MOTOROLA

Exhibit 11: SAR Test Report IHDT56CA1

Date of test:	02/15/02-02/22/02
Date of Report:	03/07/02
Laboratory:	Motorola Personal Communications Sector Product Safety & Compliance Laboratory 2001 N. Division Room: AS228 Harvard, Illinois 60033
Test Responsible:	Firass Badaruzzaman SAR RF Engineer
Accreditation:	This laboratory is accredited to ISO/IEC 17025-1999 to perform the following electromagnetic exposure tests: System Validation & Interlaboratory Comparison Simulated Tissue Specifications and Procedure EME Cellular Phone Testing Procedure On the following types of products: Wireless Communications Devices (Examples): Two Way Radios; Portable Phones (including Cellular, Licensed Non-Broadcast and PCS); Low Frequency Readers; and Pagers A2LA certificate #1651-01
Statement of Compliance:	Motorola declares under its sole responsibility that portable cellular telephone FCC ID IHDT56CA1 to which this declaration relates, is in conformity with the appropriate RF exposure standards, recommendations and guidelines (FCC 47 CFR §2.1093). It also declares that the product was tested in accordance with the appropriate measurement standards, guidelines and recommended practices. Any deviations from these standards, guidelines and recommended practices are noted below: (none)

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Reference Notes

1. Introduction

The Motorola Personal Communications Sector Product Safety Laboratory has performed measurements of the maximum potential exposure to the user of portable cellular phone FCC ID IHDT56CA1. The Specific Absorption Rate (SAR) of this product was measured. The portable cellular phone was tested in accordance with the latest available test guidelines.

2. Description of the Device Under Test

Antenna description

Type	Stubby	
Location	Right Side	
Dimensions	Length	25 mm
	Width	5 mm
Configuration	Helix	

Device description

FCC ID Number	IHDT56CA1		
Serial number	021502526		
Mode(s) of Operation	800 AMPS	TDMA 800	TDMA 1900
Modulation Mode(s)	AMPS	TDMA	TDMA
Maximum Output Power Setting	25.50 dBm	27.50 dBm	26.90 dBm
Duty Cycle	1:1	1:3	1:3
Transmitting Frequency Rang(s)	824.04-848.97 MHz	824.04-848.97 MHz	1850.04-1909.92 MHz

3. Test Equipment Used

3.1 Dosimetric System

The Motorola Personal Communications Sector Product Safety Laboratory utilizes a Dosimetric Assessment System (Dasy3™ v3.1d) SAR measurement system manufactured by Schmid & Partner Engineering AG (SPEAG™), of Zurich Switzerland. The overall RSS uncertainty of the measurement system is ±12.0% (K=1).

Description	Serial Number	Cal Due Date
DASY3 DAE V1	SN376	08/07/2002
E-Field Probe ETDV6	SN1523	01/25/2003
Dipole Validation Kit, DV900V2	SN80	10/26/2002
SAM Phantom used for 800MHz	TP1136	
Dipole Validation Kit, DV1900V2	SN277 / SN281	01/04/2003
SAM Phantom used for 1900MHz	TP1086 / TP1103	

3.2 Additional Equipment

Description	Serial Number	Cal Due Date
Signal Generator HP8648C	3847A04848	01/19/2003
Power Meter E4419B	GB39511090	11/28/2002
Power Sensor E9301A	US39211007	12/19/2002
Network Analyzer HP8753ES	US39172529	07/05/2002

Description	Serial Number	Cal Due Date
Signal Generator HP8648C	3847A04832	01/18/2003
Power Meter E4419B	US39250622	10/08/2002
Power Sensor E9301A	US39210915	12/06/2002
Network Analyzer HP8753ES	US39172529	07/05/2002

4. Electrical parameters of the tissue simulating liquid

Prior to conducting SAR measurements, the relative permittivity, ε_r, and the conductivity, σ, of the tissue simulating liquids were measured with HP85070 Dielectric Probe Kit These values are shown in the table below. Recommended limits for maximum permittivity and minimum conductivity are also shown. These come from the Federal Communication Commission, OET Bulletin 65 Supplement C 01-01. The recommended dielectric parameters of the tissue simulant for the exact center frequency of the transmitting band of this portable radio were calculated using linear interpolation from the data points given in Supplement C 01-01. It is seen that the measured parameters are satisfactory for compliance testing. The issue stimulant depth was verified to be 15.0cm ±0.5cm at the center of the ear. The stimulant temperature was measured at the beginning and end of each day. The values measured at the start of each day are shown in the table below. The ambient temperature was also measured throughout the day. The ambient temperature measurements and the tissue stimulant temperature measurements always found the temperature ±2.0 °C from the temperature measured in the morning.

f (MHz)	Tissue type	Limits / Measured	Dielectric Parameters		
			e_r	s (S/m)	Temp (°C)
835	**Head**	**Measured,** 02/19/2002	42.20	0.91	21.10
		Recommended Limits	41.50	0.90	20-25
	Body	**Measured,** 02/19/2002	54.40	0.97	21.10
		Recommended Limits	55.20	0.97	20-25
1880	**Head**	**Measured,** 02/16/2002	38.20	1.47	20.90
		Recommended Limits	40.00	1.40	20-25
	Head	**Measured,** 02/20/2002	38.10	1.45	21.60
		Recommended Limits	40.00	1.40	20-25

The composition and amounts of ingredients used for the tissue simulates are indicated in the table below:

Ingredient	800MHz Head	800MHz Body	1900MHz Head	1900MHz Body
Sugar	57.0	44.9	47.0	30.80
DGBE	--	--	52.8	68.91
Water	40.45	53.06	0.2	0.29
Salt	1.45	0.94	--	--
HEC	1.0	1.0	--	--
Bact.	0.1	0.1	--	--

5. System Accuracy Verification

A system accuracy verification of the DASY3 was performed using the measurement equipment listed in Section 3. The dipole was placed below a "flat" phantom. This "flat" phantom is made out of 1" thick natural High Density Polyethylene with a thickness at the bottom equal to 2.0mm. It measures 52.7cm(long) x 26.7cm(wide) x 21.2cm(tall). The measured dielectric constant of the material used is less than 2.3 and the loss tangent is less than 0.0046 all the way up to 2.184GHz.

A SAR measurement was performed to see if the measured SAR was within +/- 8% from the target SAR indicated on the dipole certification sheet. The test was conducted on the same days as the measurement of the DUT. Recommended limits for maximum permittivity, minimum conductivity are shown in the table below. These come from the Federal Communication Commission, OET Bulletin 65 Supplement C 01-01. The obtained results from the system accuracy verification are displayed in the table below. The distributions of SAR compare well with those of the reference measurements (see Appendix 1). The issue stimulant depth was verified to be 15.0cm ±0.5cm. SAR values are normalized to 1W forward power delivered to the dipole.

f (MHz)	Description	SAR (W/kg), 1gram	Dielectric Parameters		Temp (°C)
			e_r	s (S/m)	
800	**Measured,** 02/19/2002	12.03	41.50	0.96	20.92
	Recommended Limits	11.40	40.30	0.95	N/A
1800	**Measured,** 02/16/2002	40.87	38.50	1.37	20.90
	Recommended Limits	38.60	40.20	1.38	N/A
1800	**Measured,** 02/20/2002	40.32	38.40	1.38	22.40
	Recommended Limits	38.60	40.20	1.38	N/A

The depth of the tissue simulate was measured in the SAM head phantom. The depth measurement was (15cm +/- 0.5cm) before the tests were performed.

Look at the below figures:

