Muscle	
Ingredient	**Frequency** (900 MHz)
Water	54.05 %
Sugar	45.75 %
Salt	0.1 %
Preservative	0.1 %

The dielectric parameters were verified prior to assessment using the HP 85070A dielectric probe kit and the HP 8753C network Analyzer. The dielectric parameters were:

Frequency (MHz)	$_r$ *	*(mho/m)	**(kg/m^3)
835	56.5 ± 5%	0.97 ± 10%	1000

* *worst case uncertainty of the HP 85070A dielectric probe kit*

** *worst case assumption*

Muscle	
Ingredient	**Frequency** (1900 MHz)
Water	54.5 %
Cellulose	0.1 %
Salt	0 %
Preservative	0.1 %
Sugar	45.3 %

The dielectric parameters were verified prior to assessment using the HP 85070A dielectric probe kit and the HP 8753C network Analyzer. The dielectric parameters were:

Frequency (MHz)	$_r$ *	*(mho/m)	**(kg/m^3)
1900	52.2 ± 5%	1.65 ± 10%	1000

* *worst case uncertainty of the HP 85070A dielectric probe kit*

** *worst case assumption*

Note: The amount of each ingredient specified in the tables are not the exact amounts of the final test solution. The final test solution was adjusted by adding small amounts of either water, sugar, and/or salt to calibrate the solution to meet the proper dielectric parameters.

3.3 E-Field Probe Calibration

Probes were calibrated by the manufacturer in the TEM cell ifi 110. To ensure consistency, a strict protocol was followed. The conversion factor (ConF) between this calibration and the measurement in the tissue simulation solution was performed by comparison with temperature measurement and computer simulations. Probe calibration factors are included in Appendix C.

3.4 Measurement Uncertainty

The uncertainty budget has been determined for the DASY3 measurement system according to the NIS81 [5] and the NIST 1297 [6] documents and is given in the following table. The extended uncertainty (K=2) was assessed to be 23.5 %

UNCERTAINTY BUDGET				
Uncertainty Description	**Error**	**Distrib.**	**Weight**	**Std.Dev.**
Probe Uncertainty				
Axial isotropy	±0.2 dB	U-shape	0.5	±2.4 %
Spherical isotropy	±0.4 dB	U-shape	0.5	±4.8 %
Isotropy from gradient	±0.5 dB	U-shape	0	
Spatial resolution	±0.5 %	Normal	1	±0.5 %
Linearity error	±0.2 dB	Rectang.	1	±2.7 %
Calibration error	±3.3 %	Normal	1	±3.3 %
SAR Evaluation Uncertainty				
Data acquisition error	±1 %	Rectang.	1	±0.6 %
ELF and RF disturbances	±0.25 %	Normal	1	±0.25 %
Conductivity assessment	±10 %	Rectang.	1	±5.8 %
Spatial Peak SAR Evaluation Uncertainty				
Extrapol boundary effect	±3 %	Normal	1	±3 %
Probe positioning error	±0.1 mm	Normal	1	±1 %
Integrat. and cube orient	±3 %	Normal	1	±3 %
Cube shape inaccuracies	±2 %	Rectang.	1	±1.2 %
Device positioning	±6 %	Normal	1	±6 %
Combined Uncertainties				**±11.7 %**

3.5 Measurement Tractability

All measurements described in this report are traceable to National Institute of Standards and Technology (NIST) standards or appropriate national standards.

4.0 WARNING LABEL INFORMATION - USA

See User Manual.

5.0 REFERENCES

[1] ANSI, *ANSI/IEEE C95.1-1991: IEEE Standard for Safety Levels with Respect to Human Exposure to Radio Frequency Electromagnetic Fields, 3kHz to 300 GHz*, The Institute of electrical and Electronics Engineers, Inc., New York, NY 10017, 1992

[2] Federal Communications Commission, "Evaluating Compliance with FCC Guidelines for Human Exposure to Radiofrequency Electromagnetic Fields", OET Bulletin 65, FCC, Washington, D.C. 20554, 1997

[3] Thomas Schmid, Oliver Egger, and Niels Kuster, "Automated E-field scanning system for dosimetric assessments", *IEEE Transaction on Microwave Theory and Techniques*, vol. 44, pp. 105-113, Jan. 1996.

