

# Probe ET3DV6

## SN:1560

|               |                   |
|---------------|-------------------|
| Manufactured: | December 1, 2000  |
| Calibrated:   | February 20, 2001 |

Calibrated for System DASY3

## DASY3 - Parameters of Probe: ET3DV6 SN:1560

### Sensitivity in Free Space

|       |                                                 |
|-------|-------------------------------------------------|
| NormX | <b>1.48</b> $\mu\text{V}/(\text{V}/\text{m})^2$ |
| NormY | <b>1.51</b> $\mu\text{V}/(\text{V}/\text{m})^2$ |
| NormZ | <b>1.43</b> $\mu\text{V}/(\text{V}/\text{m})^2$ |

### Diode Compression

|       |              |
|-------|--------------|
| DCP X | <b>98</b> mV |
| DCP Y | <b>98</b> mV |
| DCP Z | <b>98</b> mV |

### Sensitivity in Tissue Simulating Liquid

**Head**                      **450 MHz**                       $\epsilon_r = 43.5 \pm 5\%$                        $s = 0.87 \pm 10\% \text{ mho/m}$

|         |                          |                  |             |
|---------|--------------------------|------------------|-------------|
| ConvF X | <b>7.17</b> extrapolated | Boundary effect: |             |
| ConvF Y | <b>7.17</b> extrapolated | Alpha            | <b>0.25</b> |
| ConvF Z | <b>7.17</b> extrapolated | Depth            | <b>3.21</b> |

**Head**                      **900 MHz**                       $\epsilon_r = 42 \pm 5\%$                        $s = 0.97 \pm 10\% \text{ mho/m}$

|         |                             |                  |             |
|---------|-----------------------------|------------------|-------------|
| ConvF X | <b>6.59</b> $\pm 7\%$ (k=2) | Boundary effect: |             |
| ConvF Y | <b>6.59</b> $\pm 7\%$ (k=2) | Alpha            | <b>0.32</b> |
| ConvF Z | <b>6.59</b> $\pm 7\%$ (k=2) | Depth            | <b>2.93</b> |

**Head**                      **1500 MHz**                       $\epsilon_r = 40.4 \pm 5\%$                        $s = 1.23 \pm 10\% \text{ mho/m}$

|         |                          |                  |             |
|---------|--------------------------|------------------|-------------|
| ConvF X | <b>5.82</b> interpolated | Boundary effect: |             |
| ConvF Y | <b>5.82</b> interpolated | Alpha            | <b>0.41</b> |
| ConvF Z | <b>5.82</b> interpolated | Depth            | <b>2.55</b> |