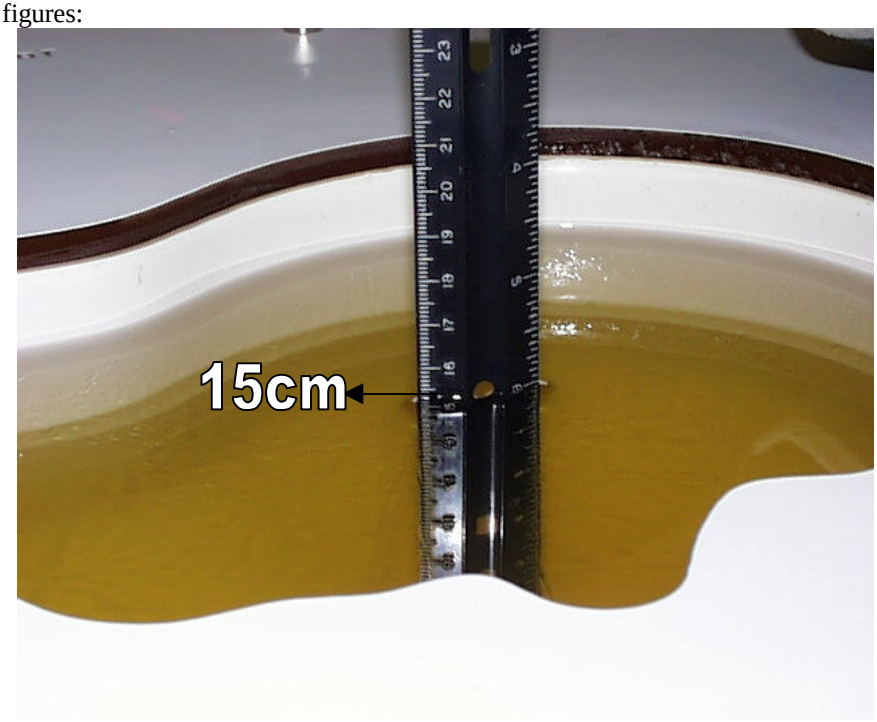


Figure 1. Location of Tissue Simulate Depth Measurement Location in Phantom Head

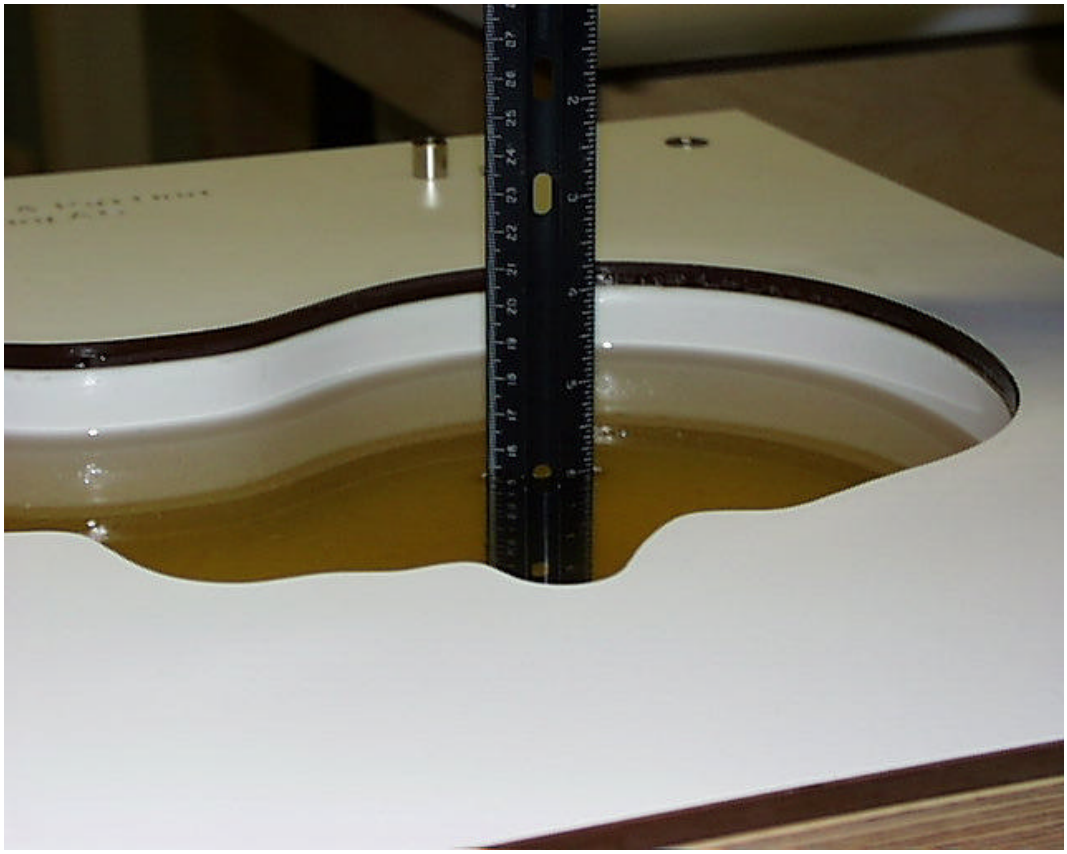


Figure 2. Location of Tissue Simulate Depth Measurement Location in Phantom Head

6. Test Results

The test sample was operated in a test mode that allows control of the transmitter without the need to place actual phone calls. For the purposes of this test the unit is commanded to test mode and manually set to the proper channel, transmitter power level and transmit mode of operation. The phone was then placed in the SAR measurement system with a fully charged battery. The phone was tested in the configurations stipulated in OET Bulletin 65 Supplement C 01-01. The Cellular Phone FCC ID IHDT56CA1 has only one battery option:

SNN5570A – 3.6V Lithium Ion battery

6.1 Head Adjacent Test Results

The SAR results shown in tables 1 and 2 are maximum SAR values averaged over 1 gram of phantom tissue. Also shown are the measured conducted output powers and the temperature of the test facility during the test. The SAR measurements were performed using the SAM phantoms listed in section 3.1. The tissue stimulant depth was verified to be 15.0cm ±0.5cm at the center of the ear. The device holder used was the supplied SPEAG™ device holder. The measured dielectric constant of the material used is less than 3.3 and the loss tangent is less than 0.053 in the 800MHz cellular band.

A full data set output of test conditions with the highest SAR values from the Dasy™ measurement system is included as appendix 2 . The test conditions included are indicated as bold numbers in the following table. All other test conditions measured lower SAR values than those included.

f (MHz)	Description	Conducted Output Power (dBm)	Cheek/Touch Position SAR, 1g *Left Head (Cheek Touch)* *Ant Fixed* Measured (W/kg)	Drift (dB)	Extrapolated (W/kg)	Temp (°C)
Analog 800MHz	Channel 991	25.48	1.04	-0.15	1.08	21.1
	Channel 384	25.51	0.994	-0.07	1.01	22.3
	Channel 799	25.53	**1.33**	**-0.22**	**1.4**	**21.1**
Digital 800MHz	Channel 991	27.58				
	Channel 384	27.63	0.528	-0.05	0.53	21.2
	Channel 799	27.42				
Digital 1900MHz	Channel 2	27.06	1.26	0.22	1.26	20.9
	Channel 1001	27.04	1.19	0.29	1.19	20.9
	Channel 1998	27.02	1.22	-0.14	1.26	20.9

Table 1: SAR measurement results for the portable cellular telephone FCC ID IHDT56CA1 at highest possible output power. Measured against the left head (Cheek Touch).

f (MHz)	Description	Conducted Output Power (dBm)	15° Position SAR, 1g *Left Head (15° Position)* *Ant Fixed* Measured (W/kg)	Drift (dB)	Extrapolated (W/kg)	Temp (°C)
Analog 800MHz	Channel 991	25.48				
	Channel 384	25.51	0.695	0.1	0.70	22.30
	Channel 799	25.53				
Digital 800MHz	Channel 991	27.58				
	Channel 384	27.63	0.33	-0.17	0.34	21.60
	Channel 799	27.42				
Digital 1900MHz	Channel 2	27.06	**1.36**	**-0.37**	**1.48**	**20.90**
	Channel 1001	27.04	1.18	0.16	1.18	20.90
	Channel 1998	27.02	1.08	0.16	1.08	20.90

Table 2: SAR measurement results for the portable cellular telephone FCC ID IHDT56CA1 at highest possible output power. Measured against the left head (15° Position).

			Cheek/Touch Position SAR, 1g			
			Right Head (Cheek Touch)			
			Ant Fixed			
f (MHz)	Description	Conducted Output Power (dBm)	Measured (W/kg)	Drift (dB)	Extrapolated (W/kg)	Temp (°C)
Analog 800MHz	**Channel 991**	25.48				
	Channel 384	25.51	0.879	-0.20	0.92	22.30
	Channel 799	25.53				
Digital 800MHz	**Channel 991**	27.58				
	Channel 384	27.63	0.496	0.02	0.50	21.20
	Channel 799	27.42				
Digital 1900MHz	**Channel 2**	27.06	**1.30**	**0.23**	**1.30**	**20.90**
	Channel 1001	27.04	1.23	0.21	1.23	20.90
	Channel 1998	27.02	1.25	0.35	1.25	20.90

Table 3: SAR measurement results for the portable cellular telephone FCC ID IHDT56CA1 at highest possible output power. Measured against the Right head (Cheek Touch).

			15° Position SAR, 1g			
			Right Head (15° Position)			
			Ant Fixed			
f (MHz)	Description	Conducted Output Power (dBm)	Measured (W/kg)	Drift (dB)	Extrapolated (W/kg)	Temp (°C)
Analog 800MHz	**Channel 991**	25.48				
	Channel 384	25.51	0.624	-0.31	0.67	21.40
	Channel 799	25.53				
Digital 800MHz	**Channel 991**	27.58				
	Channel 384	27.63	0.296	-0.18	0.31	21.20
	Channel 799	27.42				
Digital 1900MHz	**Channel 2**	27.06	0.587	0.03	0.59	21.40
	Channel 1001	27.04	**0.992**	**-0.16**	**1.03**	**20.40**
	Channel 1998	27.02	0.883	-0.19	0.92	20.40

Table 4: SAR measurement results for the portable cellular telephone FCC ID IHDT56CA1 at highest possible output power. Measured against the Right head (15° Position).

			Cheek Touch SAR, 1g			
			Rubber Boot Against the Head (Cheek Touch)			
f		Conducted Output Power (dBm)	*Ant Fixed*			
(MHz)	Description		Measured (W/kg)	Drift (dB)	Extrapolated (W/kg)	Temp (°C)
Analog 800MHz	Channel 991	25.48	1.20	0.03	1.20	21.10
	Channel 384	25.51	0.998	-0.07	1.01	21.10
	Channel 799	25.53	1.35	-0.13	1.35	20.90
Digital 800MHz	Channel 991	27.58				
	Channel 384	27.63	0.532	0.04	0.53	21.20
	Channel 799	27.42				
Digital 1900MHz	Channel 2	27.06	1.20	-0.29	1.28	20.90
	Channel 1001	27.04	1.19	-0.28	1.27	20.90
	Channel 1998	27.02	1.22	-0.21	1.28	20.90

Table 5: SAR measurement results for the portable cellular telephone FCC ID IHDT56CA1 at highest possible output power. Measured against the head (Cheek Touch).

6.2 Body-Worn Test Results

The SAR results shown in table 6 are maximum SAR values averaged over 1 gram of phantom tissue. Also shown are the measured conducted output powers and the temperature of the test facility during the test. The same "flat" phantom used for the system accuracy verification in section 5 was used for the body-worn tests. The issue stimulant depth was verified to be 15.0cm ±0.5cm. The same device holder described in section 6.1 was used for positioning the phone. The portable radio was tested with a headset connected to the device for all body-worn SAR measurements.

A full data set output of two test conditions with the highest SAR values from the Dasy™ measurement system is included as appendix 2 . The test conditions included are indicated as bold numbers in the following table. All other test conditions measured lower SAR values than those included.

			Body Worn SAR, 1g			
			Belt Clip (Body Worn)			
f		Conducted Output Power (dBm)	*Ant Fixed*			
(MHz)	Description		Measured (W/kg)	Drift (dB)	Extrapolated (W/kg)	Temp (°C)
Analog 800MHz	Channel 991	25.48	0.588	0.02	0.59	21.10
	Channel 384	25.51	0.453	-0.09	0.46	21.10
	Channel 799	25.53	**0.726**	**-0.15**	**0.73**	**21.00**
Digital 800MHz	Channel 991	27.58	0.210	-0.15	0.22	21.70
	Channel 384	27.63	0.213	0.02	0.21	21.70
	Channel 799	27.42	0.231	0.04	0.23	21.70

Table 6: SAR measurement results for the portable cellular telephone FCC ID IHDT56CA1 at highest possible output power. Measured against the body.

			Body Worn SAR, 1g			
			Leather Pouch with Belt Clip (Body Worn)			
			Ant Fixed			
f **(MHz)**	**Description**	**Conducted Output Power (dBm)**	**Measured (W/kg)**	**Drift (dB)**	**Extrapolated (W/kg)**	**Temp (°C)**
Digital 1900MHz	**Channel 2**	27.06	0354	-0.06	0.36	22.70
	Channel 1001	27.04	0.315	-0.10	0.32	22.70
	Channel 1998	27.02	0.319	0.12	0.32	22.50

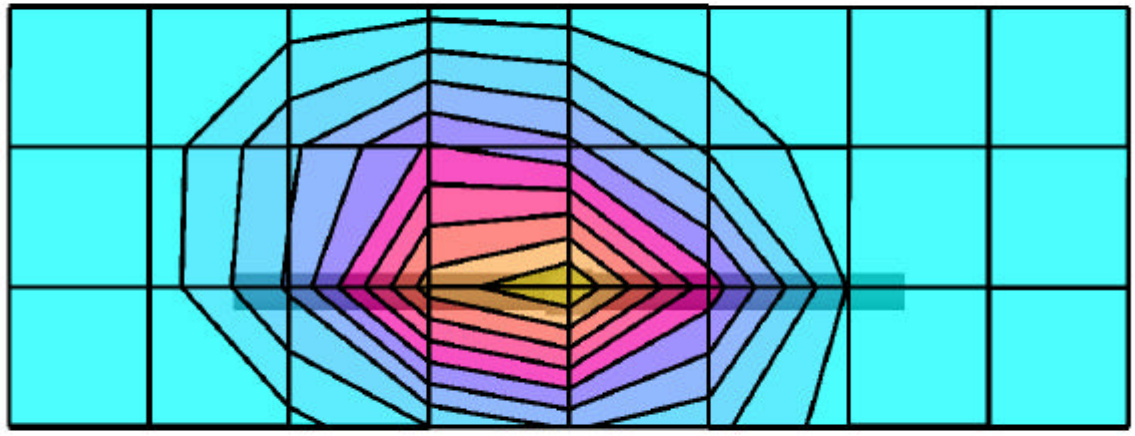
Table 7: SAR measurement results for the portable cellular telephone FCC ID IHDT56CA1 at highest possible output power. Measured against the body.

