

**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

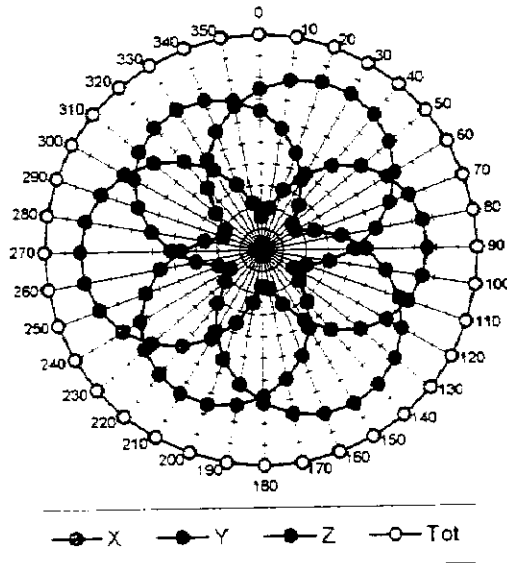
ConvF X	5.03 $\pm 7\%$ (k=2)	Boundary effect:	
ConvF Y	5.03 $\pm 7\%$ (k=2)	Alpha	0.74
ConvF Z	5.03 $\pm 7\%$ (k=2)	Depth	1.85

### Sensor Offset

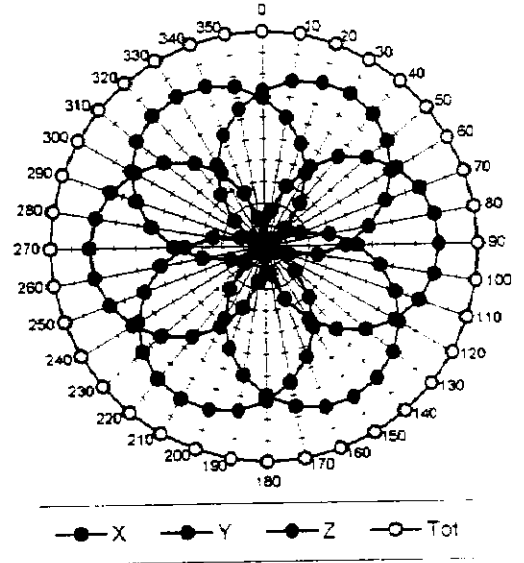
Probe Tip to Sensor Center	2.7	mm
Optical Surface Detection	1.9 $\pm$ 0.2	mm

