APPENDIX 5: Dosimetric E-Field Probe Calibration(ET3DV6,S/N: 1684)

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IMPORTANT NOTICE

USAGE OF PROBES IN ORGANIC SOLVENTS

Diethylene Gycol Monobuthy Ether (the basis for HSL1800 and M1800 liquids), as many other organic solvents, is a very effective softener for synthetic materials. These solvents can cause irreparable damage to certain SPEAG products, except those which are explicitly declared as compliant with organic solvents.

Compatible Probes:
- ET3DV6
- ET3DV6R
- ES3DV2
- ER3DV6
- H3DV6

Important Note for ET3DV6 Probes:
The ET3DV6 probes shall not be exposed to solvents longer than necessary for the measurements and shall be cleaned daily after use with warm water and stored dry.

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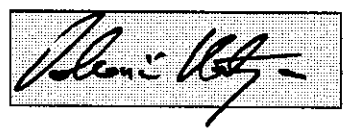
Calibration Certificate

Dosimetric E-Field Probe

Type:	**ET3DV6**
Serial Number:	**1684**
Place of Calibration:	**Zurich**
Date of Calibration:	**November 20, 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:1684

Manufactured:	April 3, 2002
Last calibration:	May 10, 2002
Recalibrated:	November 20, 2002

Calibrated for DASY Systems

(Note: non-compatible with DASY2 system!)

DASY - Parameters of Probe: ET3DV6 SN:1684

Sensitivity in Free Space

Diode Compression

NormX	**1.55** $\mu V/(V/m)^2$	DCP X	**96**	mV
NormY	**1.54** $\mu V/(V/m)^2$	DCP Y	**96**	mV
NormZ	**1.58** $\mu V/(V/m)^2$	DCP Z	**96**	mV

Sensitivity in Tissue Simulating Liquid

Head	**900 MHz**	ε_r = **41.5 ± 5%**	σ = **0.97 ± 5% mho/m**
Head	**835 MHz**	ε_r = **41.5 ± 5%**	σ = **0.90 ± 5% mho/m**

ConvF X	**6.8** ± 9.5% (k=2)	Boundary effect:	
ConvF Y	**6.8** ± 9.5% (k=2)	Alpha	**0.31**
ConvF Z	**6.8** ± 9.5% (k=2)	Depth	**2.51**

Head	**1800 MHz**	ε_r = **40.0 ± 5%**	σ = **1.40 ± 5% mho/m**
Head	**1900 MHz**	ε_r = **40.0 ± 5%**	σ = **1.40 ± 5% mho/m**

ConvF X	**5.5** ± 9.5% (k=2)	Boundary effect:	
ConvF Y	**5.5** ± 9.5% (k=2)	Alpha	**0.40**
ConvF Z	**5.5** ± 9.5% (k=2)	Depth	**2.61**

Boundary Effect

Head **900 MHz** **Typical SAR gradient: 5 % per mm**

Probe Tip to Boundary		**1 mm**	**2 mm**
SAR_{be} [%]	Without Correction Algorithm	7.8	4.5
SAR_{be} [%]	With Correction Algorithm	0.2	0.4

