Exhibit 11: SAR Test Report IHDT56CB1

Date of test:	06/27/2002-07/02/2002
Date of Report:	07/24/2002
Laboratory:	Motorola Personal Communications Sector Product Safety & Compliance Laboratory 2001 N. Division Room: AS228 Harvard, Illinois 60033
Test Responsible:	Firass Badaruzzaman SAR 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 IHDT56CB1 to which this declaration relates, is in conformity with the appropriate General Population/Uncontrolled 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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The results and statements contained herein relate only to the items tested. The names of individuals involved may be mentioned only in connection with the statements or results from this report.

Motorola encourages all feedback, both positive and negative, on this test report.

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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 IHDT56CB1). The Specific Absorption Rate (SAR) of this product was measured. The portable cellular phone was tested in accordance with FCC OET Bulletin 65 Supplement C 01-01.

2. Description of the Device Under Test

Antenna description

Type	Helix	
Location	Right Side of Phone	
Dimensions	Length	17 mm
	Width	9 mm
Configuration	Stubby	

Device description

FCC ID Number	IHDT56CB1	
Serial number	T720001	
Mode(s) of Operation	GSM 850	GSM 1900
Modulation Mode(s)	GSM	GSM
Maximum Output Power Setting	29.40 dBm	29.40 dBm
Duty Cycle	1:8	1:8
Transmitting Frequency Rang(s)	824.20 - 848.80 MHz	1850.20 – 1909.80 MHz
Production Unit or Identical Prototype (47 CFR §2..908)	Identical Prototype	
Device Category	Portable	
RF Exposure Limits	General Population / Uncontrolled	

3. Test Equipment Used

3.1 Dosimetric System

The Motorola Personal Communications Sector Product Safety & Compliance Laboratory utilizes a Dosimetric Assessment System (Dasy3™ v3.1d) manufactured by Schmid & Partner Engineering AG (SPEAG™), of Zurich Switzerland. The overall RSS uncertainty of the measurement system is ±12.63% (K=1) with an expanded uncertainty of ±24.78% (K=2). The measurement uncertainty budget is given in Appendix 6. The list of calibrated equipment used for the measurements is shown below.

Description	Serial Number	Cal Due Date
DASY3 DAE V1	SN 434	02/13/2003
DASY3 DAE V1	SN 385	03/20/2003
DASY3 DAE V1	SN 398	09/26/2002
E-Field Probe ETDV6	SN 1522	04/25/2003
E-Field Probe ETDV6	SN 1503	11/16/2002
E-Field Probe ETDV6	SN 1513	05/08/2003
Dipole Validation Kit, DV900V2	SN 96	01/03/2003
Dipole Validation Kit, DV900V2	SN 94	01/03/2003
Dipole Validation Kit, DV900V2	SN 79	10/26/2002
S.A.M. Phantom used for 800MHz	TP-1155	
S.A.M. Phantom used for 800MHz	TP-1131	
S.A.M. Phantom used for 800MHz	TP-1106	
Dipole Validation Kit, DV1800V2	SN 281tr	01/04/2003
Dipole Validation Kit, DV1800V2	SN 280tr	01/04/2003
Dipole Validation Kit, DV1800V2	SN 284tr	01/05/2003
S.A.M. Phantom used for 1900MHz	TP-1157	
S.A.M. Phantom used for 1900MHz	TP-1105	
S.A.M. Phantom used for 1900MHz	TP-1103	

3.2 Additional Equipment

Description	Serial Number	Cal Due Date
Signal Generator HP8648C	3847A04832	01/18/2003
Power Meter E4419B	US39250622	10/08/2002
Power Sensor #1 - 8481A	US37296470	10/31/2002
Power Sensor #2 - 8481A	3318A25036	10/31/2002
Network Analyzer HP8753ES	US39171846	05/01/2003
Dielectric Probe Kit HP85070C	US99360074	

Description	Serial Number	Cal Due Date
Signal Generator HP8648C	3847A04845	10/5/2002
Power Meter E4419B	GB39511084	01/18/2003
Power Sensor #1 - 8481A	US39210932	02/14/2003
Power Sensor #2 - 8481A	US39210934	02/14/2003
Network Analyzer HP8753ES	US39171846	05/1/2003
Dielectric Probe Kit HP85070C	US99360074	

Description	Serial Number	Cal Due Date
Signal Generator HP8648C	3847A04633	09/28/2002
Power Meter E4419B	GB39510900	01/18/2003
Power Sensor #1 - 8481A	US39211009	02/14/2003
Power Sensor #2 - 8481A	US39211008	02/15/2003
Network Analyzer HP8753ES	US39171846	05/01/2003
Dielectric Probe Kit HP85070C	US99360074	

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 the HP85070 Dielectric Probe Kit These values, along with the temperature of the tissue simulate are shown in the table below. The 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. It is seen that the measured parameters are satisfactory for compliance testing.

f (MHz)	Tissue type	Limits / Measured	Dielectric Parameters		
			e_r	s (S/m)	Temp (°C)
850	Head	**Measured, 06/27/2002**	42.00	0.92	22.00-22.60
		Recommended Limits	41.50	0.90	20.00-25.00
		Measured, 06/28/2002	41.50	0.90	22.00-22.60
		Recommended Limits	41.50	0.90	20.00-25.00
	Body	**Measured, 06/28/2002**	54.00	0.98	22.00-22.60
		Recommended Limits	55.20	0.97	20.00-25.00
		Measured, 06/28/2002	54.00	0.98	22.00-22.60
		Recommended Limits	55.20	0.97	20.00-25.00
1900	Head	**Measured, 06/27/2002**	38.60	1.44	22.00-22.60
		Recommended Limits	40.00	1.40	20.00-25.00
	Body	**Measured, 06/29/2001**	53.20	1.56	22.00-22.60
		Recommended Limits	53.30	1.52	20.00-25.00
		Measured, 07/01/2002	53.50	1.58	22.00-22.60
		Recommended Limits	53.30	1.52	20.00-25.00
		Measured, 07/02/2002	52.90	1.57	22.00-22.60
		Recommended Limits	53.30	1.52	20.00-25.00

The list of ingredients and the percent composition 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 3.1. The daily system accuracy verification occurs within center section of the SAM phantom.

A SAR measurement was performed to see if the measured SAR was within +/- 10% from the target SAR indicated on the dipole certification sheet. These tests were done at 900MHz and/or 1800MHz. These frequencies are within 100MHz of the mid-band frequency of the test device. This is within the allowable window given in Supplement C 01-01 *Appendix D System Verification* section item #5. 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 tissue stimulant depth was verified to be 15.0cm ±0.5cm. Z-axis scans showing the SAR penetration are also included in Appendix 1. SAR values are normalized to 1W forward power delivered to the dipole.

Daily, prior to conducting tests, measurements were made with the RF sources powered off to determine the system noise level. The highest system noise was 0.0005 W/kg, which is below the recommended limit.

f (MHz)	Description	SAR (W/kg), 1gram	Dielectric Parameters		Ambient Temp (°C)	Tissue Temp (°C)
			e_r	s (S/m)		
900	**Measured, 06/27/2002**	12.16	41.20	0.98	23.00	22.00
	Recommended Limits	11.40	40.30	0.95	N/A	N/A
	Measured, 06/28/2002	11.60	40.80	0.96	23.00	22.60
	Recommended Limits	11.40	40.30	0.95	N/A	N/A
	Measured, 06/28/2002	11.76	41.80	0.98	23.00	23.00
	Recommended Limits	11.40	40.30	0.95	N/A	N/A
	Measured, 06/28/2002	11.72	42.70	0.99	23.00	23.00
	Recommended Limits	11.40	40.30	0.95	N/A	N/A
	Measured, 07/01/2002	11.72	40.40	0.95	23.00	22.50
	Recommended Limits	11.40	40.30	0.95	N/A	N/A
	Measured, 07/02/2002	11.57	41.80	0.97	23.00	22.70
	Recommended Limits	11.40	40.30	0.95	N/A	N/A
1800	**Measured, 06/27/2002**	40.20	38.90	1.36	23.00	22.60
	Recommended Limits	38.80	39.60	1.37	N/A	N/A
	Measured, 06/28/2002	39.60	38.60	1.38	23.00	22.50
	Recommended Limits	38.60	40.20	1.38	N/A	N/A
	Measured, 06/28/2002	41.43	36.80	1.38	23.00	22.50
	Recommended Limits	38.80	39.60	1.37	N/A	N/A
	Measured, 06/28/2002	40.30	38.60	1.38	23.00	22.50
	Recommended Limits	38.60	40.20	1.38	N/A	N/A
	Measured, 07/01/2002	38.26	38.50	1.38	23.00	22.10
	Recommended Limits	38.80	39.60	1.37	N/A	N/A
	Measured, 07/02/2002	39.50	38.40	1.37	23.00	22.10
	Recommended Limits	38.80	39.60	1.37	N/A	N/A

The following probe conversion factors were used on the E-Field probe(s) used for the system accuracy verification measurements:

Description	Serial Number	Configuration	f (MHz)	Conversion Factor	Cal Cert
E-Field Probe ETDV6	SN1522	Body	835	4.40	11
			1800	3.10	11
		Head	835	4.60	11
			1800	3.40	3
E-Field Probe ETDV6	SN1513	Body	835	6.00	11
			1800	4.60	11
		Head	835	6.20	11
			1800	5.00	3
E-Field Probe ETDV6	SN1503	Body	835	6.20	11
			1800	4.90	11
		Head	835	6.50	11
			1800	5.24	3

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 tested in the configurations stipulated in OET Bulletin 65 Supplement C 01-01. Motorola also followed the directions in Supplement. C / Appendix D: SAR Measurement Procedures, section titled *"Devices Operating Next To A Person's Ear* ". These directions state, "The device should be tested on the left and right side of the head phantom in the "Cheek/Touch" and "Ear/Tilt" positions. When applicable, each configuration should be tested with the antenna in its fully extended and fully retracted positions. These test configurations should be tested at the high, middle and low frequency channels of each operating mode; for example, AMPS, CDMA, and TDMA. If the SAR measured at the middle channel for each test configuration (left, right, Cheek/Touch, Tile/Ear, extended and retracted) is at least 2.0 dB lower than the SAR limit, testing at the high and low channels is optional for such test configuration(s)."

The DASY v3.1d SAR measurement system specified in section 3.1 was utilized within the intended operations as set by the SPEAG™ setup. The phone was positioned into the measurement configurations using the positioner supplied with the DASY 3.1d SAR measurement system. The measured dielectric constant of the material used for the positioner is less than 2.9 and the loss tangent is less than 0.02 (± 30%) at 850MHz. The default settings for the "coarse" and "cube" scans were chosen and use for measurements. The grid spacing of the course scan was set to 15cm as shown in the SAR plots included in appendix 2 and 3. Please refer to the DASY manual for additional information on SAR scanning procedures and algorithms used.

The Cellular Phone (FCC ID: IHDT56CB1) has the following battery options:

SNN5582A 550 mAH LiIon Battery

This battery was used to do all of the SAR testing. The phone was placed in the SAR measurement system with a fully charged battery.

6.1 Head Adjacent Test Results

The SAR results shown in tables 1 through 4 are maximum SAR values averaged over 1 gram of phantom tissue. Also shown are the measured conducted output powers, the temperature of the test facility during the test, the temperature of the tissue simulate after the test, the measured drift and the extrapolated SAR. The exact method of extrapolation is New SAR = Old SAR * 10^(drift/10). The SAR reported at the end of the measurement process by the DASY™ measurement system can be scaled up by the measured drift to determine the SAR at the beginning of the measurement process. This is the most conservative SAR because it corresponds to the average output power at the beginning of the SAR test. This extrapolation has been done because when the DUT is operating properly it may exhibit a slump in radiated power and SAR over time. This is verified by measuring the SAR drift after the test. The test conditions indicated as bold numbers in the following table are included in Appendix 2

The SAR measurements were performed using the SAM phantoms listed in section 3.1. Since same phantoms and tissue simulate are used for the system accuracy verification as the device SAR measurements, the Z-axis scans included in within Appendix 1 are applicable for verification of tissue simulate depth to be 15.0cm ±0.5cm. All other test conditions measured lower SAR values than those included in Appendix 2.

The following probe conversion factors were used on the E-Field probe(s) used for the head adjacent measurements:

Description	Serial Number	Configuration	f (MHz)	Conversion Factor	Cal Cert
E-Field Probe ETDV6	SN1522	Body	835	4.40	11
			1800	3.10	11
		Head	835	4.60	11
			1800	3.40	3
E-Field Probe ETDV6	SN1513	Body	835	6.00	11
			1800	4.60	11
		Head	835	6.20	11
			1800	5.00	3
E-Field Probe ETDV6	SN1503	Body	835	6.20	11
			1800	4.90	11
		Head	835	6.50	11
			1800	5.24	3

f (MHz)	Description	Conducted Output Power (dBm)	Left Head (Cheek / Touch Position)				
			Ant Fixed				
			Measured (W/kg)	Drift (dB)	Extrapolated (W/kg)	Amb. Temp (°C)	Simulate Temp (°C)
Digital 850 MHz	Channel128	29.44					
	Channel 189	29.52	0.495	0.08	0.495	22.00	22.20
	Channel 251	29.52					
Digital 1900MHz	Channel 512	29.74					
	Channel 661	29.68	0.523	-0.37	0.57	22.60	22.40
	Channel 810	29.77					

Table 1: SAR measurement results for the portable cellular telephone FCC ID IHDT56CB1 at highest possible output power. Measured against the left head in the Cheek/Touch Position.

f (MHz)	Description	Conducted Output Power (dBm)	Right Head (Cheek / Touch Position)				
			Ant Fixed				
			Measured (W/kg)	Drift (dB)	Extrapolated (W/kg)	Amb. Temp (°C)	Simulate Temp (°C)
Digital 850 MHz	Channel128	29.44					
	Channel 189	29.52	0.564	-0.08	0.57	22.60	21.90
	Channel 251	29.52					
Digital 1900MHz	Channel 512	29.74					
	Channel 661	29.68	0.606	-0.40	0.66	22.60	22.40
	Channel 810	29.77					

Table 2: SAR measurement results for the portable cellular telephone FCC ID IHDT56CB1 at highest possible output power. Measured against the right head in the Cheek/Touch Position.

f (MHz)	Description	Conducted Output Power (dBm)	Left Head (15° Tilt Position)				
			Ant Fixed				
			Measured (W/kg)	Drift (dB)	Extrapolated (W/kg)	Amb. Temp (°C)	Simulate Temp (°C)
Digital 850 MHz	Channel128	29.44					
	Channel 189	29.52	0.129	-0.09	0.13	22.00	22.20
	Channel 251	29.52					
Digital 1900MHz	Channel 512	29.74					
	Channel 661	29.68	0.108	-0.23	0.11	22.60	22.40
	Channel 810	29.77					

Table 3: SAR measurement results for the portable cellular telephone FCC ID IHDT56CB1 at highest possible output power. Measured against the left head in the 15° Tilt Position.

f (MHz)	Description	Conducted Output Power (dBm)	Right Head (15° Tilt Position)				
			Ant Fixed				
			Measured (W/kg)	Drift (dB)	Extrapolated (W/kg)	Amb. Temp (°C)	Simulate Temp (°C)
Digital 850 MHz	Channel128	29.44					
	Channel 189	29.52	0.14	0.07	0.14	22.60	21.70
	Channel 251	29.52					
Digital 1900MHz	Channel 512	29.74					
	Channel 661	29.68	0.107	0.01	0.107	22.60	22.40
	Channel 810	29.77					

Table 4: SAR measurement results for the portable cellular telephone FCC ID IHDT56CB1 at highest possible output power. Measured against the right head in the 15° Tilt Position.

6.2 Body-Worn Test Results

The SAR results shown in table 5 are the maximum SAR values averaged over 1 gram of phantom tissue. Also shown are the measured conducted output powers, the temperature of the test facility during the test, the temperature of the tissue simulate after the test, the measured drift and the extrapolated SAR. The exact method of extrapolation is New SAR = Old SAR * 10^(drift/10). The SAR reported at the end of the measurement process by the DASY™ measurement system can be scaled up by the measured drift to determine the SAR at the beginning of the measurement process. This is the most conservative SAR because it corresponds to the average output power at the beginning of the SAR test. This extrapolation has been done because when the DUT is operating properly it may exhibit a slump in radiated power and SAR over time. This is verified by measuring the SAR drift after the test. The test conditions indicated as bold numbers in the following table are included in Appendix 3. All other test conditions measured lower SAR values than those included in Appendix 3.