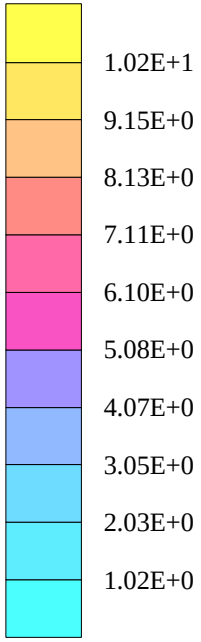
Appendix 1

SAR distribution comparison for the system accuracy verification

Dipole 1800 MHz

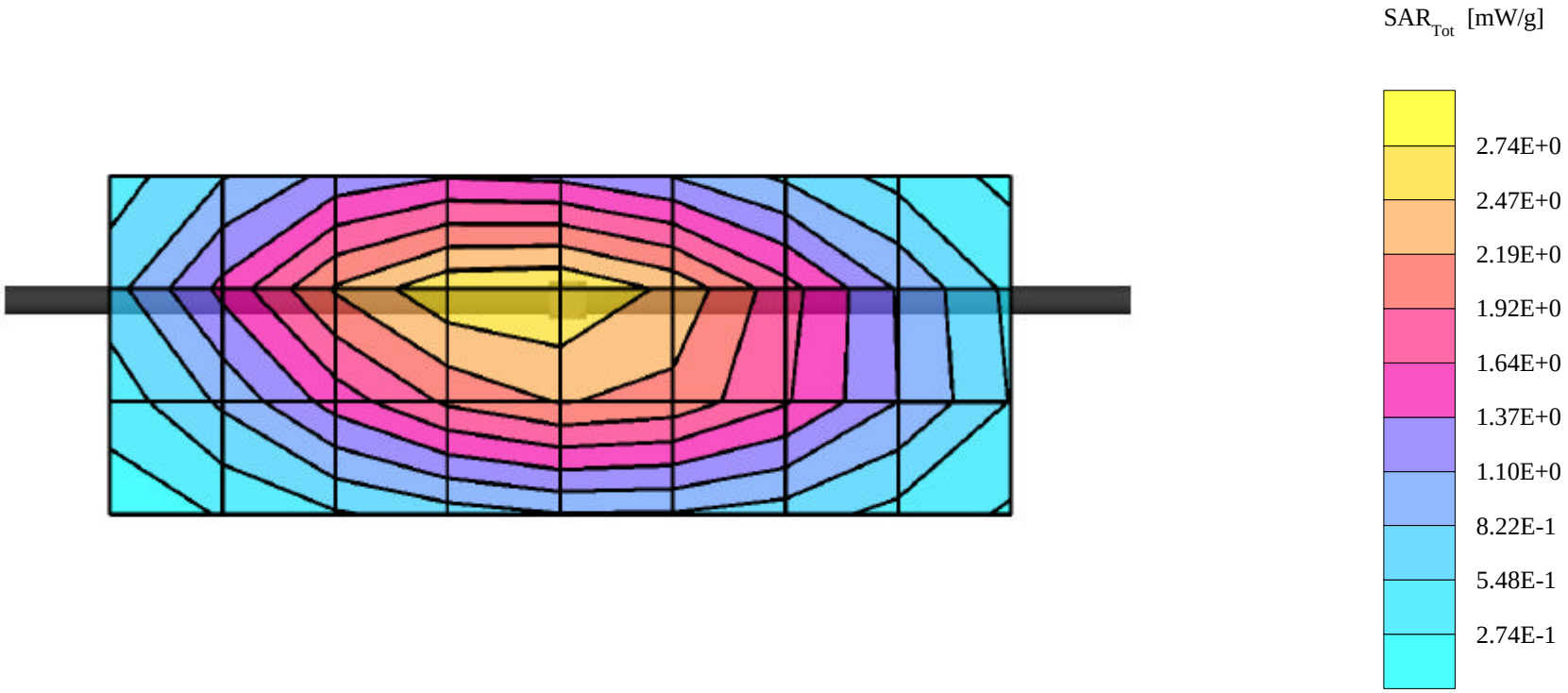
1800 MHz Dipole Validation / Dipole Sn# 281 / Forward Power = 252 / Simulant Temp at time of measurement = 20.9
R7 SAM Phantom Glycol (rev. 3) 2Jan02 Phantom; Flat Section; Position: (90°,90°); Frequency: 1800 MHz
Probe: ET3DV6 - SN1503 - Validation; ConvF(5.24,5.24,5.24); Crest factor: 1.0; 1800 MHz VALIDATION: σ = 1.37 mho/m ε_r = 38.5 ρ = 1.00 g/cm^3
Cubes (2): SAR (1g): 10.3 mW/g ± 0.00 dB, SAR (10g): 5.43 mW/g ± 0.01 dB, (Worst-case extrapolation)
Coarse: Dx = 15.0, Dy = 15.0, Dz = 10.0
Penetration depth: 8.4 (8.1, 9.1) [mm]
Powerdrift: 0.05 dB





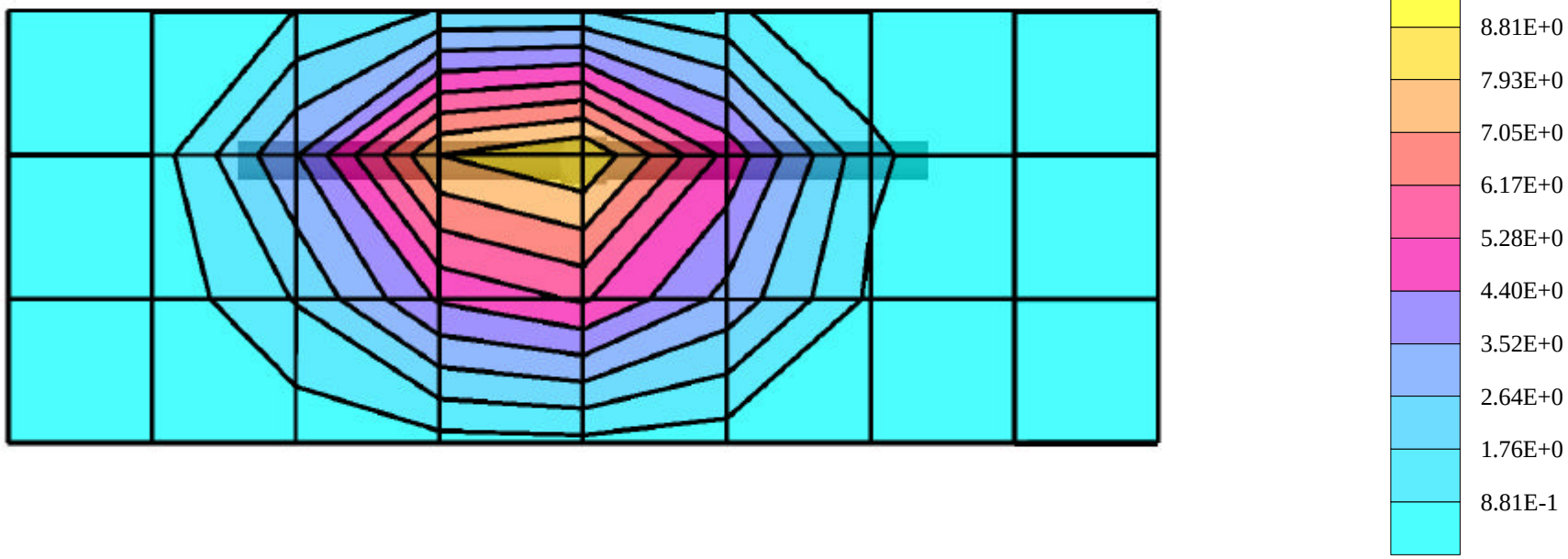
Dipole 900 MHz

900MHz Dipole Validation / Dipole Sn# 80 / Forward Power = 251mW / Simulant Temp at time of measurement = 20.92°C
R1 SAM Phantom (rev. 3) 2Jan02 SUGAR Phantom; Flat Section; Position: (90°,90°); Frequency: 900 MHz
Probe: ET3DV6 - SN1523 - VALIDATION ; ConvF(6.40,6.40,6.40); Crest factor: 1.0; 900 MHz VALIDATION: σ = 0.96 mho/m ε_r = 41.5 ρ = 1.00 g/cm^3
Cubes (2): SAR (1g): 3.02 mW/g ± 0.17 dB, SAR (10g): 1.92 mW/g ± 0.18 dB, (Worst-case extrapolation)
Coarse: Dx = 15.0, Dy = 15.0, Dz = 10.0
Penetration depth: 11.7 (10.8, 12.9) [mm]
Powerdrift: 0.11 dB



Dipole 1800 MHz

1800 MHz Dipole Validation / Dipole Sn# 277 / Forward Power = 248 / Simulant Temp at time of measurement = 22.4
R1 SAM Phantom (rev. 3) 2Jan02 Glycol Phantom; Flat Section; Position: (90°,90°); Frequency: 1800 MHz
Probe: ET3DV6 - SN1523 - VALIDATION ; ConvF(5.20,5.20,5.20); Crest factor: 1.0; 1800 MHz VALIDATION: σ = 1.38 mho/m ε_r = 38.4 ρ = 1.00 g/cm^3
Cubes (2): SAR (1g): 10.00 mW/g ± 0.16 dB, SAR (10g): 5.24 mW/g ± 0.12 dB, (Worst-case extrapolation)
Coarse: Dx = 15.0, Dy = 15.0, Dz = 10.0
Penetration depth: 8.5 (8.2, 9.3) [mm]
Powerdrift: 0.01 dB