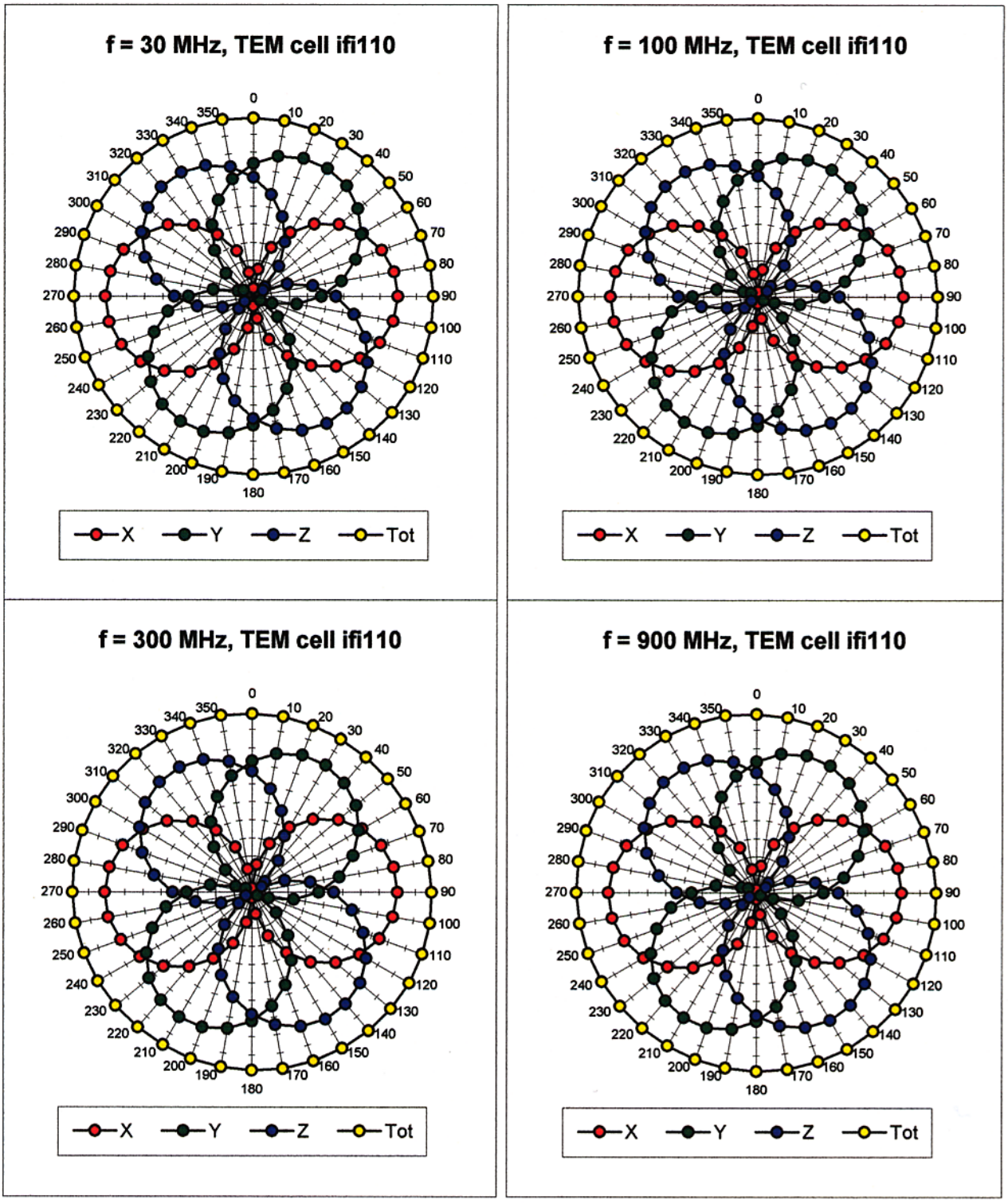
Head **1800 MHz** **Typical SAR gradient: 10 % per mm**

Probe Tip to Boundary		**1 mm**	**2 mm**
SAR_{be} [%]	Without Correction Algorithm	10.6	7.4
SAR_{be} [%]	With Correction Algorithm	0.2	0.2

