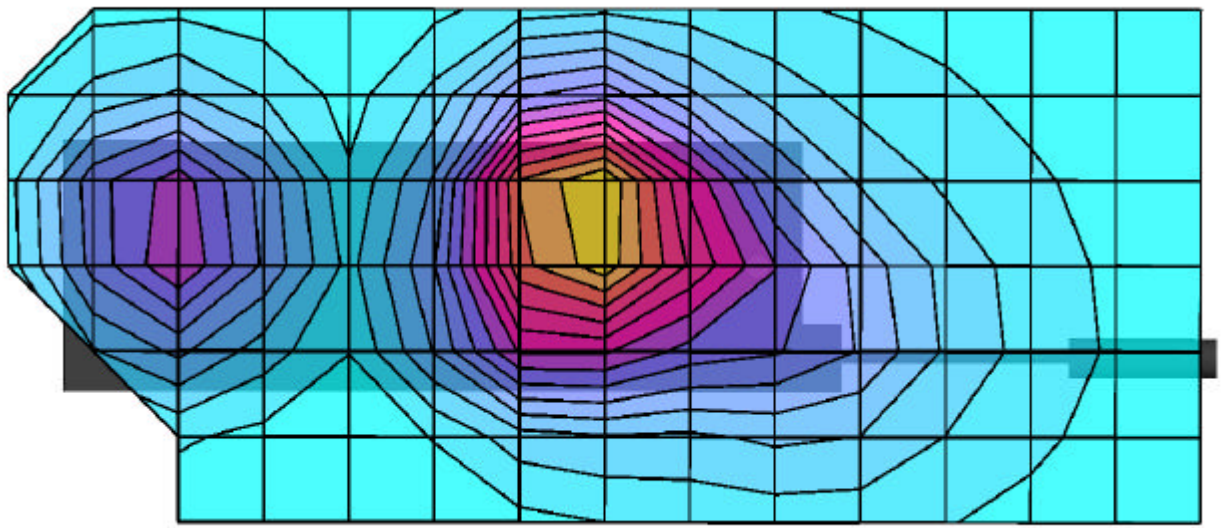
Hitachi Ltd. FCC ID: ABLSP20

SAM Phantom; Flat Section; Position: (90°,90°)
Probe: ET3DV6 - SN1387; ConvF(5.00,5.00,5.00); Crest factor: 1.0
1900 MHz Muscle: $\sigma = 1.56$ mho/m $\varepsilon_r = 53.6$ $\rho = 1.00$ g/cm^3
Coarse: Dx = 15.0, Dy = 15.0, Dz = 10.0
Cube 5x5x7; Powerdrift: -0.01 dB
SAR (1g): 0.439 mW/g, SAR (10g): 0.271 mW/g

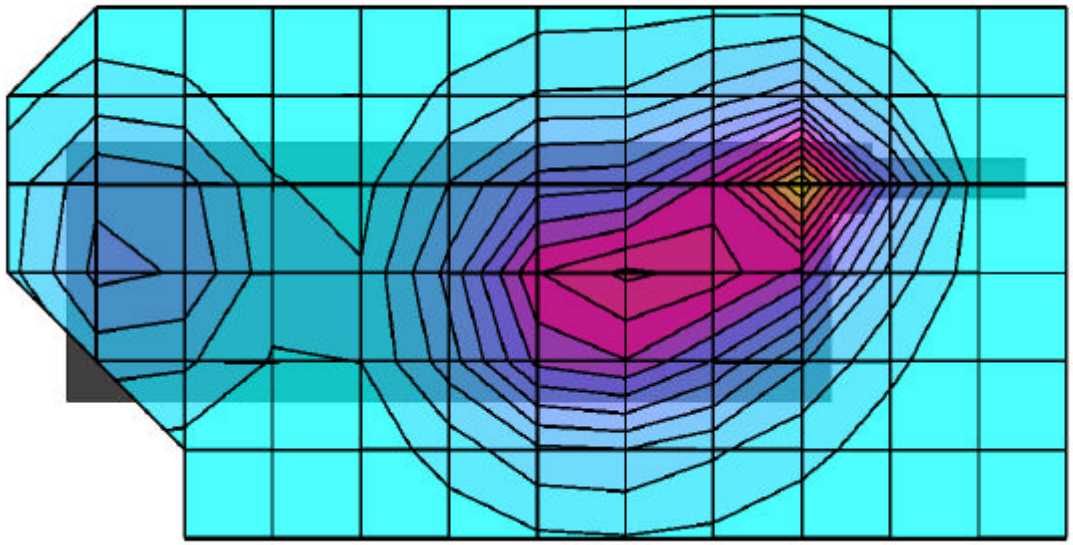
Body SAR - Front Side - 1.0 cm Separation Distance
Antenna Extended
SH-P300 PCS CDMA Handset
3.7V Lithium-ion Battery (1000mAh)
PCS CDMA Mode
Channel 0600 [1880.00 MHz]
Conducted Power: 22.3 dBm
Ambient Temp. 23.3°C; Fluid Temp 22.5°C
Date Tested: October 16, 2002



Hitachi Ltd. FCC ID: ABLSP20

SAM Phantom; Flat Section; Position: (270°,270°)
Probe: ET3DV6 - SN1387; ConvF(5.00,5.00,5.00); Crest factor: 1.0
1900 MHz Muscle: $\sigma = 1.56$ mho/m $\varepsilon_r = 53.6$ $\rho = 1.00$ g/cm^3
Coarse: Dx = 15.0, Dy = 15.0, Dz = 10.0
Cube 5x5x7; Powerdrift: -0.06 dB
SAR (1g): 0.772 mW/g, SAR (10g): 0.399 mW/g

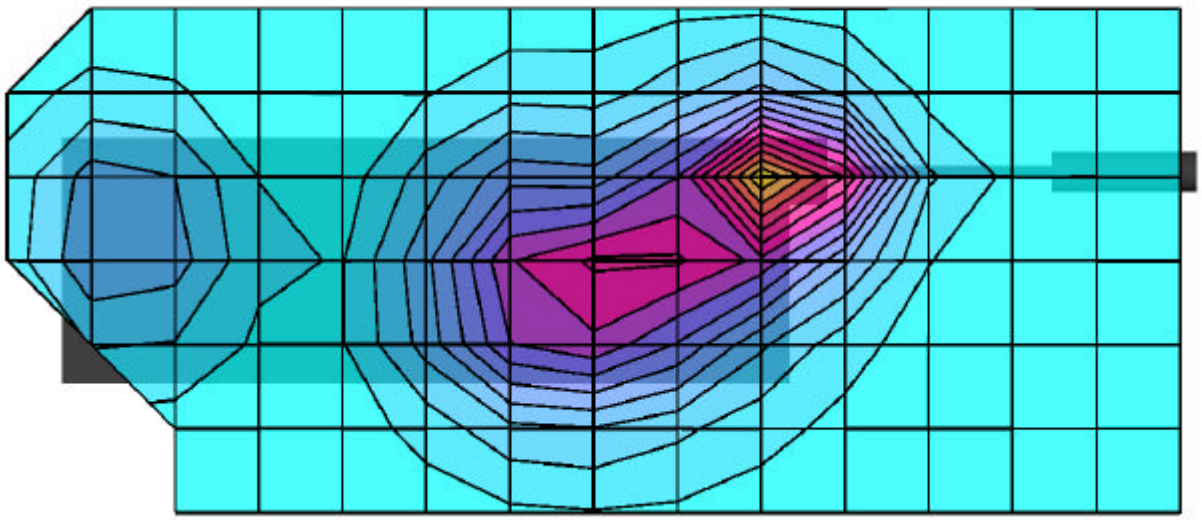
Body SAR - Back Side - 1.0 cm Separation Distance
Antenna Retracted
SH-P300 PCS CDMA Handset
3.7V Lithium-ion Battery (1000mAh)
PCS CDMA Mode
Channel 0600 [1880.00 MHz]
Conducted Power: 22.3 dBm
Ambient Temp. 23.3°C; Fluid Temp 22.5°C
Date Tested: October 16, 2002



Hitachi Ltd. FCC ID: ABLSP20

SAM Phantom; Flat Section; Position: (270°,270°)
Probe: ET3DV6 - SN1387; ConvF(5.00,5.00,5.00); Crest factor: 1.0
1900 MHz Muscle: $\sigma = 1.56$ mho/m $\varepsilon_r = 53.6$ $\rho = 1.00$ g/cm^3
Coarse: Dx = 15.0, Dy = 15.0, Dz = 10.0
Cube 5x5x7; Powerdrift: -0.00 dB
SAR (1g): 0.861 mW/g, SAR (10g): 0.444 mW/g

Body SAR - Back Side - 1.0 cm Separation Distance
Antenna Extended
SH-P300 PCS CDMA Handset
3.7V Lithium-ion Battery (1000mAh)
PCS CDMA Mode
Channel 0600 [1880.00 MHz]
Conducted Power: 22.3 dBm
Ambient Temp. 23.3°C; Fluid Temp 22.5°C
Date Tested: October 16, 2002

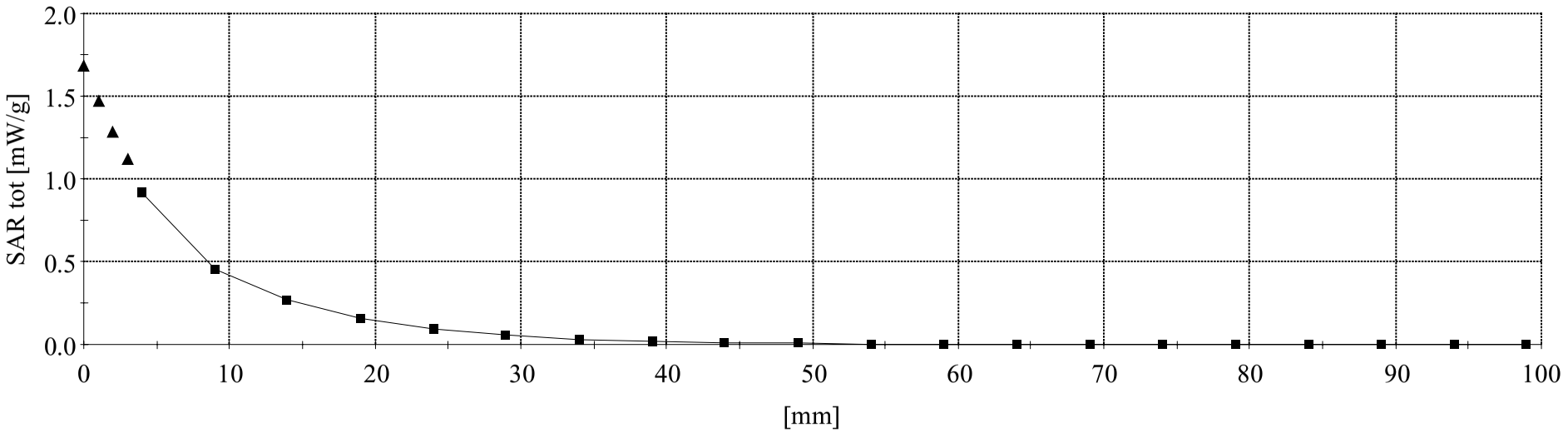


Hitachi Ltd. FCC ID: ABLSP20

SAM Phantom; Flat Section
Probe: ET3DV6 - SN1387; ConvF(5.00,5.00,5.00); Crest factor: 1.0
1900 MHz Muscle: σ = 1.56 mho/m ε_r = 53.6 ρ = 1.00 g/cm^3