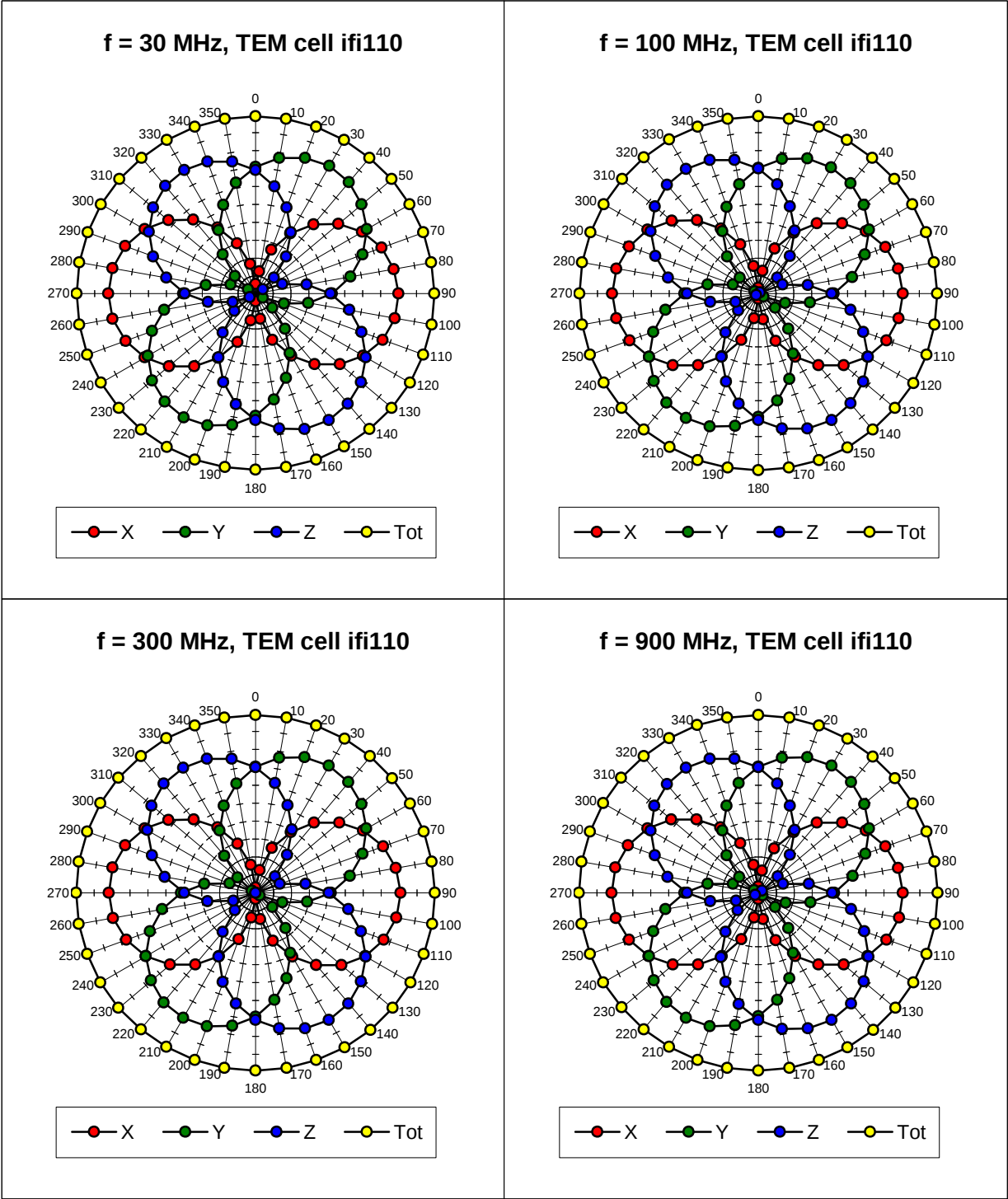
**Head**                      **1800 MHz**                       $\epsilon_r = 40 \pm 5\%$                        $s = 1.40 \pm 10\% \text{ mho/m}$