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

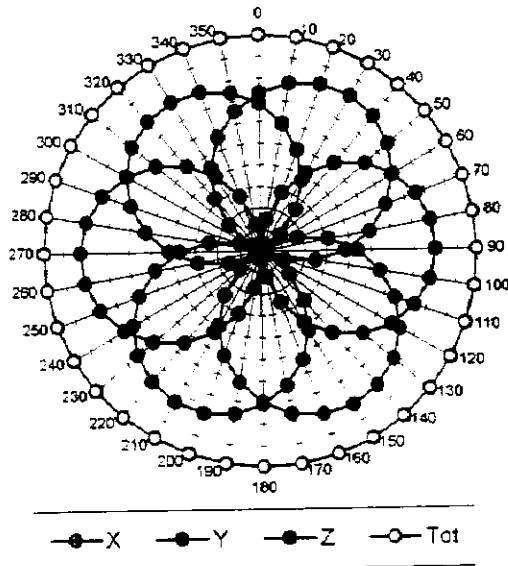
$f = 30 \text{ MHz}$ , TEM cell ifi110



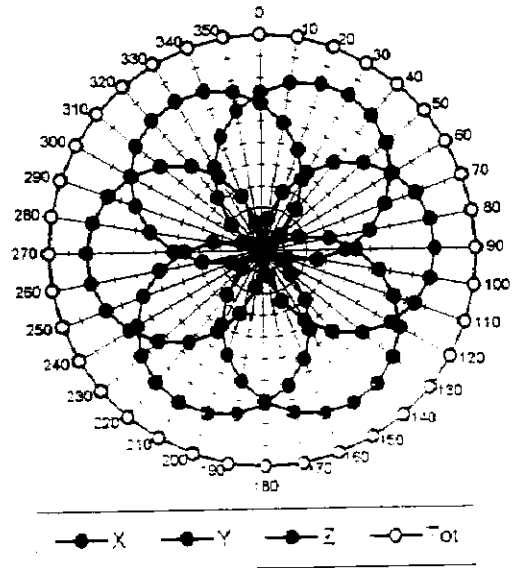
$f = 100 \text{ MHz}$ , TEM cell ifi110



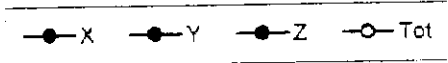
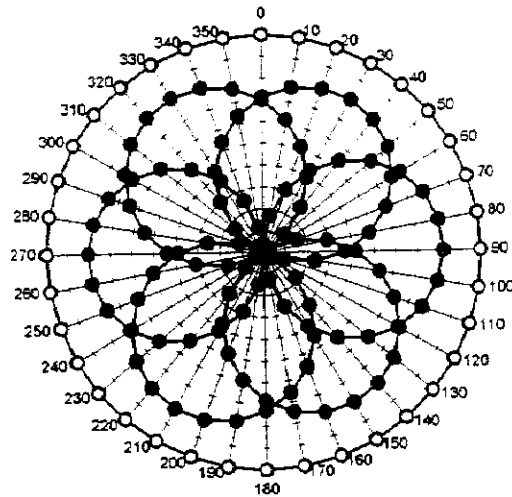
$f = 300 \text{ MHz}$ , TEM cell ifi110



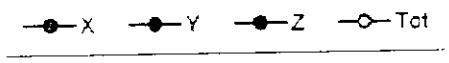
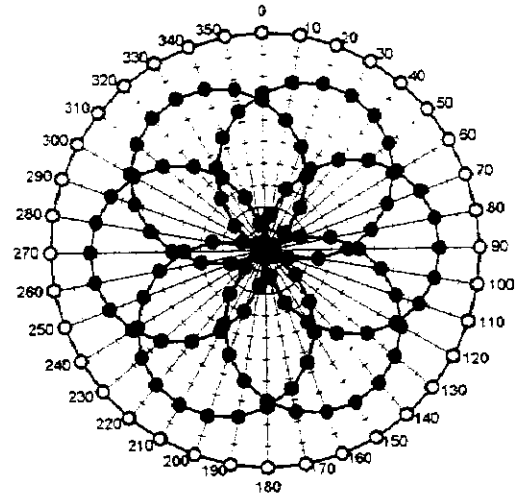
$f = 900 \text{ MHz}$ , TEM cell ifi110



