

7 APPENDIX B - E-FIELD PROBE CALIBRATION DATA

☒ See Separate Attachment

☐ See Below

Probe ET3DV5

SN:1333

Manufactured:	December 20, 1997
Last calibration:	March 18, 1999
Recalibrated:	April 10, 2000

Calibrated for System DASY3

DASY3 - Parameters of Probe: ET3DV5 SN:1333

Sensitivity in Free Space

NormX	2.39 $\mu\text{V}/(\text{V}/\text{m})^2$
NormY	2.36 $\mu\text{V}/(\text{V}/\text{m})^2$
NormZ	2.34 $\mu\text{V}/(\text{V}/\text{m})^2$

Diode Compression

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

Sensitivity in Tissue Simulating Liquid

Brain **450 MHz** $\epsilon_r = 48 \pm 5\%$ $\sigma = 0.50 \pm 10\%$ mho/m

ConvF X	6.03 extrapolated	Boundary effect:	
ConvF Y	6.03 extrapolated	Alpha	0.13
ConvF Z	6.03 extrapolated	Depth	3.57

Brain **900 MHz** $\epsilon_r = 42.5 \pm 5\%$ $\sigma = 0.86 \pm 10\%$ mho/m

ConvF X	5.70 $\pm 7\%$ (k=2)	Boundary effect:	
ConvF Y	5.70 $\pm 7\%$ (k=2)	Alpha	0.34
ConvF Z	5.70 $\pm 7\%$ (k=2)	Depth	3.00

Brain **1500 MHz** $\epsilon_r = 41 \pm 5\%$ $\sigma = 1.32 \pm 10\%$ mho/m

ConvF X	5.25 interpolated	Boundary effect:	
ConvF Y	5.25 interpolated	Alpha	0.61
ConvF Z	5.25 interpolated	Depth	2.23

Brain **1800 MHz** $\epsilon_r = 41 \pm 5\%$ $\sigma = 1.69 \pm 10\%$ mho/m

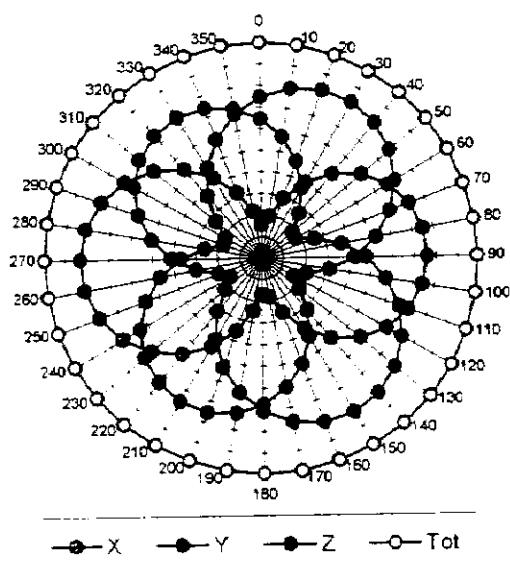
ConvF X	5.03 $\pm 7\%$ (k=2)	Boundary effect:	
ConvF Y	5.03 $\pm 7\%$ (k=2)	Alpha	0.74
ConvF Z	5.03 $\pm 7\%$ (k=2)	Depth	1.85

Sensor Offset

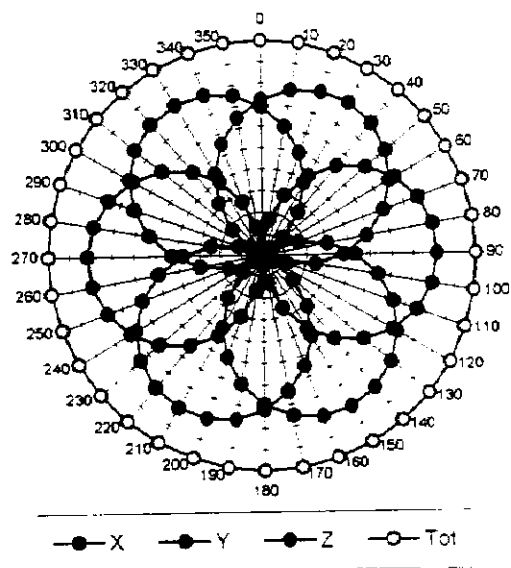
Probe Tip to Sensor Center	2.7	mm
Optical Surface Detection	1.9 $\pm$ 0.2	mm