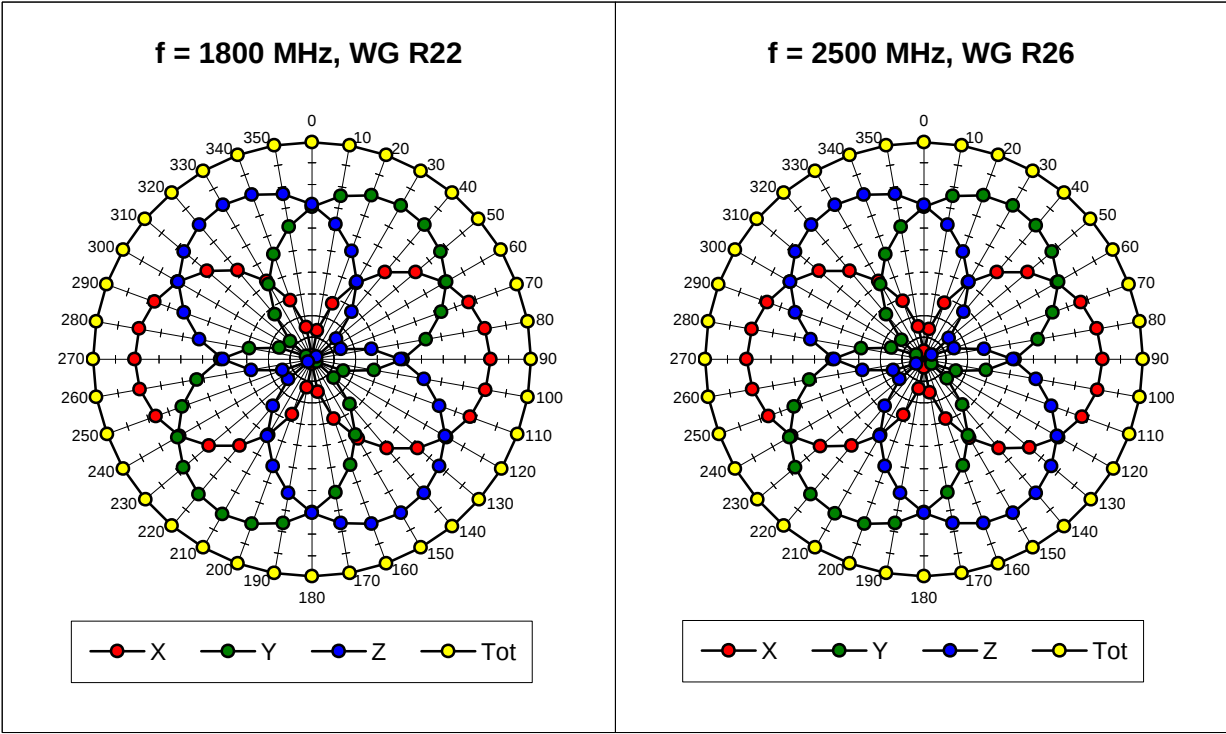
|         |                             |                  |             |
|---------|-----------------------------|------------------|-------------|
| ConvF X | <b>5.43</b> $\pm 7\%$ (k=2) | Boundary effect: |             |
| ConvF Y | <b>5.43</b> $\pm 7\%$ (k=2) | Alpha            | <b>0.46</b> |
| ConvF Z | <b>5.43</b> $\pm 7\%$ (k=2) | Depth            | <b>2.36</b> |

### Sensor Offset

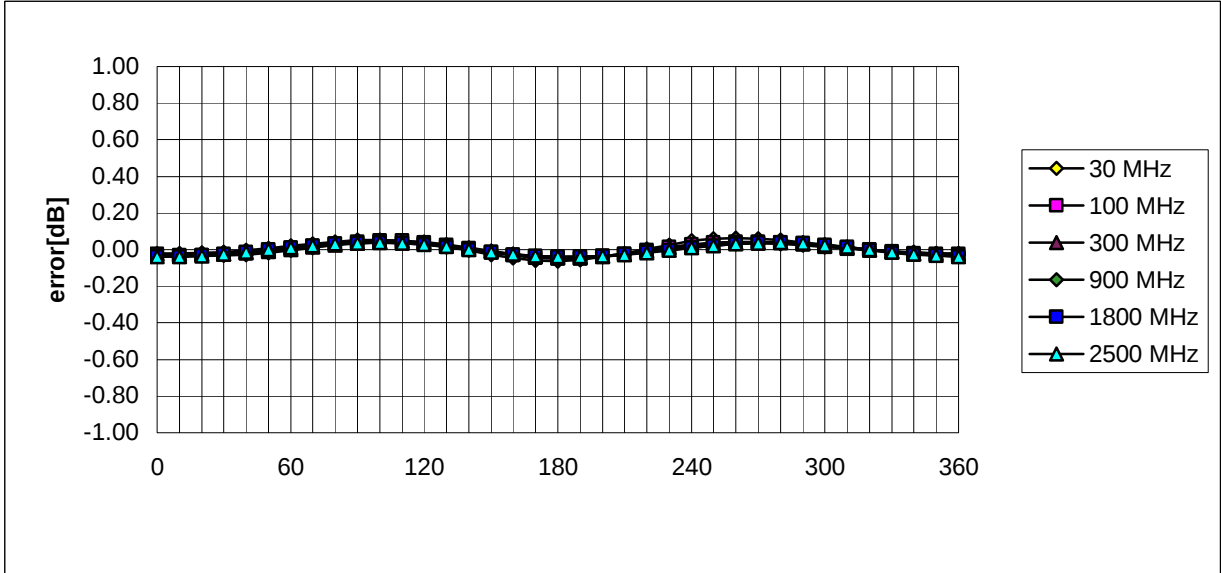
|                            |                                 |    |
|----------------------------|---------------------------------|----|
| Probe Tip to Sensor Center | <b>2.7</b>                      | mm |
| Optical Surface Detection  | <b>2.0 <math>\pm</math> 0.2</b> | mm |