A "flat" phantom was for the body-worn tests. 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.

The tissue stimulant depth was verified to be 15.0cm ±0.5cm. The same device holder described in section 6 was used for positioning the phone. The functional accessories were divided into two categories, the ones with metal components and the ones with non-metal components. For non-metallic component accessories', testing was performed on the accessory that displayed the closest proximity to the flat phantom. Each metallic component accessory, if any, was checked for uniqueness of metal component so that each is tested with the device. If multiple accessories shared an identical metal component, only the accessory that dictates the closest spacing to the body was tested. The cellular phone was tested with a headset connected to the device for all body-worn SAR measurements.

There are two Body-Worn Accessories available for this phone:

A Navy Blue Pouch with fixed belt clip: 402059R2
A Silver/Blue neoprene holster with fixed belt clip: 113840

The following probe conversion factors were used on the E-Field probe(s) used for the body worn measurements:

Description	Serial Number	Configuration	f (MHz)	Conversion Factor	Cal Cert
E-Field Probe ETDV6	SN1522	Body	835	4.40	11
			1800	3.10	11
		Head	835	4.60	11
			1800	3.40	3
E-Field Probe ETDV6	SN1513	Body	835	6.00	11
			1800	4.60	11
		Head	835	6.20	11
			1800	5.00	3
E-Field Probe ETDV6	SN1503	Body	835	6.20	11
			1800	4.90	11
		Head	835	6.50	11
			1800	5.24	3

f (MHz)	Description	Conducted Output Power (dBm)	Body Worn (Silver / Blue Neoprene Holster)				
			Ant Fixed				
			Measured (W/kg)	Drift (dB)	Extrapolated (W/kg)	Amb. Temp (°C)	Simulate Temp (°C)
Digital 850 MHz	Channel128	29.44	0.147	0.00	0.150	22.70	22.70
	Channel 189	29.52	0.168	-0.01	0.170	22.60	22.40
	Channel 251	29.52	0.194	0.00	0.190	22.60	22.40
Digital 1900MHz	Channel 512	29.74	0.225	0.04	0.230	22.10	22.10
	Channel 661	29.68	0.160	-0.18	0.170	22.30	22.20
	Channel 810	29.77	0.199	-0.07	0.200	22.10	22.20

Table 5: SAR measurement results for the portable cellular telephone FCC ID IHDT56CB1 highest possible output power. Measured against the body.

f (MHz)	Description	Conducted Output Power (dBm)	Body Worn (Navy Blue Pouch)				
			Ant Fixed				
			Measured (W/kg)	Drift (dB)	Extrapolated (W/kg)	Amb. Temp (°C)	Simulate Temp (°C)
Digital 850 MHz	Channel128	29.44	0.117	0.01	0.117	22.60	22.40
	Channel 189	29.52	0.134	0.02	0.134	22.60	22.40
	Channel 251	29.52	0.160	0.02	0.160	22.60	22.40
Digital 1900MHz	Channel 512	29.74	0.275	-0.16	0.290	22.40	22.30
	Channel 661	29.68	0.195	-0.25	0.210	22.40	22.30
	Channel 810	29.77	0.140	0.14	0.140	22.30	22.20

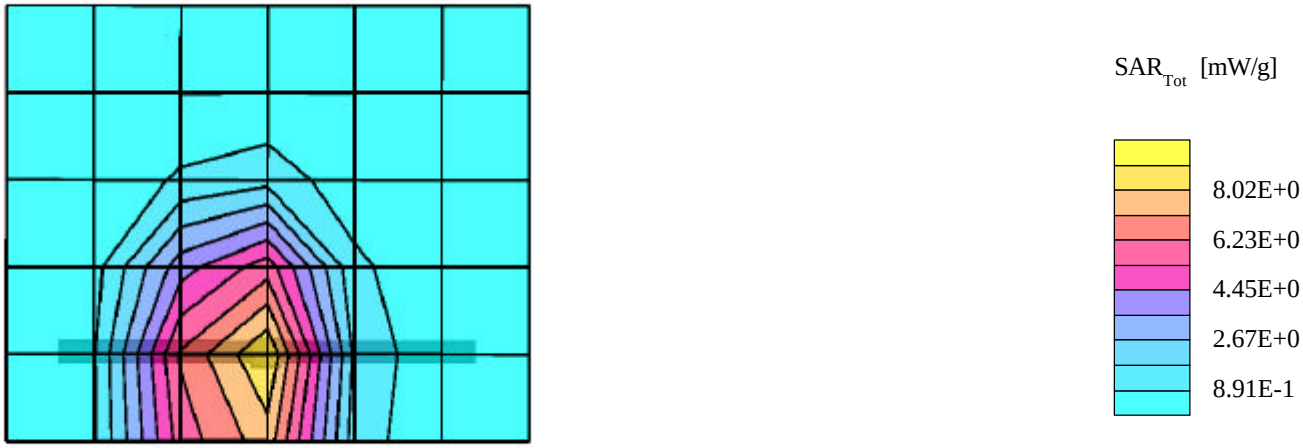
Table 6: SAR measurement results for the portable cellular telephone FCC ID IHDT56CB1 highest possible output power. Measured against the body.

Appendix 1

SAR distribution comparison for the system accuracy verification

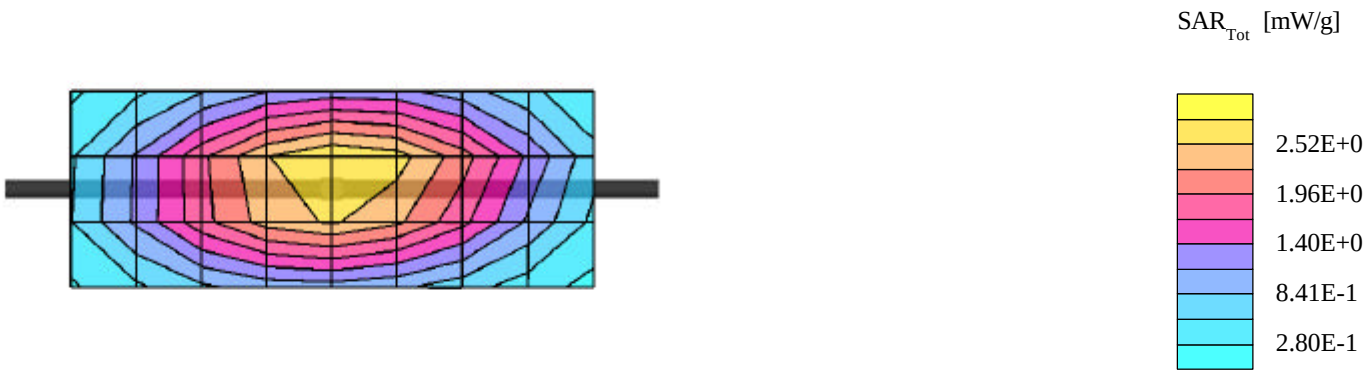
Dipole 1800 MHz

1800 MHz Dipole Validation / Dipole Sn# 281tr / Forward Power = 251 mW / Acceptable Temp Range is 15-25°C Room Temp at time of measurement = 23 c
Simulant Temp at time of measurement = 22.6 c
R3 Amy Twin Phantom Rev.3 Phantom; section 2 Section; Position: (90°,90°); Frequency: 1800 MHz
Probe: ET3DV6R - SN1522 - Validation; ConvF(3.40,3.40,3.40); Crest factor: 1.0; 1800 MHz VALIDATION: σ = 1.36 mho/m ε_r = 38.9 ρ = 1.00 g/cm^3
Cubes (2): SAR (1g): 10.1 mW/g ± 0.08 dB, SAR (10g): 5.38 mW/g ± 0.07 dB, (Worst-case extrapolation)
Coarse: Dx = 15.0, Dy = 15.0, Dz = 10.0
Penetration depth: 8.5 (8.0, 9.4) [mm]
Powerdrift: 0.03 dB



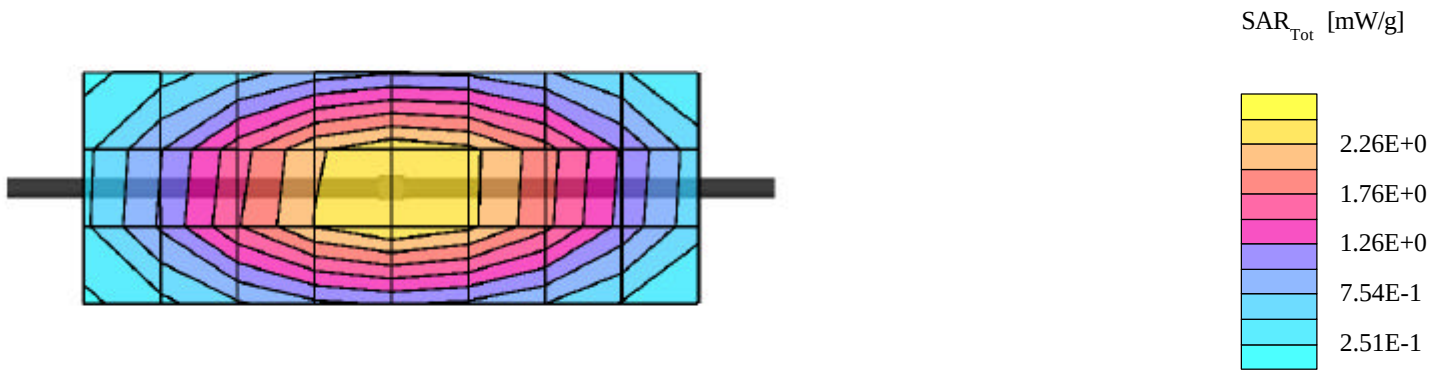
Dipole 900 MHz

900 MHz Dipole Validation / Dipole Sn# 96 / Forward Power = 250 mW / Acceptable Temp Range is 15-25°C / Room Temp at time of measurement = 23 c
Simulant Temp at time of measurement = 22 c
R3: SUGAR TP-1155 (rev 3) Phantom; Flat Section; Position: (90°,90°); Frequency: 900 MHz
Probe: ET3DV6R - SN1522 - Validation; ConvF(4.50,4.50,4.50); Crest factor: 1.0; 900 MHz VALIDATION: σ = 0.98 mho/m ε_r = 41.2 ρ = 1.00 g/cm^3
Cubes (2): SAR (1g): 3.04 mW/g ± 0.01 dB, SAR (10g): 1.93 mW/g ± 0.01 dB, (Worst-case extrapolation)
Coarse: Dx = 15.0, Dy = 15.0, Dz = 10.0
Penetration depth: 11.7 (10.8, 12.9) [mm]
Powerdrift: 0.08 dB



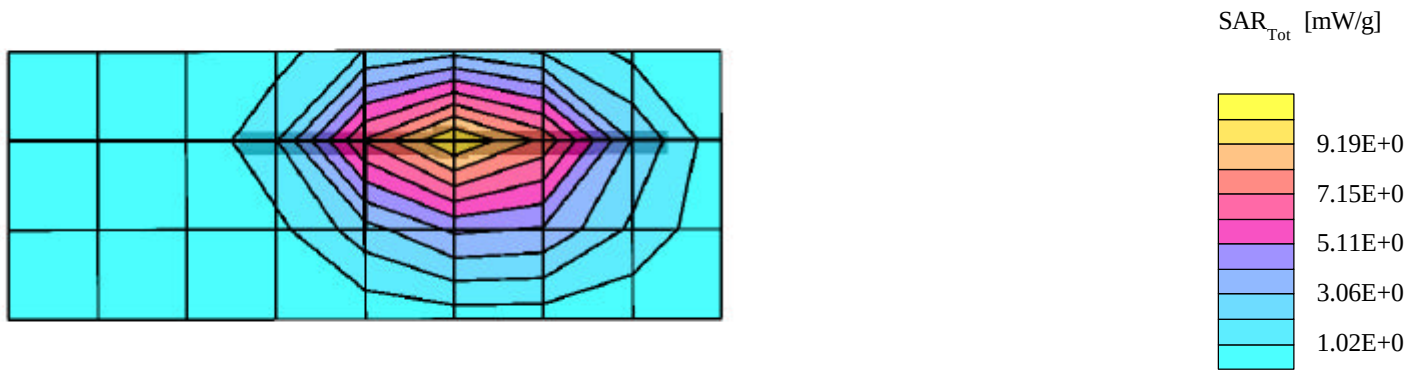
Dipole 900 MHz

900 MHz Dipole Validation / Dipole Sn# 094 / Forward Power = 249 mW / Acceptable Temp Range is 15-25°C Room Temp at time of measurement = 23*C
Simulant Temp at time of measurement =22.6*C
R4 TP-1131 Sugar SAM (rev. 4) 26Apr02 Phantom; Flat Section; Position: (90°,90°); Frequency: 900 MHz
Probe: ET3DV6R - SN1513 - VALIDATION; ConvF(6.10,6.10,6.10); Crest factor: 1.0; 900 MHz VALIDATION: σ = 0.96 mho/m ε_r = 40.8 ρ = 1.00 g/cm^3
Cubes (2): SAR (1g): 2.89 mW/g ± 0.06 dB, SAR (10g): 1.82 mW/g ± 0.06 dB, (Worst-case extrapolation)
Coarse: Dx = 15.0, Dy = 15.0, Dz = 10.0
Penetration depth: 11.5 (10.7, 12.7) [mm]
Powerdrift: 0.03 dB



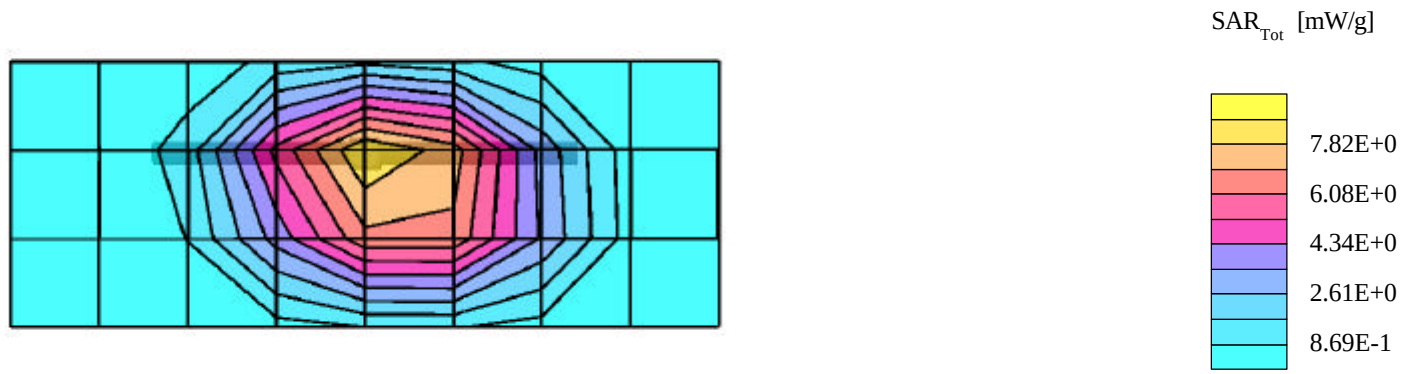
Dipole 1800 MHz

1800 MHz Dipole Validation / Dipole Sn# TR280 / Forward Power = 250 mW / Acceptable Temp Range is 15-25°C Room Temp at time of measurement = 23*C
Simulant Temp at time of measurement = 22.5*C
R4 Amy Twin Phantom Rev.3 Phantom; section 1 Section; Position: (90°,180°); Frequency: 1800 MHz
Probe: ET3DV6R - SN1513 - VALIDATION; ConvF(5.00,5.00,5.00); Crest factor: 1.0; 1800 MHz VALIDATION: σ = 1.38 mho/m ε_r = 38.6 ρ = 1.00 g/cm^3
Cubes (2): SAR (1g): 9.90 mW/g ± 0.02 dB, SAR (10g): 5.21 mW/g ± 0.05 dB, (Worst-case extrapolation)
Coarse: Dx = 15.0, Dy = 15.0, Dz = 10.0
Penetration depth: 8.4 (8.0, 9.1) [mm]
Powerdrift: 0.00 dB