Z-Axis Extrapolation at Peak SAR Location

Body SAR - Back Side - 1.0 cm Separation Distance
Antenna Extended
SH-P300 PCS CDMA Handset
3.7V Lithium-ion Battery (1000mAh)
PCS CDMA Mode
Channel 0600 [1880.00 MHz]
Conducted Power: 22.3 dBm
Ambient Temp. 23.3°C; Fluid Temp 22.5°C
Date Tested: October 16, 2002



APPENDIX B - SYSTEM VALIDATION

10/12/02

Dipole 1800MHz

SAM Phantom; Flat Section

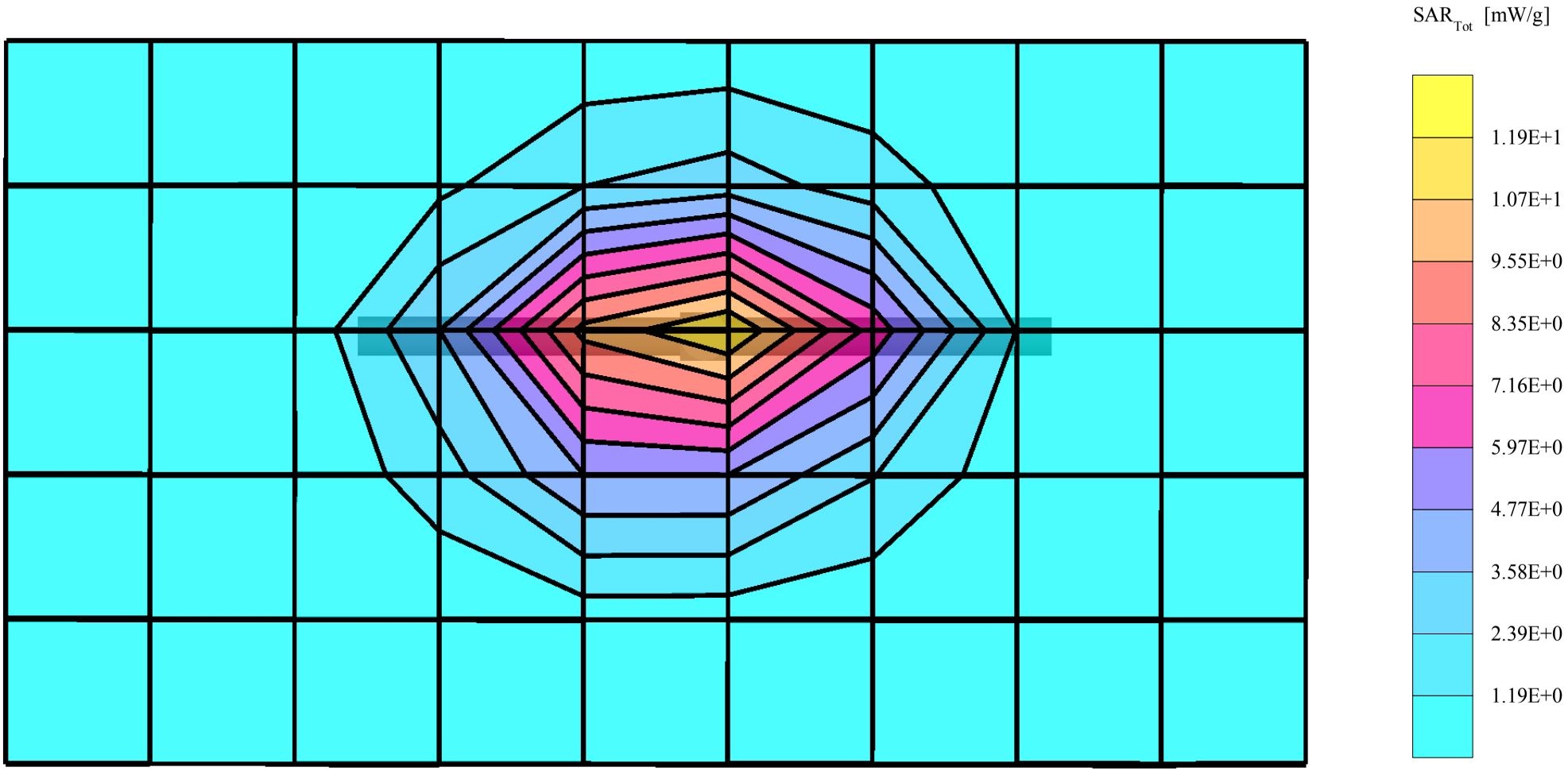
Probe: ET3DV6 - SN1387; ConvF(5.40,5.40,5.40); Crest factor: 1.0; 1800 MHz Brain: σ = 1.38 mho/m ε_r = 39.9 ρ = 1.00 g/cm^3

Cube 5x5x7: Peak: 19.8 mW/g, SAR (1g): 10.3 mW/g, SAR (10g): 5.24 mW/g, (Worst-case extrapolation)

Penetration depth: 7.9 (7.4, 9.0) [mm]; Powerdrift: -0.02 dB; Ambient Temp. 22.5°C; Fluid Temp 23.1°C

1800 MHz Validation

Date Tested: October 12, 2002



10/16/02

Dipole 1800MHz

SAM Phantom; Flat Section

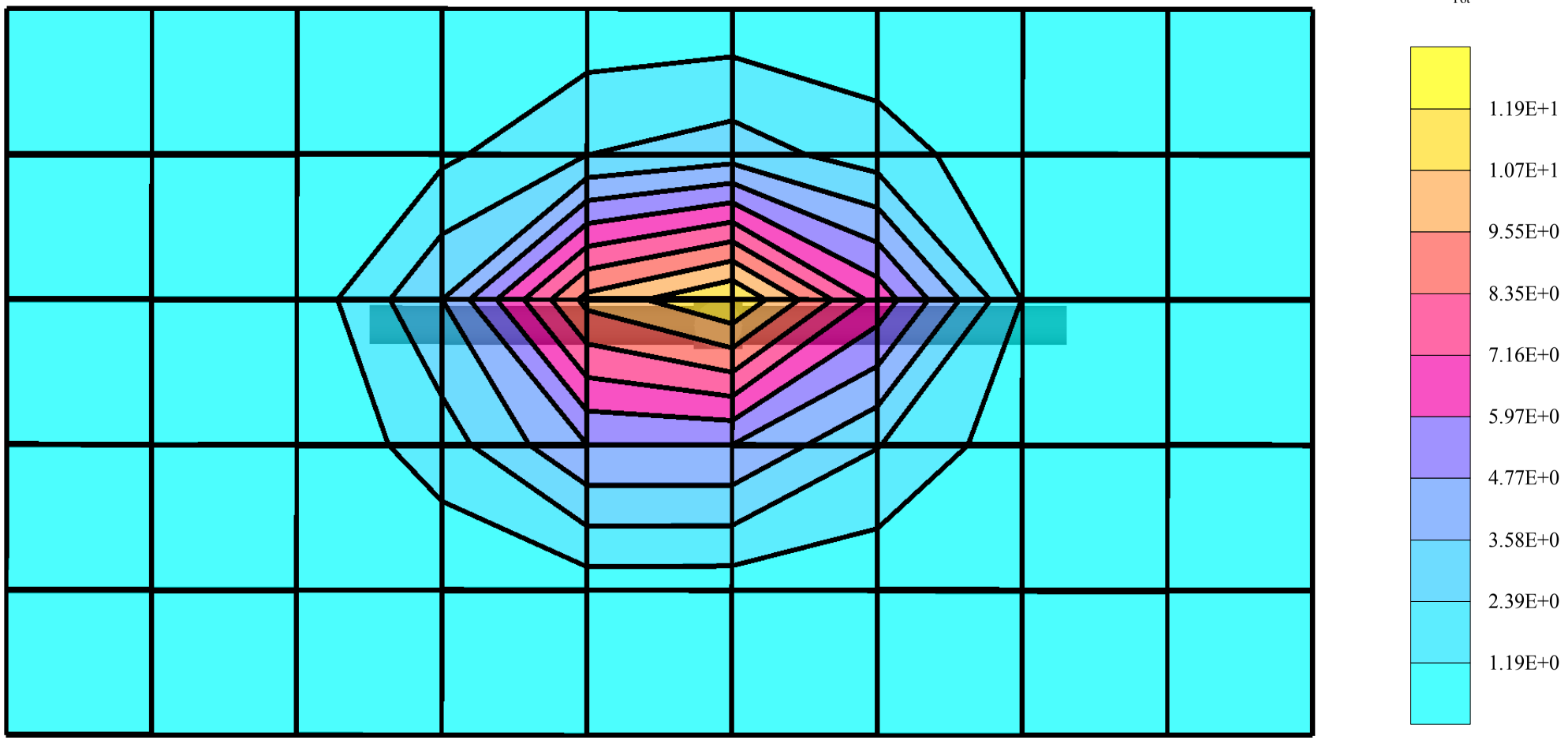
Probe: ET3DV6 - SN1387; ConvF(5.40,5.40,5.40); Crest factor: 1.0; 1800 MHz Brain: σ = 1.39 mho/m ε_r = 39.9 ρ = 1.00 g/cm^3