Receiving Pattern ( f), q = 0°



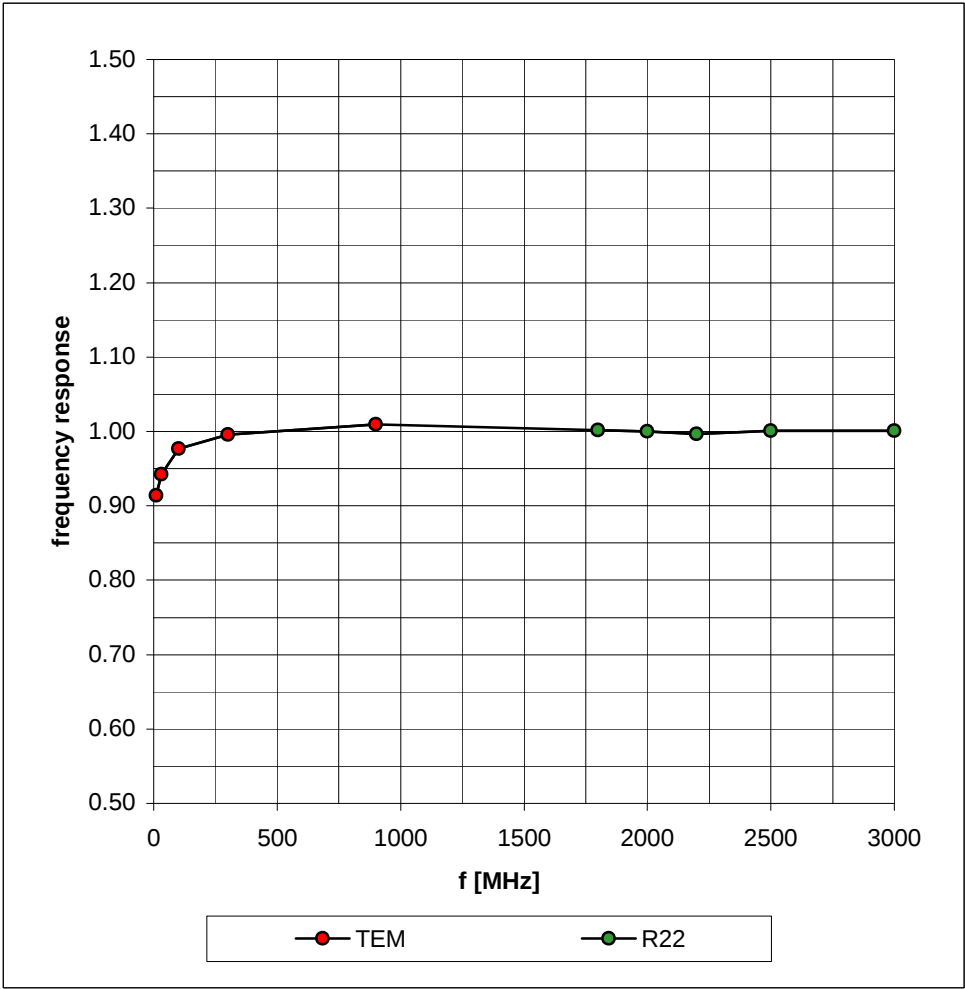


Isotropy Error ( f), q = 0°