[4] Niels Kuster, Ralph Kastle, and Thomas Schmid, "Dosimetic evaluation of mobile communications equipment with know precision", IEICE Transactions on Communications, vol. E80-B, no. 5, pp.645-652, May 1997.

[5] NIS81, NAMAS, "The treatment of uncertainty in EMC measurement", Tech. Rep., NAMAS Executive, National Physical Laboratory, Teddinton, Middlesex, England, 1994.

[6] Barry N. Tayor and Chris E. Kuyatt, "Guidelines for evaluating and expressing the uncertainty of NIST measurement results", Tech. Rep., National Institute of Standards and Technology, 1994.

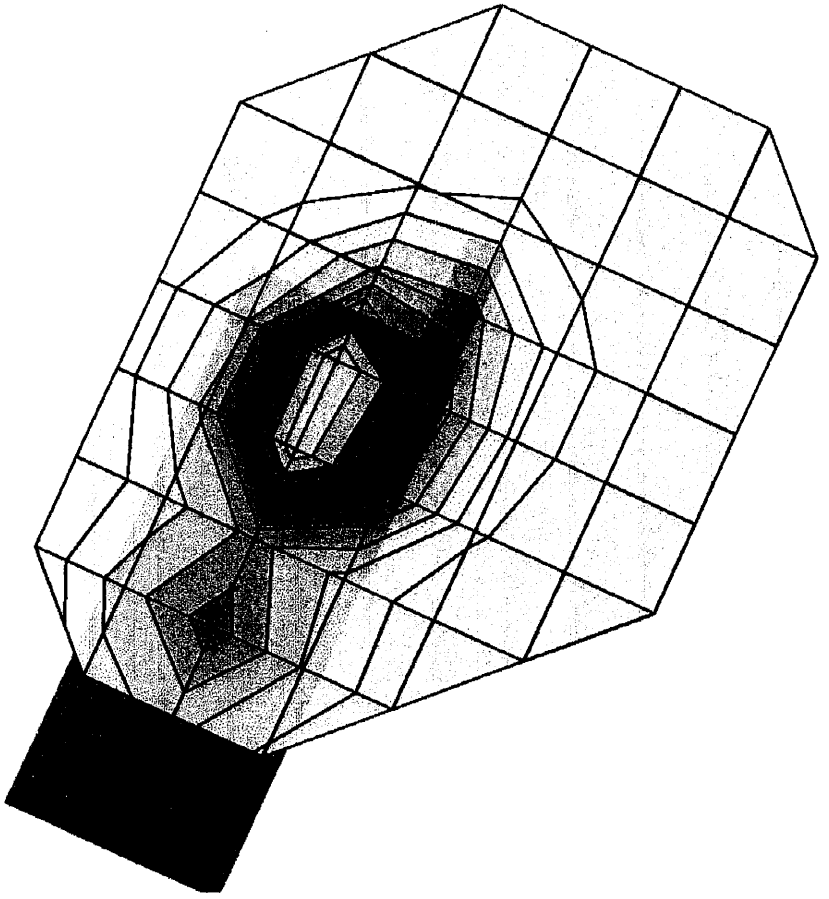
APPENDIX A - SAR Evaluation Data

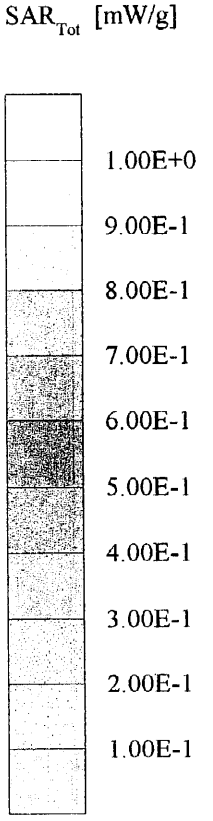
Please note that the graphical visualization of the phone position onto the SAR distribution gives only limited information on the current distribution of the device, since the curvature of the head results in graphical distortion. Full information can only be obtained either by H-field scans in free space or SAR evaluation with a flat phantom.

Powerdrift is the measurement of power drift of the device over one complete SAR scan.