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

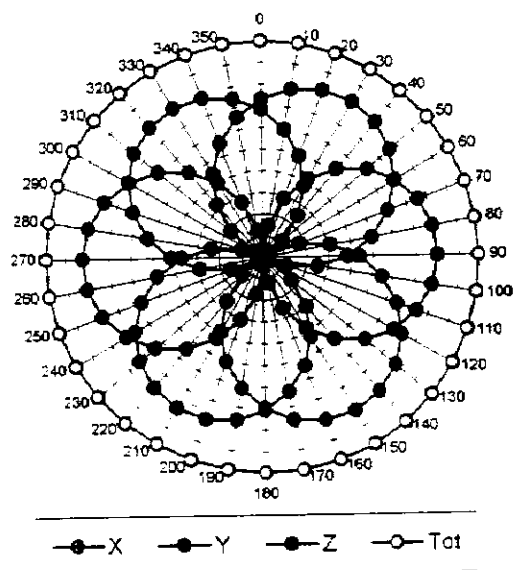
$f = 30 \text{ MHz}$, TEM cell ifi110



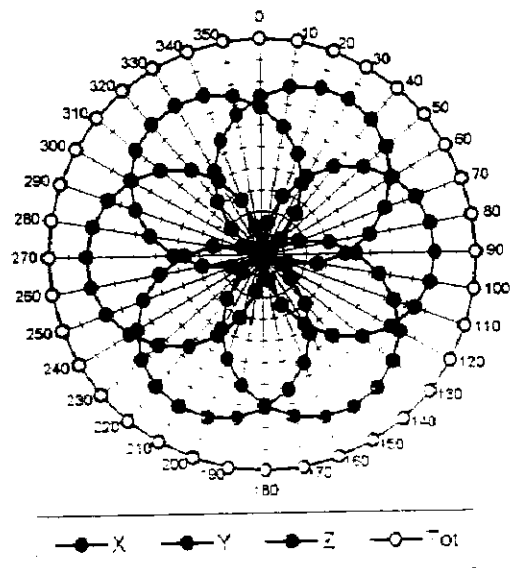
$f = 100 \text{ MHz}$, TEM cell ifi110