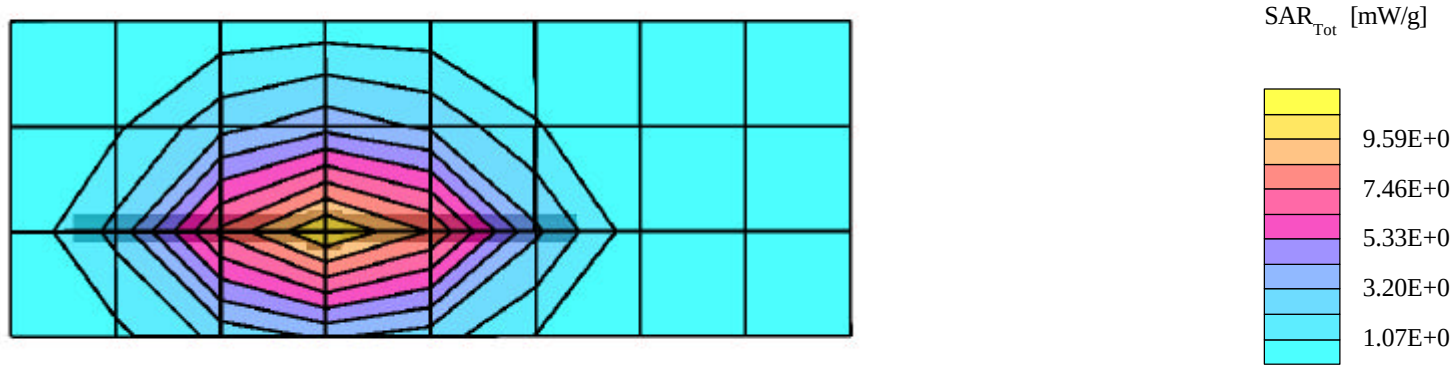
Dipole 1800 MHz

1800 MHz Dipole Validation / Dipole Sn# 281tr / Forward Power = 251 mW / Acceptable Temp Range is 15-25°C Room Temp at time of measurement = 23 c
Simulant Temp at time of measurement = 22.5 c
R3 Amy Twin Phantom Rev.3 Phantom; section 2 Section; Position: (90°,180°); Frequency: 1800 MHz
Probe: ET3DV6R - SN1522 - Validation; ConvF(3.40,3.40,3.40); Crest factor: 1.0; 1800 MHz VALIDATION: σ = 1.38 mho/m ε_r = 38.6 ρ = 1.00 g/cm^3
Cubes (2): SAR (1g): 10.4 mW/g ± 0.11 dB, SAR (10g): 5.53 mW/g ± 0.09 dB, (Worst-case extrapolation)
Coarse: Dx = 15.0, Dy = 15.0, Dz = 10.0
Penetration depth: 8.4 (8.0, 9.3) [mm]
Powerdrift: 0.04 dB



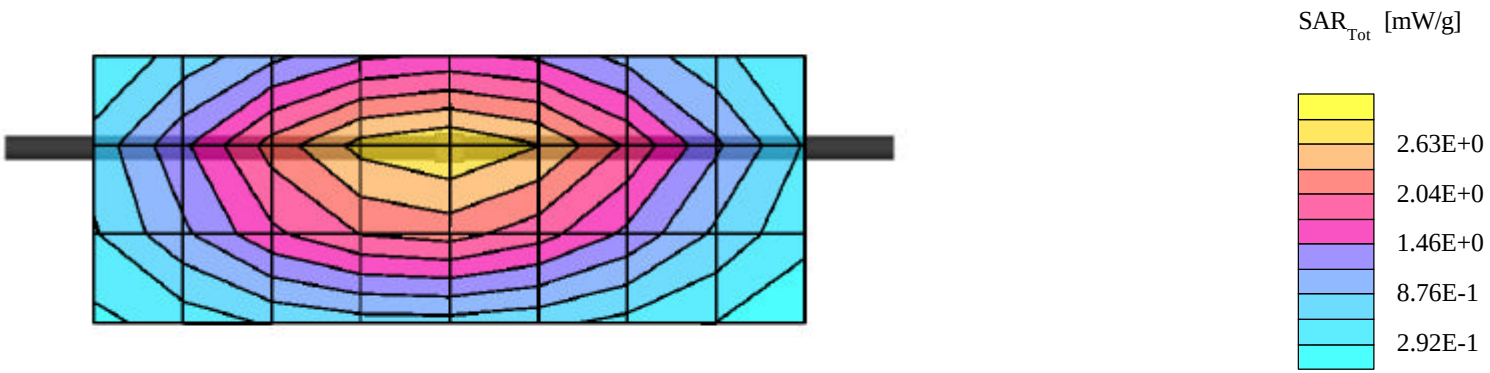
Dipole 1800 MHz

1800 MHz Dipole Validation / Dipole Sn# 284tr / Forward Power = 253mW / Acceptable Temp Range is 15-25°C Room Temp at time of measurement = 23 c
Simulant Temp at time of measurement = 22.5 c
R2 Amy Twin Phantom Rev.3 Phantom; section 1 Section; Position: (90°,180°); Frequency: 1800 MHz
Probe: ET3DV6 - SN1503 - Validation; ConvF(5.24,5.24,5.24); Crest factor: 1.0; 1800 MHz VALIDATION: σ = 1.38 mho/m ε_r = 38.6 ρ = 1.00 g/cm^3
Cubes (2): SAR (1g): 10.2 mW/g ± 0.04 dB, SAR (10g): 5.39 mW/g ± 0.07 dB, (Worst-case extrapolation)
Coarse: Dx = 15.0, Dy = 15.0, Dz = 10.0
Penetration depth: 8.5 (8.2, 9.3) [mm]
Powerdrift: 0.04 dB



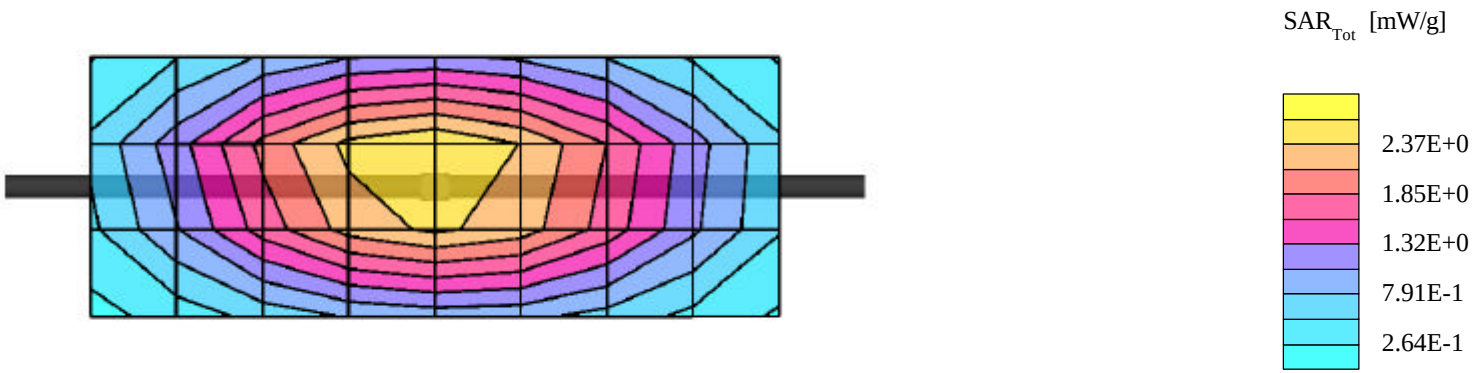
Dipole 900 MHz

900 MHz Dipole Validation / Dipole Sn# 96 / Forward Power = 248 mW / Acceptable Temp Range is 15-25°C Room Temp at time of measurement = 23 c
Simulant Temp at time of measurement = 23 c
R3: SUGAR TP-1155 (rev 3) Phantom; Flat Section; Position: (90°,90°); Frequency: 900 MHz
Probe: ET3DV6R - SN1522 - Validation; ConvF(4.50,4.50,4.50); Crest factor: 1.0; 900 MHz VALIDATION: σ = 0.98 mho/m ε_r = 41.8 ρ = 1.00 g/cm^3
Cubes (2): SAR (1g): 2.92 mW/g ± 0.05 dB, SAR (10g): 1.86 mW/g ± 0.06 dB, (Worst-case extrapolation)
Coarse: Dx = 15.0, Dy = 15.0, Dz = 10.0
Penetration depth: 11.9 (11.0, 13.0) [mm]
Powerdrift: 0.06 dB



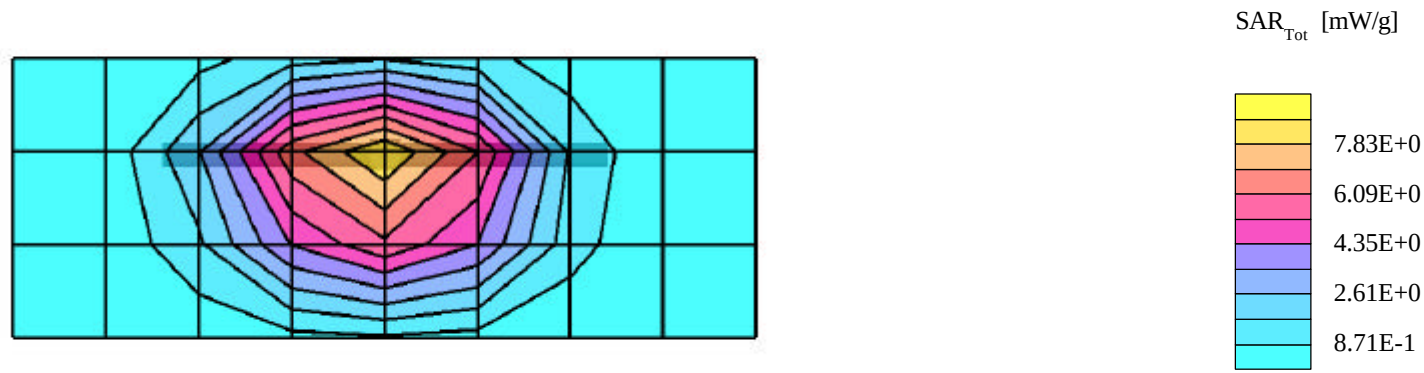
Dipole 900 MHz

900 MHz Dipole Validation / Dipole Sn# 79 / Forward Power = 250mW / Acceptable Temp Range is 15-25°C Room Temp at time of measurement = 23 c
Simulant Temp at time of measurement = 23c
R2 TP-1106 SUGAR SAM (rev. 4) 26Apr02 Phantom; Flat Section; Position: (90°,90°); Frequency: 900 MHz
Probe: ET3DV6 - SN1503 - Validation; ConvF(6.36,6.36,6.36); Crest factor: 1.0; 900 MHz VALIDATION: σ = 0.99 mho/m ε_r = 42.7 ρ = 1.00 g/cm^3
Cubes (2): SAR (1g): 2.93 mW/g ± 0.08 dB, SAR (10g): 1.86 mW/g ± 0.09 dB, (Worst-case extrapolation)
Coarse: Dx = 15.0, Dy = 15.0, Dz = 10.0
Penetration depth: 11.6 (10.7, 12.8) [mm]
Powerdrift: 0.03 dB



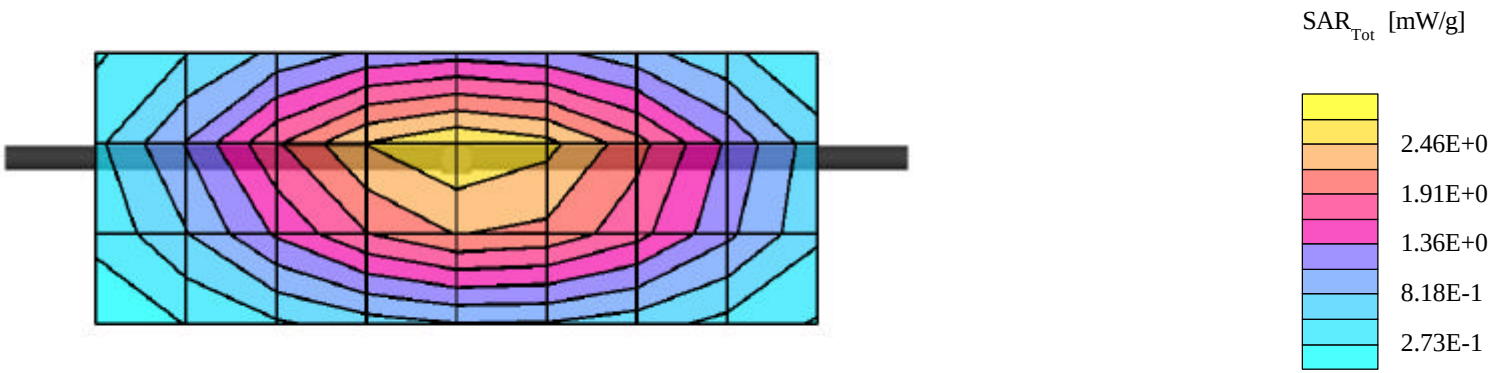
Dipole 1800 MHz

1800 MHz Dipole Validation / Dipole Sn# TR280 / Forward Power = 247mW / Acceptable Temp Range is 15-25°C Room Temp at time of measurement = 23*C
Simulant Temp at time of measurement = 22.1*C
R4 TP-1105 Glycol SAM(rev.3) Phantom; Flat Section; Position: (90°,90°); Frequency: 1800 MHz
Probe: ET3DV6R - SN1513 - VALIDATION; ConvF(5.00,5.00,5.00); Crest factor: 1.0; 1800 MHz VALIDATION: σ = 1.38 mho/m ε_r = 38.5 ρ = 1.00 g/cm^3
Cubes (2): SAR (1g): 9.45 mW/g ± 0.02 dB, SAR (10g): 5.03 mW/g ± 0.02 dB, (Worst-case extrapolation)
Coarse: Dx = 15.0, Dy = 15.0, Dz = 10.0
Penetration depth: 8.4 (8.1, 9.2) [mm]
Powerdrift: 0.02 dB



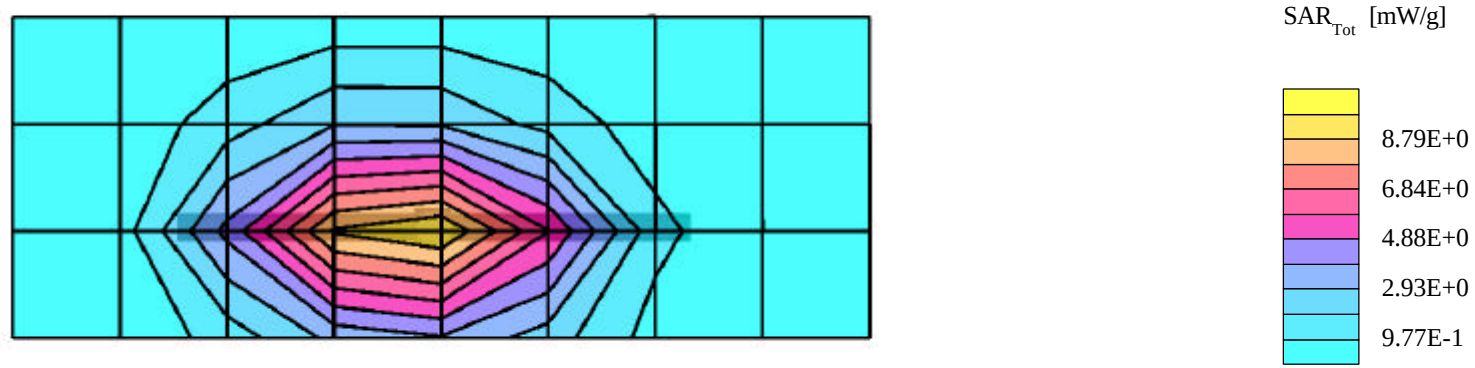
Dipole 900 MHz

900 MHz Dipole Validation / Dipole Sn# 094 / Forward Power = 248mW / Acceptable Temp Range is 15-25°C Room Temp at time of measurement = 23*C
Simulant Temp at time of measurement =22.7*C
R4 TP-1131 Sugar SAM (rev. 4) 26Apr02 Phantom; Flat Section; Position: (90°,90°); Frequency: 900 MHz
Probe: ET3DV6R - SN1513 - VALIDATION; ConvF(6.10,6.10,6.10); Crest factor: 1.0; 900 MHz VALIDATION: σ = 0.97 mho/m ε_r = 41.8 ρ = 1.00 g/cm^3
Cubes (2): SAR (1g): 2.87 mW/g ± 0.05 dB, SAR (10g): 1.81 mW/g ± 0.05 dB, (Worst-case extrapolation)
Coarse: Dx = 15.0, Dy = 15.0, Dz = 10.0
Penetration depth: 11.5 (10.7, 12.7) [mm]
Powerdrift: 0.02 dB



