



Author Data Daoud S. Attayi	Dates of Test May 16-18, 2002	Test Report No RIM-0205-04
Approved	Rev	FCC ID : L6AR6510IN

APPENDIX D: PROBE CALIBRATION



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**Schmid & Partner
Engineering AG**

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Calibration Certificate

Dosimetric E-Field Probe

Type:

ET3DV6

Serial Number:

1642

Place of Calibration:

Zurich

Date of Calibration:

November 26, 2001

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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**Schmid & Partner
Engineering AG**

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Probe ET3DV6

SN:1642

Manufactured: November 7, 2001
Calibrated: November 26, 2001

Calibrated for System DASY3



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DASY3 - Parameters of Probe: ET3DV6 SN:1642

Sensitivity in Free Space

NormX	1.63 $\mu\text{V}/(\text{V}/\text{m})^2$
NormY	1.86 $\mu\text{V}/(\text{V}/\text{m})^2$
NormZ	1.61 $\mu\text{V}/(\text{V}/\text{m})^2$

Diode Compression

DCP X	100 mV
DCP Y	100 mV
DCP Z	100 mV

Sensitivity in Tissue Simulating Liquid

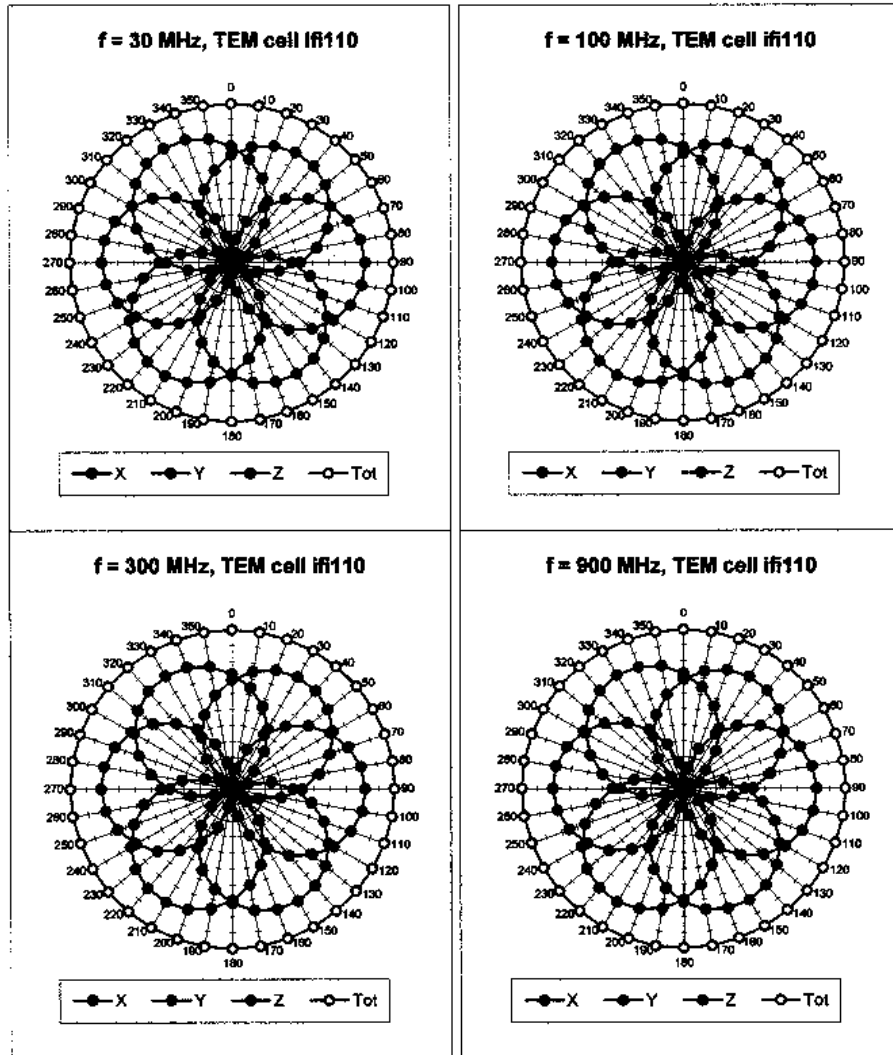
Head	450 MHz	$\epsilon_r = 43.5 \pm 5\%$	$\sigma = 0.87 \pm 10\%$ mho/m
ConvF X	7.18 extrapolated		Boundary effect:
ConvF Y	7.18 extrapolated		Alpha 0.48
ConvF Z	7.18 extrapolated		Depth 1.90
Head	800 - 1000 MHz	$\epsilon_r = 39.0 - 43.5$	$\sigma = 0.80 - 1.10$ mho/m
ConvF X	6.59 $\pm 9.5\%$ (k=2)		Boundary effect:
ConvF Y	6.59 $\pm 9.5\%$ (k=2)		Alpha 0.50
ConvF Z	6.59 $\pm 9.5\%$ (k=2)		Depth 2.00
Head	1500 MHz	$\epsilon_r = 40.4 \pm 5\%$	$\sigma = 1.23 \pm 10\%$ mho/m
ConvF X	5.80 interpolated		Boundary effect:
ConvF Y	5.80 interpolated		Alpha 0.53
ConvF Z	5.80 interpolated		Depth 2.13
Head	1700 - 1910 MHz	$\epsilon_r = 39.5 - 41.0$	$\sigma = 1.20 - 1.65$ mho/m
ConvF X	5.41 $\pm 9.5\%$ (k=2)		Boundary effect:
ConvF Y	5.41 $\pm 9.5\%$ (k=2)		Alpha 0.54
ConvF Z	5.41 $\pm 9.5\%$ (k=2)		Depth 2.19