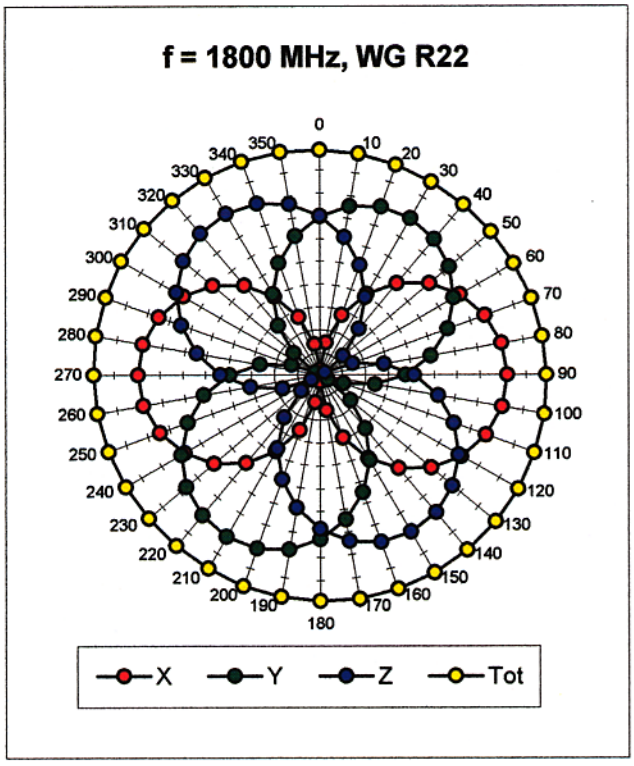
Sensor Offset

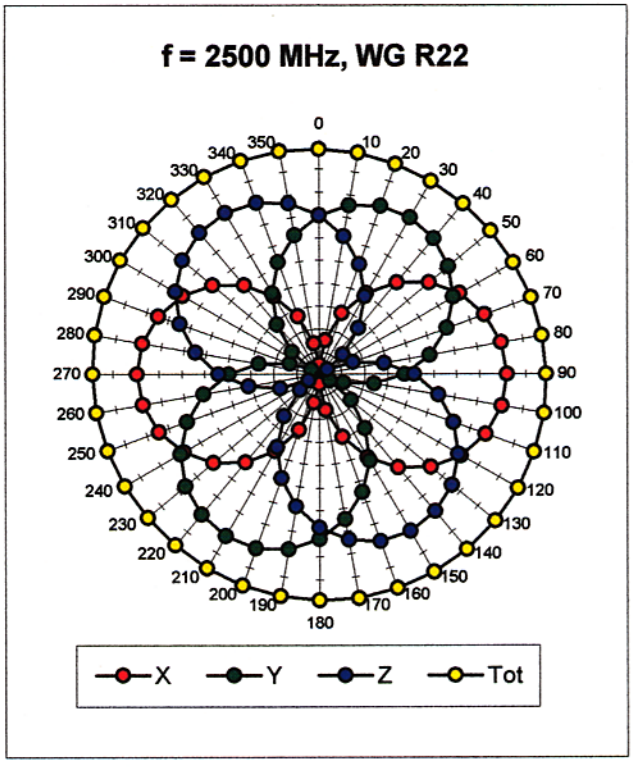
Probe Tip to Sensor Center	**2.7**	mm
Optical Surface Detection	**1.5 ± 0.2**	mm