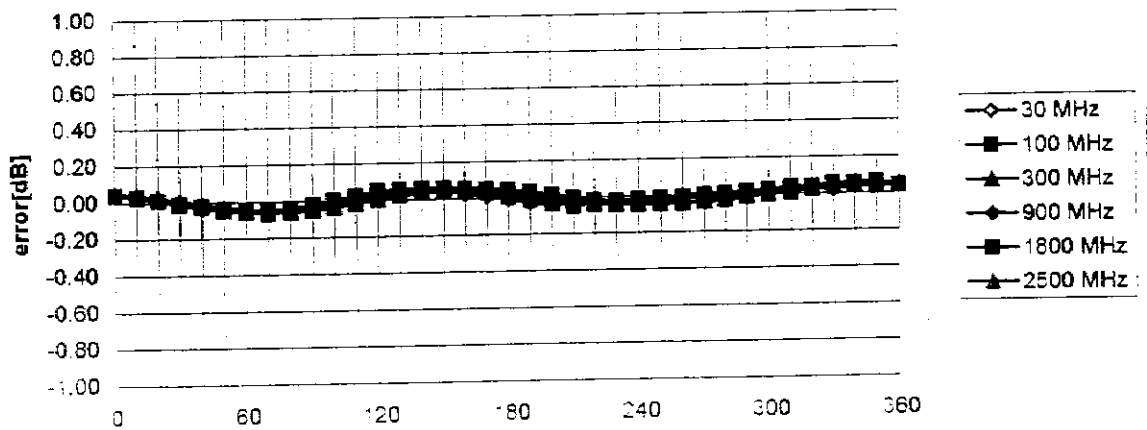
f = 1800 MHz, WG R22



f = 2500 MHz, WG R26

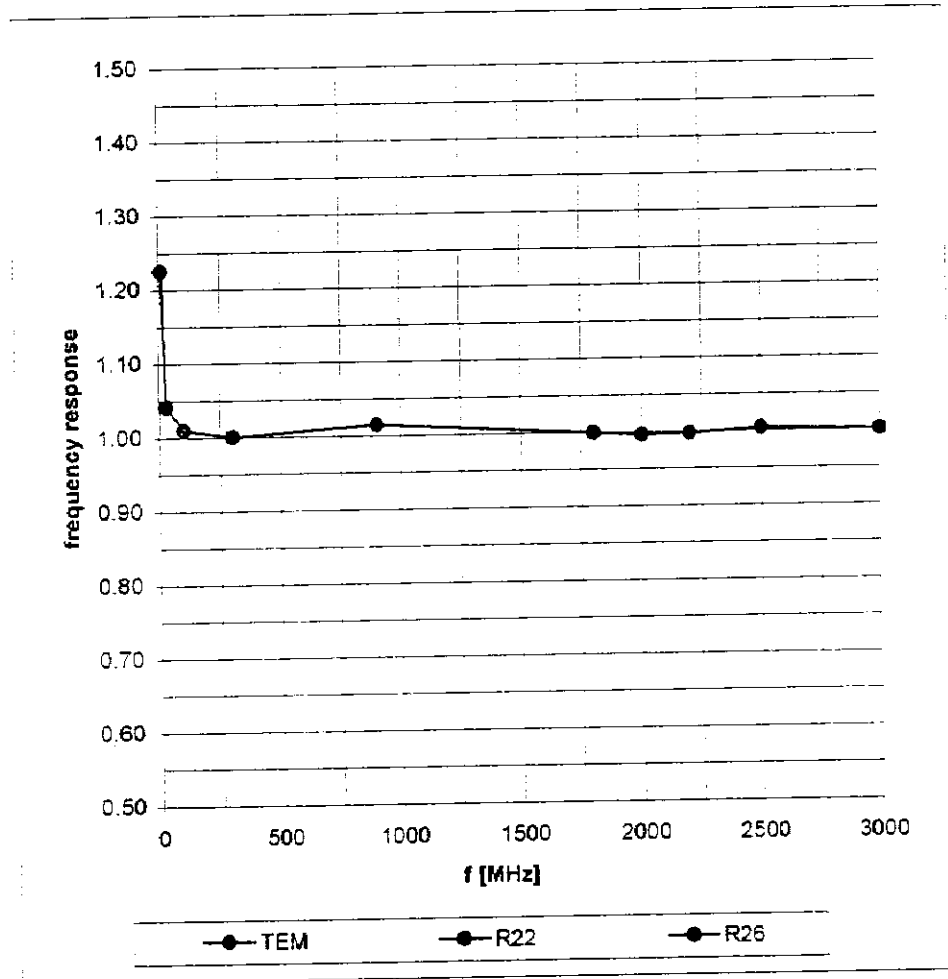


Isotropy Error ( $\phi$ ),  $\theta = 0^\circ$

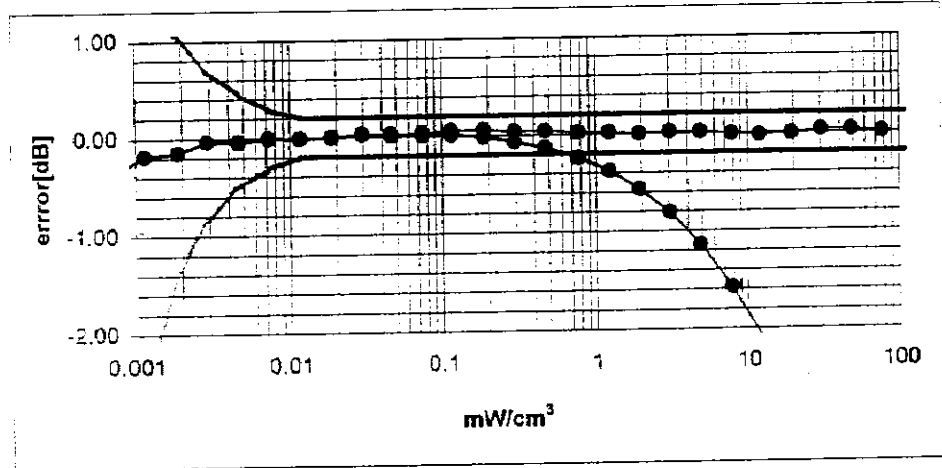
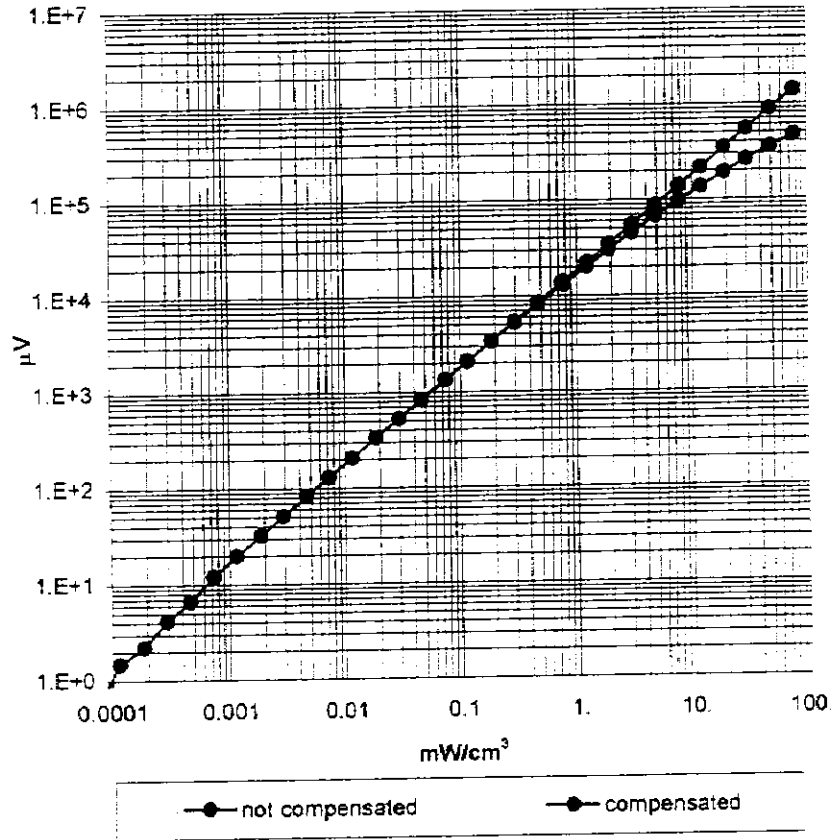