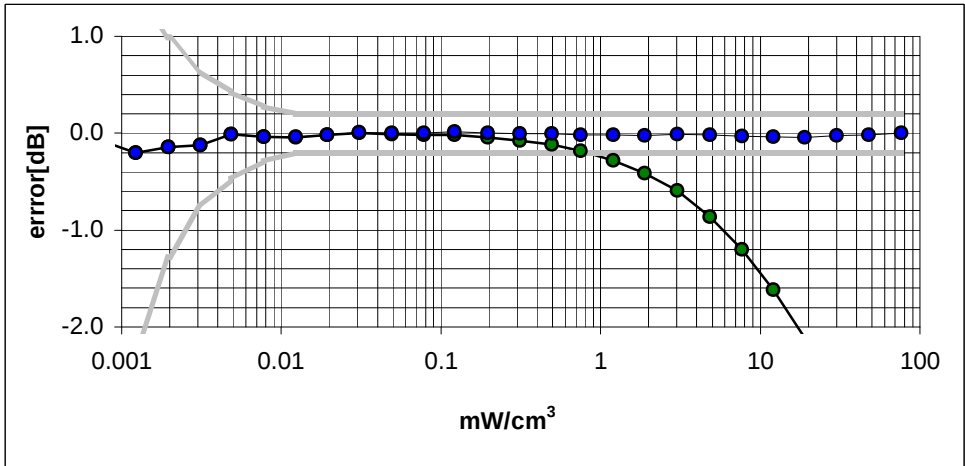
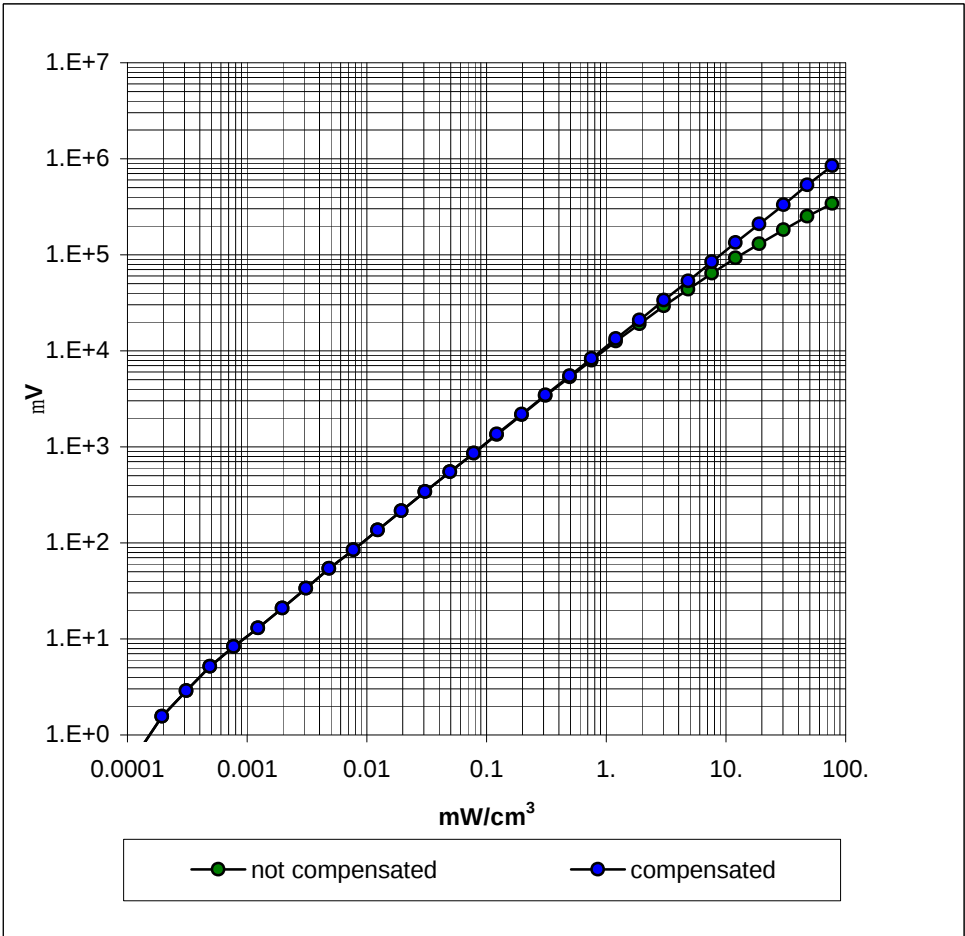


