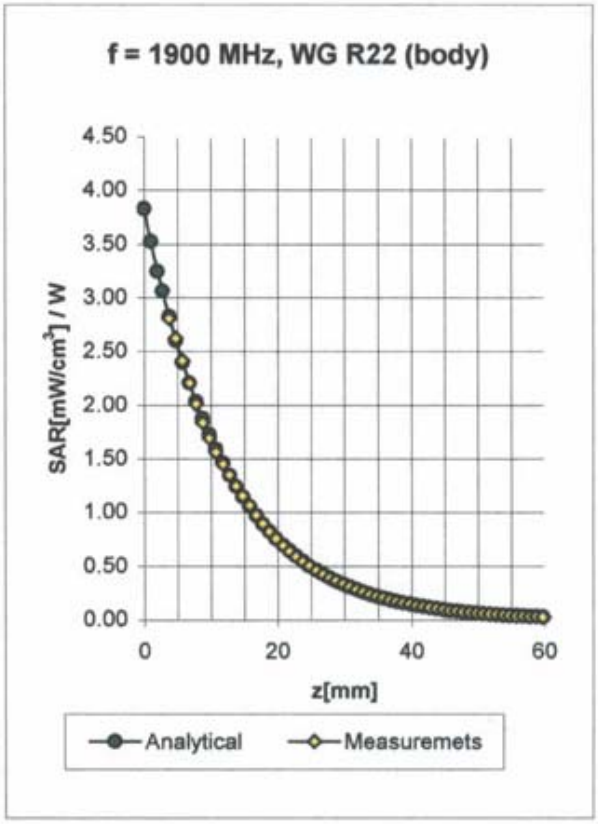

Body	**835 MHz**	ε_r **= 55.2 ± 5%**	σ **= 0.97 ± 5% mho/m**
	ConvF X	**6.6** ± 8.9% (k=2)	Boundary effect:
	ConvF Y	**6.6** ± 8.9% (k=2)	Alpha **0.31**
	ConvF Z	**6.6** ± 8.9% (k=2)	Depth **2.72**

Body	**1900 MHz**	ε_r **= 53.3 ± 5%**	σ **= 1.52 ± 5% mho/m**
	ConvF X	**4.9** ± 8.9% (k=2)	Boundary effect:
	ConvF Y	**4.9** ± 8.9% (k=2)	Alpha **0.66**
	ConvF Z	**4.9** ± 8.9% (k=2)	Depth **2.19**

Deviation from Isotropy in HSL

Error (θ,φ), f = 900 MHz