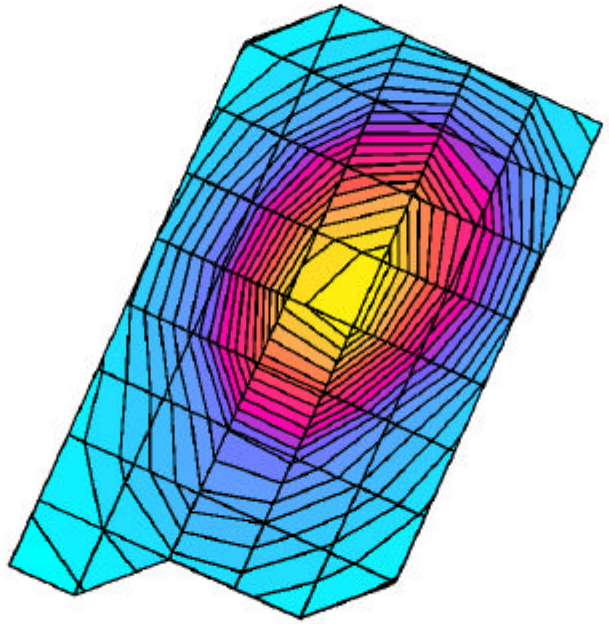


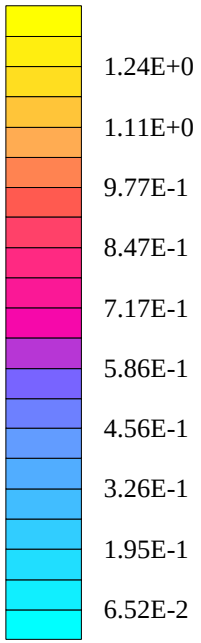
Appendix 2

SAR distribution plots for Phantom Head Adjacent Use

SN# 021502526

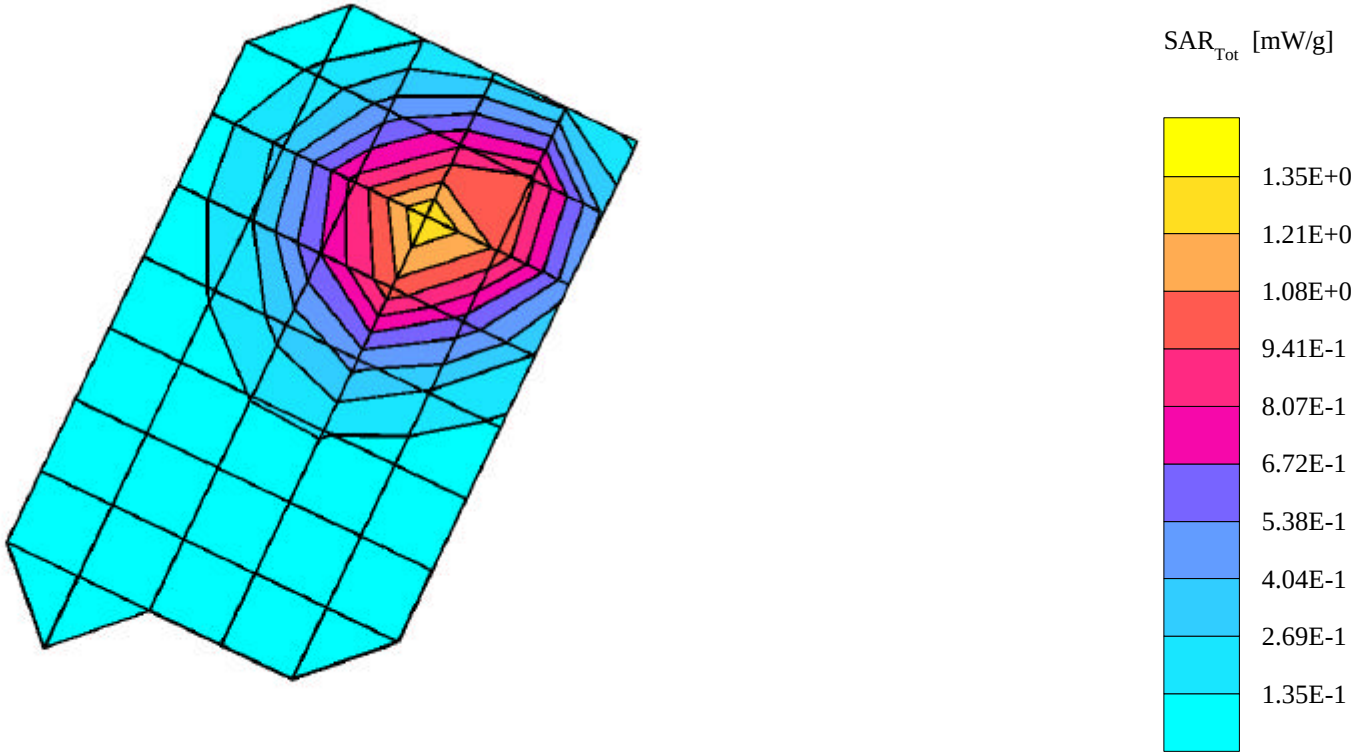
Ch# 799/ Pwr Step: OTA / Antenna Position: Fixed / Simulant temperature after Test = 21.1°C
R1 SAM Phantom (rev. 3) 2Jan02 SUGAR Phantom; Left Hand Section; Position: (90°,0°); Frequency: 848 MHz
Probe: ET3DV6 - SN1523 - IEEE Head; ConvF(6.50,6.50,6.50); Crest factor: 1.0; 835 MHz Head & Body: σ = 0.91 mho/m ε_r = 42.2 ρ = 1.00 g/cm^3
Cube 7x7x7: SAR (1g): 1.33 mW/g, SAR (10g): 0.918 mW/g, (Worst-case extrapolation)
Coarse: Dx = 15.0, Dy = 15.0, Dz = 15.0
Penetration depth: 15.8 (15.0, 16.6) [mm]
Powerdrift: -0.22 dB





SN# 021502526

Ch# 2 / Pwr Step: 2 / Antenna Position: Fixed / Simulant temperature after Test = 20.9 °C
R1 SAM Phantom (rev. 3) 2Jan02 Glycol Phantom; Left Hand Section; Position: (90°,180°); Frequency: 1851 MHz
Probe: ET3DV6 - SN1523 - IEEE Head; ConvF(5.20,5.20,5.20); Crest factor: 3.0; 1880 MHz Head & Body: σ = 1.47 mho/m ε_r = 38.2 ρ = 1.00 g/cm^3
Cube 7x7x7: SAR (1g): 1.36 mW/g, SAR (10g): 0.796 mW/g, (Worst-case extrapolation)
Coarse: Dx = 15.0, Dy = 15.0, Dz = 15.0
Penetration depth: 10.2 (9.9, 10.6) [mm]
Powerdrift: -0.37 dB



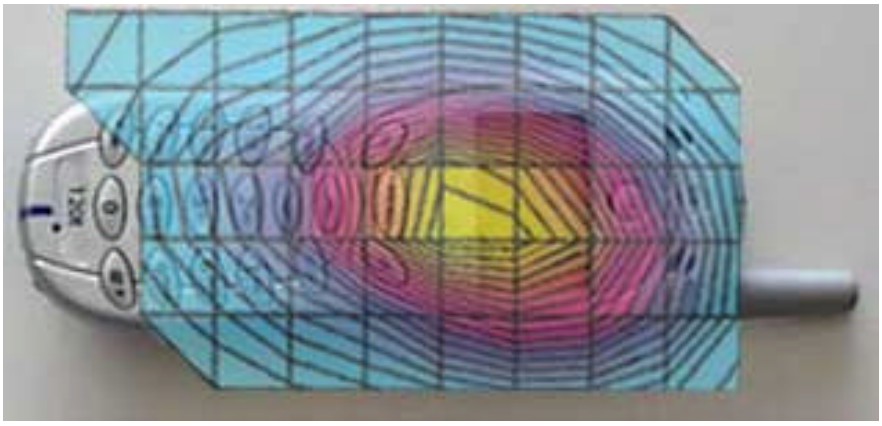


Figure 3. Typical 800MHz Head Adjacent Contour Overlaid on Phone with Antenna Fixed (Cheek Touch)

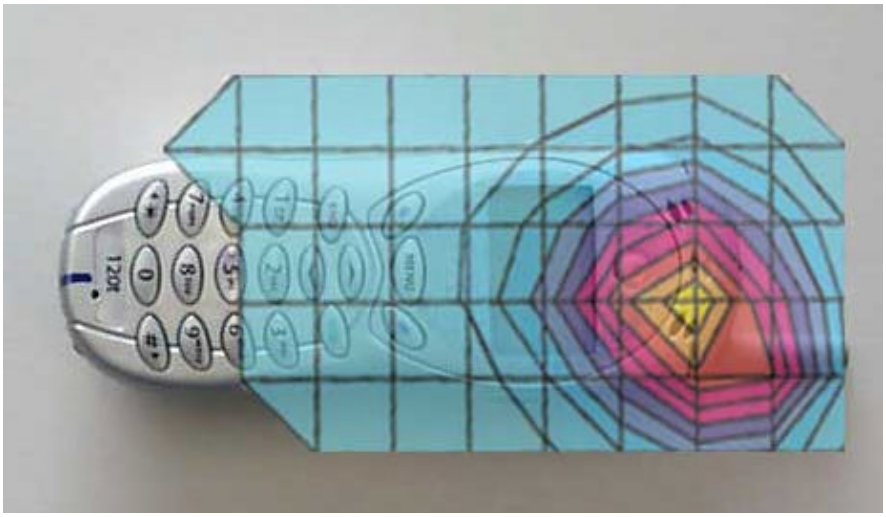
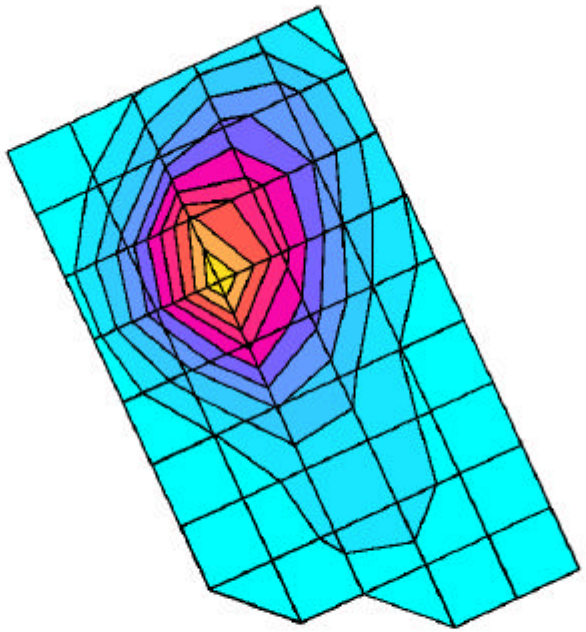
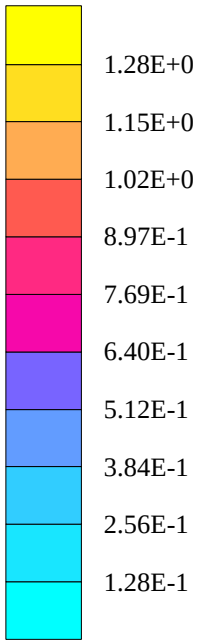


Figure 4. Typical 1900 MHz Head Adjacent Contour Overlaid on Phone with Antenna Fixed (15° Tilt)