ARIMA, M2001C #1

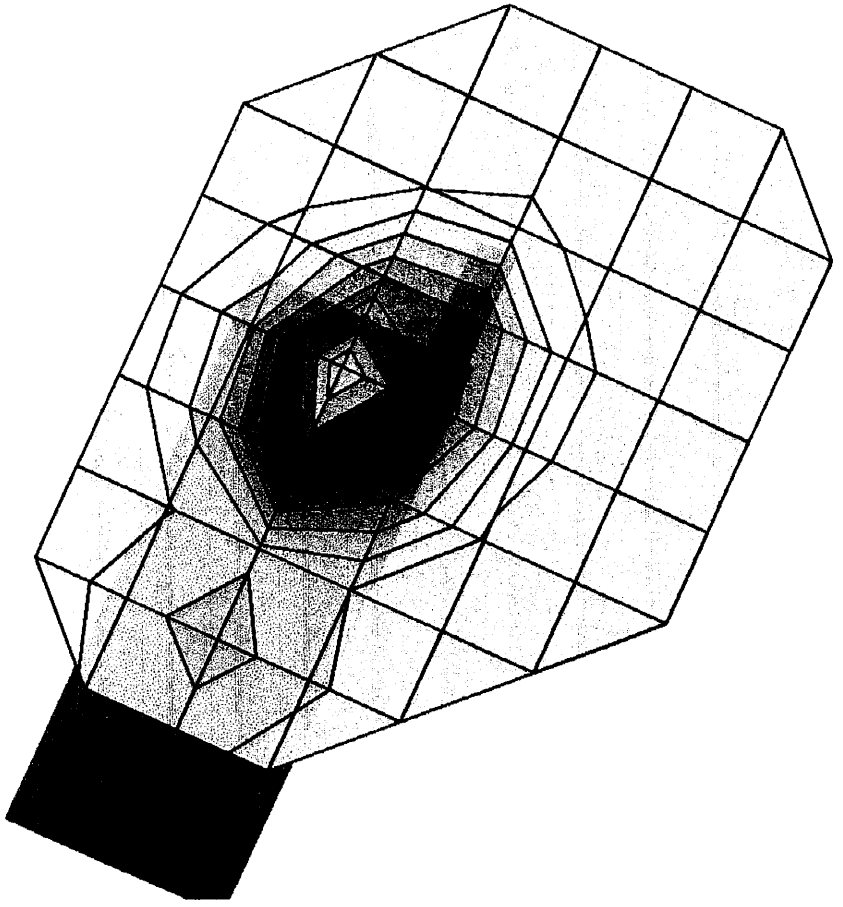
Generic Twin Phantom; Left Hand _X Section; Position: (80°,65°); Frequency: 1850 MHz
Probe: ET3DV5 - SN1333; ConvF(5.03,5.03,5.03); Crest factor: 8.0; Brain1900 MHz: σ = 1.77 mho/m ε_r = 42.8 ρ = 1.00 g/cm^3
Cube 5x5x7: SAR (1g): 1.12 mW/g, SAR (10g): 0.641 mW/g, (Worst-case extrapolation)
Coarse: Dx = 20.0, Dy = 20.0, Dz = 10.0
Powerdrift: 0.02 dB