# Frequency Response of E-Field

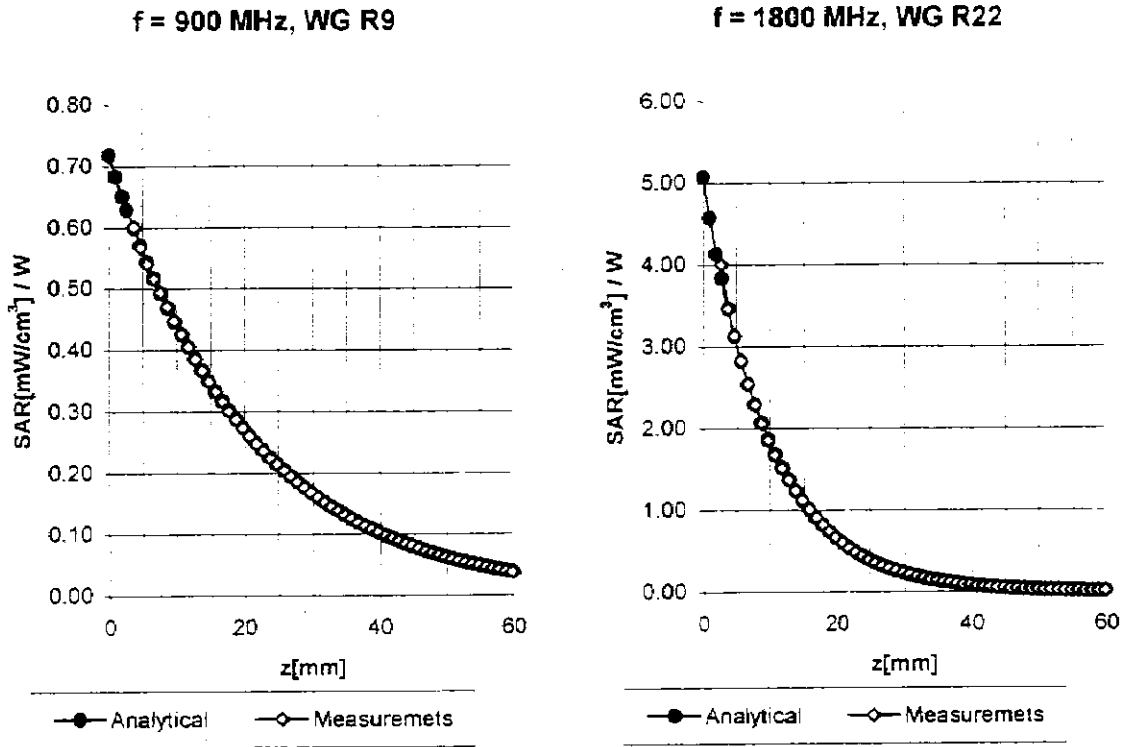
( TEM-Cell:ifi110, Waveguide R22, R26 )



# Dynamic Range f(SAR<sub>brain</sub>) ( TEM-Cell:ifi110 )



## Conversion Factor Assessment



## Receiving Pattern ( $\phi$ )

( in brain tissue, z = 5 mm )