SN# 021502526

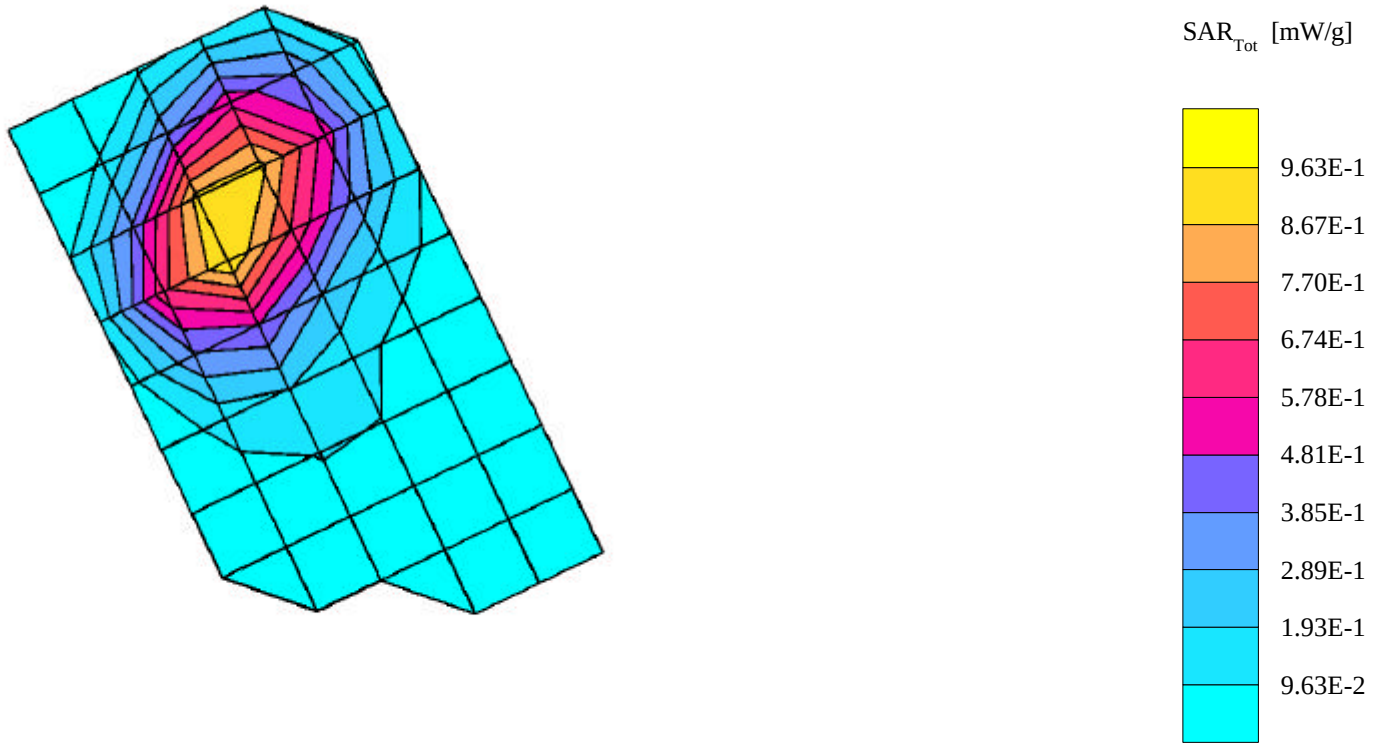
Ch# 1998 / Pwr Step: 2 / Antenna Position: Fixed / Simulant temperature after Test = 20.9 °C
R1 SAM Phantom (rev. 3) 2Jan02 Glycol Phantom; Right Hand Section; Position: (90°,180°); Frequency: 1851 MHz
Probe: ET3DV6 - SN1523 - IEEE Head; ConvF(5.20,5.20,5.20); Crest factor: 3.0; 1880 MHz Head & Body: σ = 1.47 mho/m ε_r = 38.2 ρ = 1.00 g/cm^3
Cube 7x7x7: SAR (1g): 1.30 mW/g, SAR (10g): 0.747 mW/g, (Worst-case extrapolation)
Coarse: Dx = 15.0, Dy = 15.0, Dz = 15.0
Penetration depth: 10.5 (10.1, 11.0) [mm]
Powerdrift: 0.23 dB





SN # 021502526

Ch# 1998 / Pwr Step: OTA / Antenna Position: Fixed / Simulant temperature after test = 21.6 °C
R7 SAM Phantom Glycol (rev. 3) 2Jan02 Phantom; R7 Monica Right Hand Section; Position: (90°,180°); Frequency: 1880 MHz
Probe: ET3DV6 - SN1503 - IEEE Head; ConvF(5.24,5.24,5.24); Crest factor: 3.0; 1880 MHz Head & Body: σ = 1.45 mho/m ε_r = 38.1 ρ = 1.00 g/cm^3
Cube 7x7x7: SAR (1g): 0.992 mW/g, SAR (10g): 0.590 mW/g, (Worst-case extrapolation)
Coarse: Dx = 15.0, Dy = 15.0, Dz = 15.0
Penetration depth: 10.5 (10.4, 10.6) [mm]
Powerdrift: -0.16 dB



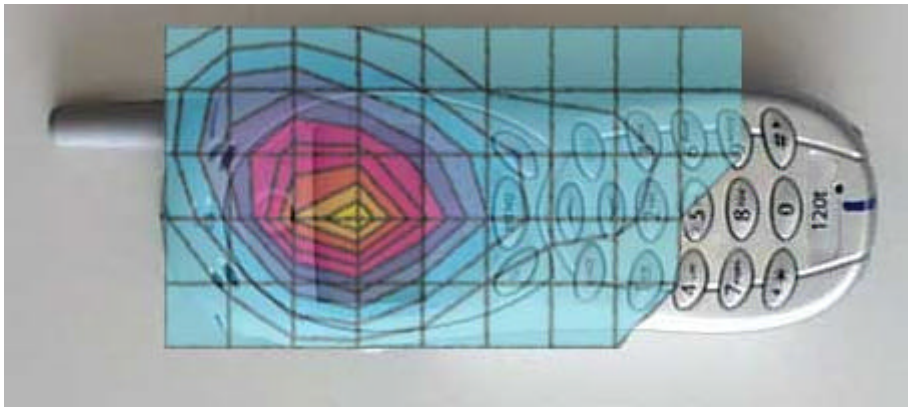


Figure 5. Typical 1900 MHz Head Adjacent Contour Overlaid on Phone with Antenna Fixed (Cheek Touch)

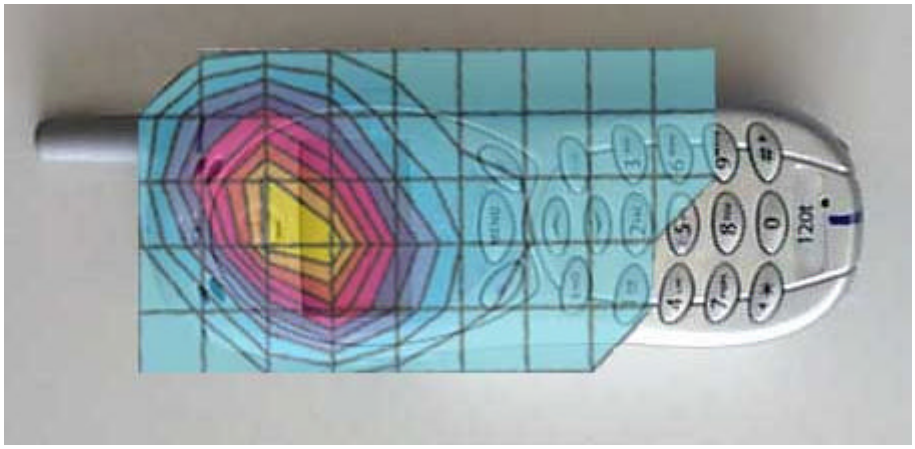


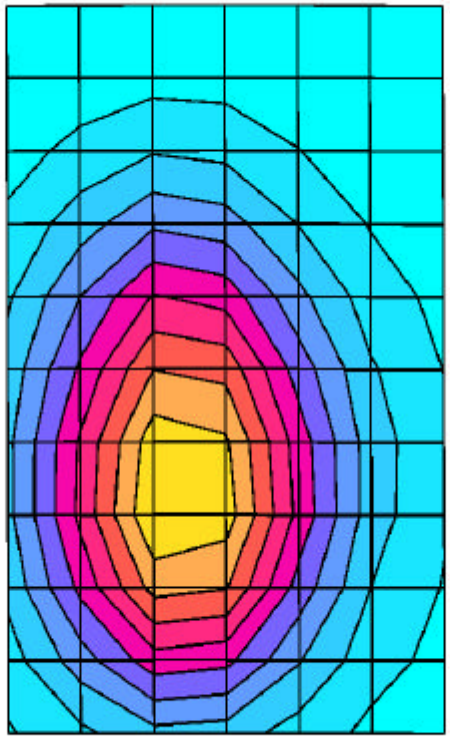
Figure 6. Typical 1900 MHz Head Adjacent Contour Overlaid on Phone with Antenna Fixed (15° Tilt)

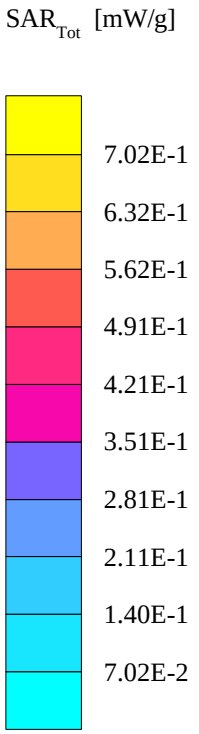
Appendix 3

SAR distribution plots for Body Worn Configuration

SN# 021502526

Ch#799 / Pwr Step: 02 / Antenna Position:fixed / Simulant tesmperature after test =21.0°C
Amy Twin Phantom 2.3 Phantom; Section2 Section; Position: (0°,0°); Frequency: 849 MHz
Probe: ET3DV6 - SN1523 - FCC Body; ConvF(6.30,6.30,6.30); Crest factor: 1.0; 835 MHz Head & Body: σ = 0.97 mho/m ε_r = 54.4 ρ = 1.00 g/cm^3
Cube 7x7x7: SAR (1g): 0.726 mW/g, SAR (10g): 0.511 mW/g, (Worst-case extrapolation)
Coarse: Dx = 15.0, Dy = 15.0, Dz = 10.0
Penetration depth: 15.7 (14.2, 17.4) [mm]
Powerdrift: -0.15 dB





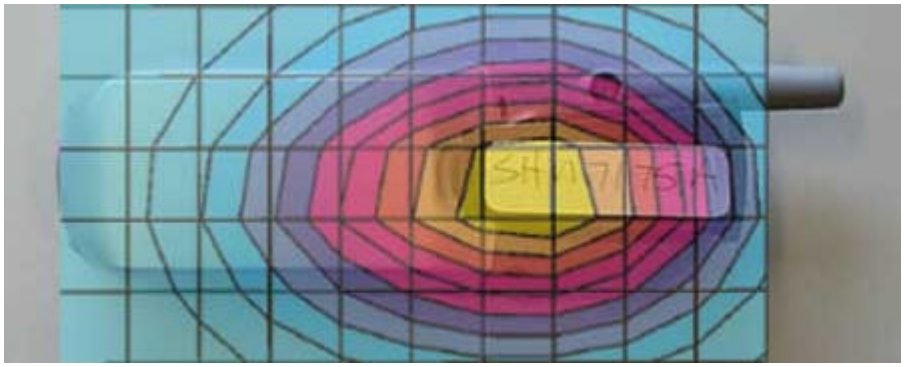


Figure 7. Typical 800 MHz Body-Worn Contour Overlaid on Phone with Antenna Extended