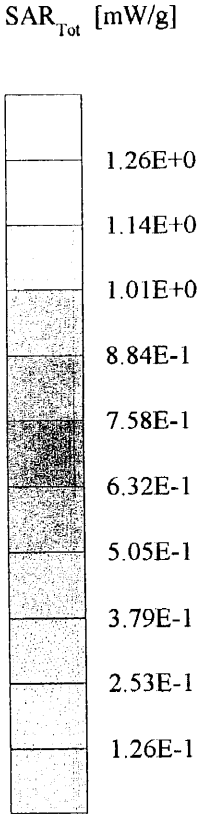




ARIMA, M2001C #2

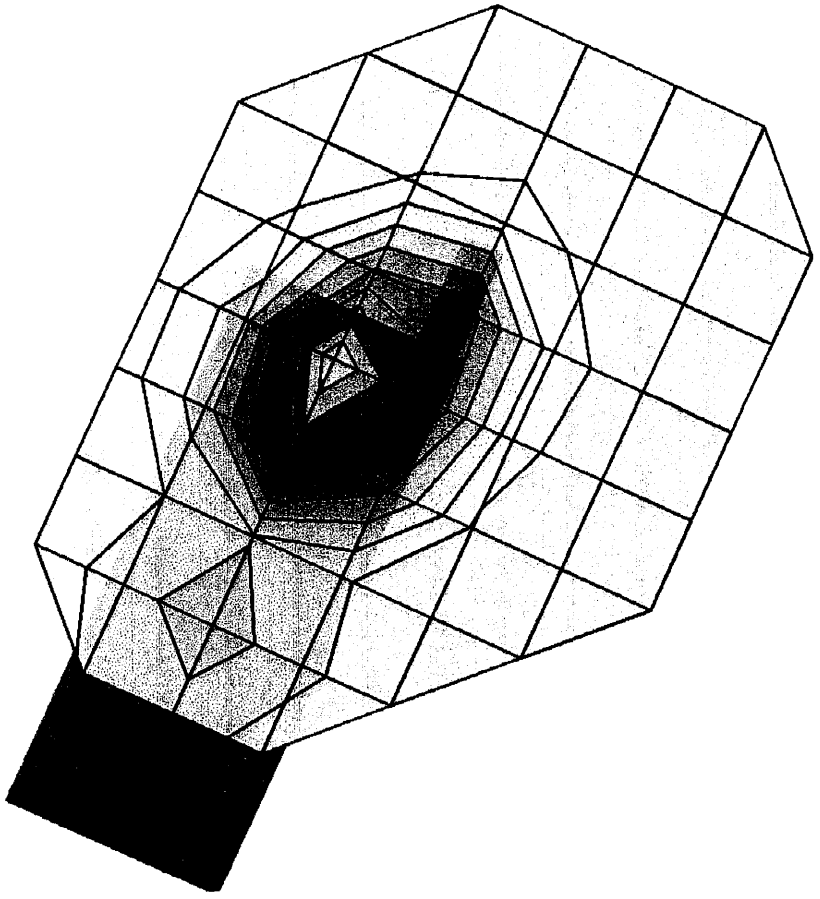
Generic Twin Phantom; Left Hand _X Section; Position: (80°,65°); Frequency: 1850 MHz
Probe: ET3DV5 - SN1333; ConvF(5.03,5.03,5.03); Crest factor: 8.0; Brain1900 MHz: σ = 1.77 mho/m ε_r = 42.8 ρ = 1.00 g/cm^3
Cube 5x5x7: SAR (1g): 1.32 mW/g, SAR (10g): 0.745 mW/g, (Worst-case extrapolation)
Coarse: Dx = 20.0, Dy = 20.0, Dz = 10.0
Powerdrift: 0.06 dB