Cube 5x5x7: Peak: 19.9 mW/g, SAR (1g): 10.3 mW/g, SAR (10g): 5.26 mW/g, (Worst-case extrapolation)

Penetration depth: 7.9 (7.4, 9.0) [mm]; Powerdrift: 0.01 dB; Ambient Temp. 23.3°C; Fluid Temp. 22.5°C

1800 MHz Validation

Date Tested: October 16, 2002



APPENDIX C - DIPOLE CALIBRATION

Schmid & Partner Engineering AG

Zeughausstrasse 43, 8004 Zurich, Switzerland, Phone +41 1 245 97 00, Fax +41 1 245 97 79

Calibration Certificate

1800 MHz System Validation Dipole

Type:	**D1800V2**
Serial Number:	**247**
Place of Calibration:	**Zurich**
Date of Calibration:	**June 20, 2001**
Calibration Interval:	**24 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: 

Schmid & Partner
Engineering AG

Zeughausstrasse 43, 8004 Zurich, Switzerland, Phone +41 1 245 97 00, Fax +41 1 245 97 79

DASY

Dipole Validation Kit

Type: D1800V2

Serial: 247

Manufactured: August 25, 1999
Calibrated: June 20, 2001

1. Measurement Conditions

The measurements were performed in the flat section of the new generic twin phantom filled with head simulating glycol solution of the following electrical parameters at 1800 MHz:

Relative Dielectricity	**40.0**	± 5%
Conductivity	**1.36 mho/m**	± 5%

The DASY3 System (Software version 3.1c) with a dosimetric E-field probe ET3DV6 (SN:1507, Conversion factor 5.57 at 1800 MHz) was used for the measurements.

The dipole was mounted on the small tripod so that the dipole feedpoint was positioned below the center marking of the flat phantom section and the dipole was oriented parallel to the body axis (the long side of the phantom). The standard measuring distance was 10mm from dipole center to the solution surface. The included distance holder was used during measurements for accurate distance positioning.

The coarse grid with a grid spacing of 15mm was aligned with the dipole. The 5x5x7 fine cube was chosen for cube integration. Probe isotropy errors were cancelled by measuring the SAR with normal and 90° turned probe orientations and averaging.
The dipole input power (forward power) was 250mW ± 3 %. The results are normalized to 1W input power.

2. SAR Measurement

Standard SAR-measurements were performed with the phantom according to the measurement conditions described in section 1. The results have been normalized to a dipole input power of 1W (forward power). The resulting averaged SAR-values are:

averaged over 1 cm^3 (1 g) of tissue:	**38.64 mW/g**
averaged over 10 cm^3 (10 g) of tissue:	**20.08 mW/g**

Note: If the liquid parameters for validation are slightly different from the ones used for initial calibration, the SAR-values will be different as well. The estimated sensitivities of SAR-values and penetration depths to the liquid parameters are listed in the DASY Application Note 4: 'SAR Sensitivities'.

3. Dipole Impedance and return loss

The impedance was measured at the SMA-connector with a network analyzer and numerically transformed to the dipole feedpoint. The transformation parameters from the SMA-connector to the dipole feedpoint are:

Electrical delay:	**1.208 ns**	(one direction)
Transmission factor:	**0.995**	(voltage transmission, one direction)

The dipole was positioned at the flat phantom sections according to section 1 and the distance holder was in place during impedance measurements.

Feedpoint impedance at 1800 MHz:	Re{Z} = **52.4 Ω**
	Im {Z} = **0.7 Ω**
Return Loss at 1800 MHz	**-32.1 dB**

4. Measurement Conditions

The measurements were performed in the flat section of the new generic twin phantom filled with brain sugar-water solution of the following electrical parameters at 1800 MHz:

Relative Dielectricity	**40.1**	± 5%
Conductivity	**1.71 mho/m**	± 5%

The DASY3 System (Software version 3.1c) with a dosimetric E-field probe ET3DV6 (SN:1507, Conversion factor 5.63 at 1800 MHz) was used for the measurements.

The dipole was mounted on the small tripod so that the dipole feedpoint was positioned below the center marking of the flat phantom section and the dipole was oriented parallel to the body axis (the long side of the phantom). The standard measuring distance was 10mm from dipole center to the solution surface. The included distance holder was used during measurements for accurate distance positioning.

The coarse grid with a grid spacing of 15mm was aligned with the dipole. The 5x5x7 fine cube was chosen for cube integration. Probe isotropy errors were cancelled by measuring the SAR with normal and 90° turned probe orientations and averaging.
The dipole input power (forward power) was 250mW ± 3 %. The results are normalized to 1W input power.

5. SAR Measurement

Standard SAR-measurements were performed with the phantom according to the measurement conditions described in section 4. The results have been normalized to a dipole input power of 1W (forward power). The resulting averaged SAR-values are:

averaged over 1 cm^3 (1 g) of tissue:	**43.6 mW/g**
averaged over 10 cm^3 (10 g) of tissue:	**21.6 mW/g**

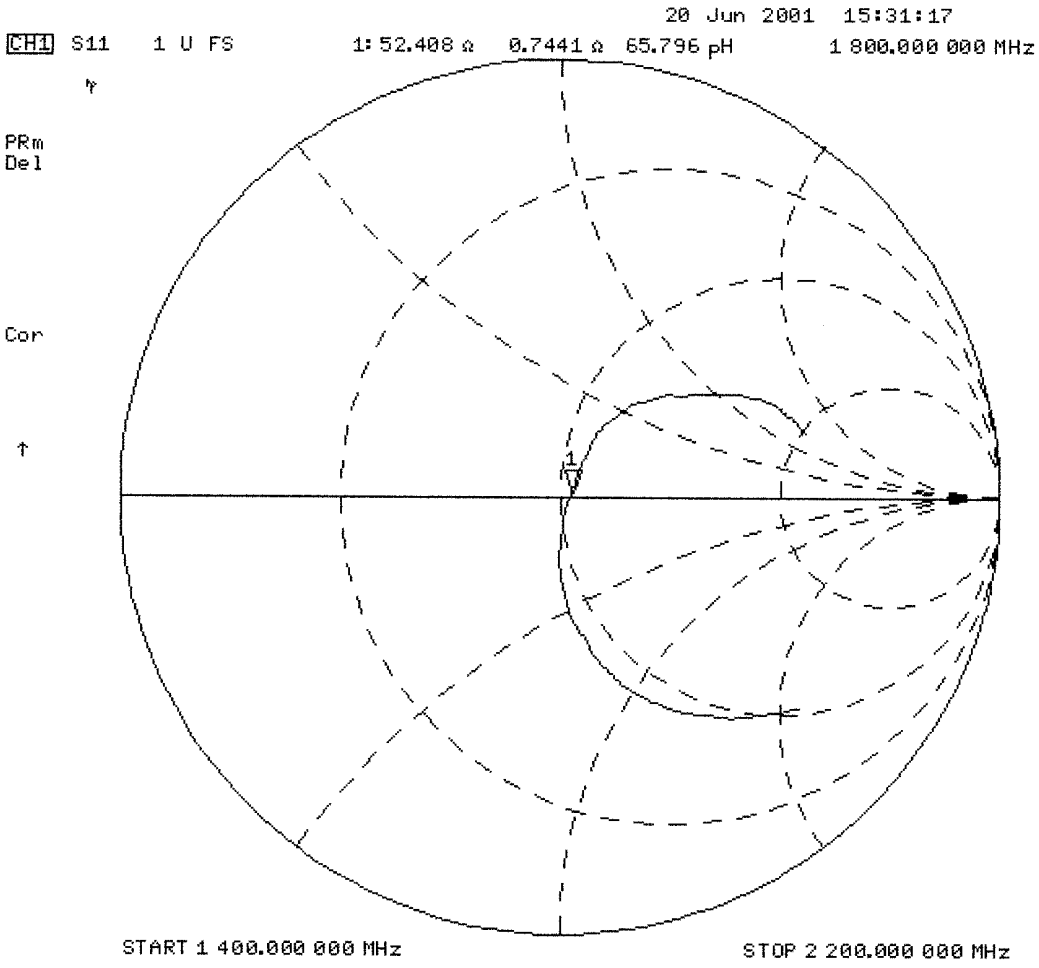
Note: If the liquid parameters for validation are slightly different from the ones used for initial calibration, the SAR-values will be different as well. The estimated sensitivities of SAR-values and penetration depths to the liquid parameters are listed in the DASY Application Note 4: 'SAR Sensitivities'.