Appendix 4

Probe Calibration Certificate

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:	**1522**
Place of Calibration:	**Zurich**
Date of Calibration:	**May 11, 2001**
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:	Poljanić Katja
Approved by:	

Engineering AG

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

Probe ET3DV6

SN:1522

Manufactured:	March 21, 2000
Last calibration:	April 7, 2000
Recalibrated:	May 11, 2001

Calibrated for System DASY3

DASY3 - Parameters of Probe: ET3DV6 SN:1522

Sensitivity in Free Space

NormX	**1.68** $\mu V/(V/m)^2$
NormY	**1.64** $\mu V/(V/m)^2$
NormZ	**1.71** $\mu V/(V/m)^2$

Diode Compression

DCP X	**99** mV
DCP Y	**99** mV
DCP Z	**99** mV

Sensitivity in Tissue Simulating Liquid

Head **450 MHz** ε_r **= 43.5 ± 5%** σ **= 0.87 ± 10% mho/m**

ConvF X	**6.81**	extrapolated	Boundary effect:	
ConvF Y	**6.81**	extrapolated	Alpha	**0.64**
ConvF Z	**6.81**	extrapolated	Depth	**1.92**

Head **900 MHz** ε_r **= 42 ± 5%** σ **= 0.97 ± 10% mho/m**

ConvF X	**6.31**	± 7% (k=2)	Boundary effect:	
ConvF Y	**6.31**	± 7% (k=2)	Alpha	**0.64**
ConvF Z	**6.31**	± 7% (k=2)	Depth	**1.95**

Head **1500 MHz** ε_r **= 40.4 ± 5%** σ **= 1.23 ± 10% mho/m**

ConvF X	**5.65**	interpolated	Boundary effect:	
ConvF Y	**5.65**	interpolated	Alpha	**0.64**
ConvF Z	**5.65**	interpolated	Depth	**1.98**

Head **1800 MHz** ε_r **= 40 ± 5%** σ **= 1.40 ± 10% mho/m**

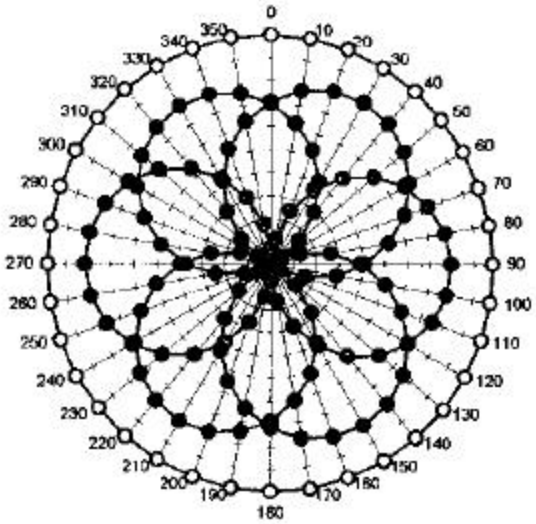
ConvF X	**5.32**	± 7% (k=2)	Boundary effect:	
ConvF Y	**5.32**	± 7% (k=2)	Alpha	**0.64**
ConvF Z	**5.32**	± 7% (k=2)	Depth	**1.99**

Sensor Offset

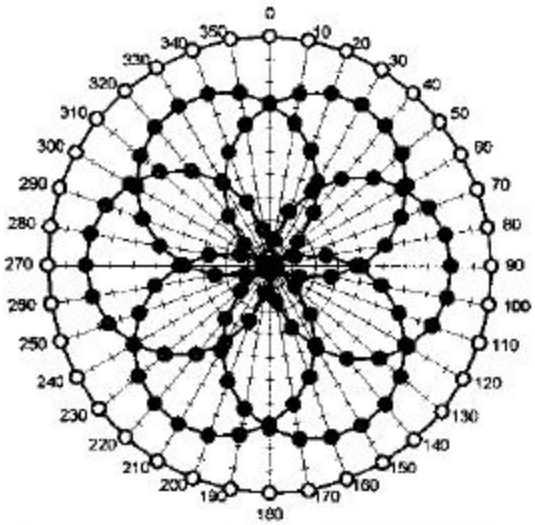
Probe Tip to Sensor Center	**2.7**	mm
Optical Surface Detection	**1.3 ± 0.2**	mm