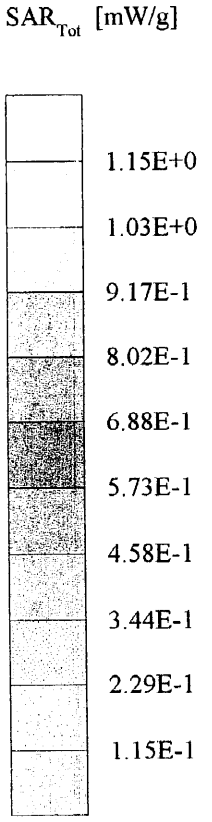




ARIMA, M2001C

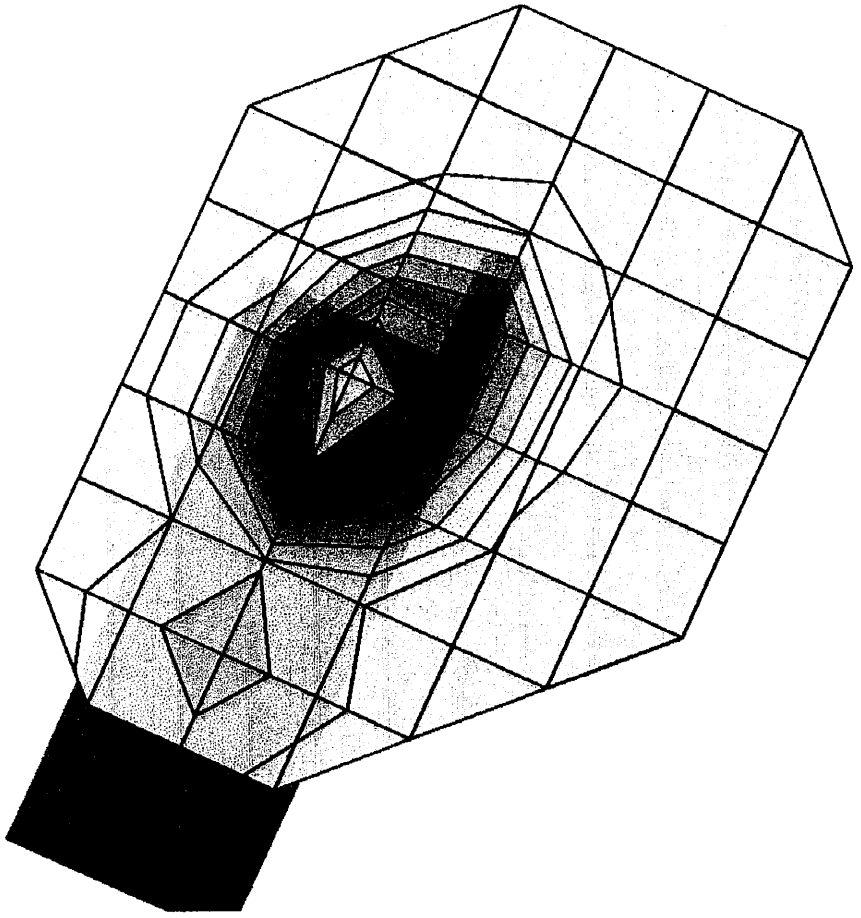
Generic Twin Phantom; Left Hand _X Section; Position: (80°,65°); Frequency: 1880 MHz
Probe: ET3DV5 - SN1333; ConvF(5.03,5.03,5.03); Crest factor: 8.0; Brain1900 MHz: σ = 1.77 mho/m ε_r = 42.8 ρ = 1.00 g/cm³
Cube 5x5x7: SAR (1g): 1.18 mW/g, SAR (10g): 0.674 mW/g, (Worst-case extrapolation)
Coarse: Dx = 20.0, Dy = 20.0, Dz = 10.0
Powerdrift: 0.03 dB

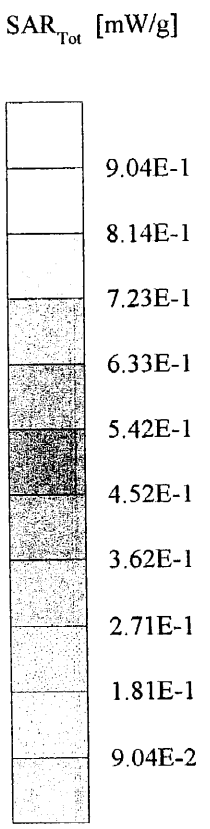




ARIMA, M2001C #4

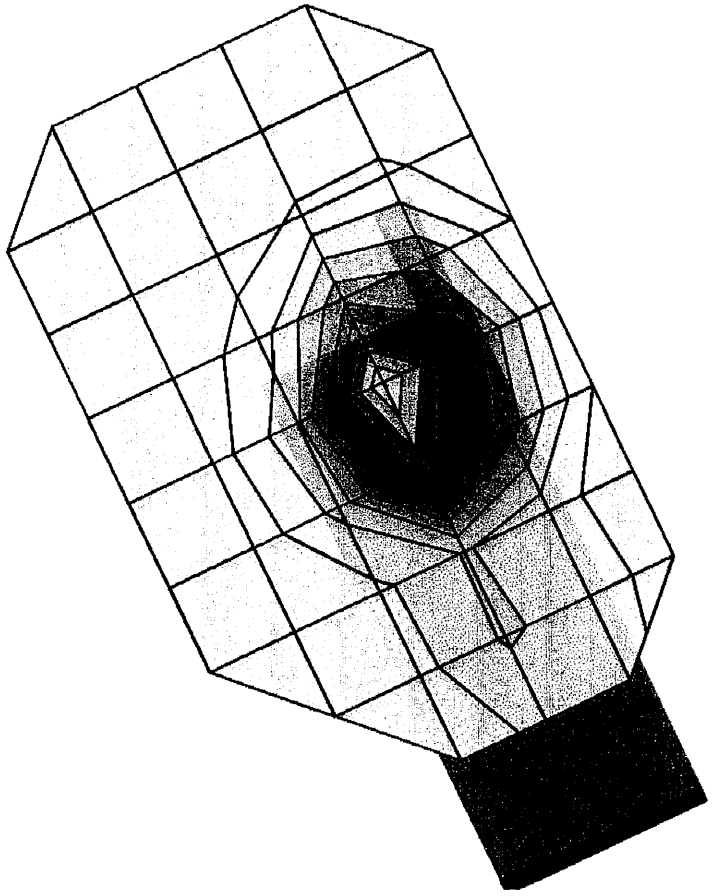
Generic Twin Phantom; Left Hand _X Section; Position: (80°,65°); Frequency: 1910 MHz
Probe: ET3DV5 - SN1333; ConvF(5.03,5.03,5.03); Crest factor: 8.0; Brain1900 MHz: σ = 1.77 mho/m ε_r = 42.8 ρ = 1.00 g/cm^3
Cube 5x5x7: SAR (1g): 0.915 mW/g, SAR (10g): 0.519 mW/g, (Worst-case extrapolation)
Coarse: Dx = 20.0, Dy = 20.0, Dz = 10.0
Powerdrift: -0.26 dB