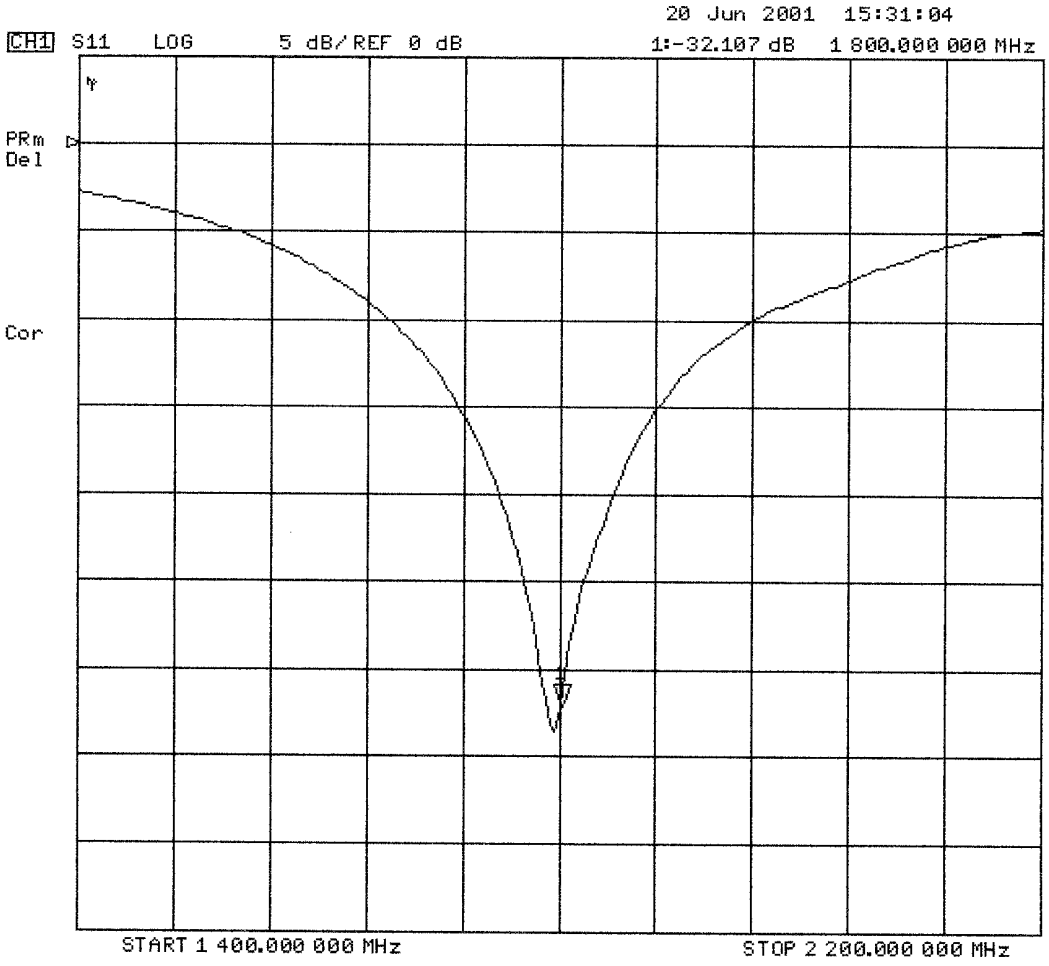
6. Handling

The dipole is made of standard semirigid coaxial cable. The center conductor of the feeding line is directly connected to the second arm of the dipole. The antenna is therefore short-circuited for DC-signals.

Do not apply excessive force to the dipole arms, because they might bend. If the dipole arms have to be bent back, take care to release stress to the soldered connections near the feedpoint; they might come off.

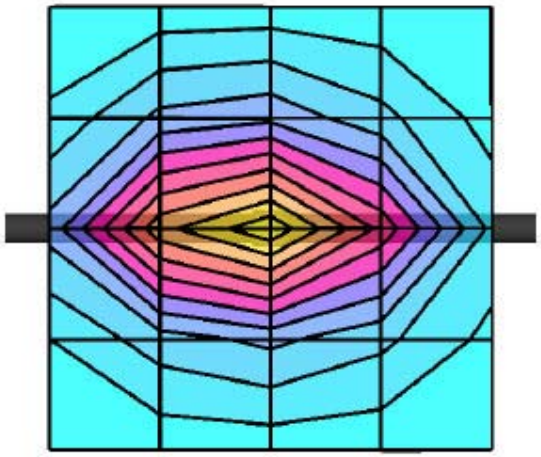
After prolonged use with 40W radiated power, only a slight warming of the dipole near the feedpoint can be measured.

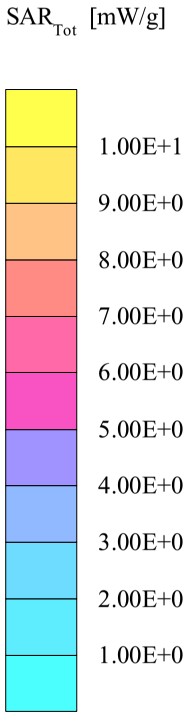

20 Jun 2001 15:31:17
CH1 S11 1 U FS
1: 52.408 Ω 0.7441 Ω 65.796 pH
1 800.000 000 MHz
PRm
Del
Cor
START 1 400.000 000 MHz
STOP 2 200.000 000 MHz


20 Jun 2001 15:31:04
CH1 S11 LOG 5 dB/ REF 0 dB
1:-32.107 dB 1 800.000 000 MHz
PRm
Del
Cor
START 1 400.000 000 MHz
STOP 2 200.000 000 MHz

Validation Dipole D1800V2 SN:247, d = 10 mm

Frequency: 1800 MHz; Antenna Input Power: 250 [mW]
Generic Twin Phantom; Flat Section; Grid Spacing:Dx = 15.0, Dy = 15.0, Dz = 10.0
Probe: ET3DV6 - SN1507; ConvF(5.57,5.57,5.57); Crest factor: 1.0; IEEE1528 1800 MHz : σ = 1.36 mho/m ε_r = 40.0 ρ = 1.00 g/cm^3
Cubes (2): Peak: 18.2 mW/g ± 0.04 dB, SAR (1g): 9.66 mW/g ± 0.03 dB, SAR (10g): 5.02 mW/g ± 0.03 dB, (Worst-case extrapolation)
Penetration depth: 8.2 (7.6, 9.4) [mm]
Powerdrift: -0.01 dB





APPENDIX D - PROBE CALIBRATION

Schmid & Partner
Engineering AG

Zeughausstrasse 43, 8004 Zurich, Switzerland, Phone +41 1 245 97 00, Fax +41 1 245 97 79

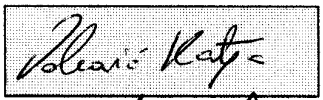
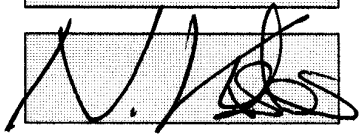
Calibration Certificate

Dosimetric E-Field Probe

Type:	**ET3DV6**
Serial Number:	**1387**
Place of Calibration:	**Zurich**
Date of Calibration:	**February 22, 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:	

Probe ET3DV6

SN:1387

Manufactured:	September 21, 1999
Last calibration:	September 22, 1999
Recalibrated:	February 22, 2002

Calibrated for System DASY3

DASY3 - Parameters of Probe: ET3DV6 SN:1387

Sensitivity in Free Space

Diode Compression

NormX	**1.58**	$\mu V/(V/m)^2$	DCP X	**97**	mV
NormY	**1.67**	$\mu V/(V/m)^2$	DCP Y	**97**	mV
NormZ	**1.67**	$\mu V/(V/m)^2$	DCP Z	**97**	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	**6.6**	± 9.5% (k=2)	Boundary effect:	
ConvF Y	**6.6**	± 9.5% (k=2)	Alpha	**0.40**
ConvF Z	**6.6**	± 9.5% (k=2)	Depth	**2.38**

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	**5.4**	± 9.5% (k=2)	Boundary effect:	
ConvF Y	**5.4**	± 9.5% (k=2)	Alpha	**0.57**
ConvF Z	**5.4**	± 9.5% (k=2)	Depth	**2.18**

Boundary Effect

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

Probe Tip to Boundary		**1 mm**	**2 mm**
SAR_{be} [%]	Without Correction Algorithm	9.7	5.4
SAR_{be} [%]	With Correction Algorithm	0.3	0.6

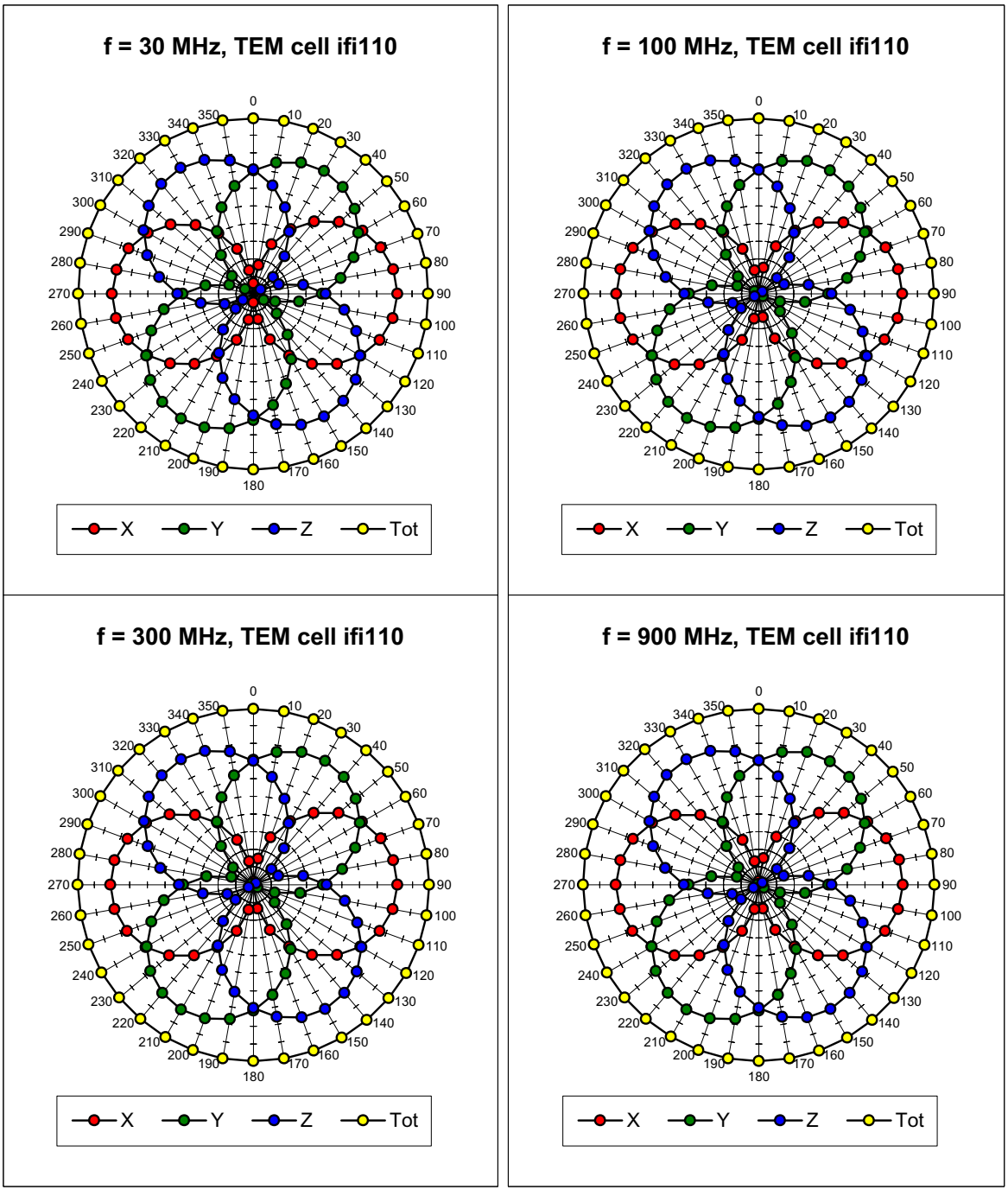
Head **1800 MHz** **Typical SAR gradient: 10 % per mm**