Sensor Offset

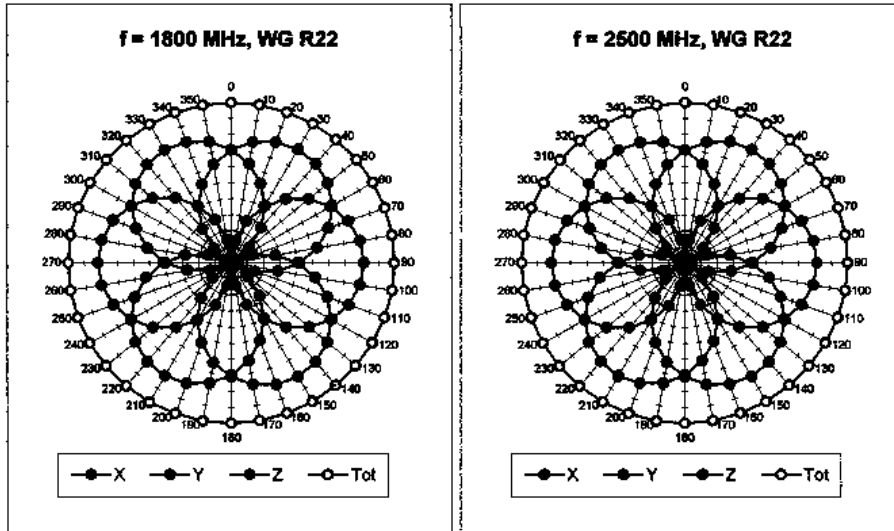
Probe Tip to Sensor Center	2.7	mm
Optical Surface Detection	1.0 \pm 0.2	mm

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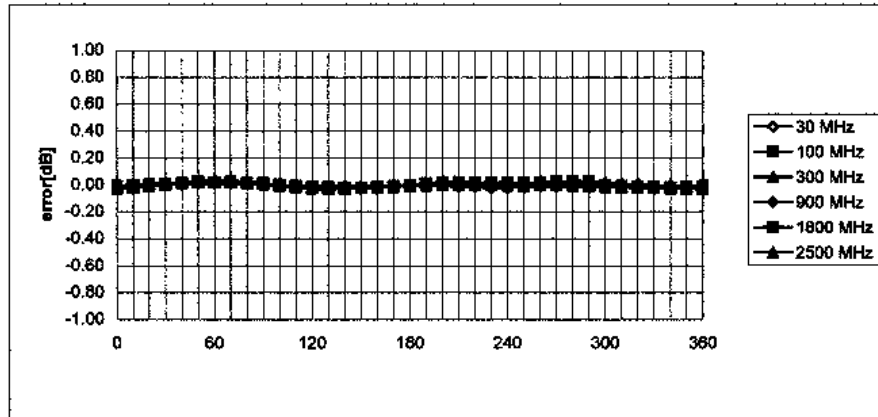
Receiving Pattern (ϕ), $\theta = 0^\circ$