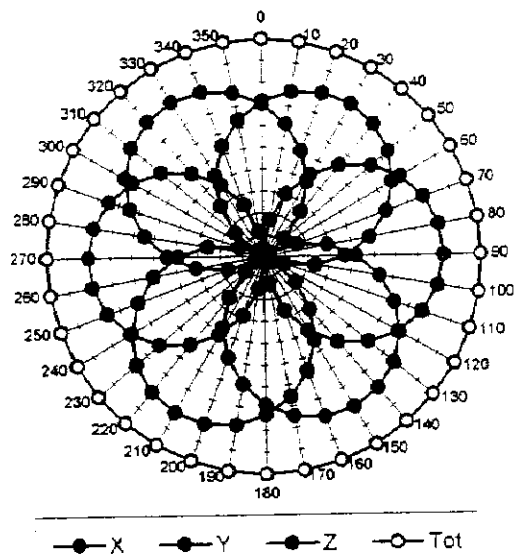
$f = 300 \text{ MHz}$, TEM cell ifi110



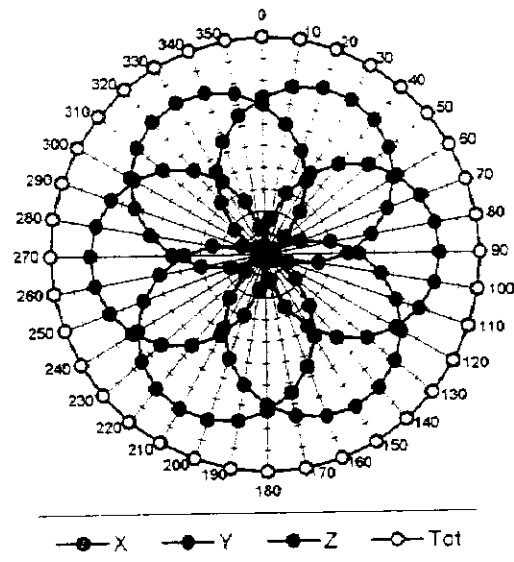
$f = 900 \text{ MHz}$, TEM cell ifi110



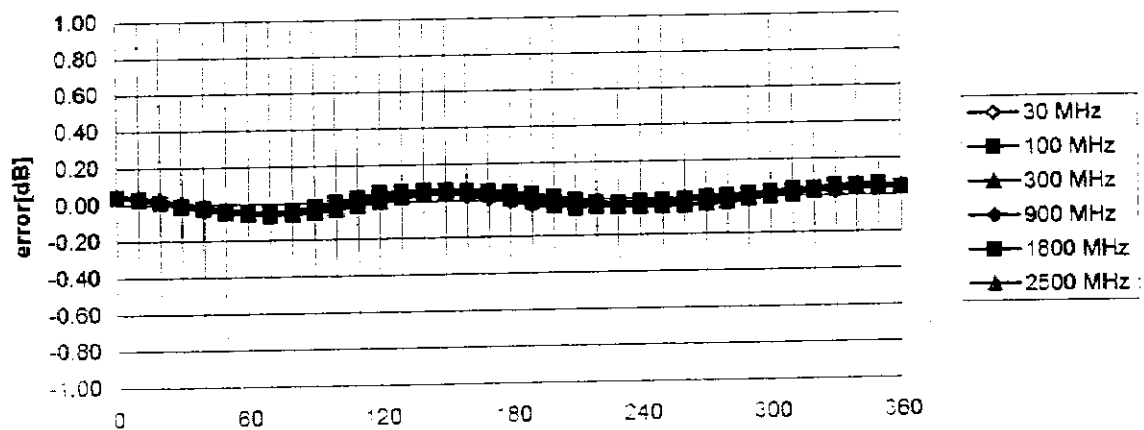
$f = 1800 \text{ MHz}$, WG R22