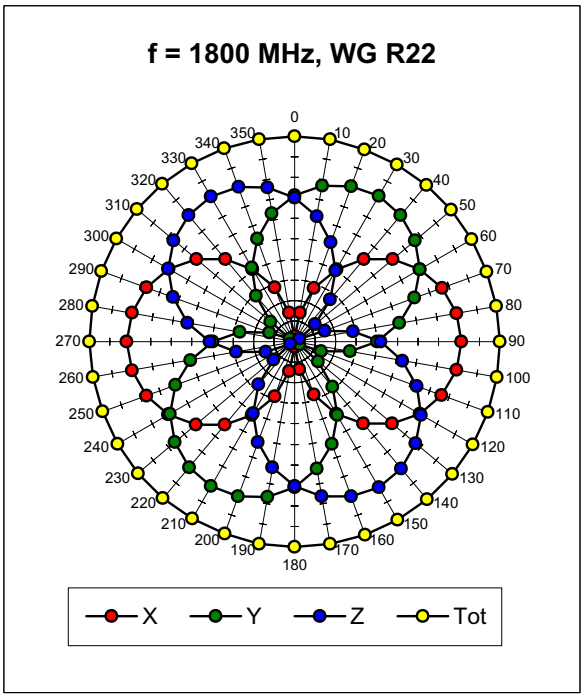
Probe Tip to Boundary		**1 mm**	**2 mm**
SAR_{be} [%]	Without Correction Algorithm	11.5	7.3
SAR_{be} [%]	With Correction Algorithm	0.1	0.3