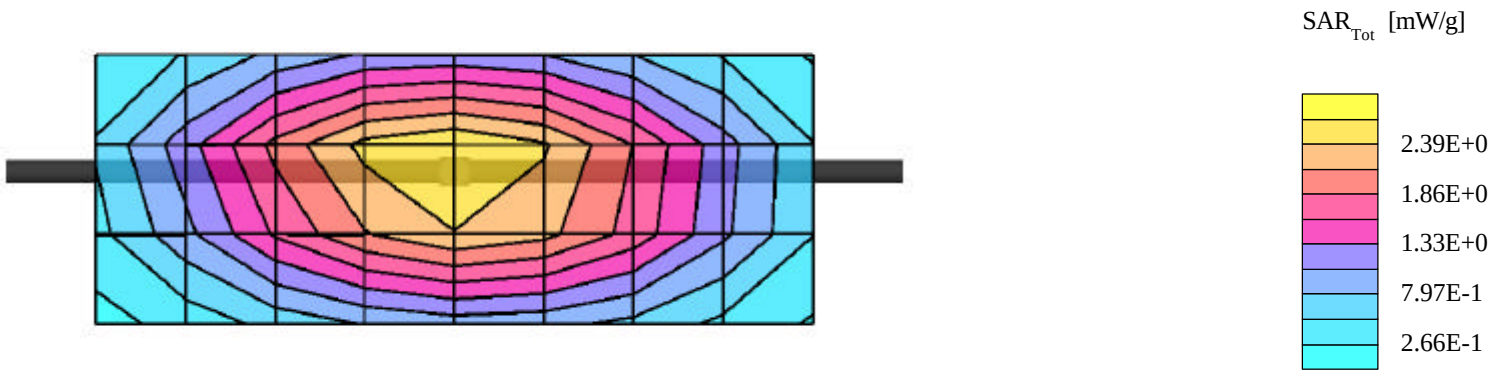
Dipole 1800 MHz

1800 MHz Dipole Validation / Dipole Sn# TR280 / Forward Power = 247 mW / Acceptable Temp Range is 15-25°C Room Temp at time of measurement = 23*C
Simulant Temp at time of measurement = 22.1*C
R4 Amy Twin Phantom Rev.3 Phantom; section 1 Section; Position: (90°,180°); Frequency: 1800 MHz
Probe: ET3DV6R - SN1513 - VALIDATION; ConvF(5.00,5.00,5.00); Crest factor: 1.0; 1800 MHz VALIDATION: σ = 1.37 mho/m ε_r = 38.4 ρ = 1.00 g/cm^3
Cubes (2): SAR (1g): 9.76 mW/g ± 0.01 dB, SAR (10g): 5.10 mW/g ± 0.04 dB, (Worst-case extrapolation)
Coarse: Dx = 15.0, Dy = 15.0, Dz = 10.0
Penetration depth: 8.3 (8.0, 9.1) [mm]
Powerdrift: 0.00 dB



Dipole 900 MHz

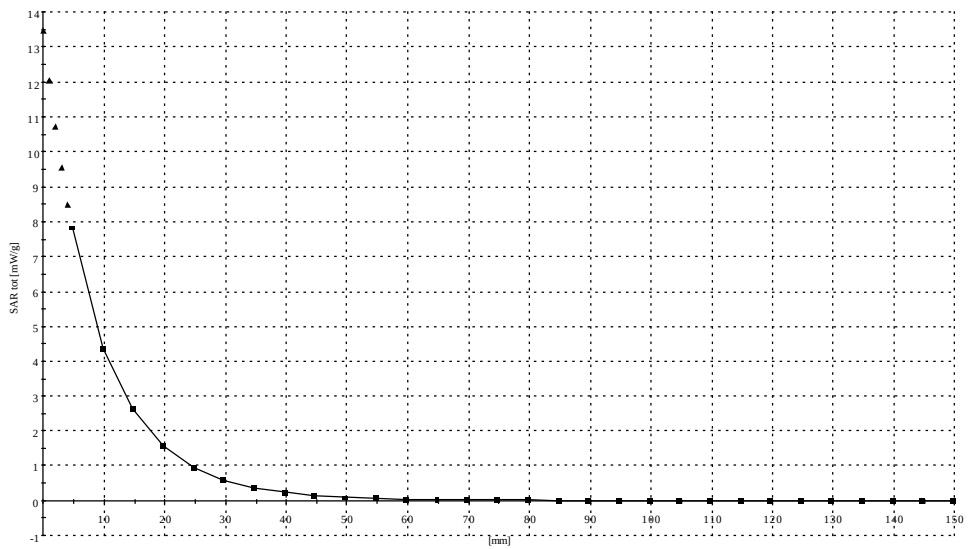
900 MHz Dipole Validation / Dipole Sn# 094 / Forward Power = 249mW / Acceptable Temp Range is 15-25°C Room Temp at time of measurement = 23*C
Simulant Temp at time of measurement =22.5*C
R4 TP-1131 Sugar SAM (rev. 4) 26Apr02 Phantom; Flat Section; Position: (90°,90°); Frequency: 900 MHz
Probe: ET3DV6R - SN1513 - VALIDATION; ConvF(6.10,6.10,6.10); Crest factor: 1.0; 900 MHz VALIDATION: σ = 0.95 mho/m ε_r = 40.4 ρ = 1.00 g/cm^3
Cubes (2): SAR (1g): 2.92 mW/g ± 0.04 dB, SAR (10g): 1.84 mW/g ± 0.04 dB, (Worst-case extrapolation)
Coarse: Dx = 15.0, Dy = 15.0, Dz = 10.0
Penetration depth: 11.5 (10.7, 12.7) [mm]
Powerdrift: -0.00 dB



Dipole 1800 MHz

1800 MHz Dipole Validation / Dipole Sn# 281tr / Forward Power = 251 mW / Acceptable Temp Range is 15-25°C Room Temp at time of measurement = 23 c
Simulant Temp at time of measurement = 22.6 c
R3 Amy Twin Phantom Rev.3 Phantom; Section; Position: ; Frequency: 1800 MHz
Probe: ET3DV6R - SN1522 - Validation; ConvF(3.40,3.40,3.40); Crest factor: 1.0; 1800 MHz VALIDATION: σ = 1.36 mho/m ε_r = 38.9 ρ = 1.00 g/cm^3

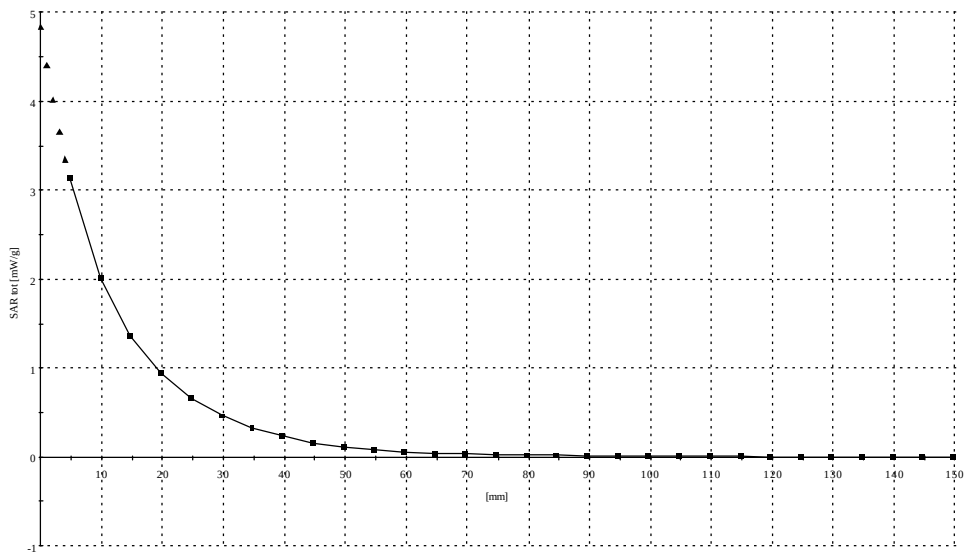
Z-Axis: Dx = 0.0, Dy = 0.0, Dz = 5.0
Penetration depth: 9.0 (8.5, 9.8) [mm]



Dipole 900 MHz

900 MHz Dipole Validation / Dipole Sn# 96 / Forward Power = 250 mW / Acceptable Temp Range is 15-25°C / Room Temp at time of measurement = 23 c
Simulant Temp at time of measurement = 22 c
R3: SUGAR TP-1155 (rev 3) Phantom; Section; Position: ; Frequency: 900 MHz
Probe: ET3DV6R - SN1522 - Validation; ConvF(4.50,4.50,4.50); Crest factor: 1.0; 900 MHz VALIDATION: σ = 0.98 mho/m ε_r = 41.2 ρ = 1.00 g/cm^3

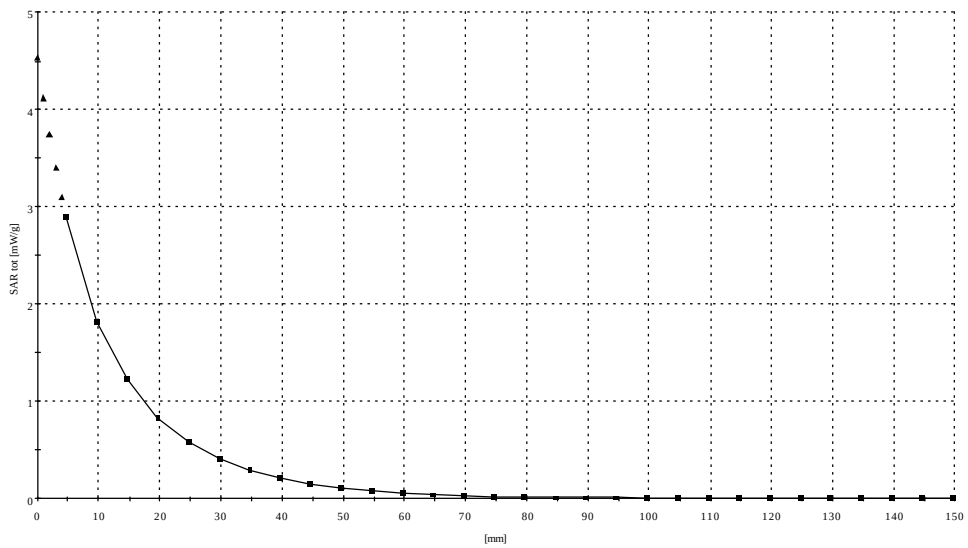
Z-Axis: Dx = 0.0, Dy = 0.0, Dz = 5.0
Penetration depth: 11.9 (11.0, 13.1) [mm]



Dipole 900 MHz

900 MHz Dipole Validation / Dipole Sn# 094 / Forward Power = 249 mW / Acceptable Temp Range is 15-25°C Room Temp at time of measurement = 23*C
Simulant Temp at time of measurement =22.6*C
R4 TP-1131 Sugar SAM (rev. 4) 26Apr02 Phantom; Section; Position: ; Frequency: 900 MHz
Probe: ET3DV6R - SN1513 - VALIDATION; ConvF(6.10,6.10,6.10); Crest factor: 1.0; 900 MHz VALIDATION: σ = 0.96 mho/m ε_r = 40.8 ρ = 1.00 g/cm^3

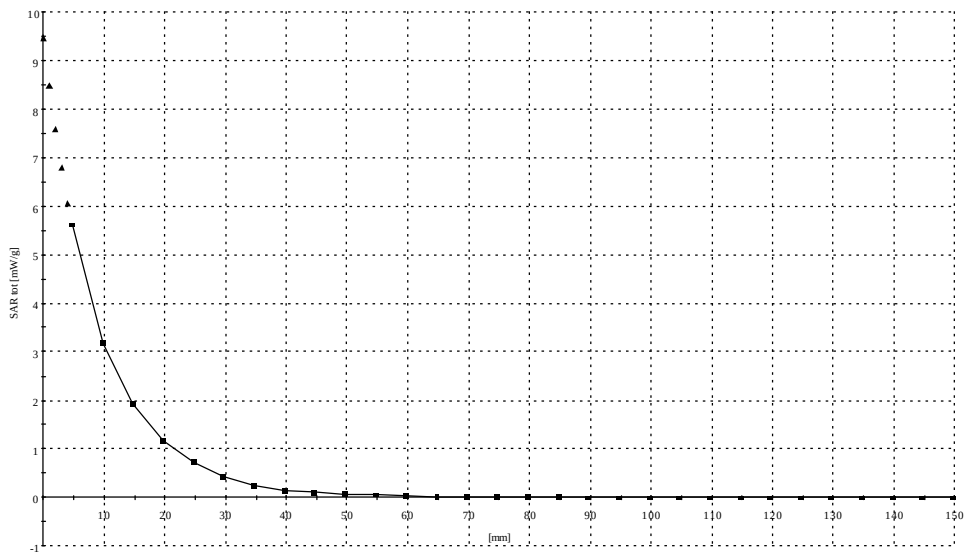
Z-Axis: Dx = 0.0, Dy = 0.0, Dz = 5.0
Penetration depth: 11.5 (10.6, 12.7) [mm]



Dipole 1800 MHz

1800 MHz Dipole Validation / Dipole Sn# TR280 / Forward Power = 250 mW / Acceptable Temp Range is 15-25°C Room Temp at time of measurement = 23*C
Simulant Temp at time of measurement = 22.5*C
R4 Amy Twin Phantom Rev.3 Phantom; Section; Position: ; Frequency: 1800 MHz
Probe: ET3DV6R - SN1513 - VALIDATION; ConvF(5.00,5.00,5.00); Crest factor: 1.0; 1800 MHz VALIDATION: σ = 1.38 mho/m ε_r = 38.6 ρ = 1.00 g/cm^3

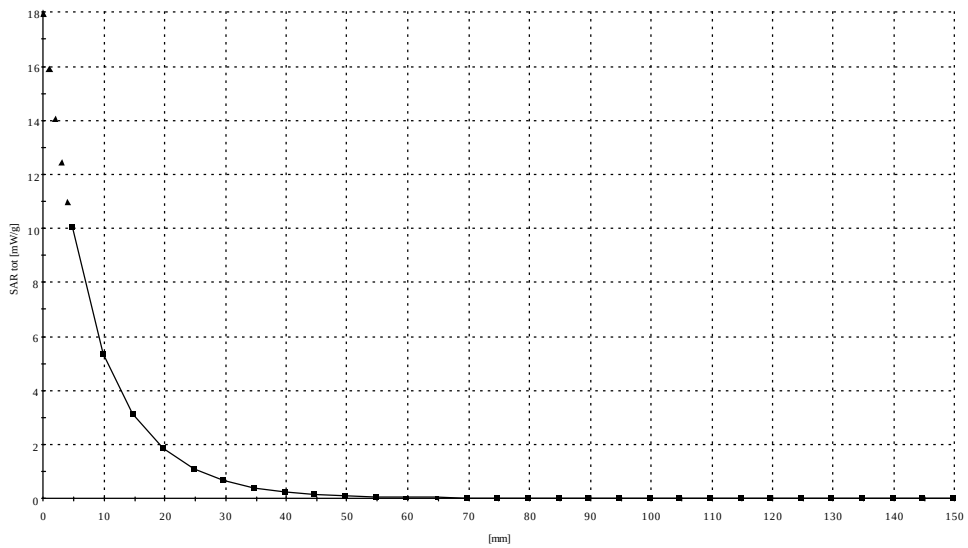
Z-Axis: Dx = 0.0, Dy = 0.0, Dz = 5.0
Penetration depth: 9.2 (8.8, 9.8) [mm]



Dipole 1800 MHz

1800 MHz Dipole Validation / Dipole Sn# 281tr / Forward Power = 251 mW / Acceptable Temp Range is 15-25°C Room Temp at time of measurement = 23 c
Simulant Temp at time of measurement = 22.5 c
R3 Amy Twin Phantom Rev.3 Phantom; Section; Position: ; Frequency: 1800 MHz
Probe: ET3DV6R - SN1522 - Validation; ConvF(3.40,3.40,3.40); Crest factor: 1.0; 1800 MHz VALIDATION: σ = 1.38 mho/m ε_r = 38.6 ρ = 1.00 g/cm^3