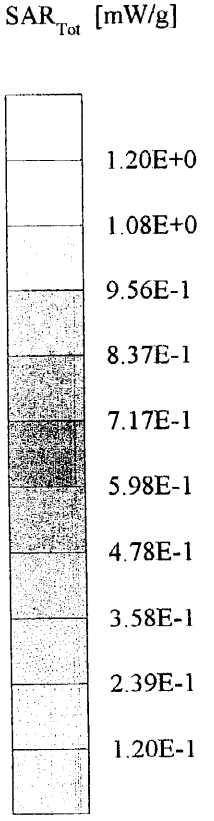




ARIMA, M2001C #5

Generic Twin Phantom; Right Hand Section; Position: (80°,65°); Frequency: 1850 MHz
Probe: ET3DV5 - SN1333; ConvF(5.03,5.03,5.03); Crest factor: 8.0; Brain1900 MHz: σ = 1.77 mho/m ε_r = 42.8 ρ = 1.00 g/cm^3
Cube 5x5x7: SAR (1g): 1.25 mW/g, SAR (10g): 0.696 mW/g, (Worst-case extrapolation)
Coarse: Dx = 20.0, Dy = 20.0, Dz = 10.0
Powerdrift: 0.17 dB





APPENDIX B - E-Field Probe Calibration Data

See attached.

Schmid & Partner
Engineering AG

Staffelstrasse 8, 8045 Zurich, Switzerland, Telefon +41 1 280 08 60, Fax +41 1 280 08 64

Calibration Certificate

Dosimetric E-Field Probe

Type:	**ET3DV5**
Serial Number:	**1333**
Place of Calibration:	**Zurich**
Date of Calibration:	**April 10, 2000**
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:	Jolanda Katja
Approved by:	C. E.

Schmid & Partner
Engineering AG

Staffelstrasse 8, 8045 Zurich, Switzerland, Telefon +41 1 280 08 60, Fax +41 1 280 08 64

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** $\mu V/(V/m)^2$
NormY	**2.36** $\mu V/(V/m)^2$
NormZ	**2.34** $\mu V/(V/m)^2$

Diode Compression

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

Sensitivity in Tissue Simulating Liquid

Brain **450 MHz** ε_r = **48 ± 5%** σ = **0.50 ± 10% mho/m**

ConvF X	**6.03**	extrapolated
ConvF Y	**6.03**	extrapolated
ConvF Z	**6.03**	extrapolated

Boundary effect:

Alpha	**0.13**
Depth	**3.57**

Brain **900 MHz** ε_r = **42.5 ± 5%** σ = **0.86 ± 10% mho/m**

ConvF X	**5.70**	± 7% (k=2)
ConvF Y	**5.70**	± 7% (k=2)
ConvF Z	**5.70**	± 7% (k=2)

Boundary effect:

Alpha	**0.34**
Depth	**3.00**

Brain **1500 MHz** ε_r = **41 ± 5%** σ = **1.32 ± 10% mho/m**

ConvF X	**5.25**	interpolated
ConvF Y	**5.25**	interpolated
ConvF Z	**5.25**	interpolated

Boundary effect:

Alpha	**0.61**
Depth	**2.23**

Brain **1800 MHz** ε_r = **41 ± 5%** σ = **1.69 ± 10% mho/m**

ConvF X	**5.03**	± 7% (k=2)
ConvF Y	**5.03**	± 7% (k=2)
ConvF Z	**5.03**	± 7% (k=2)