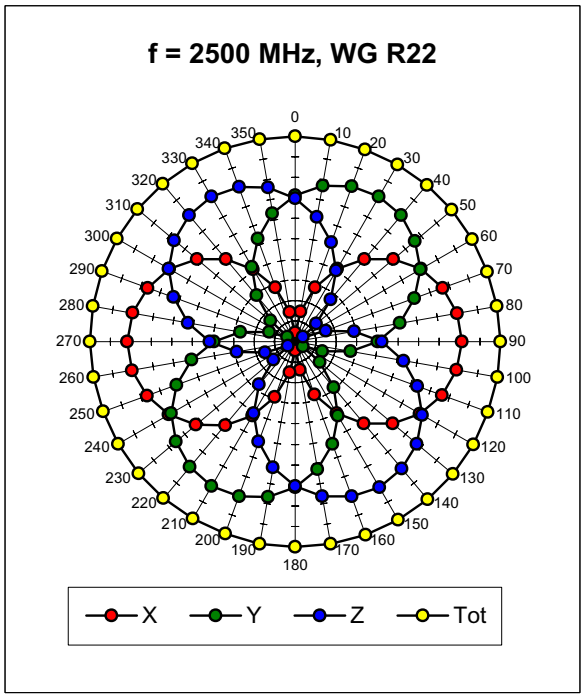
Sensor Offset

Probe Tip to Sensor Center	**2.7**	mm
Optical Surface Detection	**1.3 ± 0.2**	mm

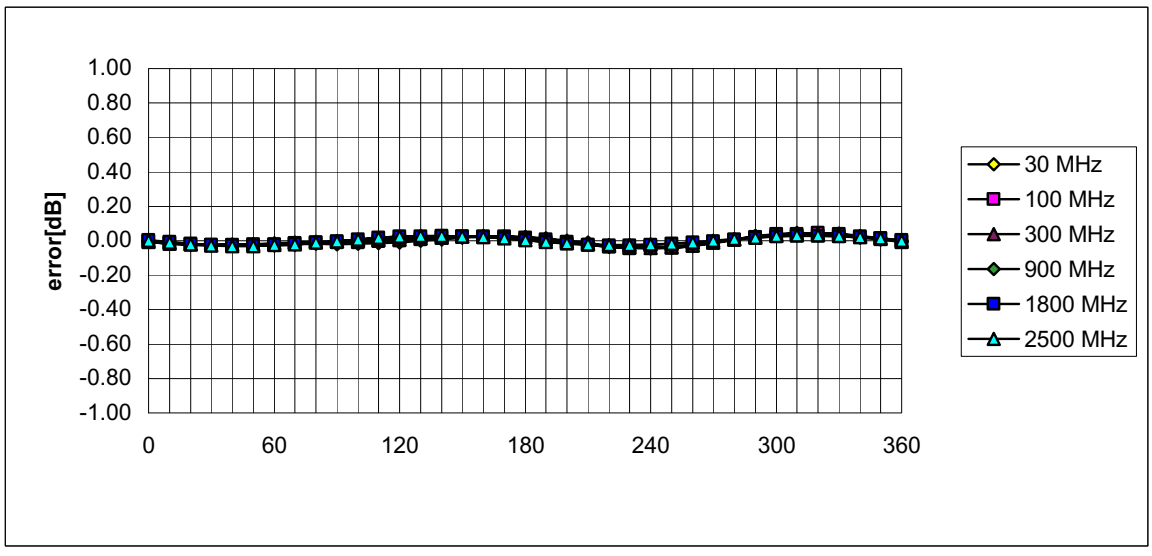
Receiving Pattern (ϕ , θ = 0°





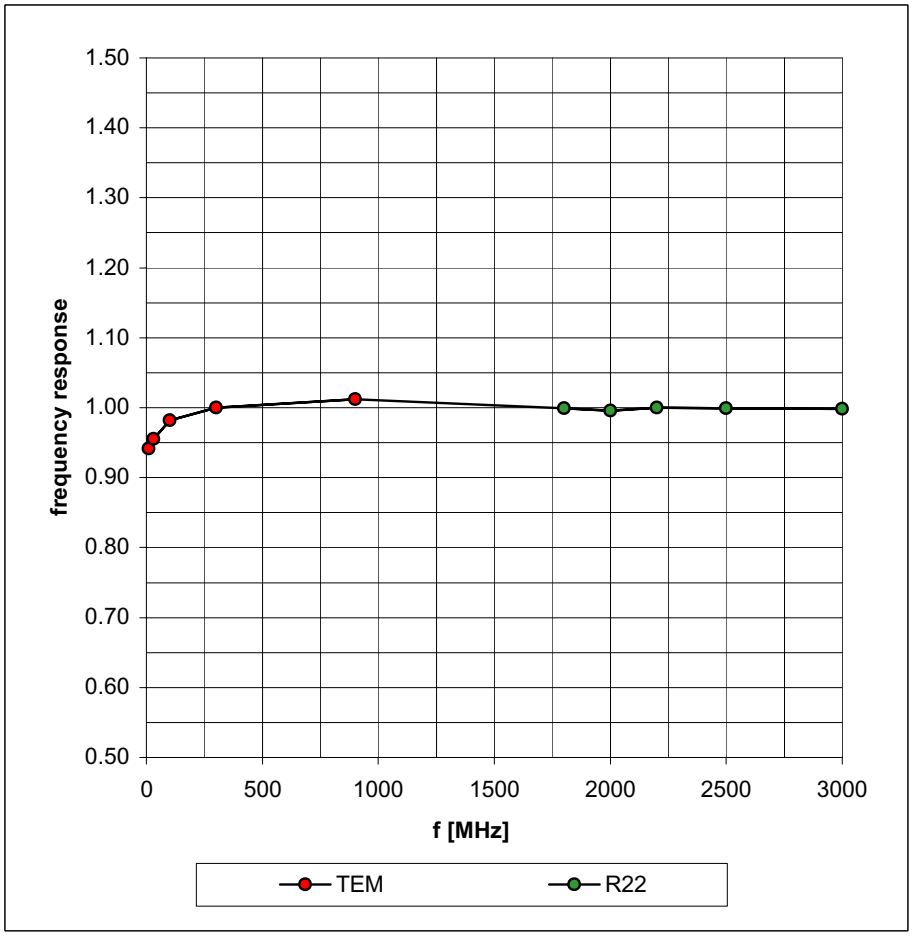


Isotropy Error (ϕ), θ = 0°



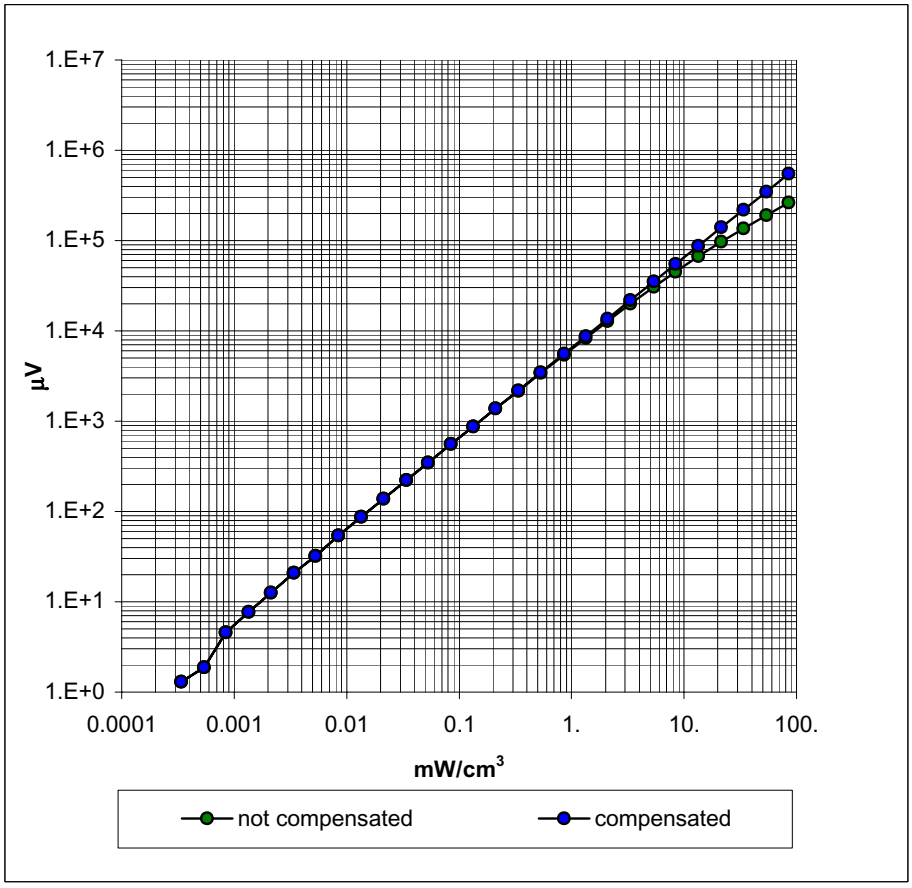
Frequency Response of E-Field

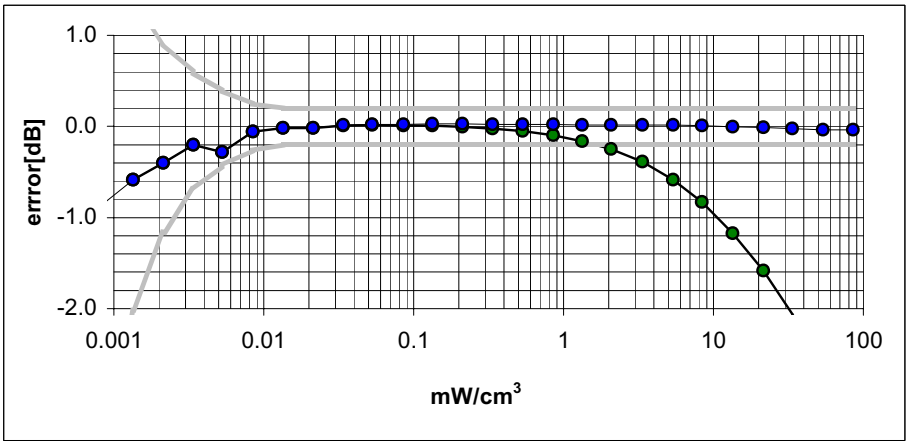
(TEM-Cell:ifi110, Waveguide R22)



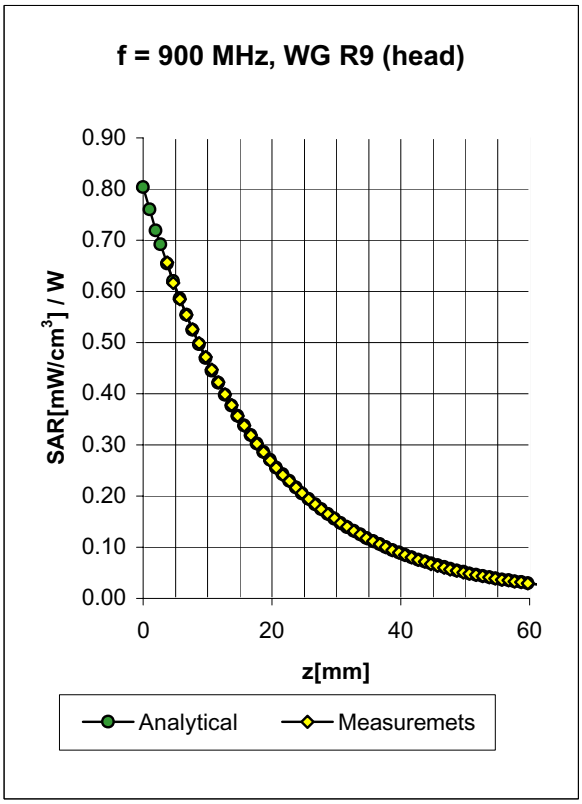
Dynamic Range f(SAR_{brain})

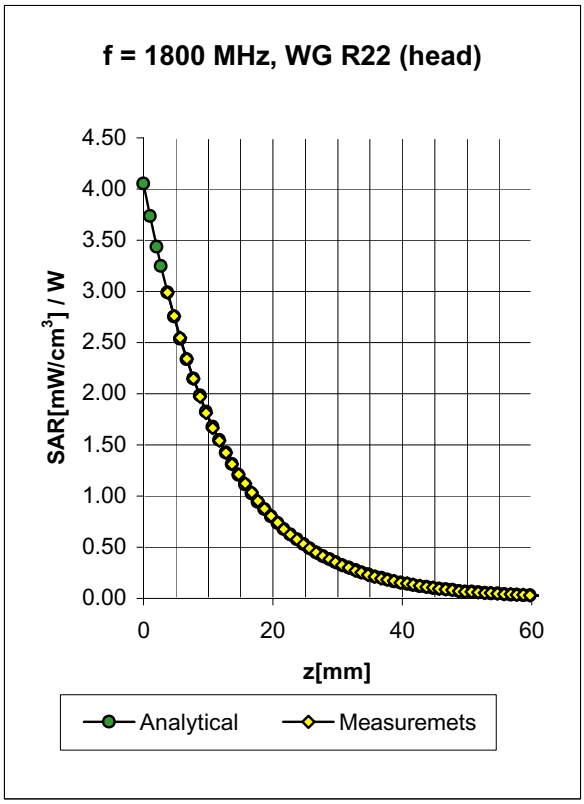
(Waveguide R22)





Conversion Factor Assessment



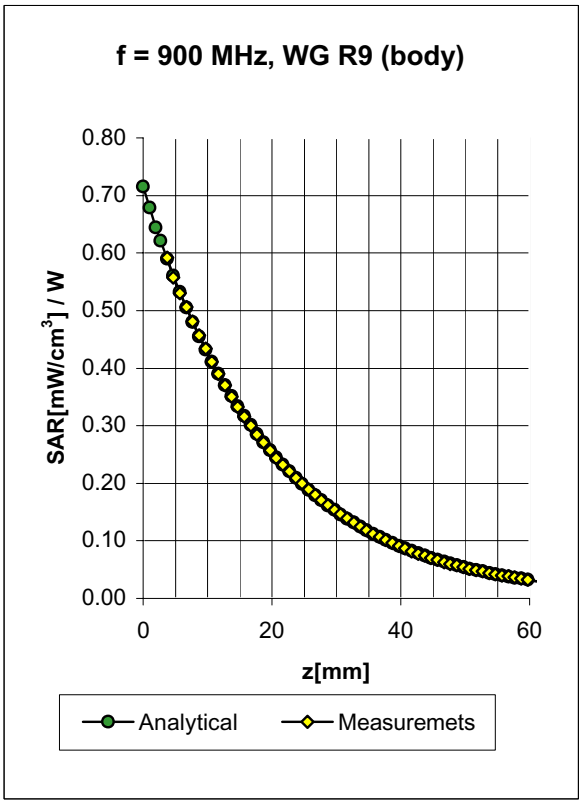


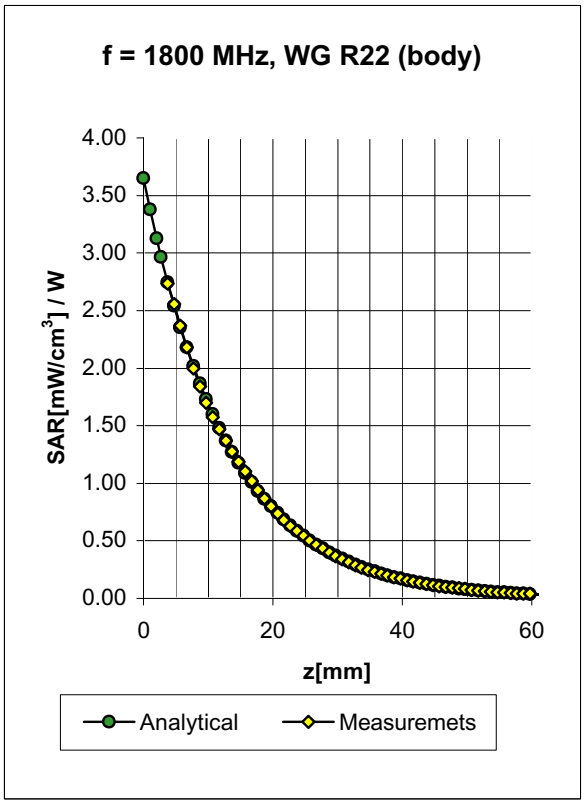
Head	**900 MHz**		**ε_r = 41.5 ± 5%**	**σ = 0.97 ± 5% mho/m**
Head	**835 MHz**		**ε_r = 41.5 ± 5%**	**σ = 0.90 ± 5% mho/m**
	ConvF X	**6.6** ± 9.5% (k=2)		Boundary effect:
	ConvF Y	**6.6** ± 9.5% (k=2)		Alpha **0.40**
	ConvF Z	**6.6** ± 9.5% (k=2)		Depth **2.38**

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	**5.4** ± 9.5% (k=2)		Boundary effect:
	ConvF Y	**5.4** ± 9.5% (k=2)		Alpha **0.57**
	ConvF Z	**5.4** ± 9.5% (k=2)		Depth **2.18**