Receiving Pattern (ϕ), θ = 0°

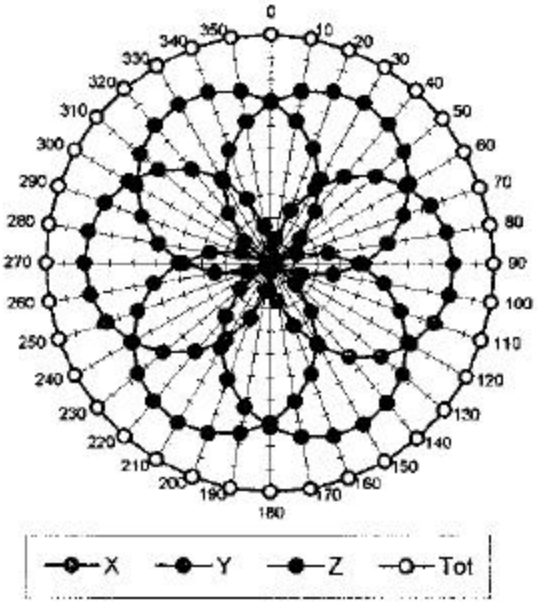
f = 30 MHz, TEM cell ifi110



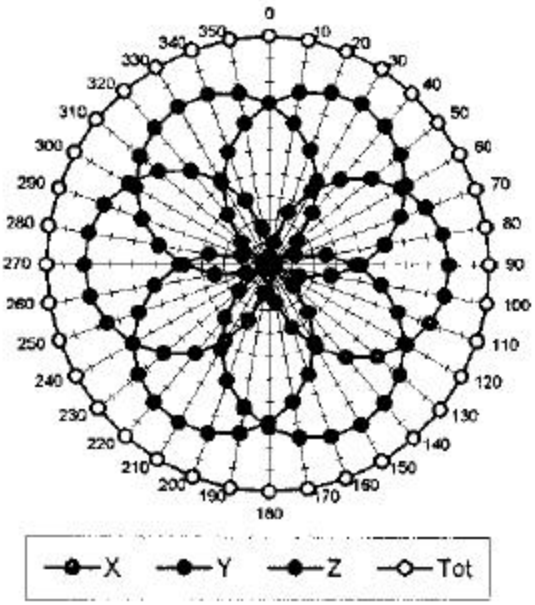
f = 100 MHz, TEM cell ifi110

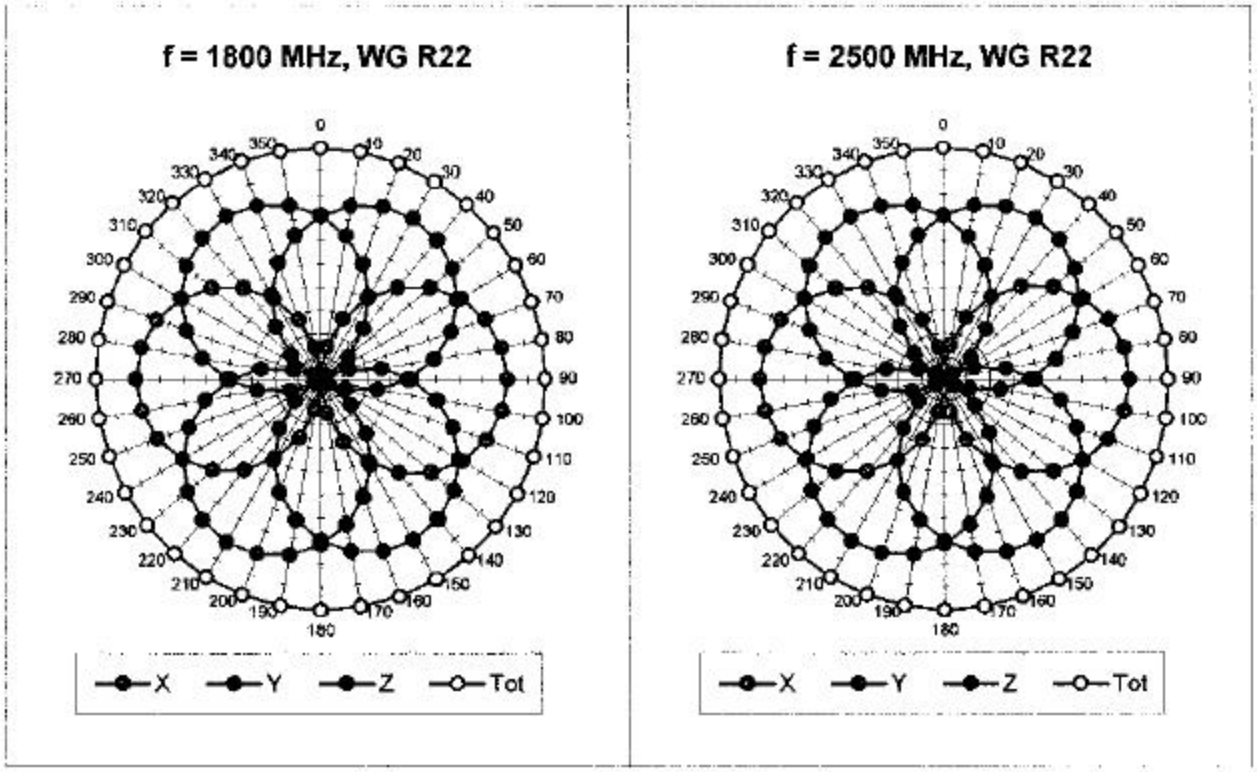


f = 300 MHz, TEM cell ifi110

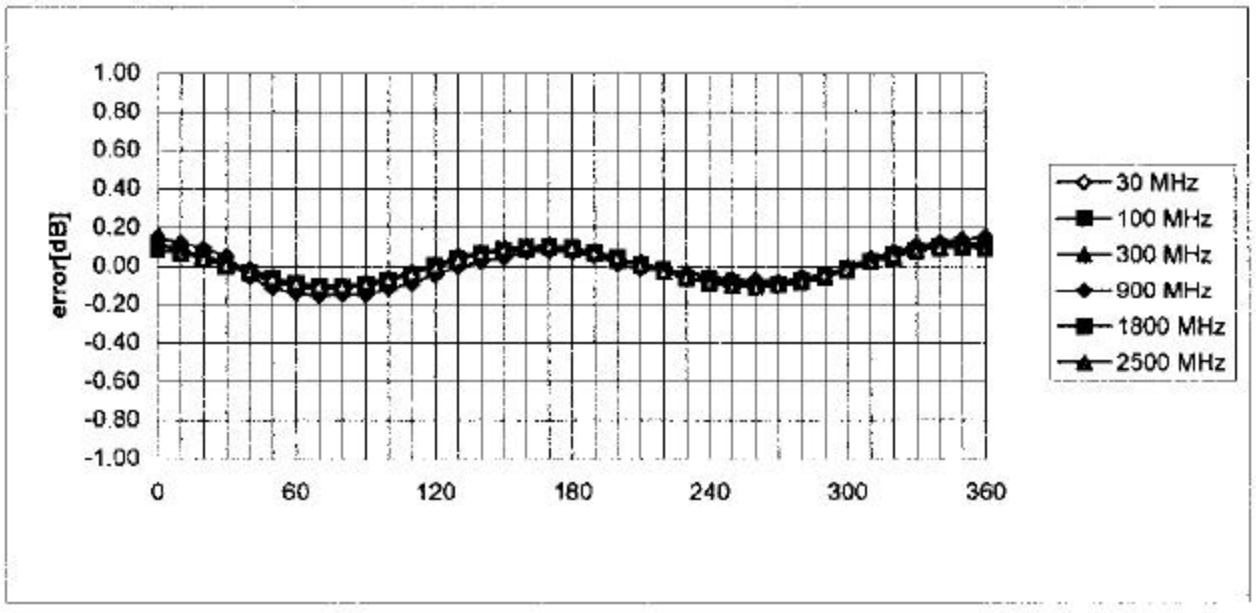


f = 900 MHz, TEM cell ifi110



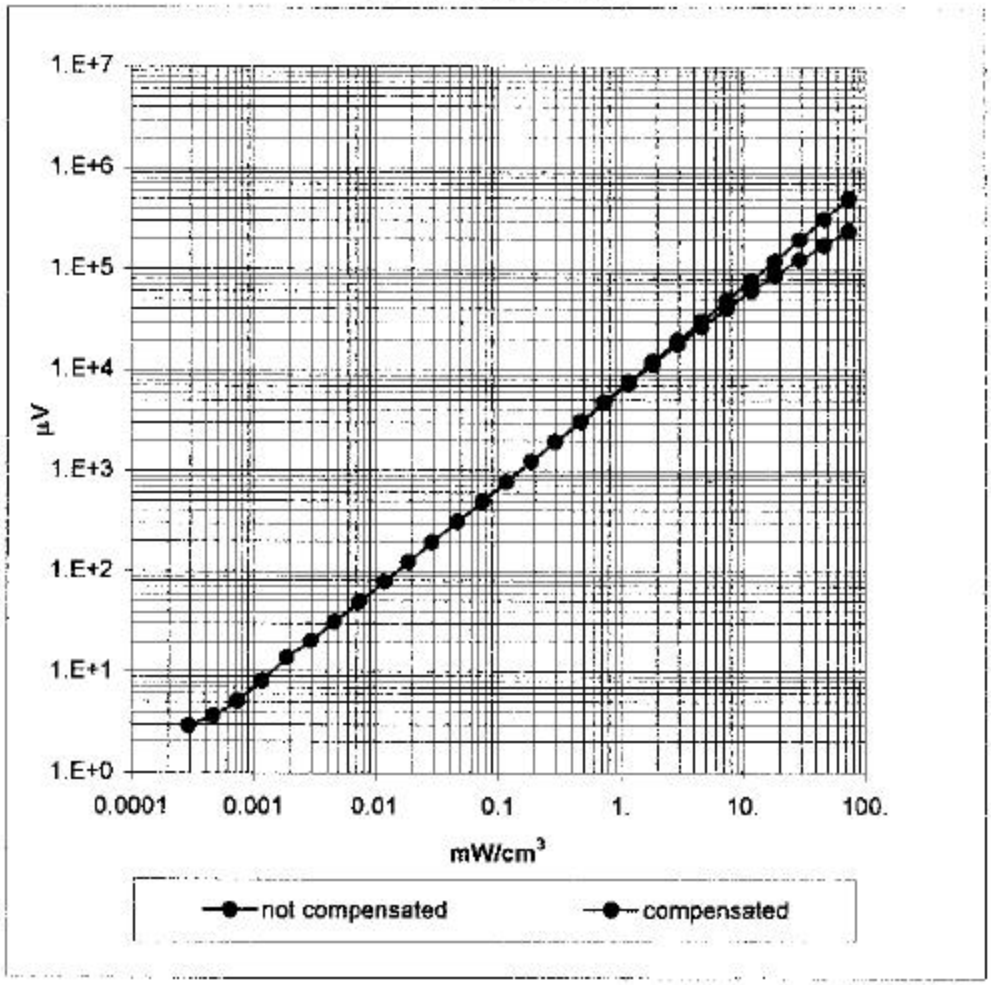


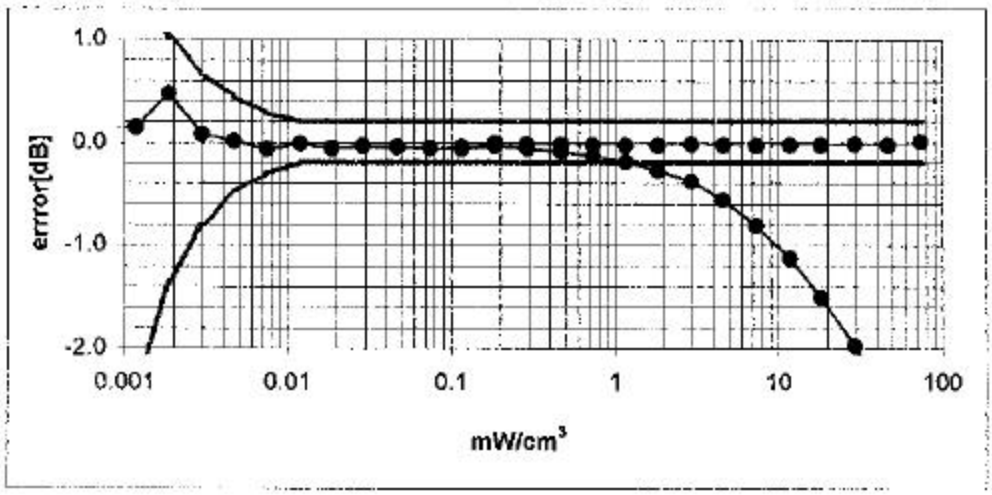
Isotropy Error (ϕ), θ = 0°



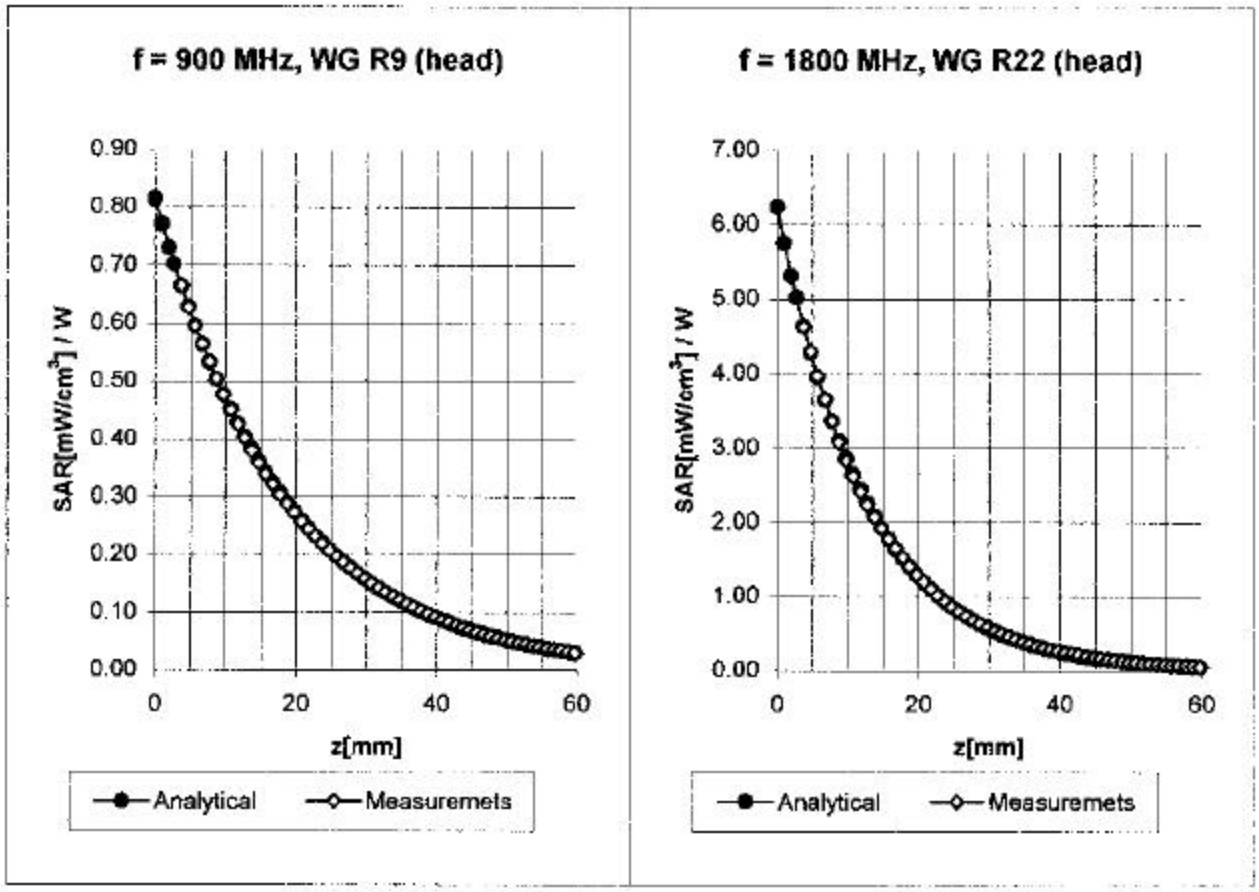
Dynamic Range f(SAR_{brain})

(TEM-Cell:ifi110)





Conversion Factor Assessment



Head **900 MHz** $\varepsilon_r = 42 \pm 5\%$ $\sigma = 0.97 \pm 10\%$ mho/m

ConvF X	**6.31** ± 7% (k=2)	Boundary effect:	
ConvF Y	**6.31** ± 7% (k=2)	Alpha	**0.64**
ConvF Z	**6.31** ± 7% (k=2)	Depth	**1.95**

Head **1800 MHz** $\varepsilon_r = 40 \pm 5\%$ $\sigma = 1.40 \pm 10\%$ mho/m

ConvF X	**5.32** ± 7% (k=2)	Boundary effect:	
ConvF Y	**5.32** ± 7% (k=2)	Alpha	**0.64**
ConvF Z	**5.32** ± 7% (k=2)	Depth	**1.99**

Appendix 5

Photographs of the device under test

Figure 8. Front of the Phone (Antenna Fixed)

Figure 9. Front of the Phone with rubber boot (Antenna Fixed)