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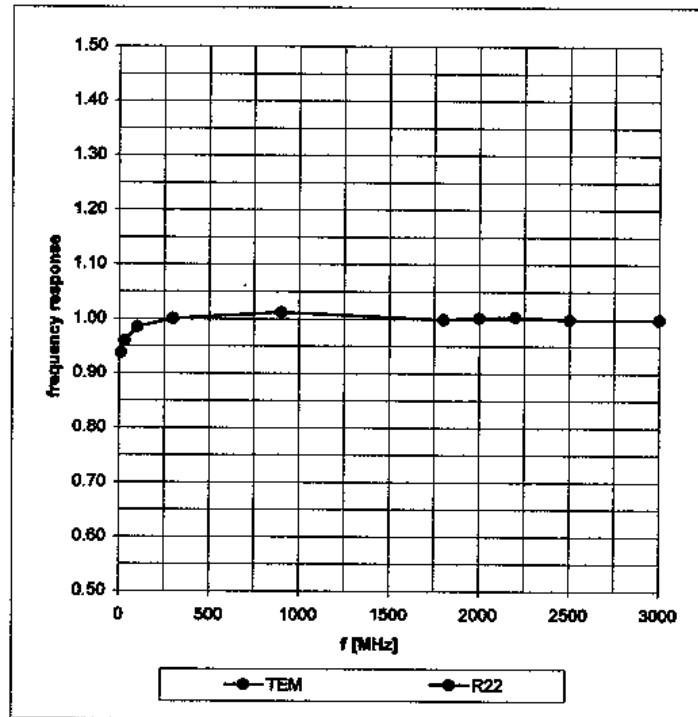
Isotropy Error (ϕ), $\theta = 0^\circ$



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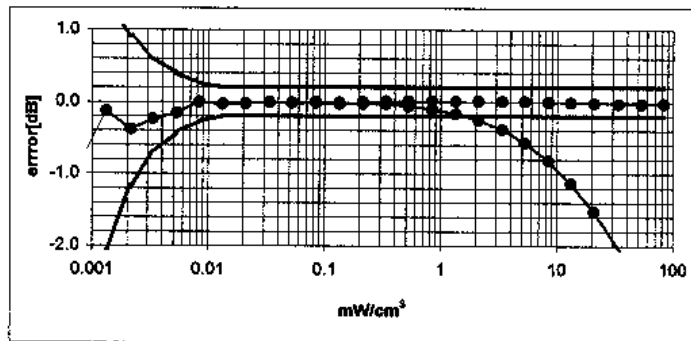
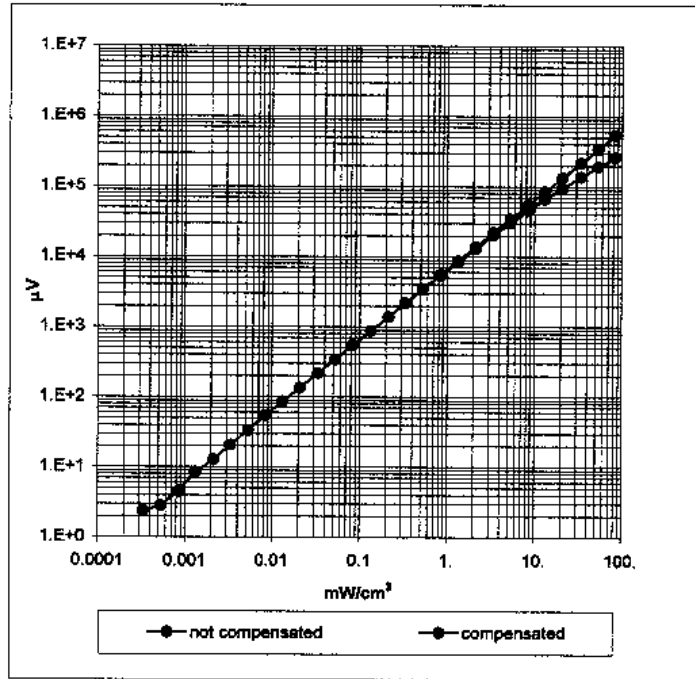
Frequency Response of E-Field