# Frequency Response of E-Field

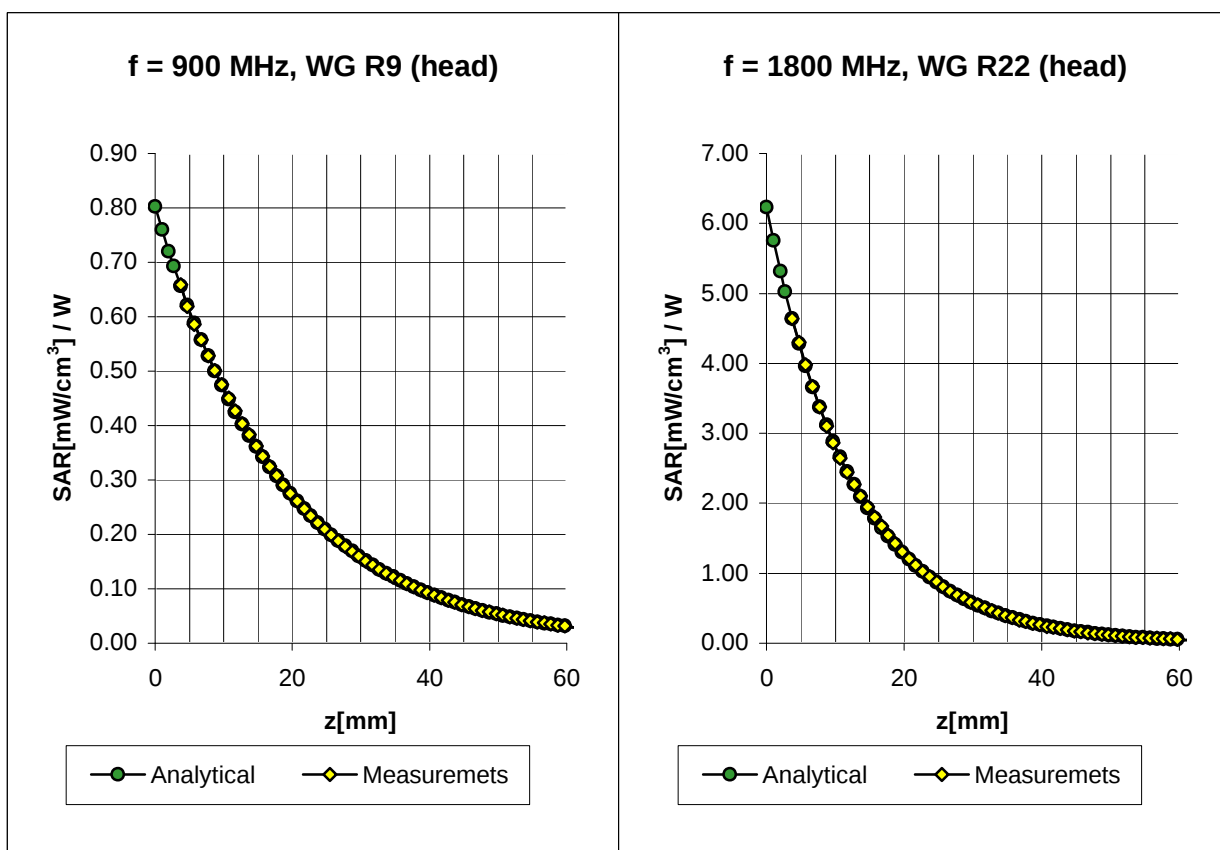
( TEM-Cell:ifi110, Waveguide R22)