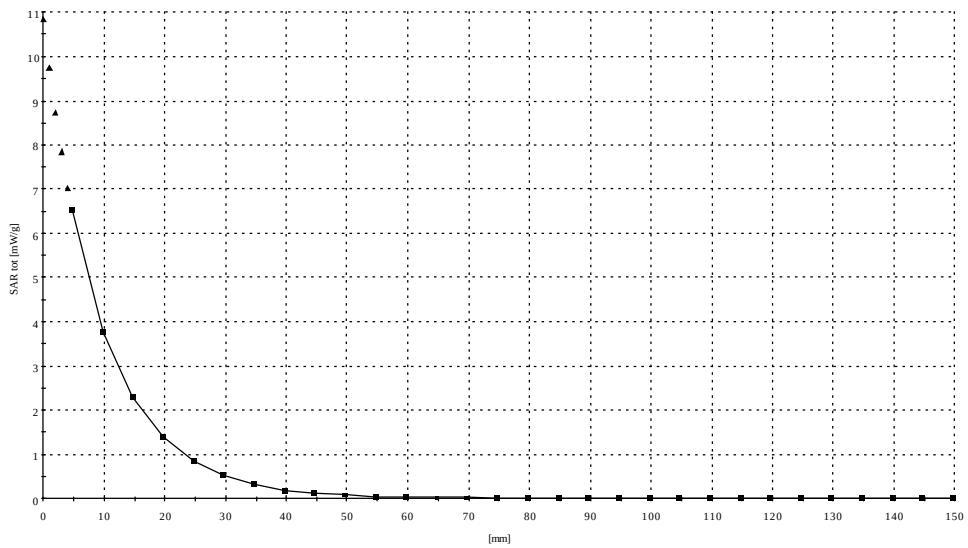
Z-Axis: Dx = 0.0, Dy = 0.0, Dz = 5.0
Penetration depth: 8.4 (8.0, 9.2) [mm]



Dipole 1800 MHz

1800 MHz Dipole Validation / Dipole Sn# 284 / Forward Power = 253mW / Acceptable Temp Range is 15-25°C Room Temp at time of measurement = 23 c
Simulant Temp at time of measurement = 22.5 c
R2 Amy Twin Phantom Rev.3 Phantom; Section; Position: ; Frequency: 1800 MHz
Probe: ET3DV6 - SN1503 - Validation; ConvF(5.24,5.24,5.24); Crest factor: 1.0; 1800 MHz VALIDATION: σ = 1.38 mho/m ε_r = 38.6 ρ = 1.00 g/cm^3

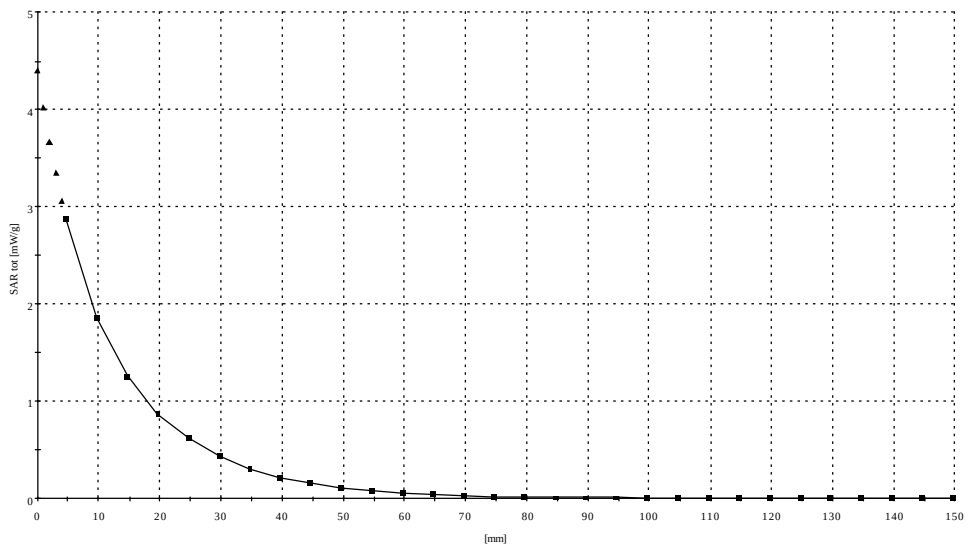
Z-Axis: Dx = 0.0, Dy = 0.0, Dz = 5.0
Penetration depth: 9.4 (9.1, 10.0) [mm]



Dipole 900 MHz

900 MHz Dipole Validation / Dipole Sn# 96 / Forward Power = 248 mW / Acceptable Temp Range is 15-25°C Room Temp at time of measurement = 23 c
Simulant Temp at time of measurement = 23 c
R3: SUGAR TP-1155 (rev 3) Phantom; Section; Position: ; Frequency: 900 MHz
Probe: ET3DV6R - SN1522 - Validation; ConvF(4.50,4.50,4.50); Crest factor: 1.0; 900 MHz VALIDATION: σ = 0.98 mho/m ε_r = 41.8 ρ = 1.00 g/cm^3

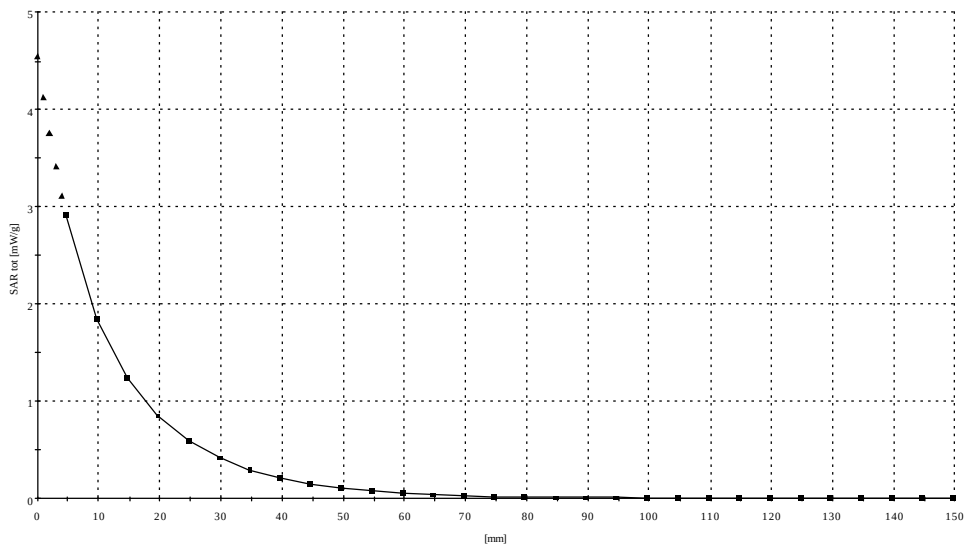
Z-Axis: Dx = 0.0, Dy = 0.0, Dz = 5.0
Penetration depth: 12.0 (11.2, 13.1) [mm]



Dipole 900 MHz

900 MHz Dipole Validation / Dipole Sn# 79 / Forward Power = 250mW / Acceptable Temp Range is 15-25°C Room Temp at time of measurement = 23 c
Simulant Temp at time of measurement = 23c
R2 TP-1106 SUGAR SAM (rev. 4) 26Apr02 Phantom; Section; Position: ; Frequency: 900 MHz
Probe: ET3DV6 - SN1503 - Validation; ConvF(6.36,6.36,6.36); Crest factor: 1.0; 900 MHz VALIDATION: σ = 0.99 mho/m ε_r = 42.7 ρ = 1.00 g/cm^3

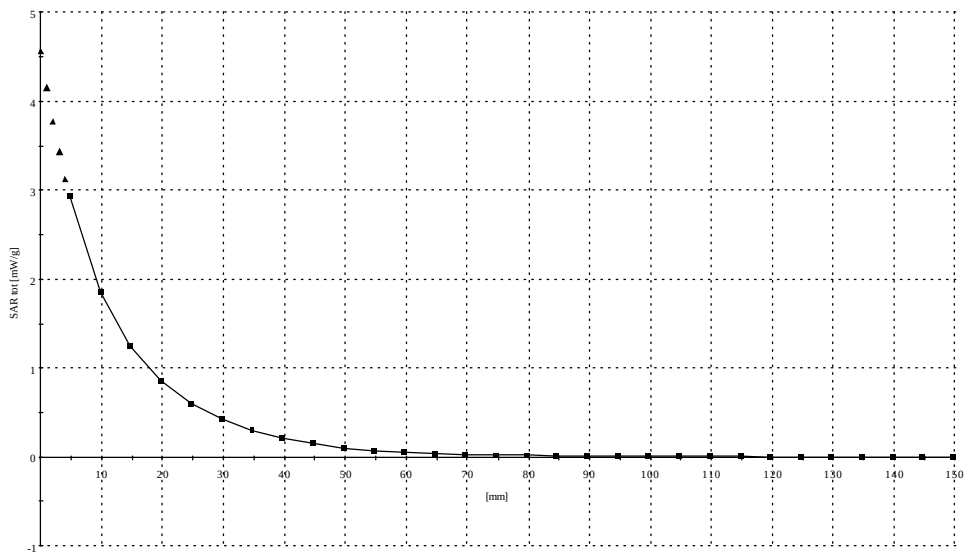
Z-Axis: Dx = 0.0, Dy = 0.0, Dz = 5.0
Penetration depth: 11.6 (10.7, 12.7) [mm]



Dipole 900 MHz

900 MHz Dipole Validation / Dipole Sn# 094 / Forward Power = 249mW / Acceptable Temp Range is 15-25°C Room Temp at time of measurement = 23*C
Simulant Temp at time of measurement =22.5*C
R4 TP-1131 Sugar SAM (rev. 4) 26Apr02 Phantom; Section; Position: ; Frequency: 900 MHz
Probe: ET3DV6R - SN1513 - VALIDATION; ConvF(6.10,6.10,6.10); Crest factor: 1.0; 900 MHz VALIDATION: σ = 0.95 mho/m ε_r = 40.4 ρ = 1.00 g/cm^3

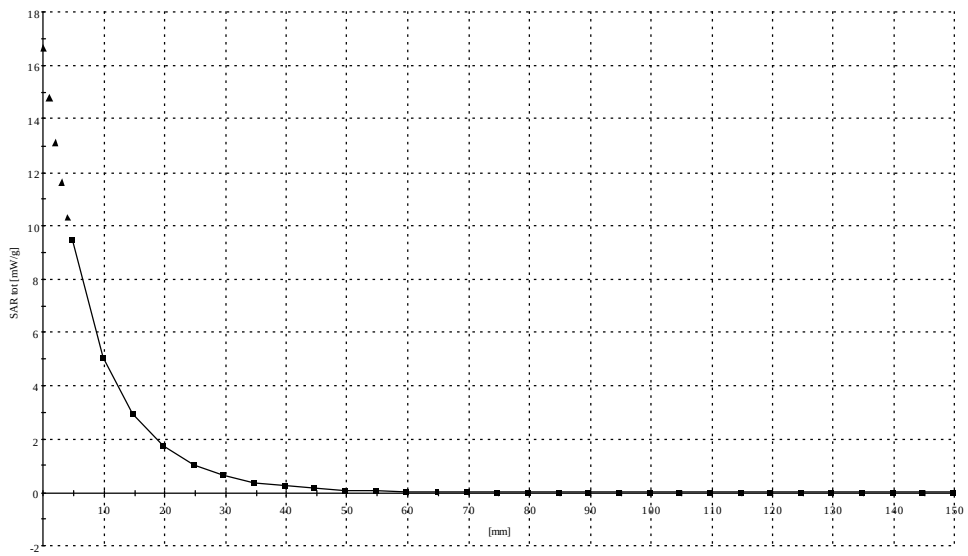
Z-Axis: Dx = 0.0, Dy = 0.0, Dz = 5.0
Penetration depth: 11.7 (10.8, 12.9) [mm]



Dipole 1800 MHz

1800 MHz Dipole Validation / Dipole Sn# TR280 / Forward Power = 247mW / Acceptable Temp Range is 15-25°C Room Temp at time of measurement = 23*C
Simulant Temp at time of measurement = 22.1*C
R4 TP-1105 Glycol SAM(rev.3) Phantom; Section; Position: ; Frequency: 1800 MHz
Probe: ET3DV6R - SN1513 - VALIDATION; ConvF(5.00,5.00,5.00); Crest factor: 1.0; 1800 MHz VALIDATION: σ = 1.38 mho/m ε_r = 38.5 ρ = 1.00 g/cm^3

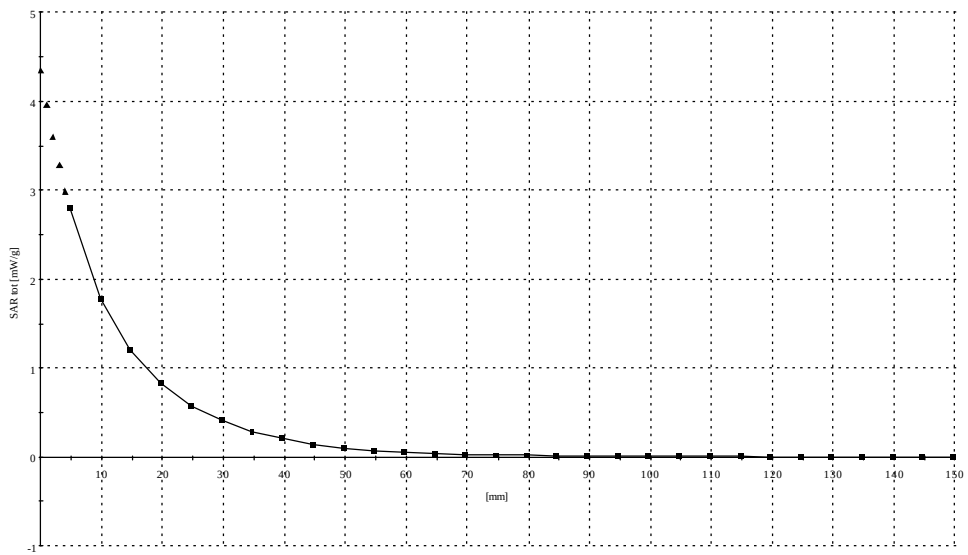
Z-Axis: Dx = 0.0, Dy = 0.0, Dz = 5.0
Penetration depth: 8.4 (8.1, 9.2) [mm]



Dipole 900 MHz

900 MHz Dipole Validation / Dipole Sn# 094 / Forward Power = 248mW / Acceptable Temp Range is 15-25°C Room Temp at time of measurement = 23*C
Simulant Temp at time of measurement =22.7*C
R4 TP-1131 Sugar SAM (rev. 4) 26Apr02 Phantom; Section; Position: ; Frequency: 900 MHz
Probe: ET3DV6R - SN1513 - VALIDATION; ConvF(6.10,6.10,6.10); Crest factor: 1.0; 900 MHz VALIDATION: σ = 0.97 mho/m ε_r = 41.8 ρ = 1.00 g/cm^3

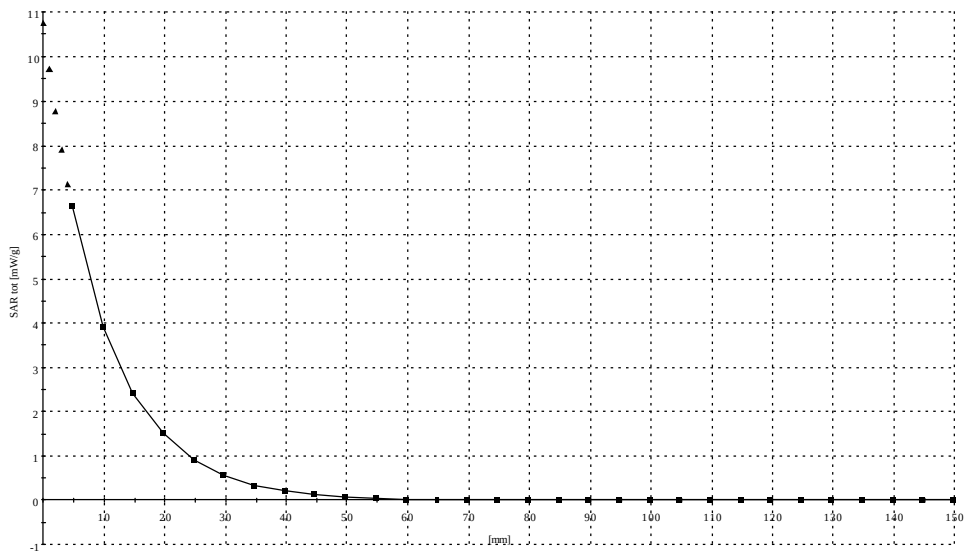
Z-Axis: Dx = 0.0, Dy = 0.0, Dz = 5.0
Penetration depth: 11.7 (10.8, 12.9) [mm]