Boundary effect:

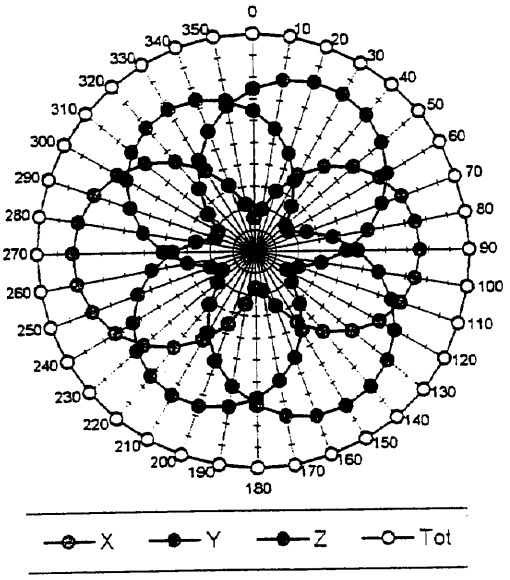
Alpha	**0.74**
Depth	**1.85**

Sensor Offset

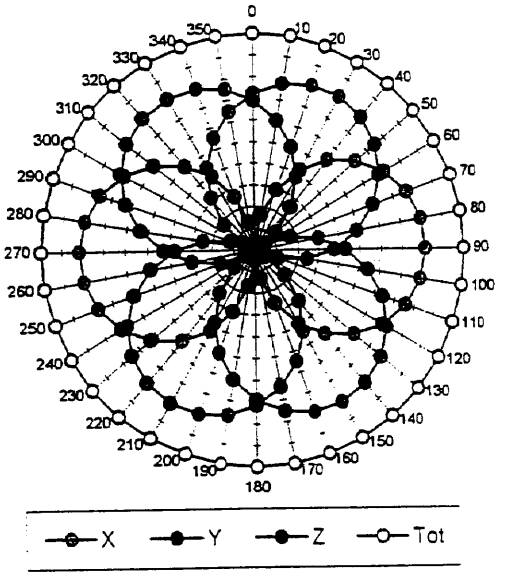
Probe Tip to Sensor Center	**2.7**	mm
Optical Surface Detection	**1.9 ± 0.2**	mm