(TEM-Cell:ifi110, Waveguide R22)



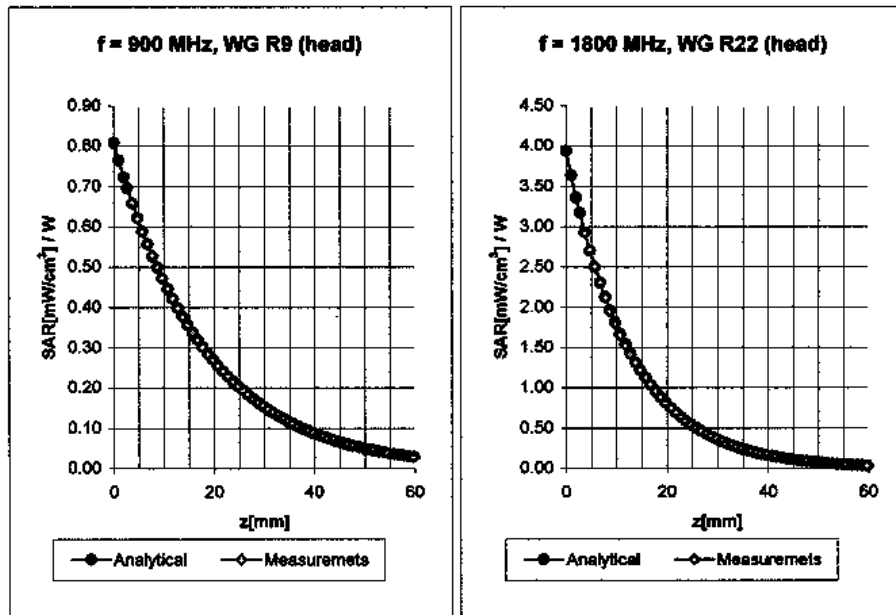
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Dynamic Range f(SAR_{brain}) (Waveguide R22)



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Conversion Factor Assessment



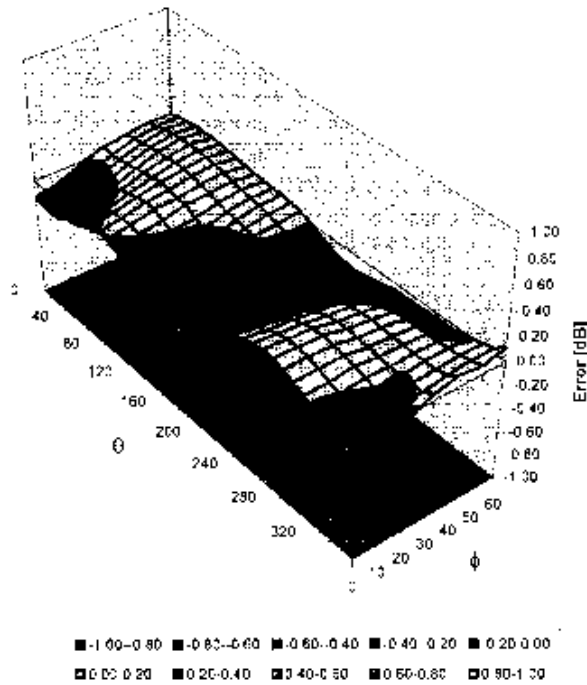
Head	800 - 1000 MHz	$\epsilon_r = 39.0 - 43.5$	$\sigma = 0.80 - 1.10 \text{ mho/m}$
	ConvF X	6.59 $\pm 9.5\%$ (k=2)	Boundary effect:
	ConvF Y	6.59 $\pm 9.5\%$ (k=2)	Alpha 0.50
	ConvF Z	6.59 $\pm 9.5\%$ (k=2)	Depth 2.00
Head	1700 - 1910 MHz	$\epsilon_r = 39.5 - 41.0$	$\sigma = 1.20 - 1.55 \text{ mho/m}$
	ConvF X	5.41 $\pm 9.5\%$ (k=2)	Boundary effect:
	ConvF Y	5.41 $\pm 9.5\%$ (k=2)	Alpha 0.54
	ConvF Z	5.41 $\pm 9.5\%$ (k=2)	Depth 2.19

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Deviation from Isotropy in HSL

Error (θ, ϕ), $f = 900$ MHz





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