ET3DV6 SN:1387 **February 22, 2002**

Conversion Factor Assessment





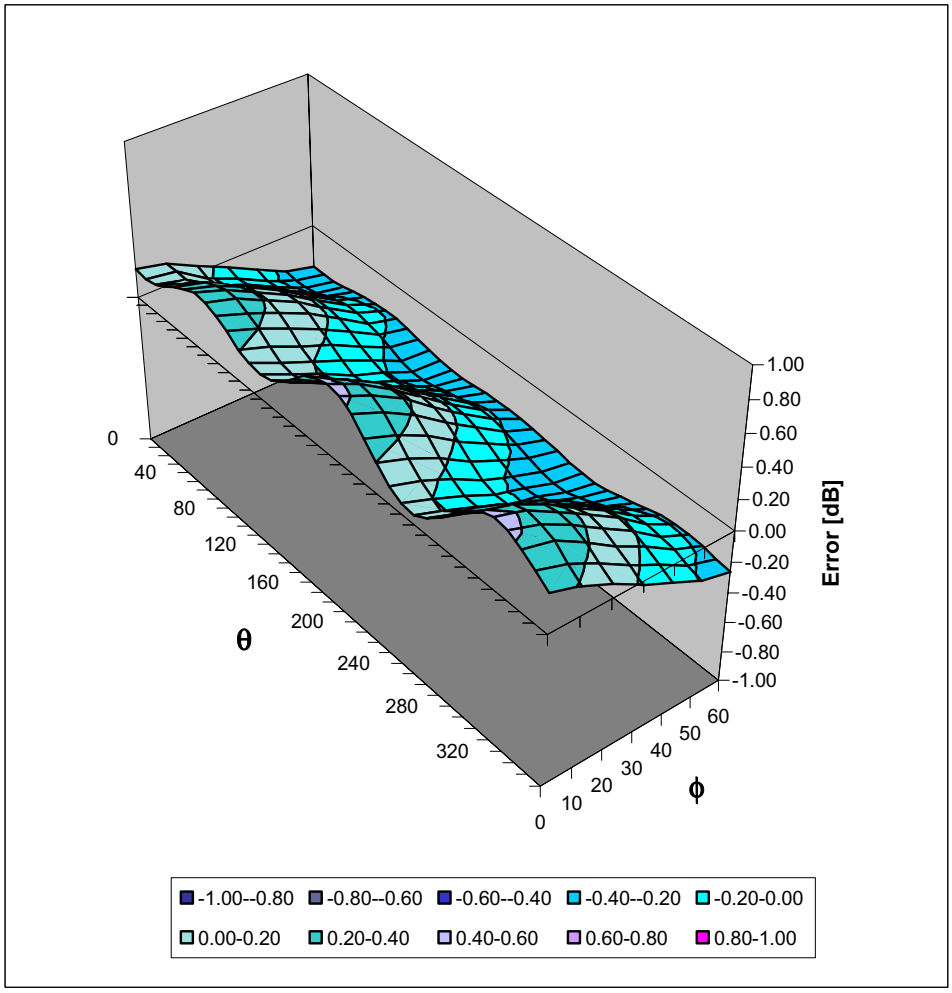
Body	**900 MHz**	ε_r **= 55.0 ± 5%**	**σ = 1.05 ± 5% mho/m**	
Body	**835 MHz**	ε_r **= 55.2 ± 5%**	**σ = 0.97 ± 5% mho/m**	
	ConvF X	**6.3** ± 9.5% (k=2)	Boundary effect:	
	ConvF Y	**6.3** ± 9.5% (k=2)	Alpha	**0.42**
	ConvF Z	**6.3** ± 9.5% (k=2)	Depth	**2.44**

Body	**1800 MHz**	ε_r **= 53.3 ± 5%**	**σ = 1.52 ± 5% mho/m**	
Body	**1900 MHz**	ε_r **= 53.3 ± 5%**	**σ = 1.52 ± 5% mho/m**	
	ConvF X	**5.0** ± 9.5% (k=2)	Boundary effect:	
	ConvF Y	**5.0** ± 9.5% (k=2)	Alpha	**0.76**
	ConvF Z	**5.0** ± 9.5% (k=2)	Depth	**2.01**

ET3DV6 SN:1387 **February 22, 2002**

Deviation from Isotropy in HSL

Error ($\theta\phi$), f = 900 MHz



Schmid & Partner
Engineering AG

Zeughausstrasse 43, 8004 Zurich, Switzerland, Phone +41 1 245 97 00, Fax +41 1 245 97 79

Additional Conversion Factors

for Dosimetric E-Field Probe

Type:	**ET3DV6**
Serial Number:	**1387**
Place of Assessment:	**Zurich**
Date of Assessment:	**February 25, 2002**
Probe Calibration Date:	**February 22, 2002**

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.

Assessed by:

Dosimetric E-Field Probe ET3DV6 SN:1387

Conversion Factor (± standard deviation)

150 MHz	ConvF	**9.2 ± 8%**	**ε_r = 52.3** **σ = 0.76 mho/m** (head tissue)
300 MHz	ConvF	**8.0 ± 8%**	**ε_r = 45.3** **σ = 0.87 mho/m** (head tissue)
450 MHz	ConvF	**7.3 ± 8%**	**ε_r = 43.5** **σ = 0.87 mho/m** (head tissue)
2450 MHz	ConvF	**4.7 ± 8%**	**ε_r = 39.2** **σ = 1.80 mho/m** (head tissue)
150 MHz	ConvF	**8.8 ± 8%**	**ε_r = 61.9** **σ = 0.80 mho/m** (body tissue)
450 MHz	ConvF	**7.7 ± 8%**	**ε_r = 56.7** **σ = 0.94 mho/m** (body tissue)
2450 MHz	ConvF	**4.3 ± 8%**	**ε_r = 52.7** **σ = 1.95 mho/m** (body tissue)

APPENDIX E - MEASURED FLUID DIELECTRIC PARAMETERS

1800MHz System Validation

Measured Fluid Dielectric Parameters (Brain)

October 12, 2002

Frequency	e'	e''
1.700000000 GHz	40.2539	13.4483
1.710000000 GHz	40.2388	13.4724
1.720000000 GHz	40.1814	13.5006
1.730000000 GHz	40.1387	13.5423
1.740000000 GHz	40.0932	13.5764
1.750000000 GHz	40.0656	13.6188
1.760000000 GHz	40.0482	13.6556
1.770000000 GHz	40.0237	13.6990
1.780000000 GHz	39.9844	13.7296
1.790000000 GHz	39.9468	13.7770
1.800000000 GHz	39.8907	13.8050
1.810000000 GHz	39.8443	13.8691
1.820000000 GHz	39.7708	13.8981
1.830000000 GHz	39.7101	13.9527
1.840000000 GHz	39.6670	13.9680
1.850000000 GHz	39.6264	13.9910
1.860000000 GHz	39.5857	14.0170
1.870000000 GHz	39.5515	14.0422
1.880000000 GHz	39.4966	14.0649
1.890000000 GHz	39.4461	14.0882
1.900000000 GHz	39.4183	14.1188

1900MHz EUT Evaluation (Head)

Measured Fluid Dielectric Parameters (Brain)

October 12, 2002

Frequency	e'	e''
1.780000000 GHz	38.9132	12.7247
1.790000000 GHz	38.9136	12.8236
1.800000000 GHz	38.8494	12.7869
1.810000000 GHz	38.8601	12.9293
1.820000000 GHz	38.9260	12.9147
1.830000000 GHz	38.8052	12.8321
1.840000000 GHz	38.7568	12.8813
1.850000000 GHz	38.7110	12.9525
1.860000000 GHz	38.6818	12.9407
1.870000000 GHz	38.5709	12.9515
1.880000000 GHz	38.5375	13.0706
1.890000000 GHz	38.5097	13.0702
1.900000000 GHz	38.4712	13.1369
1.910000000 GHz	38.5884	13.1294
1.920000000 GHz	38.4932	13.1987
1.930000000 GHz	38.4155	13.0963
1.940000000 GHz	38.3804	13.0721
1.950000000 GHz	38.3618	13.1523
1.960000000 GHz	38.3332	13.0673
1.970000000 GHz	38.2951	13.0941
1.980000000 GHz	38.1776	13.1422

1800MHz System Validation

Measured Fluid Dielectric Parameters (Brain)

October 16, 2002

Frequency	e'	e''
1.700000000 GHz	40.2157	13.5264
1.710000000 GHz	40.2012	13.5623
1.720000000 GHz	40.1585	13.5886
1.730000000 GHz	40.0897	13.6260
1.740000000 GHz	40.0604	13.6724
1.750000000 GHz	40.0302	13.6981
1.760000000 GHz	40.0043	13.7515
1.770000000 GHz	39.9848	13.7921
1.780000000 GHz	39.9473	13.8305
1.790000000 GHz	39.9018	13.8792
1.800000000 GHz	39.8645	13.9026
1.810000000 GHz	39.7978	13.9720
1.820000000 GHz	39.7397	14.0012
1.830000000 GHz	39.6665	14.0537
1.840000000 GHz	39.6288	14.0777
1.850000000 GHz	39.5894	14.0968
1.860000000 GHz	39.5566	14.1153
1.870000000 GHz	39.5231	14.1459
1.880000000 GHz	39.4719	14.1692
1.890000000 GHz	39.4167	14.2037
1.900000000 GHz	39.3743	14.2281

1900MHz EUT Evaluation (Body)

Measured Fluid Dielectric Parameters (Muscle)

October 16, 2002

Frequency	e'	e''
1.800000000 GHz	53.9729	14.4419
1.810000000 GHz	53.9191	14.4717
1.820000000 GHz	53.8653	14.5243
1.830000000 GHz	53.8243	14.5511
1.840000000 GHz	53.7926	14.5775
1.850000000 GHz	53.7646	14.5934
1.860000000 GHz	53.7407	14.6283
1.870000000 GHz	53.6910	14.6571
1.880000000 GHz	53.6561	14.6915
1.890000000 GHz	53.6209	14.7154
1.900000000 GHz	53.5839	14.7673
1.910000000 GHz	53.5370	14.8103
1.920000000 GHz	53.4684	14.8594
1.930000000 GHz	53.4408	14.8631
1.940000000 GHz	53.4216	14.8816
1.950000000 GHz	53.3937	14.9125
1.960000000 GHz	53.3686	14.9521
1.970000000 GHz	53.3017	14.9655
1.980000000 GHz	53.2588	14.9824
1.990000000 GHz	53.2186	15.0158
2.000000000 GHz	53.1552	15.0576

APPENDIX F - SAM PHANTOM CERTIFICATE OF CONFORMITY

Schmid & Partner Engineering AG

Zeughausstrasse 43, 8004 Zurich, Switzerland, Phone +41 1 245 97 00, Fax +41 1 245 97 79

Certificate of conformity / First Article Inspection

Item	SAM Twin Phantom V4.0
Type No	QD 000 P40 BA
Series No	TP-1002 and higher
Manufacturer / Origin	Untersee Composites Hauptstr. 69 CH-8559 Fruthwilen Switzerland

Tests

The series production process used allows the limitation to test of first articles.
Complete tests were made on the pre-series Type No. QD 000 P40 AA, Serial No. TP-1001 and on the series first article Type No. QD 000 P40 BA, Serial No. TP-1006. Certain parameters have been retested using further series units (called samples).

Test	Requirement	Details	Units tested
Shape	Compliance with the geometry according to the CAD model.	IT'IS CAD File (*)	First article, Samples
Material thickness	Compliant with the requirements according to the standards	2mm +/- 0.2mm in specific areas	First article, Samples
Material parameters	Dielectric parameters for required frequencies	200 MHz – 3 GHz Relative permittivity < 5 Loss tangent < 0.05.	Material sample TP 104-5
Material resistivity	The material has been tested to be compatible with the liquids defined in the standards	Liquid type HSL 1800 and others according to the standard.	Pre-series, First article

Standards

[1] CENELEC EN 50361
[2] IEEE P1528-200x draft 6.5
[3] IEC PT 62209 draft 0.9
(*) The IT'IS CAD file is derived from [2] and is also within the tolerance requirements of the shapes of [1] and [3].