Receiving Pattern (ϕ), θ = 0°

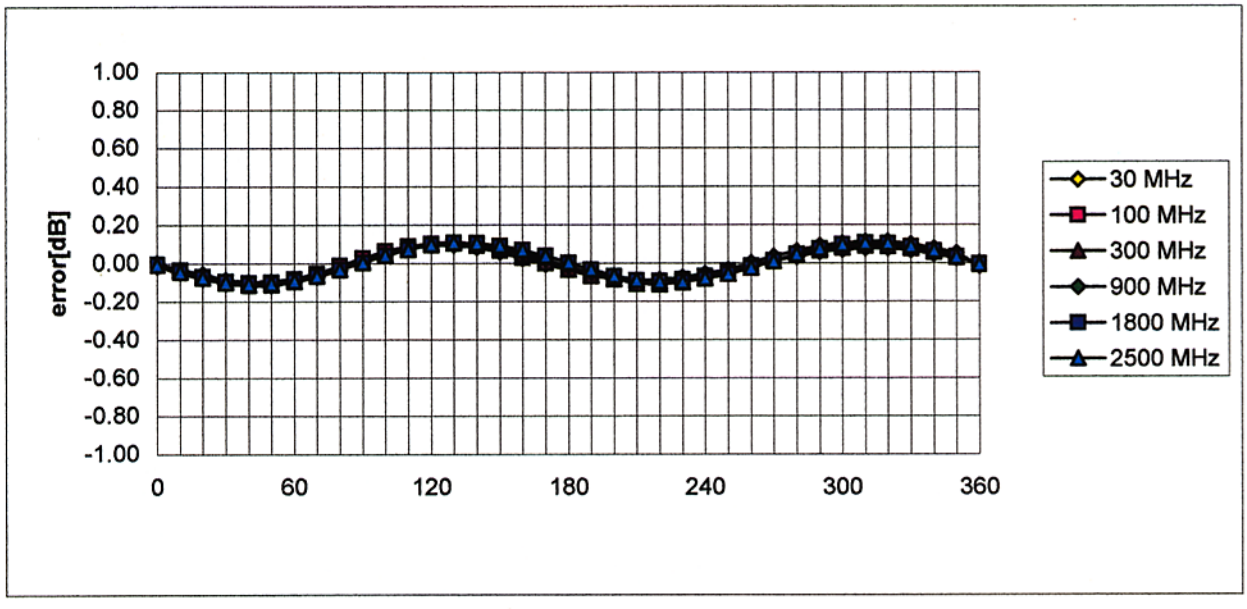


ET3DV6 SN:1684 **November 20, 2002**



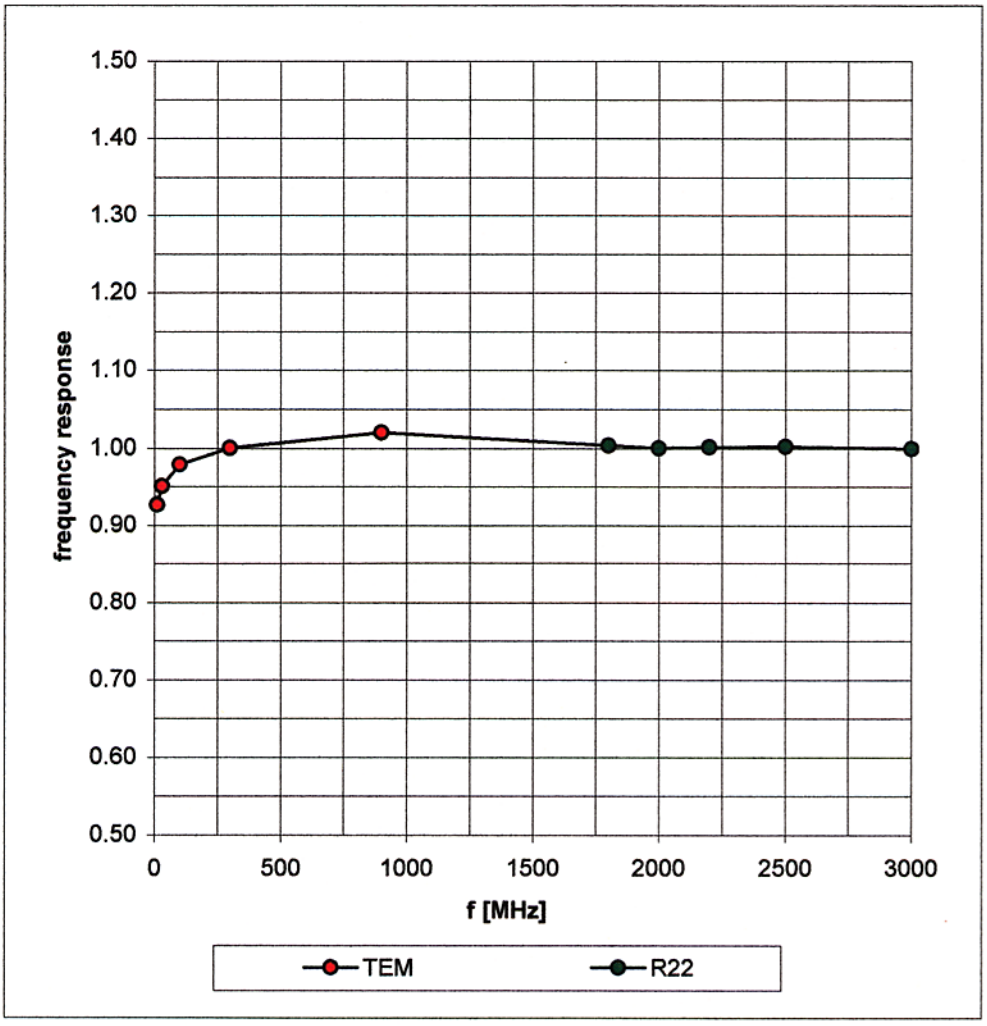


Isotropy Error (ϕ), θ = 0°



Frequency Response of E-Field

(TEM-Cell:ifi110, Waveguide R22)



Dynamic Range f(SAR_{brain})

(Waveguide R22)