$f = 2500 \text{ MHz}$, WG R26

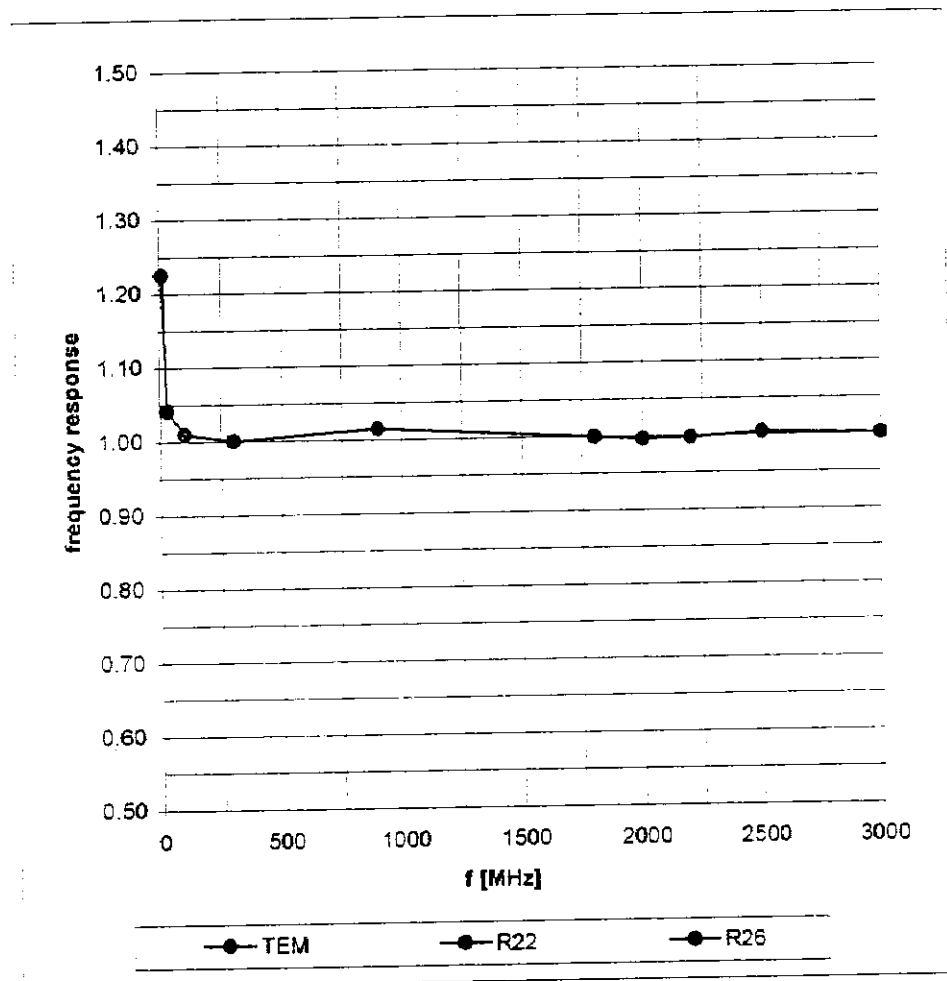


Isotropy Error (ϕ), $\theta = 0^\circ$



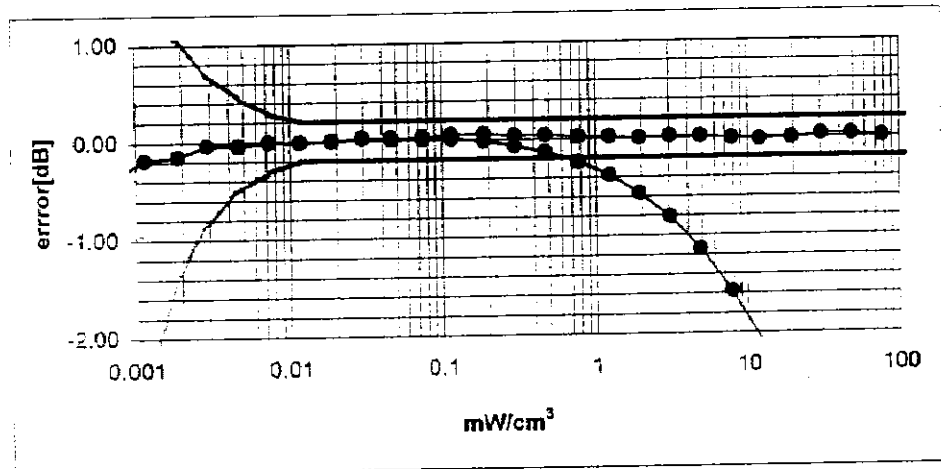
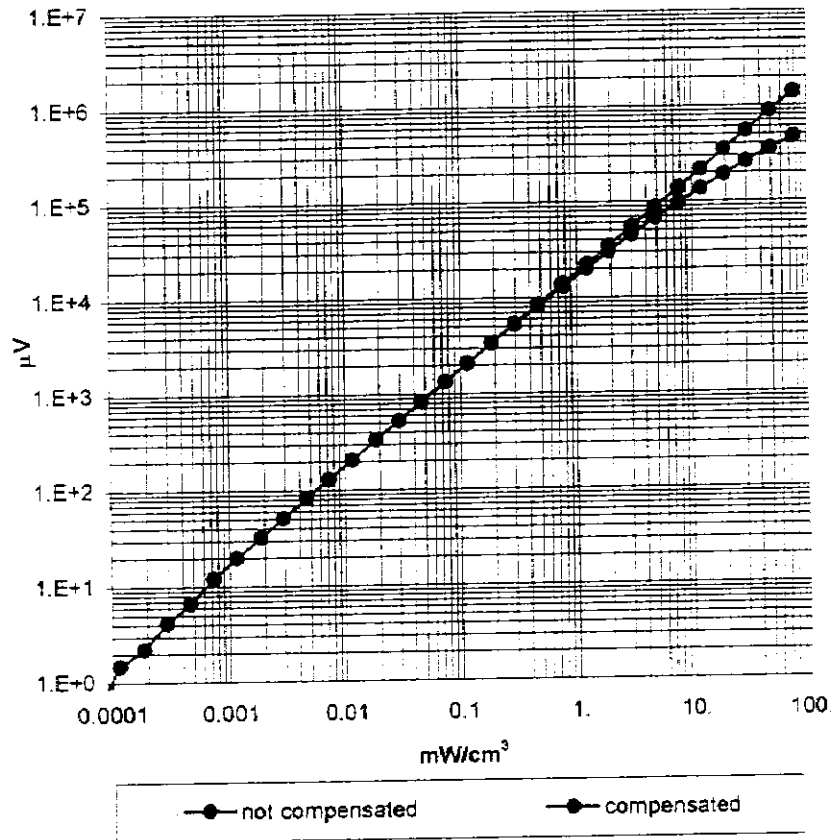
Frequency Response of E-Field