Conformity

Based on the sample tests above, we certify that this item is in compliance with the uncertainty requirements of SAR measurements specified in standard [1] and draft standards [2] and [3].

Date 18.11.2001

Signature / Stamp Schmid & Partner Engineering AG
Zeughausstrasse 43, CH-8004 Zurich
Tel. +41 1 245 97 00, Fax +41 1 245 97 79

APPENDIX G - SAR TEST SETUP & EUT PHOTOGRAPHS

SAR TEST SETUP PHOTOGRAPHS

Left Head Section / Cheek-Touch Position

Antenna Retracted

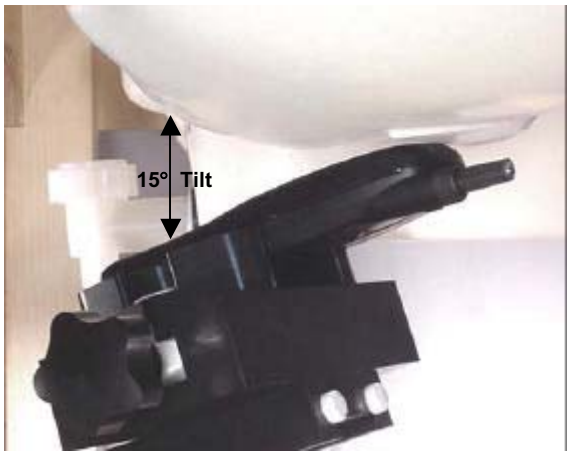
Antenna Extended

SAR TEST SETUP PHOTOGRAPHS

Left Head Section / Ear-Tilt Position

Antenna Retracted

Antenna Extended

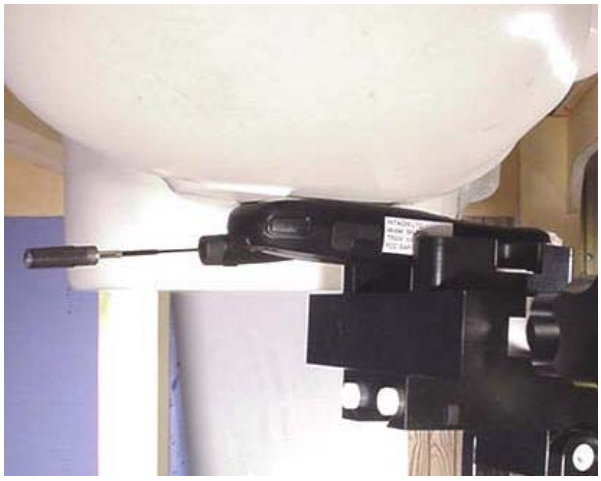


SAR TEST SETUP PHOTOGRAPHS

Right Head Section / Cheek-Touch Position

Antenna Retracted

Antenna Extended

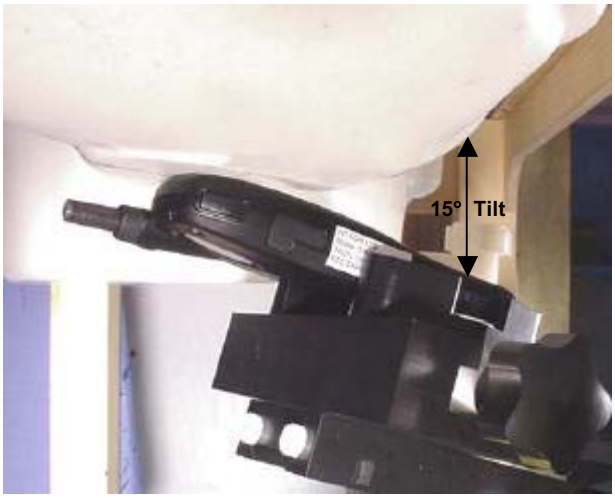


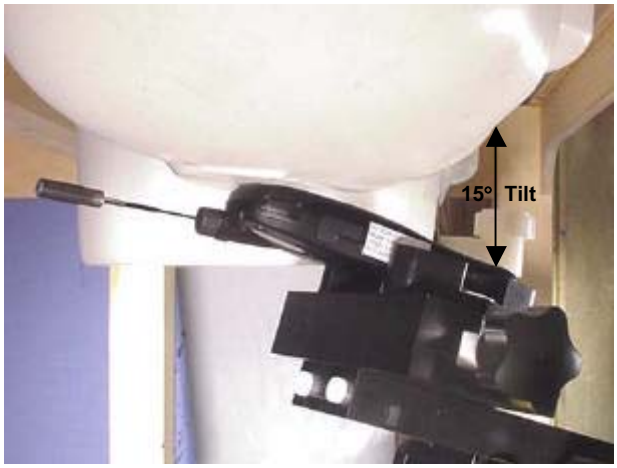
SAR TEST SETUP PHOTOGRAPHS

Right Head Section / Ear-Tilt Position

Antenna Retracted

Antenna Extended

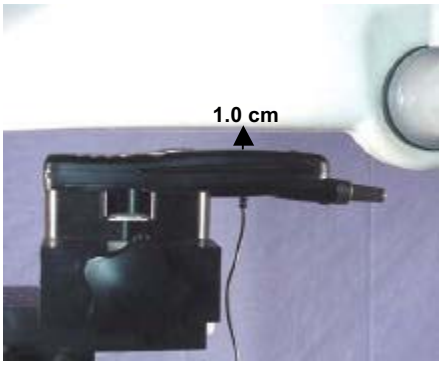


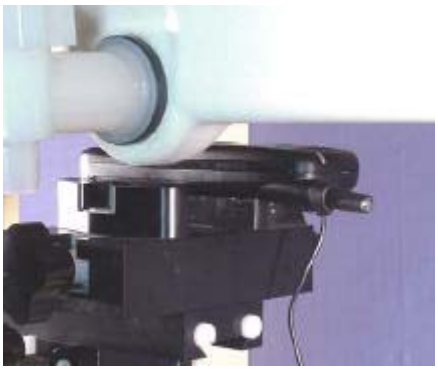


SAR TEST SETUP PHOTOGRAPHS

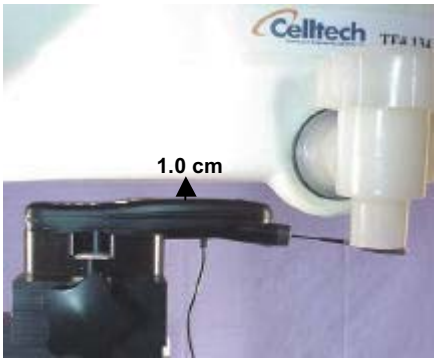
Body-Worn / Front Side / 1.0 cm Separation Distance with Headset Accessory

Antenna Retracted





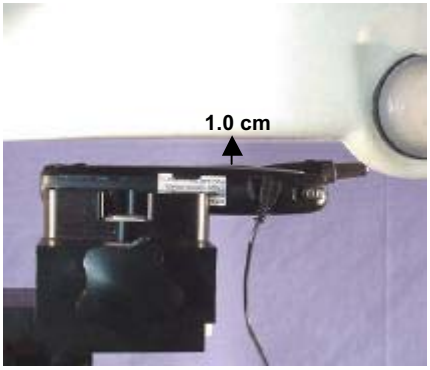
Antenna Extended

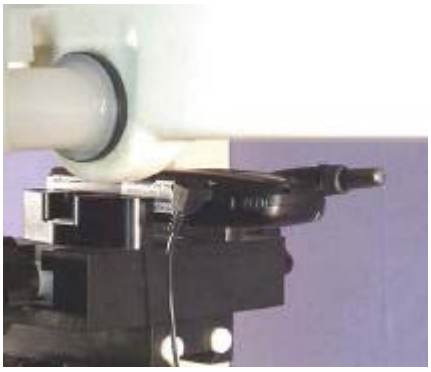


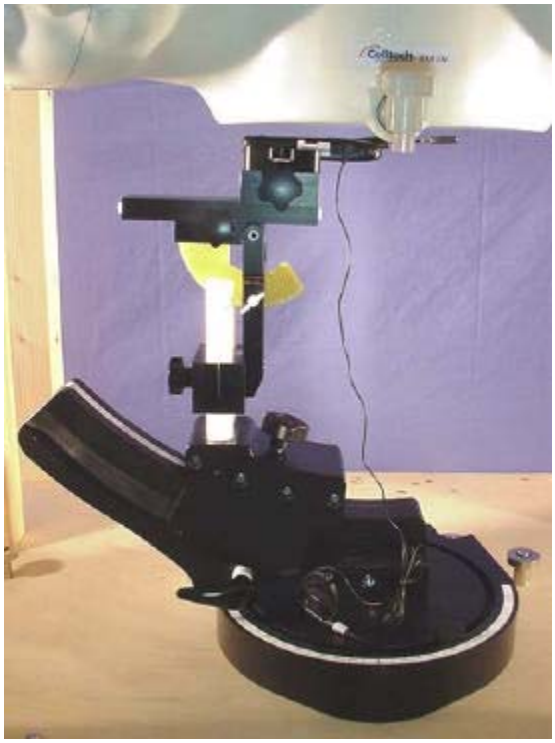
SAR TEST SETUP PHOTOGRAPHS

Body-Worn / Back Side / 1.0 cm Separation Distance with Headset Accessory

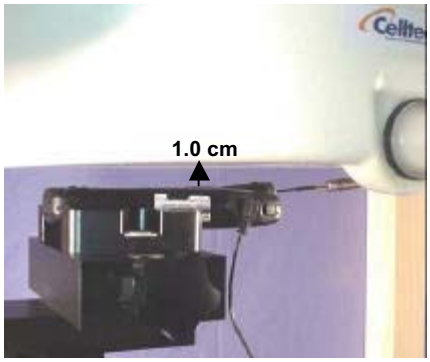
Antenna Retracted







Antenna Extended



EUT PHOTOGRAPHS

Front of EUT

Back of EUT

Back of EUT & Battery

EUT with Headset Accessory