Receiving Pattern (ϕ), θ = 0°

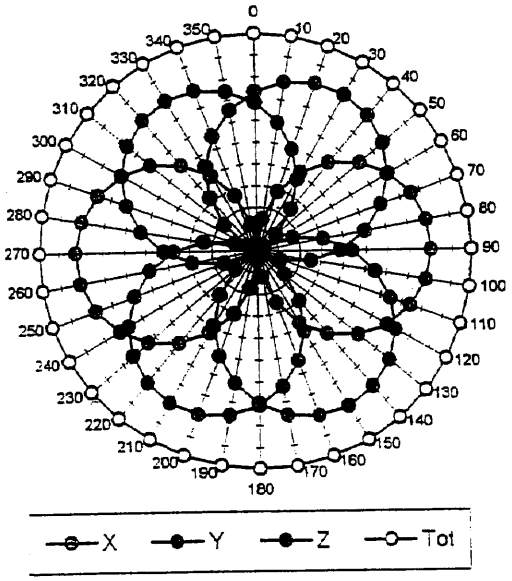
f = 30 MHz, TEM cell ifi110



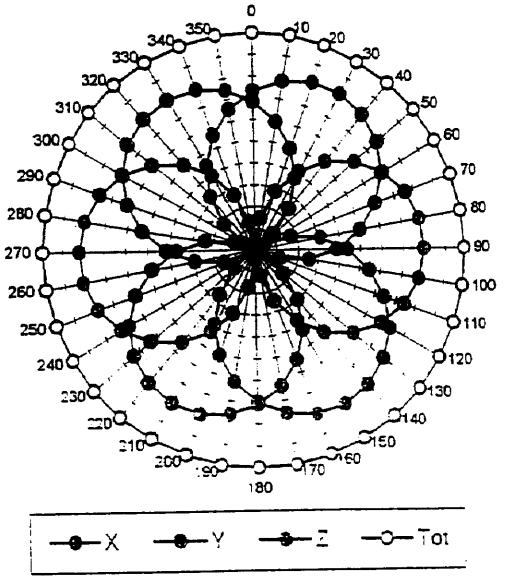
f = 100 MHz, TEM cell ifi110



f = 300 MHz, TEM cell ifi110

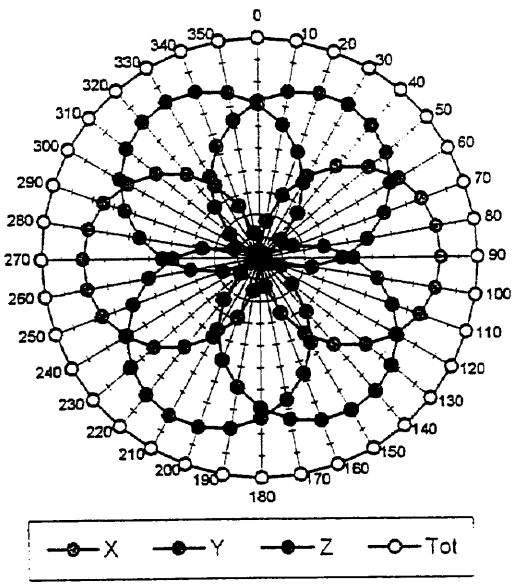


f = 900 MHz, TEM cell ifi110

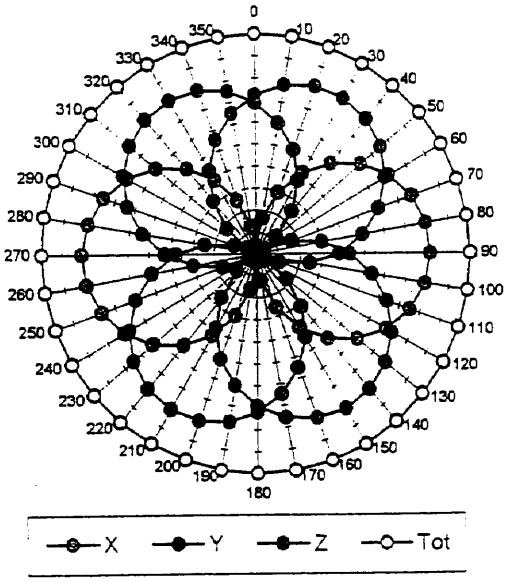


ET3DV5 SN:1333

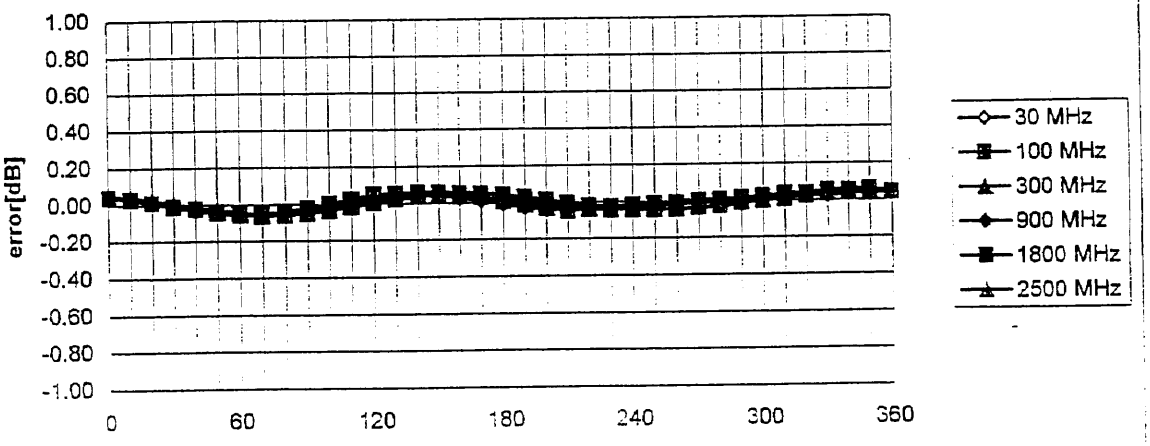
f = 1800 MHz, WG R22



f = 2500 MHz, WG R26



Isotropy Error (ϕ), θ = 0°



6.0 DOCUMENT HISTORY

Revision/ Job Number	Writer Initials	Date	Change
1.0 /J20039587	SS	February 16, 2001	Original document