Figure 10. Distance of the Antenna (Fixed) to the Base of the Flat Phantom

Figure 11. Distance of the Antenna (Fixed) to the Base of the Flat Phantom

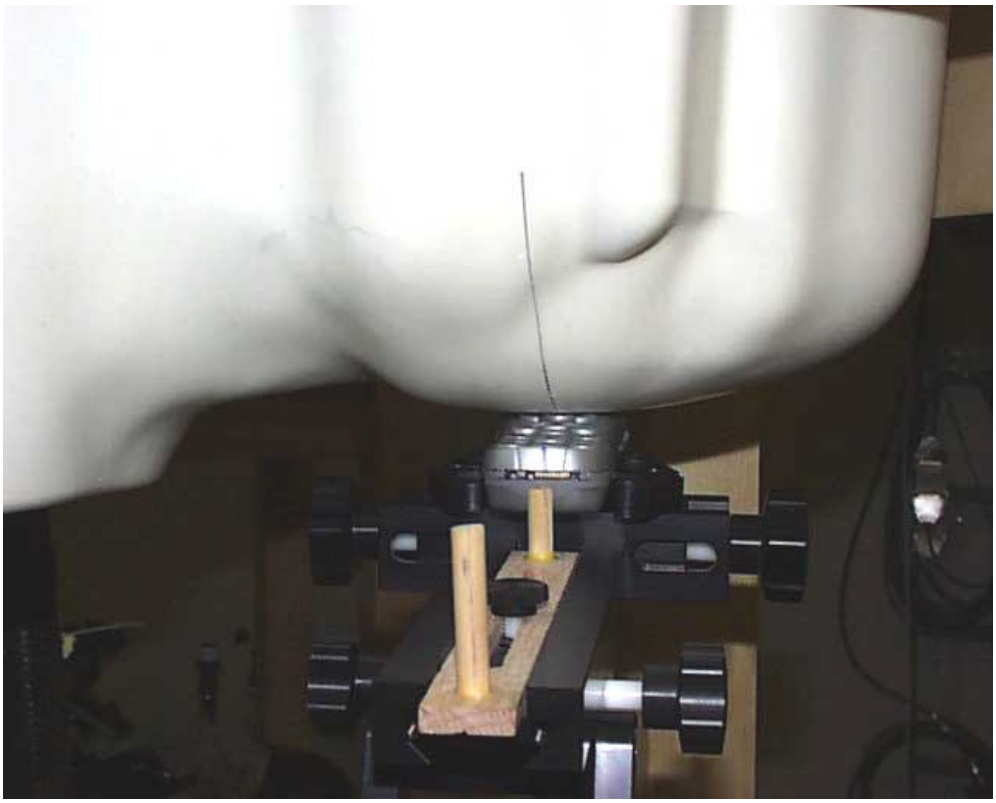


Figure 12. Front View of Phone Placed Against Head with Antenna Fixed

Figure 13. Back View of Phone Placed Against Head with Antenna Fixed

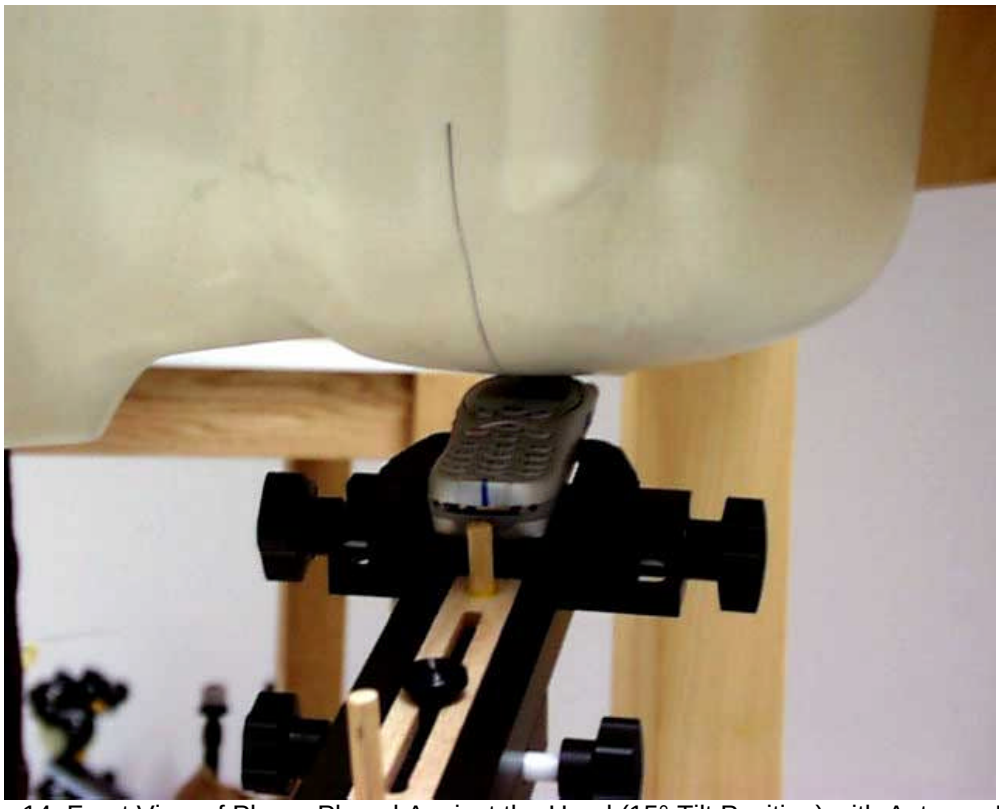


Figure 14. Front View of Phone Placed Against the Head (15° Tilt Position) with Antenna Fixed

Figure 15. Back View of Phone Placed Against the Head (15° Tilt Position) with Antenna Fixed

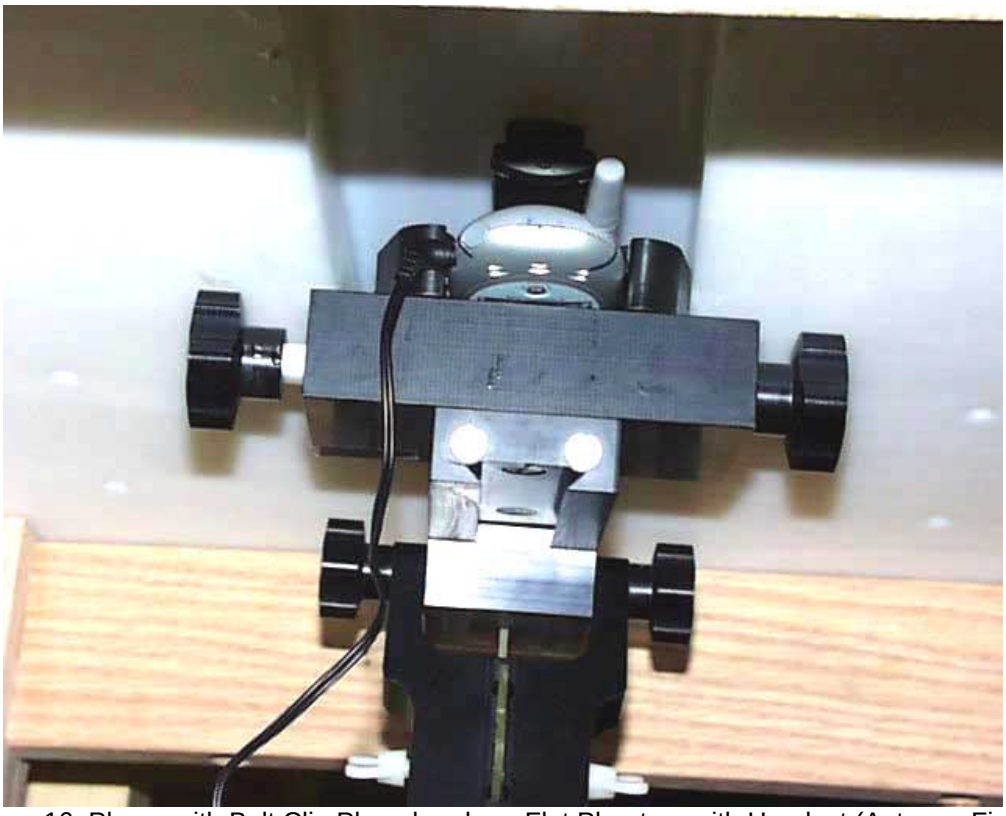


Figure 16. Phone with Belt Clip Placed under a Flat Phantom with Headset (Antenna Fixed)

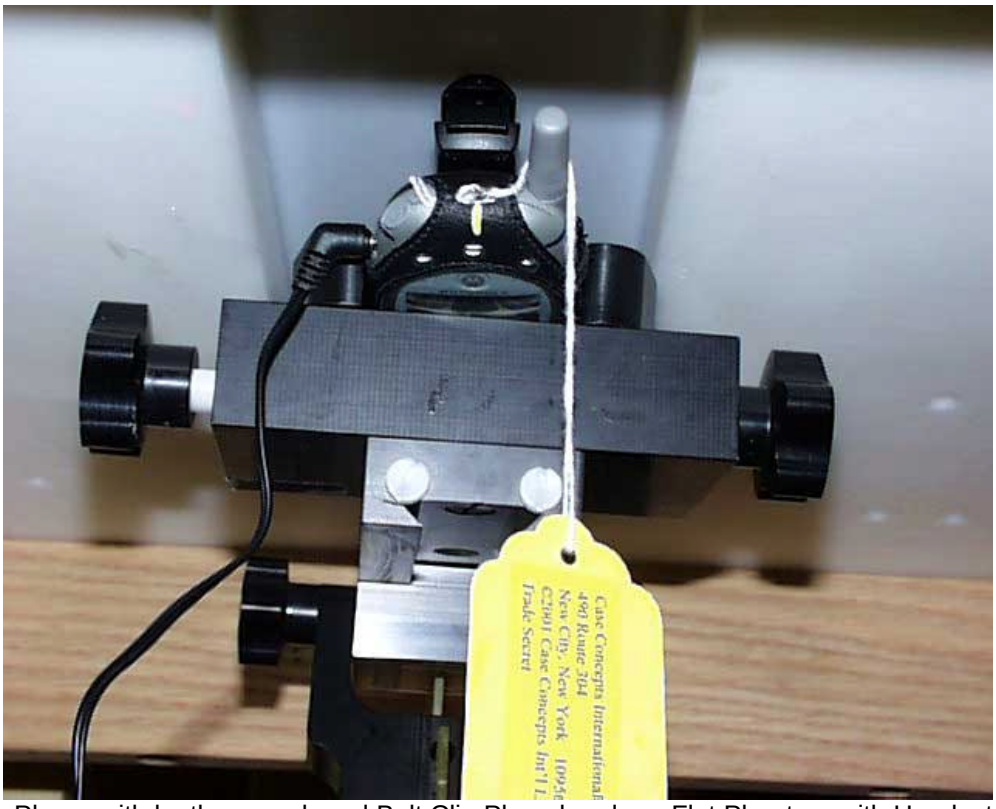


Figure 17. Phone with leather pouch and Belt Clip Placed under a Flat Phantom with Headset (Antenna Fixed)