(TEM-Cell:ifi110, Waveguide R22, R26)

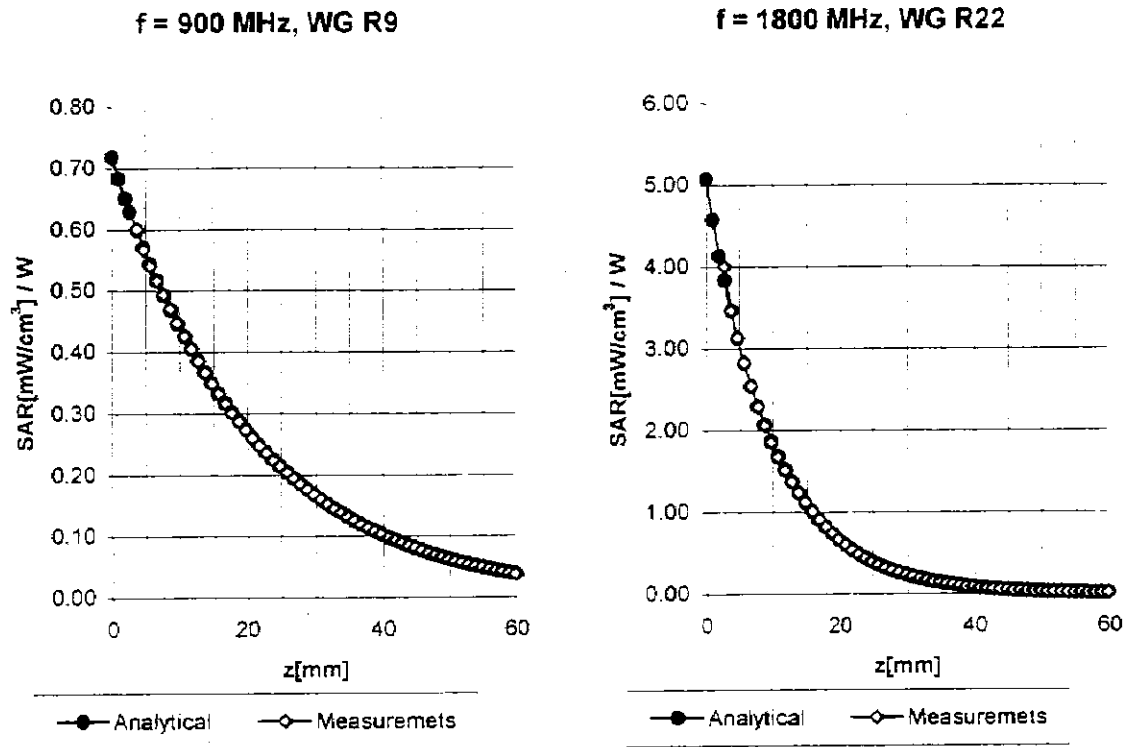


Dynamic Range $f(\text{SAR}_{\text{brain}})$

(TEM-Cell:ifi110)



Conversion Factor Assessment



Receiving Pattern (ϕ)

(in brain tissue, $z = 5 \text{ mm}$)