Dipole 1800 MHz

1800 MHz Dipole Validation / Dipole Sn# TR280 / Forward Power = 247 mW / Acceptable Temp Range is 15-25°C Room Temp at time of measurement = 23*C
Simulant Temp at time of measurement = 22.1*C
R4 Amy Twin Phantom Rev.3 Phantom; Section; Position: ; Frequency: 1800 MHz
Probe: ET3DV6R - SN1513 - VALIDATION; ConvF(5.00,5.00,5.00); Crest factor: 1.0; 1800 MHz VALIDATION: σ = 1.37 mho/m ε_r = 38.4 ρ = 1.00 g/cm^3

Z-Axis: Dx = 0.0, Dy = 0.0, Dz = 5.0
Penetration depth: 9.9 (9.6, 10.4) [mm]

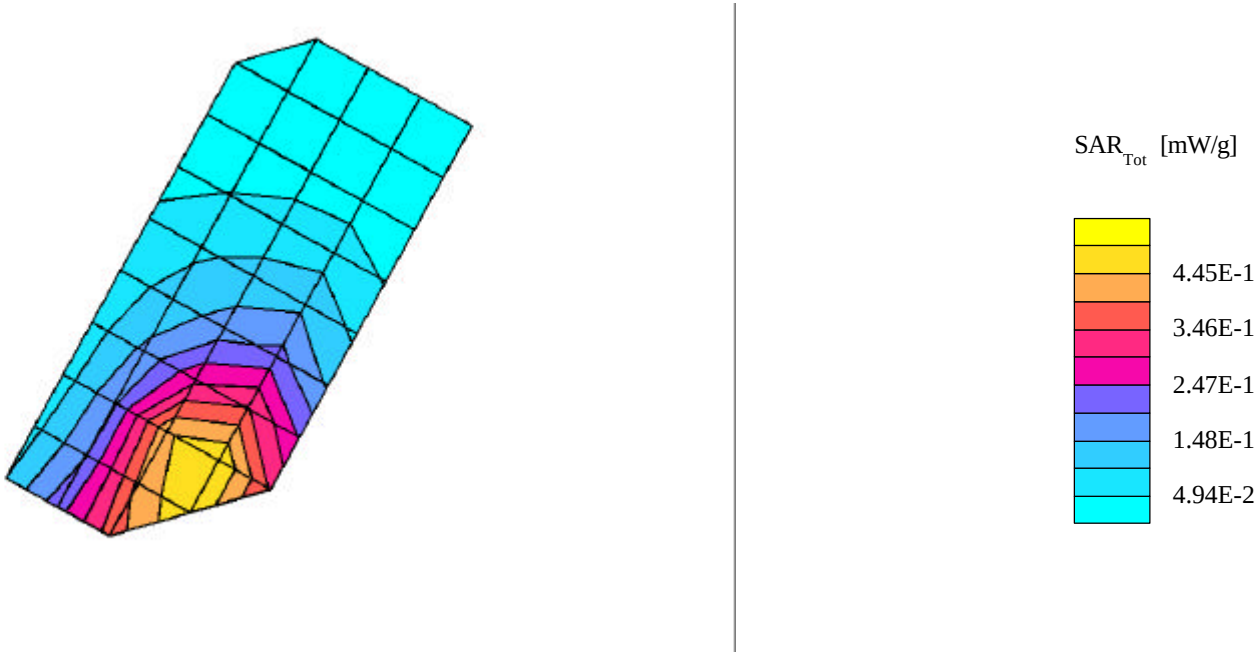


Appendix 2

SAR distribution plots for Phantom Head Adjacent Use

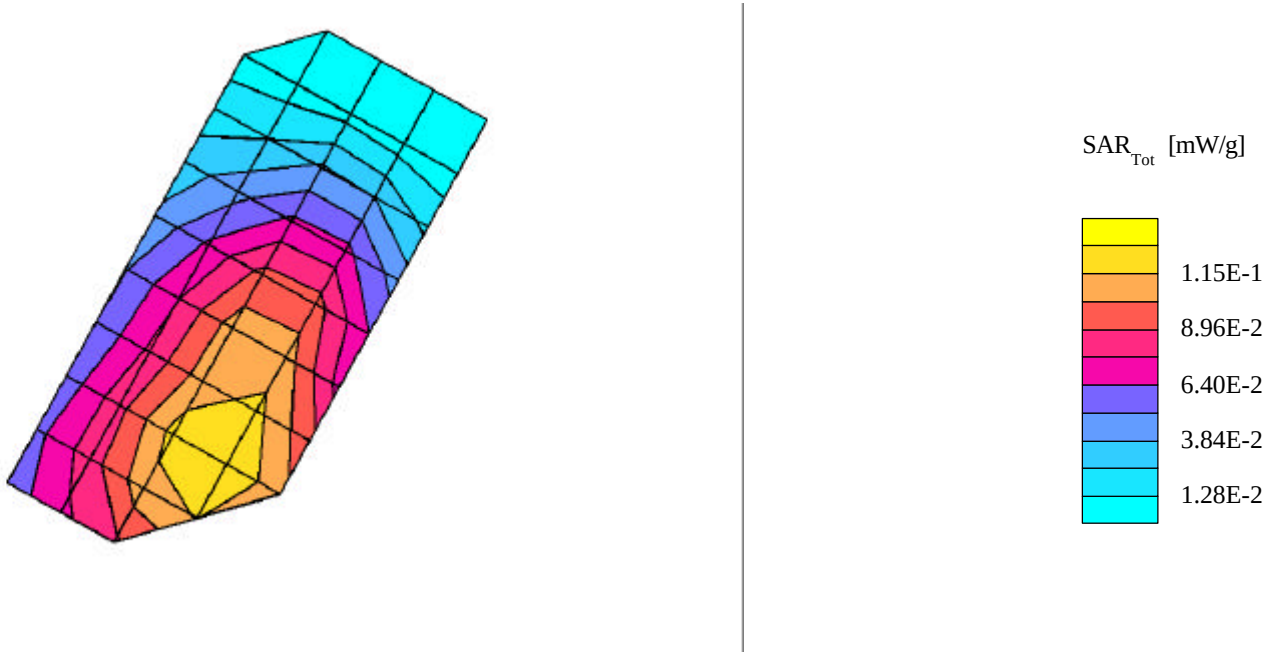
SN: T720001

Ch# 189 / Pwr Step: 7 / Antenna Position: Fixed / Type of Modulation:850 GSM / Battery Model #:SNN5582A / DEVICE POSITION: Cheek
R3: SUGAR TP-1155 (rev 3) Phantom; Left Hand Section; Position: (90°,180°); Frequency: 836 MHz
Probe: ET3DV6R - SN1522 - IEEE Head; ConvF(4.60,4.60,4.60); Crest factor: 8.0; 835 MHz Head & Body: σ = 0.92 mho/m ε_r = 42.0 ρ = 1.00 g/cm^3
Cube 7x7x7: SAR (1g): 0.495 mW/g, SAR (10g): 0.353 mW/g, (Worst-case extrapolation)
Coarse: Dx = 15.0, Dy = 15.0, Dz = 15.0
Penetration depth: 22.1 (16.0, 34.8) [mm]
Powerdrift: 0.08 dB



SN: T720001

Ch# 189 / Pwr Step:7 / Antenna Position: Fixed / Type of Modulation:850 GSM / Battery Model #:SNN5582A / DEVICE POSITION: 15 degree tilt
R3: SUGAR TP-1155 (rev 3) Phantom; Left Hand Section; Position: (90°,180°); Frequency: 836 MHz
Probe: ET3DV6R - SN1522 - IEEE Head; ConvF(4.60,4.60,4.60); Crest factor: 8.0; 835 MHz Head & Body: σ = 0.92 mho/m ε_r = 42.0 ρ = 1.00 g/cm^3
Cube 7x7x7: SAR (1g): 0.129 mW/g, SAR (10g): 0.0948 mW/g, (Worst-case extrapolation)
Coarse: Dx = 15.0, Dy = 15.0, Dz = 15.0
Penetration depth: 18.1 (16.0, 20.3) [mm]
Powerdrift: -0.09 dB



SN: T720001

Ch# 189 / Pwr Step: 7 / Antenna Position: Fixed / Type of Modulation:850 GSM / Battery Model #:SNN5582A / DEVICE POSITION: Cheek
R3: SUGAR TP-1155 (rev 3) Phantom; Right Hand Section; Position: (90°,180°); Frequency: 836 MHz
Probe: ET3DV6R - SN1522 - IEEE Head; ConvF(4.60,4.60,4.60); Crest factor: 8.0; 835 MHz Head & Body: σ = 0.92 mho/m ε_r = 42.0 ρ = 1.00 g/cm^3
Cube 7x7x7: SAR (1g): 0.564 mW/g, SAR (10g): 0.391 mW/g * Max outside, (Worst-case extrapolation)
Coarse: Dx = 15.0, Dy = 15.0, Dz = 15.0
Penetration depth: 15.3 (14.4, 16.4) [mm]
Powerdrift: -0.08 dB

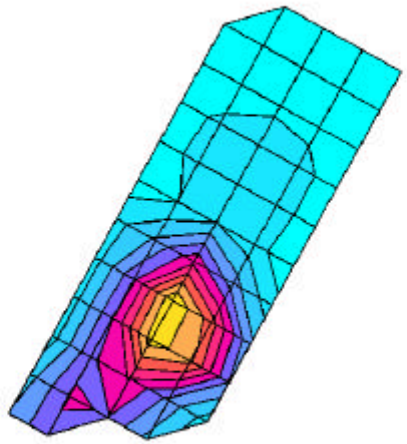
SN : T720001

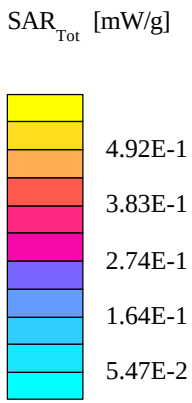
Ch# 189 / Pwr Step: 7 / Antenna Position: FIXED / Type of Modulation: 850 GSM / Battery Model #: SNN5582A / DEVICE POSITION: 15 degree tilt

R4 TP-1131 Sugar SAM (rev. 4) 26Apr02 Phantom; Right Hand Section; Position: (90°,180°); Frequency: 836 MHz
Probe: ET3DV6R - SN1513 - IEEE Head; ConvF(6.20,6.20,6.20); Crest factor: 8.0; 835 MHz Head & Body: σ = 0.90 mho/m ε_r = 41.5 ρ = 1.00 g/cm^3
Cube 7x7x7: SAR (1g): 0.140 mW/g, SAR (10g): 0.100 mW/g, (Worst-case extrapolation)
Coarse: Dx = 15.0, Dy = 15.0, Dz = 15.0
Penetration depth: 18.5 (15.5, 22.0) [mm]
Powerdrift: 0.07 dB

SN: T720001

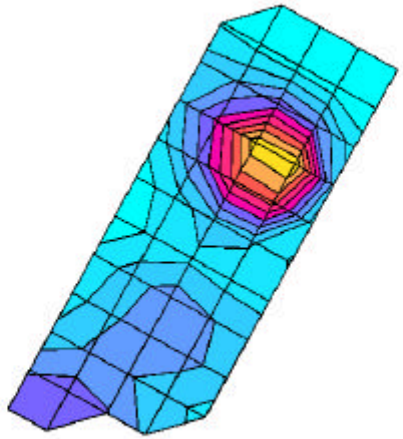
Ch# 661 / Pwr Step: 7 / Antenna Position: Fixed / Type of Modulation: 850 GSM / Battery Model #:SNN5582A / DEVICE POSITION: cheek
R3: Glycol TP-1157 (rev. 3) Phantom; Left Hand Section; Position: (90°,180°); Frequency: 1880 MHz
Probe: ET3DV6R - SN1522 - IEEE Head; ConvF(3.40,3.40,3.40); Crest factor: 8.0; 1880 MHz Head & Body: σ = 1.44 mho/m ε_r = 38.6 ρ = 1.00 g/cm^3
Cube 7x7x7: SAR (1g): 0.523 mW/g, SAR (10g): 0.329 mW/g, (Worst-case extrapolation)
Coarse: Dx = 15.0, Dy = 15.0, Dz = 15.0
Penetration depth: 11.9 (9.8, 14.8) [mm]
Powerdrift: -0.37 dB

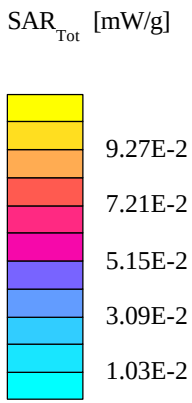




SN: T720001

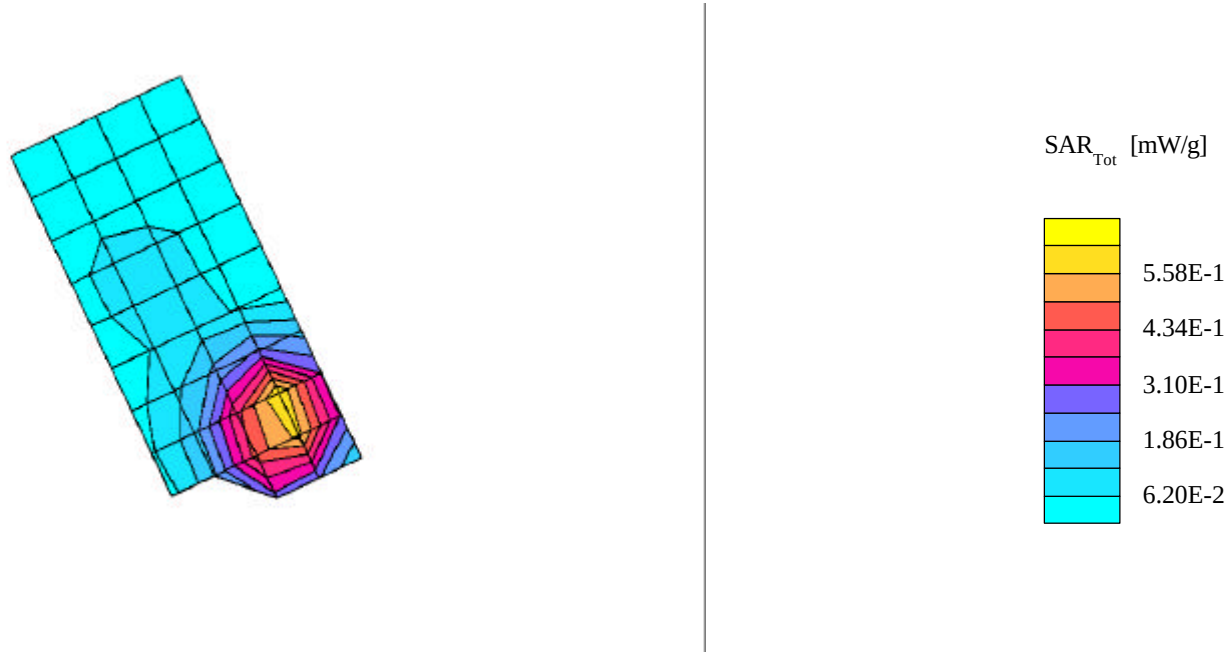
Ch# 661 / Pwr Step: 0 / Antenna Position: Fixed / Type of Modulation:1900 GSM / Battery Model #:SNN5582A / DEVICE POSITION: 15 Degree
R3: Glycol TP-1157 (rev. 3) Phantom; Left Hand Section; Position: (90°,180°); Frequency: 1880 MHz
Probe: ET3DV6R - SN1522 - IEEE Head; ConvF(3.40,3.40,3.40); Crest factor: 8.0; 1880 MHz Head & Body: σ = 1.44 mho/m ε_r = 38.6 ρ = 1.00 g/cm^3
Cube 7x7x7: SAR (1g): 0.108 mW/g, SAR (10g): 0.0640 mW/g, (Worst-case extrapolation)
Coarse: Dx = 15.0, Dy = 15.0, Dz = 15.0
Penetration depth: 11.2 (10.5, 12.1) [mm]
Powerdrift: -0.23 dB