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



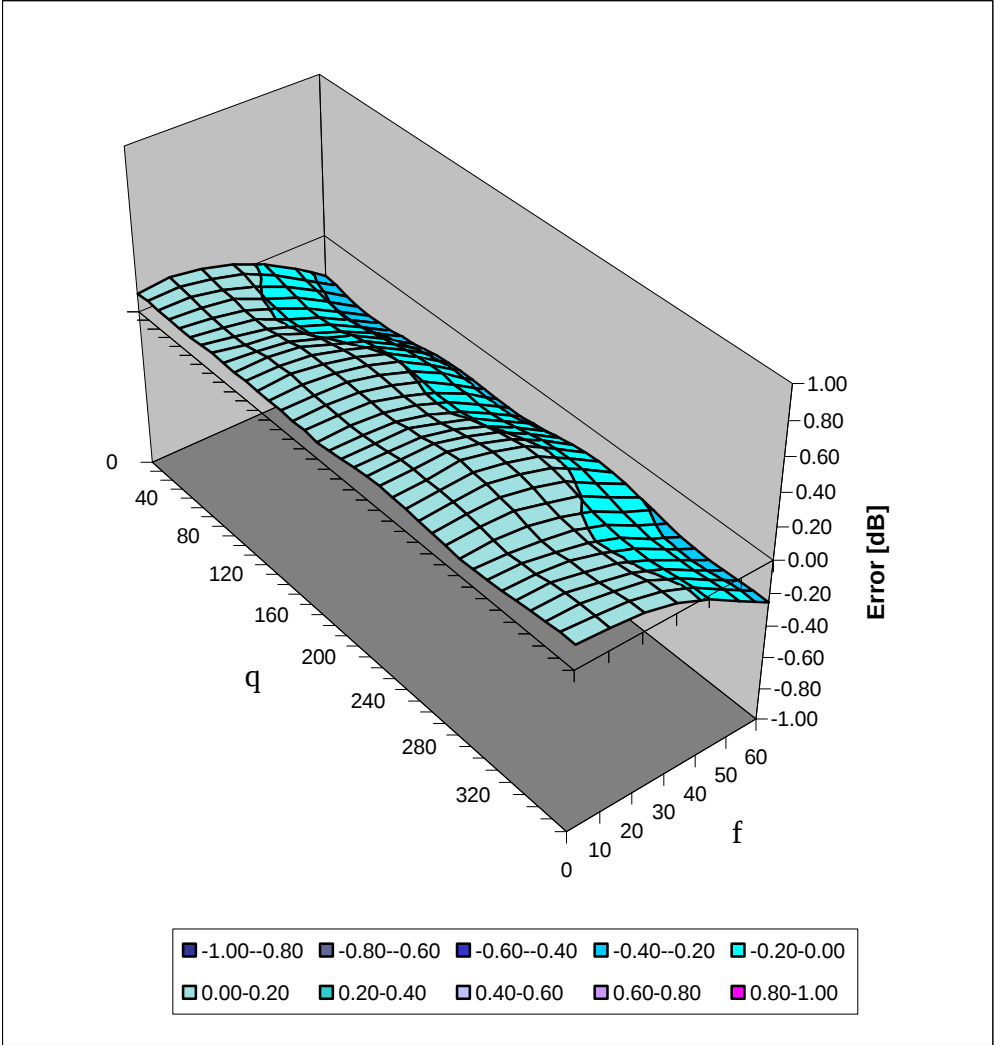
# Conversion Factor Assessment



|                |          |                             |                                   |
|----------------|----------|-----------------------------|-----------------------------------|
| Head           | 900 MHz  | $\epsilon_r = 42 \pm 5\%$   | $s = 0.97 \pm 10\% \text{ mho/m}$ |
|                | ConvF X  | <b>6.59</b> $\pm 7\%$ (k=2) | Boundary effect:                  |
|                | ConvF Y  | <b>6.59</b> $\pm 7\%$ (k=2) | Alpha <b>0.32</b>                 |
|                | ConvF Z  | <b>6.59</b> $\pm 7\%$ (k=2) | Depth <b>2.93</b>                 |
| Head           | 1800 MHz | $\epsilon_r = 40 \pm 5\%$   | $s = 1.40 \pm 10\% \text{ mho/m}$ |
|                | ConvF X  | <b>5.43</b> $\pm 7\%$ (k=2) | Boundary effect:                  |
|                | ConvF Y  | <b>5.43</b> $\pm 7\%$ (k=2) | Alpha <b>0.46</b>                 |
|                | ConvF Z  | <b>5.43</b> $\pm 7\%$ (k=2) | Depth <b>2.36</b>                 |
| ET3DV6 SN:1560 |          |                             |                                   |

# Deviation from Isotropy in HSL

Error (q, f), f = 900 MHz



## **Additional Conversion Factors** for Dosimetric E-Field Probe

Type:

**ET3DV6**

Serial Number:

**1560**

Place of Assessment:

**Zurich**

Date of Assessment:

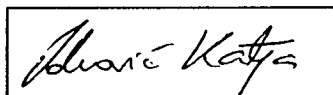
**Feb. 22, 2001**

Probe Calibration Date:

**Feb. 20, 2001**

Schmid & Partner Engineering AG hereby certifies that conversion factor(s) of this probe have been evaluated on the date indicated above. The assessment was performed using the FDTD numerical code SEMCAD of Schmid & Partner Engineering AG. Since the evaluation is coupled with measured conversion factors, it has to be recalculated yearly, i.e., following the re-calibration schedule of the probe. The uncertainty of the numerical assessment is based on the extrapolation from measured value at 900 MHz or at 1800 MHz.

Approved by:



# Dosimetric E-Field Probe ET3DV6 SN:1560

Conversion factor ( $\pm$  standard deviation)

|          |       |                 |                                                                                         |
|----------|-------|-----------------|-----------------------------------------------------------------------------------------|
| 450 MHz  | ConvF | $7.65 \pm 15\%$ | $\epsilon_r = 57.5 \pm 5\%$<br>$\sigma = 0.83 \pm 5\% \text{ mho/m}$<br>(muscle tissue) |
| 835 MHz  | ConvF | $6.78 \pm 10\%$ | $\epsilon_r = 41.5 \pm 5\%$<br>$\sigma = 0.90 \pm 5\% \text{ mho/m}$<br>(brain tissue)  |
| 835 MHz  | ConvF | $6.52 \pm 10\%$ | $\epsilon_r = 56.2 \pm 5\%$<br>$\sigma = 0.95 \pm 5\% \text{ mho/m}$<br>(muscle tissue) |
| 1900 MHz | ConvF | $5.16 \pm 10\%$ | $\epsilon_r = 40.0 \pm 5\%$<br>$\sigma = 1.40 \pm 5\% \text{ mho/m}$<br>(brain tissue)  |
| 1900 MHz | ConvF | $4.70 \pm 10\%$ | $\epsilon_r = 54.2 \pm 5\%$<br>$\sigma = 1.50 \pm 5\% \text{ mho/m}$<br>(muscle tissue) |
| 2450 MHz | ConvF | $4.37 \pm 15\%$ | $\epsilon_r = 39.2 \pm 5\%$<br>$\sigma = 1.80 \pm 5\% \text{ mho/m}$<br>(brain tissue)  |
| 2450 MHz | ConvF | $4.30 \pm 15\%$ | $\epsilon_r = 52.2 \pm 5\%$<br>$\sigma = 2.85 \pm 5\% \text{ mho/m}$<br>(muscle tissue) |