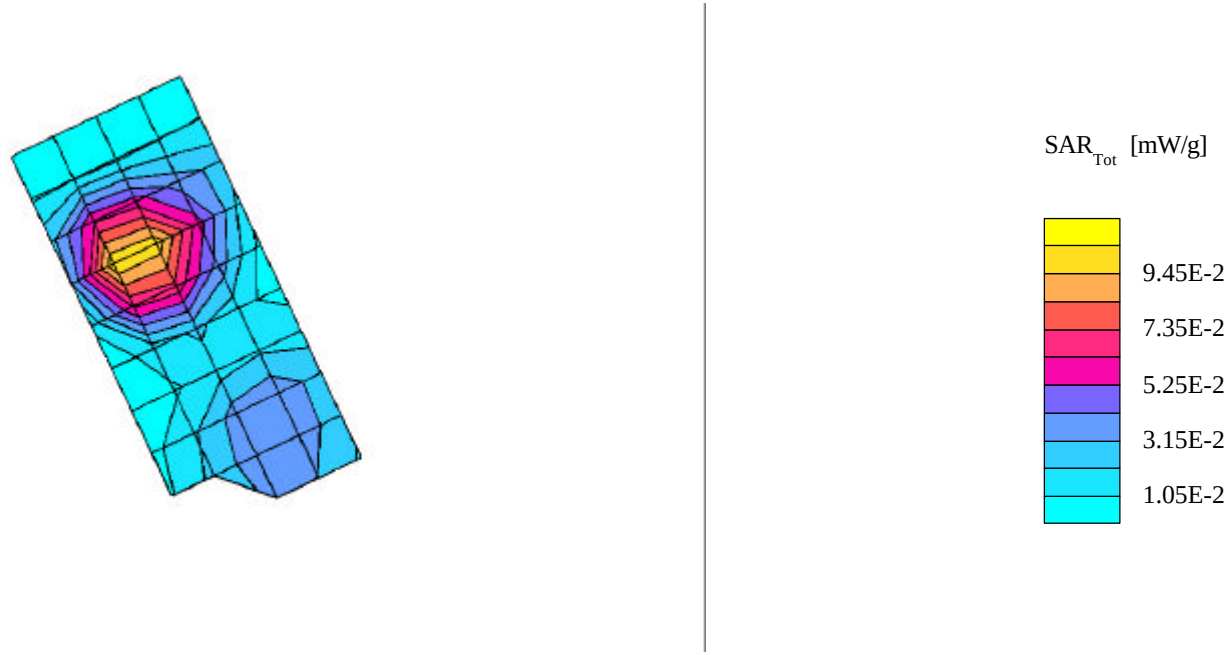
SN: T720001

Ch# 661 / Pwr Step: 0 / Antenna Position: Fixed / Type of Modulation:1900 GSM / Battery Model #:SNN5582A / DEVICE POSITION: cheek
R3: Glycol TP-1157 (rev. 3) Phantom; Right Hand Section; Position: (90°,180°); Frequency: 1880 MHz
Probe: ET3DV6R - SN1522 - IEEE Head; ConvF(3.40,3.40,3.40); Crest factor: 8.0; 1880 MHz Head & Body: σ = 1.44 mho/m ε_r = 38.6 ρ = 1.00 g/cm^3
Cube 7x7x7: SAR (1g): 0.606 mW/g, SAR (10g): 0.351 mW/g, (Worst-case extrapolation)
Coarse: Dx = 15.0, Dy = 15.0, Dz = 15.0
Penetration depth: 9.7 (9.4, 10.3) [mm]
Powerdrift: -0.40 dB



SN: T720001

Ch# 661 / Pwr Step: 0 / Antenna Position: Fixed / Type of Modulation:1900 GSM / Battery Model #:SNN5582A / DEVICE POSITION: 15 Degree
R3: Glycol TP-1157 (rev. 3) Phantom; Right Hand Section; Position: (90°,180°); Frequency: 1880 MHz
Probe: ET3DV6R - SN1522 - IEEE Head; ConvF(3.40,3.40,3.40); Crest factor: 8.0; 1880 MHz Head & Body: σ = 1.44 mho/m ε_r = 38.6 ρ = 1.00 g/cm^3
Cube 7x7x7: SAR (1g): 0.107 mW/g, SAR (10g): 0.0648 mW/g, (Worst-case extrapolation)
Coarse: Dx = 15.0, Dy = 15.0, Dz = 15.0
Penetration depth: 11.4 (10.6, 12.3) [mm]
Powerdrift: 0.01 dB



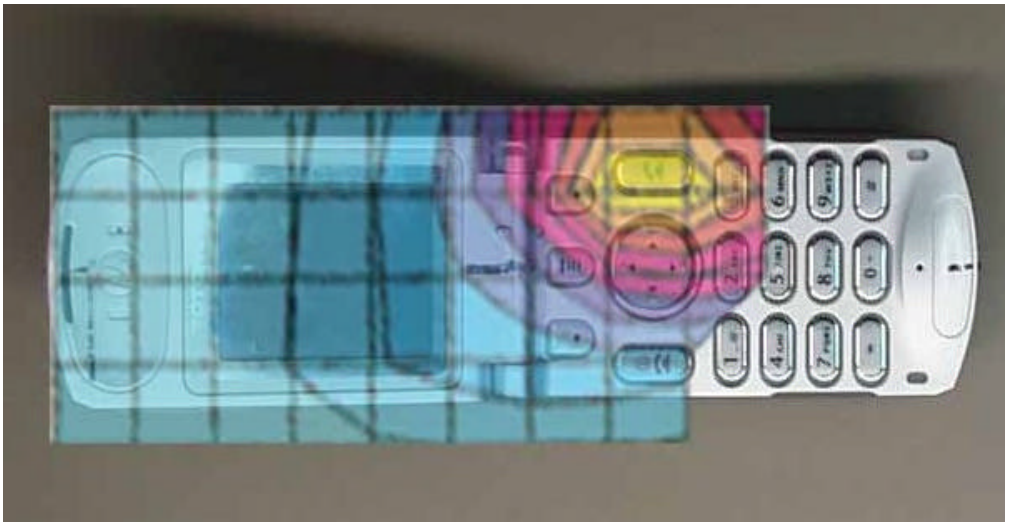


Figure 1.Typical 850MHz Right Head Adjacent Contour Overlaid on Phone with Antenna Fixed (Cheek Touch)

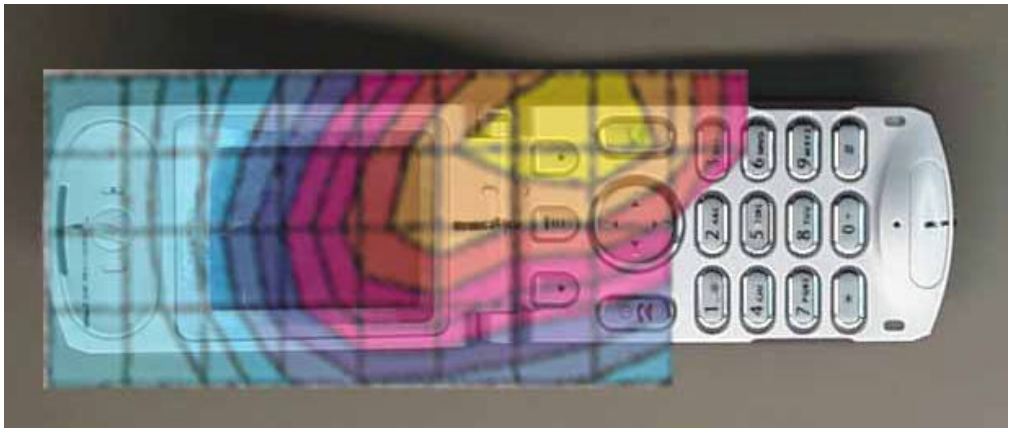


Figure 2.Typical 850MHz Left Head Adjacent Contour Overlaid on Phone with Antenna Fixed (15 ° Tilt)

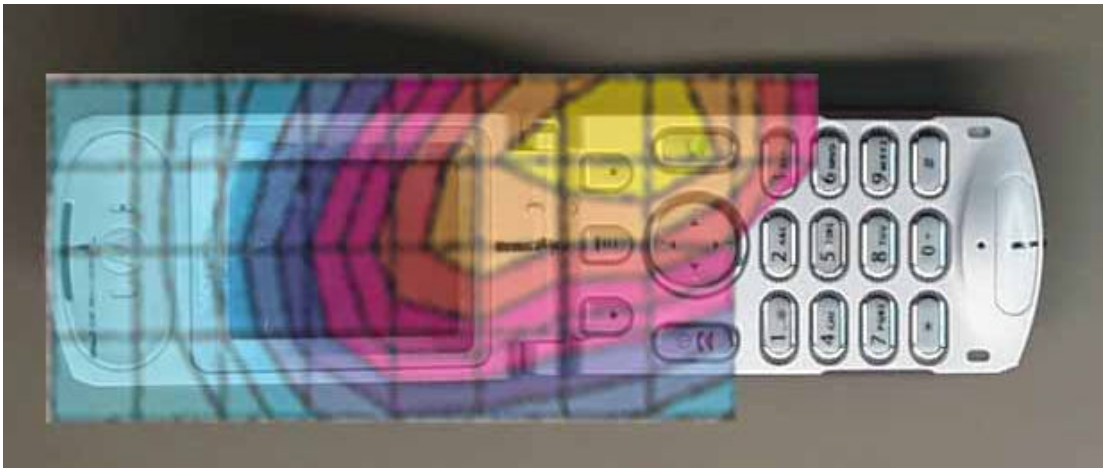


Figure 3.Typical 1900MHz Right Head Adjacent Contour Overlaid on Phone with Antenna Fixed (Cheek Touch)

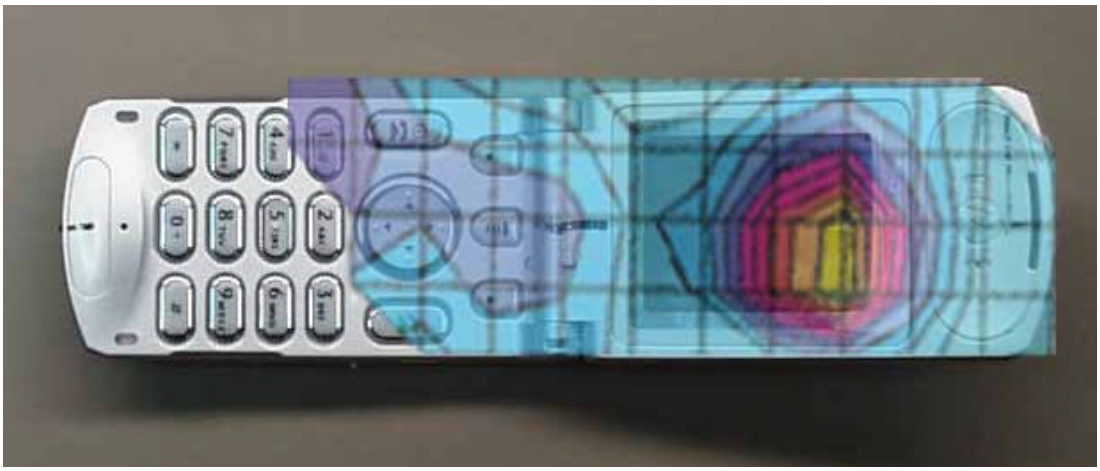


Figure 4.Typical 1900MHz Left Head Adjacent Contour Overlaid on Phone with Antenna Fixed (15 ° Tilt)

Appendix 3

SAR distribution plots for Body Worn Configuration

SN: T720001 / SN: 402059R2

Ch# 251 / Pwr Step: 7 / Antenna Position: FIXED / Type of Modulation: 850 GSM / Battery Model #: SNN5582A / Accessory Model #: (402059R2) navy blue pouch

R2 Amy Twin Phantom Rev.3 Phantom; section 2 Section; Position: (0°,0°); Frequency: 849 MHz

Probe: ET3DV6 - SN1503 - FCC Body; ConvF(6.20,6.20,6.20); Crest factor: 8.0; 835 MHz Head & Body: σ = 0.98 mho/m ε_r = 54.0 ρ = 1.00 g/cm^3

Cube 7x7x7: SAR (1g): 0.194 mW/g, SAR (10g): 0.136 mW/g, (Worst-case extrapolation)

Coarse: Dx = 15.0, Dy = 15.0, Dz = 10.0

Penetration depth: 15.9 (14.5, 17.5) [mm]

Powerdrift: 0.00 dB

SN: T720001 / SN: 113840

Ch# 189 / Pwr Step: 7 / Antenna Position: FIXED / Type of Modulation: 850 GSM / Battery Model #: SNN5582A / Accessory Model #: (113840) silver blue neoprene holster

R2 Amy Twin Phantom Rev.3 Phantom; section 2 Section; Position: (0°,0°); Frequency: 849 MHz

Probe: ET3DV6 - SN1503 - FCC Body; ConvF(6.20,6.20,6.20); Crest factor: 8.0; 835 MHz Head & Body: σ = 0.98 mho/m ε_r = 54.0 ρ = 1.00 g/cm^3

Cube 7x7x7: SAR (1g): 0.160 mW/g, SAR (10g): 0.111 mW/g, (Worst-case extrapolation)

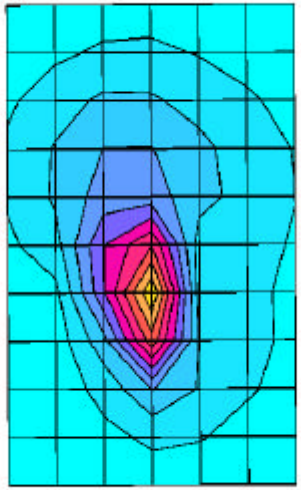
Coarse: Dx = 15.0, Dy = 15.0, Dz = 10.0

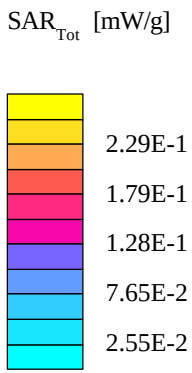
Penetration depth: 15.3 (13.8, 17.0) [mm]

Powerdrift: 0.02 dB

SN: 720001 / SN: 113840

Ch# 512 / Pwr Step: 0 / Antenna Position: FIXED / Type of Modulation: 1900 GSM / Battery Model #: SNN5582A / Accessory Model #: (113840) silver blue neoprene holster / Time : 12:04 a.m.
R2 Amy Twin Phantom Rev.3 Phantom; section 2 Section; Position: (0°,0°); Frequency: 1851 MHz
Probe: ET3DV6 - SN1503 - FCC Body; ConvF(4.90,4.90,4.90); Crest factor: 8.0; 1880 MHz Head & Body: σ = 1.56 mho/m ε_r = 53.2 ρ = 1.00 g/cm^3
Cube 7x7x7: SAR (1g): 0.275 mW/g, SAR (10g): 0.145 mW/g, (Worst-case extrapolation)
Coarse: Dx = 15.0, Dy = 15.0, Dz = 10.0
Penetration depth: 10.8 (9.8, 12.2) [mm]
Powerdrift: -0.16 dB





SN: T720001 / SN: 402059R2

Ch# 512 / Pwr Step: 0 / Antenna Position: FIXED / Type of Modulation: 1900 GSM / Battery Model #: SNN5582A / Accessory Model #: (402059R2) navyblue pouch

R4 Amy Twin Phantom Rev.3 Phantom; section 2 Section; Position: (0°,0°); Frequency: 1850 MHz

Probe: ET3DV6R - SN1513 - FCC Body; ConvF(4.60,4.60,4.60); Crest factor: 8.0; 1880 MHz Head & Body: σ = 1.58 mho/m ε_r = 53.5 ρ = 1.00 g/cm^3

Cube 7x7x7: SAR (1g): 0.225 mW/g, SAR (10g): 0.123 mW/g, (Worst-case extrapolation)

Coarse: Dx = 15.0, Dy = 15.0, Dz = 10.0

Penetration depth: 9.6 (9.0, 10.7) [mm]

Powerdrift: 0.04 dB

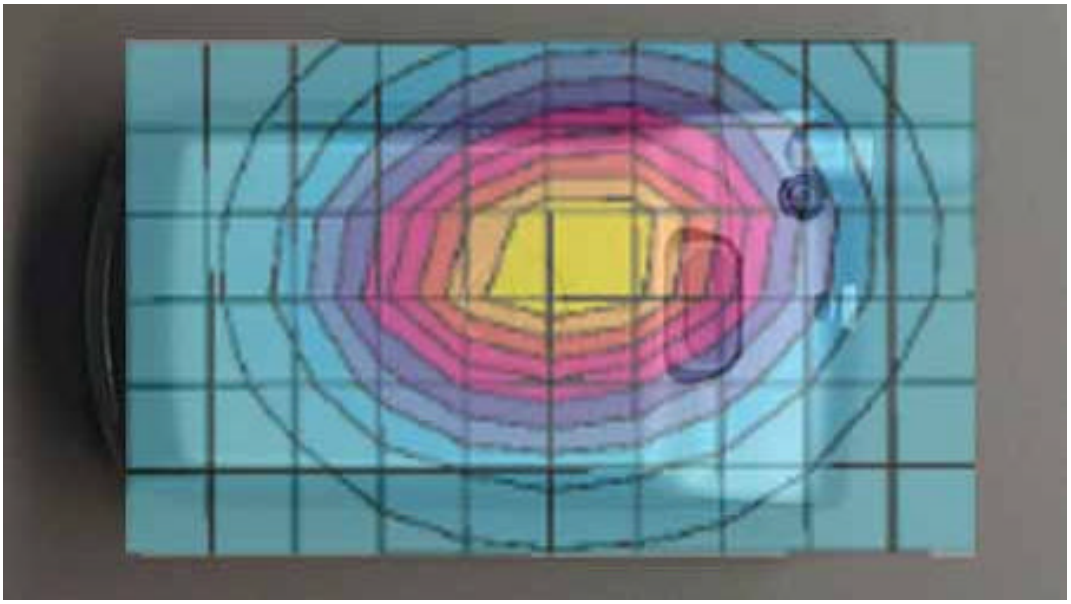


Figure 9.Typical 850 MHz Body-Worn Contour Overlaid on Phone with Antenna Fixed

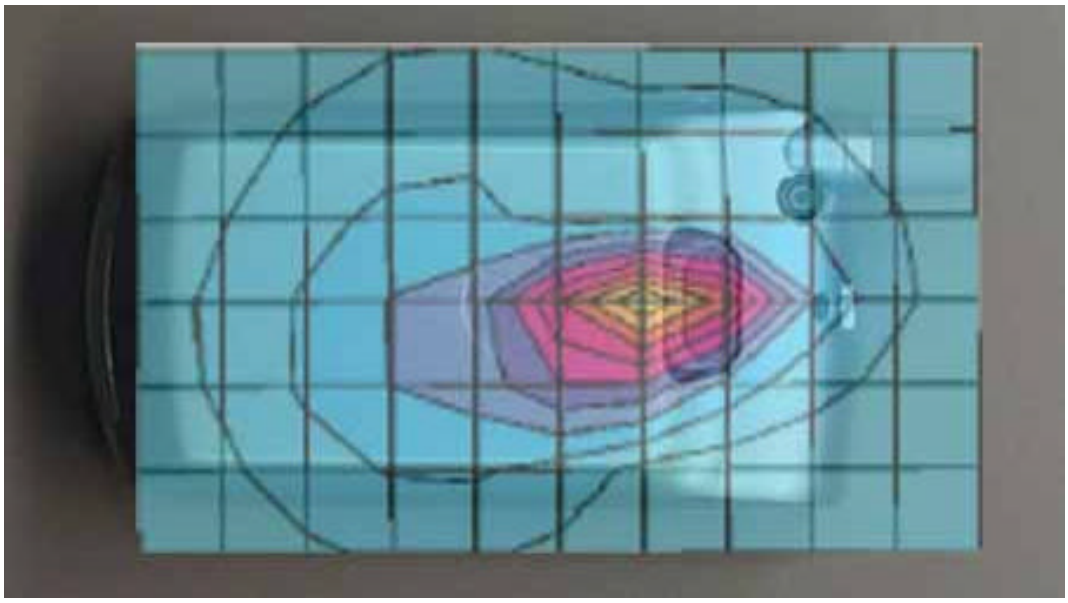


Figure 10. Typical 1900 MHz Body-Worn Contour Overlaid on Phone with Antenna Fixed

Appendix 4

Probe Calibration Certificate (Please Look at Attached documents)

Appendix 5

Dipole Characterization Certificate (Please Look at Attached Documents)

Appendix 6

Measurement Uncertainty Budget

Uncertainty Budget for Device Under Test

a	*b*	*c*	*d*	*e = f(d,k)*	*f*	*g*	*h = c x f / e*	*i = c x g / e*	*k*
Uncertainty Component	**Sec.**	**Tol. (± %)**	**Prob. Dist.**	**Div.**	c_i **(1 g)**	c_i **(10 g)**	**1 g** u_i **(±%)**	**10 g** u_i **(±%)**	v_i
Measurement System									
Probe Calibration	E.2.1	9.5	N	2.00	1	1	4.8	4.8	∞
Axial Isotropy	E.2.2	4.7	R	1.73	0.707	0.707	1.9	1.9	∞
Spherical Isotropy	E.2.2	9.6	R	1.73	0.707	0.707	3.9	3.9	∞
Boundary Effect	E.2.3	5.8	R	1.73	1	1	3.3	3.3	∞
Linearity	E.2.4	4.7	R	1.73	1	1	2.7	2.7	∞
System Detection Limits	E.2.5	1.0	R	1.73	1	1	0.6	0.6	∞
Readout Electronics	E.2.6	1.0	N	1.00	1	1	1.0	1.0	∞
Response Time	E.2.7	0.8	R	1.73	1	1	0.5	0.5	∞
Integration Time	E.2.8	1.3	R	1.73	1	1	0.8	0.8	∞
RF Ambient Conditions	E.6.1	3.0	R	1.73	1	1	1.7	1.7	∞
Probe Positioner Mechanical Tolerance	E.6.2	0.3	R	1.73	1	1	0.2	0.2	∞
Probe Positioning with respect to Phantom Shell	E.6.3	1.1	R	1.73	1	1	0.6	0.6	∞
Extrapolation, interpolation and Integration Algorithms for Max. SAR Evaluation	E.5	3.9	R	1.73	1	1	2.3	2.3	∞
Test sample Related									
Test Sample Positioning	E.4.2	3.6	N	1.00	1	1	3.6	3.6	29
Device Holder Uncertainty	E.4.1	2.8	N	1.00	1	1	2.8	2.8	8
Output Power Variation - SAR drift measurement	6.6.2	9.6	R	1.73	1	1	5.5	5.5	∞
Phantom and Tissue Parameters									
Phantom Uncertainty (shape and thickness tolerances)	E.3.1	4.0	R	1.73	1	1	2.3	2.3	∞
Liquid Conductivity - deviation from target values	E.3.2	5.0	R	1.73	0.64	0.43	1.8	1.2	∞
Liquid Conductivity - measurement uncertainty	E.3.3	10.0	R	1.73	0.64	0.43	3.7	2.5	∞
Liquid Permittivity - deviation from target values	E.3.2	10.0	R	1.73	0.6	0.49	3.5	2.8	∞
Liquid Permittivity - measurement uncertainty	E.3.3	5.0	R	1.73	0.6	0.49	1.7	1.4	∞
Combined Standard Uncertainty			RSS				12.63	12.05	1844
Expanded Uncertainty (95% CONFIDENCE LEVEL)			*k* =2				24.78	23.64	

Uncertainty Budget for System Performance Check (dipole & flat phantom)

a	*b*	*c*	*d*	*e = f(d,k)*	*f*	*g*	*h = c x f / e*	*i = c x g / e*	*k*
Uncertainty Component	**Sec.**	**Tol. (± %)**	**Prob. Dist.**	**Div.**	**c_i (1 g)**	**c_i (10 g)**	**1 g u_i (±%)**	**10 g u_i (±%)**	**v_i**
Measurement System									
Probe Calibration	E.2.1	9.5	N	2.00	1	1	4.8	4.8	∞
Axial Isotropy	E.2.2	4.7	R	1.73	1	1	2.7	2.7	∞
Spherical Isotropy	E.2.2	9.6	R	1.73	0	0	0.0	0.0	∞
Boundary Effect	E.2.3	5.8	R	1.73	1	1	3.3	3.3	∞
Linearity	E.2.4	4.7	R	1.73	1	1	2.7	2.7	∞
System Detection Limits	E.2.5	1.0	R	1.73	1	1	0.6	0.6	∞
Readout Electronics	E.2.6	1.0	N	1.00	1	1	1.0	1.0	∞
Response Time	E.2.7	0.0	R	1.73	1	1	0.0	0.0	∞
Integration Time	E.2.8	0.0	R	1.73	1	1	0.0	0.0	∞
RF Ambient Conditions	E.6.1	3.0	R	1.73	1	1	1.7	1.7	∞
Probe Positioner Mechanical Tolerance	E.6.2	0.3	R	1.73	1	1	0.2	0.2	∞
Probe Positioning with respect to Phantom Shell	E.6.3	1.1	R	1.73	1	1	0.6	0.6	∞
Extrapolation, interpolation and Integration Algorithms for Max. SAR Evaluation	E.5	3.9	R	1.73	1	1	2.3	2.3	∞
Dipole									
Dipole Axis to Liquid Distance	8, E.4.2	1.0	R	1.73	1	1	0.6	0.6	∞
Input Power and SAR Drift Measurement	8, 6.6.2	4.7	R	1.73	1	1	2.7	2.7	∞
Phantom and Tissue Parameters									
Phantom Uncertainty (shape and thickness tolerances)	E.3.1	4.0	R	1.73	1	1	2.3	2.3	∞
Liquid Conductivity - deviation from target values	E.3.2	5.0	R	1.73	0.64	0.43	1.8	1.2	∞
Liquid Conductivity - measurement uncertainty	E.3.3	10.0	R	1.73	0.64	0.43	3.7	2.5	∞
Liquid Permittivity - deviation from target values	E.3.2	10.0	R	1.73	0.6	0.49	3.5	2.8	∞
Liquid Permittivity - measurement uncertainty	E.3.3	5.0	R	1.73	0.6	0.49	1.7	1.4	∞
Combined Standard Uncertainty			RSS				10.16	9.43	99999
Expanded Uncertainty (95% CONFIDENCE LEVEL)			*k*=2				19.92	18.48	

Appendix 7

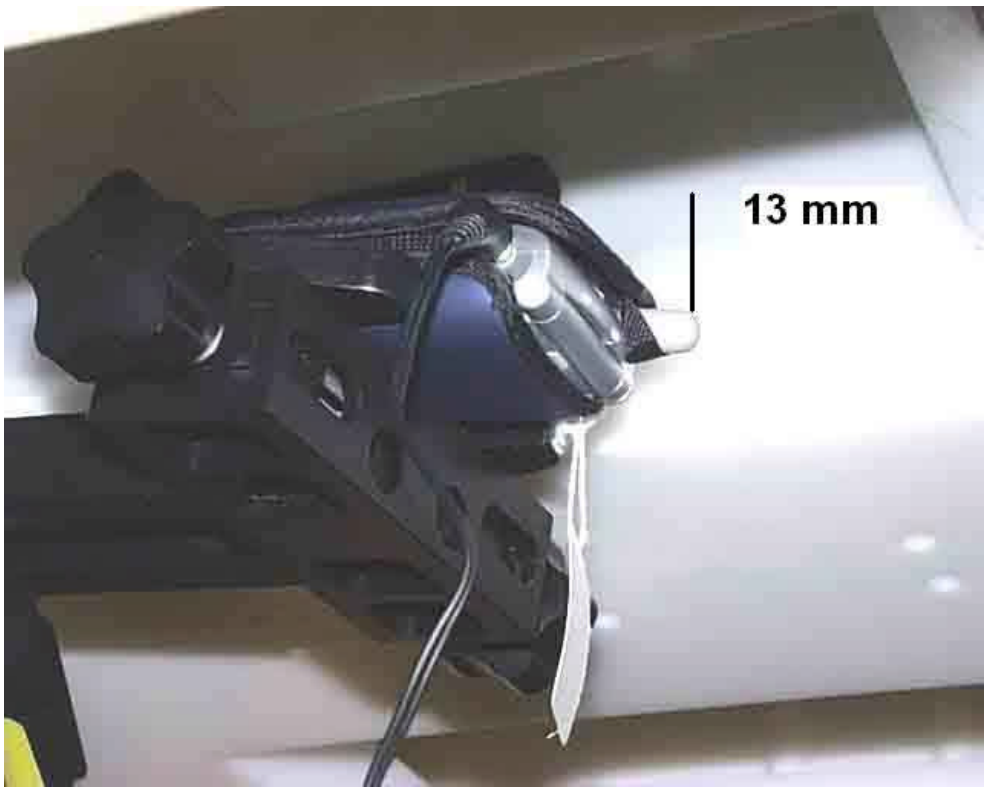
Photographs of the device under test

Figure 12. Front of Phone

Figure 13. Front of Phone with Flip Open

Figure 14. Side of Phone with Flip Open

Figure 15. Back of Phone


13 mm

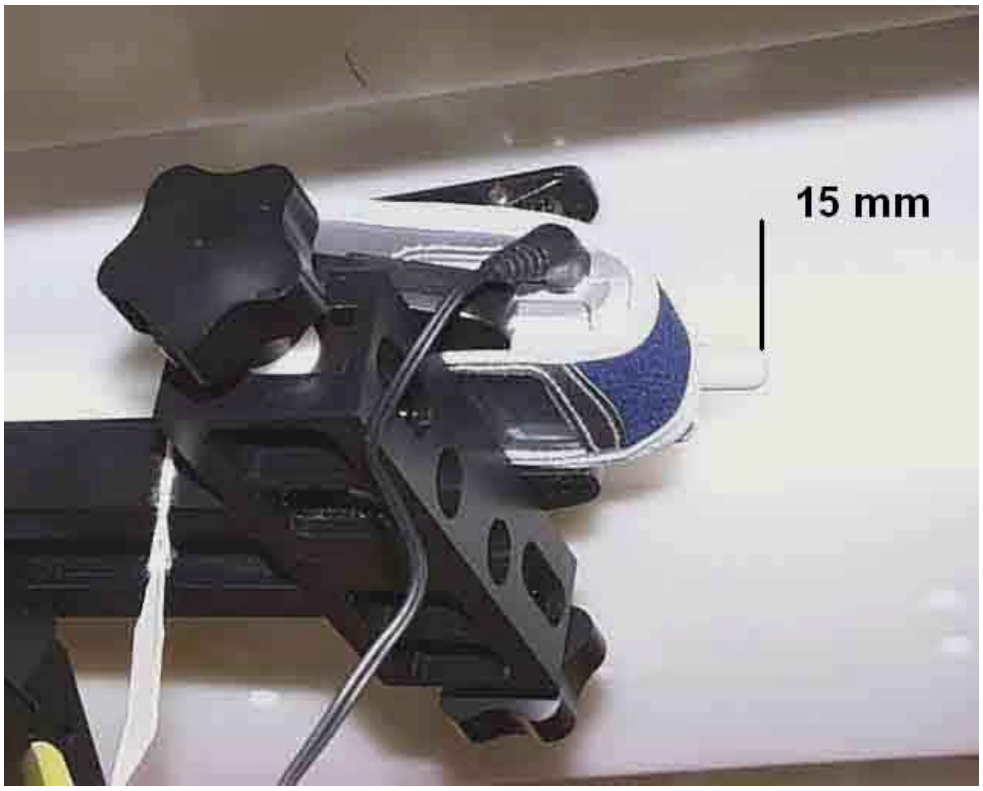

15 mm

Figure 16. Phone Against the Head Phantom (Front View - Cheek Touch)

Figure 17. Phone Against the Head Phantom (Back View – Cheek Touch)

Figure 18. Phone Against the Head Phantom (Front View – 15°Tilt)

Figure 19. Phone Against the Head Phantom (Back View – 15°Tilt)